NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

October 7, 2021

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

RE: Tower Share Application
1455 Forbes Street, East Hartford CT 06118
Latitude: 41.731472
Longitude: -72.607778
Site# 806376_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 1455 Forbes Street in East Hartford, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 5G MHz antenna and six (6) RRUs, at the 77-foot level of the existing 130-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Infinigy, dated August 09, 2021 Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated June 15, 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 in Docket No. 139 on September 18, 1991. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Mayor Marcia A. Leclerc, Elected Official for the Town of East Hartford, Eileen Buckheit, Development Director, as well as the tower owner (Crown Castle) and property owner (Rebecca Handel-Jack)

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the tower is 130-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 77-feet.

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

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

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4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 59.24% as evidenced by Exhibit F.

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

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

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this support tower in East Hartford. 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 77-foot level of the existing 130-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

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:

Marcia A. Leclerc, Mayor
Town of East Hartford
740 Main Street East Hartford, CT 06108 860-291-7200

Eileen Buckheit, Development Director
Town of East Hartford
740 Main Street East Hartford, CT 06108

Rebecca Handel-Jack – Property Owner
1455 Forbes Street East Hartford, CT 06118

Crown Castle, Tower Owner

Exhibit A

Original Facility Approval

DOCKET NO. 139 - An application of Metro Mobile CTS of Hartford, Inc., for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of cellular facilities in the Towns of Enfield, East Hartford, and Wethersfield, Connecticut. : Connecticut : Siting : Council

September 18, 1991

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a cellular telecommunications towers and equipment buildings at the proposed Enfield, Connecticut, alternate site and the proposed East Hartford, Connecticut, prime site 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 section 16-50k of the Connecticut General Statutes (CGS), be issued to Metro Mobile CTS of Hartford, Inc., for the construction, operation, and maintenance of a cellular telecommunications tower, associated equipment, and building at the proposed alternate site in Enfield, Connecticut, and the proposed prime site in East Hartford, Connecticut.

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

1. The self-supporting monopole towers shall be no taller than necessary to provide the proposed communication service and in no event shall the towers exceed a total height of 163 feet above ground level (AGL) at the proposed Enfield alternate site and 123 feet AGL at the proposed East Hartford prime site, with antennas and appurtenances.

2. The Certificate holder shall prepare a Development and Management (D&M) Plan, for approval by the Council, for these sites in compliance with sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies. This D&M plan

shall include detailed plans of the towers, tower foundations, soil boring reports, equipment buildings, access roads, security fences, landscaping plans, detailed erosion and sedimentation control plans, and a final schedule. In addition, the D&M plan shall include for Council consideration, detailed plans and itemized costs for the placement of service utilities underground in order to further mitigate the visual effect of the facilities.

3. The Certificate holder shall comply with any existing and future radio frequency (RF) standards promulgated by State or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facilities granted herein shall be brought into compliance with such standards.

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

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

6. If the facility does not initially provide or permanently ceases to provide cellular service following completion of construction, this Decision and Order shall be void, and the tower and all associated equipment shall be dismantled and removed or reapplication for any new use shall be made to the Council as soon as practicable before any such new use is made.

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

Pursuant to CGS section 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 this issuance shall be published in the Hartford Courant and the Journal Inquirer.

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 State Agencies.

The parties to this proceeding are:

PARTIES	ITS REPRESENTATIVE
Metro Mobile CTS of Hartford, Inc. 20 Alexander Drive P.O. Box 5029 Wallingford, CT 06492 Attn: Gary Schulman	Robinson and Cole One Commercial Plaza Hartford, CT 06103-3597 Attn: Earl Phillips, Jr. (203) 275-8200
The Town of East Hartford	G. Barry Goodberg Assistant Corporation Counsel Town of East Hartford 740 Main Street East Hartford, CT 06108 (203) 289-2781
The Town of Enfield	Christopher W. Bromson Enfield Town Attorney 47 No. Main Street Enfield, CT 06082 (203) 745-0371 Ext. 290

SMH:bw

5534E

CERTIFICATION

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case in DOCKET NO. 139 - An application of Metro Mobile CTS of Hartford, Inc., for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of cellular facilities in the Towns of Enfield, East Hartford, and Wethersfield, Connecticut, or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut the 18th day of September, 1991.

Council Members	Vote Cast
Mortimer A. Gelston Chairman	YES
Commissioner Clifton A. Leonhardt Designee: Commissioner Richard G. Patterson	ABSTAIN
Commissioner Timothy R.E. Keeney Designee: Brian Emerick	ABSENT
Harry E. Covey	NO
Daniel P. Lynch, Jr.	NO
Gloria Dibble Pond	YES
Paulann H. Sheets	YES
William H. Smith	YES
Colin C. Tait	YES

PETITION NO. 535 - AT&T Wireless PCS, LLC and Crown Atlantic Company LLC petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for proposed modification of an existing telecommunications tower located at 1455 Forbes Street, East Hartford, Connecticut.	}	Connecticut
	}	Siting
	}	Council
	}	May 21, 2002

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the extension of an existing telecommunications tower and installation of associated equipment at an existing facility located at 1455 Forbes Street in East Hartford, Connecticut, are not significant, are not disproportionate either alone or cumulatively with other effects, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny this petition.

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 extension shall be compatible with and installed on the existing monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T Wireless PCS, LLC (AT&T) and XM Satellite Radio, but such extension shall not exceed a height of 133 feet above ground level, including antennas and appurtenances.

2. 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.

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

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

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

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

7. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not completed 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.

8. All other applicable provisions of the Council's September 18, 1991 Decision and Order in Docket No. 139 remain in effect.

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 Hartford Courant, and The East Hartford Gazette.

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:

Crown Atlantic Company LLC and AT&T Wireless PCS, LLC	Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103-3597

Exhibit B

Property Card

Town of East Hartford Property Summary Report

1455 FORBES ST

MAP LOT:	41-233	**CAMA PID:**	4723
LOCATION:	1455 FORBES ST		
OWNER NAME:	HANDEL-JACK REBECCA		

OWNER OF RECORD
HANDEL-JACK REBECCA 1455 FORBES ST EAST HARTFORD, CT 06118

LIVING AREA:	720	**ZONING:**	R2	**ACREAGE:**	25.01

SALES HISTORY

OWNER	BOOK / PAGE	SALE DATE	SALE PRICE
HANDEL-JACK REBECCA	3909/186	07-Jul-2020	$0.00
HANDEL ROBERT D	3582/0113	23-Jan-2016	$0.00
HANDEL JESSIE K EST OF C/O ROBERT D HANDEL EXECUTOR	3534/0329	19-May-2015	$0.00
HANDEL JESSIE K	1874/0345	01-Jan-2000	$0.00
HANDEL ALBERT P JR EST OF HANDEL JESSIE K EXEC	0000/0000	30-Dec-1999	$0.00

CURRENT PARCEL ASSESSMENT

TOTAL:	$332,190.00	**IMPROVEMENTS:**	$291,500.00	**LAND:**	$40,690.00

ASSESSING HISTORY

FISCAL YEAR	TOTAL VALUE	IMPROVEMENT VALUE	LAND VALUE
2019	$332,880.00	$291,500.00	$41,380.00
2018	$332,880.00	$291,500.00	$41,380.00
2017	$332,880.00	$291,500.00	$41,380.00
2016	$332,880.00	$291,500.00	$41,380.00
2015	$346,650.00	$302,420.00	$44,230.00

Town of East Hartford Property Summary Report

1455 FORBES ST

MAP LOT:	41-233	**CAMA PID:**	4723
LOCATION:	1455 FORBES ST		
OWNER NAME:	HANDEL-JACK REBECCA		

BUILDING # 1

YEAR BUILT	1865	**EXT WALL 1**	Vinyl Siding
STYLE	Colonial	**INT WALLS 1**	Plaster
MODEL	Residential	**HEAT FUEL**	Gas
STORIES	2.0	**HEAT TYPE**	Hot Water
OCCUPANCY	One Family	**AC TYPE**	None
ROOF	Gable	**BEDROOMS**	4
ROOF COVER	Asphalt	**FULL BATHS**	1
FLOOR COVER 1	Hardwood	**HALF BATHS**	1
% BSMT	100	**TOTAL ROOMS**	9
% FIN BSMT	0	**% REC RM**	60
% SEMI FIN	0	**% ATTIC FINISH**	0
BSMT GARAGE		**FIREPLACES**	0

EXTRA FEATURES

DESCRIPTION	CODE	UNITS
1 Story Barn	BRN1	1x5112 (5112.00 SF)
Shed	SHD1	1x64 (64.00 S.F.)
1 Story Barn	BRN1	1x3072 (3072.00 SF)
Shed	SHD1	1x300 (300.00 S.F.)
Shed	SHD1	1x561 (561.00 S.F.)
1 Story Barn	BRN1	1x4928 (4928.00 SF)
Shed	SHD1	1x600 (600.00 S.F.)

Town of East Hartford Property Summary Report

1455 FORBES ST

MAP LOT:	41-233	**CAMA PID:**	4723
LOCATION:	1455 FORBES ST		
OWNER NAME:	HANDEL-JACK REBECCA		

BUILDING # 2

YEAR BUILT	1934	**EXT WALL 1**	Vinyl Siding
STYLE	Single Family	**INT WALLS 1**	Plaster
MODEL	Residential	**HEAT FUEL**	Other
STORIES	1.0	**HEAT TYPE**	Other
OCCUPANCY	One Family	**AC TYPE**	None
ROOF	Gable	**BEDROOMS**	1
ROOF COVER	Asphalt	**FULL BATHS**	1
FLOOR COVER 1	Hardwood	**HALF BATHS**	0
% BSMT	0	**TOTAL ROOMS**	4
% FIN BSMT	0	**% REC RM**	0
% SEMI FIN	0	**% ATTIC FINISH**	0
BSMT GARAGE		**FIREPLACES**	0

EXTRA FEATURES

DESCRIPTION	CODE	UNITS
Shed	SHD1	1x105 (105.00 S.F.)
FR/SHED	MSC55	30.00 UNIT
1 Story Barn	BRN1	1x840 (840.00 SF)
Shed	SHD1	1x144 (144.00 S.F.)
Shed	SHD1	1x308 (308.00 S.F.)
1 Story Barn	BRN1	1x3840 (3840.00 SF)


Spaulding Cir
Heritage Ln
Landers Rd
Britt Rd
May Rd
Oconnell Dr
Forbes St
Linwood Dr
Montclair Dr
Stevens
Exit 5D Rt 2 W
Ramp 5D Rt 2 W
Exit 6D Rt 2 W
State Hwy 2
3
1455
1397

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBDL00047A

DISH Wireless L.L.C. SITE ADDRESS:

1455 FORBES STREET
EAST HARTFORD, CT 06118

CONNECTICUT CODE COMPLIANCE

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

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

SHEET INDEX

SCOPE OF WORK

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

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

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- UTILIZED EXISTING 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)
- EXISTING METER SOCKET ON EXISTING H-FRAME TO BE UTILIZED

SITE PHOTO

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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	HANDEL-JACK REBECCA
ADDRESS:	1455 FORBES ST EAST HARTFORD, CT 06118
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	806376
TOWER APP NUMBER:	556638
COUNTY:	HARTFORD
LATITUDE (NAD 83):	41° 43' 53.30" N 41.731472 N
LONGITUDE (NAD 83):	72° 36' 28.00" W 72.607778 W
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL EAST HARTFORD
ZONING DISTRICT:	R-2 SINGLE FAMILY
PARCEL NUMBER:	TBD
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	CONNECTICUT LIGHT & POWER
TELEPHONE COMPANY:	AT&T

PROJECT DIRECTORY

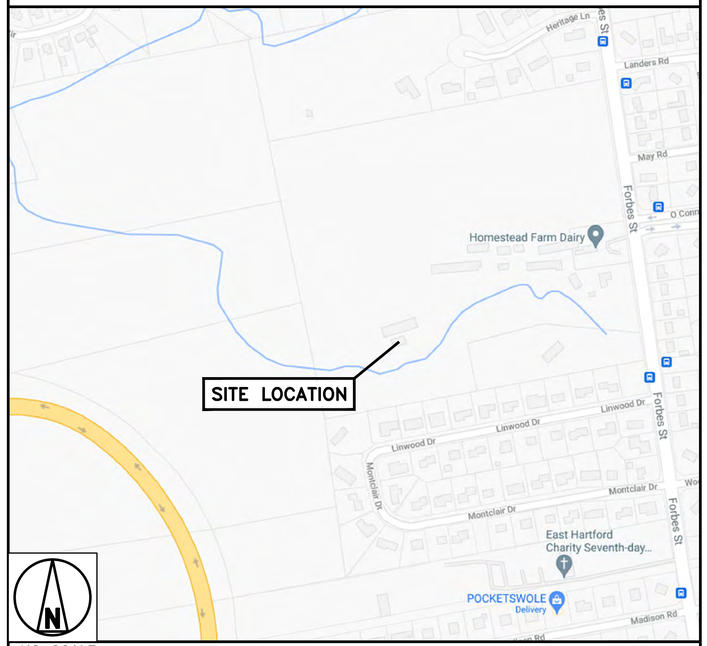
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	INFINIGY 2500 W. HIGGINS RD. STE. 500 HOFFMAN ESTATES, IL 60169 (847) 648-4068
SITE ACQUISITION:	NICHOLAS CURRY NICHOLAS.CURRY@CROWNCASTLE.COM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

DIRECTIONS

DIRECTIONS FROM TOURS OF DISTINCTION AIRPORT:

DEPART AND HEAD TOWARD MASSACO ST, TURN RIGHT ONTO MASSACO ST,TURN LEFT ONTO US-202 E / CT-10 / HOPMEADOW ST, MINOR CONGESTION, TURN RIGHT ONTO CT-315 / TARIFFVILLE RD, KEEP RIGHT TO STAY ON CT-315 / ELM ST, TURN RIGHT ONTO CT-189 / STATE HIGHWAY 189, TAKE THE RAMP ON THE RIGHT FOR CT-187 SOUTH AND HEAD TOWARD BLOOMFIELD / HARTFORD, BEAR LEFT ONTO DAY HILL RD, TAKE THE RAMP ON THE RIGHT FOR I-91 SOUTH AND HEAD TOWARD HARTFORD, AT EXIT 30, HEAD LEFT ON THE RAMP FOR I-84 EAST TOWARD E HARTFORD / NEW LONDON, AT EXIT 55, HEAD RIGHT ON THE RAMP FOR CT-2 EAST TOWARD NEW LONDON / NORWICH, AT EXIT 5C, HEAD ON THE RAMP RIGHT AND FOLLOW SIGNS FOR MAPLE STREET, TURN LEFT ONTO MAPLE ST TOWARD MAPLE STREET, TURN RIGHT ONTO FORBES ST, TURN RIGHT, TURN RIGHT, ARRIVE AT 1455 FORBES STREET EAST HARTFORD, CT 06118

VICINITY MAP



NO SCALE

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
2500 W. HIGGINS RD. SUITE 500 | HOFFMAN ESTATES, IL 60169
PHONE: 847-648-4068 | FAX: 518-690-0793
WWW.INFINIGY.COM

STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/13/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/17/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00047A
1455 FORBES STREET
EAST HARTFORD, CT 06118

SHEET TITLE

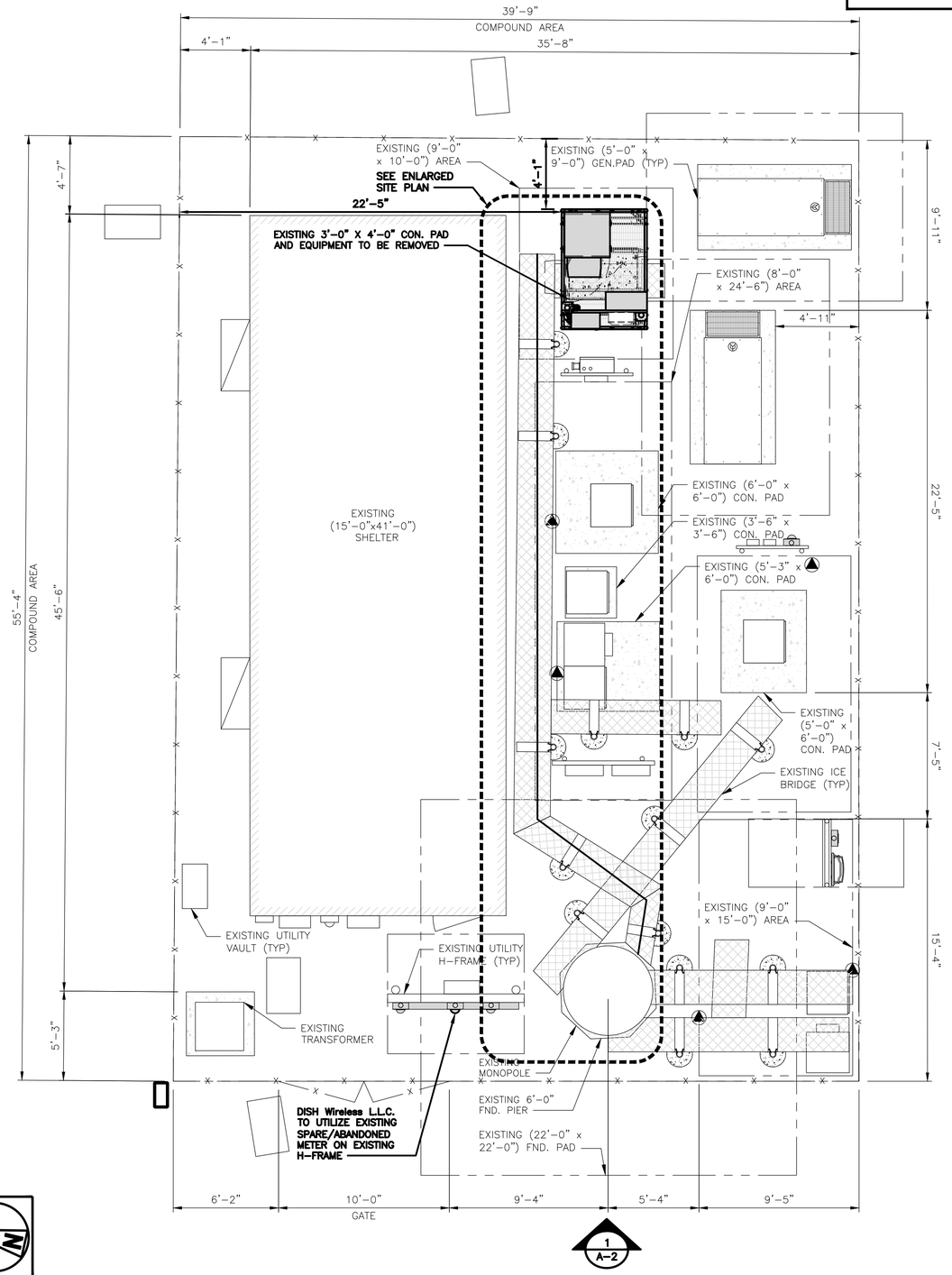
TITLE SHEET

SHEET NUMBER

T-1

NOTES

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



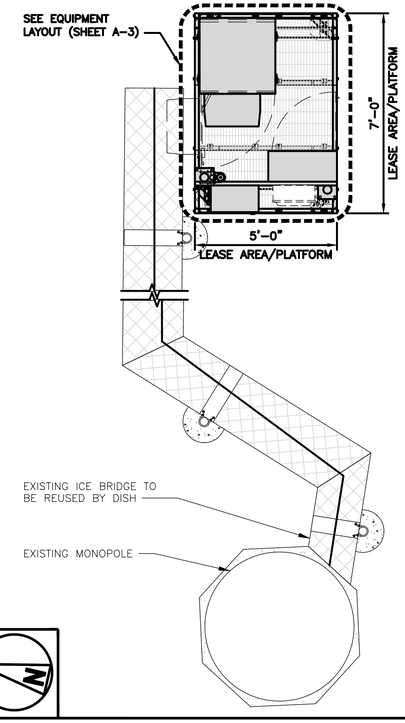
OVERALL SITE PLAN

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

1

NOTES

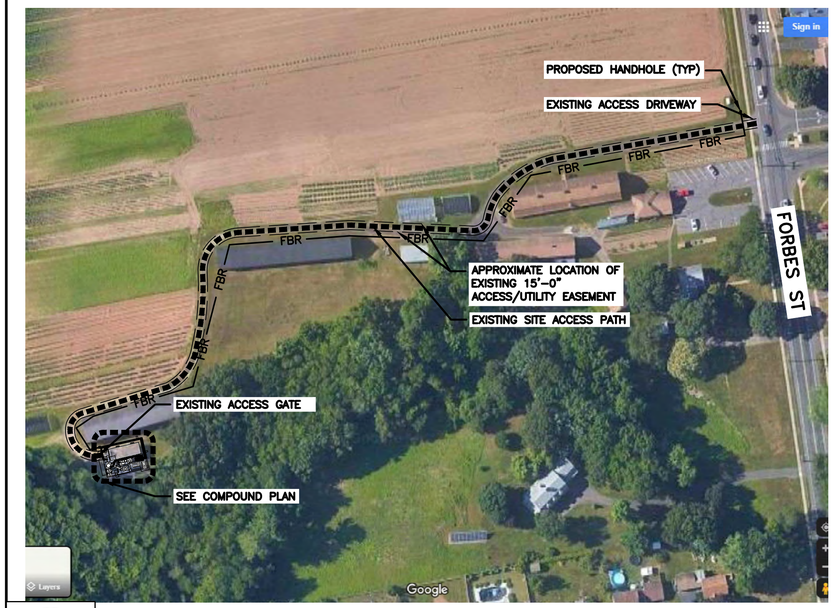
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

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

2



SITE PLAN

100' 50' 0 100' 200'
1"=100'

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
2500 W. HIGGINS RD. SUITE 500 |
HOFFMAN ESTATES, IL 60169
PHONE: 847-648-4068 | FAX: 518-690-0793
WWW.INFINIGY.COM

STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/13/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/17/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00047A
1455 FORBES STREET
EAST HARTFORD, CT 06118

SHEET TITLE

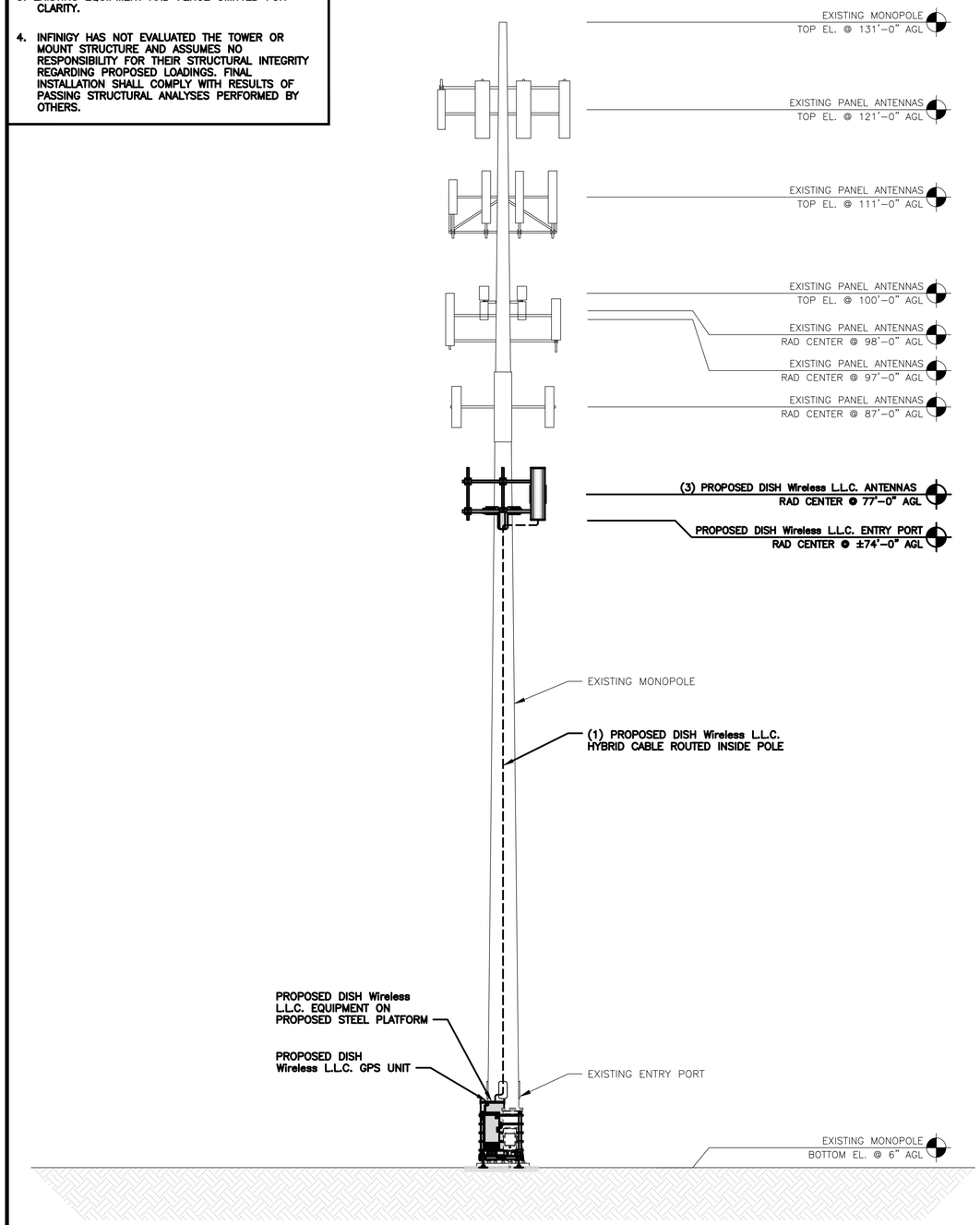
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

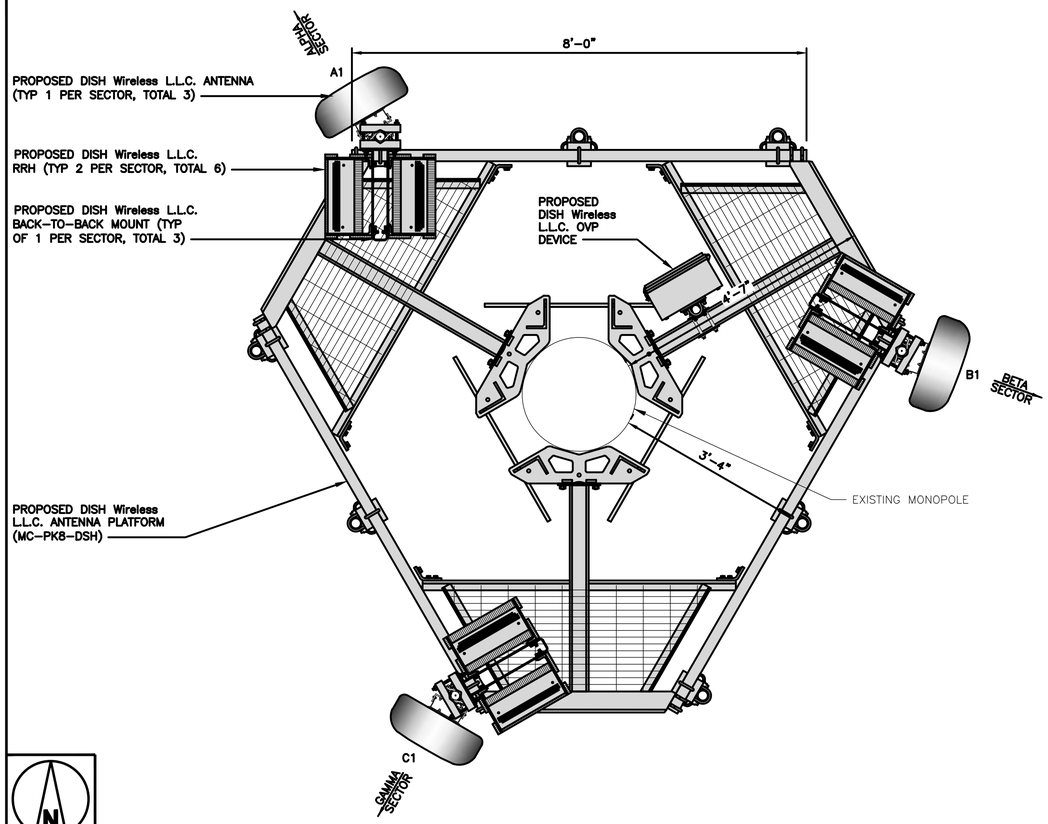
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.
4. INFINIGY HAS NOT EVALUATED THE TOWER OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR STRUCTURAL INTEGRITY REGARDING PROPOSED LOADINGS. FINAL INSTALLATION SHALL COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSES PERFORMED BY OTHERS.



PROPOSED WEST ELEVATION

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

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZMUITH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	330°	77'-0"	(1) HIGH-CAPACITY HYBRID CABLE (152' LONG)
BETA	B1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	110°	77'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	210°	77'-0"	

NOTES

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2. ANTENNA OR RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.

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

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ANTENNA SCHEDULE

NO SCALE

3

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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED
PROFESSIONAL ENGINEER
8/13/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/17/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00047A
1455 FORBES STREET
EAST HARTFORD, CT 06118

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2

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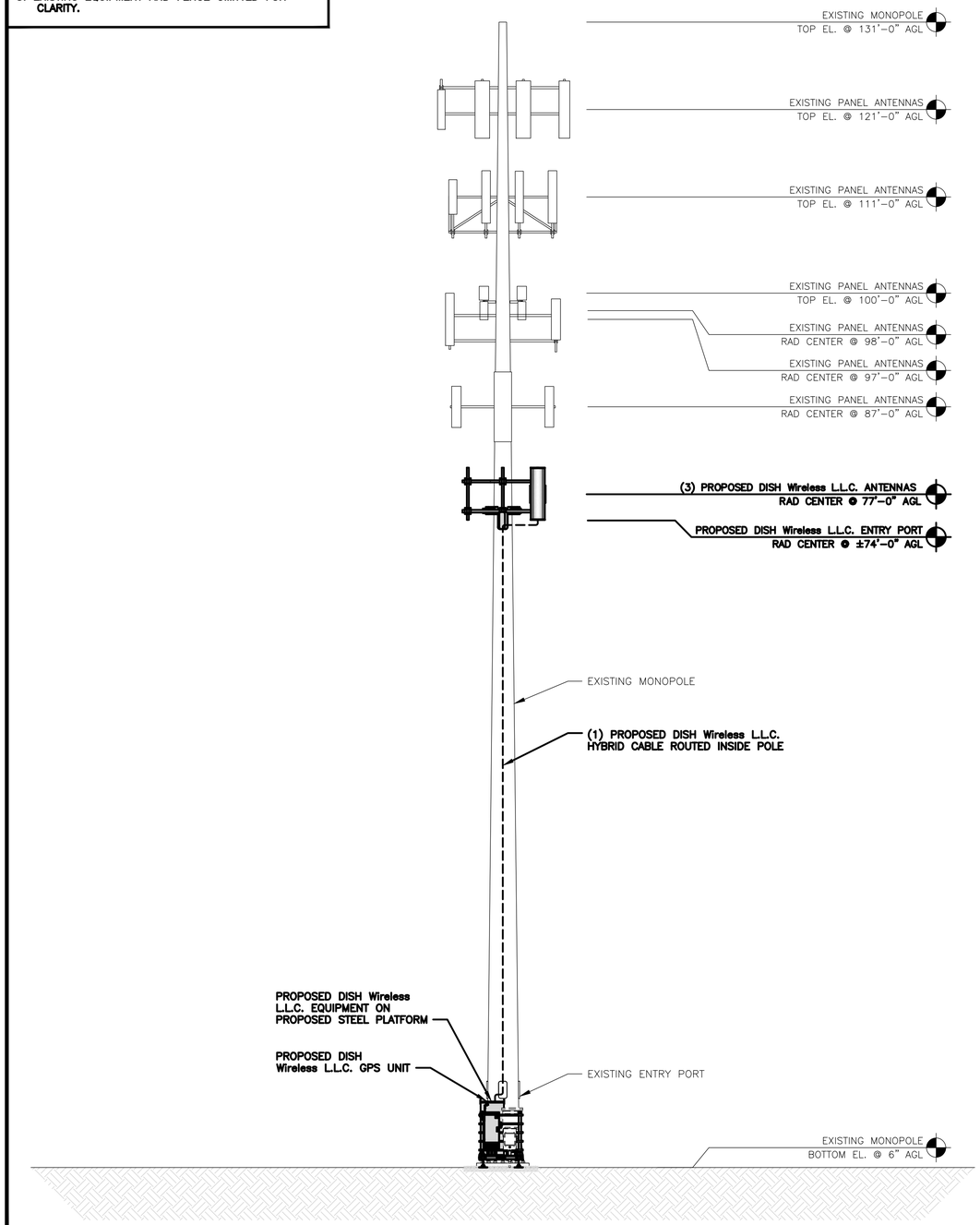
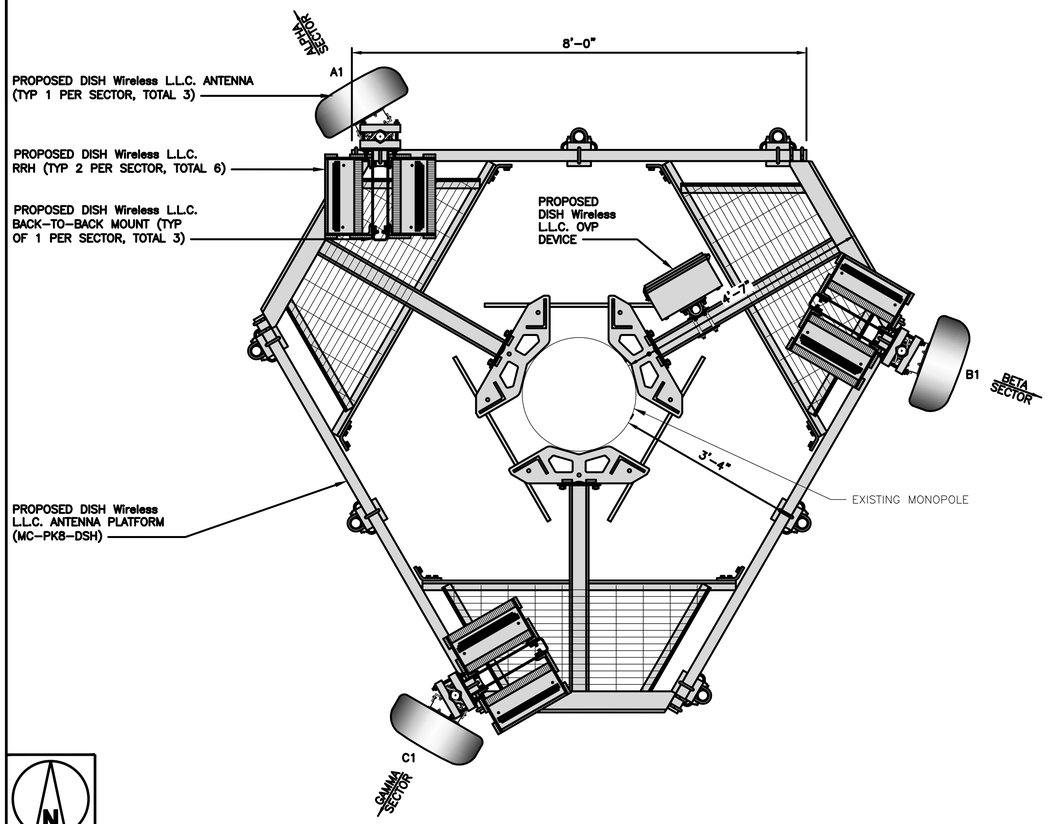


PROPOSED WEST ELEVATION

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

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZMUITH	RAD CENTER	FEED LINE TYPE AND LENGTH
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SECTOR	POSITION	RRH	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
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	A1	FUJITSU – TA08025-B605	5G
BETA	B1	FUJITSU – TA08025-B604	5G
	B1	FUJITSU – TA08025-B605	5G
GAMMA	C1	FUJITSU – TA08025-B604	5G
	C1	FUJITSU – TA08025-B605	5G

NOTES

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ANTENNA SCHEDULE

NO SCALE

3

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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/13/2021

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

RFDS REV #: N/A

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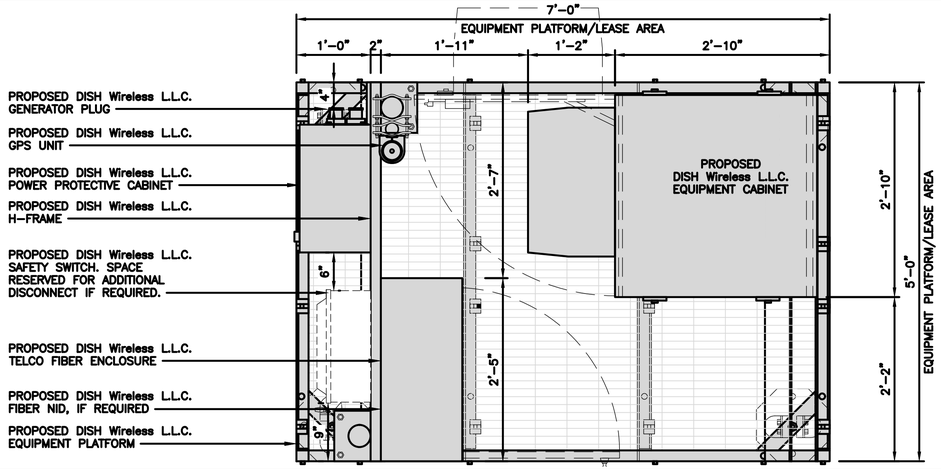
EAST HARTFORD, CT 06118

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



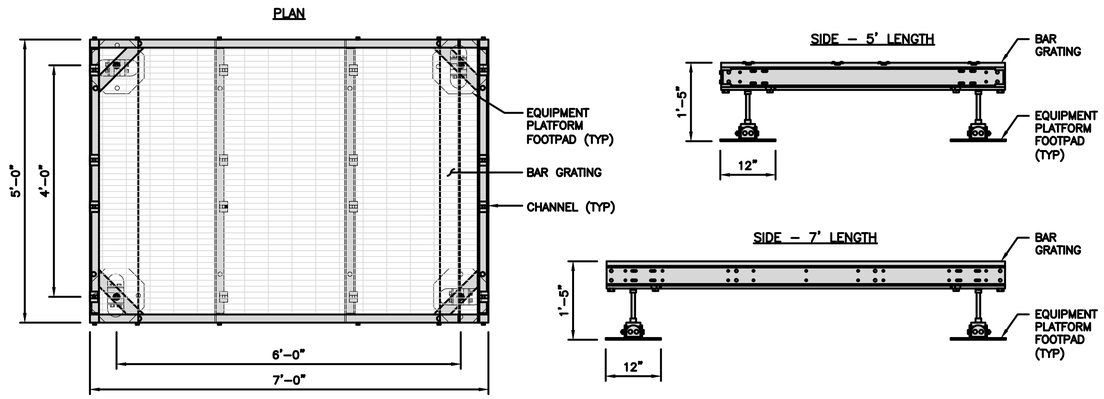
PLATFORM EQUIPMENT PLAN

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

1

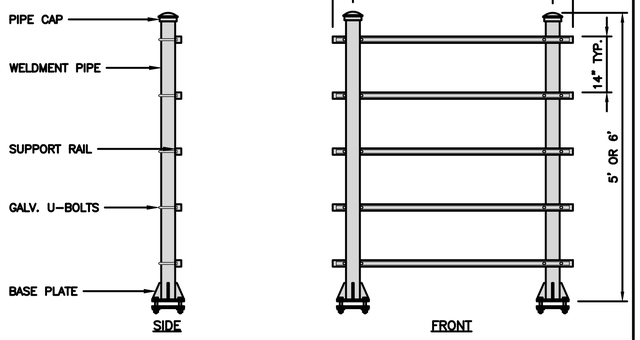
COMMSCOPE MTC4045LP 5X7 PLATFORM	
DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

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

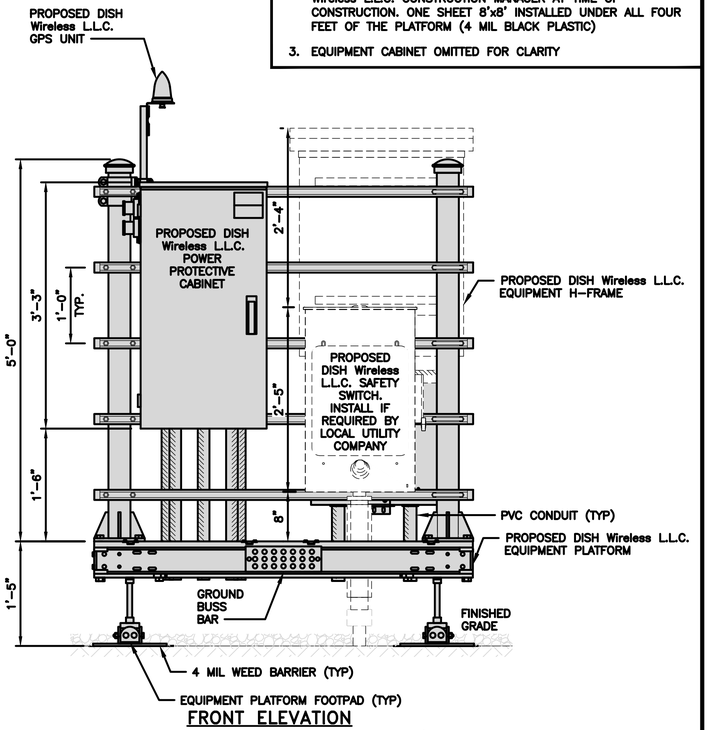


H-FRAME DETAIL — NO SCALE — 3

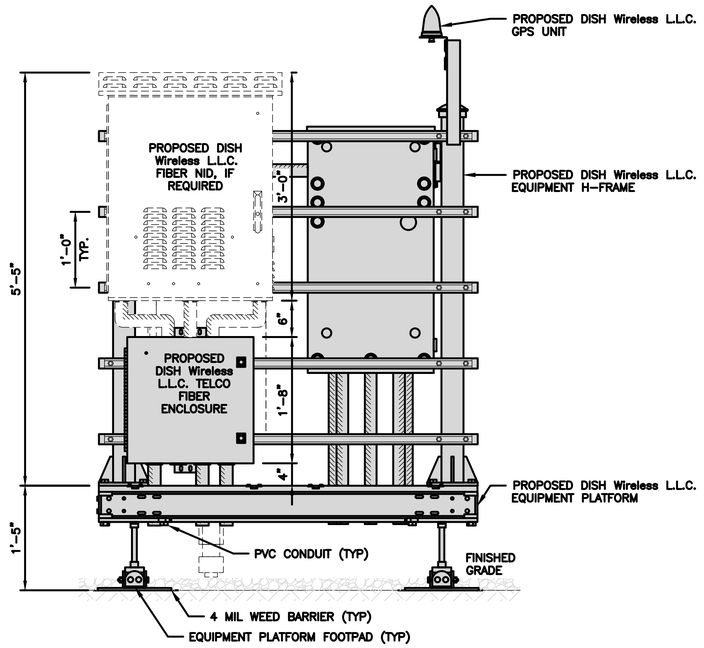
NOT USED — NO SCALE — 4

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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LICENSED PROFESSIONAL ENGINEER
8/13/2021

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

RFDS REV #: N/A

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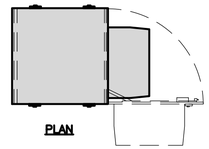
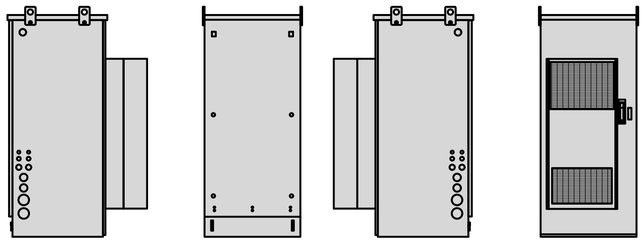
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00047A
1455 FORBES STREET
EAST HARTFORD, CT 06118

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

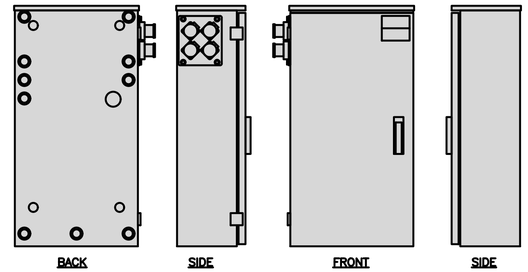
CHARLES INDUSTRY HEX CUBE–PM639155N4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS





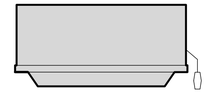
CABINET DETAIL | NO SCALE | 1

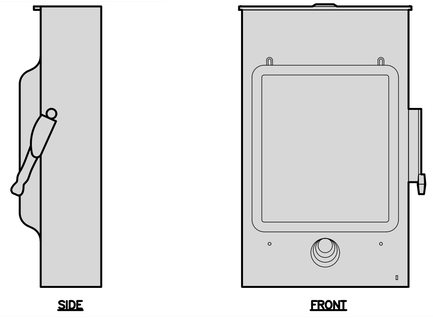
RAYCAP PPC RDIAC–2465–P–240–MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G



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

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

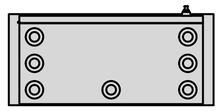


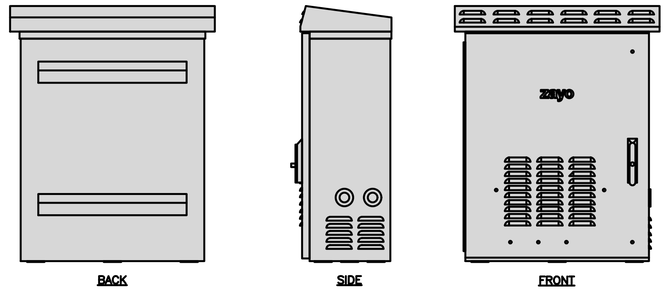


SAFETY SWITCH DETAIL | NO SCALE | 3

NOT USED | NO SCALE | 4

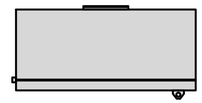
ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs





FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

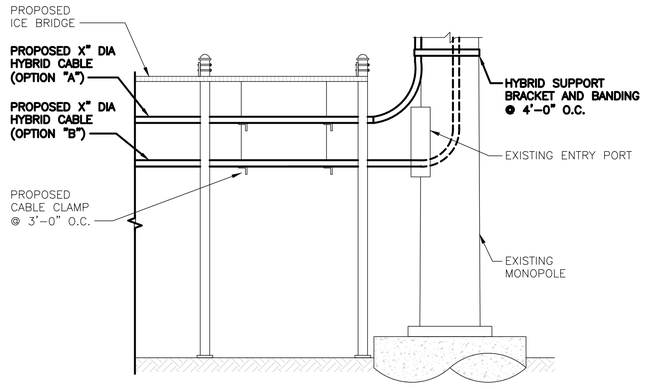
CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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EAST HARTFORD, CT 06118

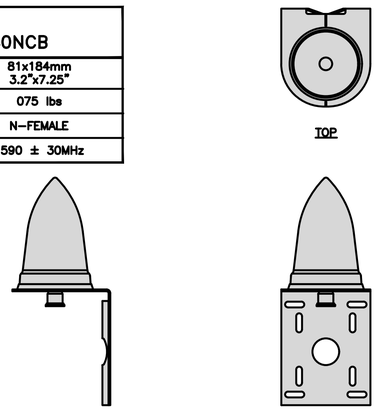
SHEET TITLE

EQUIPMENT DETAILS

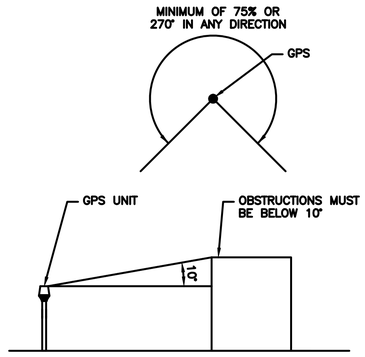
SHEET NUMBER

A-4

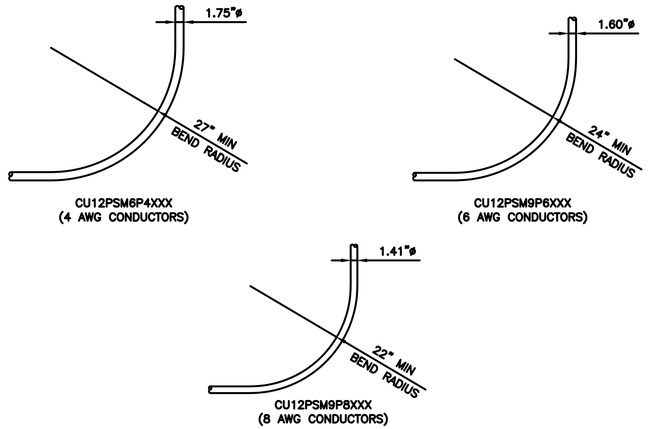
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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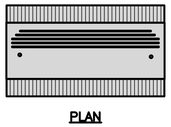
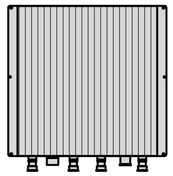
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

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


PLAN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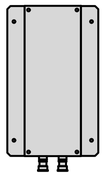
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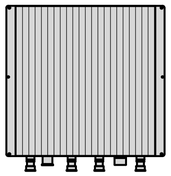
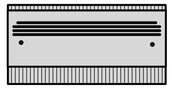
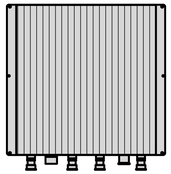

FRONT

RRH DETAIL | NO SCALE | 1

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


PLAN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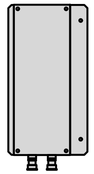
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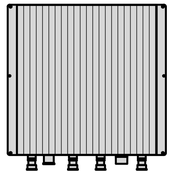
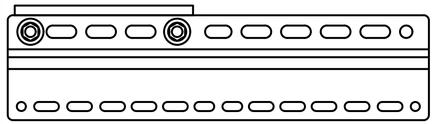
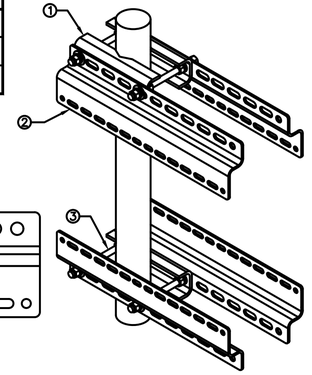

FRONT

RRH DETAIL | NO SCALE | 2

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

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





NOTE:
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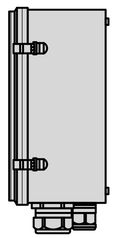
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

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


PLAN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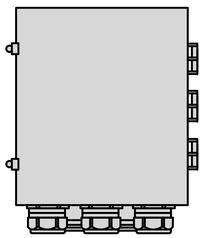
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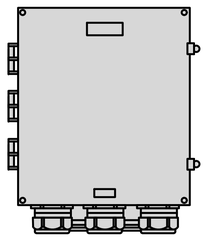
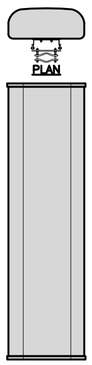

FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 4

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.8"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE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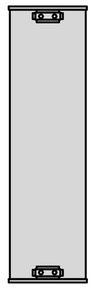
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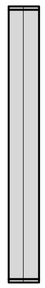
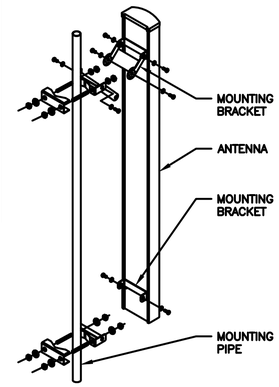

SIDE

FRONT

ANTENNA DETAIL | NO SCALE | 5

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

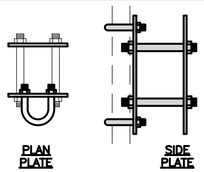


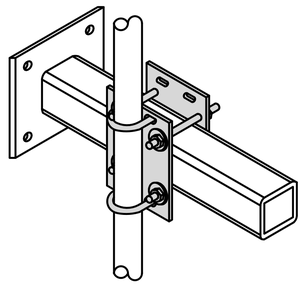
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

ANTENNA MOUNTING DETAIL | NO SCALE | 6

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

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

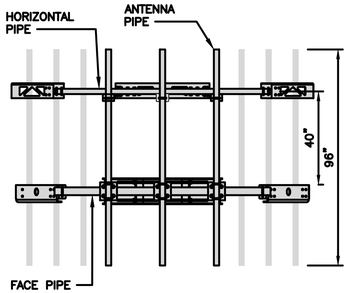


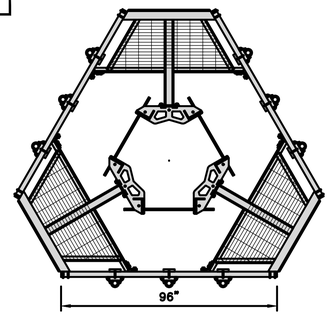


RRH/OVP MOUNT DETAIL | NO SCALE | 7

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

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





ANTENNA PLATFORM DETAIL | NO SCALE | 8

NOT USED | NO SCALE | 9

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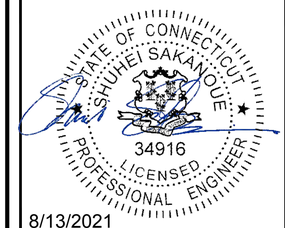

8/13/2021

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

RFDS REV #: N/A

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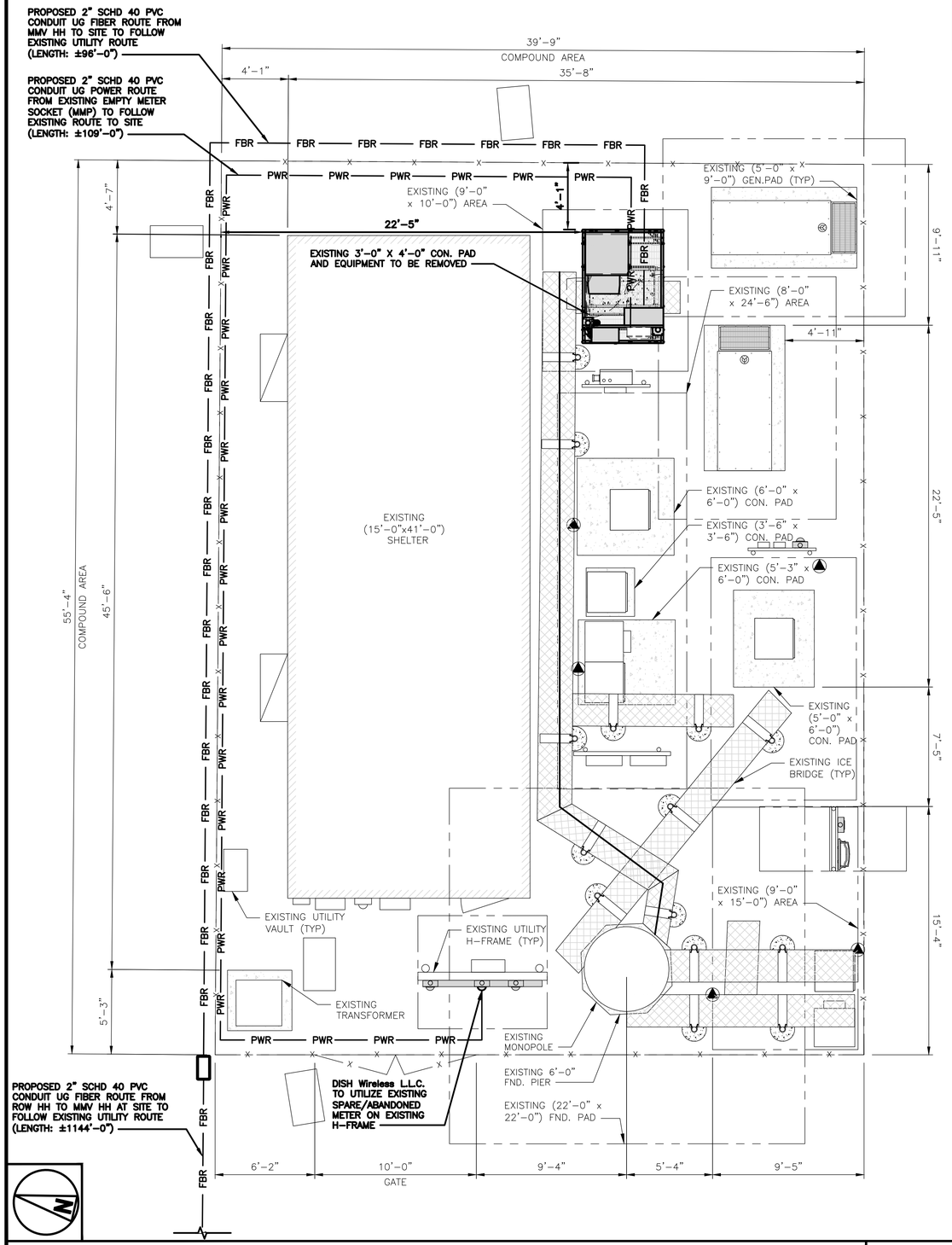
A&E PROJECT NUMBER
2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00047A
1455 FORBES STREET
EAST HARTFORD, CT 06118

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6



UTILITY ROUTE PLAN

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

1

NOTES

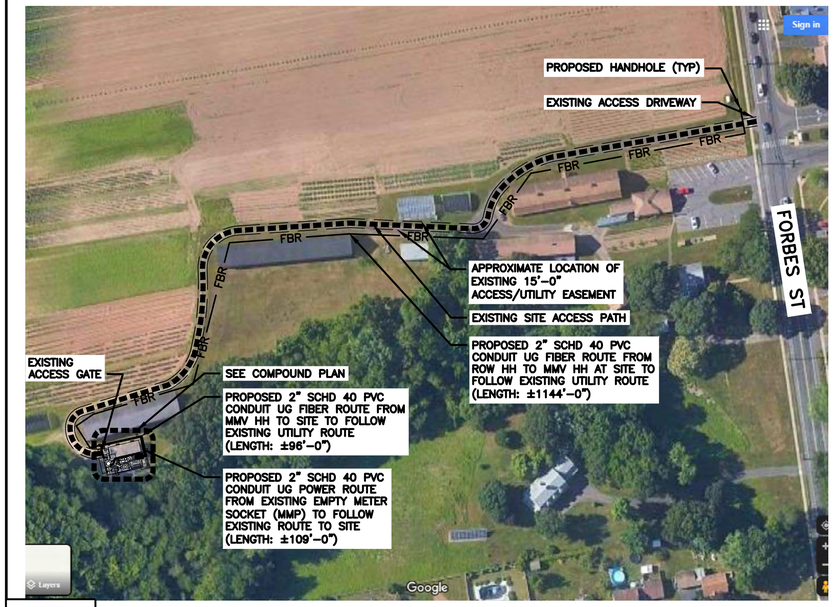
1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.

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

100' 50' 0 100' 200'
1"=100'

3

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SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/13/2021

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

RFDS REV #: N/A

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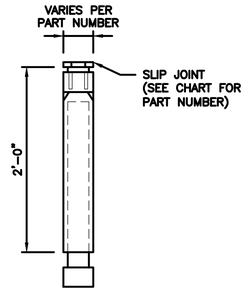
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00047A
1455 FORBES STREET
EAST HARTFORD, CT 06118

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

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

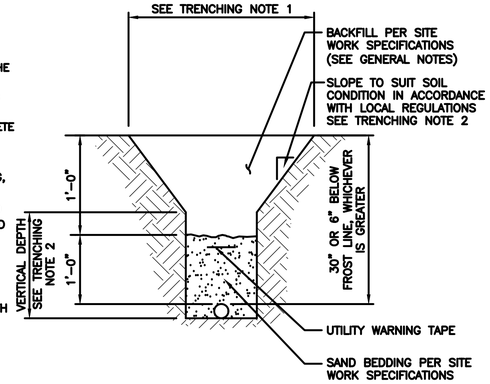


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

EXPANSION JOINT DETAIL | NO SCALE | 1

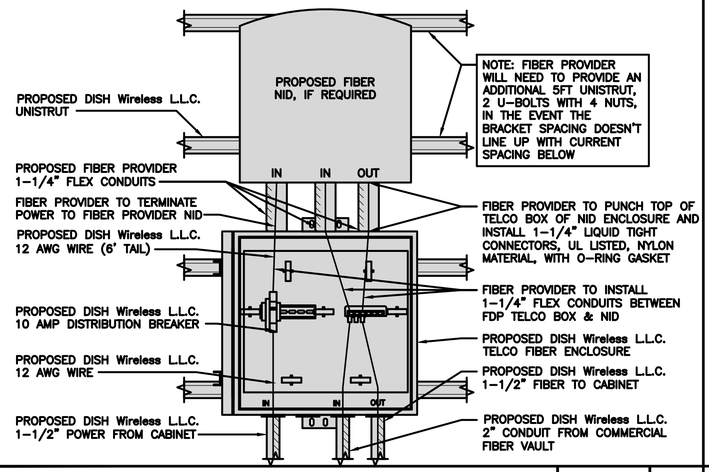
TRENCHING NOTES

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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2

NOT USED | NO SCALE | 3



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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DISH Wireless L.L.C.
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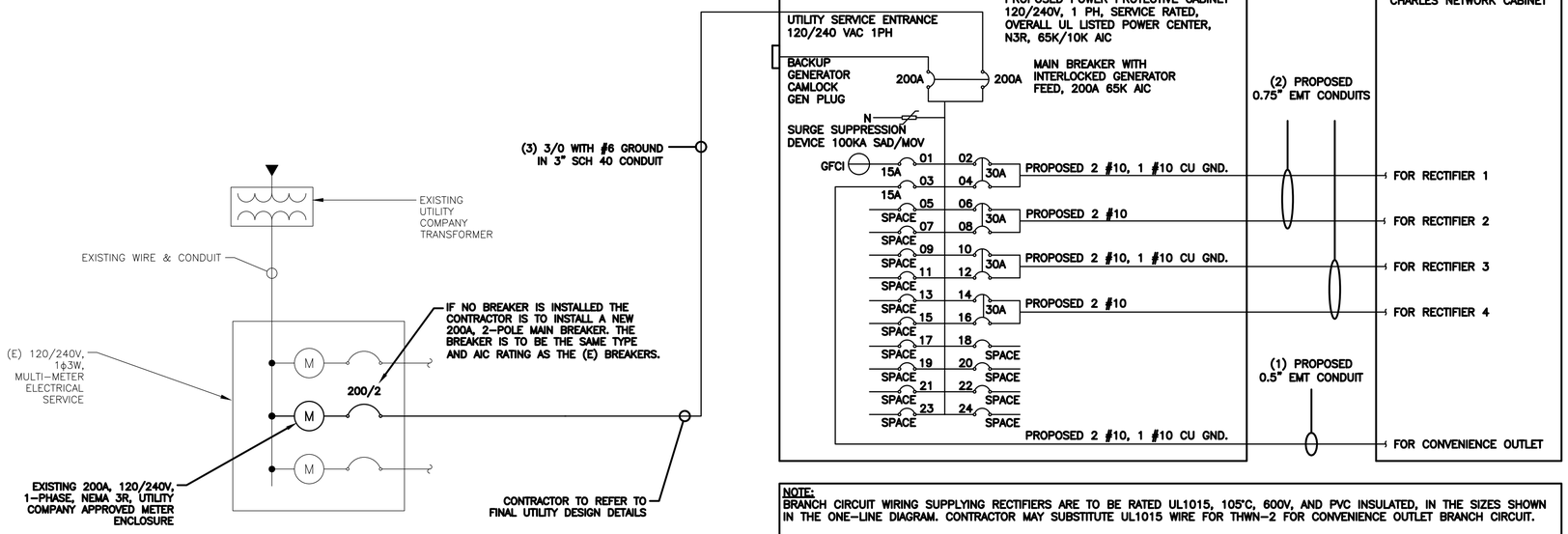
EAST HARTFORD, CT 06118

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



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

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

NOTES

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

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

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

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

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

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

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

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

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

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

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

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

PPC ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE | NO SCALE | 2

NOT USED | NO SCALE | 3

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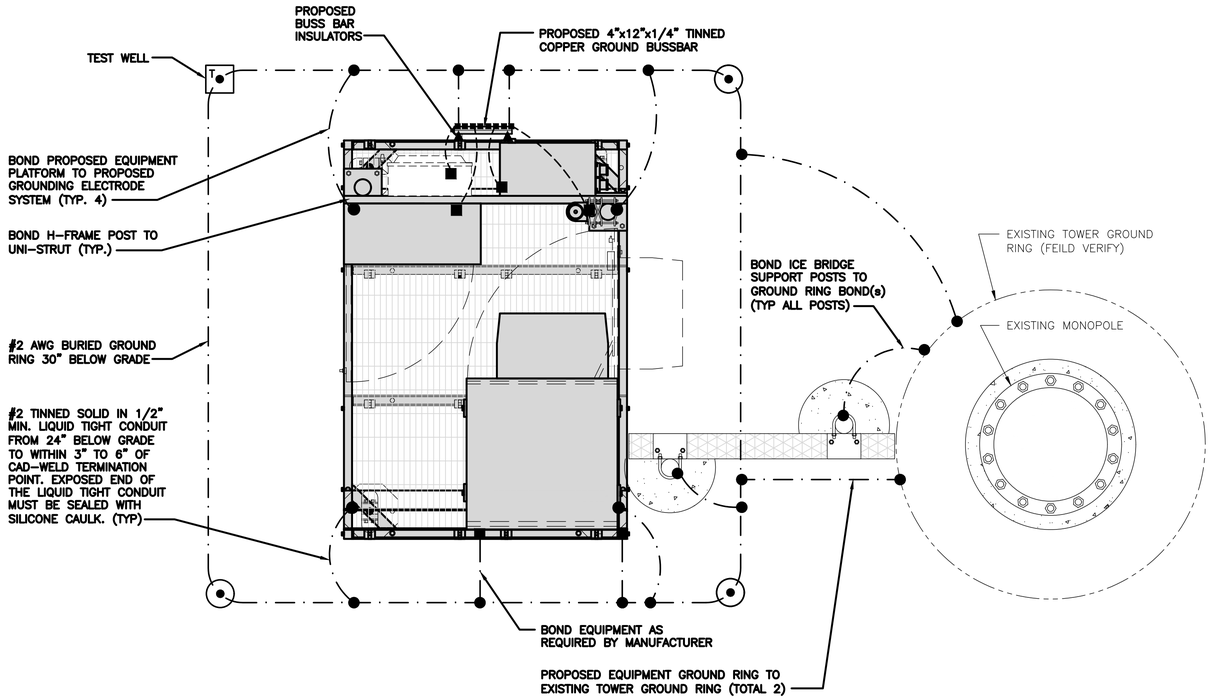
EAST HARTFORD, CT 06118

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

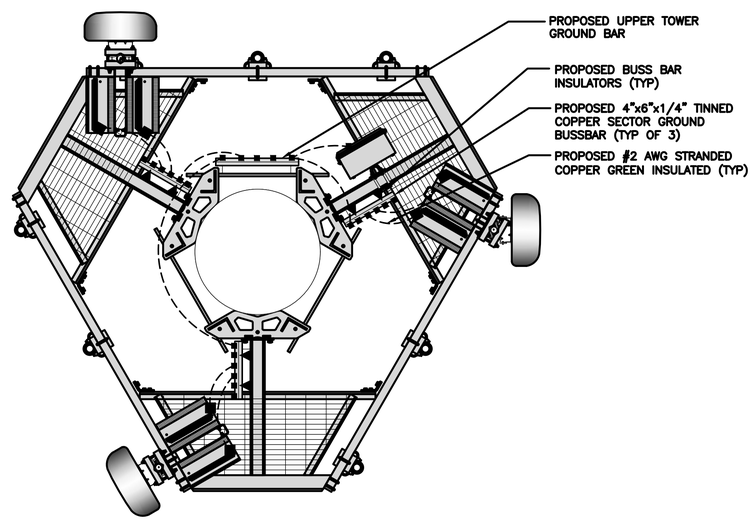
SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN | NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES | NO SCALE | 3

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8/13/2021

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

RFDS REV #: N/A

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2039-Z5555C

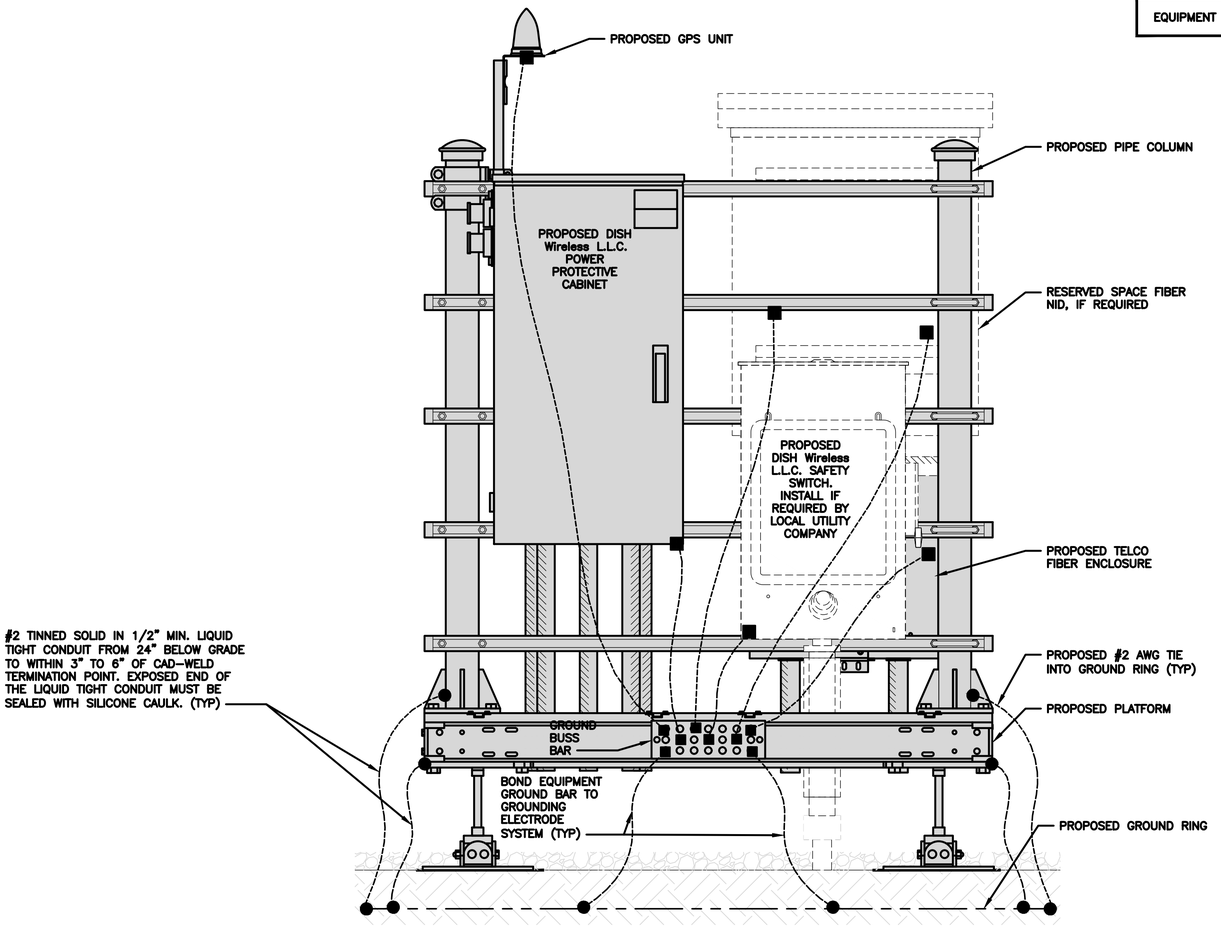
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00047A
1455 FORBES STREET
EAST HARTFORD, CT 06118

SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

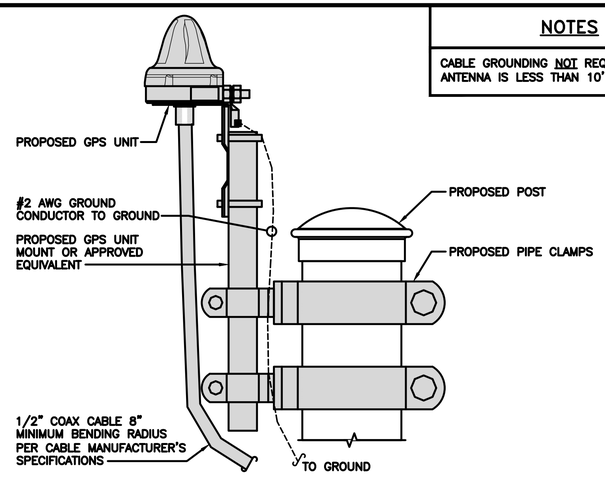
EQUIPMENT CABINET OMITTED FOR CLARITY



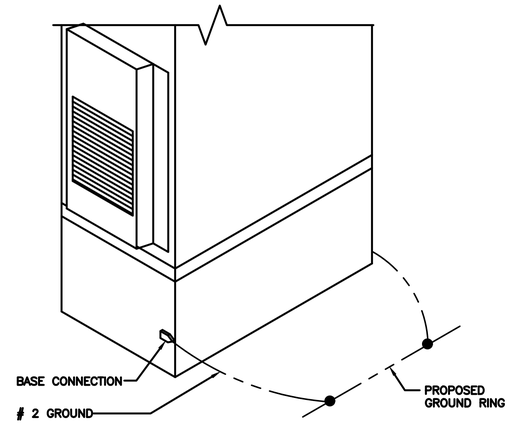
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

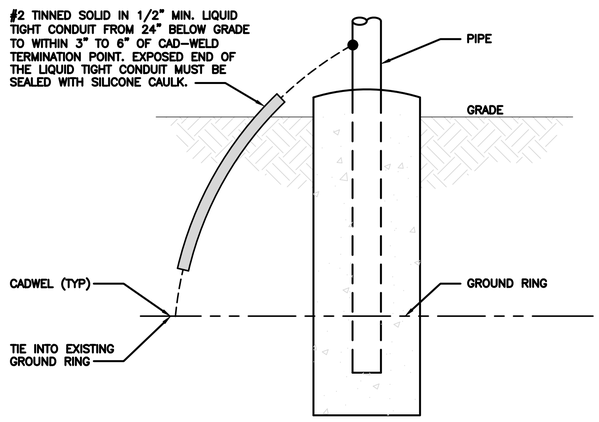
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



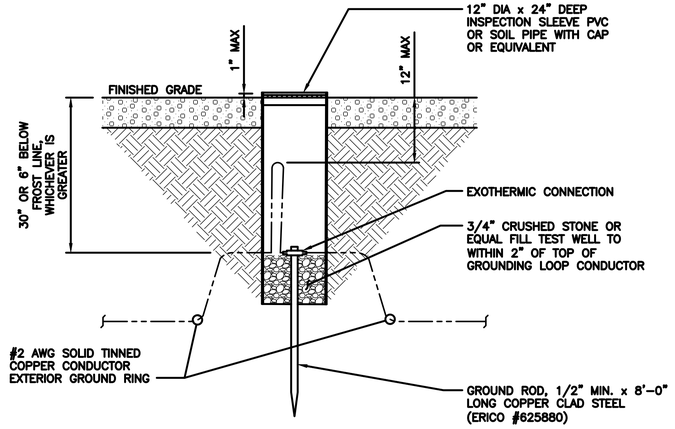
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



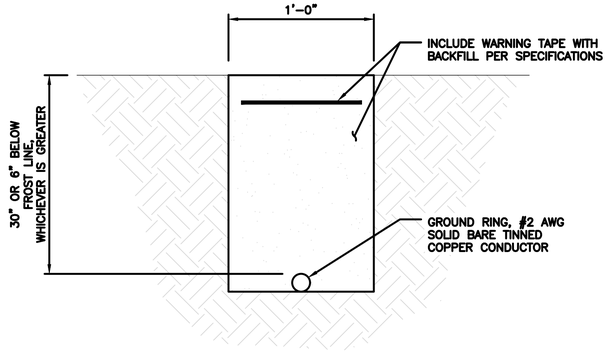
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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EAST HARTFORD, CT 06118

SHEET TITLE

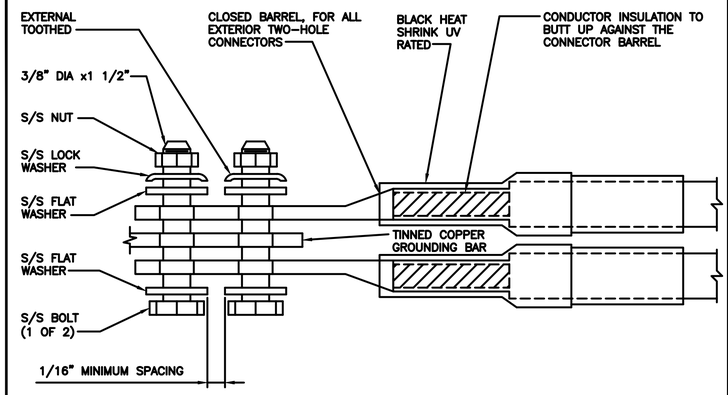
GROUNDING DETAILS

SHEET NUMBER

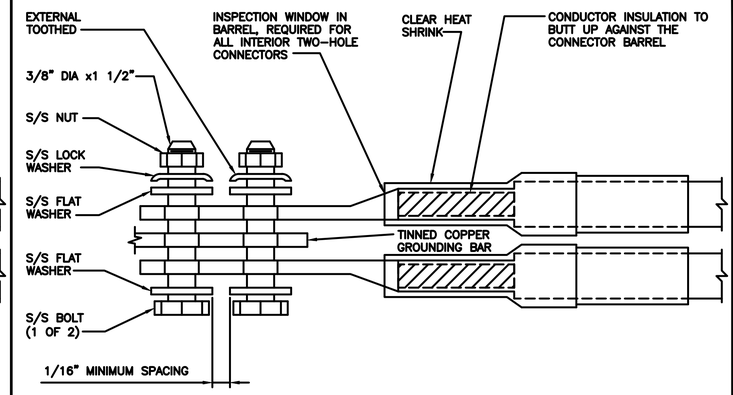
G-2

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

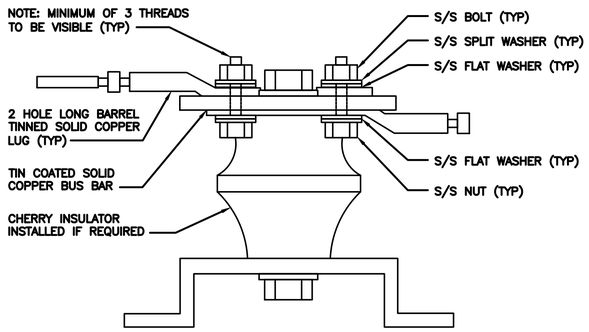
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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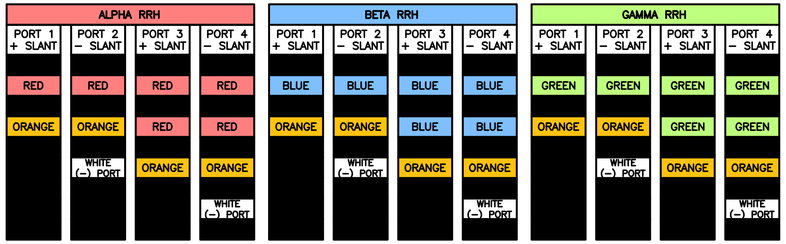
SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

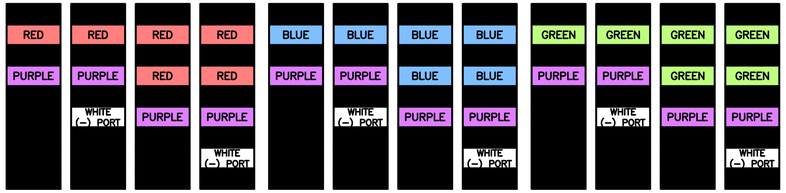
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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

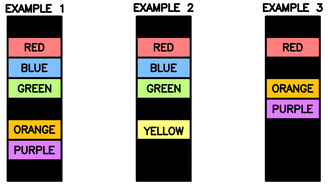


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

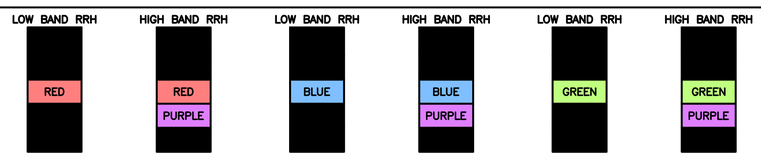
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS
ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

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



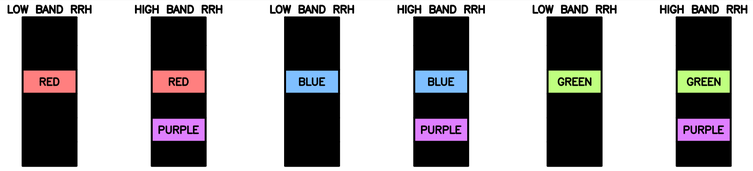
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

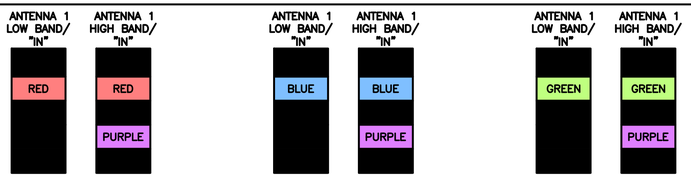


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY



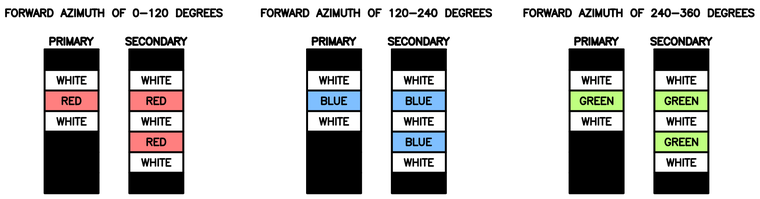
RET MOTORS AT ANTENNAS



MICROWAVE RADIO LINKS

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

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



RF CABLE COLOR CODES | NO SCALE | 1

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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EAST HARTFORD, CT 06118

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

SECTION REFERENCE

DETAIL REFERENCE

ABBREVIATIONS

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

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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/13/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/17/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

2039–Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00047A
1455 FORBES STREET
EAST HARTFORD, CT 06118

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
8/13/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER

2039–Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00047A
1455 FORBES STREET
EAST HARTFORD, CT 06118

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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LITTLETON, CO 80120

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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER

8/13/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/17/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00047A
1455 FORBES STREET
EAST HARTFORD, CT 06118

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Date: **June 15, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate**	
	Site Number:	BOBDL00047A
	Site Name:	CT-CCI-T-806376
Crown Castle Designation:	**BU Number:**	806376
	Site Name:	HRT 100 943239
	JDE Job Number:	650042
	Work Order Number:	1963271
	Order Number:	556638 Rev. 1
Engineering Firm Designation:	**Crown Castle Project Number:**	1963271
Site Data:	**1455 FORBES STREET, EAST HARTFORD, HARTFORD County, CT** **Latitude *41° 43' 53.3"*, Longitude *-72° 36' 28"*** **130 Foot - Monopole Tower**	

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

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

LC7: Proposed Equipment Configuration **Sufficient Capacity – 88.5%**

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

Structural analysis prepared by: Daniel Chen

Respectfully submitted by:

Jamal A. Huwel, P.E.
Director Engineering

Digitally signed by Jamal A Huwel
Date: 2021.06.16 08:58:14 -04'00'

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 130 ft Monopole tower designed by Valmont.

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:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	2 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.18
Seismic S1:	0.064
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)
77.0	77.0	3	fujitsu	TA08025-B604	1	1-3/8
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
121.0	121.0	1	tower mounts	Platform Mount [LP 602-1]	2 8 6	3/8 3/4 1-1/4
		1	tower mounts	Side Arm Mount [SO 102-3]		
	120.0	3	ericsson	RRUS 32 B30		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14		
		3	ericsson	RRUS 8843 B2/B66A		
		3	ericsson	RRUS E2 B29		
		3	kathrein	800 10121 w/ Mount Pipe		
		3	kathrein	80010798 w/ Mount Pipe		
		6	kathrein	80010965 w/ Mount Pipe		
		6	powerwave technologies	LGP21401		
		4	raycap	DC6-48-60-18-8F		
109.0	113.0	3	samsung telecommunications	MT6407-77A w/ Mount Pipe	2	7/8
	111.0	6	andrew	SBNHH-1D65B w/ Mount Pipe		
		3	antel	BXA-80063/4CF w/ Mount Pipe		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
	109.0	1	raycap	RUSDC-6267-PF-48		
		3	samsung telecommunications	CBRS w/ Mount Pipe		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
		1	tower mounts	Site Pro 1 F3P-12[W]		
		1	tower mounts	Site Pro 1 F3P-HRK12		
99.0	99.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER	-	-
		3	alcatel lucent	PCS 1900MHz 4x45W-65MHz w/ Mount Pipe		
		1	tower mounts	Side Arm Mount [SO 101-3]		
97.0	103.0	1	andrew	VHLP2-18	4 3 3	1-1/4 5/16 1/2
		1	andrew	VHLP2.5-18		
	98.0	3	argus technologies	LLPX310R-V1 w/ Mount Pipe		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-ALU-I20 w/ Mount Pipe		
	97.0	3	alcatel lucent	TD-RRH8X20-25		
		2	dragonwave	HORIZON COMPACT		
		1	motorola	TIMING 2000		
		3	samsung telecommunications	RRH-2WB		
		1	tower mounts	Platform Mount [LP 713-1]		
87.0	87.0	3	ericsson	AIR -32 B2A/B66AA w/ Mount Pipe	11 1 1 1	1-1/4 1-5/8 7/8 1-3/8
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		
		3	ericsson	RADIO 4449 B12/B71		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		1	tower mounts	T-Arm Mount [TA 602-3]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	262381	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	262389	CCISITES
4-TOWER MANUFACTURER DRAWINGS	262386	CCISITES

Document	Reference	Source
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	7890057	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	6515906	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5681337	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3842355	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3749907	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3635976	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3448150	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3249954	CCISITES
4-POST-MODIFICATION INSPECTION	8418504	CCISITES
4-POST-MODIFICATION INSPECTION	7030743	CCISITES
4-POST-MODIFICATION INSPECTION	5921968	CCISITES
4-POST-MODIFICATION INSPECTION	5099148	CCISITES
4-POST-MODIFICATION INSPECTION	3675451	CCISITES

3.1) Analysis Method

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

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
130 - 125	Pole	TP11.775x10.525x0.1875	Pole	0.5%	Pass
125 - 120	Pole	TP13.025x11.775x0.1875	Pole	4.6%	Pass
120 - 115	Pole	TP14.275x13.025x0.1875	Pole	26.0%	Pass
115 - 110	Pole	TP15.525x14.275x0.1875	Pole	41.8%	Pass
110 - 105	Pole	TP16.776x15.525x0.25	Pole	48.3%	Pass
105 - 100	Pole	TP18.027x16.776x0.25	Pole	60.6%	Pass
100 - 95	Pole	TP19.277x18.027x0.25	Pole	73.4%	Pass
95 - 90	Pole	TP20.528x19.277x0.25	Pole	84.8%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
90 - 89.75	Pole + Reinf.	TP20.591x20.528x0.5	Reinf. 12 Tension Rupture	75.7%	Pass
89.75 - 84.75	Pole + Reinf.	TP21.841x20.591x0.4813	Reinf. 12 Tension Rupture	87.3%	Pass
84.75 - 84.58	Pole + Reinf.	TP21.884x21.841x0.475	Reinf. 12 Tension Rupture	87.7%	Pass
84.58 - 84.33	Pole + Reinf.	TP21.946x21.884x0.6375	Reinf. 12 Tension Rupture	67.8%	Pass
84.33 - 83.42	Pole + Reinf.	TP22.174x21.946x0.625	Reinf. 12 Tension Rupture	69.6%	Pass
83.42 - 83.17	Pole + Reinf.	TP22.237x22.174x0.95	Reinf. 17 Tension Rupture	48.8%	Pass
83.17 - 83	Pole + Reinf.	TP22.279x22.237x0.95	Reinf. 17 Tension Rupture	49.1%	Pass
83 - 82.75	Pole + Reinf.	TP22.342x22.279x0.7	Reinf. 17 Tension Rupture	65.2%	Pass
82.75 - 77.75	Pole + Reinf.	TP23.592x22.342x0.6625	Reinf. 17 Tension Rupture	73.3%	Pass
77.75 - 74	Pole + Reinf.	TP25.531x23.592x0.65	Reinf. 17 Tension Rupture	79.9%	Pass
74 - 69	Pole + Reinf.	TP25.281x24.03x0.7	Reinf. 17 Tension Rupture	82.2%	Pass
69 - 67.08	Pole + Reinf.	TP25.761x25.281x0.6875	Reinf. 17 Tension Rupture	84.8%	Pass
67.08 - 66.83	Pole + Reinf.	TP25.824x25.761x0.6875	Reinf. 17 Tension Rupture	85.1%	Pass
66.83 - 64.08	Pole + Reinf.	TP26.512x25.824x0.675	Reinf. 17 Tension Rupture	88.5%	Pass
64.08 - 63.83	Pole + Reinf.	TP26.574x26.512x0.7375	Reinf. 17 Tension Rupture	85.0%	Pass
63.83 - 62.5	Pole + Reinf.	TP26.907x26.574x0.7375	Reinf. 17 Tension Rupture	86.5%	Pass
62.5 - 62.25	Pole + Reinf.	TP26.969x26.907x0.8625	Reinf. 17 Tension Rupture	71.7%	Pass
62.25 - 57.25	Pole + Reinf.	TP28.22x26.969x0.8375	Reinf. 17 Tension Rupture	76.4%	Pass
57.25 - 53.5	Pole + Reinf.	TP29.158x28.22x0.8125	Reinf. 17 Tension Rupture	79.6%	Pass
53.5 - 53.25	Pole + Reinf.	TP29.22x29.158x0.8375	Reinf. 10 Tension Rupture	78.9%	Pass
53.25 - 52.58	Pole + Reinf.	TP29.388x29.22x0.825	Reinf. 10 Tension Rupture	79.5%	Pass
52.58 - 52.33	Pole + Reinf.	TP29.45x29.388x0.8625	Reinf. 10 Tension Rupture	76.6%	Pass
52.33 - 47.33	Pole + Reinf.	TP30.701x29.45x0.8375	Reinf. 10 Tension Rupture	80.5%	Pass
47.33 - 44.58	Pole + Reinf.	TP31.389x30.701x0.8125	Reinf. 10 Tension Rupture	82.4%	Pass
44.58 - 44.33	Pole + Reinf.	TP31.451x31.389x0.8125	Reinf. 10 Tension Rupture	82.6%	Pass
44.33 - 41.92	Pole + Reinf.	TP32.054x31.451x0.8	Reinf. 10 Tension Rupture	84.3%	Pass
41.92 - 41.67	Pole + Reinf.	TP32.117x32.054x0.8125	Reinf. 9 Tension Rupture	75.1%	Pass
41.67 - 39	Pole + Reinf.	TP34.015x32.117x0.7875	Reinf. 9 Tension Rupture	76.6%	Pass
39 - 34	Pole + Reinf.	TP33.408x32.159x0.8188	Reinf. 9 Tension Rupture	78.3%	Pass
34 - 29	Pole + Reinf.	TP34.657x33.408x0.7938	Reinf. 9 Tension Rupture	80.6%	Pass
29 - 26.92	Pole + Reinf.	TP35.177x34.657x0.7938	Reinf. 9 Tension Rupture	81.5%	Pass
26.92 - 26.67	Pole + Reinf.	TP35.239x35.177x0.8938	Reinf. 7 Tension Rupture	76.3%	Pass
26.67 - 21.67	Pole + Reinf.	TP36.488x35.239x0.8688	Reinf. 7 Tension Rupture	78.4%	Pass
21.67 - 18	Pole + Reinf.	TP37.404x36.488x0.8563	Reinf. 7 Tension Rupture	79.8%	Pass
18 - 17.75	Pole + Reinf.	TP37.467x37.404x0.9938	Reinf. 16 Tension Rupture	67.1%	Pass
17.75 - 17.5	Pole + Reinf.	TP37.529x37.467x0.9938	Reinf. 16 Tension Rupture	67.2%	Pass
17.5 - 17.25	Pole + Reinf.	TP37.592x37.529x0.9938	Reinf. 15 Tension Rupture	67.3%	Pass
17.25 - 17.08	Pole + Reinf.	TP37.634x37.592x0.9938	Reinf. 15 Tension Rupture	67.3%	Pass
17.08 - 16.83	Pole + Reinf.	TP37.697x37.634x0.8938	Reinf. 15 Tension Rupture	73.5%	Pass
16.83 - 13	Pole + Reinf.	TP38.653x37.697x0.8813	Reinf. 15 Tension Rupture	74.8%	Pass
13 - 12.75	Pole + Reinf.	TP38.716x38.653x1.0563	Reinf. 5 Tension Rupture	63.5%	Pass
12.75 - 11.92	Pole + Reinf.	TP38.923x38.716x1.0438	Reinf. 5 Tension Rupture	63.8%	Pass
11.92 - 11.67	Pole + Reinf.	TP38.985x38.923x0.8188	Reinf. 15 Tension Rupture	81.7%	Pass
11.67 - 6.67	Pole + Reinf.	TP40.234x38.985x0.7938	Reinf. 15 Tension Rupture	83.3%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
6.67 - 6.5	Pole + Reinf.	TP40.277x40.234x0.7938	Reinf. 15 Tension Rupture	83.4%	Pass
6.5 - 6.25	Pole + Reinf.	TP40.339x40.277x0.9188	Reinf. 5 Tension Rupture	77.9%	Pass
6.25 - 3.75	Pole + Reinf.	TP40.963x40.339x0.9063	Reinf. 5 Tension Rupture	78.6%	Pass
3.75 - 3.5	Pole + Reinf.	TP41.026x40.963x1.0063	Reinf. 14 Tension Rupture	68.1%	Pass
3.5 - 3	Pole + Reinf.	TP41.151x41.026x0.9938	Reinf. 14 Tension Rupture	68.3%	Pass
3 - 2.75	Pole + Reinf.	TP41.213x41.151x0.9938	Reinf. 15 Tension Rupture	73.2%	Pass
2.75 - 0	Pole + Reinf.	TP41.9x41.213x1.0188	Reinf. 4 Weldment	86.8%	Pass
				Summary	
			Pole	84.8%	Pass
			Reinforcement	88.5%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	84.7	Pass
1	Base Plate	0	57.1	Pass
1	Base Foundation (Structure)	0	62.2	Pass
1	Base Foundation (Soil Interaction)	0	72.7	Pass
1	Flange Bolts	110	38.4	Pass
1	Flange Plate	110	20.6	Pass

Structure Rating (max from all components) =	88.5%

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

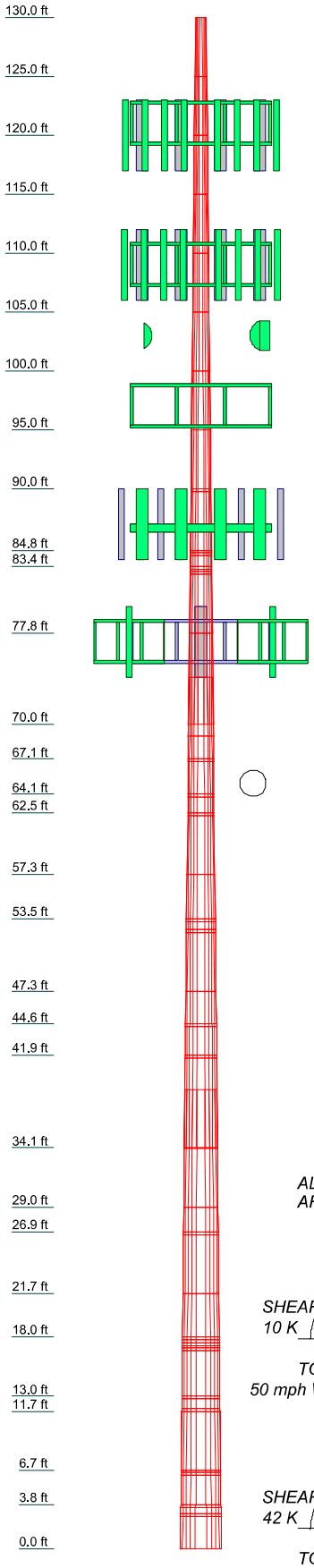
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4	5	6	7	8	9	10	17	18	19	20	22	24	26	27	29	31	32	33	34	35	36	37	38	39	41	42	48	49	50	52	53	55	56	58	59
Length (ft)	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	2.7600
Number of Sides	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Thickness (in)	0.1875	0.1875	0.1875	0.1875	0.2500	0.2500	0.2500	0.2500	0.3125	0.4810	0.6625	0.6500	0.7000	0.7000	0.7000	0.7000	0.8375	0.8125	0.8125	0.8370	0.8125	0.8125	0.8125	0.8125	0.7875	0.7812	0.7937	0.7937	0.8662	0.8562	0.8562	0.8562	0.8562	0.7937	0.7937	0.7937	0.7937	0.7937	1.0000
Socket Length (ft)												4.0000													4.9200															
Top Dia (in)	10.5250	11.7750	13.0250	14.2750	15.5250	16.7757	18.0265	19.2772	20.5280	21.7787	22.3427	23.5923	24.8420	25.4668	26.0916	26.7163	26.9628	28.2198	29.4768	30.1053	30.7338	31.3623	31.9908	32.6193	33.2478	33.4059	33.5640	34.1965	35.2396	36.4877	36.8644	37.2411	37.6178	37.9945	38.3712	38.7479	39.1246	39.5013	41.2200
Bot Dia (in)	11.7750	13.0250	14.2750	15.5250	16.7757	18.0265	19.2772	20.5280	21.7787	23.0295	23.5923	25.5310	26.1558	26.4682	26.7806	27.0930	28.2198	29.4768	30.7338	31.3623	31.9908	32.6193	33.2478	33.4059	33.5640	34.1965	35.2396	36.4877	36.8644	37.2411	37.6178	37.9945	38.3712	38.7479	39.1246	39.5013	41.2200	41.9400	41.9400
Grade	A572-65																																						
Weight (K)	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.0	0.5	0.7	1.2	0.8	0.3	0.5	0.0	1.1	0.9	0.1	1.2	0.7	0.1	0.6	0.0	2.0	1.4	1.4	0.6	1.6	1.2	1.1	1.3	0.1	1.8	0.0	1.1	0.0	1.0	26.2



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 2.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.0000 ft
7. TOWER RATING: 88.5%

ALL REACTIONS ARE FACTORED

AXIAL 116 K

SHEAR 10 K

MOMENT 944 kip-ft

TORQUE 1 kip-ft
50 mph WIND - 2.0000 in ICE

AXIAL 58 K

SHEAR 42 K

MOMENT 3540 kip-ft

TORQUE 2 kip-ft
REACTIONS - 125 mph WIND

CROWN CASTLE
The Pathway to Possible

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

Job: ***BU# 806376***			
Project:			
Client: Crown Castle	Drawn by: Daniel Chen		App'd:
Code: TIA-222-H	Date: 06/15/21		Scale: NTS
Path: C:\Users\dchen\Documents\Work Area - DChen\806376\WO 1963271 - SA\Prod\806376 Model			Dwg No. E-1

Tower Input Data

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

- Tower base elevation above sea level: 41.0000 ft.
- Basic wind speed of 125 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.0000 ft.
- Nominal ice thickness of 2.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.00 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	

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	130.0000-125.0000	5.0000	0.00	12	10.5250	11.7750	0.1875	0.7500	A572-65 (65 ksi)
L2	125.0000-120.0000	5.0000	0.00	12	11.7750	13.0250	0.1875	0.7500	A572-65 (65 ksi)
L3	120.0000-115.0000	5.0000	0.00	12	13.0250	14.2750	0.1875	0.7500	A572-65 (65 ksi)
L4	115.0000-110.0000	5.0000	0.00	12	14.2750	15.5250	0.1875	0.7500	A572-65 (65 ksi)
L5	110.0000-105.0000	5.0000	0.00	12	15.5250	16.7757	0.2500	1.0000	A572-65 (65 ksi)
L6	105.0000-100.0000	5.0000	0.00	12	16.7757	18.0265	0.2500	1.0000	A572-65 (65 ksi)
L7	100.0000-95.0000	5.0000	0.00	12	18.0265	19.2772	0.2500	1.0000	A572-65 (65 ksi)
L8	95.0000-90.0000	5.0000	0.00	12	19.2772	20.5280	0.2500	1.0000	A572-65 (65 ksi)
L9	90.0000-89.7500	0.2500	0.00	12	20.5280	20.5905	0.5000	2.0000	A572-65 (65 ksi)
L10	89.7500-84.7500	5.0000	0.00	12	20.5905	21.8413	0.4813	1.9250	A572-65 (65 ksi)
L11	84.7500-84.5800	0.1700	0.00	12	21.8413	21.8838	0.4750	1.9000	A572-65 (65 ksi)
L12	84.5800-84.3300	0.2500	0.00	12	21.8838	21.9464	0.6375	2.5500	A572-65 (65 ksi)
L13	84.3300-83.4200	0.9100	0.00	12	21.9464	22.1740	0.6250	2.5000	A572-65 (65 ksi)
L14	83.4200-83.1700	0.2500	0.00	12	22.1740	22.2365	0.9500	3.8000	A572-65 (65 ksi)
L15	83.1700-83.0000	0.1700	0.00	12	22.2365	22.2791	0.9500	3.8000	A572-65 (65 ksi)
L16	83.0000-82.7500	0.2500	0.00	12	22.2791	22.3416	0.7000	2.8000	A572-65 (65 ksi)
L17	82.7500-77.7500	5.0000	0.00	12	22.3416	23.5923	0.6625	2.6500	A572-65 (65 ksi)
L18	77.7500-70.0000	7.7500	4.00	12	23.5923	25.5310	0.6500	2.6000	A572-65 (65 ksi)
L19	70.0000-69.0000	5.0000	0.00	12	24.0304	25.2810	0.7000	2.8000	A572-65 (65 ksi)
L20	69.0000-67.0800	1.9200	0.00	12	25.2810	25.7612	0.6875	2.7500	A572-65 (65 ksi)
L21	67.0800-66.8300	0.2500	0.00	12	25.7612	25.8237	0.6875	2.7500	A572-65 (65 ksi)
L22	66.8300-64.0800	2.7500	0.00	12	25.8237	26.5115	0.6750	2.7000	A572-65 (65 ksi)
L23	64.0800-63.8300	0.2500	0.00	12	26.5115	26.5741	0.7375	2.9500	A572-65 (65 ksi)
L24	63.8300-62.5000	1.3300	0.00	12	26.5741	26.9067	0.7375	2.9500	A572-65 (65 ksi)
L25	62.5000-62.2500	0.2500	0.00	12	26.9067	26.9693	0.8625	3.4500	A572-65 (65 ksi)
L26	62.2500-57.2500	5.0000	0.00	12	26.9693	28.2198	0.8375	3.3500	A572-65 (65 ksi)
L27	57.2500-53.5000	3.7500	0.00	12	28.2198	29.1578	0.8125	3.2500	A572-65 (65 ksi)
L28	53.5000-53.2500	0.2500	0.00	12	29.1578	29.2203	0.8375	3.3500	A572-65 (65 ksi)
L29	53.2500-52.5800	0.6700	0.00	12	29.2203	29.3879	0.8250	3.3000	A572-65 (65 ksi)
L30	52.5800-52.3300	0.2500	0.00	12	29.3879	29.4504	0.8625	3.4500	A572-65 (65 ksi)
L31	52.3300-47.3300	5.0000	0.00	12	29.4504	30.7010	0.8375	3.3500	A572-65 (65 ksi)
L32	47.3300-44.5800	2.7500	0.00	12	30.7010	31.3888	0.8125	3.2500	A572-65 (65 ksi)
L33	44.5800-44.3300	0.2500	0.00	12	31.3888	31.4513	0.8125	3.2500	A572-65 (65 ksi)
L34	44.3300-41.9200	2.4100	0.00	12	31.4513	32.0541	0.8000	3.2000	A572-65 (65 ksi)
L35	41.9200-	0.2500	0.00	12	32.0541	32.1166	0.8125	3.2500	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
	41.6700								(65 ksi)
L36	41.6700-34.0800	7.5900	4.92	12	32.1166	34.0150	0.7875	3.1500	A572-65 (65 ksi)
L37	34.0800-34.0000	5.0000	0.00	12	32.1594	33.4082	0.8187	3.2750	A572-65 (65 ksi)
L38	34.0000-29.0000	5.0000	0.00	12	33.4082	34.6570	0.7937	3.1750	A572-65 (65 ksi)
L39	29.0000-26.9200	2.0800	0.00	12	34.6570	35.1765	0.7937	3.1750	A572-65 (65 ksi)
L40	26.9200-26.6700	0.2500	0.00	12	35.1765	35.2390	0.8938	3.5750	A572-65 (65 ksi)
L41	26.6700-21.6700	5.0000	0.00	12	35.2390	36.4877	0.8688	3.4750	A572-65 (65 ksi)
L42	21.6700-18.0000	3.6700	0.00	12	36.4877	37.4044	0.8562	3.4250	A572-65 (65 ksi)
L43	18.0000-17.7500	0.2500	0.00	12	37.4044	37.4668	0.9938	3.9750	A572-65 (65 ksi)
L44	17.7500-17.5000	0.2500	0.00	12	37.4668	37.5292	0.9938	3.9750	A572-65 (65 ksi)
L45	17.5000-17.2500	0.2500	0.00	12	37.5292	37.5917	0.9938	3.9750	A572-65 (65 ksi)
L46	17.2500-17.0800	0.1700	0.00	12	37.5917	37.6341	0.9938	3.9750	A572-65 (65 ksi)
L47	17.0800-16.8300	0.2500	0.00	12	37.6341	37.6966	0.8938	3.5750	A572-65 (65 ksi)
L48	16.8300-13.0000	3.8300	0.00	12	37.6966	38.6531	0.8812	3.5250	A572-65 (65 ksi)
L49	13.0000-12.7500	0.2500	0.00	12	38.6531	38.7156	1.0562	4.2250	A572-65 (65 ksi)
L50	12.7500-11.9200	0.8300	0.00	12	38.7156	38.9229	1.0438	4.1750	A572-65 (65 ksi)
L51	11.9200-11.6700	0.2500	0.00	12	38.9229	38.9853	0.8187	3.2750	A572-65 (65 ksi)
L52	11.6700-6.6700	5.0000	0.00	12	38.9853	40.2341	0.7937	3.1750	A572-65 (65 ksi)
L53	6.6700-6.5000	0.1700	0.00	12	40.2341	40.2766	0.7937	3.1750	A572-65 (65 ksi)
L54	6.5000-6.2500	0.2500	0.00	12	40.2766	40.3390	0.9187	3.6750	A572-65 (65 ksi)
L55	6.2500-3.7500	2.5000	0.00	12	40.3390	40.9634	0.9063	3.6250	A572-65 (65 ksi)
L56	3.7500-3.5000	0.2500	0.00	12	40.9634	41.0258	1.0063	4.0250	A572-65 (65 ksi)
L57	3.5000-3.0000	0.5000	0.00	12	41.0258	41.1507	0.9938	3.9750	A572-65 (65 ksi)
L58	3.0000-2.7500	0.2500	0.00	12	41.1507	41.2132	0.9938	3.9750	A572-65 (65 ksi)
L59	2.7500-0.0000	2.7500		12	41.2132	41.9000	1.0188	4.0750	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	10.8301	6.2413	85.1314	3.7008	5.4520	15.6148	172.4993	3.0718	2.3182	12.364
	12.1242	6.9960	119.8981	4.1483	6.0995	19.6572	242.9461	3.4432	2.6532	14.15
L2	12.1242	6.9960	119.8981	4.1483	6.0995	19.6572	242.9461	3.4432	2.6532	14.15
	13.4183	7.7506	163.0364	4.5958	6.7470	24.1645	330.3559	3.8146	2.9882	15.937
L3	13.4183	7.7506	163.0364	4.5958	6.7470	24.1645	330.3559	3.8146	2.9882	15.937
	14.7124	8.5053	215.4492	5.0433	7.3945	29.1366	436.5585	4.1861	3.3232	17.724
L4	14.7124	8.5053	215.4492	5.0433	7.3945	29.1366	436.5585	4.1861	3.3232	17.724
	16.0065	9.2600	278.0397	5.4908	8.0419	34.5737	563.3838	4.5575	3.6582	19.51
L5	15.9845	12.2964	366.2060	5.4684	8.0419	45.5370	742.0327	6.0519	3.4907	13.963
	17.2793	13.3032	463.7302	5.9162	8.6898	53.3646	939.6431	6.5474	3.8259	15.304
L6	17.2793	13.3032	463.7302	5.9162	8.6898	53.3646	939.6431	6.5474	3.8259	15.304

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
	18.5742	14.3101	577.1924	6.3640	9.3377	61.8129	1169.5483	7.0430	4.1611	16.644
L7	18.5742	14.3101	577.1924	6.3640	9.3377	61.8129	1169.5483	7.0430	4.1611	16.644
	19.8691	15.3169	707.7989	6.8118	9.9856	70.8819	1434.1925	7.5385	4.4963	17.985
L8	19.8691	15.3169	707.7989	6.8118	9.9856	70.8819	1434.1925	7.5385	4.4963	17.985
	21.1640	16.3238	856.7561	7.2595	10.6335	80.5714	1736.0201	8.0341	4.8315	19.326
L9	21.0758	32.2451	1650.9145	7.1700	10.6335	155.2559	3345.2003	15.8700	4.1615	8.323
	21.1405	32.3458	1666.4278	7.1924	10.6659	156.2389	3376.6345	15.9196	4.1783	8.357
L10	21.1471	31.1619	1608.4317	7.1991	10.6659	150.8013	3259.1186	15.3369	4.2285	8.787
	22.4420	33.1000	1927.6075	7.6469	11.3138	170.3769	3905.8553	16.2908	4.5637	9.483
L11	22.4442	32.6797	1904.2442	7.6491	11.3138	168.3118	3858.5150	16.0840	4.5805	9.643
	22.4882	32.7448	1915.6369	7.6644	11.3358	168.9898	3881.5997	16.1160	4.5919	9.667
L12	22.4309	43.6134	2512.8857	7.6062	11.3358	221.6767	5091.7877	21.4652	4.1564	6.52
	22.4956	43.7417	2535.1408	7.6286	11.3682	223.0026	5136.8825	21.5284	4.1731	6.546
L13	22.5001	42.9092	2489.8086	7.6330	11.3682	219.0150	5045.0273	21.1186	4.2066	6.731
	22.7357	43.3673	2570.4101	7.7145	11.4861	223.7839	5208.3477	21.3441	4.2676	6.828
L14	22.6211	64.9242	3732.8999	7.5982	11.4861	324.9921	7563.8672	31.9537	3.3966	3.575
	22.6858	65.1155	3765.9947	7.6206	11.5185	326.9513	7630.9263	32.0479	3.4134	3.593
L15	22.6858	65.1155	3765.9947	7.6206	11.5185	326.9513	7630.9263	32.0479	3.4134	3.593
	22.7298	65.2456	3788.6105	7.6358	11.5405	328.2869	7676.7521	32.1119	3.4248	3.605
L16	22.8180	48.6392	2890.9250	7.7253	11.5405	250.5015	5857.7978	23.9387	4.0948	5.85
	22.8828	48.7801	2916.1322	7.7477	11.5729	251.9785	5908.8744	24.0081	4.1115	5.874
L17	22.8960	46.2469	2774.2826	7.7611	11.5729	239.7215	5621.4487	22.7613	4.2120	6.358
	24.1909	48.9151	3282.6958	8.2089	12.2208	268.6148	6651.6316	24.0745	4.5472	6.864
L18	24.1953	48.0183	3226.0283	8.2134	12.2208	263.9778	6536.8079	23.6332	4.5807	7.047
	26.2023	52.0759	4114.8942	8.9074	13.2251	311.1438	8337.8912	25.6302	5.1003	7.847
L19	25.6669	52.5867	3653.4773	8.3523	12.4477	293.5051	7402.9356	25.8816	4.5641	6.52
	25.9259	55.4055	4273.0428	8.8000	13.0955	326.2974	8658.3431	27.2689	4.8993	6.999
L20	25.9303	54.4438	4203.1441	8.8045	13.0955	320.9598	8516.7095	26.7956	4.9328	7.175
	26.4274	55.5069	4454.1995	8.9764	13.3443	333.7904	9025.4158	27.3188	5.0615	7.362
L21	26.4274	55.5069	4454.1995	8.9764	13.3443	333.7904	9025.4158	27.3188	5.0615	7.362
	26.4922	55.6453	4487.6063	8.9988	13.3767	335.4796	9093.1071	27.3869	5.0783	7.387
L22	26.4966	54.6608	4412.5900	9.0032	13.3767	329.8716	8941.1036	26.9024	5.1118	7.573
	27.2087	56.1557	4784.6350	9.2495	13.7330	348.4047	9694.9676	27.6381	5.2961	7.846
L23	27.1866	61.2069	5189.8105	9.2271	13.7330	377.9086	10515.963 0	30.1242	5.1286	6.954
	27.2513	61.3554	5227.6742	9.2495	13.7654	379.7700	10592.685 2	30.1973	5.1454	6.977
L24	27.2513	61.3554	5227.6742	9.2495	13.7654	379.7700	10592.685 2	30.1973	5.1454	6.977
	27.5957	62.1454	5432.2086	9.3686	13.9377	389.7497	11007.127 3	30.5861	5.2345	7.098
L25	27.5516	72.3313	6262.3199	9.3238	13.9377	449.3085	12689.157 9	35.5993	4.8995	5.681
	27.6164	72.5050	6307.5333	9.3462	13.9701	451.5032	12780.772 6	35.6847	4.9163	5.7
L26	27.6252	70.4708	6142.3183	9.3552	13.9701	439.6769	12446.002 2	34.6836	4.9833	5.95
	28.9199	73.8433	7067.0448	9.8029	14.6179	483.4524	14319.748 7	36.3434	5.3184	6.35
L27	28.9287	71.7044	6874.8841	9.8118	14.6179	470.3068	13930.379 1	35.2907	5.3854	6.628
	29.8997	74.1583	7605.1298	10.1476	15.1037	503.5269	15410.054 8	36.4985	5.6368	6.938
L28	29.8909	76.3727	7818.4101	10.1387	15.1037	517.6480	15842.218 6	37.5883	5.5698	6.65
	29.9556	76.5413	7870.3118	10.1610	15.1361	519.9692	15947.385 4	37.6713	5.5865	6.67
L29	29.9600	75.4321	7763.0922	10.1655	15.1361	512.8855	15730.129 4	37.1254	5.6200	6.812
	30.1335	75.8773	7901.3485	10.2255	15.2229	519.0430	16010.274 3	37.3445	5.6649	6.867
L30	30.1203	79.2221	8228.0080	10.2121	15.2229	540.5014	16672.174 9	38.9907	5.5644	6.452
	30.1850	79.3957	8282.2351	10.2345	15.2553	542.9085	16782.053 7	39.0762	5.5812	6.471
L31	30.1939	77.1618	8063.2873	10.2434	15.2553	528.5563	16338.406 1	37.9767	5.6482	6.744
	31.4885	80.5343	9167.4296	10.6911	15.9031	576.4554	18575.697 9	39.6365	5.9834	7.144
L32	31.4974	78.1957	8916.1298	10.7001	15.9031	560.6534	18066.496	38.4856	6.0504	7.447

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
	32.2094	79.9952	9545.9589	10.9463	16.2594	587.1043	19342.7003	39.3712	6.2347	7.673
L33	32.2094	79.9952	9545.9589	10.9463	16.2594	587.1043	19342.7008	39.3712	6.2347	7.673
	32.2742	80.1588	9604.6435	10.9687	16.2918	589.5391	19461.6117	39.4517	6.2515	7.694
L34	32.2786	78.9578	9468.4591	10.9732	16.2918	581.1800	19185.6652	38.8606	6.2850	7.856
	32.9026	80.5106	10038.1264	11.1890	16.6040	604.5599	20339.9655	39.6248	6.4465	8.058
L35	32.8982	81.7358	10182.7446	11.1845	16.6040	613.2698	20633.0013	40.2279	6.4130	7.893
	32.9630	81.8994	10244.0082	11.2069	16.6364	615.7583	20757.1378	40.3084	6.4298	7.914
L36	32.9718	79.4428	9952.6148	11.2158	16.6364	598.2429	20166.6960	39.0993	6.4968	8.25
	34.9371	84.2566	11873.6812	11.8954	17.6198	673.8840	24059.2972	41.4686	7.0055	8.896
L37	34.2772	82.6258	10359.0161	11.2200	16.6586	621.8424	20990.1751	40.6659	6.4245	7.847
	34.2979	85.9181	11647.2977	11.6670	17.3055	673.0418	23600.5829	42.2863	6.7592	8.255
L38	34.3067	83.3585	11317.6611	11.6760	17.3055	653.9937	22932.6497	41.0265	6.8262	8.6
	35.5996	86.5503	12668.1157	12.1230	17.9523	705.6529	25669.0370	42.5974	7.1608	9.022
L39	35.5996	86.5503	12668.1157	12.1230	17.9523	705.6529	25669.0370	42.5974	7.1608	9.022
	36.1374	87.8780	13260.1310	12.3090	18.2214	727.7216	26868.6204	43.2509	7.3001	9.197
L40	36.1021	98.6615	14800.8023	12.2732	18.2214	812.2743	29990.4382	48.5582	7.0321	7.868
	36.1668	98.8412	14881.8203	12.2956	18.2538	815.2735	30154.6025	48.6466	7.0488	7.887
L41	36.1756	96.1463	14497.1571	12.3045	18.2538	794.2004	29375.1707	47.3203	7.1158	8.191
	37.4684	99.6397	16135.4653	12.7516	18.9007	853.6990	32694.8271	49.0396	7.4505	8.576
L42	37.4728	98.2405	15920.0493	12.7561	18.9007	842.3017	32258.3360	48.3510	7.4840	8.74
	38.4218	100.7677	17180.5456	13.0842	19.3755	886.7170	34812.4434	49.5948	7.7296	9.027
L43	38.3733	116.5094	19715.2643	13.0350	19.3755	1017.5381	39948.4706	57.3424	7.3611	7.407
	38.4379	116.7092	19816.8658	13.0573	19.4078	1021.0774	40154.3428	57.4407	7.3779	7.424
L44	38.4379	116.7092	19816.8658	13.0573	19.4078	1021.0774	40154.3428	57.4407	7.3779	7.424
	38.5026	116.9090	19918.8158	13.0797	19.4401	1024.6229	40360.9210	57.5390	7.3946	7.441
L45	38.5026	116.9090	19918.8158	13.0797	19.4401	1024.6229	40360.9210	57.5390	7.3946	7.441
	38.5672	117.1088	20021.1148	13.1021	19.4725	1028.1746	40568.2066	57.6374	7.4113	7.458
L46	38.5672	117.1088	20021.1148	13.1021	19.4725	1028.1746	40568.2066	57.6374	7.4113	7.458
	38.6112	117.2446	20090.8779	13.1173	19.4945	1030.5932	40709.5655	57.7042	7.4227	7.469
L47	38.6464	105.7342	18217.5030	13.1531	19.4945	934.4955	36913.6002	52.0392	7.6907	8.605
	38.7111	105.9139	18310.5418	13.1754	19.5268	937.7123	37102.1219	52.1276	7.7074	8.624
L48	38.7155	104.4681	18072.8530	13.1799	19.5268	925.5398	36620.5000	51.4160	7.7409	8.784
	39.7058	107.1825	19518.5365	13.5223	20.0223	974.8385	39549.8467	52.7520	7.9973	9.075
L49	39.6441	127.8717	23070.8959	13.4597	20.0223	1152.2584	46747.8900	62.9346	7.5283	7.127
	39.7087	128.0841	23186.032	13.4820	20.0547	1156.1412	46981.188	63.0391	7.5450	7.143

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
			8				5			
L50	39.7131	126.6103	22934.464	13.4865	20.0547	1143.5970	46471.442	62.3138	7.5785	7.261
			2				2			
	39.9277	127.3070	23315.160	13.5607	20.1621	1156.3882	47242.835	62.6566	7.6341	7.314
			3				8			
L51	40.0071	100.4568	18616.986	13.6413	20.1621	923.3676	37723.062	49.4418	8.2371	10.061
			9				7			
	40.0718	100.6214	18708.657	13.6636	20.1944	926.4281	37908.812	49.5228	8.2538	10.081
			4				0			
L52	40.0806	97.6129	18173.065	13.6726	20.1944	899.9063	36823.557	48.0421	8.3208	10.483
			3				2			
	41.3734	100.8046	20014.662	14.1197	20.8413	960.3379	40555.133	49.6130	8.6555	10.905
			9				3			
L53	41.3734	100.8046	20014.662	14.1197	20.8413	960.3379	40555.133	49.6130	8.6555	10.905
			9				3			
	41.4174	100.9132	20079.371	14.1349	20.8633	962.4271	40686.251	49.6664	8.6669	10.919
			9				3			
L54	41.3733	116.4352	23021.432	14.0901	20.8633	1103.4435	46647.664	57.3059	8.3319	9.069
			9				5			
	41.4379	116.6199	23131.174	14.1125	20.8956	1106.9874	46870.030	57.3968	8.3486	9.087
			4				6			
L55	41.4423	115.0697	22838.176	14.1169	20.8956	1092.9654	46276.337	56.6338	8.3821	9.249
			5				3			
	42.0887	116.8918	23940.334	14.3405	21.2190	1128.2475	48509.607	57.5306	8.5494	9.434
			3				8			
L56	42.0535	129.4662	26383.442	14.3047	21.2190	1243.3850	53460.006	63.7193	8.2814	8.23
			2				8			
	42.1181	129.6685	26507.320	14.3270	21.2514	1247.3218	53711.018	63.8189	8.2982	8.247
			8				4			
L57	42.1225	128.0977	26202.574	14.3315	21.2514	1232.9818	53093.520	63.0458	8.3317	8.384
			8				5			
	42.2518	128.4973	26448.555	14.3762	21.3161	1240.7797	53591.943	63.2425	8.3651	8.418
			3				6			
L58	42.2518	128.4973	26448.555	14.3762	21.3161	1240.7797	53591.943	63.2425	8.3651	8.418
			3				6			
	42.3165	128.6971	26572.120	14.3986	21.3484	1244.6880	53842.320	63.3408	8.3819	8.435
			7				6			
L59	42.3076	131.8528	27189.835	14.3896	21.3484	1273.6229	55093.978	64.8939	8.3149	8.162
			8				9			
	43.0187	134.1058	28607.634	14.6355	21.7042	1318.0690	57966.822	66.0028	8.4990	8.343
			1				7			

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 130.0000-125.0000				1	1	1			
L2 125.0000-120.0000				1	1	1			
L3 120.0000-115.0000				1	1	1			
L4 115.0000-110.0000				1	1	1			
L5 110.0000-105.0000				1	1	1			
L6 105.0000-100.0000				1	1	1			
L7 100.0000-95.0000				1	1	1			
L8 95.0000-90.0000				1	1	1			
L9 90.0000-89.7500				1	1	0.924185			
L10 89.7500-84.7500				1	1	0.933544			
L11 84.7500-84.5800				1	1	0.944718			

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
L12 84.5800-84.3300				1	1	0.914408			
L13 84.3300-83.4200				1	1	0.926528			
L14 83.4200-83.1700				1	1	0.877374			
L15 83.1700-83.0000				1	1	0.876149			
L16 83.0000-82.7500				1	1	0.895771			
L17 82.7500-77.7500				1	1	0.913883			
L18 77.7500-70.0000				1	1	0.90949			
L19 70.0000-69.0000				1	1	0.921147			
L20 69.0000-67.0800				1	1	0.92817			
L21 67.0800-66.8300				1	1	0.926992			
L22 66.8300-64.0800				1	1	0.930891			
L23 64.0800-63.8300				1	1	0.999923			
L24 63.8300-62.5000				1	1	0.992599			
L25 62.5000-62.2500				1	1	0.913797			
L26 62.2500-57.2500				1	1	0.914277			
L27 57.2500-53.5000				1	1	0.92312			
L28 53.5000-53.2500				1	1	0.934453			
L29 53.2500-52.5800				1	1	0.944853			
L30 52.5800-52.3300				1	1	0.917963			
L31 52.3300-47.3300				1	1	0.920611			
L32 47.3300-44.5800				1	1	0.935467			
L33 44.5800-44.3300				1	1	0.934343			
L34 44.3300-41.9200				1	1	0.937794			
L35 41.9200-41.6700				1	1	0.941001			
L36 41.6700-34.0800				1	1	0.958134			
L37 34.0800-34.0000				1	1	0.950472			
L38 34.0000-29.0000				1	1	0.9595			
L39 29.0000-26.9200				1	1	0.951546			
L40 26.9200-26.6700				1	1	0.968284			
L41 26.6700-21.6700				1	1	0.974397			
L42 21.6700-18.0000				1	1	0.973558			
L43 18.0000-17.7500				1	1	0.947355			
L44 17.7500-17.5000				1	1	0.946327			
L45 17.5000-				1	1	0.945303			

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
17.2500									
L46 17.2500-17.0800				1	1	0.944608			
L47 17.0800-16.8300				1	1	0.961219			
L48 16.8300-13.0000				1	1	0.959721			
L49 13.0000-12.7500				1	1	0.944381			
L50 12.7500-11.9200				1	1	0.951948			
L51 11.9200-11.6700				1	1	1.02595			
L52 11.6700-6.6700				1	1	1.0378			
L53 6.6700-6.5000				1	1	1.03715			
L54 6.5000-6.2500				1	1	0.967827			
L55 6.2500-3.7500				1	1	0.971489			
L56 3.7500-3.5000				1	1	0.93422			
L57 3.5000-3.0000				1	1	0.943811			
L58 3.0000-2.7500				1	1	0.91273			
L59 2.7500-0.0000				1	1	0.881587			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
CU12PSM9P8XXX(1-3/8) ***	B	No	Surface Ar (CaAa)	77.0000 - 0.0000	1	1	0.000 0.020	1.4110		1.66
2" Flexible Conduit	B	No	Surface Ar (CaAa)	121.0000 - 0.0000	4	4	-0.200 -0.100	2.0000		0.34
LDF6-50A(1-1/4) ***	B	No	Surface Ar (CaAa)	121.0000 - 0.0000	6	3	-0.100 0.000	1.5500		0.60
2" Flexible Conduit ***	A	No	Surface Ar (CaAa)	97.0000 - 0.0000	2	2	0.000 0.100	2.0000		0.34
HCS 6X12 4AWG(1-5/8) ***	B	No	Surface Ar (CaAa)	87.0000 - 0.0000	14	6	-0.500 -0.350	1.6600		2.40
PL 0.75x4	A	No	Surface Af (CaAa)	45.8300 - 15.8300	1	1	0.000 0.000	4.0000	9.5000	0.00
PL 0.75x4	B	No	Surface Af (CaAa)	45.8300 - 15.8300	1	1	0.000 0.000	4.0000	9.5000	0.00
PL 0.75x4	C	No	Surface Af (CaAa)	45.8300 - 15.8300	1	1	0.000 0.000	4.0000	9.5000	0.00
PL 0.75x4	A	No	Surface Af (CaAa)	68.2500 - 43.2500	1	1	0.250 0.250	4.0000	9.5000	0.00
PL 0.75x4	B	No	Surface Af (CaAa)	68.2500 - 43.2500	1	1	0.250 0.250	4.0000	9.5000	0.00
PL 0.75x4	C	No	Surface Af (CaAa)	68.2500 - 43.2500	1	1	0.250 0.250	4.0000	9.5000	0.00
PL 0.75x4	A	No	Surface Af	85.8300 -	1	1	0.000	4.0000	9.5000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
			(CaAa)	65.8300			0.000			
PL 0.75x4	B	No	Surface Af (CaAa)	85.8300 - 65.8300	1	1	0.000 0.000	4.0000	9.5000	0.00
PL 0.75x4	C	No	Surface Af (CaAa)	85.8300 - 65.8300	1	1	0.000 0.000	4.0000	9.5000	0.00
**										
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	15.5000 - 0.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	B	No	Surface Af (CaAa)	15.5000 - 0.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	C	No	Surface Af (CaAa)	15.5000 - 0.0000	1	1	0.000 0.000	6.0000	14.0000	0.00
**										
(Area) CCI-65FP-060100 (H)	B	No	Surface Af (CaAa)	20.7500 - 9.4200	1	1	0.500 0.500	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	20.7500 - 9.4200	1	1	0.250 0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	C	No	Surface Af (CaAa)	20.7500 - 9.4200	1	1	0.250 0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	B	No	Surface Af (CaAa)	44.4200 - 20.7500	1	1	0.500 0.500	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	29.4200 - 20.7500	1	1	0.250 0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	C	No	Surface Af (CaAa)	29.4200 - 20.7500	1	1	0.250 0.250	6.0000	14.0000	0.00
**										
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	56.0000 - 21.0000	1	1	0.500 0.500	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	C	No	Surface Af (CaAa)	56.0000 - 21.0000	1	1	0.500 0.500	6.0000	14.0000	0.00
**										
(Area) CCI-65FP-045100 (H)	A	No	Surface Af (CaAa)	66.0800 - 56.0000	1	1	0.500 0.500	4.5000	11.0000	0.00
(Area) CCI-65FP-045100 (H)	C	No	Surface Af (CaAa)	66.0800 - 56.0000	1	1	0.500 0.500	4.5000	11.0000	0.00
(Area) CCI-65FP-045100 (H)	B	No	Surface Af (CaAa)	64.5000 - 44.5000	1	1	0.500 0.500	4.5000	11.0000	0.00
**										
(Area) CCI-65FP-045100 (H)	A	No	Surface Af (CaAa)	91.5000 - 81.5000	1	1	0.500 0.500	4.5000	11.0000	0.00
(Area) CCI-65FP-045100 (H)	B	No	Surface Af (CaAa)	91.5000 - 81.5000	1	1	0.500 0.500	4.5000	11.0000	0.00
(Area) CCI-65FP-045100 (H)	C	No	Surface Af (CaAa)	91.5000 - 81.5000	1	1	0.500 0.500	4.5000	11.0000	0.00
**										
(Area) CCI-65FP-065125 (H)	A	No	Surface Af (CaAa)	9.2500 - 0.0000	1	1	0.250 0.250	6.5000	15.5000	0.00
(Area) CCI-65FP-065125 (H)	B	No	Surface Af (CaAa)	20.7500 - 0.0000	1	1	0.250 0.250	6.5000	15.5000	0.00
(Area) CCI-65FP-065125 (H)	A	No	Surface Af (CaAa)	20.7500 - 0.0000	1	1	0.500 0.500	6.5000	15.5000	0.00
(Area) CCI-65FP-065125 (H)	C	No	Surface Af (CaAa)	20.7500 - 0.0000	1	1	0.500 0.500	6.5000	15.5000	0.00
**										
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	20.0000 - 0.0000	1	1	-0.250 -0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	B	No	Surface Af (CaAa)	20.0000 - 0.0000	1	1	-0.250 -0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	C	No	Surface Af (CaAa)	20.0000 - 0.0000	1	1	-0.250 -0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	55.0800 - 20.0000	1	1	-0.250 -0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	B	No	Surface Af (CaAa)	55.0800 - 20.0000	1	1	-0.250 -0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	C	No	Surface Af (CaAa)	55.0800 - 20.0000	1	1	-0.250 -0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-045125 (H)	A	No	Surface Af (CaAa)	85.1700 - 55.0800	1	1	-0.250 -0.250	4.5000	11.5000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
(Area) CCI-65FP-045125 (H)	B	No	Surface Af (CaAa)	85.1700 - 55.0800	1	1	-0.250 -0.250	4.5000	11.5000	0.00
(Area) CCI-65FP-045125 (H) ****	C	No	Surface Af (CaAa)	85.1700 - 55.0800	1	1	-0.250 -0.250	4.5000	11.5000	0.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
FB-L98B-002-75000(3/8)	B	No	No	Inside Pole	121.0000 - 0.0000	2	No Ice	0.0000	0.06
							1/2" Ice	0.0000	0.06
							1" Ice	0.0000	0.06
							2" Ice	0.0000	0.06
WR-VG86ST-BRD(3/4) ***	B	No	No	Inside Pole	121.0000 - 0.0000	8	No Ice	0.0000	0.58
							1/2" Ice	0.0000	0.58
							1" Ice	0.0000	0.58
							2" Ice	0.0000	0.58
HB158-U12S24-160-LI(1-7/8)	B	No	No	Inside Pole	109.0000 - 0.0000	2	No Ice	0.0000	3.20
							1/2" Ice	0.0000	3.20
							1" Ice	0.0000	3.20
							2" Ice	0.0000	3.20
ATCB-B01-005(5/16)	A	No	No	Inside Pole	97.0000 - 0.0000	3	No Ice	0.0000	0.07
							1/2" Ice	0.0000	0.07
							1" Ice	0.0000	0.07
							2" Ice	0.0000	0.07
FSJ4-50B(1/2)	A	No	No	Inside Pole	97.0000 - 0.0000	3	No Ice	0.0000	0.14
							1/2" Ice	0.0000	0.14
							1" Ice	0.0000	0.14
							2" Ice	0.0000	0.14
HB158-21U6S24-xxM_TMO(1-5/8) ****	C	No	No	Inside Pole	97.0000 - 0.0000	3	No Ice	0.0000	2.50
							1/2" Ice	0.0000	2.50
							1" Ice	0.0000	2.50
							2" Ice	0.0000	2.50

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	130.0000-125.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	125.0000-120.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	1.265	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L3	120.0000-115.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	6.325	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.00
L4	115.0000-110.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	6.325	0.000	0.05
		C	0.000	0.000	0.000	0.000	0.00
L5	110.0000-105.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	6.325	0.000	0.07
		C	0.000	0.000	0.000	0.000	0.00
L6	105.0000-	A	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
	100.0000	B	0.000	0.000	6.325	0.000	0.08
		C	0.000	0.000	0.000	0.000	0.00
L7	100.0000-	A	0.000	0.000	0.800	0.000	0.00
	95.0000	B	0.000	0.000	6.325	0.000	0.08
		C	0.000	0.000	0.000	0.000	0.01
L8	95.0000-90.0000	A	0.000	0.000	3.125	0.000	0.01
		B	0.000	0.000	7.450	0.000	0.08
		C	0.000	0.000	1.125	0.000	0.04
L9	90.0000-89.7500	A	0.000	0.000	0.287	0.000	0.00
		B	0.000	0.000	0.504	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.00
L10	89.7500-84.7500	A	0.000	0.000	6.785	0.000	0.01
		B	0.000	0.000	13.351	0.000	0.16
		C	0.000	0.000	4.785	0.000	0.04
L11	84.7500-84.5800	A	0.000	0.000	0.436	0.000	0.00
		B	0.000	0.000	0.753	0.000	0.01
		C	0.000	0.000	0.368	0.000	0.00
L12	84.5800-84.3300	A	0.000	0.000	0.642	0.000	0.00
		B	0.000	0.000	1.107	0.000	0.01
		C	0.000	0.000	0.542	0.000	0.00
L13	84.3300-83.4200	A	0.000	0.000	2.336	0.000	0.00
		B	0.000	0.000	4.029	0.000	0.05
		C	0.000	0.000	1.972	0.000	0.01
L14	83.4200-83.1700	A	0.000	0.000	0.642	0.000	0.00
		B	0.000	0.000	1.107	0.000	0.01
		C	0.000	0.000	0.542	0.000	0.00
L15	83.1700-83.0000	A	0.000	0.000	0.436	0.000	0.00
		B	0.000	0.000	0.753	0.000	0.01
		C	0.000	0.000	0.368	0.000	0.00
L16	83.0000-82.7500	A	0.000	0.000	0.642	0.000	0.00
		B	0.000	0.000	1.107	0.000	0.01
		C	0.000	0.000	0.542	0.000	0.00
L17	82.7500-77.7500	A	0.000	0.000	10.021	0.000	0.01
		B	0.000	0.000	19.326	0.000	0.25
		C	0.000	0.000	8.021	0.000	0.04
L18	77.7500-70.0000	A	0.000	0.000	14.079	0.000	0.01
		B	0.000	0.000	29.490	0.000	0.40
		C	0.000	0.000	10.979	0.000	0.06
L19	70.0000-69.0000	A	0.000	0.000	1.817	0.000	0.00
		B	0.000	0.000	3.819	0.000	0.05
		C	0.000	0.000	1.417	0.000	0.01
L20	69.0000-67.0800	A	0.000	0.000	4.268	0.000	0.00
		B	0.000	0.000	8.112	0.000	0.10
		C	0.000	0.000	3.500	0.000	0.01
L21	67.0800-66.8300	A	0.000	0.000	0.621	0.000	0.00
		B	0.000	0.000	1.121	0.000	0.01
		C	0.000	0.000	0.521	0.000	0.00
L22	66.8300-64.0800	A	0.000	0.000	7.163	0.000	0.00
		B	0.000	0.000	11.483	0.000	0.14
		C	0.000	0.000	6.063	0.000	0.02
L23	64.0800-63.8300	A	0.000	0.000	0.642	0.000	0.00
		B	0.000	0.000	1.142	0.000	0.01
		C	0.000	0.000	0.542	0.000	0.00
L24	63.8300-62.5000	A	0.000	0.000	3.414	0.000	0.00
		B	0.000	0.000	6.076	0.000	0.07
		C	0.000	0.000	2.882	0.000	0.01
L25	62.5000-62.2500	A	0.000	0.000	0.642	0.000	0.00
		B	0.000	0.000	1.142	0.000	0.01
		C	0.000	0.000	0.542	0.000	0.00
L26	62.2500-57.2500	A	0.000	0.000	12.833	0.000	0.01
		B	0.000	0.000	22.844	0.000	0.26
		C	0.000	0.000	10.833	0.000	0.04
L27	57.2500-53.5000	A	0.000	0.000	10.645	0.000	0.00
		B	0.000	0.000	17.528	0.000	0.19
		C	0.000	0.000	9.145	0.000	0.03
L28	53.5000-53.2500	A	0.000	0.000	0.767	0.000	0.00
		B	0.000	0.000	1.205	0.000	0.01
		C	0.000	0.000	0.667	0.000	0.00
L29	53.2500-52.5800	A	0.000	0.000	2.055	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	3.229	0.000	0.03
		C	0.000	0.000	1.787	0.000	0.01
L30	52.5800-52.3300	A	0.000	0.000	0.767	0.000	0.00
		B	0.000	0.000	1.205	0.000	0.01
		C	0.000	0.000	0.667	0.000	0.00
L31	52.3300-47.3300	A	0.000	0.000	15.333	0.000	0.01
		B	0.000	0.000	24.094	0.000	0.26
		C	0.000	0.000	13.333	0.000	0.04
L32	47.3300-44.5800	A	0.000	0.000	9.267	0.000	0.00
		B	0.000	0.000	14.085	0.000	0.14
		C	0.000	0.000	8.167	0.000	0.02
L33	44.5800-44.3300	A	0.000	0.000	0.933	0.000	0.00
		B	0.000	0.000	1.334	0.000	0.01
		C	0.000	0.000	0.833	0.000	0.00
L34	44.3300-41.9200	A	0.000	0.000	8.111	0.000	0.00
		B	0.000	0.000	12.936	0.000	0.12
		C	0.000	0.000	7.147	0.000	0.02
L35	41.9200-41.6700	A	0.000	0.000	0.767	0.000	0.00
		B	0.000	0.000	1.267	0.000	0.01
		C	0.000	0.000	0.667	0.000	0.00
L36	41.6700-34.0800	A	0.000	0.000	23.276	0.000	0.01
		B	0.000	0.000	38.472	0.000	0.39
		C	0.000	0.000	20.240	0.000	0.06
L37	34.0800-34.0000	A	0.000	0.000	0.245	0.000	0.00
		B	0.000	0.000	0.406	0.000	0.00
		C	0.000	0.000	0.213	0.000	0.00
L38	34.0000-29.0000	A	0.000	0.000	15.698	0.000	0.01
		B	0.000	0.000	25.344	0.000	0.26
		C	0.000	0.000	13.698	0.000	0.04
L39	29.0000-26.9200	A	0.000	0.000	8.185	0.000	0.00
		B	0.000	0.000	10.543	0.000	0.11
		C	0.000	0.000	7.353	0.000	0.02
L40	26.9200-26.6700	A	0.000	0.000	0.984	0.000	0.00
		B	0.000	0.000	1.267	0.000	0.01
		C	0.000	0.000	0.884	0.000	0.00
L41	26.6700-21.6700	A	0.000	0.000	19.675	0.000	0.01
		B	0.000	0.000	25.344	0.000	0.26
		C	0.000	0.000	17.675	0.000	0.04
L42	21.6700-18.0000	A	0.000	0.000	14.661	0.000	0.00
		B	0.000	0.000	21.460	0.000	0.19
		C	0.000	0.000	13.193	0.000	0.03
L43	18.0000-17.7500	A	0.000	0.000	1.026	0.000	0.00
		B	0.000	0.000	1.527	0.000	0.01
		C	0.000	0.000	0.926	0.000	0.00
L44	17.7500-17.5000	A	0.000	0.000	1.026	0.000	0.00
		B	0.000	0.000	1.527	0.000	0.01
		C	0.000	0.000	0.926	0.000	0.00
L45	17.5000-17.2500	A	0.000	0.000	1.026	0.000	0.00
		B	0.000	0.000	1.527	0.000	0.01
		C	0.000	0.000	0.926	0.000	0.00
L46	17.2500-17.0800	A	0.000	0.000	0.698	0.000	0.00
		B	0.000	0.000	1.038	0.000	0.01
		C	0.000	0.000	0.630	0.000	0.00
L47	17.0800-16.8300	A	0.000	0.000	1.026	0.000	0.00
		B	0.000	0.000	1.527	0.000	0.01
		C	0.000	0.000	0.926	0.000	0.00
L48	16.8300-13.0000	A	0.000	0.000	16.339	0.000	0.01
		B	0.000	0.000	24.007	0.000	0.20
		C	0.000	0.000	14.807	0.000	0.03
L49	13.0000-12.7500	A	0.000	0.000	1.110	0.000	0.00
		B	0.000	0.000	1.610	0.000	0.01
		C	0.000	0.000	1.010	0.000	0.00
L50	12.7500-11.9200	A	0.000	0.000	3.685	0.000	0.00
		B	0.000	0.000	5.346	0.000	0.04
		C	0.000	0.000	3.353	0.000	0.01
L51	11.9200-11.6700	A	0.000	0.000	1.110	0.000	0.00
		B	0.000	0.000	1.610	0.000	0.01
		C	0.000	0.000	1.010	0.000	0.00
L52	11.6700-6.6700	A	0.000	0.000	21.979	0.000	0.01

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	29.578	0.000	0.26
		C	0.000	0.000	17.567	0.000	0.04
L53	6.6700-6.5000	A	0.000	0.000	0.751	0.000	0.00
		B	0.000	0.000	0.933	0.000	0.01
		C	0.000	0.000	0.524	0.000	0.00
L54	6.5000-6.2500	A	0.000	0.000	1.105	0.000	0.00
		B	0.000	0.000	1.371	0.000	0.01
		C	0.000	0.000	0.771	0.000	0.00
L55	6.2500-3.7500	A	0.000	0.000	11.045	0.000	0.00
		B	0.000	0.000	13.714	0.000	0.13
		C	0.000	0.000	7.708	0.000	0.02
L56	3.7500-3.5000	A	0.000	0.000	1.105	0.000	0.00
		B	0.000	0.000	1.371	0.000	0.01
		C	0.000	0.000	0.771	0.000	0.00
L57	3.5000-3.0000	A	0.000	0.000	2.209	0.000	0.00
		B	0.000	0.000	2.743	0.000	0.03
		C	0.000	0.000	1.542	0.000	0.00
L58	3.0000-2.7500	A	0.000	0.000	1.105	0.000	0.00
		B	0.000	0.000	1.371	0.000	0.01
		C	0.000	0.000	0.771	0.000	0.00
L59	2.7500-0.0000	A	0.000	0.000	12.150	0.000	0.00
		B	0.000	0.000	15.085	0.000	0.14
		C	0.000	0.000	8.479	0.000	0.02

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	130.0000-125.0000	A	1.946	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L2	125.0000-120.0000	A	1.938	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	2.550	0.000	0.05
		C		0.000	0.000	0.000	0.000	0.00
L3	120.0000-115.0000	A	1.930	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	12.732	0.000	0.23
		C		0.000	0.000	0.000	0.000	0.00
L4	115.0000-110.0000	A	1.922	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	12.711	0.000	0.23
		C		0.000	0.000	0.000	0.000	0.00
L5	110.0000-105.0000	A	1.913	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	12.689	0.000	0.25
		C		0.000	0.000	0.000	0.000	0.00
L6	105.0000-100.0000	A	1.904	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	12.666	0.000	0.26
		C		0.000	0.000	0.000	0.000	0.00
L7	100.0000-95.0000	A	1.894	0.000	0.000	1.947	0.000	0.03
		B		0.000	0.000	12.642	0.000	0.25
		C		0.000	0.000	0.000	0.000	0.01
L8	95.0000-90.0000	A	1.885	0.000	0.000	6.293	0.000	0.09
		B		0.000	0.000	14.055	0.000	0.27
		C		0.000	0.000	1.437	0.000	0.06
L9	90.0000-89.7500	A	1.879	0.000	0.000	0.482	0.000	0.01
		B		0.000	0.000	0.870	0.000	0.02
		C		0.000	0.000	0.239	0.000	0.01
L10	89.7500-84.7500	A	1.874	0.000	0.000	11.224	0.000	0.15
		B		0.000	0.000	22.827	0.000	0.47
		C		0.000	0.000	6.382	0.000	0.12
L11	84.7500-84.5800	A	1.868	0.000	0.000	0.695	0.000	0.01
		B		0.000	0.000	1.249	0.000	0.03
		C		0.000	0.000	0.530	0.000	0.01
L12	84.5800-84.3300	A	1.867	0.000	0.000	1.022	0.000	0.01
		B		0.000	0.000	1.837	0.000	0.04
		C		0.000	0.000	0.780	0.000	0.01
L13	84.3300-83.4200	A	1.866	0.000	0.000	3.718	0.000	0.05

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	6.684	0.000	0.14
		C		0.000	0.000	2.839	0.000	0.04
L14	83.4200-83.1700	A	1.865	0.000	0.000	1.021	0.000	0.01
		B		0.000	0.000	1.836	0.000	0.04
		C		0.000	0.000	0.780	0.000	0.01
L15	83.1700-83.0000	A	1.864	0.000	0.000	0.694	0.000	0.01
		B		0.000	0.000	1.248	0.000	0.03
		C		0.000	0.000	0.530	0.000	0.01
L16	83.0000-82.7500	A	1.864	0.000	0.000	1.021	0.000	0.01
		B		0.000	0.000	1.836	0.000	0.04
		C		0.000	0.000	0.780	0.000	0.01
L17	82.7500-77.7500	A	1.858	0.000	0.000	16.816	0.000	0.21
		B		0.000	0.000	33.092	0.000	0.70
		C		0.000	0.000	11.993	0.000	0.18
L18	77.7500-70.0000	A	1.843	0.000	0.000	24.136	0.000	0.30
		B		0.000	0.000	52.872	0.000	1.11
		C		0.000	0.000	16.691	0.000	0.25
L19	70.0000-69.0000	A	1.831	0.000	0.000	3.114	0.000	0.04
		B		0.000	0.000	6.871	0.000	0.14
		C		0.000	0.000	2.154	0.000	0.03
L20	69.0000-67.0800	A	1.828	0.000	0.000	7.168	0.000	0.09
		B		0.000	0.000	14.362	0.000	0.29
		C		0.000	0.000	5.331	0.000	0.08
L21	67.0800-66.8300	A	1.825	0.000	0.000	1.034	0.000	0.01
		B		0.000	0.000	1.970	0.000	0.04
		C		0.000	0.000	0.795	0.000	0.01
L22	66.8300-64.0800	A	1.820	0.000	0.000	11.464	0.000	0.14
		B		0.000	0.000	20.313	0.000	0.41
		C		0.000	0.000	8.837	0.000	0.13
L23	64.0800-63.8300	A	1.816	0.000	0.000	1.013	0.000	0.01
		B		0.000	0.000	1.987	0.000	0.04
		C		0.000	0.000	0.774	0.000	0.01
L24	63.8300-62.5000	A	1.814	0.000	0.000	5.385	0.000	0.07
		B		0.000	0.000	10.568	0.000	0.21
		C		0.000	0.000	4.117	0.000	0.06
L25	62.5000-62.2500	A	1.812	0.000	0.000	1.012	0.000	0.01
		B		0.000	0.000	1.986	0.000	0.04
		C		0.000	0.000	0.774	0.000	0.01
L26	62.2500-57.2500	A	1.804	0.000	0.000	20.208	0.000	0.25
		B		0.000	0.000	39.650	0.000	0.77
		C		0.000	0.000	15.453	0.000	0.22
L27	57.2500-53.5000	A	1.790	0.000	0.000	16.530	0.000	0.19
		B		0.000	0.000	30.054	0.000	0.58
		C		0.000	0.000	12.977	0.000	0.17
L28	53.5000-53.2500	A	1.784	0.000	0.000	1.171	0.000	0.01
		B		0.000	0.000	2.037	0.000	0.04
		C		0.000	0.000	0.934	0.000	0.01
L29	53.2500-52.5800	A	1.782	0.000	0.000	3.137	0.000	0.04
		B		0.000	0.000	5.458	0.000	0.10
		C		0.000	0.000	2.503	0.000	0.03
L30	52.5800-52.3300	A	1.781	0.000	0.000	1.170	0.000	0.01
		B		0.000	0.000	2.036	0.000	0.04
		C		0.000	0.000	0.934	0.000	0.01
L31	52.3300-47.3300	A	1.771	0.000	0.000	23.362	0.000	0.26
		B		0.000	0.000	40.649	0.000	0.77
		C		0.000	0.000	18.648	0.000	0.24
L32	47.3300-44.5800	A	1.757	0.000	0.000	14.088	0.000	0.16
		B		0.000	0.000	23.569	0.000	0.43
		C		0.000	0.000	11.505	0.000	0.14
L33	44.5800-44.3300	A	1.751	0.000	0.000	1.418	0.000	0.02
		B		0.000	0.000	2.213	0.000	0.04
		C		0.000	0.000	1.184	0.000	0.01
L34	44.3300-41.9200	A	1.746	0.000	0.000	12.306	0.000	0.14
		B		0.000	0.000	21.198	0.000	0.38
		C		0.000	0.000	10.049	0.000	0.12
L35	41.9200-41.6700	A	1.741	0.000	0.000	1.162	0.000	0.01
		B		0.000	0.000	2.083	0.000	0.04
		C		0.000	0.000	0.928	0.000	0.01
L36	41.6700-34.0800	A	1.723	0.000	0.000	35.154	0.000	0.38

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	63.037	0.000	1.16
		C		0.000	0.000	28.088	0.000	0.35
L37	34.0800-34.0000	A	1.705	0.000	0.000	0.371	0.000	0.00
		B		0.000	0.000	0.664	0.000	0.01
		C		0.000	0.000	0.296	0.000	0.00
L38	34.0000-29.0000	A	1.692	0.000	0.000	23.465	0.000	0.25
		B		0.000	0.000	41.283	0.000	0.75
		C		0.000	0.000	18.850	0.000	0.23
L39	29.0000-26.9200	A	1.672	0.000	0.000	11.720	0.000	0.13
		B		0.000	0.000	17.109	0.000	0.31
		C		0.000	0.000	9.810	0.000	0.12
L40	26.9200-26.6700	A	1.665	0.000	0.000	1.407	0.000	0.02
		B		0.000	0.000	2.054	0.000	0.04
		C		0.000	0.000	1.178	0.000	0.01
L41	26.6700-21.6700	A	1.648	0.000	0.000	28.056	0.000	0.30
		B		0.000	0.000	40.940	0.000	0.74
		C		0.000	0.000	23.497	0.000	0.28
L42	21.6700-18.0000	A	1.616	0.000	0.000	20.613	0.000	0.22
		B		0.000	0.000	33.192	0.000	0.57
		C		0.000	0.000	17.296	0.000	0.20
L43	18.0000-17.7500	A	1.599	0.000	0.000	1.433	0.000	0.01
		B		0.000	0.000	2.330	0.000	0.04
		C		0.000	0.000	1.208	0.000	0.01
L44	17.7500-17.5000	A	1.597	0.000	0.000	1.433	0.000	0.01
		B		0.000	0.000	2.329	0.000	0.04
		C		0.000	0.000	1.208	0.000	0.01
L45	17.5000-17.2500	A	1.594	0.000	0.000	1.432	0.000	0.01
		B		0.000	0.000	2.328	0.000	0.04
		C		0.000	0.000	1.208	0.000	0.01
L46	17.2500-17.0800	A	1.592	0.000	0.000	0.974	0.000	0.01
		B		0.000	0.000	1.583	0.000	0.03
		C		0.000	0.000	0.821	0.000	0.01
L47	17.0800-16.8300	A	1.590	0.000	0.000	1.431	0.000	0.01
		B		0.000	0.000	2.326	0.000	0.04
		C		0.000	0.000	1.207	0.000	0.01
L48	16.8300-13.0000	A	1.570	0.000	0.000	22.214	0.000	0.23
		B		0.000	0.000	35.874	0.000	0.60
		C		0.000	0.000	18.796	0.000	0.21
L49	13.0000-12.7500	A	1.547	0.000	0.000	1.490	0.000	0.01
		B		0.000	0.000	2.378	0.000	0.04
		C		0.000	0.000	1.268	0.000	0.01
L50	12.7500-11.9200	A	1.541	0.000	0.000	4.942	0.000	0.05
		B		0.000	0.000	7.885	0.000	0.13
		C		0.000	0.000	4.208	0.000	0.05
L51	11.9200-11.6700	A	1.534	0.000	0.000	1.487	0.000	0.01
		B		0.000	0.000	2.372	0.000	0.04
		C		0.000	0.000	1.266	0.000	0.01
L52	11.6700-6.6700	A	1.495	0.000	0.000	29.344	0.000	0.29
		B		0.000	0.000	44.089	0.000	0.73
		C		0.000	0.000	22.149	0.000	0.24
L53	6.6700-6.5000	A	1.447	0.000	0.000	0.996	0.000	0.01
		B		0.000	0.000	1.402	0.000	0.02
		C		0.000	0.000	0.664	0.000	0.01
L54	6.5000-6.2500	A	1.442	0.000	0.000	1.463	0.000	0.01
		B		0.000	0.000	2.060	0.000	0.03
		C		0.000	0.000	0.976	0.000	0.01
L55	6.2500-3.7500	A	1.408	0.000	0.000	14.557	0.000	0.13
		B		0.000	0.000	20.474	0.000	0.34
		C		0.000	0.000	9.712	0.000	0.10
L56	3.7500-3.5000	A	1.363	0.000	0.000	1.446	0.000	0.01
		B		0.000	0.000	2.031	0.000	0.03
		C		0.000	0.000	0.966	0.000	0.01
L57	3.5000-3.0000	A	1.348	0.000	0.000	2.886	0.000	0.03
		B		0.000	0.000	4.052	0.000	0.06
		C		0.000	0.000	1.928	0.000	0.02
L58	3.0000-2.7500	A	1.332	0.000	0.000	1.440	0.000	0.01
		B		0.000	0.000	2.020	0.000	0.03
		C		0.000	0.000	0.962	0.000	0.01
L59	2.7500-0.0000	A	1.237	0.000	0.000	15.611	0.000	0.13

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	21.840	0.000	0.34
		C		0.000	0.000	10.449	0.000	0.10

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	130.0000-125.0000	0.0000	0.0000	0.0000	0.0000
L2	125.0000-120.0000	1.1072	-1.0467	1.1637	-1.0768
L3	120.0000-115.0000	3.0857	-2.9183	2.6045	-2.4110
L4	115.0000-110.0000	3.1879	-3.0164	2.7443	-2.5418
L5	110.0000-105.0000	3.2842	-3.1089	2.8789	-2.6678
L6	105.0000-100.0000	3.3712	-3.1923	3.0067	-2.7875
L7	100.0000-95.0000	2.8025	-3.4276	2.3409	-2.9652
L8	95.0000-90.0000	1.6763	-3.0849	1.3459	-2.8494
L9	90.0000-89.7500	1.2241	-2.2540	1.1232	-2.3791
L10	89.7500-84.7500	1.1866	-2.8061	1.0914	-2.8275
L11	84.7500-84.5800	0.8513	-2.4236	0.8302	-2.5157
L12	84.5800-84.3300	0.8531	-2.4286	0.8319	-2.5209
L13	84.3300-83.4200	0.8570	-2.4398	0.8361	-2.5334
L14	83.4200-83.1700	0.8617	-2.4529	0.8407	-2.5474
L15	83.1700-83.0000	0.8632	-2.4570	0.8423	-2.5519
L16	83.0000-82.7500	0.8641	-2.4594	0.8434	-2.5553
L17	82.7500-77.7500	1.0413	-2.9629	0.9659	-2.9256
L18	77.7500-70.0000	1.3031	-3.3353	1.3269	-3.2817
L19	70.0000-69.0000	1.3392	-3.3924	1.3786	-3.3486
L20	69.0000-67.0800	1.1928	-3.0208	1.2597	-3.0601
L21	67.0800-66.8300	1.1126	-2.8171	1.1965	-2.9064
L22	66.8300-64.0800	0.9296	-3.5664	1.1007	-3.4596
L23	64.0800-63.8300	1.1126	-2.8159	1.2678	-2.8401
L24	63.8300-62.5000	1.1190	-2.8316	1.2749	-2.8561
L25	62.5000-62.2500	1.1256	-2.8479	1.2824	-2.8726
L26	62.2500-57.2500	1.1465	-2.8998	1.3060	-2.9254
L27	57.2500-53.5000	1.0390	-3.0931	1.2212	-3.1418
L28	53.5000-53.2500	0.9662	-3.1146	1.1645	-3.2042
L29	53.2500-52.5800	0.9690	-3.1233	1.1679	-3.2139
L30	52.5800-52.3300	0.9718	-3.1324	1.1715	-3.2238
L31	52.3300-47.3300	0.9873	-3.1823	1.1912	-3.2790
L32	47.3300-44.5800	0.9443	-3.0437	1.1496	-3.1661
L33	44.5800-44.3300	0.8307	-3.0949	1.0328	-3.2431
L34	44.3300-41.9200	1.0534	-2.6585	1.2225	-2.9659
L35	41.9200-41.6700	1.1324	-2.8576	1.3055	-3.1671
L36	41.6700-34.0800	1.1571	-2.9187	1.3353	-3.2395
L37	34.0800-34.0000	1.1655	-2.9395	1.3459	-3.2648
L38	34.0000-29.0000	1.0740	-2.9928	1.2855	-3.3170
L39	29.0000-26.9200	0.0532	-3.1829	0.5239	-3.4557
L40	26.9200-26.6700	0.0531	-3.2030	0.5263	-3.4782
L41	26.6700-21.6700	0.0529	-3.2466	0.5311	-3.5273
L42	21.6700-18.0000	0.9019	-2.7631	1.2097	-3.2407
L43	18.0000-17.7500	1.1229	-2.7268	1.3883	-3.2422
L44	17.7500-17.5000	1.1243	-2.7302	1.3899	-3.2461
L45	17.5000-17.2500	1.1257	-2.7335	1.3915	-3.2500
L46	17.2500-17.0800	1.1269	-2.7363	1.3929	-3.2532
L47	17.0800-16.8300	1.1279	-2.7387	1.3940	-3.2560
L48	16.8300-13.0000	1.1080	-2.6899	1.3920	-3.2524
L49	13.0000-12.7500	1.0872	-2.6390	1.3764	-3.2175
L50	12.7500-11.9200	1.0901	-2.6457	1.3794	-3.2249
L51	11.9200-11.6700	1.0926	-2.6516	1.3819	-3.2313

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L52	11.6700-6.6700	1.5228	-4.0427	1.7287	-4.3385
L53	6.6700-6.5000	1.9116	-5.4011	2.0345	-5.3963
L54	6.5000-6.2500	1.9139	-5.4075	2.0365	-5.4023
L55	6.2500-3.7500	1.9263	-5.4417	2.0467	-5.4347
L56	3.7500-3.5000	1.9390	-5.4767	2.0561	-5.4668
L57	3.5000-3.0000	1.9423	-5.4859	2.0582	-5.4749
L58	3.0000-2.7500	1.9456	-5.4952	2.0602	-5.4830
L59	2.7500-0.0000	1.9592	-5.5325	2.0647	-5.5121

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
L2	3	2" Flexible Conduit	120.00 - 121.00	1.0000	1.0000
L2	4	LDF6-50A(1-1/4)	120.00 - 121.00	1.0000	1.0000
L3	3	2" Flexible Conduit	115.00 - 120.00	1.0000	1.0000
L3	4	LDF6-50A(1-1/4)	115.00 - 120.00	1.0000	1.0000
L4	3	2" Flexible Conduit	110.00 - 115.00	1.0000	1.0000
L4	4	LDF6-50A(1-1/4)	110.00 - 115.00	1.0000	1.0000
L5	3	2" Flexible Conduit	105.00 - 110.00	1.0000	1.0000
L5	4	LDF6-50A(1-1/4)	105.00 - 110.00	1.0000	1.0000
L6	3	2" Flexible Conduit	100.00 - 105.00	1.0000	1.0000
L6	4	LDF6-50A(1-1/4)	100.00 - 105.00	1.0000	1.0000
L7	3	2" Flexible Conduit	95.00 - 100.00	1.0000	1.0000
L7	4	LDF6-50A(1-1/4)	95.00 - 100.00	1.0000	1.0000
L7	10	2" Flexible Conduit	95.00 - 97.00	1.0000	1.0000
L8	3	2" Flexible Conduit	90.00 - 95.00	1.0000	1.0000
L8	4	LDF6-50A(1-1/4)	90.00 - 95.00	1.0000	1.0000
L8	10	2" Flexible Conduit	90.00 - 95.00	1.0000	1.0000
L8	47	(Area) CCI-65FP-045100 (H)	90.00 - 91.50	1.0000	1.0000
L8	48	(Area) CCI-65FP-045100 (H)	90.00 - 91.50	1.0000	1.0000
L8	49	(Area) CCI-65FP-045100 (H)	90.00 - 91.50	1.0000	1.0000
L9	3	2" Flexible Conduit	89.75 - 90.00	1.0000	1.0000
L9	4	LDF6-50A(1-1/4)	89.75 - 90.00	1.0000	1.0000
L9	10	2" Flexible Conduit	89.75 - 90.00	1.0000	1.0000
L9	47	(Area) CCI-65FP-045100 (H)	89.75 - 90.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L9	48	(Area) CCI-65FP-045100 (H)	89.75 - 90.00	1.0000	1.0000
L9	49	(Area) CCI-65FP-045100 (H)	89.75 - 90.00	1.0000	1.0000
L10	3	2" Flexible Conduit	84.75 - 89.75	1.0000	1.0000
L10	4	LDF6-50A(1-1/4)	84.75 - 89.75	1.0000	1.0000
L10	10	2" Flexible Conduit	84.75 - 89.75	1.0000	1.0000
L10	16	HCS 6X12 4AWG(1-5/8)	84.75 - 87.00	1.0000	1.0000
L10	25	PL 0.75x4	84.75 - 85.83	1.0000	1.0000
L10	26	PL 0.75x4	84.75 - 85.83	1.0000	1.0000
L10	27	PL 0.75x4	84.75 - 85.83	1.0000	1.0000
L10	47	(Area) CCI-65FP-045100 (H)	84.75 - 89.75	1.0000	1.0000
L10	48	(Area) CCI-65FP-045100 (H)	84.75 - 89.75	1.0000	1.0000
L10	49	(Area) CCI-65FP-045100 (H)	84.75 - 89.75	1.0000	1.0000
L10	62	(Area) CCI-65FP-045125 (H)	84.75 - 85.17	1.0000	1.0000
L10	63	(Area) CCI-65FP-045125 (H)	84.75 - 85.17	1.0000	1.0000
L10	64	(Area) CCI-65FP-045125 (H)	84.75 - 85.17	1.0000	1.0000
L11	3	2" Flexible Conduit	84.58 - 84.75	1.0000	1.0000
L11	4	LDF6-50A(1-1/4)	84.58 - 84.75	1.0000	1.0000
L11	10	2" Flexible Conduit	84.58 - 84.75	1.0000	1.0000
L11	16	HCS 6X12 4AWG(1-5/8)	84.58 - 84.75	1.0000	1.0000
L11	25	PL 0.75x4	84.58 - 84.75	1.0000	1.0000
L11	26	PL 0.75x4	84.58 - 84.75	1.0000	1.0000
L11	27	PL 0.75x4	84.58 - 84.75	1.0000	1.0000
L11	47	(Area) CCI-65FP-045100 (H)	84.58 - 84.75	1.0000	1.0000
L11	48	(Area) CCI-65FP-045100 (H)	84.58 - 84.75	1.0000	1.0000
L11	49	(Area) CCI-65FP-045100 (H)	84.58 - 84.75	1.0000	1.0000
L11	62	(Area) CCI-65FP-045125 (H)	84.58 - 84.75	1.0000	1.0000
L11	63	(Area) CCI-65FP-045125 (H)	84.58 - 84.75	1.0000	1.0000
L11	64	(Area) CCI-65FP-045125 (H)	84.58 - 84.75	1.0000	1.0000
L12	3	2" Flexible Conduit	84.33 - 84.58	1.0000	1.0000
L12	4	LDF6-50A(1-1/4)	84.33 - 84.58	1.0000	1.0000
L12	10	2" Flexible Conduit	84.33 - 84.58	1.0000	1.0000
L12	16	HCS 6X12 4AWG(1-5/8)	84.33 - 84.58	1.0000	1.0000
L12	25	PL 0.75x4	84.33 - 84.58	1.0000	1.0000
L12	26	PL 0.75x4	84.33 - 84.58	1.0000	1.0000
L12	27	PL 0.75x4	84.33 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			84.58		
L12	47	(Area) CCI-65FP-045100 (H)	84.33 - 84.58	1.0000	1.0000
L12	48	(Area) CCI-65FP-045100 (H)	84.33 - 84.58	1.0000	1.0000
L12	49	(Area) CCI-65FP-045100 (H)	84.33 - 84.58	1.0000	1.0000
L12	62	(Area) CCI-65FP-045125 (H)	84.33 - 84.58	1.0000	1.0000
L12	63	(Area) CCI-65FP-045125 (H)	84.33 - 84.58	1.0000	1.0000
L12	64	(Area) CCI-65FP-045125 (H)	84.33 - 84.58	1.0000	1.0000
L13	3	2" Flexible Conduit	83.42 - 84.33	1.0000	1.0000
L13	4	LDF6-50A(1-1/4)	83.42 - 84.33	1.0000	1.0000
L13	10	2" Flexible Conduit	83.42 - 84.33	1.0000	1.0000
L13	16	HCS 6X12 4AWG(1-5/8)	83.42 - 84.33	1.0000	1.0000
L13	25	PL 0.75x4	83.42 - 84.33	1.0000	1.0000
L13	26	PL 0.75x4	83.42 - 84.33	1.0000	1.0000
L13	27	PL 0.75x4	83.42 - 84.33	1.0000	1.0000
L13	47	(Area) CCI-65FP-045100 (H)	83.42 - 84.33	1.0000	1.0000
L13	48	(Area) CCI-65FP-045100 (H)	83.42 - 84.33	1.0000	1.0000
L13	49	(Area) CCI-65FP-045100 (H)	83.42 - 84.33	1.0000	1.0000
L13	62	(Area) CCI-65FP-045125 (H)	83.42 - 84.33	1.0000	1.0000
L13	63	(Area) CCI-65FP-045125 (H)	83.42 - 84.33	1.0000	1.0000
L13	64	(Area) CCI-65FP-045125 (H)	83.42 - 84.33	1.0000	1.0000
L14	3	2" Flexible Conduit	83.17 - 83.42	1.0000	1.0000
L14	4	LDF6-50A(1-1/4)	83.17 - 83.42	1.0000	1.0000
L14	10	2" Flexible Conduit	83.17 - 83.42	1.0000	1.0000
L14	16	HCS 6X12 4AWG(1-5/8)	83.17 - 83.42	1.0000	1.0000
L14	25	PL 0.75x4	83.17 - 83.42	1.0000	1.0000
L14	26	PL 0.75x4	83.17 - 83.42	1.0000	1.0000
L14	27	PL 0.75x4	83.17 - 83.42	1.0000	1.0000
L14	47	(Area) CCI-65FP-045100 (H)	83.17 - 83.42	1.0000	1.0000
L14	48	(Area) CCI-65FP-045100 (H)	83.17 - 83.42	1.0000	1.0000
L14	49	(Area) CCI-65FP-045100 (H)	83.17 - 83.42	1.0000	1.0000
L14	62	(Area) CCI-65FP-045125 (H)	83.17 - 83.42	1.0000	1.0000
L14	63	(Area) CCI-65FP-045125 (H)	83.17 - 83.42	1.0000	1.0000
L14	64	(Area) CCI-65FP-045125 (H)	83.17 - 83.42	1.0000	1.0000
L15	3	2" Flexible Conduit	83.00 - 83.17	1.0000	1.0000
L15	4	LDF6-50A(1-1/4)	83.00 - 83.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L15	10	2" Flexible Conduit	83.00 - 83.17	1.0000	1.0000
L15	16	HCS 6X12 4AWG(1-5/8)	83.00 - 83.17	1.0000	1.0000
L15	25	PL 0.75x4	83.00 - 83.17	1.0000	1.0000
L15	26	PL 0.75x4	83.00 - 83.17	1.0000	1.0000
L15	27	PL 0.75x4	83.00 - 83.17	1.0000	1.0000
L15	47	(Area) CCI-65FP-045100 (H)	83.00 - 83.17	1.0000	1.0000
L15	48	(Area) CCI-65FP-045100 (H)	83.00 - 83.17	1.0000	1.0000
L15	49	(Area) CCI-65FP-045100 (H)	83.00 - 83.17	1.0000	1.0000
L15	62	(Area) CCI-65FP-045125 (H)	83.00 - 83.17	1.0000	1.0000
L15	63	(Area) CCI-65FP-045125 (H)	83.00 - 83.17	1.0000	1.0000
L15	64	(Area) CCI-65FP-045125 (H)	83.00 - 83.17	1.0000	1.0000
L16	3	2" Flexible Conduit	82.75 - 83.00	1.0000	1.0000
L16	4	LDF6-50A(1-1/4)	82.75 - 83.00	1.0000	1.0000
L16	10	2" Flexible Conduit	82.75 - 83.00	1.0000	1.0000
L16	16	HCS 6X12 4AWG(1-5/8)	82.75 - 83.00	1.0000	1.0000
L16	25	PL 0.75x4	82.75 - 83.00	1.0000	1.0000
L16	26	PL 0.75x4	82.75 - 83.00	1.0000	1.0000
L16	27	PL 0.75x4	82.75 - 83.00	1.0000	1.0000
L16	47	(Area) CCI-65FP-045100 (H)	82.75 - 83.00	1.0000	1.0000
L16	48	(Area) CCI-65FP-045100 (H)	82.75 - 83.00	1.0000	1.0000
L16	49	(Area) CCI-65FP-045100 (H)	82.75 - 83.00	1.0000	1.0000
L16	62	(Area) CCI-65FP-045125 (H)	82.75 - 83.00	1.0000	1.0000
L16	63	(Area) CCI-65FP-045125 (H)	82.75 - 83.00	1.0000	1.0000
L16	64	(Area) CCI-65FP-045125 (H)	82.75 - 83.00	1.0000	1.0000
L17	3	2" Flexible Conduit	77.75 - 82.75	1.0000	1.0000
L17	4	LDF6-50A(1-1/4)	77.75 - 82.75	1.0000	1.0000
L17	10	2" Flexible Conduit	77.75 - 82.75	1.0000	1.0000
L17	16	HCS 6X12 4AWG(1-5/8)	77.75 - 82.75	1.0000	1.0000
L17	25	PL 0.75x4	77.75 - 82.75	1.0000	1.0000
L17	26	PL 0.75x4	77.75 - 82.75	1.0000	1.0000
L17	27	PL 0.75x4	77.75 - 82.75	1.0000	1.0000
L17	47	(Area) CCI-65FP-045100 (H)	81.50 - 82.75	1.0000	1.0000
L17	48	(Area) CCI-65FP-045100 (H)	81.50 - 82.75	1.0000	1.0000
L17	49	(Area) CCI-65FP-045100 (H)	81.50 - 82.75	1.0000	1.0000
L17	62	(Area) CCI-65FP-045125	77.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		(H)	82.75		
L17	63	(Area) CCI-65FP-045125	77.75 -	1.0000	1.0000
		(H)	82.75		
L17	64	(Area) CCI-65FP-045125	77.75 -	1.0000	1.0000
		(H)	82.75		
L18	1	CU12PSM9P8XXX(1-3/8)	70.00 -	1.0000	1.0000
			77.00		
L18	3	2" Flexible Conduit	70.00 -	1.0000	1.0000
			77.75		
L18	4	LDF6-50A(1-1/4)	70.00 -	1.0000	1.0000
			77.75		
L18	10	2" Flexible Conduit	70.00 -	1.0000	1.0000
			77.75		
L18	16	HCS 6X12 4AWG(1-5/8)	70.00 -	1.0000	1.0000
			77.75		
L18	25	PL 0.75x4	70.00 -	1.0000	1.0000
			77.75		
L18	26	PL 0.75x4	70.00 -	1.0000	1.0000
			77.75		
L18	27	PL 0.75x4	70.00 -	1.0000	1.0000
			77.75		
L18	62	(Area) CCI-65FP-045125	70.00 -	1.0000	1.0000
		(H)	77.75		
L18	63	(Area) CCI-65FP-045125	70.00 -	1.0000	1.0000
		(H)	77.75		
L18	64	(Area) CCI-65FP-045125	70.00 -	1.0000	1.0000
		(H)	77.75		
L19	1	CU12PSM9P8XXX(1-3/8)	69.00 -	1.0000	1.0000
			70.00		
L19	3	2" Flexible Conduit	69.00 -	1.0000	1.0000
			70.00		
L19	4	LDF6-50A(1-1/4)	69.00 -	1.0000	1.0000
			70.00		
L19	10	2" Flexible Conduit	69.00 -	1.0000	1.0000
			70.00		
L19	16	HCS 6X12 4AWG(1-5/8)	69.00 -	1.0000	1.0000
			70.00		
L19	25	PL 0.75x4	69.00 -	1.0000	1.0000
			70.00		
L19	26	PL 0.75x4	69.00 -	1.0000	1.0000
			70.00		
L19	27	PL 0.75x4	69.00 -	1.0000	1.0000
			70.00		
L19	62	(Area) CCI-65FP-045125	69.00 -	1.0000	1.0000
		(H)	70.00		
L19	63	(Area) CCI-65FP-045125	69.00 -	1.0000	1.0000
		(H)	70.00		
L19	64	(Area) CCI-65FP-045125	69.00 -	1.0000	1.0000
		(H)	70.00		
L20	1	CU12PSM9P8XXX(1-3/8)	67.08 -	1.0000	1.0000
			69.00		
L20	3	2" Flexible Conduit	67.08 -	1.0000	1.0000
			69.00		
L20	4	LDF6-50A(1-1/4)	67.08 -	1.0000	1.0000
			69.00		
L20	10	2" Flexible Conduit	67.08 -	1.0000	1.0000
			69.00		
L20	16	HCS 6X12 4AWG(1-5/8)	67.08 -	1.0000	1.0000
			69.00		
L20	22	PL 0.75x4	67.08 -	1.0000	1.0000
			68.25		
L20	23	PL 0.75x4	67.08 -	1.0000	1.0000
			68.25		
L20	24	PL 0.75x4	67.08 -	1.0000	1.0000
			68.25		
L20	25	PL 0.75x4	67.08 -	1.0000	1.0000
			69.00		
L20	26	PL 0.75x4	67.08 -	1.0000	1.0000
			69.00		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L20	27	PL 0.75x4	67.08 - 69.00	1.0000	1.0000
L20	62	(Area) CCI-65FP-045125 (H)	67.08 - 69.00	1.0000	1.0000
L20	63	(Area) CCI-65FP-045125 (H)	67.08 - 69.00	1.0000	1.0000
L20	64	(Area) CCI-65FP-045125 (H)	67.08 - 69.00	1.0000	1.0000
L21	1	CU12PSM9P8XXX(1-3/8)	66.83 - 67.08	1.0000	1.0000
L21	3	2" Flexible Conduit	66.83 - 67.08	1.0000	1.0000
L21	4	LDF6-50A(1-1/4)	66.83 - 67.08	1.0000	1.0000
L21	10	2" Flexible Conduit	66.83 - 67.08	1.0000	1.0000
L21	16	HCS 6X12 4AWG(1-5/8)	66.83 - 67.08	1.0000	1.0000
L21	22	PL 0.75x4	66.83 - 67.08	1.0000	1.0000
L21	23	PL 0.75x4	66.83 - 67.08	1.0000	1.0000
L21	24	PL 0.75x4	66.83 - 67.08	1.0000	1.0000
L21	25	PL 0.75x4	66.83 - 67.08	1.0000	1.0000
L21	26	PL 0.75x4	66.83 - 67.08	1.0000	1.0000
L21	27	PL 0.75x4	66.83 - 67.08	1.0000	1.0000
L21	62	(Area) CCI-65FP-045125 (H)	66.83 - 67.08	1.0000	1.0000
L21	63	(Area) CCI-65FP-045125 (H)	66.83 - 67.08	1.0000	1.0000
L21	64	(Area) CCI-65FP-045125 (H)	66.83 - 67.08	1.0000	1.0000
L22	1	CU12PSM9P8XXX(1-3/8)	64.08 - 66.83	1.0000	1.0000
L22	3	2" Flexible Conduit	64.08 - 66.83	1.0000	1.0000
L22	4	LDF6-50A(1-1/4)	64.08 - 66.83	1.0000	1.0000
L22	10	2" Flexible Conduit	64.08 - 66.83	1.0000	1.0000
L22	16	HCS 6X12 4AWG(1-5/8)	64.08 - 66.83	1.0000	1.0000
L22	22	PL 0.75x4	64.08 - 66.83	1.0000	1.0000
L22	23	PL 0.75x4	64.08 - 66.83	1.0000	1.0000
L22	24	PL 0.75x4	64.08 - 66.83	1.0000	1.0000
L22	25	PL 0.75x4	65.83 - 66.83	1.0000	1.0000
L22	26	PL 0.75x4	65.83 - 66.83	1.0000	1.0000
L22	27	PL 0.75x4	65.83 - 66.83	1.0000	1.0000
L22	43	(Area) CCI-65FP-045100 (H)	64.08 - 66.08	1.0000	1.0000
L22	44	(Area) CCI-65FP-045100 (H)	64.08 - 66.08	1.0000	1.0000
L22	45	(Area) CCI-65FP-045100 (H)	64.08 - 64.50	1.0000	1.0000
L22	62	(Area) CCI-65FP-045125 (H)	64.08 - 66.83	1.0000	1.0000
L22	63	(Area) CCI-65FP-045125 (H)	64.08 - 66.83	1.0000	1.0000
L22	64	(Area) CCI-65FP-045125	64.08 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		(H)	66.83		
L23	1	CU12PSM9P8XXX(1-3/8)	63.83 - 64.08	1.0000	1.0000
L23	3	2" Flexible Conduit	63.83 - 64.08	1.0000	1.0000
L23	4	LDF6-50A(1-1/4)	63.83 - 64.08	1.0000	1.0000
L23	10	2" Flexible Conduit	63.83 - 64.08	1.0000	1.0000
L23	16	HCS 6X12 4AWG(1-5/8)	63.83 - 64.08	1.0000	1.0000
L23	22	PL 0.75x4	63.83 - 64.08	1.0000	1.0000
L23	23	PL 0.75x4	63.83 - 64.08	1.0000	1.0000
L23	24	PL 0.75x4	63.83 - 64.08	1.0000	1.0000
L23	43	(Area) CCI-65FP-045100 (H)	63.83 - 64.08	1.0000	1.0000
L23	44	(Area) CCI-65FP-045100 (H)	63.83 - 64.08	1.0000	1.0000
L23	45	(Area) CCI-65FP-045100 (H)	63.83 - 64.08	1.0000	1.0000
L23	62	(Area) CCI-65FP-045125 (H)	63.83 - 64.08	1.0000	1.0000
L23	63	(Area) CCI-65FP-045125 (H)	63.83 - 64.08	1.0000	1.0000
L23	64	(Area) CCI-65FP-045125 (H)	63.83 - 64.08	1.0000	1.0000
L24	1	CU12PSM9P8XXX(1-3/8)	62.50 - 63.83	1.0000	1.0000
L24	3	2" Flexible Conduit	62.50 - 63.83	1.0000	1.0000
L24	4	LDF6-50A(1-1/4)	62.50 - 63.83	1.0000	1.0000
L24	10	2" Flexible Conduit	62.50 - 63.83	1.0000	1.0000
L24	16	HCS 6X12 4AWG(1-5/8)	62.50 - 63.83	1.0000	1.0000
L24	22	PL 0.75x4	62.50 - 63.83	1.0000	1.0000
L24	23	PL 0.75x4	62.50 - 63.83	1.0000	1.0000
L24	24	PL 0.75x4	62.50 - 63.83	1.0000	1.0000
L24	43	(Area) CCI-65FP-045100 (H)	62.50 - 63.83	1.0000	1.0000
L24	44	(Area) CCI-65FP-045100 (H)	62.50 - 63.83	1.0000	1.0000
L24	45	(Area) CCI-65FP-045100 (H)	62.50 - 63.83	1.0000	1.0000
L24	62	(Area) CCI-65FP-045125 (H)	62.50 - 63.83	1.0000	1.0000
L24	63	(Area) CCI-65FP-045125 (H)	62.50 - 63.83	1.0000	1.0000
L24	64	(Area) CCI-65FP-045125 (H)	62.50 - 63.83	1.0000	1.0000
L25	1	CU12PSM9P8XXX(1-3/8)	62.25 - 62.50	1.0000	1.0000
L25	3	2" Flexible Conduit	62.25 - 62.50	1.0000	1.0000
L25	4	LDF6-50A(1-1/4)	62.25 - 62.50	1.0000	1.0000
L25	10	2" Flexible Conduit	62.25 - 62.50	1.0000	1.0000
L25	16	HCS 6X12 4AWG(1-5/8)	62.25 - 62.50	1.0000	1.0000
L25	22	PL 0.75x4	62.25 - 62.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L25	23	PL 0.75x4	62.25 - 62.50	1.0000	1.0000
L25	24	PL 0.75x4	62.25 - 62.50	1.0000	1.0000
L25	43	(Area) CCI-65FP-045100 (H)	62.25 - 62.50	1.0000	1.0000
L25	44	(Area) CCI-65FP-045100 (H)	62.25 - 62.50	1.0000	1.0000
L25	45	(Area) CCI-65FP-045100 (H)	62.25 - 62.50	1.0000	1.0000
L25	62	(Area) CCI-65FP-045125 (H)	62.25 - 62.50	1.0000	1.0000
L25	63	(Area) CCI-65FP-045125 (H)	62.25 - 62.50	1.0000	1.0000
L25	64	(Area) CCI-65FP-045125 (H)	62.25 - 62.50	1.0000	1.0000
L26	1	CU12PSM9P8XXX(1-3/8)	57.25 - 62.25	1.0000	1.0000
L26	3	2" Flexible Conduit	57.25 - 62.25	1.0000	1.0000
L26	4	LDF6-50A(1-1/4)	57.25 - 62.25	1.0000	1.0000
L26	10	2" Flexible Conduit	57.25 - 62.25	1.0000	1.0000
L26	16	HCS 6X12 4AWG(1-5/8)	57.25 - 62.25	1.0000	1.0000
L26	22	PL 0.75x4	57.25 - 62.25	1.0000	1.0000
L26	23	PL 0.75x4	57.25 - 62.25	1.0000	1.0000
L26	24	PL 0.75x4	57.25 - 62.25	1.0000	1.0000
L26	43	(Area) CCI-65FP-045100 (H)	57.25 - 62.25	1.0000	1.0000
L26	44	(Area) CCI-65FP-045100 (H)	57.25 - 62.25	1.0000	1.0000
L26	45	(Area) CCI-65FP-045100 (H)	57.25 - 62.25	1.0000	1.0000
L26	62	(Area) CCI-65FP-045125 (H)	57.25 - 62.25	1.0000	1.0000
L26	63	(Area) CCI-65FP-045125 (H)	57.25 - 62.25	1.0000	1.0000
L26	64	(Area) CCI-65FP-045125 (H)	57.25 - 62.25	1.0000	1.0000
L27	1	CU12PSM9P8XXX(1-3/8)	53.50 - 57.25	1.0000	1.0000
L27	3	2" Flexible Conduit	53.50 - 57.25	1.0000	1.0000
L27	4	LDF6-50A(1-1/4)	53.50 - 57.25	1.0000	1.0000
L27	10	2" Flexible Conduit	53.50 - 57.25	1.0000	1.0000
L27	16	HCS 6X12 4AWG(1-5/8)	53.50 - 57.25	1.0000	1.0000
L27	22	PL 0.75x4	53.50 - 57.25	1.0000	1.0000
L27	23	PL 0.75x4	53.50 - 57.25	1.0000	1.0000
L27	24	PL 0.75x4	53.50 - 57.25	1.0000	1.0000
L27	40	(Area) CCI-65FP-060100 (H)	53.50 - 56.00	1.0000	1.0000
L27	41	(Area) CCI-65FP-060100 (H)	53.50 - 56.00	1.0000	1.0000
L27	43	(Area) CCI-65FP-045100 (H)	56.00 - 57.25	1.0000	1.0000
L27	44	(Area) CCI-65FP-045100 (H)	56.00 - 57.25	1.0000	1.0000
L27	45	(Area) CCI-65FP-045100	53.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		(H)	57.25		
L27	59	(Area) CCI-65FP-060100	53.50 - 55.08	1.0000	1.0000
		(H)			
L27	60	(Area) CCI-65FP-060100	53.50 - 55.08	1.0000	1.0000
		(H)			
L27	61	(Area) CCI-65FP-060100	53.50 - 55.08	1.0000	1.0000
		(H)			
L27	62	(Area) CCI-65FP-045125	55.08 - 57.25	1.0000	1.0000
		(H)			
L27	63	(Area) CCI-65FP-045125	55.08 - 57.25	1.0000	1.0000
		(H)			
L27	64	(Area) CCI-65FP-045125	55.08 - 57.25	1.0000	1.0000
		(H)			
L28	1	CU12PSM9P8XXX(1-3/8)	53.25 - 53.50	1.0000	1.0000
L28	3	2" Flexible Conduit	53.25 - 53.50	1.0000	1.0000
L28	4	LDF6-50A(1-1/4)	53.25 - 53.50	1.0000	1.0000
L28	10	2" Flexible Conduit	53.25 - 53.50	1.0000	1.0000
L28	16	HCS 6X12 4AWG(1-5/8)	53.25 - 53.50	1.0000	1.0000
L28	22	PL 0.75x4	53.25 - 53.50	1.0000	1.0000
L28	23	PL 0.75x4	53.25 - 53.50	1.0000	1.0000
L28	24	PL 0.75x4	53.25 - 53.50	1.0000	1.0000
L28	40	(Area) CCI-65FP-060100	53.25 - 53.50	1.0000	1.0000
		(H)			
L28	41	(Area) CCI-65FP-060100	53.25 - 53.50	1.0000	1.0000
		(H)			
L28	45	(Area) CCI-65FP-045100	53.25 - 53.50	1.0000	1.0000
		(H)			
L28	59	(Area) CCI-65FP-060100	53.25 - 53.50	1.0000	1.0000
		(H)			
L28	60	(Area) CCI-65FP-060100	53.25 - 53.50	1.0000	1.0000
		(H)			
L28	61	(Area) CCI-65FP-060100	53.25 - 53.50	1.0000	1.0000
		(H)			
L29	1	CU12PSM9P8XXX(1-3/8)	52.58 - 53.25	1.0000	1.0000
L29	3	2" Flexible Conduit	52.58 - 53.25	1.0000	1.0000
L29	4	LDF6-50A(1-1/4)	52.58 - 53.25	1.0000	1.0000
L29	10	2" Flexible Conduit	52.58 - 53.25	1.0000	1.0000
L29	16	HCS 6X12 4AWG(1-5/8)	52.58 - 53.25	1.0000	1.0000
L29	22	PL 0.75x4	52.58 - 53.25	1.0000	1.0000
L29	23	PL 0.75x4	52.58 - 53.25	1.0000	1.0000
L29	24	PL 0.75x4	52.58 - 53.25	1.0000	1.0000
L29	40	(Area) CCI-65FP-060100	52.58 - 53.25	1.0000	1.0000
		(H)			
L29	41	(Area) CCI-65FP-060100	52.58 - 53.25	1.0000	1.0000
		(H)			
L29	45	(Area) CCI-65FP-045100	52.58 - 53.25	1.0000	1.0000
		(H)			
L29	59	(Area) CCI-65FP-060100	52.58 - 53.25	1.0000	1.0000
		(H)			
L29	60	(Area) CCI-65FP-060100	52.58 - 53.25	1.0000	1.0000
		(H)			
L29	61	(Area) CCI-65FP-060100	52.58 - 53.25	1.0000	1.0000
		(H)			

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L30	1	CU12PSM9P8XXX(1-3/8)	52.33 - 52.58	1.0000	1.0000
L30	3	2" Flexible Conduit	52.33 - 52.58	1.0000	1.0000
L30	4	LDF6-50A(1-1/4)	52.33 - 52.58	1.0000	1.0000
L30	10	2" Flexible Conduit	52.33 - 52.58	1.0000	1.0000
L30	16	HCS 6X12 4AWG(1-5/8)	52.33 - 52.58	1.0000	1.0000
L30	22	PL 0.75x4	52.33 - 52.58	1.0000	1.0000
L30	23	PL 0.75x4	52.33 - 52.58	1.0000	1.0000
L30	24	PL 0.75x4	52.33 - 52.58	1.0000	1.0000
L30	40	(Area) CCI-65FP-060100 (H)	52.33 - 52.58	1.0000	1.0000
L30	41	(Area) CCI-65FP-060100 (H)	52.33 - 52.58	1.0000	1.0000
L30	45	(Area) CCI-65FP-045100 (H)	52.33 - 52.58	1.0000	1.0000
L30	59	(Area) CCI-65FP-060100 (H)	52.33 - 52.58	1.0000	1.0000
L30	60	(Area) CCI-65FP-060100 (H)	52.33 - 52.58	1.0000	1.0000
L30	61	(Area) CCI-65FP-060100 (H)	52.33 - 52.58	1.0000	1.0000
L31	1	CU12PSM9P8XXX(1-3/8)	47.33 - 52.33	1.0000	1.0000
L31	3	2" Flexible Conduit	47.33 - 52.33	1.0000	1.0000
L31	4	LDF6-50A(1-1/4)	47.33 - 52.33	1.0000	1.0000
L31	10	2" Flexible Conduit	47.33 - 52.33	1.0000	1.0000
L31	16	HCS 6X12 4AWG(1-5/8)	47.33 - 52.33	1.0000	1.0000
L31	22	PL 0.75x4	47.33 - 52.33	1.0000	1.0000
L31	23	PL 0.75x4	47.33 - 52.33	1.0000	1.0000
L31	24	PL 0.75x4	47.33 - 52.33	1.0000	1.0000
L31	40	(Area) CCI-65FP-060100 (H)	47.33 - 52.33	1.0000	1.0000
L31	41	(Area) CCI-65FP-060100 (H)	47.33 - 52.33	1.0000	1.0000
L31	45	(Area) CCI-65FP-045100 (H)	47.33 - 52.33	1.0000	1.0000
L31	59	(Area) CCI-65FP-060100 (H)	47.33 - 52.33	1.0000	1.0000
L31	60	(Area) CCI-65FP-060100 (H)	47.33 - 52.33	1.0000	1.0000
L31	61	(Area) CCI-65FP-060100 (H)	47.33 - 52.33	1.0000	1.0000
L32	1	CU12PSM9P8XXX(1-3/8)	44.58 - 47.33	1.0000	1.0000
L32	3	2" Flexible Conduit	44.58 - 47.33	1.0000	1.0000
L32	4	LDF6-50A(1-1/4)	44.58 - 47.33	1.0000	1.0000
L32	10	2" Flexible Conduit	44.58 - 47.33	1.0000	1.0000
L32	16	HCS 6X12 4AWG(1-5/8)	44.58 - 47.33	1.0000	1.0000
L32	19	PL 0.75x4	44.58 - 45.83	1.0000	1.0000
L32	20	PL 0.75x4	44.58 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L32	21	PL 0.75x4	45.83 44.58 -	1.0000	1.0000
L32	22	PL 0.75x4	45.83 44.58 -	1.0000	1.0000
L32	23	PL 0.75x4	47.33 44.58 -	1.0000	1.0000
L32	24	PL 0.75x4	47.33 44.58 -	1.0000	1.0000
L32	40	(Area) CCI-65FP-060100 (H)	47.33 44.58 -	1.0000	1.0000
L32	41	(Area) CCI-65FP-060100 (H)	47.33 44.58 -	1.0000	1.0000
L32	45	(Area) CCI-65FP-045100 (H)	47.33 44.58 -	1.0000	1.0000
L32	59	(Area) CCI-65FP-060100 (H)	47.33 44.58 -	1.0000	1.0000
L32	60	(Area) CCI-65FP-060100 (H)	47.33 44.58 -	1.0000	1.0000
L32	61	(Area) CCI-65FP-060100 (H)	47.33 44.58 -	1.0000	1.0000
L33	1	CU12PSM9P8XXX(1-3/8)	44.33 -	1.0000	1.0000
L33	3	2" Flexible Conduit	44.58 44.33 -	1.0000	1.0000
L33	4	LDF6-50A(1-1/4)	44.58 44.33 -	1.0000	1.0000
L33	10	2" Flexible Conduit	44.58 44.33 -	1.0000	1.0000
L33	16	HCS 6X12 4AWG(1-5/8)	44.58 44.33 -	1.0000	1.0000
L33	19	PL 0.75x4	44.58 44.33 -	1.0000	1.0000
L33	20	PL 0.75x4	44.58 44.33 -	1.0000	1.0000
L33	21	PL 0.75x4	44.58 44.33 -	1.0000	1.0000
L33	22	PL 0.75x4	44.58 44.33 -	1.0000	1.0000
L33	23	PL 0.75x4	44.58 44.33 -	1.0000	1.0000
L33	24	PL 0.75x4	44.58 44.33 -	1.0000	1.0000
L33	36	(Area) CCI-65FP-060100 (H)	44.58 44.33 -	1.0000	1.0000
L33	40	(Area) CCI-65FP-060100 (H)	44.42 44.33 -	1.0000	1.0000
L33	41	(Area) CCI-65FP-060100 (H)	44.58 44.33 -	1.0000	1.0000
L33	45	(Area) CCI-65FP-045100 (H)	44.58 44.50 -	1.0000	1.0000
L33	59	(Area) CCI-65FP-060100 (H)	44.58 44.33 -	1.0000	1.0000
L33	60	(Area) CCI-65FP-060100 (H)	44.58 44.33 -	1.0000	1.0000
L33	61	(Area) CCI-65FP-060100 (H)	44.58 44.33 -	1.0000	1.0000
L34	1	CU12PSM9P8XXX(1-3/8)	44.58 41.92 -	1.0000	1.0000
L34	3	2" Flexible Conduit	44.33 41.92 -	1.0000	1.0000
L34	4	LDF6-50A(1-1/4)	44.33 41.92 -	1.0000	1.0000
L34	10	2" Flexible Conduit	44.33 41.92 -	1.0000	1.0000
L34	16	HCS 6X12 4AWG(1-5/8)	44.33 41.92 -	1.0000	1.0000
L34	19	PL 0.75x4	44.33 41.92 -	1.0000	1.0000
			44.33		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L34	20	PL 0.75x4	41.92 - 44.33	1.0000	1.0000
L34	21	PL 0.75x4	41.92 - 44.33	1.0000	1.0000
L34	22	PL 0.75x4	43.25 - 44.33	1.0000	1.0000
L34	23	PL 0.75x4	43.25 - 44.33	1.0000	1.0000
L34	24	PL 0.75x4	43.25 - 44.33	1.0000	1.0000
L34	36	(Area) CCI-65FP-060100 (H)	41.92 - 44.33	1.0000	1.0000
L34	40	(Area) CCI-65FP-060100 (H)	41.92 - 44.33	1.0000	1.0000
L34	41	(Area) CCI-65FP-060100 (H)	41.92 - 44.33	1.0000	1.0000
L34	59	(Area) CCI-65FP-060100 (H)	41.92 - 44.33	1.0000	1.0000
L34	60	(Area) CCI-65FP-060100 (H)	41.92 - 44.33	1.0000	1.0000
L34	61	(Area) CCI-65FP-060100 (H)	41.92 - 44.33	1.0000	1.0000
L35	1	CU12PSM9P8XXX(1-3/8)	41.67 - 41.92	1.0000	1.0000
L35	3	2" Flexible Conduit	41.67 - 41.92	1.0000	1.0000
L35	4	LDF6-50A(1-1/4)	41.67 - 41.92	1.0000	1.0000
L35	10	2" Flexible Conduit	41.67 - 41.92	1.0000	1.0000
L35	16	HCS 6X12 4AWG(1-5/8)	41.67 - 41.92	1.0000	1.0000
L35	19	PL 0.75x4	41.67 - 41.92	1.0000	1.0000
L35	20	PL 0.75x4	41.67 - 41.92	1.0000	1.0000
L35	21	PL 0.75x4	41.67 - 41.92	1.0000	1.0000
L35	36	(Area) CCI-65FP-060100 (H)	41.67 - 41.92	1.0000	1.0000
L35	40	(Area) CCI-65FP-060100 (H)	41.67 - 41.92	1.0000	1.0000
L35	41	(Area) CCI-65FP-060100 (H)	41.67 - 41.92	1.0000	1.0000
L35	59	(Area) CCI-65FP-060100 (H)	41.67 - 41.92	1.0000	1.0000
L35	60	(Area) CCI-65FP-060100 (H)	41.67 - 41.92	1.0000	1.0000
L35	61	(Area) CCI-65FP-060100 (H)	41.67 - 41.92	1.0000	1.0000
L36	1	CU12PSM9P8XXX(1-3/8)	34.08 - 41.67	1.0000	1.0000
L36	3	2" Flexible Conduit	34.08 - 41.67	1.0000	1.0000
L36	4	LDF6-50A(1-1/4)	34.08 - 41.67	1.0000	1.0000
L36	10	2" Flexible Conduit	34.08 - 41.67	1.0000	1.0000
L36	16	HCS 6X12 4AWG(1-5/8)	34.08 - 41.67	1.0000	1.0000
L36	19	PL 0.75x4	34.08 - 41.67	1.0000	1.0000
L36	20	PL 0.75x4	34.08 - 41.67	1.0000	1.0000
L36	21	PL 0.75x4	34.08 - 41.67	1.0000	1.0000
L36	36	(Area) CCI-65FP-060100 (H)	34.08 - 41.67	1.0000	1.0000
L36	40	(Area) CCI-65FP-060100	34.08 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		(H)	41.67		
L36	41	(Area) CCI-65FP-060100	34.08 -	1.0000	1.0000
		(H)	41.67		
L36	59	(Area) CCI-65FP-060100	34.08 -	1.0000	1.0000
		(H)	41.67		
L36	60	(Area) CCI-65FP-060100	34.08 -	1.0000	1.0000
		(H)	41.67		
L36	61	(Area) CCI-65FP-060100	34.08 -	1.0000	1.0000
		(H)	41.67		
L37	1	CU12PSM9P8XXX(1-3/8)	34.00 -	1.0000	1.0000
			34.08		
L37	3	2" Flexible Conduit	34.00 -	1.0000	1.0000
			34.08		
L37	4	LDF6-50A(1-1/4)	34.00 -	1.0000	1.0000
			34.08		
L37	10	2" Flexible Conduit	34.00 -	1.0000	1.0000
			34.08		
L37	16	HCS 6X12 4AWG(1-5/8)	34.00 -	1.0000	1.0000
			34.08		
L37	19	PL 0.75x4	34.00 -	1.0000	1.0000
			34.08		
L37	20	PL 0.75x4	34.00 -	1.0000	1.0000
			34.08		
L37	21	PL 0.75x4	34.00 -	1.0000	1.0000
			34.08		
L37	36	(Area) CCI-65FP-060100	34.00 -	1.0000	1.0000
		(H)	34.08		
L37	40	(Area) CCI-65FP-060100	34.00 -	1.0000	1.0000
		(H)	34.08		
L37	41	(Area) CCI-65FP-060100	34.00 -	1.0000	1.0000
		(H)	34.08		
L37	59	(Area) CCI-65FP-060100	34.00 -	1.0000	1.0000
		(H)	34.08		
L37	60	(Area) CCI-65FP-060100	34.00 -	1.0000	1.0000
		(H)	34.08		
L37	61	(Area) CCI-65FP-060100	34.00 -	1.0000	1.0000
		(H)	34.08		
L38	1	CU12PSM9P8XXX(1-3/8)	29.00 -	1.0000	1.0000
			34.00		
L38	3	2" Flexible Conduit	29.00 -	1.0000	1.0000
			34.00		
L38	4	LDF6-50A(1-1/4)	29.00 -	1.0000	1.0000
			34.00		
L38	10	2" Flexible Conduit	29.00 -	1.0000	1.0000
			34.00		
L38	16	HCS 6X12 4AWG(1-5/8)	29.00 -	1.0000	1.0000
			34.00		
L38	19	PL 0.75x4	29.00 -	1.0000	1.0000
			34.00		
L38	20	PL 0.75x4	29.00 -	1.0000	1.0000
			34.00		
L38	21	PL 0.75x4	29.00 -	1.0000	1.0000
			34.00		
L38	36	(Area) CCI-65FP-060100	29.00 -	1.0000	1.0000
		(H)	34.00		
L38	37	(Area) CCI-65FP-060100	29.00 -	1.0000	1.0000
		(H)	29.42		
L38	38	(Area) CCI-65FP-060100	29.00 -	1.0000	1.0000
		(H)	29.42		
L38	40	(Area) CCI-65FP-060100	29.00 -	1.0000	1.0000
		(H)	34.00		
L38	41	(Area) CCI-65FP-060100	29.00 -	1.0000	1.0000
		(H)	34.00		
L38	59	(Area) CCI-65FP-060100	29.00 -	1.0000	1.0000
		(H)	34.00		
L38	60	(Area) CCI-65FP-060100	29.00 -	1.0000	1.0000
		(H)	34.00		
L38	61	(Area) CCI-65FP-060100	29.00 -	1.0000	1.0000
		(H)	34.00		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L39	1	CU12PSM9P8XXX(1-3/8)	26.92 - 29.00	1.0000	1.0000
L39	3	2" Flexible Conduit	26.92 - 29.00	1.0000	1.0000
L39	4	LDF6-50A(1-1/4)	26.92 - 29.00	1.0000	1.0000
L39	10	2" Flexible Conduit	26.92 - 29.00	1.0000	1.0000
L39	16	HCS 6X12 4AWG(1-5/8)	26.92 - 29.00	1.0000	1.0000
L39	19	PL 0.75x4	26.92 - 29.00	1.0000	1.0000
L39	20	PL 0.75x4	26.92 - 29.00	1.0000	1.0000
L39	21	PL 0.75x4	26.92 - 29.00	1.0000	1.0000
L39	36	(Area) CCI-65FP-060100 (H)	26.92 - 29.00	1.0000	1.0000
L39	37	(Area) CCI-65FP-060100 (H)	26.92 - 29.00	1.0000	1.0000
L39	38	(Area) CCI-65FP-060100 (H)	26.92 - 29.00	1.0000	1.0000
L39	40	(Area) CCI-65FP-060100 (H)	26.92 - 29.00	1.0000	1.0000
L39	41	(Area) CCI-65FP-060100 (H)	26.92 - 29.00	1.0000	1.0000
L39	59	(Area) CCI-65FP-060100 (H)	26.92 - 29.00	1.0000	1.0000
L39	60	(Area) CCI-65FP-060100 (H)	26.92 - 29.00	1.0000	1.0000
L39	61	(Area) CCI-65FP-060100 (H)	26.92 - 29.00	1.0000	1.0000
L40	1	CU12PSM9P8XXX(1-3/8)	26.67 - 26.92	1.0000	1.0000
L40	3	2" Flexible Conduit	26.67 - 26.92	1.0000	1.0000
L40	4	LDF6-50A(1-1/4)	26.67 - 26.92	1.0000	1.0000
L40	10	2" Flexible Conduit	26.67 - 26.92	1.0000	1.0000
L40	16	HCS 6X12 4AWG(1-5/8)	26.67 - 26.92	1.0000	1.0000
L40	19	PL 0.75x4	26.67 - 26.92	1.0000	1.0000
L40	20	PL 0.75x4	26.67 - 26.92	1.0000	1.0000
L40	21	PL 0.75x4	26.67 - 26.92	1.0000	1.0000
L40	36	(Area) CCI-65FP-060100 (H)	26.67 - 26.92	1.0000	1.0000
L40	37	(Area) CCI-65FP-060100 (H)	26.67 - 26.92	1.0000	1.0000
L40	38	(Area) CCI-65FP-060100 (H)	26.67 - 26.92	1.0000	1.0000
L40	40	(Area) CCI-65FP-060100 (H)	26.67 - 26.92	1.0000	1.0000
L40	41	(Area) CCI-65FP-060100 (H)	26.67 - 26.92	1.0000	1.0000
L40	59	(Area) CCI-65FP-060100 (H)	26.67 - 26.92	1.0000	1.0000
L40	60	(Area) CCI-65FP-060100 (H)	26.67 - 26.92	1.0000	1.0000
L40	61	(Area) CCI-65FP-060100 (H)	26.67 - 26.92	1.0000	1.0000
L41	1	CU12PSM9P8XXX(1-3/8)	21.67 - 26.67	1.0000	1.0000
L41	3	2" Flexible Conduit	21.67 - 26.67	1.0000	1.0000
L41	4	LDF6-50A(1-1/4)	21.67 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L41	10	2" Flexible Conduit	26.67 - 21.67	1.0000	1.0000
L41	16	HCS 6X12 4AWG(1-5/8)	26.67 - 21.67	1.0000	1.0000
L41	19	PL 0.75x4	26.67 - 21.67	1.0000	1.0000
L41	20	PL 0.75x4	26.67 - 21.67	1.0000	1.0000
L41	21	PL 0.75x4	26.67 - 21.67	1.0000	1.0000
L41	36	(Area) CCI-65FP-060100 (H)	26.67 - 21.67	1.0000	1.0000
L41	37	(Area) CCI-65FP-060100 (H)	26.67 - 21.67	1.0000	1.0000
L41	38	(Area) CCI-65FP-060100 (H)	26.67 - 21.67	1.0000	1.0000
L41	40	(Area) CCI-65FP-060100 (H)	26.67 - 21.67	1.0000	1.0000
L41	41	(Area) CCI-65FP-060100 (H)	26.67 - 21.67	1.0000	1.0000
L41	59	(Area) CCI-65FP-060100 (H)	26.67 - 21.67	1.0000	1.0000
L41	60	(Area) CCI-65FP-060100 (H)	26.67 - 21.67	1.0000	1.0000
L41	61	(Area) CCI-65FP-060100 (H)	26.67 - 21.67	1.0000	1.0000
L42	1	CU12PSM9P8XXX(1-3/8)	18.00 - 21.67	1.0000	1.0000
L42	3	2" Flexible Conduit	18.00 - 21.67	1.0000	1.0000
L42	4	LDF6-50A(1-1/4)	18.00 - 21.67	1.0000	1.0000
L42	10	2" Flexible Conduit	18.00 - 21.67	1.0000	1.0000
L42	16	HCS 6X12 4AWG(1-5/8)	18.00 - 21.67	1.0000	1.0000
L42	19	PL 0.75x4	18.00 - 21.67	1.0000	1.0000
L42	20	PL 0.75x4	18.00 - 21.67	1.0000	1.0000
L42	21	PL 0.75x4	18.00 - 21.67	1.0000	1.0000
L42	33	(Area) CCI-65FP-060100 (H)	18.00 - 20.75	1.0000	1.0000
L42	34	(Area) CCI-65FP-060100 (H)	18.00 - 20.75	1.0000	1.0000
L42	35	(Area) CCI-65FP-060100 (H)	18.00 - 20.75	1.0000	1.0000
L42	36	(Area) CCI-65FP-060100 (H)	20.75 - 21.67	1.0000	1.0000
L42	37	(Area) CCI-65FP-060100 (H)	20.75 - 21.67	1.0000	1.0000
L42	38	(Area) CCI-65FP-060100 (H)	20.75 - 21.67	1.0000	1.0000
L42	40	(Area) CCI-65FP-060100 (H)	21.00 - 21.67	1.0000	1.0000
L42	41	(Area) CCI-65FP-060100 (H)	21.00 - 21.67	1.0000	1.0000
L42	52	(Area) CCI-65FP-065125 (H)	18.00 - 20.75	1.0000	1.0000
L42	53	(Area) CCI-65FP-065125 (H)	18.00 - 20.75	1.0000	1.0000
L42	54	(Area) CCI-65FP-065125 (H)	18.00 - 20.75	1.0000	1.0000
L42	56	(Area) CCI-65FP-060100 (H)	18.00 - 20.00	1.0000	1.0000
L42	57	(Area) CCI-65FP-060100 (H)	18.00 - 20.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L42	58	(Area) CCI-65FP-060100 (H)	18.00 - 20.00	1.0000	1.0000
L42	59	(Area) CCI-65FP-060100 (H)	20.00 - 21.67	1.0000	1.0000
L42	60	(Area) CCI-65FP-060100 (H)	20.00 - 21.67	1.0000	1.0000
L42	61	(Area) CCI-65FP-060100 (H)	20.00 - 21.67	1.0000	1.0000
L43	1	CU12PSM9P8XXX(1-3/8)	17.75 - 18.00	1.0000	1.0000
L43	3	2" Flexible Conduit	17.75 - 18.00	1.0000	1.0000
L43	4	LDF6-50A(1-1/4)	17.75 - 18.00	1.0000	1.0000
L43	10	2" Flexible Conduit	17.75 - 18.00	1.0000	1.0000
L43	16	HCS 6X12 4AWG(1-5/8)	17.75 - 18.00	1.0000	1.0000
L43	19	PL 0.75x4	17.75 - 18.00	1.0000	1.0000
L43	20	PL 0.75x4	17.75 - 18.00	1.0000	1.0000
L43	21	PL 0.75x4	17.75 - 18.00	1.0000	1.0000
L43	33	(Area) CCI-65FP-060100 (H)	17.75 - 18.00	1.0000	1.0000
L43	34	(Area) CCI-65FP-060100 (H)	17.75 - 18.00	1.0000	1.0000
L43	35	(Area) CCI-65FP-060100 (H)	17.75 - 18.00	1.0000	1.0000
L43	52	(Area) CCI-65FP-065125 (H)	17.75 - 18.00	1.0000	1.0000
L43	53	(Area) CCI-65FP-065125 (H)	17.75 - 18.00	1.0000	1.0000
L43	54	(Area) CCI-65FP-065125 (H)	17.75 - 18.00	1.0000	1.0000
L43	56	(Area) CCI-65FP-060100 (H)	17.75 - 18.00	1.0000	1.0000
L43	57	(Area) CCI-65FP-060100 (H)	17.75 - 18.00	1.0000	1.0000
L43	58	(Area) CCI-65FP-060100 (H)	17.75 - 18.00	1.0000	1.0000
L44	1	CU12PSM9P8XXX(1-3/8)	17.50 - 17.75	1.0000	1.0000
L44	3	2" Flexible Conduit	17.50 - 17.75	1.0000	1.0000
L44	4	LDF6-50A(1-1/4)	17.50 - 17.75	1.0000	1.0000
L44	10	2" Flexible Conduit	17.50 - 17.75	1.0000	1.0000
L44	16	HCS 6X12 4AWG(1-5/8)	17.50 - 17.75	1.0000	1.0000
L44	19	PL 0.75x4	17.50 - 17.75	1.0000	1.0000
L44	20	PL 0.75x4	17.50 - 17.75	1.0000	1.0000
L44	21	PL 0.75x4	17.50 - 17.75	1.0000	1.0000
L44	33	(Area) CCI-65FP-060100 (H)	17.50 - 17.75	1.0000	1.0000
L44	34	(Area) CCI-65FP-060100 (H)	17.50 - 17.75	1.0000	1.0000
L44	35	(Area) CCI-65FP-060100 (H)	17.50 - 17.75	1.0000	1.0000
L44	52	(Area) CCI-65FP-065125 (H)	17.50 - 17.75	1.0000	1.0000
L44	53	(Area) CCI-65FP-065125 (H)	17.50 - 17.75	1.0000	1.0000
L44	54	(Area) CCI-65FP-065125	17.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		(H)	17.75		
L44	56	(Area) CCI-65FP-060100	17.50 - 17.75	1.0000	1.0000
		(H)			
L44	57	(Area) CCI-65FP-060100	17.50 - 17.75	1.0000	1.0000
		(H)			
L44	58	(Area) CCI-65FP-060100	17.50 - 17.75	1.0000	1.0000
		(H)			
L45	1	CU12PSM9P8XXX(1-3/8)	17.25 - 17.50	1.0000	1.0000
L45	3	2" Flexible Conduit	17.25 - 17.50	1.0000	1.0000
L45	4	LDF6-50A(1-1/4)	17.25 - 17.50	1.0000	1.0000
L45	10	2" Flexible Conduit	17.25 - 17.50	1.0000	1.0000
L45	16	HCS 6X12 4AWG(1-5/8)	17.25 - 17.50	1.0000	1.0000
L45	19	PL 0.75x4	17.25 - 17.50	1.0000	1.0000
L45	20	PL 0.75x4	17.25 - 17.50	1.0000	1.0000
L45	21	PL 0.75x4	17.25 - 17.50	1.0000	1.0000
L45	33	(Area) CCI-65FP-060100	17.25 - 17.50	1.0000	1.0000
		(H)			
L45	34	(Area) CCI-65FP-060100	17.25 - 17.50	1.0000	1.0000
		(H)			
L45	35	(Area) CCI-65FP-060100	17.25 - 17.50	1.0000	1.0000
		(H)			
L45	52	(Area) CCI-65FP-065125	17.25 - 17.50	1.0000	1.0000
		(H)			
L45	53	(Area) CCI-65FP-065125	17.25 - 17.50	1.0000	1.0000
		(H)			
L45	54	(Area) CCI-65FP-065125	17.25 - 17.50	1.0000	1.0000
		(H)			
L45	56	(Area) CCI-65FP-060100	17.25 - 17.50	1.0000	1.0000
		(H)			
L45	57	(Area) CCI-65FP-060100	17.25 - 17.50	1.0000	1.0000
		(H)			
L45	58	(Area) CCI-65FP-060100	17.25 - 17.50	1.0000	1.0000
		(H)			
L46	1	CU12PSM9P8XXX(1-3/8)	17.08 - 17.25	1.0000	1.0000
L46	3	2" Flexible Conduit	17.08 - 17.25	1.0000	1.0000
L46	4	LDF6-50A(1-1/4)	17.08 - 17.25	1.0000	1.0000
L46	10	2" Flexible Conduit	17.08 - 17.25	1.0000	1.0000
L46	16	HCS 6X12 4AWG(1-5/8)	17.08 - 17.25	1.0000	1.0000
L46	19	PL 0.75x4	17.08 - 17.25	1.0000	1.0000
L46	20	PL 0.75x4	17.08 - 17.25	1.0000	1.0000
L46	21	PL 0.75x4	17.08 - 17.25	1.0000	1.0000
L46	33	(Area) CCI-65FP-060100	17.08 - 17.25	1.0000	1.0000
		(H)			
L46	34	(Area) CCI-65FP-060100	17.08 - 17.25	1.0000	1.0000
		(H)			
L46	35	(Area) CCI-65FP-060100	17.08 - 17.25	1.0000	1.0000
		(H)			
L46	52	(Area) CCI-65FP-065125	17.08 - 17.25	1.0000	1.0000
		(H)			
L46	53	(Area) CCI-65FP-065125	17.08 - 17.25	1.0000	1.0000
		(H)			
L46	54	(Area) CCI-65FP-065125	17.08 - 17.25	1.0000	1.0000
		(H)			

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L46	56	(Area) CCI-65FP-060100 (H)	17.08 - 17.25	1.0000	1.0000
L46	57	(Area) CCI-65FP-060100 (H)	17.08 - 17.25	1.0000	1.0000
L46	58	(Area) CCI-65FP-060100 (H)	17.08 - 17.25	1.0000	1.0000
L47	1	CU12PSM9P8XXX(1-3/8)	16.83 - 17.08	1.0000	1.0000
L47	3	2" Flexible Conduit	16.83 - 17.08	1.0000	1.0000
L47	4	LDF6-50A(1-1/4)	16.83 - 17.08	1.0000	1.0000
L47	10	2" Flexible Conduit	16.83 - 17.08	1.0000	1.0000
L47	16	HCS 6X12 4AWG(1-5/8)	16.83 - 17.08	1.0000	1.0000
L47	19	PL 0.75x4	16.83 - 17.08	1.0000	1.0000
L47	20	PL 0.75x4	16.83 - 17.08	1.0000	1.0000
L47	21	PL 0.75x4	16.83 - 17.08	1.0000	1.0000
L47	33	(Area) CCI-65FP-060100 (H)	16.83 - 17.08	1.0000	1.0000
L47	34	(Area) CCI-65FP-060100 (H)	16.83 - 17.08	1.0000	1.0000
L47	35	(Area) CCI-65FP-060100 (H)	16.83 - 17.08	1.0000	1.0000
L47	52	(Area) CCI-65FP-065125 (H)	16.83 - 17.08	1.0000	1.0000
L47	53	(Area) CCI-65FP-065125 (H)	16.83 - 17.08	1.0000	1.0000
L47	54	(Area) CCI-65FP-065125 (H)	16.83 - 17.08	1.0000	1.0000
L47	56	(Area) CCI-65FP-060100 (H)	16.83 - 17.08	1.0000	1.0000
L47	57	(Area) CCI-65FP-060100 (H)	16.83 - 17.08	1.0000	1.0000
L47	58	(Area) CCI-65FP-060100 (H)	16.83 - 17.08	1.0000	1.0000
L48	1	CU12PSM9P8XXX(1-3/8)	13.00 - 16.83	1.0000	1.0000
L48	3	2" Flexible Conduit	13.00 - 16.83	1.0000	1.0000
L48	4	LDF6-50A(1-1/4)	13.00 - 16.83	1.0000	1.0000
L48	10	2" Flexible Conduit	13.00 - 16.83	1.0000	1.0000
L48	16	HCS 6X12 4AWG(1-5/8)	13.00 - 16.83	1.0000	1.0000
L48	19	PL 0.75x4	15.83 - 16.83	1.0000	1.0000
L48	20	PL 0.75x4	15.83 - 16.83	1.0000	1.0000
L48	21	PL 0.75x4	15.83 - 16.83	1.0000	1.0000
L48	29	(Area) CCI-65FP-060100 (H)	13.00 - 15.50	1.0000	1.0000
L48	30	(Area) CCI-65FP-060100 (H)	13.00 - 15.50	1.0000	1.0000
L48	31	(Area) CCI-65FP-060100 (H)	13.00 - 15.50	1.0000	1.0000
L48	33	(Area) CCI-65FP-060100 (H)	13.00 - 16.83	1.0000	1.0000
L48	34	(Area) CCI-65FP-060100 (H)	13.00 - 16.83	1.0000	1.0000
L48	35	(Area) CCI-65FP-060100 (H)	13.00 - 16.83	1.0000	1.0000
L48	52	(Area) CCI-65FP-065125	13.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		(H)	16.83		
L48	53	(Area) CCI-65FP-065125	13.00 -	1.0000	1.0000
		(H)	16.83		
L48	54	(Area) CCI-65FP-065125	13.00 -	1.0000	1.0000
		(H)	16.83		
L48	56	(Area) CCI-65FP-060100	13.00 -	1.0000	1.0000
		(H)	16.83		
L48	57	(Area) CCI-65FP-060100	13.00 -	1.0000	1.0000
		(H)	16.83		
L48	58	(Area) CCI-65FP-060100	13.00 -	1.0000	1.0000
		(H)	16.83		
L49	1	CU12PSM9P8XXX(1-3/8)	12.75 -	1.0000	1.0000
			13.00		
L49	3	2" Flexible Conduit	12.75 -	1.0000	1.0000
			13.00		
L49	4	LDF6-50A(1-1/4)	12.75 -	1.0000	1.0000
			13.00		
L49	10	2" Flexible Conduit	12.75 -	1.0000	1.0000
			13.00		
L49	16	HCS 6X12 4AWG(1-5/8)	12.75 -	1.0000	1.0000
			13.00		
L49	29	(Area) CCI-65FP-060100	12.75 -	1.0000	1.0000
		(H)	13.00		
L49	30	(Area) CCI-65FP-060100	12.75 -	1.0000	1.0000
		(H)	13.00		
L49	31	(Area) CCI-65FP-060100	12.75 -	1.0000	1.0000
		(H)	13.00		
L49	33	(Area) CCI-65FP-060100	12.75 -	1.0000	1.0000
		(H)	13.00		
L49	34	(Area) CCI-65FP-060100	12.75 -	1.0000	1.0000
		(H)	13.00		
L49	35	(Area) CCI-65FP-060100	12.75 -	1.0000	1.0000
		(H)	13.00		
L49	52	(Area) CCI-65FP-065125	12.75 -	1.0000	1.0000
		(H)	13.00		
L49	53	(Area) CCI-65FP-065125	12.75 -	1.0000	1.0000
		(H)	13.00		
L49	54	(Area) CCI-65FP-065125	12.75 -	1.0000	1.0000
		(H)	13.00		
L49	56	(Area) CCI-65FP-060100	12.75 -	1.0000	1.0000
		(H)	13.00		
L49	57	(Area) CCI-65FP-060100	12.75 -	1.0000	1.0000
		(H)	13.00		
L49	58	(Area) CCI-65FP-060100	12.75 -	1.0000	1.0000
		(H)	13.00		
L50	1	CU12PSM9P8XXX(1-3/8)	11.92 -	1.0000	1.0000
			12.75		
L50	3	2" Flexible Conduit	11.92 -	1.0000	1.0000
			12.75		
L50	4	LDF6-50A(1-1/4)	11.92 -	1.0000	1.0000
			12.75		
L50	10	2" Flexible Conduit	11.92 -	1.0000	1.0000
			12.75		
L50	16	HCS 6X12 4AWG(1-5/8)	11.92 -	1.0000	1.0000
			12.75		
L50	29	(Area) CCI-65FP-060100	11.92 -	1.0000	1.0000
		(H)	12.75		
L50	30	(Area) CCI-65FP-060100	11.92 -	1.0000	1.0000
		(H)	12.75		
L50	31	(Area) CCI-65FP-060100	11.92 -	1.0000	1.0000
		(H)	12.75		
L50	33	(Area) CCI-65FP-060100	11.92 -	1.0000	1.0000
		(H)	12.75		
L50	34	(Area) CCI-65FP-060100	11.92 -	1.0000	1.0000
		(H)	12.75		
L50	35	(Area) CCI-65FP-060100	11.92 -	1.0000	1.0000
		(H)	12.75		
L50	52	(Area) CCI-65FP-065125	11.92 -	1.0000	1.0000
		(H)	12.75		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L50	53	(Area) CCI-65FP-065125 (H)	11.92 - 12.75	1.0000	1.0000
L50	54	(Area) CCI-65FP-065125 (H)	11.92 - 12.75	1.0000	1.0000
L50	56	(Area) CCI-65FP-060100 (H)	11.92 - 12.75	1.0000	1.0000
L50	57	(Area) CCI-65FP-060100 (H)	11.92 - 12.75	1.0000	1.0000
L50	58	(Area) CCI-65FP-060100 (H)	11.92 - 12.75	1.0000	1.0000
L51	1	CU12PSM9P8XXX(1-3/8)	11.67 - 11.92	1.0000	1.0000
L51	3	2" Flexible Conduit	11.67 - 11.92	1.0000	1.0000
L51	4	LDF6-50A(1-1/4)	11.67 - 11.92	1.0000	1.0000
L51	10	2" Flexible Conduit	11.67 - 11.92	1.0000	1.0000
L51	16	HCS 6X12 4AWG(1-5/8)	11.67 - 11.92	1.0000	1.0000
L51	29	(Area) CCI-65FP-060100 (H)	11.67 - 11.92	1.0000	1.0000
L51	30	(Area) CCI-65FP-060100 (H)	11.67 - 11.92	1.0000	1.0000
L51	31	(Area) CCI-65FP-060100 (H)	11.67 - 11.92	1.0000	1.0000
L51	33	(Area) CCI-65FP-060100 (H)	11.67 - 11.92	1.0000	1.0000
L51	34	(Area) CCI-65FP-060100 (H)	11.67 - 11.92	1.0000	1.0000
L51	35	(Area) CCI-65FP-060100 (H)	11.67 - 11.92	1.0000	1.0000
L51	52	(Area) CCI-65FP-065125 (H)	11.67 - 11.92	1.0000	1.0000
L51	53	(Area) CCI-65FP-065125 (H)	11.67 - 11.92	1.0000	1.0000
L51	54	(Area) CCI-65FP-065125 (H)	11.67 - 11.92	1.0000	1.0000
L51	56	(Area) CCI-65FP-060100 (H)	11.67 - 11.92	1.0000	1.0000
L51	57	(Area) CCI-65FP-060100 (H)	11.67 - 11.92	1.0000	1.0000
L51	58	(Area) CCI-65FP-060100 (H)	11.67 - 11.92	1.0000	1.0000
L52	1	CU12PSM9P8XXX(1-3/8)	6.67 - 11.67	1.0000	1.0000
L52	3	2" Flexible Conduit	6.67 - 11.67	1.0000	1.0000
L52	4	LDF6-50A(1-1/4)	6.67 - 11.67	1.0000	1.0000
L52	10	2" Flexible Conduit	6.67 - 11.67	1.0000	1.0000
L52	16	HCS 6X12 4AWG(1-5/8)	6.67 - 11.67	1.0000	1.0000
L52	29	(Area) CCI-65FP-060100 (H)	6.67 - 11.67	1.0000	1.0000
L52	30	(Area) CCI-65FP-060100 (H)	6.67 - 11.67	1.0000	1.0000
L52	31	(Area) CCI-65FP-060100 (H)	6.67 - 11.67	1.0000	1.0000
L52	33	(Area) CCI-65FP-060100 (H)	9.42 - 11.67	1.0000	1.0000
L52	34	(Area) CCI-65FP-060100 (H)	9.42 - 11.67	1.0000	1.0000
L52	35	(Area) CCI-65FP-060100 (H)	9.42 - 11.67	1.0000	1.0000
L52	51	(Area) CCI-65FP-065125 (H)	6.67 - 9.25	1.0000	1.0000
L52	52	(Area) CCI-65FP-065125 (H)	6.67 - 11.67	1.0000	1.0000
L52	53	(Area) CCI-65FP-065125 (H)	6.67 - 11.67	1.0000	1.0000
L52	54	(Area) CCI-65FP-065125 (H)	6.67 - 11.67	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L52	56	(Area) CCI-65FP-060100 (H)	6.67 - 11.67	1.0000	1.0000
L52	57	(Area) CCI-65FP-060100 (H)	6.67 - 11.67	1.0000	1.0000
L52	58	(Area) CCI-65FP-060100 (H)	6.67 - 11.67	1.0000	1.0000
L53	1	CU12PSM9P8XXX(1-3/8)	6.50 - 6.67	1.0000	1.0000
L53	3	2" Flexible Conduit	6.50 - 6.67	1.0000	1.0000
L53	4	LDF6-50A(1-1/4)	6.50 - 6.67	1.0000	1.0000
L53	10	2" Flexible Conduit	6.50 - 6.67	1.0000	1.0000
L53	16	HCS 6X12 4AWG(1-5/8)	6.50 - 6.67	1.0000	1.0000
L53	29	(Area) CCI-65FP-060100 (H)	6.50 - 6.67	1.0000	1.0000
L53	30	(Area) CCI-65FP-060100 (H)	6.50 - 6.67	1.0000	1.0000
L53	31	(Area) CCI-65FP-060100 (H)	6.50 - 6.67	1.0000	1.0000
L53	51	(Area) CCI-65FP-065125 (H)	6.50 - 6.67	1.0000	1.0000
L53	52	(Area) CCI-65FP-065125 (H)	6.50 - 6.67	1.0000	1.0000
L53	53	(Area) CCI-65FP-065125 (H)	6.50 - 6.67	1.0000	1.0000
L53	54	(Area) CCI-65FP-065125 (H)	6.50 - 6.67	1.0000	1.0000
L53	56	(Area) CCI-65FP-060100 (H)	6.50 - 6.67	1.0000	1.0000
L53	57	(Area) CCI-65FP-060100 (H)	6.50 - 6.67	1.0000	1.0000
L53	58	(Area) CCI-65FP-060100 (H)	6.50 - 6.67	1.0000	1.0000
L54	1	CU12PSM9P8XXX(1-3/8)	6.25 - 6.50	1.0000	1.0000
L54	3	2" Flexible Conduit	6.25 - 6.50	1.0000	1.0000
L54	4	LDF6-50A(1-1/4)	6.25 - 6.50	1.0000	1.0000
L54	10	2" Flexible Conduit	6.25 - 6.50	1.0000	1.0000
L54	16	HCS 6X12 4AWG(1-5/8)	6.25 - 6.50	1.0000	1.0000
L54	29	(Area) CCI-65FP-060100 (H)	6.25 - 6.50	1.0000	1.0000
L54	30	(Area) CCI-65FP-060100 (H)	6.25 - 6.50	1.0000	1.0000
L54	31	(Area) CCI-65FP-060100 (H)	6.25 - 6.50	1.0000	1.0000
L54	51	(Area) CCI-65FP-065125 (H)	6.25 - 6.50	1.0000	1.0000
L54	52	(Area) CCI-65FP-065125 (H)	6.25 - 6.50	1.0000	1.0000
L54	53	(Area) CCI-65FP-065125 (H)	6.25 - 6.50	1.0000	1.0000
L54	54	(Area) CCI-65FP-065125 (H)	6.25 - 6.50	1.0000	1.0000
L54	56	(Area) CCI-65FP-060100 (H)	6.25 - 6.50	1.0000	1.0000
L54	57	(Area) CCI-65FP-060100 (H)	6.25 - 6.50	1.0000	1.0000
L54	58	(Area) CCI-65FP-060100 (H)	6.25 - 6.50	1.0000	1.0000
L55	1	CU12PSM9P8XXX(1-3/8)	3.75 - 6.25	1.0000	1.0000
L55	3	2" Flexible Conduit	3.75 - 6.25	1.0000	1.0000
L55	4	LDF6-50A(1-1/4)	3.75 - 6.25	1.0000	1.0000
L55	10	2" Flexible Conduit	3.75 - 6.25	1.0000	1.0000
L55	16	HCS 6X12 4AWG(1-5/8)	3.75 - 6.25	1.0000	1.0000
L55	29	(Area) CCI-65FP-060100 (H)	3.75 - 6.25	1.0000	1.0000
L55	30	(Area) CCI-65FP-060100 (H)	3.75 - 6.25	1.0000	1.0000
L55	31	(Area) CCI-65FP-060100 (H)	3.75 - 6.25	1.0000	1.0000
L55	51	(Area) CCI-65FP-065125 (H)	3.75 - 6.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L55	52	(Area) CCI-65FP-065125 (H)	3.75 - 6.25	1.0000	1.0000
L55	53	(Area) CCI-65FP-065125 (H)	3.75 - 6.25	1.0000	1.0000
L55	54	(Area) CCI-65FP-065125 (H)	3.75 - 6.25	1.0000	1.0000
L55	56	(Area) CCI-65FP-060100 (H)	3.75 - 6.25	1.0000	1.0000
L55	57	(Area) CCI-65FP-060100 (H)	3.75 - 6.25	1.0000	1.0000
L55	58	(Area) CCI-65FP-060100 (H)	3.75 - 6.25	1.0000	1.0000
L56	1	CU12PSM9P8XXX(1-3/8)	3.50 - 3.75	1.0000	1.0000
L56	3	2" Flexible Conduit	3.50 - 3.75	1.0000	1.0000
L56	4	LDF6-50A(1-1/4)	3.50 - 3.75	1.0000	1.0000
L56	10	2" Flexible Conduit	3.50 - 3.75	1.0000	1.0000
L56	16	HCS 6X12 4AWG(1-5/8)	3.50 - 3.75	1.0000	1.0000
L56	29	(Area) CCI-65FP-060100 (H)	3.50 - 3.75	1.0000	1.0000
L56	30	(Area) CCI-65FP-060100 (H)	3.50 - 3.75	1.0000	1.0000
L56	31	(Area) CCI-65FP-060100 (H)	3.50 - 3.75	1.0000	1.0000
L56	51	(Area) CCI-65FP-065125 (H)	3.50 - 3.75	1.0000	1.0000
L56	52	(Area) CCI-65FP-065125 (H)	3.50 - 3.75	1.0000	1.0000
L56	53	(Area) CCI-65FP-065125 (H)	3.50 - 3.75	1.0000	1.0000
L56	54	(Area) CCI-65FP-065125 (H)	3.50 - 3.75	1.0000	1.0000
L56	56	(Area) CCI-65FP-060100 (H)	3.50 - 3.75	1.0000	1.0000
L56	57	(Area) CCI-65FP-060100 (H)	3.50 - 3.75	1.0000	1.0000
L56	58	(Area) CCI-65FP-060100 (H)	3.50 - 3.75	1.0000	1.0000
L57	1	CU12PSM9P8XXX(1-3/8)	3.00 - 3.50	1.0000	1.0000
L57	3	2" Flexible Conduit	3.00 - 3.50	1.0000	1.0000
L57	4	LDF6-50A(1-1/4)	3.00 - 3.50	1.0000	1.0000
L57	10	2" Flexible Conduit	3.00 - 3.50	1.0000	1.0000
L57	16	HCS 6X12 4AWG(1-5/8)	3.00 - 3.50	1.0000	1.0000
L57	29	(Area) CCI-65FP-060100 (H)	3.00 - 3.50	1.0000	1.0000
L57	30	(Area) CCI-65FP-060100 (H)	3.00 - 3.50	1.0000	1.0000
L57	31	(Area) CCI-65FP-060100 (H)	3.00 - 3.50	1.0000	1.0000
L57	51	(Area) CCI-65FP-065125 (H)	3.00 - 3.50	1.0000	1.0000
L57	52	(Area) CCI-65FP-065125 (H)	3.00 - 3.50	1.0000	1.0000
L57	53	(Area) CCI-65FP-065125 (H)	3.00 - 3.50	1.0000	1.0000
L57	54	(Area) CCI-65FP-065125 (H)	3.00 - 3.50	1.0000	1.0000
L57	56	(Area) CCI-65FP-060100 (H)	3.00 - 3.50	1.0000	1.0000
L57	57	(Area) CCI-65FP-060100 (H)	3.00 - 3.50	1.0000	1.0000
L57	58	(Area) CCI-65FP-060100 (H)	3.00 - 3.50	1.0000	1.0000
L58	1	CU12PSM9P8XXX(1-3/8)	2.75 - 3.00	1.0000	1.0000
L58	3	2" Flexible Conduit	2.75 - 3.00	1.0000	1.0000
L58	4	LDF6-50A(1-1/4)	2.75 - 3.00	1.0000	1.0000
L58	10	2" Flexible Conduit	2.75 - 3.00	1.0000	1.0000
L58	16	HCS 6X12 4AWG(1-5/8)	2.75 - 3.00	1.0000	1.0000
L58	29	(Area) CCI-65FP-060100 (H)	2.75 - 3.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L58	30	(Area) CCI-65FP-060100 (H)	2.75 - 3.00	1.0000	1.0000
L58	31	(Area) CCI-65FP-060100 (H)	2.75 - 3.00	1.0000	1.0000
L58	51	(Area) CCI-65FP-065125 (H)	2.75 - 3.00	1.0000	1.0000
L58	52	(Area) CCI-65FP-065125 (H)	2.75 - 3.00	1.0000	1.0000
L58	53	(Area) CCI-65FP-065125 (H)	2.75 - 3.00	1.0000	1.0000
L58	54	(Area) CCI-65FP-065125 (H)	2.75 - 3.00	1.0000	1.0000
L58	56	(Area) CCI-65FP-060100 (H)	2.75 - 3.00	1.0000	1.0000
L58	57	(Area) CCI-65FP-060100 (H)	2.75 - 3.00	1.0000	1.0000
L58	58	(Area) CCI-65FP-060100 (H)	2.75 - 3.00	1.0000	1.0000
L59	1	CU12PSM9P8XXX(1-3/8)	0.00 - 2.75	1.0000	1.0000
L59	3	2" Flexible Conduit	0.00 - 2.75	1.0000	1.0000
L59	4	LDF6-50A(1-1/4)	0.00 - 2.75	1.0000	1.0000
L59	10	2" Flexible Conduit	0.00 - 2.75	1.0000	1.0000
L59	16	HCS 6X12 4AWG(1-5/8)	0.00 - 2.75	1.0000	1.0000
L59	29	(Area) CCI-65FP-060100 (H)	0.00 - 2.75	1.0000	1.0000
L59	30	(Area) CCI-65FP-060100 (H)	0.00 - 2.75	1.0000	1.0000
L59	31	(Area) CCI-65FP-060100 (H)	0.00 - 2.75	1.0000	1.0000
L59	51	(Area) CCI-65FP-065125 (H)	0.00 - 2.75	1.0000	1.0000
L59	52	(Area) CCI-65FP-065125 (H)	0.00 - 2.75	1.0000	1.0000
L59	53	(Area) CCI-65FP-065125 (H)	0.00 - 2.75	1.0000	1.0000
L59	54	(Area) CCI-65FP-065125 (H)	0.00 - 2.75	1.0000	1.0000
L59	56	(Area) CCI-65FP-060100 (H)	0.00 - 2.75	1.0000	1.0000
L59	57	(Area) CCI-65FP-060100 (H)	0.00 - 2.75	1.0000	1.0000
L59	58	(Area) CCI-65FP-060100 (H)	0.00 - 2.75	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L8	47	(Area) CCI-65FP-045100 (H)	90.00 - 91.50	Auto	0.0000
L8	48	(Area) CCI-65FP-045100 (H)	90.00 - 91.50	Auto	0.0000
L8	49	(Area) CCI-65FP-045100 (H)	90.00 - 91.50	Auto	0.0000
L9	47	(Area) CCI-65FP-045100 (H)	89.75 - 90.00	Auto	0.0734
L9	48	(Area) CCI-65FP-045100 (H)	89.75 - 90.00	Auto	0.0734
L9	49	(Area) CCI-65FP-045100	89.75 -	Auto	0.0734

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
		(H)	90.00		
L10	25	PL 0.75x4	84.75 - 85.83	Auto	0.0000
L10	26	PL 0.75x4	84.75 - 85.83	Auto	0.0000
L10	27	PL 0.75x4	84.75 - 85.83	Auto	0.0000
L10	47	(Area) CCI-65FP-045100 (H)	84.75 - 89.75	Auto	0.0244
L10	48	(Area) CCI-65FP-045100 (H)	84.75 - 89.75	Auto	0.0244
L10	49	(Area) CCI-65FP-045100 (H)	84.75 - 89.75	Auto	0.0244
L10	62	(Area) CCI-65FP-045125 (H)	84.75 - 85.17	Auto	0.0000
L10	63	(Area) CCI-65FP-045125 (H)	84.75 - 85.17	Auto	0.0000
L10	64	(Area) CCI-65FP-045125 (H)	84.75 - 85.17	Auto	0.0000
L11	25	PL 0.75x4	84.58 - 84.75	Auto	0.0000
L11	26	PL 0.75x4	84.58 - 84.75	Auto	0.0000
L11	27	PL 0.75x4	84.58 - 84.75	Auto	0.0000
L11	47	(Area) CCI-65FP-045100 (H)	84.58 - 84.75	Auto	0.0000
L11	48	(Area) CCI-65FP-045100 (H)	84.58 - 84.75	Auto	0.0000
L11	49	(Area) CCI-65FP-045100 (H)	84.58 - 84.75	Auto	0.0000
L11	62	(Area) CCI-65FP-045125 (H)	84.58 - 84.75	Auto	0.0000
L11	63	(Area) CCI-65FP-045125 (H)	84.58 - 84.75	Auto	0.0000
L11	64	(Area) CCI-65FP-045125 (H)	84.58 - 84.75	Auto	0.0000
L12	25	PL 0.75x4	84.33 - 84.58	Auto	0.0000
L12	26	PL 0.75x4	84.33 - 84.58	Auto	0.0000
L12	27	PL 0.75x4	84.33 - 84.58	Auto	0.0000
L12	47	(Area) CCI-65FP-045100 (H)	84.33 - 84.58	Auto	0.0745
L12	48	(Area) CCI-65FP-045100 (H)	84.33 - 84.58	Auto	0.0745
L12	49	(Area) CCI-65FP-045100 (H)	84.33 - 84.58	Auto	0.0745
L12	62	(Area) CCI-65FP-045125 (H)	84.33 - 84.58	Auto	0.0745
L12	63	(Area) CCI-65FP-045125 (H)	84.33 - 84.58	Auto	0.0745
L12	64	(Area) CCI-65FP-045125 (H)	84.33 - 84.58	Auto	0.0745
L13	25	PL 0.75x4	83.42 - 84.33	Auto	0.0000
L13	26	PL 0.75x4	83.42 - 84.33	Auto	0.0000
L13	27	PL 0.75x4	83.42 - 84.33	Auto	0.0000
L13	47	(Area) CCI-65FP-045100 (H)	83.42 - 84.33	Auto	0.0584
L13	48	(Area) CCI-65FP-045100 (H)	83.42 - 84.33	Auto	0.0584
L13	49	(Area) CCI-65FP-045100 (H)	83.42 - 84.33	Auto	0.0584
L13	62	(Area) CCI-65FP-045125	83.42 -	Auto	0.0584

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
		(H)	84.33		
L13	63	(Area) CCI-65FP-045125	83.42 -	Auto	0.0584
		(H)	84.33		
L13	64	(Area) CCI-65FP-045125	83.42 -	Auto	0.0584
		(H)	84.33		
L14	25	PL 0.75x4	83.17 -	Auto	0.1487
			83.42		
L14	26	PL 0.75x4	83.17 -	Auto	0.1487
			83.42		
L14	27	PL 0.75x4	83.17 -	Auto	0.1487
			83.42		
L14	47	(Area) CCI-65FP-045100	83.17 -	Auto	0.2433
		(H)	83.42		
L14	48	(Area) CCI-65FP-045100	83.17 -	Auto	0.2433
		(H)	83.42		
L14	49	(Area) CCI-65FP-045100	83.17 -	Auto	0.2433
		(H)	83.42		
L14	62	(Area) CCI-65FP-045125	83.17 -	Auto	0.2433
		(H)	83.42		
L14	63	(Area) CCI-65FP-045125	83.17 -	Auto	0.2433
		(H)	83.42		
L14	64	(Area) CCI-65FP-045125	83.17 -	Auto	0.2433
		(H)	83.42		
L15	25	PL 0.75x4	83.00 -	Auto	0.1452
			83.17		
L15	26	PL 0.75x4	83.00 -	Auto	0.1452
			83.17		
L15	27	PL 0.75x4	83.00 -	Auto	0.1452
			83.17		
L15	47	(Area) CCI-65FP-045100	83.00 -	Auto	0.2402
		(H)	83.17		
L15	48	(Area) CCI-65FP-045100	83.00 -	Auto	0.2402
		(H)	83.17		
L15	49	(Area) CCI-65FP-045100	83.00 -	Auto	0.2402
		(H)	83.17		
L15	62	(Area) CCI-65FP-045125	83.00 -	Auto	0.2402
		(H)	83.17		
L15	63	(Area) CCI-65FP-045125	83.00 -	Auto	0.2402
		(H)	83.17		
L15	64	(Area) CCI-65FP-045125	83.00 -	Auto	0.2402
		(H)	83.17		
L16	25	PL 0.75x4	82.75 -	Auto	0.0000
			83.00		
L16	26	PL 0.75x4	82.75 -	Auto	0.0000
			83.00		
L16	27	PL 0.75x4	82.75 -	Auto	0.0000
			83.00		
L16	47	(Area) CCI-65FP-045100	82.75 -	Auto	0.0882
		(H)	83.00		
L16	48	(Area) CCI-65FP-045100	82.75 -	Auto	0.0882
		(H)	83.00		
L16	49	(Area) CCI-65FP-045100	82.75 -	Auto	0.0882
		(H)	83.00		
L16	62	(Area) CCI-65FP-045125	82.75 -	Auto	0.0882
		(H)	83.00		
L16	63	(Area) CCI-65FP-045125	82.75 -	Auto	0.0882
		(H)	83.00		
L16	64	(Area) CCI-65FP-045125	82.75 -	Auto	0.0882
		(H)	83.00		
L17	25	PL 0.75x4	77.75 -	Auto	0.0000
			82.75		
L17	26	PL 0.75x4	77.75 -	Auto	0.0000
			82.75		
L17	27	PL 0.75x4	77.75 -	Auto	0.0000
			82.75		
L17	47	(Area) CCI-65FP-045100	81.50 -	Auto	0.0547
		(H)	82.75		
L17	48	(Area) CCI-65FP-045100	81.50 -	Auto	0.0547

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
		(H)	82.75		
L17	49	(Area) CCI-65FP-045100	81.50 - 82.75	Auto	0.0547
		(H)			
L17	62	(Area) CCI-65FP-045125	77.75 - 82.75	Auto	0.0275
		(H)			
L17	63	(Area) CCI-65FP-045125	77.75 - 82.75	Auto	0.0275
		(H)			
L17	64	(Area) CCI-65FP-045125	77.75 - 82.75	Auto	0.0275
		(H)			
L18	25	PL 0.75x4	70.00 - 77.75	Auto	0.0000
L18	26	PL 0.75x4	70.00 - 77.75	Auto	0.0000
L18	27	PL 0.75x4	70.00 - 77.75	Auto	0.0000
L18	62	(Area) CCI-65FP-045125	70.00 - 77.75	Auto	0.0000
		(H)			
L18	63	(Area) CCI-65FP-045125	70.00 - 77.75	Auto	0.0000
		(H)			
L18	64	(Area) CCI-65FP-045125	70.00 - 77.75	Auto	0.0000
		(H)			
L19	25	PL 0.75x4	69.00 - 70.00	Auto	0.0000
L19	26	PL 0.75x4	69.00 - 70.00	Auto	0.0000
L19	27	PL 0.75x4	69.00 - 70.00	Auto	0.0000
L19	62	(Area) CCI-65FP-045125	69.00 - 70.00	Auto	0.0000
		(H)			
L19	63	(Area) CCI-65FP-045125	69.00 - 70.00	Auto	0.0000
		(H)			
L19	64	(Area) CCI-65FP-045125	69.00 - 70.00	Auto	0.0000
		(H)			
L20	22	PL 0.75x4	67.08 - 68.25	Auto	0.0000
L20	23	PL 0.75x4	67.08 - 68.25	Auto	0.0000
L20	24	PL 0.75x4	67.08 - 68.25	Auto	0.0000
L20	25	PL 0.75x4	67.08 - 69.00	Auto	0.0000
L20	26	PL 0.75x4	67.08 - 69.00	Auto	0.0000
L20	27	PL 0.75x4	67.08 - 69.00	Auto	0.0000
L20	62	(Area) CCI-65FP-045125	67.08 - 69.00	Auto	0.0000
		(H)			
L20	63	(Area) CCI-65FP-045125	67.08 - 69.00	Auto	0.0000
		(H)			
L20	64	(Area) CCI-65FP-045125	67.08 - 69.00	Auto	0.0000
		(H)			
L21	22	PL 0.75x4	66.83 - 67.08	Auto	0.0000
L21	23	PL 0.75x4	66.83 - 67.08	Auto	0.0000
L21	24	PL 0.75x4	66.83 - 67.08	Auto	0.0000
L21	25	PL 0.75x4	66.83 - 67.08	Auto	0.0000
L21	26	PL 0.75x4	66.83 - 67.08	Auto	0.0000
L21	27	PL 0.75x4	66.83 - 67.08	Auto	0.0000
L21	62	(Area) CCI-65FP-045125	66.83 - 67.08	Auto	0.0000
		(H)			
L21	63	(Area) CCI-65FP-045125	66.83 - 67.08	Auto	0.0000
		(H)			
L21	64	(Area) CCI-65FP-045125	66.83 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
		(H)	67.08		
L22	22	PL 0.75x4	64.08 - 66.83	Auto	0.0000
L22	23	PL 0.75x4	64.08 - 66.83	Auto	0.0000
L22	24	PL 0.75x4	64.08 - 66.83	Auto	0.0000
L22	25	PL 0.75x4	65.83 - 66.83	Auto	0.0000
L22	26	PL 0.75x4	65.83 - 66.83	Auto	0.0000
L22	27	PL 0.75x4	65.83 - 66.83	Auto	0.0000
L22	43	(Area) CCI-65FP-045100 (H)	64.08 - 66.08	Auto	0.0000
L22	44	(Area) CCI-65FP-045100 (H)	64.08 - 66.08	Auto	0.0000
L22	45	(Area) CCI-65FP-045100 (H)	64.08 - 64.50	Auto	0.0000
L22	62	(Area) CCI-65FP-045125 (H)	64.08 - 66.83	Auto	0.0000
L22	63	(Area) CCI-65FP-045125 (H)	64.08 - 66.83	Auto	0.0000
L22	64	(Area) CCI-65FP-045125 (H)	64.08 - 66.83	Auto	0.0000
L23	22	PL 0.75x4	63.83 - 64.08	Auto	0.0000
L23	23	PL 0.75x4	63.83 - 64.08	Auto	0.0000
L23	24	PL 0.75x4	63.83 - 64.08	Auto	0.0000
L23	43	(Area) CCI-65FP-045100 (H)	63.83 - 64.08	Auto	0.0000
L23	44	(Area) CCI-65FP-045100 (H)	63.83 - 64.08	Auto	0.0000
L23	45	(Area) CCI-65FP-045100 (H)	63.83 - 64.08	Auto	0.0000
L23	62	(Area) CCI-65FP-045125 (H)	63.83 - 64.08	Auto	0.0000
L23	63	(Area) CCI-65FP-045125 (H)	63.83 - 64.08	Auto	0.0000
L23	64	(Area) CCI-65FP-045125 (H)	63.83 - 64.08	Auto	0.0000
L24	22	PL 0.75x4	62.50 - 63.83	Auto	0.0000
L24	23	PL 0.75x4	62.50 - 63.83	Auto	0.0000
L24	24	PL 0.75x4	62.50 - 63.83	Auto	0.0000
L24	43	(Area) CCI-65FP-045100 (H)	62.50 - 63.83	Auto	0.0000
L24	44	(Area) CCI-65FP-045100 (H)	62.50 - 63.83	Auto	0.0000
L24	45	(Area) CCI-65FP-045100 (H)	62.50 - 63.83	Auto	0.0000
L24	62	(Area) CCI-65FP-045125 (H)	62.50 - 63.83	Auto	0.0000
L24	63	(Area) CCI-65FP-045125 (H)	62.50 - 63.83	Auto	0.0000
L24	64	(Area) CCI-65FP-045125 (H)	62.50 - 63.83	Auto	0.0000
L25	22	PL 0.75x4	62.25 - 62.50	Auto	0.0000
L25	23	PL 0.75x4	62.25 - 62.50	Auto	0.0000
L25	24	PL 0.75x4	62.25 - 62.50	Auto	0.0000
L25	43	(Area) CCI-65FP-045100	62.25 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
		(H)	62.50		
L25	44	(Area) CCI-65FP-045100	62.25 - 62.50	Auto	0.0000
		(H)			
L25	45	(Area) CCI-65FP-045100	62.25 - 62.50	Auto	0.0000
		(H)			
L25	62	(Area) CCI-65FP-045125	62.25 - 62.50	Auto	0.0000
		(H)			
L25	63	(Area) CCI-65FP-045125	62.25 - 62.50	Auto	0.0000
		(H)			
L25	64	(Area) CCI-65FP-045125	62.25 - 62.50	Auto	0.0000
		(H)			
L26	22	PL 0.75x4	57.25 - 62.25	Auto	0.0000
L26	23	PL 0.75x4	57.25 - 62.25	Auto	0.0000
L26	24	PL 0.75x4	57.25 - 62.25	Auto	0.0000
L26	43	(Area) CCI-65FP-045100	57.25 - 62.25	Auto	0.0000
		(H)			
L26	44	(Area) CCI-65FP-045100	57.25 - 62.25	Auto	0.0000
		(H)			
L26	45	(Area) CCI-65FP-045100	57.25 - 62.25	Auto	0.0000
		(H)			
L26	62	(Area) CCI-65FP-045125	57.25 - 62.25	Auto	0.0000
		(H)			
L26	63	(Area) CCI-65FP-045125	57.25 - 62.25	Auto	0.0000
		(H)			
L26	64	(Area) CCI-65FP-045125	57.25 - 62.25	Auto	0.0000
		(H)			
L27	22	PL 0.75x4	53.50 - 57.25	Auto	0.0000
L27	23	PL 0.75x4	53.50 - 57.25	Auto	0.0000
L27	24	PL 0.75x4	53.50 - 57.25	Auto	0.0000
L27	40	(Area) CCI-65FP-060100	53.50 - 56.00	Auto	0.0745
		(H)			
L27	41	(Area) CCI-65FP-060100	53.50 - 56.00	Auto	0.0745
		(H)			
L27	43	(Area) CCI-65FP-045100	56.00 - 57.25	Auto	0.0000
		(H)			
L27	44	(Area) CCI-65FP-045100	56.00 - 57.25	Auto	0.0000
		(H)			
L27	45	(Area) CCI-65FP-045100	53.50 - 57.25	Auto	0.0000
		(H)			
L27	59	(Area) CCI-65FP-060100	53.50 - 55.08	Auto	0.0694
		(H)			
L27	60	(Area) CCI-65FP-060100	53.50 - 55.08	Auto	0.0694
		(H)			
L27	61	(Area) CCI-65FP-060100	53.50 - 55.08	Auto	0.0694
		(H)			
L27	62	(Area) CCI-65FP-045125	55.08 - 57.25	Auto	0.0000
		(H)			
L27	63	(Area) CCI-65FP-045125	55.08 - 57.25	Auto	0.0000
		(H)			
L27	64	(Area) CCI-65FP-045125	55.08 - 57.25	Auto	0.0000
		(H)			
L28	22	PL 0.75x4	53.25 - 53.50	Auto	0.0000
L28	23	PL 0.75x4	53.25 - 53.50	Auto	0.0000
L28	24	PL 0.75x4	53.25 - 53.50	Auto	0.0000
L28	40	(Area) CCI-65FP-060100	53.25 - 53.50	Auto	0.0703
		(H)			
L28	41	(Area) CCI-65FP-060100	53.25 - 53.50	Auto	0.0703
		(H)			
L28	45	(Area) CCI-65FP-045100	53.25 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
		(H)	53.50		
L28	59	(Area) CCI-65FP-060100	53.25 - 53.50	Auto	0.0703
		(H)			
L28	60	(Area) CCI-65FP-060100	53.25 - 53.50	Auto	0.0703
		(H)			
L28	61	(Area) CCI-65FP-060100	53.25 - 53.50	Auto	0.0703
		(H)			
L29	22	PL 0.75x4	52.58 - 53.25	Auto	0.0000
L29	23	PL 0.75x4	52.58 - 53.25	Auto	0.0000
L29	24	PL 0.75x4	52.58 - 53.25	Auto	0.0000
L29	40	(Area) CCI-65FP-060100	52.58 - 53.25	Auto	0.0596
		(H)			
L29	41	(Area) CCI-65FP-060100	52.58 - 53.25	Auto	0.0596
		(H)			
L29	45	(Area) CCI-65FP-045100	52.58 - 53.25	Auto	0.0000
		(H)			
L29	59	(Area) CCI-65FP-060100	52.58 - 53.25	Auto	0.0596
		(H)			
L29	60	(Area) CCI-65FP-060100	52.58 - 53.25	Auto	0.0596
		(H)			
L29	61	(Area) CCI-65FP-060100	52.58 - 53.25	Auto	0.0596
		(H)			
L30	22	PL 0.75x4	52.33 - 52.58	Auto	0.0000
L30	23	PL 0.75x4	52.33 - 52.58	Auto	0.0000
L30	24	PL 0.75x4	52.33 - 52.58	Auto	0.0000
L30	40	(Area) CCI-65FP-060100	52.33 - 52.58	Auto	0.0712
		(H)			
L30	41	(Area) CCI-65FP-060100	52.33 - 52.58	Auto	0.0712
		(H)			
L30	45	(Area) CCI-65FP-045100	52.33 - 52.58	Auto	0.0000
		(H)			
L30	59	(Area) CCI-65FP-060100	52.33 - 52.58	Auto	0.0712
		(H)			
L30	60	(Area) CCI-65FP-060100	52.33 - 52.58	Auto	0.0712
		(H)			
L30	61	(Area) CCI-65FP-060100	52.33 - 52.58	Auto	0.0712
		(H)			
L31	22	PL 0.75x4	47.33 - 52.33	Auto	0.0000
L31	23	PL 0.75x4	47.33 - 52.33	Auto	0.0000
L31	24	PL 0.75x4	47.33 - 52.33	Auto	0.0000
L31	40	(Area) CCI-65FP-060100	47.33 - 52.33	Auto	0.0307
		(H)			
L31	41	(Area) CCI-65FP-060100	47.33 - 52.33	Auto	0.0307
		(H)			
L31	45	(Area) CCI-65FP-045100	47.33 - 52.33	Auto	0.0000
		(H)			
L31	59	(Area) CCI-65FP-060100	47.33 - 52.33	Auto	0.0307
		(H)			
L31	60	(Area) CCI-65FP-060100	47.33 - 52.33	Auto	0.0307
		(H)			
L31	61	(Area) CCI-65FP-060100	47.33 - 52.33	Auto	0.0307
		(H)			
L32	19	PL 0.75x4	44.58 - 45.83	Auto	0.0000
L32	20	PL 0.75x4	44.58 - 45.83	Auto	0.0000
L32	21	PL 0.75x4	44.58 - 45.83	Auto	0.0000
L32	22	PL 0.75x4	44.58 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L32	23	PL 0.75x4	47.33 - 44.58	Auto	0.0000
L32	24	PL 0.75x4	47.33 - 44.58	Auto	0.0000
L32	40	(Area) CCI-65FP-060100 (H)	47.33 - 44.58	Auto	0.0000
L32	41	(Area) CCI-65FP-060100 (H)	47.33 - 44.58	Auto	0.0000
L32	45	(Area) CCI-65FP-045100 (H)	47.33 - 44.58	Auto	0.0000
L32	59	(Area) CCI-65FP-060100 (H)	47.33 - 44.58	Auto	0.0000
L32	60	(Area) CCI-65FP-060100 (H)	47.33 - 44.58	Auto	0.0000
L32	61	(Area) CCI-65FP-060100 (H)	47.33 - 44.58	Auto	0.0000
L33	19	PL 0.75x4	44.33 - 44.58	Auto	0.0000
L33	20	PL 0.75x4	44.33 - 44.58	Auto	0.0000
L33	21	PL 0.75x4	44.33 - 44.58	Auto	0.0000
L33	22	PL 0.75x4	44.33 - 44.58	Auto	0.0000
L33	23	PL 0.75x4	44.33 - 44.58	Auto	0.0000
L33	24	PL 0.75x4	44.33 - 44.58	Auto	0.0000
L33	36	(Area) CCI-65FP-060100 (H)	44.33 - 44.42	Auto	0.0000
L33	40	(Area) CCI-65FP-060100 (H)	44.33 - 44.58	Auto	0.0000
L33	41	(Area) CCI-65FP-060100 (H)	44.33 - 44.58	Auto	0.0000
L33	45	(Area) CCI-65FP-045100 (H)	44.50 - 44.58	Auto	0.0000
L33	59	(Area) CCI-65FP-060100 (H)	44.33 - 44.58	Auto	0.0000
L33	60	(Area) CCI-65FP-060100 (H)	44.33 - 44.58	Auto	0.0000
L33	61	(Area) CCI-65FP-060100 (H)	44.33 - 44.58	Auto	0.0000
L34	19	PL 0.75x4	41.92 - 44.33	Auto	0.0000
L34	20	PL 0.75x4	41.92 - 44.33	Auto	0.0000
L34	21	PL 0.75x4	41.92 - 44.33	Auto	0.0000
L34	22	PL 0.75x4	43.25 - 44.33	Auto	0.0000
L34	23	PL 0.75x4	43.25 - 44.33	Auto	0.0000
L34	24	PL 0.75x4	43.25 - 44.33	Auto	0.0000
L34	36	(Area) CCI-65FP-060100 (H)	41.92 - 44.33	Auto	0.0000
L34	40	(Area) CCI-65FP-060100 (H)	41.92 - 44.33	Auto	0.0000
L34	41	(Area) CCI-65FP-060100 (H)	41.92 - 44.33	Auto	0.0000
L34	59	(Area) CCI-65FP-060100 (H)	41.92 - 44.33	Auto	0.0000
L34	60	(Area) CCI-65FP-060100 (H)	41.92 - 44.33	Auto	0.0000
L34	61	(Area) CCI-65FP-060100 (H)	41.92 - 44.33	Auto	0.0000
L35	19	PL 0.75x4	41.67 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L35	20	PL 0.75x4	41.92 41.67 - 41.92	Auto	0.0000
L35	21	PL 0.75x4	41.67 - 41.92	Auto	0.0000
L35	36	(Area) CCI-65FP-060100 (H)	41.67 - 41.92	Auto	0.0000
L35	40	(Area) CCI-65FP-060100 (H)	41.67 - 41.92	Auto	0.0000
L35	41	(Area) CCI-65FP-060100 (H)	41.67 - 41.92	Auto	0.0000
L35	59	(Area) CCI-65FP-060100 (H)	41.67 - 41.92	Auto	0.0000
L35	60	(Area) CCI-65FP-060100 (H)	41.67 - 41.92	Auto	0.0000
L35	61	(Area) CCI-65FP-060100 (H)	41.67 - 41.92	Auto	0.0000
L36	19	PL 0.75x4	34.08 - 41.67	Auto	0.0000
L36	20	PL 0.75x4	34.08 - 41.67	Auto	0.0000
L36	21	PL 0.75x4	34.08 - 41.67	Auto	0.0000
L36	36	(Area) CCI-65FP-060100 (H)	34.08 - 41.67	Auto	0.0000
L36	40	(Area) CCI-65FP-060100 (H)	34.08 - 41.67	Auto	0.0000
L36	41	(Area) CCI-65FP-060100 (H)	34.08 - 41.67	Auto	0.0000
L36	59	(Area) CCI-65FP-060100 (H)	34.08 - 41.67	Auto	0.0000
L36	60	(Area) CCI-65FP-060100 (H)	34.08 - 41.67	Auto	0.0000
L36	61	(Area) CCI-65FP-060100 (H)	34.08 - 41.67	Auto	0.0000
L37	19	PL 0.75x4	34.00 - 34.08	Auto	0.0000
L37	20	PL 0.75x4	34.00 - 34.08	Auto	0.0000
L37	21	PL 0.75x4	34.00 - 34.08	Auto	0.0000
L37	36	(Area) CCI-65FP-060100 (H)	34.00 - 34.08	Auto	0.0000
L37	40	(Area) CCI-65FP-060100 (H)	34.00 - 34.08	Auto	0.0000
L37	41	(Area) CCI-65FP-060100 (H)	34.00 - 34.08	Auto	0.0000
L37	59	(Area) CCI-65FP-060100 (H)	34.00 - 34.08	Auto	0.0000
L37	60	(Area) CCI-65FP-060100 (H)	34.00 - 34.08	Auto	0.0000
L37	61	(Area) CCI-65FP-060100 (H)	34.00 - 34.08	Auto	0.0000
L38	19	PL 0.75x4	29.00 - 34.00	Auto	0.0000
L38	20	PL 0.75x4	29.00 - 34.00	Auto	0.0000
L38	21	PL 0.75x4	29.00 - 34.00	Auto	0.0000
L38	36	(Area) CCI-65FP-060100 (H)	29.00 - 34.00	Auto	0.0000
L38	37	(Area) CCI-65FP-060100 (H)	29.00 - 29.42	Auto	0.0000
L38	38	(Area) CCI-65FP-060100 (H)	29.00 - 29.42	Auto	0.0000
L38	40	(Area) CCI-65FP-060100 (H)	29.00 - 34.00	Auto	0.0000
L38	41	(Area) CCI-65FP-060100	29.00 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
		(H)	34.00		
L38	59	(Area) CCI-65FP-060100	29.00 -	Auto	0.0000
		(H)	34.00		
L38	60	(Area) CCI-65FP-060100	29.00 -	Auto	0.0000
		(H)	34.00		
L38	61	(Area) CCI-65FP-060100	29.00 -	Auto	0.0000
		(H)	34.00		
L39	19	PL 0.75x4	26.92 -	Auto	0.0000
			29.00		
L39	20	PL 0.75x4	26.92 -	Auto	0.0000
			29.00		
L39	21	PL 0.75x4	26.92 -	Auto	0.0000
			29.00		
L39	36	(Area) CCI-65FP-060100	26.92 -	Auto	0.0000
		(H)	29.00		
L39	37	(Area) CCI-65FP-060100	26.92 -	Auto	0.0000
		(H)	29.00		
L39	38	(Area) CCI-65FP-060100	26.92 -	Auto	0.0000
		(H)	29.00		
L39	40	(Area) CCI-65FP-060100	26.92 -	Auto	0.0000
		(H)	29.00		
L39	41	(Area) CCI-65FP-060100	26.92 -	Auto	0.0000
		(H)	29.00		
L39	59	(Area) CCI-65FP-060100	26.92 -	Auto	0.0000
		(H)	29.00		
L39	60	(Area) CCI-65FP-060100	26.92 -	Auto	0.0000
		(H)	29.00		
L39	61	(Area) CCI-65FP-060100	26.92 -	Auto	0.0000
		(H)	29.00		
L40	19	PL 0.75x4	26.67 -	Auto	0.0000
			26.92		
L40	20	PL 0.75x4	26.67 -	Auto	0.0000
			26.92		
L40	21	PL 0.75x4	26.67 -	Auto	0.0000
			26.92		
L40	36	(Area) CCI-65FP-060100	26.67 -	Auto	0.0000
		(H)	26.92		
L40	37	(Area) CCI-65FP-060100	26.67 -	Auto	0.0000
		(H)	26.92		
L40	38	(Area) CCI-65FP-060100	26.67 -	Auto	0.0000
		(H)	26.92		
L40	40	(Area) CCI-65FP-060100	26.67 -	Auto	0.0000
		(H)	26.92		
L40	41	(Area) CCI-65FP-060100	26.67 -	Auto	0.0000
		(H)	26.92		
L40	59	(Area) CCI-65FP-060100	26.67 -	Auto	0.0000
		(H)	26.92		
L40	60	(Area) CCI-65FP-060100	26.67 -	Auto	0.0000
		(H)	26.92		
L40	61	(Area) CCI-65FP-060100	26.67 -	Auto	0.0000
		(H)	26.92		
L41	19	PL 0.75x4	21.67 -	Auto	0.0000
			26.67		
L41	20	PL 0.75x4	21.67 -	Auto	0.0000
			26.67		
L41	21	PL 0.75x4	21.67 -	Auto	0.0000
			26.67		
L41	36	(Area) CCI-65FP-060100	21.67 -	Auto	0.0000
		(H)	26.67		
L41	37	(Area) CCI-65FP-060100	21.67 -	Auto	0.0000
		(H)	26.67		
L41	38	(Area) CCI-65FP-060100	21.67 -	Auto	0.0000
		(H)	26.67		
L41	40	(Area) CCI-65FP-060100	21.67 -	Auto	0.0000
		(H)	26.67		
L41	41	(Area) CCI-65FP-060100	21.67 -	Auto	0.0000
		(H)	26.67		
L41	59	(Area) CCI-65FP-060100	21.67 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
		(H)	26.67		
L41	60	(Area) CCI-65FP-060100	21.67 -	Auto	0.0000
		(H)	26.67		
L41	61	(Area) CCI-65FP-060100	21.67 -	Auto	0.0000
		(H)	26.67		
L42	19	PL 0.75x4	18.00 -	Auto	0.0000
			21.67		
L42	20	PL 0.75x4	18.00 -	Auto	0.0000
			21.67		
L42	21	PL 0.75x4	18.00 -	Auto	0.0000
			21.67		
L42	33	(Area) CCI-65FP-060100	18.00 -	Auto	0.0000
		(H)	20.75		
L42	34	(Area) CCI-65FP-060100	18.00 -	Auto	0.0000
		(H)	20.75		
L42	35	(Area) CCI-65FP-060100	18.00 -	Auto	0.0000
		(H)	20.75		
L42	36	(Area) CCI-65FP-060100	20.75 -	Auto	0.0000
		(H)	21.67		
L42	37	(Area) CCI-65FP-060100	20.75 -	Auto	0.0000
		(H)	21.67		
L42	38	(Area) CCI-65FP-060100	20.75 -	Auto	0.0000
		(H)	21.67		
L42	40	(Area) CCI-65FP-060100	21.00 -	Auto	0.0000
		(H)	21.67		
L42	41	(Area) CCI-65FP-060100	21.00 -	Auto	0.0000
		(H)	21.67		
L42	52	(Area) CCI-65FP-065125	18.00 -	Auto	0.0000
		(H)	20.75		
L42	53	(Area) CCI-65FP-065125	18.00 -	Auto	0.0000
		(H)	20.75		
L42	54	(Area) CCI-65FP-065125	18.00 -	Auto	0.0000
		(H)	20.75		
L42	56	(Area) CCI-65FP-060100	18.00 -	Auto	0.0000
		(H)	20.00		
L42	57	(Area) CCI-65FP-060100	18.00 -	Auto	0.0000
		(H)	20.00		
L42	58	(Area) CCI-65FP-060100	18.00 -	Auto	0.0000
		(H)	20.00		
L42	59	(Area) CCI-65FP-060100	20.00 -	Auto	0.0000
		(H)	21.67		
L42	60	(Area) CCI-65FP-060100	20.00 -	Auto	0.0000
		(H)	21.67		
L42	61	(Area) CCI-65FP-060100	20.00 -	Auto	0.0000
		(H)	21.67		
L43	19	PL 0.75x4	17.75 -	Auto	0.0000
			18.00		
L43	20	PL 0.75x4	17.75 -	Auto	0.0000
			18.00		
L43	21	PL 0.75x4	17.75 -	Auto	0.0000
			18.00		
L43	33	(Area) CCI-65FP-060100	17.75 -	Auto	0.0000
		(H)	18.00		
L43	34	(Area) CCI-65FP-060100	17.75 -	Auto	0.0000
		(H)	18.00		
L43	35	(Area) CCI-65FP-060100	17.75 -	Auto	0.0000
		(H)	18.00		
L43	52	(Area) CCI-65FP-065125	17.75 -	Auto	0.0000
		(H)	18.00		
L43	53	(Area) CCI-65FP-065125	17.75 -	Auto	0.0000
		(H)	18.00		
L43	54	(Area) CCI-65FP-065125	17.75 -	Auto	0.0000
		(H)	18.00		
L43	56	(Area) CCI-65FP-060100	17.75 -	Auto	0.0000
		(H)	18.00		
L43	57	(Area) CCI-65FP-060100	17.75 -	Auto	0.0000
		(H)	18.00		
L43	58	(Area) CCI-65FP-060100	17.75 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
		(H)	18.00		
L44	19	PL 0.75x4	17.50 - 17.75	Auto	0.0000
L44	20	PL 0.75x4	17.50 - 17.75	Auto	0.0000
L44	21	PL 0.75x4	17.50 - 17.75	Auto	0.0000
L44	33	(Area) CCI-65FP-060100 (H)	17.50 - 17.75	Auto	0.0000
L44	34	(Area) CCI-65FP-060100 (H)	17.50 - 17.75	Auto	0.0000
L44	35	(Area) CCI-65FP-060100 (H)	17.50 - 17.75	Auto	0.0000
L44	52	(Area) CCI-65FP-065125 (H)	17.50 - 17.75	Auto	0.0000
L44	53	(Area) CCI-65FP-065125 (H)	17.50 - 17.75	Auto	0.0000
L44	54	(Area) CCI-65FP-065125 (H)	17.50 - 17.75	Auto	0.0000
L44	56	(Area) CCI-65FP-060100 (H)	17.50 - 17.75	Auto	0.0000
L44	57	(Area) CCI-65FP-060100 (H)	17.50 - 17.75	Auto	0.0000
L44	58	(Area) CCI-65FP-060100 (H)	17.50 - 17.75	Auto	0.0000
L45	19	PL 0.75x4	17.25 - 17.50	Auto	0.0000
L45	20	PL 0.75x4	17.25 - 17.50	Auto	0.0000
L45	21	PL 0.75x4	17.25 - 17.50	Auto	0.0000
L45	33	(Area) CCI-65FP-060100 (H)	17.25 - 17.50	Auto	0.0000
L45	34	(Area) CCI-65FP-060100 (H)	17.25 - 17.50	Auto	0.0000
L45	35	(Area) CCI-65FP-060100 (H)	17.25 - 17.50	Auto	0.0000
L45	52	(Area) CCI-65FP-065125 (H)	17.25 - 17.50	Auto	0.0000
L45	53	(Area) CCI-65FP-065125 (H)	17.25 - 17.50	Auto	0.0000
L45	54	(Area) CCI-65FP-065125 (H)	17.25 - 17.50	Auto	0.0000
L45	56	(Area) CCI-65FP-060100 (H)	17.25 - 17.50	Auto	0.0000
L45	57	(Area) CCI-65FP-060100 (H)	17.25 - 17.50	Auto	0.0000
L45	58	(Area) CCI-65FP-060100 (H)	17.25 - 17.50	Auto	0.0000
L46	19	PL 0.75x4	17.08 - 17.25	Auto	0.0000
L46	20	PL 0.75x4	17.08 - 17.25	Auto	0.0000
L46	21	PL 0.75x4	17.08 - 17.25	Auto	0.0000
L46	33	(Area) CCI-65FP-060100 (H)	17.08 - 17.25	Auto	0.0000
L46	34	(Area) CCI-65FP-060100 (H)	17.08 - 17.25	Auto	0.0000
L46	35	(Area) CCI-65FP-060100 (H)	17.08 - 17.25	Auto	0.0000
L46	52	(Area) CCI-65FP-065125 (H)	17.08 - 17.25	Auto	0.0000
L46	53	(Area) CCI-65FP-065125 (H)	17.08 - 17.25	Auto	0.0000
L46	54	(Area) CCI-65FP-065125 (H)	17.08 - 17.25	Auto	0.0000
L46	56	(Area) CCI-65FP-060100	17.08 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
		(H)	17.25		
L46	57	(Area) CCI-65FP-060100	17.08 - 17.25	Auto	0.0000
		(H)			
L46	58	(Area) CCI-65FP-060100	17.08 - 17.25	Auto	0.0000
		(H)			
L47	19	PL 0.75x4	16.83 - 17.08	Auto	0.0000
L47	20	PL 0.75x4	16.83 - 17.08	Auto	0.0000
L47	21	PL 0.75x4	16.83 - 17.08	Auto	0.0000
L47	33	(Area) CCI-65FP-060100	16.83 - 17.08	Auto	0.0000
		(H)			
L47	34	(Area) CCI-65FP-060100	16.83 - 17.08	Auto	0.0000
		(H)			
L47	35	(Area) CCI-65FP-060100	16.83 - 17.08	Auto	0.0000
		(H)			
L47	52	(Area) CCI-65FP-065125	16.83 - 17.08	Auto	0.0000
		(H)			
L47	53	(Area) CCI-65FP-065125	16.83 - 17.08	Auto	0.0000
		(H)			
L47	54	(Area) CCI-65FP-065125	16.83 - 17.08	Auto	0.0000
		(H)			
L47	56	(Area) CCI-65FP-060100	16.83 - 17.08	Auto	0.0000
		(H)			
L47	57	(Area) CCI-65FP-060100	16.83 - 17.08	Auto	0.0000
		(H)			
L47	58	(Area) CCI-65FP-060100	16.83 - 17.08	Auto	0.0000
		(H)			
L48	19	PL 0.75x4	15.83 - 16.83	Auto	0.0000
L48	20	PL 0.75x4	15.83 - 16.83	Auto	0.0000
L48	21	PL 0.75x4	15.83 - 16.83	Auto	0.0000
L48	29	(Area) CCI-65FP-060100	13.00 - 15.50	Auto	0.0000
		(H)			
L48	30	(Area) CCI-65FP-060100	13.00 - 15.50	Auto	0.0000
		(H)			
L48	31	(Area) CCI-65FP-060100	13.00 - 15.50	Auto	0.0000
		(H)			
L48	33	(Area) CCI-65FP-060100	13.00 - 16.83	Auto	0.0000
		(H)			
L48	34	(Area) CCI-65FP-060100	13.00 - 16.83	Auto	0.0000
		(H)			
L48	35	(Area) CCI-65FP-060100	13.00 - 16.83	Auto	0.0000
		(H)			
L48	52	(Area) CCI-65FP-065125	13.00 - 16.83	Auto	0.0000
		(H)			
L48	53	(Area) CCI-65FP-065125	13.00 - 16.83	Auto	0.0000
		(H)			
L48	54	(Area) CCI-65FP-065125	13.00 - 16.83	Auto	0.0000
		(H)			
L48	56	(Area) CCI-65FP-060100	13.00 - 16.83	Auto	0.0000
		(H)			
L48	57	(Area) CCI-65FP-060100	13.00 - 16.83	Auto	0.0000
		(H)			
L48	58	(Area) CCI-65FP-060100	13.00 - 16.83	Auto	0.0000
		(H)			
L49	29	(Area) CCI-65FP-060100	12.75 - 13.00	Auto	0.0000
		(H)			
L49	30	(Area) CCI-65FP-060100	12.75 - 13.00	Auto	0.0000
		(H)			
L49	31	(Area) CCI-65FP-060100	12.75 - 13.00	Auto	0.0000
		(H)			
L49	33	(Area) CCI-65FP-060100	12.75 - 13.00	Auto	0.0000
		(H)			
L49	34	(Area) CCI-65FP-060100	12.75 -	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
		(H)	13.00		
L49	35	(Area) CCI-65FP-060100	12.75 - 13.00 (H)	Auto	0.0000
L49	52	(Area) CCI-65FP-065125	12.75 - 13.00 (H)	Auto	0.0000
L49	53	(Area) CCI-65FP-065125	12.75 - 13.00 (H)	Auto	0.0000
L49	54	(Area) CCI-65FP-065125	12.75 - 13.00 (H)	Auto	0.0000
L49	56	(Area) CCI-65FP-060100	12.75 - 13.00 (H)	Auto	0.0000
L49	57	(Area) CCI-65FP-060100	12.75 - 13.00 (H)	Auto	0.0000
L49	58	(Area) CCI-65FP-060100	12.75 - 13.00 (H)	Auto	0.0000
L50	29	(Area) CCI-65FP-060100	11.92 - 12.75 (H)	Auto	0.0000
L50	30	(Area) CCI-65FP-060100	11.92 - 12.75 (H)	Auto	0.0000
L50	31	(Area) CCI-65FP-060100	11.92 - 12.75 (H)	Auto	0.0000
L50	33	(Area) CCI-65FP-060100	11.92 - 12.75 (H)	Auto	0.0000
L50	34	(Area) CCI-65FP-060100	11.92 - 12.75 (H)	Auto	0.0000
L50	35	(Area) CCI-65FP-060100	11.92 - 12.75 (H)	Auto	0.0000
L50	52	(Area) CCI-65FP-065125	11.92 - 12.75 (H)	Auto	0.0000
L50	53	(Area) CCI-65FP-065125	11.92 - 12.75 (H)	Auto	0.0000
L50	54	(Area) CCI-65FP-065125	11.92 - 12.75 (H)	Auto	0.0000
L50	56	(Area) CCI-65FP-060100	11.92 - 12.75 (H)	Auto	0.0000
L50	57	(Area) CCI-65FP-060100	11.92 - 12.75 (H)	Auto	0.0000
L50	58	(Area) CCI-65FP-060100	11.92 - 12.75 (H)	Auto	0.0000
L51	29	(Area) CCI-65FP-060100	11.67 - 11.92 (H)	Auto	0.0000
L51	30	(Area) CCI-65FP-060100	11.67 - 11.92 (H)	Auto	0.0000
L51	31	(Area) CCI-65FP-060100	11.67 - 11.92 (H)	Auto	0.0000
L51	33	(Area) CCI-65FP-060100	11.67 - 11.92 (H)	Auto	0.0000
L51	34	(Area) CCI-65FP-060100	11.67 - 11.92 (H)	Auto	0.0000
L51	35	(Area) CCI-65FP-060100	11.67 - 11.92 (H)	Auto	0.0000
L51	52	(Area) CCI-65FP-065125	11.67 - 11.92 (H)	Auto	0.0000
L51	53	(Area) CCI-65FP-065125	11.67 - 11.92 (H)	Auto	0.0000
L51	54	(Area) CCI-65FP-065125	11.67 - 11.92 (H)	Auto	0.0000
L51	56	(Area) CCI-65FP-060100	11.67 - 11.92 (H)	Auto	0.0000
L51	57	(Area) CCI-65FP-060100	11.67 - 11.92 (H)	Auto	0.0000
L51	58	(Area) CCI-65FP-060100	11.67 - 11.92 (H)	Auto	0.0000
L52	29	(Area) CCI-65FP-060100	6.67 - 11.67 (H)	Auto	0.0000
L52	30	(Area) CCI-65FP-060100	6.67 - 11.67 (H)	Auto	0.0000
L52	31	(Area) CCI-65FP-060100	6.67 - 11.67	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L52	33	(H) (Area) CCI-65FP-060100	9.42 - 11.67	Auto	0.0000
L52	34	(H) (Area) CCI-65FP-060100	9.42 - 11.67	Auto	0.0000
L52	35	(H) (Area) CCI-65FP-060100	9.42 - 11.67	Auto	0.0000
L52	51	(H) (Area) CCI-65FP-065125	6.67 - 9.25	Auto	0.0000
L52	52	(H) (Area) CCI-65FP-065125	6.67 - 11.67	Auto	0.0000
L52	53	(H) (Area) CCI-65FP-065125	6.67 - 11.67	Auto	0.0000
L52	54	(H) (Area) CCI-65FP-065125	6.67 - 11.67	Auto	0.0000
L52	56	(H) (Area) CCI-65FP-060100	6.67 - 11.67	Auto	0.0000
L52	57	(H) (Area) CCI-65FP-060100	6.67 - 11.67	Auto	0.0000
L52	58	(H) (Area) CCI-65FP-060100	6.67 - 11.67	Auto	0.0000
L53	29	(H) (Area) CCI-65FP-060100	6.50 - 6.67	Auto	0.0000
L53	30	(H) (Area) CCI-65FP-060100	6.50 - 6.67	Auto	0.0000
L53	31	(H) (Area) CCI-65FP-060100	6.50 - 6.67	Auto	0.0000
L53	51	(H) (Area) CCI-65FP-065125	6.50 - 6.67	Auto	0.0000
L53	52	(H) (Area) CCI-65FP-065125	6.50 - 6.67	Auto	0.0000
L53	53	(H) (Area) CCI-65FP-065125	6.50 - 6.67	Auto	0.0000
L53	54	(H) (Area) CCI-65FP-065125	6.50 - 6.67	Auto	0.0000
L53	56	(H) (Area) CCI-65FP-060100	6.50 - 6.67	Auto	0.0000
L53	57	(H) (Area) CCI-65FP-060100	6.50 - 6.67	Auto	0.0000
L53	58	(H) (Area) CCI-65FP-060100	6.50 - 6.67	Auto	0.0000
L54	29	(H) (Area) CCI-65FP-060100	6.25 - 6.50	Auto	0.0000
L54	30	(H) (Area) CCI-65FP-060100	6.25 - 6.50	Auto	0.0000
L54	31	(H) (Area) CCI-65FP-060100	6.25 - 6.50	Auto	0.0000
L54	51	(H) (Area) CCI-65FP-065125	6.25 - 6.50	Auto	0.0000
L54	52	(H) (Area) CCI-65FP-065125	6.25 - 6.50	Auto	0.0000
L54	53	(H) (Area) CCI-65FP-065125	6.25 - 6.50	Auto	0.0000
L54	54	(H) (Area) CCI-65FP-065125	6.25 - 6.50	Auto	0.0000
L54	56	(H) (Area) CCI-65FP-060100	6.25 - 6.50	Auto	0.0000
L54	57	(H) (Area) CCI-65FP-060100	6.25 - 6.50	Auto	0.0000
L54	58	(H) (Area) CCI-65FP-060100	6.25 - 6.50	Auto	0.0000
L55	29	(H) (Area) CCI-65FP-060100	3.75 - 6.25	Auto	0.0000
L55	30	(H) (Area) CCI-65FP-060100	3.75 - 6.25	Auto	0.0000
L55	31	(H) (Area) CCI-65FP-060100	3.75 - 6.25	Auto	0.0000
L55	51	(H) (Area) CCI-65FP-065125	3.75 - 6.25	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L55	52	(Area) CCI-65FP-065125 (H)	3.75 - 6.25	Auto	0.0000
L55	53	(Area) CCI-65FP-065125 (H)	3.75 - 6.25	Auto	0.0000
L55	54	(Area) CCI-65FP-065125 (H)	3.75 - 6.25	Auto	0.0000
L55	56	(Area) CCI-65FP-060100 (H)	3.75 - 6.25	Auto	0.0000
L55	57	(Area) CCI-65FP-060100 (H)	3.75 - 6.25	Auto	0.0000
L55	58	(Area) CCI-65FP-060100 (H)	3.75 - 6.25	Auto	0.0000
L56	29	(Area) CCI-65FP-060100 (H)	3.50 - 3.75	Auto	0.0000
L56	30	(Area) CCI-65FP-060100 (H)	3.50 - 3.75	Auto	0.0000
L56	31	(Area) CCI-65FP-060100 (H)	3.50 - 3.75	Auto	0.0000
L56	51	(Area) CCI-65FP-065125 (H)	3.50 - 3.75	Auto	0.0000
L56	52	(Area) CCI-65FP-065125 (H)	3.50 - 3.75	Auto	0.0000
L56	53	(Area) CCI-65FP-065125 (H)	3.50 - 3.75	Auto	0.0000
L56	54	(Area) CCI-65FP-065125 (H)	3.50 - 3.75	Auto	0.0000
L56	56	(Area) CCI-65FP-060100 (H)	3.50 - 3.75	Auto	0.0000
L56	57	(Area) CCI-65FP-060100 (H)	3.50 - 3.75	Auto	0.0000
L56	58	(Area) CCI-65FP-060100 (H)	3.50 - 3.75	Auto	0.0000
L57	29	(Area) CCI-65FP-060100 (H)	3.00 - 3.50	Auto	0.0000
L57	30	(Area) CCI-65FP-060100 (H)	3.00 - 3.50	Auto	0.0000
L57	31	(Area) CCI-65FP-060100 (H)	3.00 - 3.50	Auto	0.0000
L57	51	(Area) CCI-65FP-065125 (H)	3.00 - 3.50	Auto	0.0000
L57	52	(Area) CCI-65FP-065125 (H)	3.00 - 3.50	Auto	0.0000
L57	53	(Area) CCI-65FP-065125 (H)	3.00 - 3.50	Auto	0.0000
L57	54	(Area) CCI-65FP-065125 (H)	3.00 - 3.50	Auto	0.0000
L57	56	(Area) CCI-65FP-060100 (H)	3.00 - 3.50	Auto	0.0000
L57	57	(Area) CCI-65FP-060100 (H)	3.00 - 3.50	Auto	0.0000
L57	58	(Area) CCI-65FP-060100 (H)	3.00 - 3.50	Auto	0.0000
L58	29	(Area) CCI-65FP-060100 (H)	2.75 - 3.00	Auto	0.0000
L58	30	(Area) CCI-65FP-060100 (H)	2.75 - 3.00	Auto	0.0000
L58	31	(Area) CCI-65FP-060100 (H)	2.75 - 3.00	Auto	0.0000
L58	51	(Area) CCI-65FP-065125 (H)	2.75 - 3.00	Auto	0.0000
L58	52	(Area) CCI-65FP-065125 (H)	2.75 - 3.00	Auto	0.0000
L58	53	(Area) CCI-65FP-065125 (H)	2.75 - 3.00	Auto	0.0000
L58	54	(Area) CCI-65FP-065125 (H)	2.75 - 3.00	Auto	0.0000
L58	56	(Area) CCI-65FP-060100	2.75 - 3.00	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L58	57	(H) (Area) CCI-65FP-060100	2.75 - 3.00	Auto	0.0000
L58	58	(H) (Area) CCI-65FP-060100	2.75 - 3.00	Auto	0.0000
L59	29	(H) (Area) CCI-65FP-060100	0.00 - 2.75	Auto	0.0000
L59	30	(H) (Area) CCI-65FP-060100	0.00 - 2.75	Auto	0.0000
L59	31	(H) (Area) CCI-65FP-060100	0.00 - 2.75	Auto	0.0000
L59	51	(H) (Area) CCI-65FP-065125	0.00 - 2.75	Auto	0.0000
L59	52	(H) (Area) CCI-65FP-065125	0.00 - 2.75	Auto	0.0000
L59	53	(H) (Area) CCI-65FP-065125	0.00 - 2.75	Auto	0.0000
L59	54	(H) (Area) CCI-65FP-065125	0.00 - 2.75	Auto	0.0000
L59	56	(H) (Area) CCI-65FP-060100	0.00 - 2.75	Auto	0.0000
L59	57	(H) (Area) CCI-65FP-060100	0.00 - 2.75	Auto	0.0000
L59	58	(H) (Area) CCI-65FP-060100	0.00 - 2.75	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
80010798 w/ Mount Pipe	A	From Leg	4.0000 0.00 -1.00	0.00	121.0000
80010798 w/ Mount Pipe	B	From Leg	4.0000 0.00 -1.00	0.00	121.0000
80010798 w/ Mount Pipe	C	From Leg	4.0000 0.00 -1.00	0.00	121.0000
(2) 80010965 w/ Mount Pipe	A	From Leg	4.0000 0.00 -1.00	0.00	121.0000
(2) 80010965 w/ Mount Pipe	B	From Leg	4.0000 0.00 -1.00	0.00	121.0000
(2) 80010965 w/ Mount Pipe	C	From Leg	4.0000 0.00 -1.00	0.00	121.0000
800 10121 w/ Mount Pipe	A	From Leg	4.0000 0.00 -1.00	0.00	121.0000
800 10121 w/ Mount Pipe	B	From Leg	4.0000 0.00 -1.00	0.00	121.0000
800 10121 w/ Mount Pipe	C	From Leg	4.0000 0.00	0.00	121.0000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
RRUS E2 B29	A	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS E2 B29	B	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS E2 B29	C	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS 8843 B2/B66A	A	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS 8843 B2/B66A	B	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS 8843 B2/B66A	C	From Leg	-1.00 4.0000 0.00	0.00	121.0000
DC6-48-60-18-8F	A	From Leg	-1.00 4.0000 0.00	0.00	121.0000
DC6-48-60-18-8F	B	From Leg	-1.00 4.0000 0.00	0.00	121.0000
(2) DC6-48-60-18-8F	C	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS 32 B30	A	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS 32 B30	B	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS 32 B30	C	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS 4478 B14	A	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS 4478 B14	B	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS 4478 B14	C	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS 4449 B5/B12	A	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS 4449 B5/B12	B	From Leg	-1.00 4.0000 0.00	0.00	121.0000
RRUS 4449 B5/B12	C	From Leg	-1.00 4.0000 0.00	0.00	121.0000
(2) LGP21401	A	From Leg	-1.00 4.0000 0.00	0.00	121.0000
(2) LGP21401	B	From Leg	-1.00 4.0000 0.00	0.00	121.0000
(2) LGP21401	C	From Leg	-1.00 4.0000 0.00	0.00	121.0000
(2) 2.4" Dia x 6-ft Pipe (Horizontal)	A	From Leg	-1.00 4.0000	0.00	121.0000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.00 0.00		
(2) 2.4" Dia x 6-ft Pipe (Horizontal)	B	From Leg	4.0000 0.00 0.00	0.00	121.0000
(2) 2.4" Dia x 6-ft Pipe (Horizontal)	C	From Leg	4.0000 0.00 0.00	0.00	121.0000
Side Arm Mount [SO 102-3]	C	None		0.00	121.0000
Platform Mount [LP 602-1] **	C	None		0.00	121.0000
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.00	109.0000
(2) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.00	109.0000
(2) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.00	109.0000
BXA-80063/4CF w/ Mount Pipe	A	From Leg	4.0000 0.00 2.00	0.00	109.0000
BXA-80063/4CF w/ Mount Pipe	B	From Leg	4.0000 0.00 2.00	0.00	109.0000
BXA-80063/4CF w/ Mount Pipe	C	From Leg	4.0000 0.00 2.00	0.00	109.0000
CBRS w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	109.0000
CBRS w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	109.0000
CBRS w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	109.0000
MT6407-77A w/ Mount Pipe	A	From Leg	4.0000 0.00 4.00	0.00	109.0000
MT6407-77A w/ Mount Pipe	B	From Leg	4.0000 0.00 4.00	0.00	109.0000
MT6407-77A w/ Mount Pipe	C	From Leg	4.0000 0.00 4.00	0.00	109.0000
RFV01U-D1A	A	From Leg	4.0000 0.00 0.00	0.00	109.0000
RFV01U-D1A	A	From Leg	4.0000 0.00 0.00	0.00	109.0000
RFV01U-D1A	B	From Leg	4.0000 0.00 0.00	0.00	109.0000
RFV01U-D2A	A	From Leg	4.0000 0.00 0.00	0.00	109.0000
RFV01U-D2A	B	From Leg	4.0000 0.00 0.00	0.00	109.0000
RFV01U-D2A	B	From Leg	4.0000 0.00 0.00	0.00	109.0000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
RUSDC-6267-PF-48	B	From Leg	4.0000 0.00 0.00	0.00	109.0000
Site Pro 1 F3P-HRK12	C	None		0.00	109.0000
Site Pro 1 F3P-12[W]	C	None		0.00	109.0000
**					
800MHz 2X50W RRH W/FILTER	A	From Leg	2.0000 0.00 0.00	0.00	99.0000
800MHz 2X50W RRH W/FILTER	B	From Leg	2.0000 0.00 0.00	0.00	99.0000
800MHz 2X50W RRH W/FILTER	C	From Leg	2.0000 0.00 0.00	0.00	99.0000
PCS 1900MHz 4x45W-65MHz w/ Mount Pipe	A	From Leg	2.0000 0.00 0.00	0.00	99.0000
PCS 1900MHz 4x45W-65MHz w/ Mount Pipe	B	From Leg	2.0000 0.00 0.00	0.00	99.0000
PCS 1900MHz 4x45W-65MHz w/ Mount Pipe	C	From Leg	2.0000 0.00 0.00	0.00	99.0000
Side Arm Mount [SO 101-3]	C	None		0.00	99.0000
**					
LLPX310R-V1 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.00	97.0000
LLPX310R-V1 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.00	97.0000
LLPX310R-V1 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.00	97.0000
TIMING 2000	A	From Leg	4.0000 0.00 0.00	0.00	97.0000
RRH-2WB	A	From Leg	4.0000 0.00 0.00	0.00	97.0000
RRH-2WB	B	From Leg	4.0000 0.00 0.00	0.00	97.0000
RRH-2WB	C	From Leg	4.0000 0.00 0.00	0.00	97.0000
HORIZON COMPACT	B	From Leg	4.0000 0.00 0.00	0.00	97.0000
HORIZON COMPACT	C	From Leg	4.0000 0.00 0.00	0.00	97.0000
**					
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.00	97.0000
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.00	97.0000
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.00	97.0000
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Leg	4.0000 0.00	0.00	97.0000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Leg	1.00 4.0000 0.00	0.00	97.0000
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Leg	1.00 4.0000 0.00	0.00	97.0000
TD-RRH8X20-25	A	From Leg	1.00 4.0000 0.00	0.00	97.0000
TD-RRH8X20-25	B	From Leg	0.00 4.0000 0.00	0.00	97.0000
TD-RRH8X20-25	C	From Leg	0.00 4.0000 0.00	0.00	97.0000
Platform Mount [LP 713-1]	C	None	0.00	0.00	97.0000
**					
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Face	4.0000 0.00 0.00	0.00	87.0000
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Face	4.0000 0.00 0.00	0.00	87.0000
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Face	4.0000 0.00 0.00	0.00	87.0000
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Face	4.0000 0.00 0.00	0.00	87.0000
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Face	4.0000 0.00 0.00	0.00	87.0000
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Face	4.0000 0.00 0.00	0.00	87.0000
AIR -32 B2A/B66AA w/ Mount Pipe	A	From Face	4.0000 0.00 0.00	0.00	87.0000
AIR -32 B2A/B66AA w/ Mount Pipe	B	From Face	4.0000 0.00 0.00	0.00	87.0000
AIR -32 B2A/B66AA w/ Mount Pipe	C	From Face	4.0000 0.00 0.00	0.00	87.0000
KRY 112 144/1	A	From Face	4.0000 0.00 0.00	0.00	87.0000
KRY 112 144/1	A	From Face	4.0000 0.00 0.00	0.00	87.0000
KRY 112 144/1	B	From Face	4.0000 0.00 0.00	0.00	87.0000
RADIO 4449 B12/B71	A	From Leg	4.0000 0.00 0.00	0.00	87.0000
(2) RADIO 4449 B12/B71	C	From Leg	4.0000 0.00 0.00	0.00	87.0000
T-Arm Mount [TA 602-3]	C	None	0.00	0.00	87.0000
**					
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	77.0000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	77.0000
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	77.0000
TA08025-B604	A	From Leg	4.0000 0.00 0.00	0.00	77.0000
TA08025-B604	B	From Leg	4.0000 0.00 0.00	0.00	77.0000
TA08025-B604	C	From Leg	4.0000 0.00 0.00	0.00	77.0000
TA08025-B605	A	From Leg	4.0000 0.00 0.00	0.00	77.0000
TA08025-B605	B	From Leg	4.0000 0.00 0.00	0.00	77.0000
TA08025-B605	C	From Leg	4.0000 0.00 0.00	0.00	77.0000
RDIDC-9181-PF-48	B	From Leg	4.0000 0.00 0.00	0.00	77.0000
(2) 8' x 2" Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	77.0000
(2) 8' x 2" Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	77.0000
(2) 8' x 2" Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	77.0000
Commscope MC-PK8-DSH ****	C	None		0.00	77.0000

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft
VHLP2.5-18	B	Paraboloid w/Shroud (HP)	From Leg	4.0000 0.00 6.00	0.00		97.0000	2.5000
VHLP2-18	C	Paraboloid w/o Radome	From Leg	4.0000 0.00 6.00	0.00		97.0000	2.1750
****								

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
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	130 - 125	Pole	Max Tension	8	0.00	0.00	0.00
			Max. Compression	26	-0.29	-0.00	0.00
			Max. Mx	8	-0.10	-0.63	-0.00
			Max. My	2	-0.10	-0.00	0.62
			Max. Vy	8	0.25	-0.63	-0.00
			Max. Vx	2	-0.25	-0.00	0.62
			Max. Torque	10			-0.00
L2	125 - 120	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-15.13	0.46	-0.27
			Max. Mx	20	-4.15	5.22	-0.03
			Max. My	14	-4.17	0.06	-5.17

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	8.03	-5.04	-0.04
			Max. Vx	2	-8.02	0.06	5.07
			Max. Torque	24			0.24
L3	120 - 115	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-15.72	0.27	-0.17
			Max. Mx	20	-4.36	46.10	-0.00
			Max. My	14	-4.38	0.01	-46.00
			Max. Vy	8	8.33	-45.97	-0.03
			Max. Vx	2	-8.32	0.04	45.93
			Max. Torque	24			0.24
L4	115 - 110	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.34	0.08	-0.07
			Max. Mx	20	-4.62	88.49	0.03
			Max. My	14	-4.64	-0.05	-88.34
			Max. Vy	8	8.64	-88.42	-0.02
			Max. Vx	2	-8.63	0.01	88.31
			Max. Torque	2			0.21
L5	110 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.05	-2.73	1.07
			Max. Mx	8	-9.02	-156.62	0.25
			Max. My	2	-9.06	-0.78	155.83
			Max. Vy	8	13.53	-156.62	0.25
			Max. Vx	2	-13.50	-0.78	155.83
			Max. Torque	24			-0.97
L6	105 - 100	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-29.05	-2.95	0.67
			Max. Mx	8	-9.52	-226.84	-0.22
			Max. My	2	-9.57	-0.56	225.27
			Max. Vy	8	14.41	-226.84	-0.22
			Max. Vx	2	-14.28	-0.56	225.27
			Max. Torque	4			-1.58
L7	100 - 95	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.97	-3.17	0.65
			Max. Mx	8	-13.48	-312.22	-0.46
			Max. My	2	-13.54	-0.35	309.89
			Max. Vy	8	19.43	-312.22	-0.46
			Max. Vx	2	-19.27	-0.35	309.89
			Max. Torque	4			-1.60
L8	95 - 90	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.99	-3.37	0.82
			Max. Mx	8	-14.14	-410.00	-0.65
			Max. My	2	-14.19	-0.12	406.90
			Max. Vy	8	19.71	-410.00	-0.65
			Max. Vx	2	-19.56	-0.12	406.90
			Max. Torque	4			-1.60
L9	90 - 89.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.07	-3.38	0.83
			Max. Mx	8	-14.20	-414.93	-0.65
			Max. My	2	-14.26	-0.11	411.79
			Max. Vy	8	19.71	-414.93	-0.65
			Max. Vx	2	-19.56	-0.11	411.79
			Max. Torque	4			-1.60
L10	89.75 - 84.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.43	-2.20	1.32
			Max. Mx	8	-17.92	-520.85	-0.67
			Max. My	2	-17.98	0.72	517.53
			Max. Vy	8	23.23	-520.85	-0.67
			Max. Vx	2	-22.99	0.72	517.53
			Max. Torque	4			-1.60
L11	84.75 - 84.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.50	-2.22	1.34
			Max. Mx	8	-17.97	-524.81	-0.67
			Max. My	2	-18.03	0.72	521.44
			Max. Vy	8	23.25	-524.81	-0.67
			Max. Vx	2	-23.00	0.72	521.44
			Max. Torque	4			-1.22
L12	84.58 -	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	84.33						
			Max. Compression	26	-51.62	-2.25	1.36
			Max. Mx	8	-18.03	-530.63	-0.67
			Max. My	2	-18.10	0.72	527.20
			Max. Vy	8	23.29	-530.63	-0.67
			Max. Vx	2	-23.02	0.72	527.20
			Max. Torque	4			-1.22
L13	84.33 - 83.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.06	-2.34	1.42
			Max. Mx	8	-18.24	-551.92	-0.68
			Max. My	2	-18.32	0.71	548.20
			Max. Vy	8	23.42	-551.92	-0.68
			Max. Vx	2	-23.10	0.71	548.20
			Max. Torque	4			-1.22
L14	83.42 - 83.17	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.20	-2.37	1.44
			Max. Mx	8	-18.33	-557.79	-0.68
			Max. My	2	-18.41	0.71	553.98
			Max. Vy	8	23.46	-557.79	-0.68
			Max. Vx	2	-23.11	0.71	553.98
			Max. Torque	4			-1.22
L15	83.17 - 83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.29	-2.39	1.45
			Max. Mx	8	-18.38	-561.79	-0.68
			Max. My	2	-18.46	0.71	557.92
			Max. Vy	8	23.48	-561.79	-0.68
			Max. Vx	2	-23.13	0.71	557.92
			Max. Torque	4			-1.22
L16	83 - 82.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.41	-2.42	1.47
			Max. Mx	8	-18.45	-567.67	-0.68
			Max. My	2	-18.52	0.71	563.71
			Max. Vy	8	23.52	-567.67	-0.68
			Max. Vx	2	-23.15	0.71	563.71
			Max. Torque	4			-1.22
L17	82.75 - 77.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.73	-2.96	1.86
			Max. Mx	8	-19.75	-687.29	-0.68
			Max. My	2	-19.84	0.66	680.65
			Max. Vy	8	24.25	-687.29	-0.68
			Max. Vx	2	-23.58	0.66	680.65
			Max. Torque	4			-1.22
L18	77.75 - 70	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.21	-3.91	1.89
			Max. Mx	8	-23.80	-789.60	-0.77
			Max. My	2	-23.91	0.56	779.73
			Max. Vy	8	28.16	-789.60	-0.77
			Max. Vx	2	-27.25	0.56	779.73
			Max. Torque	4			-1.46
L19	70 - 69	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.67	-4.53	2.32
			Max. Mx	8	-25.98	-932.64	-0.84
			Max. My	2	-26.11	0.57	917.37
			Max. Vy	8	28.97	-932.64	-0.84
			Max. Vx	2	-27.76	0.57	917.37
			Max. Torque	4			-1.46
L20	69 - 67.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.66	-4.77	2.49
			Max. Mx	8	-26.55	-988.59	-0.87
			Max. My	2	-26.68	0.57	970.85
			Max. Vy	8	29.25	-988.59	-0.87
			Max. Vx	2	-27.93	0.57	970.85
			Max. Torque	4			-1.46
L21	67.08 - 66.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.79	-4.80	2.51

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	-26.65	-995.92	-0.87
			Max. My	2	-26.78	0.57	977.84
			Max. Vy	8	29.27	-995.92	-0.87
			Max. Vx	2	-27.93	0.57	977.84
			Max. Torque	4			-1.46
L22	66.83 - 64.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.26	-5.13	2.77
			Max. Mx	8	-27.48	-1077.06	-0.91
			Max. My	2	-27.61	0.57	1055.03
			Max. Vy	8	29.67	-1077.06	-0.91
			Max. Vx	2	-28.17	0.57	1055.03
			Max. Torque	4			-1.46
L23	64.08 - 63.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.40	-5.16	2.79
			Max. Mx	8	-27.58	-1084.49	-0.91
			Max. My	2	-27.71	0.57	1062.08
			Max. Vy	8	29.69	-1084.49	-0.91
			Max. Vx	2	-28.18	0.57	1062.08
			Max. Torque	4			-1.46
L24	63.83 - 62.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.17	-5.33	2.91
			Max. Mx	8	-28.02	-1124.18	-0.93
			Max. My	2	-28.16	0.57	1099.67
			Max. Vy	8	29.90	-1124.18	-0.93
			Max. Vx	2	-28.31	0.57	1099.67
			Max. Torque	4			-1.46
L25	62.5 - 62.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.32	-5.36	2.93
			Max. Mx	8	-28.13	-1131.67	-0.93
			Max. My	2	-28.26	0.57	1106.75
			Max. Vy	8	29.92	-1131.67	-0.93
			Max. Vx	2	-28.32	0.57	1106.75
			Max. Torque	4			-1.46
L26	62.25 - 57.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.30	-6.02	3.39
			Max. Mx	8	-29.93	-1283.40	-0.98
			Max. My	2	-30.07	0.55	1249.61
			Max. Vy	8	30.68	-1283.40	-0.98
			Max. Vx	2	-28.78	0.55	1249.61
			Max. Torque	4			-1.46
L27	57.25 - 53.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.57	-6.51	3.74
			Max. Mx	8	-31.31	-1399.68	-1.02
			Max. My	2	-31.44	0.54	1358.23
			Max. Vy	8	31.25	-1399.68	-1.02
			Max. Vx	2	-29.12	0.54	1358.23
			Max. Torque	4			-1.46
L28	53.5 - 53.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.73	-6.55	3.77
			Max. Mx	8	-31.42	-1407.50	-1.02
			Max. My	2	-31.55	0.54	1365.52
			Max. Vy	8	31.26	-1407.50	-1.02
			Max. Vx	2	-29.13	0.54	1365.52
			Max. Torque	4			-1.46
L29	53.25 - 52.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.15	-6.64	3.83
			Max. Mx	8	-31.67	-1428.51	-1.03
			Max. My	2	-31.81	0.53	1385.07
			Max. Vy	8	31.35	-1428.51	-1.03
			Max. Vx	2	-29.19	0.53	1385.07
			Max. Torque	4			-1.46
L30	52.58 - 52.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.31	-6.67	3.86
			Max. Mx	8	-31.77	-1436.37	-1.03

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	-31.91	0.53	1392.38
			Max. Vy	8	31.37	-1436.37	-1.03
			Max. Vx	2	-29.21	0.53	1392.38
			Max. Torque	4			-1.46
L31	52.33 - 47.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.47	-7.34	4.34
			Max. Mx	8	-33.72	-1594.98	-1.07
			Max. My	2	-33.85	0.50	1539.72
			Max. Vy	8	31.98	-1594.98	-1.07
			Max. Vx	2	-29.67	0.50	1539.72
			Max. Torque	4			-1.46
L32	47.33 - 44.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.27	-7.71	4.61
			Max. Mx	8	-34.81	-1683.49	-1.09
			Max. My	2	-34.93	0.47	1621.73
			Max. Vy	8	32.31	-1683.49	-1.09
			Max. Vx	2	-29.93	0.47	1621.73
			Max. Torque	10			1.49
L33	44.58 - 44.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.43	-7.74	4.64
			Max. Mx	8	-34.92	-1691.58	-1.09
			Max. My	2	-35.05	0.47	1629.21
			Max. Vy	8	32.33	-1691.58	-1.09
			Max. Vx	2	-29.94	0.47	1629.21
			Max. Torque	10			1.49
L34	44.33 - 41.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.02	-8.08	4.87
			Max. Mx	8	-35.88	-1770.08	-1.11
			Max. My	2	-36.00	0.45	1701.70
			Max. Vy	8	32.71	-1770.08	-1.11
			Max. Vx	2	-30.16	0.45	1701.70
			Max. Torque	10			1.53
L35	41.92 - 41.67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.18	-8.12	4.90
			Max. Mx	8	-35.99	-1778.27	-1.11
			Max. My	2	-36.11	0.44	1709.25
			Max. Vy	8	32.74	-1778.27	-1.11
			Max. Vx	2	-30.17	0.44	1709.25
			Max. Torque	10			1.53
L36	41.67 - 34.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.92	-8.50	5.17
			Max. Mx	8	-37.07	-1866.25	-1.12
			Max. My	2	-37.19	0.41	1790.21
			Max. Vy	8	33.06	-1866.25	-1.12
			Max. Vx	24	-30.54	997.91	1709.62
			Max. Torque	10			1.57
L37	34.08 - 34	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-90.19	-9.22	5.67
			Max. Mx	8	-40.73	-2033.54	-1.14
			Max. My	2	-40.85	0.35	1943.82
			Max. Vy	8	33.76	-2033.54	-1.14
			Max. Vx	24	-31.31	1088.01	1864.37
			Max. Torque	10			1.65
L38	34 - 29	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-93.53	-9.93	6.18
			Max. Mx	8	-42.88	-2203.98	-1.16
			Max. My	2	-42.98	0.28	2099.86
			Max. Vy	8	34.32	-2203.98	-1.16
			Max. Vx	24	-31.96	1180.16	2022.69
			Max. Torque	10			1.73
L39	29 - 26.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-94.97	-10.19	6.38
			Max. Mx	8	-43.79	-2275.69	-1.17

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	-43.88	0.25	2165.38
			Max. Vy	8	34.54	-2275.69	-1.17
			Max. Vx	24	-32.23	1219.04	2089.49
			Max. Torque	10			1.76
L40	26.92 - 26.67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-95.16	-10.22	6.41
			Max. Mx	8	-43.92	-2284.35	-1.17
			Max. My	2	-44.01	0.25	2173.28
			Max. Vy	8	34.56	-2284.35	-1.17
			Max. Vx	24	-32.24	1223.73	2097.56
			Max. Torque	10			1.77
L41	26.67 - 21.67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-98.87	-10.81	6.89
			Max. Mx	8	-46.34	-2458.80	-1.18
			Max. My	2	-46.42	0.16	2332.35
			Max. Vy	8	35.11	-2458.80	-1.18
			Max. Vx	24	-32.88	1318.54	2260.53
			Max. Torque	10			1.84
L42	21.67 - 18	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-101.64	-11.32	7.25
			Max. Mx	8	-48.15	-2588.56	-1.18
			Max. My	2	-48.21	0.09	2450.41
			Max. Vy	8	35.50	-2588.56	-1.18
			Max. Vx	24	-33.33	1389.26	2382.13
			Max. Torque	10			1.89
L43	18 - 17.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-101.85	-11.35	7.28
			Max. Mx	8	-48.30	-2597.45	-1.18
			Max. My	2	-48.36	0.09	2458.49
			Max. Vy	8	35.51	-2597.45	-1.18
			Max. Vx	24	-33.35	1394.11	2390.47
			Max. Torque	10			1.89
L44	17.75 - 17.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-102.05	-11.39	7.31
			Max. Mx	8	-48.44	-2606.34	-1.18
			Max. My	2	-48.50	0.08	2466.57
			Max. Vy	8	35.53	-2606.34	-1.18
			Max. Vx	24	-33.38	1398.97	2398.82
			Max. Torque	10			1.90
L45	17.5 - 17.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-102.25	-11.42	7.33
			Max. Mx	8	-48.57	-2615.25	-1.18
			Max. My	2	-48.63	0.08	2474.66
			Max. Vy	8	35.56	-2615.25	-1.18
			Max. Vx	24	-33.41	1403.83	2407.18
			Max. Torque	10			1.90
L46	17.25 - 17.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-102.39	-11.45	7.35
			Max. Mx	8	-48.67	-2621.30	-1.18
			Max. My	2	-48.72	0.07	2480.17
			Max. Vy	8	35.58	-2621.30	-1.18
			Max. Vx	24	-33.43	1407.14	2412.87
			Max. Torque	10			1.90
L47	17.08 - 16.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-102.59	-11.48	7.37
			Max. Mx	8	-48.79	-2630.22	-1.18
			Max. My	2	-48.85	0.07	2488.27
			Max. Vy	8	35.60	-2630.22	-1.18
			Max. Vx	24	-33.46	1412.00	2421.24
			Max. Torque	10			1.90
L48	16.83 - 13	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-105.55	-12.03	7.76
			Max. Mx	8	-50.74	-2767.57	-1.17
			Max. My	2	-50.78	-0.01	2612.95
			Max. Vy	8	36.00	-2767.57	-1.17

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	24	-33.92	1487.10	2550.40
			Max. Torque	10			1.96
L49	13 - 12.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-105.77	-12.07	7.79
			Max. Mx	8	-50.90	-2776.58	-1.17
			Max. My	2	-50.94	-0.01	2621.13
			Max. Vy	8	36.01	-2776.58	-1.17
			Max. Vx	24	-33.94	1492.03	2558.89
			Max. Torque	10			1.96
L50	12.75 - 11.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-106.48	-12.19	7.87
			Max. Mx	8	-51.38	-2806.57	-1.17
			Max. My	2	-51.42	-0.03	2648.32
			Max. Vy	8	36.11	-2806.57	-1.17
			Max. Vx	24	-34.05	1508.45	2587.13
			Max. Torque	10			1.97
L51	11.92 - 11.67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-106.67	-12.23	7.90
			Max. Mx	8	-51.51	-2815.61	-1.17
			Max. My	2	-51.55	-0.04	2656.52
			Max. Vy	8	36.12	-2815.61	-1.17
			Max. Vx	24	-34.07	1513.41	2595.66
			Max. Torque	10			1.97
L52	11.67 - 6.67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-110.47	-12.90	8.48
			Max. Mx	8	-54.10	-2997.79	-1.16
			Max. My	2	-54.12	-0.15	2821.47
			Max. Vy	8	36.62	-2997.79	-1.16
			Max. Vx	24	-34.66	1613.37	2767.65
			Max. Torque	10			2.07
L53	6.67 - 6.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-110.60	-12.92	8.50
			Max. Mx	8	-54.20	-3004.03	-1.16
			Max. My	2	-54.22	-0.16	2827.11
			Max. Vy	8	36.62	-3004.03	-1.16
			Max. Vx	24	-34.67	1616.80	2773.55
			Max. Torque	10			2.07
L54	6.5 - 6.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-110.79	-12.96	8.53
			Max. Mx	8	-54.34	-3013.20	-1.16
			Max. My	2	-54.36	-0.16	2835.41
			Max. Vy	8	36.65	-3013.20	-1.16
			Max. Vx	24	-34.70	1621.84	2782.23
			Max. Torque	10			2.08
L55	6.25 - 3.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-112.73	-13.27	8.85
			Max. Mx	8	-55.72	-3105.33	-1.15
			Max. My	2	-55.73	-0.23	2918.69
			Max. Vy	8	36.92	-3105.33	-1.15
			Max. Vx	24	-35.02	1672.53	2869.45
			Max. Torque	10			2.14
L56	3.75 - 3.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-112.93	-13.30	8.88
			Max. Mx	8	-55.88	-3114.57	-1.15
			Max. My	2	-55.89	-0.23	2927.04
			Max. Vy	8	36.93	-3114.57	-1.15
			Max. Vx	24	-35.03	1677.62	2878.22
			Max. Torque	10			2.14
L57	3.5 - 3	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-113.32	-13.37	8.94
			Max. Mx	8	-56.17	-3133.09	-1.15
			Max. My	2	-56.18	-0.25	2943.77
			Max. Vy	8	36.99	-3133.09	-1.15
			Max. Vx	24	-35.08	1687.82	2895.77
			Max. Torque	10			2.16
L58	3 - 2.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-113.52	-13.40	8.97

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	-56.31	-3142.36	-1.15
			Max. My	2	-56.32	-0.25	2952.14
			Max. Vy	8	37.01	-3142.36	-1.15
			Max. Vx	24	-35.10	1692.92	2904.55
			Max. Torque	10			2.16
L59	2.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-115.61	-13.74	9.29
			Max. Mx	8	-57.87	-3244.73	-1.14
			Max. My	2	-57.88	-0.32	3044.56
			Max. Vy	8	37.32	-3244.73	-1.14
			Max. Vx	24	-35.38	1749.27	3001.55
			Max. Torque	10			2.23

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	31	115.61	-8.95	-5.11
	Max. H_x	20	57.89	37.29	0.21
	Max. H_z	24	57.89	20.65	35.36
	Max. M_x	2	3044.56	0.05	33.68
	Max. M_z	8	3244.73	-37.29	-0.04
	Max. Torsion	10	2.23	-36.73	-20.95
	Min. Vert	17	43.42	16.84	-29.27
	Min. H_x	8	57.89	-37.29	-0.04
	Min. H_z	12	57.89	-20.58	-35.30
	Min. M_x	14	-3026.87	-0.19	-33.58
	Min. M_z	20	-3231.90	37.29	0.21
	Min. Torsion	22	-1.95	36.63	21.13

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	48.24	0.00	0.00	-3.03	-5.08	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	57.89	-0.05	-33.68	-3044.56	-0.32	0.83
0.9 Dead+1.0 Wind 0 deg - No Ice	43.42	-0.05	-33.68	-3013.21	1.22	0.80
1.2 Dead+1.0 Wind 30 deg - No Ice	57.89	17.07	-29.24	-2637.53	-1547.07	1.46
0.9 Dead+1.0 Wind 30 deg - No Ice	43.42	17.07	-29.24	-2610.30	-1530.10	1.43
1.2 Dead+1.0 Wind 60 deg - No Ice	57.89	30.62	-17.45	-1547.67	-2722.35	0.93
0.9 Dead+1.0 Wind 60 deg - No Ice	43.42	30.62	-17.45	-1531.45	-2693.88	0.92
1.2 Dead+1.0 Wind 90 deg - No Ice	57.89	37.29	0.04	1.14	-3244.73	-0.14
0.9 Dead+1.0 Wind 90 deg - No Ice	43.42	37.29	0.04	2.04	-3211.50	-0.14
1.2 Dead+1.0 Wind 120 deg - No Ice	57.89	36.73	20.95	1743.96	-3080.61	-2.23
0.9 Dead+1.0 Wind 120 deg - No Ice	43.42	36.73	20.95	1728.13	-3049.44	-2.20
1.2 Dead+1.0 Wind 150 deg - No Ice	57.89	20.58	35.30	2987.96	-1754.47	-1.84
0.9 Dead+1.0 Wind 150 deg - No Ice	43.42	20.58	35.30	2959.95	-1735.92	-1.81

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 180 deg - No Ice	57.89	0.19	33.58	3026.87	-26.48	-0.75
0.9 Dead+1.0 Wind 180 deg - No Ice	43.42	0.19	33.58	2997.54	-24.66	-0.72
1.2 Dead+1.0 Wind 210 deg - No Ice	57.89	-16.84	29.27	2633.56	1509.92	-1.03
0.9 Dead+1.0 Wind 210 deg - No Ice	43.42	-16.84	29.27	2608.20	1496.41	-1.00
1.2 Dead+1.0 Wind 240 deg - No Ice	57.89	-30.59	17.34	1528.80	2707.33	-0.73
0.9 Dead+1.0 Wind 240 deg - No Ice	43.42	-30.59	17.34	1514.62	2682.10	-0.72
1.2 Dead+1.0 Wind 270 deg - No Ice	57.89	-37.29	-0.21	-26.56	3231.90	-0.28
0.9 Dead+1.0 Wind 270 deg - No Ice	43.42	-37.29	-0.21	-25.36	3201.88	-0.29
1.2 Dead+1.0 Wind 300 deg - No Ice	57.89	-36.63	-21.13	-1771.58	3057.24	1.95
0.9 Dead+1.0 Wind 300 deg - No Ice	43.42	-36.63	-21.13	-1753.62	3029.40	1.93
1.2 Dead+1.0 Wind 330 deg - No Ice	57.89	-20.65	-35.36	-3001.55	1749.27	1.84
0.9 Dead+1.0 Wind 330 deg - No Ice	43.42	-20.65	-35.36	-2971.57	1733.87	1.81
1.2 Dead+1.0 Ice+1.0 Temp	115.61	0.00	-0.00	-9.29	-13.74	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	115.61	-0.01	-8.63	-841.30	-13.02	0.19
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	115.61	4.34	-7.45	-726.77	-432.54	0.32
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	115.61	7.53	-4.30	-423.35	-739.55	0.20
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	115.61	9.06	0.01	-8.64	-877.20	-0.07
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	115.61	8.95	5.11	454.04	-827.10	-0.62
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	115.61	5.08	8.73	789.71	-479.51	-0.53
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	115.61	0.04	8.61	820.30	-17.95	-0.17
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	115.61	-4.30	7.46	708.75	399.45	-0.23
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	115.61	-7.53	4.28	402.16	711.20	-0.16
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	115.61	-9.05	-0.04	-14.04	849.33	-0.02
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	115.61	-8.93	-5.15	-477.19	796.91	0.56
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	115.61	-5.09	-8.74	-809.73	453.36	0.53
Dead+Wind 0 deg - Service	48.24	-0.01	-7.32	-660.43	-3.90	0.17
Dead+Wind 30 deg - Service	48.24	3.71	-6.35	-572.45	-338.26	0.31
Dead+Wind 60 deg - Service	48.24	6.65	-3.79	-336.86	-592.34	0.20
Dead+Wind 90 deg - Service	48.24	8.10	0.01	-2.04	-705.30	-0.03
Dead+Wind 120 deg - Service	48.24	7.98	4.55	374.79	-669.89	-0.48
Dead+Wind 150 deg - Service	48.24	4.47	7.67	643.73	-383.15	-0.39
Dead+Wind 180 deg - Service	48.24	0.04	7.30	652.04	-9.54	-0.16
Dead+Wind 210 deg - Service	48.24	-3.66	6.36	567.02	322.58	-0.22
Dead+Wind 240 deg - Service	48.24	-6.65	3.77	328.22	581.43	-0.16
Dead+Wind 270 deg - Service	48.24	-8.10	-0.05	-8.01	694.87	-0.07
Dead+Wind 300 deg - Service	48.24	-7.96	-4.59	-385.32	657.19	0.42
Dead+Wind 330 deg - Service	48.24	-4.48	-7.68	-651.24	374.37	0.39

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-48.24	0.00	0.00	48.24	0.00	0.000%
2	-0.05	-57.89	-33.68	0.05	57.89	33.68	0.000%
3	-0.05	-43.42	-33.68	0.05	43.42	33.68	0.000%
4	17.07	-57.89	-29.24	-17.07	57.89	29.24	0.000%
5	17.07	-43.42	-29.24	-17.07	43.42	29.24	0.000%
6	30.62	-57.89	-17.45	-30.62	57.89	17.45	0.000%
7	30.62	-43.42	-17.45	-30.62	43.42	17.45	0.000%
8	37.29	-57.89	0.04	-37.29	57.89	-0.04	0.000%
9	37.29	-43.42	0.04	-37.29	43.42	-0.04	0.000%
10	36.73	-57.89	20.95	-36.73	57.89	-20.95	0.000%
11	36.73	-43.42	20.95	-36.73	43.42	-20.95	0.000%
12	20.58	-57.89	35.30	-20.58	57.89	-35.30	0.000%
13	20.58	-43.42	35.30	-20.58	43.42	-35.30	0.000%
14	0.19	-57.89	33.58	-0.19	57.89	-33.58	0.000%
15	0.19	-43.42	33.58	-0.19	43.42	-33.58	0.000%
16	-16.84	-57.89	29.27	16.84	57.89	-29.27	0.000%
17	-16.84	-43.42	29.27	16.84	43.42	-29.27	0.000%
18	-30.59	-57.89	17.34	30.59	57.89	-17.34	0.000%
19	-30.59	-43.42	17.34	30.59	43.42	-17.34	0.000%
20	-37.29	-57.89	-0.21	37.29	57.89	0.21	0.000%
21	-37.29	-43.42	-0.21	37.29	43.42	0.21	0.000%
22	-36.63	-57.89	-21.13	36.63	57.89	21.13	0.000%
23	-36.63	-43.42	-21.13	36.63	43.42	21.13	0.000%
24	-20.65	-57.89	-35.36	20.65	57.89	35.36	0.000%
25	-20.65	-43.42	-35.36	20.65	43.42	35.36	0.000%
26	0.00	-115.61	0.00	-0.00	115.61	0.00	0.000%
27	-0.01	-115.61	-8.63	0.01	115.61	8.63	0.000%
28	4.34	-115.61	-7.45	-4.34	115.61	7.45	0.000%
29	7.53	-115.61	-4.30	-7.53	115.61	4.30	0.000%
30	9.06	-115.61	0.01	-9.06	115.61	-0.01	0.000%
31	8.95	-115.61	5.11	-8.95	115.61	-5.11	0.000%
32	5.08	-115.61	8.73	-5.08	115.61	-8.73	0.000%
33	0.04	-115.61	8.61	-0.04	115.61	-8.61	0.000%
34	-4.30	-115.61	7.46	4.30	115.61	-7.46	0.000%
35	-7.53	-115.61	4.28	7.53	115.61	-4.28	0.000%
36	-9.05	-115.61	-0.04	9.05	115.61	0.04	0.000%
37	-8.93	-115.61	-5.15	8.93	115.61	5.15	0.000%
38	-5.09	-115.61	-8.74	5.09	115.61	8.74	0.000%
39	-0.01	-48.24	-7.32	0.01	48.24	7.32	0.000%
40	3.71	-48.24	-6.35	-3.71	48.24	6.35	0.000%
41	6.65	-48.24	-3.79	-6.65	48.24	3.79	0.000%
42	8.10	-48.24	0.01	-8.10	48.24	-0.01	0.000%
43	7.98	-48.24	4.55	-7.98	48.24	-4.55	0.000%
44	4.47	-48.24	7.67	-4.47	48.24	-7.67	0.000%
45	0.04	-48.24	7.30	-0.04	48.24	-7.30	0.000%
46	-3.66	-48.24	6.36	3.66	48.24	-6.36	0.000%
47	-6.65	-48.24	3.77	6.65	48.24	-3.77	0.000%
48	-8.10	-48.24	-0.05	8.10	48.24	0.05	0.000%
49	-7.96	-48.24	-4.59	7.96	48.24	4.59	0.000%
50	-4.48	-48.24	-7.68	4.48	48.24	7.68	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00001188
2	Yes	5	0.00000001	0.00060782
3	Yes	5	0.00000001	0.00024556
4	Yes	6	0.00000001	0.00075608

5	Yes	6	0.00000001	0.00024215
6	Yes	6	0.00000001	0.00072486
7	Yes	6	0.00000001	0.00022958
8	Yes	5	0.00000001	0.00039397
9	Yes	5	0.00000001	0.00013813
10	Yes	6	0.00000001	0.00083181
11	Yes	6	0.00000001	0.00025252
12	Yes	6	0.00000001	0.00087223
13	Yes	6	0.00000001	0.00026763
14	Yes	5	0.00000001	0.00083910
15	Yes	5	0.00000001	0.00035795
16	Yes	6	0.00000001	0.00069845
17	Yes	6	0.00000001	0.00022355
18	Yes	6	0.00000001	0.00073864
19	Yes	6	0.00000001	0.00023617
20	Yes	5	0.00000001	0.00041322
21	Yes	5	0.00000001	0.00014581
22	Yes	6	0.00000001	0.00087700
23	Yes	6	0.00000001	0.00026776
24	Yes	6	0.00000001	0.00082836
25	Yes	6	0.00000001	0.00025233
26	Yes	5	0.00000001	0.00064639
27	Yes	7	0.00000001	0.00052425
28	Yes	7	0.00000001	0.00057550
29	Yes	7	0.00000001	0.00057759
30	Yes	7	0.00000001	0.00054038
31	Yes	7	0.00000001	0.00062174
32	Yes	7	0.00000001	0.00061698
33	Yes	7	0.00000001	0.00051279
34	Yes	7	0.00000001	0.00054591
35	Yes	7	0.00000001	0.00054808
36	Yes	7	0.00000001	0.00051948
37	Yes	7	0.00000001	0.00061213
38	Yes	7	0.00000001	0.00061018
39	Yes	5	0.00000001	0.00007799
40	Yes	5	0.00000001	0.00023649
41	Yes	5	0.00000001	0.00021324
42	Yes	5	0.00000001	0.00007679
43	Yes	5	0.00000001	0.00025900
44	Yes	5	0.00000001	0.00028933
45	Yes	5	0.00000001	0.00007749
46	Yes	5	0.00000001	0.00019608
47	Yes	5	0.00000001	0.00021940
48	Yes	5	0.00000001	0.00007583
49	Yes	5	0.00000001	0.00028896
50	Yes	5	0.00000001	0.00025450

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	130 - 125	20.91	43	1.64	0.00
L2	125 - 120	19.19	43	1.64	0.00
L3	120 - 115	17.47	43	1.64	0.00
L4	115 - 110	15.77	43	1.60	0.00
L5	110 - 105	14.13	43	1.52	0.00
L6	105 - 100	12.59	43	1.42	0.00
L7	100 - 95	11.16	43	1.30	0.00
L8	95 - 90	9.87	43	1.17	0.00
L9	90 - 89.75	8.72	43	1.02	0.00
L10	89.75 - 84.75	8.67	43	1.01	0.00
L11	84.75 - 84.58	7.65	43	0.93	0.00
L12	84.58 - 84.33	7.62	43	0.92	0.00
L13	84.33 - 83.42	7.57	43	0.92	0.00
L14	83.42 - 83.17	7.40	43	0.91	0.00
L15	83.17 - 83	7.35	43	0.91	0.00
L16	83 - 82.75	7.32	43	0.90	0.00

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L17	82.75 - 77.75	7.27	43	0.90	0.00
L18	77.75 - 70	6.36	43	0.83	0.00
L19	74 - 69	5.73	43	0.78	0.00
L20	69 - 67.08	4.93	43	0.74	0.00
L21	67.08 - 66.83	4.64	43	0.71	0.00
L22	66.83 - 64.08	4.60	43	0.71	0.00
L23	64.08 - 63.83	4.21	43	0.67	0.00
L24	63.83 - 62.5	4.17	43	0.66	0.00
L25	62.5 - 62.25	3.99	43	0.65	0.00
L26	62.25 - 57.25	3.96	43	0.64	0.00
L27	57.25 - 53.5	3.31	43	0.58	0.00
L28	53.5 - 53.25	2.88	43	0.54	0.00
L29	53.25 - 52.58	2.85	43	0.53	0.00
L30	52.58 - 52.33	2.77	43	0.53	0.00
L31	52.33 - 47.33	2.75	43	0.52	0.00
L32	47.33 - 44.58	2.23	43	0.47	0.00
L33	44.58 - 44.33	1.97	43	0.43	0.00
L34	44.33 - 41.92	1.95	43	0.43	0.00
L35	41.92 - 41.67	1.74	43	0.40	0.00
L36	41.67 - 34.08	1.72	43	0.40	0.00
L37	39 - 34	1.50	43	0.37	0.00
L38	34 - 29	1.13	43	0.34	0.00
L39	29 - 26.92	0.81	43	0.28	0.00
L40	26.92 - 26.67	0.69	43	0.26	0.00
L41	26.67 - 21.67	0.68	43	0.25	0.00
L42	21.67 - 18	0.44	43	0.20	0.00
L43	18 - 17.75	0.30	43	0.16	0.00
L44	17.75 - 17.5	0.29	43	0.16	0.00
L45	17.5 - 17.25	0.28	43	0.16	0.00
L46	17.25 - 17.08	0.27	43	0.16	0.00
L47	17.08 - 16.83	0.27	43	0.16	0.00
L48	16.83 - 13	0.26	43	0.15	0.00
L49	13 - 12.75	0.15	43	0.12	0.00
L50	12.75 - 11.92	0.15	43	0.12	0.00
L51	11.92 - 11.67	0.13	43	0.11	0.00
L52	11.67 - 6.67	0.12	43	0.11	0.00
L53	6.67 - 6.5	0.04	43	0.05	0.00
L54	6.5 - 6.25	0.04	43	0.05	0.00
L55	6.25 - 3.75	0.03	43	0.05	0.00
L56	3.75 - 3.5	0.01	43	0.03	0.00
L57	3.5 - 3	0.01	43	0.03	0.00
L58	3 - 2.75	0.01	43	0.02	0.00
L59	2.75 - 0	0.01	43	0.02	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
121.0000	80010798 w/ Mount Pipe	43	17.81	1.64	0.00	25121
109.0000	(2) SBNHH-1D65B w/ Mount Pipe	43	13.82	1.50	0.00	3077
103.0000	VHLP2.5-18	43	12.01	1.38	0.00	2482
99.0000	800MHz 2X50W RRH W/FILTER	43	10.89	1.28	0.00	2195
97.0000	LLPX310R-V1 w/ Mount Pipe	43	10.37	1.23	0.00	2089
87.0000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	43	8.10	0.97	0.00	3231
77.0000	MX08FRO665-21 w/ Mount Pipe	43	6.23	0.82	0.00	4443

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	130 - 125	96.17	10	7.58	0.02
L2	125 - 120	88.28	10	7.57	0.02
L3	120 - 115	80.40	10	7.56	0.02
L4	115 - 110	72.59	10	7.37	0.02
L5	110 - 105	65.10	10	6.98	0.02
L6	105 - 100	58.03	10	6.55	0.02
L7	100 - 95	51.47	10	6.01	0.02
L8	95 - 90	45.52	10	5.39	0.01
L9	90 - 89.75	40.25	10	4.70	0.01
L10	89.75 - 84.75	40.00	10	4.68	0.01
L11	84.75 - 84.58	35.31	10	4.28	0.01
L12	84.58 - 84.33	35.16	10	4.27	0.01
L13	84.33 - 83.42	34.94	10	4.25	0.01
L14	83.42 - 83.17	34.14	10	4.20	0.01
L15	83.17 - 83	33.92	10	4.18	0.01
L16	83 - 82.75	33.77	10	4.18	0.01
L17	82.75 - 77.75	33.55	10	4.16	0.01
L18	77.75 - 70	29.36	10	3.85	0.00
L19	74 - 69	26.44	10	3.61	0.00
L20	69 - 67.08	22.75	10	3.41	0.00
L21	67.08 - 66.83	21.41	10	3.28	0.00
L22	66.83 - 64.08	21.24	10	3.27	0.00
L23	64.08 - 63.83	19.41	10	3.08	0.00
L24	63.83 - 62.5	19.25	10	3.06	0.00
L25	62.5 - 62.25	18.41	10	2.98	0.00
L26	62.25 - 57.25	18.25	10	2.97	0.00
L27	57.25 - 53.5	15.30	10	2.69	0.00
L28	53.5 - 53.25	13.27	10	2.48	0.00
L29	53.25 - 52.58	13.14	10	2.46	0.00
L30	52.58 - 52.33	12.80	10	2.43	0.00
L31	52.33 - 47.33	12.67	10	2.41	0.00
L32	47.33 - 44.58	10.28	10	2.15	0.00
L33	44.58 - 44.33	9.09	10	2.00	0.00
L34	44.33 - 41.92	8.98	10	1.98	0.00
L35	41.92 - 41.67	8.02	10	1.85	0.00
L36	41.67 - 34.08	7.92	10	1.84	0.00
L37	39 - 34	6.93	10	1.70	0.00
L38	34 - 29	5.22	10	1.56	0.00
L39	29 - 26.92	3.73	10	1.29	0.00
L40	26.92 - 26.67	3.19	10	1.18	0.00
L41	26.67 - 21.67	3.13	10	1.17	0.00
L42	21.67 - 18	2.03	10	0.93	0.00
L43	18 - 17.75	1.38	10	0.76	0.00
L44	17.75 - 17.5	1.34	10	0.75	0.00
L45	17.5 - 17.25	1.31	10	0.74	0.00
L46	17.25 - 17.08	1.27	10	0.73	0.00
L47	17.08 - 16.83	1.24	10	0.72	0.00
L48	16.83 - 13	1.20	10	0.71	0.00
L49	13 - 12.75	0.70	10	0.54	0.00
L50	12.75 - 11.92	0.67	10	0.53	0.00
L51	11.92 - 11.67	0.58	10	0.50	0.00
L52	11.67 - 6.67	0.56	10	0.49	0.00
L53	6.67 - 6.5	0.17	10	0.25	0.00
L54	6.5 - 6.25	0.16	10	0.25	0.00
L55	6.25 - 3.75	0.15	10	0.24	0.00
L56	3.75 - 3.5	0.05	10	0.13	0.00
L57	3.5 - 3	0.05	10	0.13	0.00
L58	3 - 2.75	0.03	10	0.11	0.00
L59	2.75 - 0	0.03	10	0.10	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
121.0000	80010798 w/ Mount Pipe	10	81.97	7.57	0.02	5796
109.0000	(2) SBNHH-1D65B w/ Mount Pipe	10	63.65	6.90	0.02	693
103.0000	VHLP2.5-18	10	55.34	6.34	0.02	559
99.0000	800MHz 2X50W RRH W/FILTER	10	50.23	5.89	0.01	491
97.0000	LLPX310R-V1 w/ Mount Pipe	10	47.82	5.66	0.01	466
87.0000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	10	37.37	4.47	0.01	711
77.0000	MX08FRO665-21 w/ Mount Pipe	10	28.76	3.80	0.00	971

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	130 - 125 (1)	TP11.775x10.525x0.1875	5.0000	0.0000	0.0	6.9960	-0.10	409.26	0.000
L2	125 - 120 (2)	TP13.025x11.775x0.1875	5.0000	0.0000	0.0	7.7506	-15.07	453.41	0.033
L3	120 - 115 (3)	TP14.275x13.025x0.1875	5.0000	0.0000	0.0	8.5053	-4.27	497.56	0.009
L4	115 - 110 (4)	TP15.525x14.275x0.1875	5.0000	0.0000	0.0	9.2600	-4.50	541.71	0.008
L5	110 - 105 (5)	TP16.7758x15.525x0.25	5.0000	0.0000	0.0	13.3032	-8.84	778.24	0.011
L6	105 - 100 (6)	TP18.0265x16.7758x0.25	5.0000	0.0000	0.0	14.3101	-9.33	837.14	0.011
L7	100 - 95 (7)	TP19.2773x18.0265x0.25	5.0000	0.0000	0.0	15.3169	-13.25	896.04	0.015
L8	95 - 90 (8)	TP20.528x19.2773x0.25	5.0000	0.0000	0.0	16.3238	-13.91	954.94	0.015
L9	90 - 89.75 (9)	TP20.5905x20.528x0.5	0.2500	0.0000	0.0	32.3458	-13.98	1892.23	0.007
L10	89.75 - 84.75 (10)	TP21.8413x20.5905x0.4813	5.0000	0.0000	0.0	33.1000	-17.69	1936.35	0.009
L11	84.75 - 84.58 (11)	TP21.8838x21.8413x0.475	0.1700	0.0000	0.0	32.7448	-17.74	1915.57	0.009
L12	84.58 - 84.33 (12)	TP21.9464x21.8838x0.6375	0.2500	0.0000	0.0	43.7417	-17.81	2558.89	0.007
L13	84.33 - 83.42 (13)	TP22.174x21.9464x0.625	0.9100	0.0000	0.0	43.3673	-18.02	2536.99	0.007
L14	83.42 - 83.17 (14)	TP22.2365x22.174x0.95	0.2500	0.0000	0.0	65.1155	-18.11	3809.26	0.005
L15	83.17 - 83 (15)	TP22.2791x22.2365x0.95	0.1700	0.0000	0.0	65.2456	-18.17	3816.87	0.005
L16	83 - 82.75 (16)	TP22.3416x22.2791x0.7	0.2500	0.0000	0.0	48.7801	-18.23	2853.64	0.006
L17	82.75 - 77.75 (17)	TP23.5923x22.3416x0.6625	5.0000	0.0000	0.0	48.9151	-19.52	2861.53	0.007
L18	77.75 - 70 (18)	TP25.531x23.5923x0.65	7.7500	0.0000	0.0	49.9817	-23.55	2923.93	0.008
L19	70 - 69 (19)	TP25.281x24.0304x0.7	5.0000	0.0000	0.0	55.4055	-25.74	3241.22	0.008
L20	69 - 67.08 (20)	TP25.7612x25.281x0.6875	1.9200	0.0000	0.0	55.5069	-26.31	3247.15	0.008
L21	67.08 - 66.83 (21)	TP25.8237x25.7612x0.6875	0.2500	0.0000	0.0	55.6453	-26.42	3255.25	0.008
L22	66.83 - 64.08 (22)	TP26.5115x25.8237x0.675	2.7500	0.0000	0.0	56.1557	-27.25	3285.11	0.008
L23	64.08 - 63.83 (23)	TP26.5741x26.5115x0.7375	0.2500	0.0000	0.0	61.3554	-27.35	3589.29	0.008
L24	63.83 - 62.5 (24)	TP26.9067x26.5741x0.7375	1.3300	0.0000	0.0	62.1454	-27.80	3635.50	0.008
L25	62.5 - 62.25	TP26.9693x26.9067x0.86	0.2500	0.0000	0.0	72.505	-27.91	4241.54	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	(25)	25				0			
L26	62.25 - 57.25	TP28.2198x26.9693x0.83	5.0000	0.0000	0.0	73.843	-29.71	4319.83	0.007
	(26)	75				3			
L27	57.25 - 53.5	TP29.1578x28.2198x0.81	3.7500	0.0000	0.0	74.158	-31.10	4338.26	0.007
	(27)	25				3			
L28	53.5 - 53.25	TP29.2203x29.1578x0.83	0.2500	0.0000	0.0	76.541	-31.21	4477.67	0.007
	(28)	75				3			
L29	53.25 - 52.58	TP29.3879x29.2203x0.82	0.6700	0.0000	0.0	75.877	-31.47	4438.82	0.007
	(29)	5				3			
L30	52.58 - 52.33	TP29.4504x29.3879x0.86	0.2500	0.0000	0.0	79.395	-31.57	4644.65	0.007
	(30)	25				7			
L31	52.33 - 47.33	TP30.701x29.4504x0.837	5.0000	0.0000	0.0	80.534	-33.52	4711.26	0.007
	(31)	5				3			
L32	47.33 - 44.58	TP31.3888x30.701x0.812	2.7500	0.0000	0.0	79.995	-34.62	4679.72	0.007
	(32)	5				2			
L33	44.58 - 44.33	TP31.4513x31.3888x0.81	0.2500	0.0000	0.0	80.158	-34.74	4689.29	0.007
	(33)	25				8			
L34	44.33 - 41.92	TP32.0541x31.4513x0.8	2.4100	0.0000	0.0	80.510	-35.70	4709.87	0.008
	(34)					6			
L35	41.92 - 41.67	TP32.1166x32.0541x0.81	0.2500	0.0000	0.0	81.899	-35.82	4791.12	0.007
	(35)	25				4			
L36	41.67 - 34.08	TP34.015x32.1166x0.787	7.5900	0.0000	0.0	81.136	-36.90	4746.47	0.008
	(36)	5				2			
L37	34.08 - 34	TP33.4082x32.1594x0.81	5.0000	0.0000	0.0	85.918	-40.57	5026.21	0.008
	(37)	88				1			
L38	34 - 29 (38)	TP34.657x33.4082x0.793	5.0000	0.0000	0.0	86.550	-42.74	5063.19	0.008
		8				3			
L39	29 - 26.92	TP35.1765x34.657x0.793	2.0800	0.0000	0.0	87.878	-43.66	5140.87	0.008
	(39)	8				0			
L40	26.92 - 26.67	TP35.239x35.1765x0.893	0.2500	0.0000	0.0	98.841	-43.79	5782.21	0.008
	(40)	8				2			
L41	26.67 - 21.67	TP36.4877x35.239x0.868	5.0000	0.0000	0.0	99.639	-46.23	5828.92	0.008
	(41)	8				7			
L42	21.67 - 18	TP37.4044x36.4877x0.85	3.6700	0.0000	0.0	100.76	-48.05	5894.91	0.008
	(42)	63				80			
L43	18 - 17.75	TP37.4668x37.4044x0.99	0.2500	0.0000	0.0	116.70	-48.21	6827.49	0.007
	(43)	38				90			
L44	17.75 - 17.5	TP37.5292x37.4668x0.99	0.2500	0.0000	0.0	116.90	-48.35	6839.18	0.007
	(44)	38				90			
L45	17.5 - 17.25	TP37.5917x37.5292x0.99	0.2500	0.0000	0.0	117.10	-48.48	6850.86	0.007
	(45)	38				90			
L46	17.25 - 17.08	TP37.6341x37.5917x0.99	0.1700	0.0000	0.0	117.24	-48.58	6858.81	0.007
	(46)	38				50			
L47	17.08 - 16.83	TP37.6966x37.6341x0.89	0.2500	0.0000	0.0	105.91	-48.70	6195.96	0.008
	(47)	38				40			
L48	16.83 - 13	TP38.6531x37.6966x0.88	3.8300	0.0000	0.0	107.18	-50.67	6270.17	0.008
	(48)	13				20			
L49	13 - 12.75	TP38.7156x38.6531x1.05	0.2500	0.0000	0.0	128.08	-50.83	7492.92	0.007
	(49)	63				40			
L50	12.75 - 11.92	TP38.9229x38.7156x1.04	0.8300	0.0000	0.0	127.30	-51.31	7447.46	0.007
	(50)	38				70			
L51	11.92 - 11.67	TP38.9853x38.9229x0.81	0.2500	0.0000	0.0	100.62	-51.45	5886.35	0.009
	(51)	88				10			
L52	11.67 - 6.67	TP40.2341x38.9853x0.79	5.0000	0.0000	0.0	99.527	-53.04	5822.38	0.009
	(52)	38				9			
L53	6.67 - 6.5 (53)	TP40.2766x40.2341x0.79	0.1700	0.0000	0.0	100.80	-54.08	5897.07	0.009
		38				50			
L54	6.5 - 6.25 (54)	TP40.339x40.2766x0.918	0.2500	0.0000	0.0	116.43	-54.17	6811.46	0.008
		8				50			
L55	6.25 - 3.75	TP40.9634x40.339x0.906	2.5000	0.0000	0.0	115.07	-54.33	6731.58	0.008
	(55)	3				00			
L56	3.75 - 3.5 (56)	TP41.0258x40.9634x1.00	0.2500	0.0000	0.0	129.46	-55.72	7573.77	0.007
		63				60			
L57	3.5 - 3 (57)	TP41.1507x41.0258x0.99	0.5000	0.0000	0.0	128.09	-55.87	7493.72	0.007
		38				80			
L58	3 - 2.75 (58)	TP41.2132x41.1507x0.99	0.2500	0.0000	0.0	128.49	-56.16	7517.09	0.007
		38				70			
L59	2.75 - 0 (59)	TP41.9x41.2132x1.0188	2.7500	0.0000	0.0	131.85	-56.32	7713.39	0.007
						30			

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	

Pole Bending Design Data

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
L1	130 - 125 (1)	TP11.775x10.525x0.1875	0.63	120.74	0.005	0.00	120.74	0.000
L2	125 - 120 (2)	TP13.025x11.775x0.1875	2.28	148.43	0.015	0.00	148.43	0.000
L3	120 - 115 (3)	TP14.275x13.025x0.1875	46.78	178.97	0.261	0.00	178.97	0.000
L4	115 - 110 (4)	TP15.525x14.275x0.1875	91.06	212.37	0.429	0.00	212.37	0.000
L5	110 - 105 (5)	TP16.7758x15.525x0.25	161.84	327.79	0.494	0.00	327.79	0.000
L6	105 - 100 (6)	TP18.0265x16.7758x0.25	236.53	379.69	0.623	0.00	379.69	0.000
L7	100 - 95 (7)	TP19.2773x18.0265x0.25	327.43	435.39	0.752	0.00	435.39	0.000
L8	95 - 90 (8)	TP20.528x19.2773x0.25	431.90	494.91	0.873	0.00	494.91	0.000
L9	90 - 89.75 (9)	TP20.5905x20.528x0.5	437.20	959.70	0.456	0.00	959.70	0.000
L10	89.75 - 84.75 (10)	TP21.8413x20.5905x0.4813	551.23	1046.54	0.527	0.00	1046.54	0.000
L11	84.75 - 84.58 (11)	TP21.8838x21.8413x0.475	555.47	1038.02	0.535	0.00	1038.02	0.000
L12	84.58 - 84.33 (12)	TP21.9464x21.8838x0.6375	561.71	1369.79	0.410	0.00	1369.79	0.000
L13	84.33 - 83.42 (13)	TP22.174x21.9464x0.625	584.50	1374.59	0.425	0.00	1374.59	0.000
L14	83.42 - 83.17 (14)	TP22.2365x22.174x0.95	590.79	2008.30	0.294	0.00	2008.30	0.000
L15	83.17 - 83 (15)	TP22.2791x22.2365x0.95	595.07	2016.50	0.295	0.00	2016.50	0.000
L16	83 - 82.75 (16)	TP22.3416x22.2791x0.7	601.37	1547.78	0.389	0.00	1547.78	0.000
L17	82.75 - 77.75 (17)	TP23.5923x22.3416x0.6625	729.73	1649.97	0.442	0.00	1649.97	0.000
L18	77.75 - 70 (18)	TP25.531x23.5923x0.65	839.17	1758.70	0.477	0.00	1758.70	0.000
L19	70 - 69 (19)	TP25.281x24.0304x0.7	992.27	2004.28	0.495	0.00	2004.28	0.000
L20	69 - 67.08 (20)	TP25.7612x25.281x0.6875	1052.27	2050.31	0.513	0.00	2050.31	0.000
L21	67.08 - 66.83 (21)	TP25.8237x25.7612x0.6875	1060.13	2060.68	0.514	0.00	2060.68	0.000
L22	66.83 - 64.08 (22)	TP26.5115x25.8237x0.675	1147.24	2140.07	0.536	0.00	2140.07	0.000
L23	64.08 - 63.83 (23)	TP26.5741x26.5115x0.7375	1155.22	2332.73	0.495	0.00	2332.73	0.000
L24	63.83 - 62.5 (24)	TP26.9067x26.5741x0.7375	1197.88	2394.04	0.500	0.00	2394.04	0.000
L25	62.5 - 62.25 (25)	TP26.9693x26.9067x0.8625	1205.93	2773.36	0.435	0.00	2773.36	0.000
L26	62.25 - 57.25 (26)	TP28.2198x26.9693x0.8375	1369.28	2969.61	0.461	0.00	2969.61	0.000
L27	57.25 - 53.5 (27)	TP29.1578x28.2198x0.8125	1494.67	3092.92	0.483	0.00	3092.92	0.000
L28	53.5 - 53.25 (28)	TP29.2203x29.1578x0.8375	1503.12	3193.91	0.471	0.00	3193.91	0.000
L29	53.25 - 52.58 (29)	TP29.3879x29.2203x0.825	1525.81	3188.22	0.479	0.00	3188.22	0.000
L30	52.58 - 52.33 (30)	TP29.4504x29.3879x0.8625	1534.30	3334.82	0.460	0.00	3334.82	0.000
L31	52.33 - 47.33 (31)	TP30.701x29.4504x0.8375	1706.34	3540.88	0.482	0.00	3540.88	0.000
L32	47.33 - 44.58 (32)	TP31.3888x30.701x0.8125	1802.83	3606.29	0.500	0.00	3606.29	0.000
L33	44.58 - 44.33 (33)	TP31.4513x31.3888x0.8125	1811.66	3621.24	0.500	0.00	3621.24	0.000
L34	44.33 - 41.92 (34)	TP32.0541x31.4513x0.8	1897.38	3713.51	0.511	0.00	3713.51	0.000
L35	41.92 - 41.67	TP32.1166x32.0541x0.81	1906.33	3782.29	0.504	0.00	3782.29	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 $\frac{M_{uy}}{\phi M_{ny}}$
	(35)	25						
L36	41.67 - 34.08	TP34.015x32.1166x0.787	2002.53	3835.00	0.522	0.00	3835.00	0.000
	(36)	5						
L37	34.08 - 34	TP33.4082x32.1594x0.81	2186.20	4134.16	0.529	0.00	4134.16	0.000
	(37)	88						
L38	34 - 29 (38)	TP34.657x33.4082x0.793	2374.21	4334.48	0.548	0.00	4334.48	0.000
		8						
L39	29 - 26.92	TP35.1765x34.657x0.793	2453.58	4470.03	0.549	0.00	4470.03	0.000
	(39)	8						
L40	26.92 - 26.67	TP35.239x35.1765x0.893	2463.17	5007.82	0.492	0.00	5007.82	0.000
	(40)	8						
L41	26.67 - 21.67	TP36.4877x35.239x0.868	2656.96	5243.85	0.507	0.00	5243.85	0.000
	(41)	8						
L42	21.67 - 18	TP37.4044x36.4877x0.85	2801.68	5446.66	0.514	0.00	5446.66	0.000
	(42)	63						
L43	18 - 17.75	TP37.4668x37.4044x0.99	2811.62	6271.97	0.448	0.00	6271.97	0.000
	(43)	38						
L44	17.75 - 17.5	TP37.5292x37.4668x0.99	2821.56	6293.75	0.448	0.00	6293.75	0.000
	(44)	38						
L45	17.5 - 17.25	TP37.5917x37.5292x0.99	2831.51	6315.56	0.448	0.00	6315.56	0.000
	(45)	38						
L46	17.25 - 17.08	TP37.6341x37.5917x0.99	2838.28	6330.42	0.448	0.00	6330.42	0.000
	(46)	38						
L47	17.08 - 16.83	TP37.6966x37.6341x0.89	2848.25	5759.90	0.494	0.00	5759.90	0.000
	(47)	38						
L48	16.83 - 13	TP38.6531x37.6966x0.88	3002.09	5987.94	0.501	0.00	5987.94	0.000
	(48)	13						
L49	13 - 12.75	TP38.7156x38.6531x1.05	3012.21	7101.60	0.424	0.00	7101.60	0.000
	(49)	63						
L50	12.75 - 11.92	TP38.9229x38.7156x1.04	3045.86	7103.12	0.429	0.00	7103.12	0.000
	(50)	38						
L51	11.92 - 11.67	TP38.9853x38.9229x0.81	3056.02	5690.58	0.537	0.00	5690.58	0.000
	(51)	88						
L52	11.67 - 6.67	TP40.2341x38.9853x0.79	3178.57	5748.95	0.553	0.00	5748.95	0.000
	(52)	38						
L53	6.67 - 6.5 (53)	TP40.2766x40.2341x0.79	3260.98	5898.87	0.553	0.00	5898.87	0.000
		38						
L54	6.5 - 6.25 (54)	TP40.339x40.2766x0.918	3268.01	6777.90	0.482	0.00	6777.90	0.000
		8						
L55	6.25 - 3.75	TP40.9634x40.339x0.906	3278.36	6713.54	0.488	0.00	6713.54	0.000
	(55)	3						
L56	3.75 - 3.5 (56)	TP41.0258x40.9634x1.00	3382.32	7637.49	0.443	0.00	7637.49	0.000
		63						
L57	3.5 - 3 (57)	TP41.1507x41.0258x0.99	3392.77	7573.59	0.448	0.00	7573.59	0.000
		38						
L58	3 - 2.75 (58)	TP41.2132x41.1507x0.99	3413.68	7621.49	0.448	0.00	7621.49	0.000
		38						
L59	2.75 - 0 (59)	TP41.9x41.2132x1.0188	3424.16	7823.22	0.438	0.00	7823.22	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	130 - 125 (1)	TP11.775x10.525x0.1875	0.26	122.78	0.002	0.00	125.15	0.000
L2	125 - 120 (2)	TP13.025x11.775x0.1875	2.24	136.02	0.016	0.00	153.60	0.000
L3	120 - 115 (3)	TP14.275x13.025x0.1875	8.57	149.27	0.057	0.14	184.97	0.001
L4	115 - 110 (4)	TP15.525x14.275x0.1875	9.14	162.51	0.056	0.06	219.25	0.000
L5	110 - 105 (5)	TP16.7758x15.525x0.25	14.31	233.47	0.061	0.77	339.39	0.002
L6	105 - 100 (6)	TP18.0265x16.7758x0.25	15.39	251.14	0.061	0.68	392.70	0.002
L7	100 - 95 (7)	TP19.2773x18.0265x0.25	20.65	268.81	0.077	0.73	449.91	0.002
L8	95 - 90 (8)	TP20.528x19.2773x0.25	21.17	286.48	0.074	0.79	511.00	0.002
L9	90 - 89.75 (9)	TP20.5905x20.528x0.5	21.18	567.67	0.037	0.79	1003.20	0.001
L10	89.75 - 84.75	TP21.8413x20.5905x0.48	24.94	580.91	0.043	0.92	1091.46	0.001
	(10)	13						

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 $\frac{T_u}{\phi T_n}$
L11	84.75 - 84.58 (11)	TP21.8838x21.8413x0.475	24.95	574.67	0.043	0.93	1082.21	0.001
L12	84.58 - 84.33 (12)	TP21.9464x21.8838x0.6375	24.99	767.67	0.033	0.93	1438.91	0.001
L13	84.33 - 83.42 (13)	TP22.174x21.9464x0.625	25.12	761.10	0.033	0.93	1442.67	0.001
L14	83.42 - 83.17 (14)	TP22.2365x22.174x0.95	25.16	1142.78	0.022	0.94	2139.77	0.000
L15	83.17 - 83 (15)	TP22.2791x22.2365x0.95	25.19	1145.06	0.022	0.94	2148.32	0.000
L16	83 - 82.75 (16)	TP22.3416x22.2791x0.7	25.22	856.09	0.029	0.94	1629.71	0.001
L17	82.75 - 77.75 (17)	TP23.5923x22.3416x0.6625	26.11	858.46	0.030	0.82	1731.49	0.000
L18	77.75 - 70 (18)	TP25.531x23.5923x0.65	30.13	877.18	0.034	0.90	1842.59	0.000
L19	70 - 69 (19)	TP25.281x24.0304x0.7	31.07	972.37	0.032	1.02	2102.47	0.000
L20	69 - 67.08 (20)	TP25.7612x25.281x0.6875	31.41	974.15	0.032	1.05	2148.53	0.000
L21	67.08 - 66.83 (21)	TP25.8237x25.7612x0.6875	31.43	976.58	0.032	1.06	2159.27	0.000
L22	66.83 - 64.08 (22)	TP26.5115x25.8237x0.675	31.90	985.53	0.032	1.12	2239.78	0.001
L23	64.08 - 63.83 (23)	TP26.5741x26.5115x0.7375	31.93	1076.79	0.030	1.13	2447.18	0.000
L24	63.83 - 62.5 (24)	TP26.9067x26.5741x0.7375	32.17	1090.65	0.030	1.15	2510.59	0.000
L25	62.5 - 62.25 (25)	TP26.9693x26.9067x0.8625	32.20	1272.46	0.025	1.16	2922.12	0.000
L26	62.25 - 57.25 (26)	TP28.2198x26.9693x0.8375	33.09	1295.95	0.026	1.25	3121.47	0.000
L27	57.25 - 53.5 (27)	TP29.1578x28.2198x0.8125	33.75	1301.48	0.026	1.32	3245.02	0.000
L28	53.5 - 53.25 (28)	TP29.2203x29.1578x0.8375	33.78	1343.30	0.025	1.33	3353.72	0.000
L29	53.25 - 52.58 (29)	TP29.3879x29.2203x0.825	33.91	1331.65	0.025	1.34	3345.72	0.000
L30	52.58 - 52.33 (30)	TP29.4504x29.3879x0.8625	33.95	1393.40	0.024	1.34	3503.94	0.000
L31	52.33 - 47.33 (31)	TP30.701x29.4504x0.8375	34.83	1413.38	0.025	1.44	3712.78	0.000
L32	47.33 - 44.58 (32)	TP31.3888x30.701x0.8125	35.31	1403.92	0.025	1.49	3775.95	0.000
L33	44.58 - 44.33 (33)	TP31.4513x31.3888x0.8125	35.34	1406.79	0.025	1.49	3791.41	0.000
L34	44.33 - 41.92 (34)	TP32.0541x31.4513x0.8	35.76	1412.96	0.025	1.53	3884.52	0.000
L35	41.92 - 41.67 (35)	TP32.1166x32.0541x0.8125	35.78	1437.33	0.025	1.53	3957.85	0.000
L36	41.67 - 34.08 (36)	TP34.015x32.1166x0.7875	36.24	1423.94	0.025	1.57	4007.74	0.000
L37	34.08 - 34 (37)	TP33.4082x32.1594x0.8188	37.18	1507.86	0.025	1.65	4322.54	0.000
L38	34 - 29 (38)	TP34.657x33.4082x0.7938	37.98	1518.96	0.025	1.73	4524.54	0.000
L39	29 - 26.92 (39)	TP35.1765x34.657x0.7938	38.31	1542.26	0.025	1.76	4664.43	0.000
L40	26.92 - 26.67 (40)	TP35.239x35.1765x0.8938	38.33	1734.66	0.022	1.77	5240.60	0.000
L41	26.67 - 21.67 (41)	TP36.4877x35.239x0.8688	39.13	1748.68	0.022	1.84	5478.87	0.000
L42	21.67 - 18 (42)	TP37.4044x36.4877x0.8563	39.70	1768.47	0.022	1.89	5685.42	0.000
L43	18 - 17.75 (43)	TP37.4668x37.4044x0.9938	39.71	2048.25	0.019	1.89	6571.34	0.000
L44	17.75 - 17.5 (44)	TP37.5292x37.4668x0.9938	39.75	2051.75	0.019	1.90	6593.86	0.000
L45	17.5 - 17.25 (45)	TP37.5917x37.5292x0.9938	39.79	2055.26	0.019	1.90	6616.42	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 $\frac{T_u}{\phi T_n}$
L46	17.25 - 17.08 (46)	TP37.6341x37.5917x0.9938	39.82	2057.64	0.019	1.90	6631.77	0.000
L47	17.08 - 16.83 (47)	TP37.6966x37.6341x0.8938	39.85	1858.79	0.021	1.90	6017.43	0.000
L48	16.83 - 13 (48)	TP38.6531x37.6966x0.8813	40.43	1881.05	0.021	1.96	6249.85	0.000
L49	13 - 12.75 (49)	TP38.7156x38.6531x1.0563	40.44	2247.88	0.018	1.96	7446.37	0.000
L50	12.75 - 11.92 (50)	TP38.9229x38.7156x1.0438	40.58	2234.24	0.018	1.97	7444.39	0.000
L51	11.92 - 11.67 (51)	TP38.9853x38.9229x0.8188	40.61	1765.91	0.023	1.97	5928.57	0.000
L52	11.67 - 6.67 (52)	TP40.2341x38.9853x0.7938	41.18	1757.92	0.023	2.05	5983.12	0.000
L53	6.67 - 6.5 (53)	TP40.2766x40.2341x0.7938	41.33	1771.03	0.023	2.07	6137.60	0.000
L54	6.5 - 6.25 (54)	TP40.339x40.2766x0.9188	41.37	2046.68	0.020	2.08	7074.44	0.000
L55	6.25 - 3.75 (55)	TP40.9634x40.339x0.9063	41.56	2035.46	0.020	2.11	7004.79	0.000
L56	3.75 - 3.5 (56)	TP41.0258x40.9634x1.0063	41.76	2275.68	0.018	2.14	7985.97	0.000
L57	3.5 - 3 (57)	TP41.1507x41.0258x0.9938	41.84	2255.13	0.019	2.16	7916.38	0.000
L58	3 - 2.75 (58)	TP41.2132x41.1507x0.9938	41.87	2258.63	0.019	2.16	7965.85	0.000
L59	2.75 - 0 (59)	TP41.9x41.2132x1.0188	42.10	2333.79	0.018	2.20	8181.48	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	130 - 125 (1)	0.000	0.005	0.000	0.002	0.000	0.005	1.050	4.8.2
L2	125 - 120 (2)	0.033	0.015	0.000	0.016	0.000	0.049	1.050	4.8.2
L3	120 - 115 (3)	0.009	0.261	0.000	0.057	0.001	0.273	1.050	4.8.2
L4	115 - 110 (4)	0.008	0.429	0.000	0.056	0.000	0.440	1.050	4.8.2
L5	110 - 105 (5)	0.011	0.494	0.000	0.061	0.002	0.509	1.050	4.8.2
L6	105 - 100 (6)	0.011	0.623	0.000	0.061	0.002	0.638	1.050	4.8.2
L7	100 - 95 (7)	0.015	0.752	0.000	0.077	0.002	0.773	1.050	4.8.2
L8	95 - 90 (8)	0.015	0.873	0.000	0.074	0.002	0.893	1.050	4.8.2
L9	90 - 89.75 (9)	0.007	0.456	0.000	0.037	0.001	0.464	1.050	4.8.2
L10	89.75 - 84.75 (10)	0.009	0.527	0.000	0.043	0.001	0.538	1.050	4.8.2
L11	84.75 - 84.58 (11)	0.009	0.535	0.000	0.043	0.001	0.546	1.050	4.8.2
L12	84.58 - 84.33 (12)	0.007	0.410	0.000	0.033	0.001	0.418	1.050	4.8.2
L13	84.33 - 83.42 (13)	0.007	0.425	0.000	0.033	0.001	0.433	1.050	4.8.2
L14	83.42 - 83.17 (14)	0.005	0.294	0.000	0.022	0.000	0.299	1.050	4.8.2
L15	83.17 - 83 (15)	0.005	0.295	0.000	0.022	0.000	0.300	1.050	4.8.2
L16	83 - 82.75 (16)	0.006	0.389	0.000	0.029	0.001	0.396	1.050	4.8.2
L17	82.75 - 77.75 (17)	0.007	0.442	0.000	0.030	0.000	0.450	1.050	4.8.2
L18	77.75 - 70 (18)	0.008	0.477	0.000	0.034	0.000	0.486	1.050	4.8.2
L19	70 - 69 (19)	0.008	0.495	0.000	0.032	0.000	0.504	1.050	4.8.2
L20	69 - 67.08 (20)	0.008	0.513	0.000	0.032	0.000	0.522	1.050	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L21	67.08 - 66.83 (21)	0.008	0.514	0.000	0.032	0.000	0.524	1.050	4.8.2
L22	66.83 - 64.08 (22)	0.008	0.536	0.000	0.032	0.001	0.545	1.050	4.8.2
L23	64.08 - 63.83 (23)	0.008	0.495	0.000	0.030	0.000	0.504	1.050	4.8.2
L24	63.83 - 62.5 (24)	0.008	0.500	0.000	0.030	0.000	0.509	1.050	4.8.2
L25	62.5 - 62.25 (25)	0.007	0.435	0.000	0.025	0.000	0.442	1.050	4.8.2
L26	62.25 - 57.25 (26)	0.007	0.461	0.000	0.026	0.000	0.469	1.050	4.8.2
L27	57.25 - 53.5 (27)	0.007	0.483	0.000	0.026	0.000	0.491	1.050	4.8.2
L28	53.5 - 53.25 (28)	0.007	0.471	0.000	0.025	0.000	0.478	1.050	4.8.2
L29	53.25 - 52.58 (29)	0.007	0.479	0.000	0.025	0.000	0.486	1.050	4.8.2
L30	52.58 - 52.33 (30)	0.007	0.460	0.000	0.024	0.000	0.467	1.050	4.8.2
L31	52.33 - 47.33 (31)	0.007	0.482	0.000	0.025	0.000	0.490	1.050	4.8.2
L32	47.33 - 44.58 (32)	0.007	0.500	0.000	0.025	0.000	0.508	1.050	4.8.2
L33	44.58 - 44.33 (33)	0.007	0.500	0.000	0.025	0.000	0.508	1.050	4.8.2
L34	44.33 - 41.92 (34)	0.008	0.511	0.000	0.025	0.000	0.519	1.050	4.8.2
L35	41.92 - 41.67 (35)	0.007	0.504	0.000	0.025	0.000	0.512	1.050	4.8.2
L36	41.67 - 34.08 (36)	0.008	0.522	0.000	0.025	0.000	0.531	1.050	4.8.2
L37	34.08 - 34 (37)	0.008	0.529	0.000	0.025	0.000	0.538	1.050	4.8.2
L38	34 - 29 (38)	0.008	0.548	0.000	0.025	0.000	0.557	1.050	4.8.2
L39	29 - 26.92 (39)	0.008	0.549	0.000	0.025	0.000	0.558	1.050	4.8.2
L40	26.92 - 26.67 (40)	0.008	0.492	0.000	0.022	0.000	0.500	1.050	4.8.2
L41	26.67 - 21.67 (41)	0.008	0.507	0.000	0.022	0.000	0.515	1.050	4.8.2
L42	21.67 - 18 (42)	0.008	0.514	0.000	0.022	0.000	0.523	1.050	4.8.2
L43	18 - 17.75 (43)	0.007	0.448	0.000	0.019	0.000	0.456	1.050	4.8.2
L44	17.75 - 17.5 (44)	0.007	0.448	0.000	0.019	0.000	0.456	1.050	4.8.2
L45	17.5 - 17.25 (45)	0.007	0.448	0.000	0.019	0.000	0.456	1.050	4.8.2
L46	17.25 - 17.08 (46)	0.007	0.448	0.000	0.019	0.000	0.456	1.050	4.8.2
L47	17.08 - 16.83 (47)	0.008	0.494	0.000	0.021	0.000	0.503	1.050	4.8.2
L48	16.83 - 13 (48)	0.008	0.501	0.000	0.021	0.000	0.510	1.050	4.8.2
L49	13 - 12.75 (49)	0.007	0.424	0.000	0.018	0.000	0.431	1.050	4.8.2
L50	12.75 - 11.92 (50)	0.007	0.429	0.000	0.018	0.000	0.436	1.050	4.8.2
L51	11.92 - 11.67 (51)	0.009	0.537	0.000	0.023	0.000	0.546	1.050	4.8.2
L52	11.67 - 6.67 (52)	0.009	0.553	0.000	0.023	0.000	0.563	1.050	4.8.2
L53	6.67 - 6.5 (53)	0.009	0.553	0.000	0.023	0.000	0.563	1.050	4.8.2
L54	6.5 - 6.25 (54)	0.008	0.482	0.000	0.020	0.000	0.491	1.050	4.8.2
L55	6.25 - 3.75 (55)	0.008	0.488	0.000	0.020	0.000	0.497	1.050	4.8.2
L56	3.75 - 3.5 (56)	0.007	0.443	0.000	0.018	0.000	0.451	1.050	4.8.2
L57	3.5 - 3 (57)	0.007	0.448	0.000	0.019	0.000	0.456	1.050	4.8.2

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L58	3 - 2.75 (58)	0.007	0.448	0.000	0.019	0.000	0.456	1.050	4.8.2
L59	2.75 - 0 (59)	0.007	0.438	0.000	0.018	0.000	0.445	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	130 - 125	Pole	TP11.775x10.525x0.1875	1	-0.10	429.73	0.5	Pass
L2	125 - 120	Pole	TP13.025x11.775x0.1875	2	-15.07	476.08	5.8	Pass
L3	120 - 115	Pole	TP14.275x13.025x0.1875	3	-4.27	522.44	26.0	Pass
L4	115 - 110	Pole	TP15.525x14.275x0.1875	4	-4.50	568.80	41.9	Pass
L5	110 - 105	Pole	TP16.7758x15.525x0.25	5	-8.84	817.15	48.5	Pass
L6	105 - 100	Pole	TP18.0265x16.7758x0.25	6	-9.33	879.00	60.8	Pass
L7	100 - 95	Pole	TP19.2773x18.0265x0.25	7	-13.25	940.84	73.6	Pass
L8	95 - 90	Pole	TP20.528x19.2773x0.25	8	-13.91	1002.69	85.0	Pass
L9	90 - 89.75	Pole	TP20.5905x20.528x0.5	9	-13.98	1986.84	44.2	Pass
L10	89.75 - 84.75	Pole	TP21.8413x20.5905x0.4813	10	-17.69	2033.17	51.2	Pass
L11	84.75 - 84.58	Pole	TP21.8838x21.8413x0.475	11	-17.74	2011.35	52.0	Pass
L12	84.58 - 84.33	Pole	TP21.9464x21.8838x0.6375	12	-17.81	2686.83	39.8	Pass
L13	84.33 - 83.42	Pole	TP22.174x21.9464x0.625	13	-18.02	2663.84	41.3	Pass
L14	83.42 - 83.17	Pole	TP22.2365x22.174x0.95	14	-18.11	3999.72	28.5	Pass
L15	83.17 - 83	Pole	TP22.2791x22.2365x0.95	15	-18.17	4007.71	28.6	Pass
L16	83 - 82.75	Pole	TP22.3416x22.2791x0.7	16	-18.23	2996.32	37.7	Pass
L17	82.75 - 77.75	Pole	TP23.5923x22.3416x0.6625	17	-19.52	3004.61	42.9	Pass
L18	77.75 - 70	Pole	TP25.531x23.5923x0.65	18	-23.55	3070.13	46.3	Pass
L19	70 - 69	Pole	TP25.281x24.0304x0.7	19	-25.74	3403.28	48.0	Pass
L20	69 - 67.08	Pole	TP25.7612x25.281x0.6875	20	-26.31	3409.51	49.8	Pass
L21	67.08 - 66.83	Pole	TP25.8237x25.7612x0.6875	21	-26.42	3418.01	49.9	Pass
L22	66.83 - 64.08	Pole	TP26.5115x25.8237x0.675	22	-27.25	3449.37	51.9	Pass
L23	64.08 - 63.83	Pole	TP26.5741x26.5115x0.7375	23	-27.35	3768.75	48.0	Pass
L24	63.83 - 62.5	Pole	TP26.9067x26.5741x0.7375	24	-27.80	3817.27	48.5	Pass
L25	62.5 - 62.25	Pole	TP26.9693x26.9067x0.8625	25	-27.91	4453.62	42.1	Pass
L26	62.25 - 57.25	Pole	TP28.2198x26.9693x0.8375	26	-29.71	4535.82	44.6	Pass
L27	57.25 - 53.5	Pole	TP29.1578x28.2198x0.8125	27	-31.10	4555.17	46.8	Pass
L28	53.5 - 53.25	Pole	TP29.2203x29.1578x0.8375	28	-31.21	4701.55	45.5	Pass
L29	53.25 - 52.58	Pole	TP29.3879x29.2203x0.825	29	-31.47	4660.76	46.3	Pass
L30	52.58 - 52.33	Pole	TP29.4504x29.3879x0.8625	30	-31.57	4876.88	44.5	Pass
L31	52.33 - 47.33	Pole	TP30.701x29.4504x0.8375	31	-33.52	4946.82	46.6	Pass
L32	47.33 - 44.58	Pole	TP31.3888x30.701x0.8125	32	-34.62	4913.71	48.4	Pass
L33	44.58 - 44.33	Pole	TP31.4513x31.3888x0.8125	33	-34.74	4923.75	48.4	Pass
L34	44.33 - 41.92	Pole	TP32.0541x31.4513x0.8	34	-35.70	4945.36	49.4	Pass
L35	41.92 - 41.67	Pole	TP32.1166x32.0541x0.8125	35	-35.82	5030.68	48.8	Pass
L36	41.67 - 34.08	Pole	TP34.015x32.1166x0.7875	36	-36.90	4983.79	50.5	Pass
L37	34.08 - 34	Pole	TP33.4082x32.1594x0.8188	37	-40.57	5277.52	51.2	Pass
L38	34 - 29	Pole	TP34.657x33.4082x0.7938	38	-42.74	5316.35	53.0	Pass
L39	29 - 26.92	Pole	TP35.1765x34.657x0.7938	39	-43.66	5397.91	53.1	Pass
L40	26.92 - 26.67	Pole	TP35.239x35.1765x0.8938	40	-43.79	6071.32	47.6	Pass
L41	26.67 - 21.67	Pole	TP36.4877x35.239x0.8688	41	-46.23	6120.37	49.1	Pass
L42	21.67 - 18	Pole	TP37.4044x36.4877x0.8563	42	-48.05	6189.66	49.8	Pass
L43	18 - 17.75	Pole	TP37.4668x37.4044x0.9938	43	-48.21	7168.86	43.4	Pass
L44	17.75 - 17.5	Pole	TP37.5292x37.4668x0.9938	44	-48.35	7181.14	43.4	Pass
L45	17.5 - 17.25	Pole	TP37.5917x37.5292x0.9938	45	-48.48	7193.40	43.4	Pass
L46	17.25 - 17.08	Pole	TP37.6341x37.5917x0.9938	46	-48.58	7201.75	43.4	Pass
L47	17.08 - 16.83	Pole	TP37.6966x37.6341x0.8938	47	-48.70	6505.76	47.9	Pass
L48	16.83 - 13	Pole	TP38.6531x37.6966x0.8813	48	-50.67	6583.68	48.6	Pass
L49	13 - 12.75	Pole	TP38.7156x38.6531x1.0563	49	-50.83	7867.57	41.1	Pass
L50	12.75 - 11.92	Pole	TP38.9229x38.7156x1.0438	50	-51.31	7819.83	41.5	Pass
L51	11.92 - 11.67	Pole	TP38.9853x38.9229x0.8188	51	-51.45	6180.67	52.0	Pass
L52	11.67 - 6.67	Pole	TP40.2341x38.9853x0.7938	52	-53.04	6113.50	53.6	Pass
L53	6.67 - 6.5	Pole	TP40.2766x40.2341x0.7938	53	-54.08	6191.92	53.6	Pass
L54	6.5 - 6.25	Pole	TP40.339x40.2766x0.9188	54	-54.17	7152.03	46.7	Pass
L55	6.25 - 3.75	Pole	TP40.9634x40.339x0.9063	55	-54.33	7068.16	47.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L56	3.75 - 3.5	Pole	TP41.0258x40.9634x1.0063	56	-55.72	7952.46	42.9	Pass
L57	3.5 - 3	Pole	TP41.1507x41.0258x0.9938	57	-55.87	7868.41	43.4	Pass
L58	3 - 2.75	Pole	TP41.2132x41.1507x0.9938	58	-56.16	7892.94	43.4	Pass
L59	2.75 - 0	Pole	TP41.9x41.2132x1.0188	59	-56.32	8099.06	42.4	Pass
							Summary	
						Pole (L8)	85.0	Pass
						RATING =	**85.0**	**Pass**

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

APPENDIX B

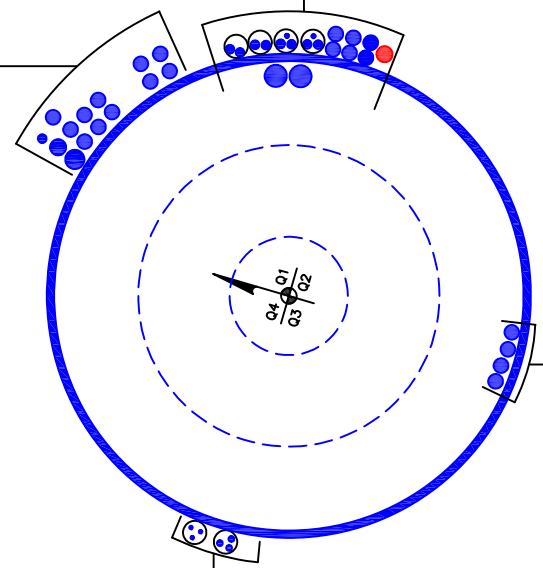
BASE LEVEL DRAWING

(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-3/8" TO 77 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(2) 1-7/8" TO 109 FT LEVEL

(OTHER CONSIDERED EQUIPMENT-IN (4) 2" CONDUITS)
(2) 3/8" TO 121 FT LEVEL
(8) 3/4" TO 121 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(6) 1-1/4" TO 121 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(1) 7/8" TO 87 FT LEVEL
(11) 1-1/4" TO 87 FT LEVEL
(1) 1-3/8" TO 87 FT LEVEL
(1) 1-5/8" TO 87 FT LEVEL



(OTHER CONSIDERED EQUIPMENT)
(4) 1-1/4" TO 97 FT LEVEL

(OTHER CONSIDERED EQUIPMENT-IN-(2) 2" IN CONDUITS)
(3) 5/16" TO 97 FT LEVEL
(3) 1/2" TO 97 FT LEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 806376

Work Order: 1963271

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	130	20	0	12	10.525	15.525	0.1875	Auto	A572-65
2	110	40	4	12	15.53	25.531	0.25	Auto	A572-65
3	74	39.92	4.92	12	24.03	34.015	0.3125	Auto	A572-65
4	39	39	0	12	32.16	41.9	0.34375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	17.08	44.58	plate	PL 0.75x4.00 (100ksi)	3	x				x				x			
2	44.58	67.08	plate	PL 0.75x4.00 (100ksi)	3				x				x				x
3	67.08	84.58	plate	PL 0.75x4.00 (100ksi)	3	x				x				x			
4	0	3.75	plate	S) 1.25x7.00 (65ksi) P.	2								c				c
5	3	13	plate	CCI-AFP-060100	2	x								x			
6	0	13	plate	CCI-AFP-060100	1					x							
7	11.92	41.92	plate	CCI-AFP-060100	1			x									
8	11.92	26.92	plate	CCI-AFP-060100	2								x				x
9	18	53.5	plate	CCI-AFP-060100	2							x				x	
10	41.92	62.5	plate	CCI-AFP-045100	1			x									
11	53.5	64.08	plate	CCI-AFP-045100	2							x				x	
12	83	90	plate	CCI-SFP-045100	3			x				x				x	
13	0	6.5	plate	CCI-WCFP-065125	1								1.5				
14	0	18	plate	CCI-WCFP-065125	3				x			x				x	
15	0	17.5	plate	CCI-WCFP-060100	3		-2				x				x		
16	17.5	52.58	plate	CCI-CFP-060100	3		-2				x				x		
17	52.58	83.42	plate	CCI-CFP-045125	3		x				x				x		
18																	

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	4	0.75	3	0.375	PC 8.8 - M20 (100)	15	PC 8.8 - M20 (100)	15.000	15.000	2.063	1.1875	A514-GR100
2	4	0.75	3	0.375	PC 8.8 - M20 (100)	15	PC 8.8 - M20 (100)	15.000	15.000	2.063	1.1875	A514-GR100
3	4	0.75	3	0.375	PC 8.8 - M20 (100)	15	PC 8.8 - M20 (100)	15.000	15.000	2.063	1.1875	A514-GR100
4	1.25	6.25	7.8125	3.125	Welded	n/a	Capacity Input	n/a	0.750	7.813	0.0000	A572-65
5	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
6	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
7	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
8	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
9	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
10	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
11	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
12	4.5	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
13	6.5	1.25	8.125	0.625	Welded	n/a	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
14	6.5	1.25	8.125	0.625	Welded	n/a	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
15	6	1	6	0.5	Welded	n/a	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
16	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
17	4.5	1.25	5.625	0.625	PC 8.8 - M20 (100)	21	PC 8.8 - M20 (100)	21.000	24.000	4.063	1.1875	A572-65

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)
PL 0.75x4.00 (100ksi)	Top	5	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	5	N	3	3	-	-	-	-	-	-	-	-	-
(TS) 1.25x7.00 (65ksi) PJP	Top	0	N	0	0	-	-	-	-	-	-	-	-	1000
	Bottom	-	-	-	-	80	PJP Groove	12.5	0.5	45	0.625	-	-	-
CCI-WCFP-065125	Top	11	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	80	CJP Groove	6.5	1.25	45	0.5	-	-	-
CCI-WCFP-060100	Top	10	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	80	CJP Groove	6	1	45	0.375	-	-	-
CCI-CFP-060100	Top	10	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	10	N	3	3	-	-	-	-	-	-	-	-	-
CCI-CFP-045125	Top	7	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	7	N	3	3	-	-	-	-	-	-	-	-	-

TNX Geometry Input

Increment (ft): 5 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	130 - 125	5		12	10.525	11.775	0.1875	A572-65	1.000
2	125 - 120	5		12	11.775	13.025	0.1875	A572-65	1.000
3	120 - 115	5		12	13.025	14.275	0.1875	A572-65	1.000
4	115 - 110	5	0	12	14.275	15.525	0.1875	A572-65	1.000
5	110 - 105	5		12	15.525	16.776	0.25	A572-65	1.000
6	105 - 100	5		12	16.776	18.027	0.25	A572-65	1.000
7	100 - 95	5		12	18.027	19.277	0.25	A572-65	1.000
8	95 - 90	5		12	19.277	20.528	0.25	A572-65	1.000
9	90 - 89.75	0.25		12	20.528	20.591	0.5	A572-65	0.924
10	89.75 - 84.75	5		12	20.591	21.841	0.48125	A572-65	0.934
11	84.75 - 84.58	0.17		12	21.841	21.884	0.475	A572-65	0.945
12	84.58 - 84.33	0.25		12	21.884	21.946	0.6375	A572-65	0.914
13	84.33 - 83.42	0.91		12	21.946	22.174	0.625	A572-65	0.927
14	83.42 - 83.17	0.25		12	22.174	22.237	0.95	A572-65	0.877
15	83.17 - 83	0.17		12	22.237	22.279	0.95	A572-65	0.876
16	83 - 82.75	0.25		12	22.279	22.342	0.7	A572-65	0.896
17	82.75 - 77.75	5		12	22.342	23.592	0.6625	A572-65	0.914
18	77.75 - 74	7.75	4	12	23.592	25.531	0.65	A572-65	0.909
19	74 - 69	5		12	24.030	25.281	0.7	A572-65	0.921
20	69 - 67.08	1.92		12	25.281	25.761	0.6875	A572-65	0.928
21	67.08 - 66.83	0.25		12	25.761	25.824	0.6875	A572-65	0.927
22	66.83 - 64.08	2.75		12	25.824	26.512	0.675	A572-65	0.931
23	64.08 - 63.83	0.25		12	26.512	26.574	0.7375	A572-65	1.000
24	63.83 - 62.5	1.33		12	26.574	26.907	0.7375	A572-65	0.993
25	62.5 - 62.25	0.25		12	26.907	26.969	0.8625	A572-65	0.914
26	62.25 - 57.25	5		12	26.969	28.220	0.8375	A572-65	0.914
27	57.25 - 53.5	3.75		12	28.220	29.158	0.8125	A572-65	0.923
28	53.5 - 53.25	0.25		12	29.158	29.220	0.8375	A572-65	0.934
29	53.25 - 52.58	0.67		12	29.220	29.388	0.825	A572-65	0.945
30	52.58 - 52.33	0.25		12	29.388	29.450	0.8625	A572-65	0.918
31	52.33 - 47.33	5		12	29.450	30.701	0.8375	A572-65	0.921
32	47.33 - 44.58	2.75		12	30.701	31.389	0.8125	A572-65	0.935
33	44.58 - 44.33	0.25		12	31.389	31.451	0.8125	A572-65	0.934
34	44.33 - 41.92	2.41		12	31.451	32.054	0.8	A572-65	0.938
35	41.92 - 41.67	0.25		12	32.054	32.117	0.8125	A572-65	0.941
36	41.67 - 39	7.59	4.92	12	32.117	34.015	0.7875	A572-65	0.958
37	39 - 34	5		12	32.159	33.408	0.81875	A572-65	0.950
38	34 - 29	5		12	33.408	34.657	0.79375	A572-65	0.960
39	29 - 26.92	2.08		12	34.657	35.177	0.79375	A572-65	0.952
40	26.92 - 26.67	0.25		12	35.177	35.239	0.89375	A572-65	0.968
41	26.67 - 21.67	5		12	35.239	36.488	0.86875	A572-65	0.974
42	21.67 - 18	3.67		12	36.488	37.404	0.85625	A572-65	0.974
43	18 - 17.75	0.25		12	37.404	37.467	0.99375	A572-65	0.947
44	17.75 - 17.5	0.25		12	37.467	37.529	0.99375	A572-65	0.946
45	17.5 - 17.25	0.25		12	37.529	37.592	0.99375	A572-65	0.945
46	17.25 - 17.08	0.17		12	37.592	37.634	0.99375	A572-65	0.945
47	17.08 - 16.83	0.25		12	37.634	37.697	0.89375	A572-65	0.961
48	16.83 - 13	3.83		12	37.697	38.653	0.88125	A572-65	0.960
49	13 - 12.75	0.25		12	38.653	38.716	1.05625	A572-65	0.944
50	12.75 - 11.92	0.83		12	38.716	38.923	1.04375	A572-65	0.952
51	11.92 - 11.67	0.25		12	38.923	38.985	0.81875	A572-65	1.026
52	11.67 - 6.67	5		12	38.985	40.234	0.79375	A572-65	1.038
53	6.67 - 6.5	0.17		12	40.234	40.277	0.79375	A572-65	1.037
54	6.5 - 6.25	0.25		12	40.277	40.339	0.91875	A572-65	0.968
55	6.25 - 3.75	2.5		12	40.339	40.963	0.90625	A572-65	0.971
56	3.75 - 3.5	0.25		12	40.963	41.026	1.00625	A572-65	0.934
57	3.5 - 3	0.5		12	41.026	41.151	0.99375	A572-65	0.944
58	3 - 2.75	0.25		12	41.151	41.213	0.99375	A572-65	0.913
59	2.75 - 0	2.75		12	41.213	41.900	1.01875	A572-65	0.882

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	130 - 125	0.10	0.63	0.26
2	125 - 120	4.16	5.23	8.02
3	120 - 115	4.27	46.78	8.57
4	115 - 110	4.50	91.06	9.14
5	110 - 105	8.84	161.84	14.31
6	105 - 100	9.33	236.53	15.39
7	100 - 95	13.25	327.43	20.65
8	95 - 90	13.91	431.90	21.17
9	90 - 89.75	13.98	437.20	21.18
10	89.75 - 84.75	17.69	551.23	24.94
11	84.75 - 84.58	17.74	555.47	24.95
12	84.58 - 84.33	17.81	561.71	24.99
13	84.33 - 83.42	18.02	584.50	25.12
14	83.42 - 83.17	18.11	590.79	25.16
15	83.17 - 83	18.17	595.07	25.19
16	83 - 82.75	18.23	601.37	25.22
17	82.75 - 77.75	19.52	729.73	26.11
18	77.75 - 74	23.55	839.17	30.13
19	74 - 69	25.74	992.28	31.07
20	69 - 67.08	26.31	1052.27	31.41
21	67.08 - 66.83	26.42	1060.12	31.43
22	66.83 - 64.08	27.25	1147.24	31.90
23	64.08 - 63.83	27.35	1155.23	31.93
24	63.83 - 62.5	27.80	1197.88	32.17
25	62.5 - 62.25	27.91	1205.93	32.20
26	62.25 - 57.25	29.71	1369.27	33.09
27	57.25 - 53.5	31.10	1494.67	33.75
28	53.5 - 53.25	31.21	1503.12	33.78
29	53.25 - 52.58	31.47	1525.81	33.91
30	52.58 - 52.33	31.57	1534.30	33.95
31	52.33 - 47.33	33.52	1706.34	34.83
32	47.33 - 44.58	34.62	1802.82	35.31
33	44.58 - 44.33	34.74	1811.66	35.34
34	44.33 - 41.92	35.70	1897.38	35.76
35	41.92 - 41.67	35.82	1906.33	35.78
36	41.67 - 39	36.90	2002.54	36.24
37	39 - 34	40.57	2186.20	37.18
38	34 - 29	42.74	2374.21	37.98
39	29 - 26.92	43.66	2453.58	38.31
40	26.92 - 26.67	43.79	2463.17	38.33
41	26.67 - 21.67	46.23	2656.96	39.13
42	21.67 - 18	48.05	2801.68	39.70
43	18 - 17.75	48.21	2811.62	39.71
44	17.75 - 17.5	48.35	2821.56	39.75
45	17.5 - 17.25	48.48	2831.51	39.79
46	17.25 - 17.08	48.58	2838.28	39.82
47	17.08 - 16.83	48.70	2848.25	39.85
48	16.83 - 13	50.67	3002.09	40.43
49	13 - 12.75	50.83	3012.21	40.44
50	12.75 - 11.92	51.31	3045.86	40.58
51	11.92 - 11.67	51.45	3056.02	40.61
52	11.67 - 6.67	54.06	3260.98	41.32
53	6.67 - 6.5	54.17	3268.01	41.33
54	6.5 - 6.25	54.31	3278.36	41.37
55	6.25 - 3.75	55.69	3382.32	41.75
56	3.75 - 3.5	55.86	3392.77	41.76
57	3.5 - 3	56.15	3413.69	41.84
58	3 - 2.75	56.30	3424.16	41.87
59	2.75 - 0	57.87	3539.99	42.31

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
130 - 125	Pole	TP11.775x10.525x0.1875	Pole	0.5%	Pass
125 - 120	Pole	TP13.025x11.775x0.1875	Pole	4.6%	Pass
120 - 115	Pole	TP14.275x13.025x0.1875	Pole	26.0%	Pass
115 - 110	Pole	TP15.525x14.275x0.1875	Pole	41.8%	Pass
110 - 105	Pole	TP16.776x15.525x0.25	Pole	48.3%	Pass
105 - 100	Pole	TP18.027x16.776x0.25	Pole	60.6%	Pass
100 - 95	Pole	TP19.277x18.027x0.25	Pole	73.4%	Pass
95 - 90	Pole	TP20.528x19.277x0.25	Pole	84.8%	Pass
90 - 89.75	Pole + Reinf.	TP20.591x20.528x0.5	Reinf. 12 Tension Rupture	75.7%	Pass
89.75 - 84.75	Pole + Reinf.	TP21.841x20.591x0.4813	Reinf. 12 Tension Rupture	87.3%	Pass
84.75 - 84.58	Pole + Reinf.	TP21.884x21.841x0.475	Reinf. 12 Tension Rupture	87.7%	Pass
84.58 - 84.33	Pole + Reinf.	TP21.946x21.884x0.6375	Reinf. 12 Tension Rupture	67.8%	Pass
84.33 - 83.42	Pole + Reinf.	TP22.174x21.946x0.625	Reinf. 12 Tension Rupture	69.6%	Pass
83.42 - 83.17	Pole + Reinf.	TP22.237x22.174x0.95	Reinf. 17 Tension Rupture	48.8%	Pass
83.17 - 83	Pole + Reinf.	TP22.279x22.237x0.95	Reinf. 17 Tension Rupture	49.1%	Pass
83 - 82.75	Pole + Reinf.	TP22.342x22.279x0.7	Reinf. 17 Tension Rupture	65.2%	Pass
82.75 - 77.75	Pole + Reinf.	TP23.592x22.342x0.6625	Reinf. 17 Tension Rupture	73.3%	Pass
77.75 - 74	Pole + Reinf.	TP25.531x23.592x0.65	Reinf. 17 Tension Rupture	79.9%	Pass
74 - 69	Pole + Reinf.	TP25.281x24.03x0.7	Reinf. 17 Tension Rupture	82.2%	Pass
69 - 67.08	Pole + Reinf.	TP25.761x25.281x0.6875	Reinf. 17 Tension Rupture	84.8%	Pass
67.08 - 66.83	Pole + Reinf.	TP25.824x25.761x0.6875	Reinf. 17 Tension Rupture	85.1%	Pass
66.83 - 64.08	Pole + Reinf.	TP26.512x25.824x0.675	Reinf. 17 Tension Rupture	88.5%	Pass
64.08 - 63.83	Pole + Reinf.	TP26.574x26.512x0.7375	Reinf. 17 Tension Rupture	85.0%	Pass
63.83 - 62.5	Pole + Reinf.	TP26.907x26.574x0.7375	Reinf. 17 Tension Rupture	86.5%	Pass
62.5 - 62.25	Pole + Reinf.	TP26.969x26.907x0.8625	Reinf. 17 Tension Rupture	71.7%	Pass
62.25 - 57.25	Pole + Reinf.	TP28.22x26.969x0.8375	Reinf. 17 Tension Rupture	76.4%	Pass
57.25 - 53.5	Pole + Reinf.	TP29.158x28.22x0.8125	Reinf. 17 Tension Rupture	79.6%	Pass
53.5 - 53.25	Pole + Reinf.	TP29.22x29.158x0.8375	Reinf. 10 Tension Rupture	78.9%	Pass
53.25 - 52.58	Pole + Reinf.	TP29.388x29.22x0.825	Reinf. 10 Tension Rupture	79.5%	Pass
52.58 - 52.33	Pole + Reinf.	TP29.45x29.388x0.8625	Reinf. 10 Tension Rupture	76.6%	Pass
52.33 - 47.33	Pole + Reinf.	TP30.701x29.45x0.8375	Reinf. 10 Tension Rupture	80.5%	Pass
47.33 - 44.58	Pole + Reinf.	TP31.389x30.701x0.8125	Reinf. 10 Tension Rupture	82.4%	Pass
44.58 - 44.33	Pole + Reinf.	TP31.451x31.389x0.8125	Reinf. 10 Tension Rupture	82.6%	Pass
44.33 - 41.92	Pole + Reinf.	TP32.054x31.451x0.8	Reinf. 10 Tension Rupture	84.3%	Pass
41.92 - 41.67	Pole + Reinf.	TP32.117x32.054x0.8125	Reinf. 9 Tension Rupture	75.1%	Pass
41.67 - 39	Pole + Reinf.	TP34.015x32.117x0.7875	Reinf. 9 Tension Rupture	76.6%	Pass
39 - 34	Pole + Reinf.	TP33.408x32.159x0.8188	Reinf. 9 Tension Rupture	78.3%	Pass
34 - 29	Pole + Reinf.	TP34.657x33.408x0.7938	Reinf. 9 Tension Rupture	80.6%	Pass
29 - 26.92	Pole + Reinf.	TP35.177x34.657x0.7938	Reinf. 9 Tension Rupture	81.5%	Pass
26.92 - 26.67	Pole + Reinf.	TP35.239x35.177x0.8938	Reinf. 7 Tension Rupture	76.3%	Pass
26.67 - 21.67	Pole + Reinf.	TP36.488x35.239x0.8688	Reinf. 7 Tension Rupture	78.4%	Pass
21.67 - 18	Pole + Reinf.	TP37.404x36.488x0.8563	Reinf. 7 Tension Rupture	79.8%	Pass
18 - 17.75	Pole + Reinf.	TP37.467x37.404x0.9938	Reinf. 16 Tension Rupture	67.1%	Pass
17.75 - 17.5	Pole + Reinf.	TP37.529x37.467x0.9938	Reinf. 16 Tension Rupture	67.2%	Pass
17.5 - 17.25	Pole + Reinf.	TP37.592x37.529x0.9938	Reinf. 15 Tension Rupture	67.3%	Pass
17.25 - 17.08	Pole + Reinf.	TP37.634x37.592x0.9938	Reinf. 15 Tension Rupture	67.3%	Pass
17.08 - 16.83	Pole + Reinf.	TP37.697x37.634x0.8938	Reinf. 15 Tension Rupture	73.5%	Pass
16.83 - 13	Pole + Reinf.	TP38.653x37.697x0.8813	Reinf. 15 Tension Rupture	74.8%	Pass
13 - 12.75	Pole + Reinf.	TP38.716x38.653x1.0563	Reinf. 5 Tension Rupture	63.5%	Pass
12.75 - 11.92	Pole + Reinf.	TP38.923x38.716x1.0438	Reinf. 5 Tension Rupture	63.8%	Pass
11.92 - 11.67	Pole + Reinf.	TP38.985x38.923x0.8188	Reinf. 15 Tension Rupture	81.7%	Pass
11.67 - 6.67	Pole + Reinf.	TP40.234x38.985x0.7938	Reinf. 15 Tension Rupture	83.3%	Pass
6.67 - 6.5	Pole + Reinf.	TP40.277x40.234x0.7938	Reinf. 15 Tension Rupture	83.4%	Pass
6.5 - 6.25	Pole + Reinf.	TP40.339x40.277x0.9188	Reinf. 5 Tension Rupture	77.9%	Pass
6.25 - 3.75	Pole + Reinf.	TP40.963x40.339x0.9063	Reinf. 5 Tension Rupture	78.6%	Pass
3.75 - 3.5	Pole + Reinf.	TP41.026x40.963x1.0063	Reinf. 14 Tension Rupture	68.1%	Pass
3.5 - 3	Pole + Reinf.	TP41.151x41.026x0.9938	Reinf. 14 Tension Rupture	68.3%	Pass
3 - 2.75	Pole + Reinf.	TP41.213x41.151x0.9938	Reinf. 15 Tension Rupture	73.2%	Pass
2.75 - 0	Pole + Reinf.	TP41.9x41.213x1.0188	Reinf. 4 Weldment	86.8%	Pass
				Summary	
			Pole	84.8%	Pass
			Reinforcement	88.5%	Pass
			Overall	88.5%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*																
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17
130 - 125	120	n/a	120	6.99	n/a	6.99	0.5%																	
125 - 120	163	n/a	163	7.74	n/a	7.74	4.6%																	
120 - 115	216	n/a	216	8.49	n/a	8.49	26.0%																	
115 - 110	278	n/a	278	9.25	n/a	9.25	41.8%																	
110 - 105	464	n/a	464	13.28	n/a	13.28	48.3%																	
105 - 100	578	n/a	578	14.29	n/a	14.29	60.6%																	
100 - 95	709	n/a	709	15.30	n/a	15.30	73.4%																	
95 - 90	858	n/a	858	16.30	n/a	16.30	84.8%																	
90 - 89.75	866	799	1664	16.35	13.50	29.85	42.9%												75.7%					
89.75 - 84.75	1036	892	1928	17.36	13.50	30.86	50.3%												87.3%					
84.75 - 84.58	1042	896	1937	17.39	13.50	30.89	50.6%												87.7%					
84.58 - 84.33	1051	1486	2537	17.44	22.50	39.94	39.2%			51.5%									67.8%					
84.33 - 83.42	1084	1516	2600	17.62	22.50	40.12	40.3%			52.8%									69.6%					
83.42 - 83.17	1094	2703	3796	17.67	39.38	57.05	28.0%			36.7%									48.3%					48.8%
83.17 - 83	1100	2712	3812	17.71	39.38	57.08	28.2%			36.8%									48.5%					49.1%
83 - 82.75	1109	1795	2905	17.76	25.88	43.63	37.5%			49.0%														65.2%
82.75 - 77.75	1309	1990	3299	18.76	25.88	44.64	43.0%			55.1%														73.3%
77.75 - 74	1473	2142	3615	19.52	25.88	45.39	47.6%			60.1%														79.9%
74 - 69	2002	2269	4271	25.09	25.88	50.96	46.5%			61.9%														82.2%
69 - 67.08	2120	2351	4471	25.57	25.88	51.45	48.0%			63.8%														84.8%
67.08 - 66.83	2135	2362	4498	25.63	25.88	51.51	48.1%		64.1%															85.1%
66.83 - 64.08	2313	2483	4796	26.33	25.88	52.20	50.4%		66.7%															88.5%
64.08 - 63.83	2353	2954	5307	26.39	34.88	61.26	50.6%		64.0%									69.8%						85.0%
63.83 - 62.5	2444	3025	5468	26.72	34.88	61.60	51.8%		65.2%									71.1%						86.5%
62.5 - 62.25	2436	3898	6334	26.78	39.38	66.16	41.1%		54.0%								71.0%	71.0%						71.7%
62.25 - 57.25	2795	4250	7046	28.04	39.38	67.42	44.5%		57.6%								75.7%	75.7%						76.4%
57.25 - 53.5	3087	4525	7612	28.98	39.38	68.36	46.9%		60.0%								79.0%	79.0%						79.6%
53.5 - 53.25	3110	4720	7830	29.05	42.38	71.42	47.0%		59.2%							67.7%	78.9%							78.5%
53.25 - 52.58	3164	4772	7936	29.22	42.38	71.59	47.4%		59.6%							68.2%	79.5%							79.1%
52.58 - 52.33	3183	5071	8254	29.28	43.50	72.78	45.7%		57.6%							68.3%	76.6%						71.2%	
52.33 - 47.33	3611	5485	9095	30.53	43.50	74.03	48.8%		60.5%							71.7%	80.5%						74.7%	
47.33 - 44.58	3862	5719	9581	31.23	43.50	74.73	50.4%		61.9%							73.5%	82.4%						76.5%	
44.58 - 44.33	3885	5740	9625	31.29	43.50	74.79	50.6%	63.2%								73.6%	82.6%						76.7%	
44.33 - 41.92	4115	5950	10065	31.89	43.50	75.39	52.0%	64.4%								75.0%	84.3%						78.2%	
41.92 - 41.67	4138	6045	10183	31.96	45.00	76.96	51.2%	63.1%						72.7%		75.1%							74.7%	
41.67 - 39	4404	6293	10697	32.63	45.00	77.63	52.7%	64.4%						74.2%		76.6%							76.3%	
39 - 34	5114	6529	11643	36.55	45.00	81.55	52.3%	65.8%						76.0%		78.3%							78.0%	
34 - 29	5716	7014	12729	37.93	45.00	82.93	54.7%	67.7%						78.4%		80.6%							80.3%	
29 - 26.92	5979	7220	13200	38.50	45.00	83.50	55.6%	68.5%						79.3%		81.5%							81.2%	
26.92 - 26.67	6047	8878	14925	38.57	57.00	95.57	52.9%	64.1%						76.3%	67.4%	69.6%							72.8%	
26.67 - 21.67	6718	9488	16206	39.95	57.00	96.95	55.1%	65.8%						78.4%	69.3%	71.5%							74.7%	
21.67 - 18	7242	9949	17190	40.96	57.00	97.96	56.7%	67.0%						79.8%	70.6%	72.8%							76.0%	
18 - 17.75	7238	12612	19850	41.03	69.38	110.41	47.3%	56.1%						65.3%	66.1%						64.8%		67.1%	
17.75 - 17.5	7275	12652	19927	41.10	69.38	110.48	47.4%	56.2%						65.3%	66.2%						64.9%		67.2%	
17.5 - 17.25	7312	12693	20005	41.17	69.38	110.54	47.5%	56.3%						65.4%	66.3%						64.9%	67.3%		
17.25 - 17.08	7337	12721	20057	41.22	69.38	110.59	47.6%	56.3%						65.5%	66.3%						65.0%	67.3%		
17.08 - 16.83	7374	11092	18466	41.29	60.38	101.66	52.0%							71.4%	72.4%						70.9%	73.5%		
16.83 - 13	7955	11640	19595	42.34	60.38	102.72	53.5%							72.7%	73.7%						72.2%	74.8%		
13 - 12.75	7995	15215	23210	42.41	78.38	120.79	44.8%					63.5%	59.8%	61.8%	62.4%						61.2%	63.3%		
12.75 - 11.92	8125	15374	23499	42.64	78.38	121.02	45.1%					63.8%	60.1%	62.0%	62.7%						61.5%	63.6%		
11.92 - 11.67	8177	10548	18725	42.71	60.38	103.09	57.9%					80.8%	65.4%								73.5%	81.7%		
11.67 - 6.67	8995	11209	20204	44.09	60.38	104.47	59.9%					82.3%	66.9%								75.0%	83.3%		
6.67 - 6.5	9024	11232	20256	44.14	60.38	104.51	60.0%					82.4%	67.0%								75.0%	83.4%		
6.5 - 6.25	9256	14118	23374	44.21	68.50	112.71	56.2%					77.9%	67.0%							62.9%	71.2%	77.4%		
6.25 - 3.75	9693	14546	24240	44.90	68.50	113.40	57.2%					78.6%	67.7%							63.5%	71.9%	78.2%		
3.75 - 3.5	9595	17018	26613	44.97	76.00	120.97	50.2%				57.4%	62.1%	66.6%								68.1%	66.6%		
3.5 - 3	9683	17117	26800	45.10	76.00	121.10	50.4%				57.5%	62.3%	66.7%								68.3%	66.8%		
3 - 2.75	9907	16832	26739	45.17	72.13	117.30	54.8%				64.1%		67.0%							56.8%	71.2%	73.2%		
2.75 - 0	10321	18654	28974	45.93	72.13	118.06	52.8%				86.8%		67.8%							57.5%	72.0%	74.0%		

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

Monopole Flange Plate Connection

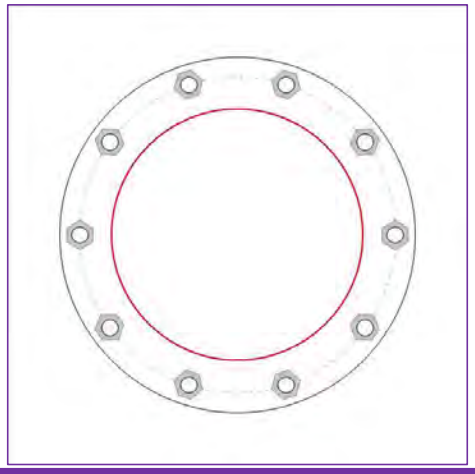
Elevation = 110 ft.

BU #	806376
Site Name	HRT 100 943239
Order #	556638 Rev 1
TIA-222 Revision	H

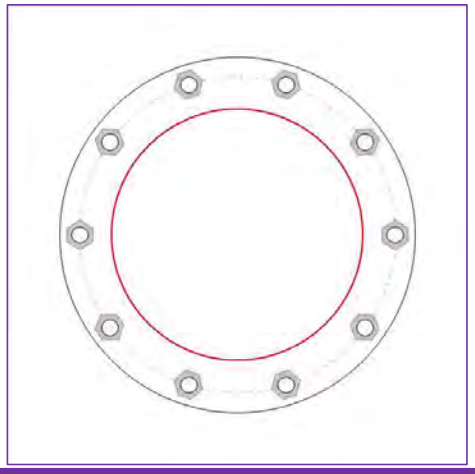
Applied Loads	
Moment (kip-ft)	91.06
Axial Force (kips)	4.50
Shear Force (kips)	9.14

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(10) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 19.45" BC

Top Plate Data

21.95" OD x 1.375" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Bottom Plate Data

21.95" OD x 1.375" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

15.525" x 0.1875" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bottom Pole Data

15.525" x 0.25" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	22.00	
Allowable (kips)	54.52	
Stress Rating:	**38.4%**	Pass

Top Plate Capacity

Max Stress (ksi):	11.70	(Flexural)
Allowable Stress (ksi):	54.00	
Stress Rating:	**20.6%**	Pass
Tension Side Stress Rating:	**11.0%**	Pass

Bottom Plate Capacity

Max Stress (ksi):	11.70	(Flexural)
Allowable Stress (ksi):	54.00	
Stress Rating:	**20.6%**	Pass
Tension Side Stress Rating:	**11.0%**	Pass

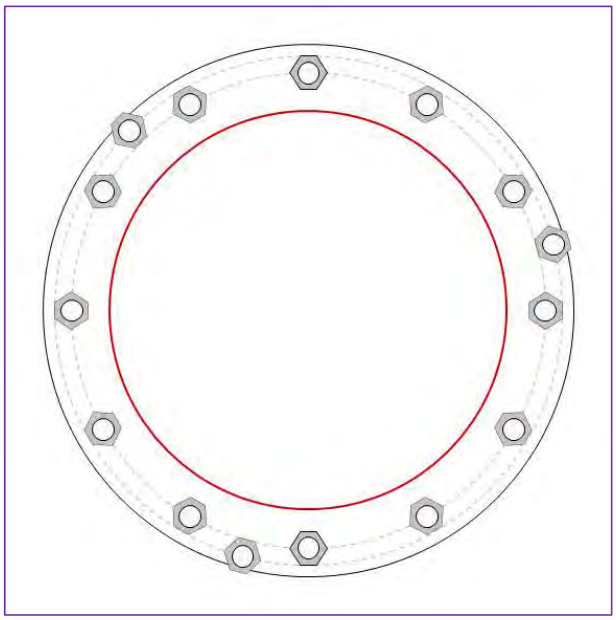
Monopole Base Plate Connection

Site Info	
BU #	806376
Site Name	HRT 100 943239
Order #	556638 Rev 1

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

Applied Loads	
Moment (kip-ft)	3539.99
Axial Force (kips)	57.87
Shear Force (kips)	42.31

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 49.88" BC

GROUP 2: (3) 2-1/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 53.38" BC

Base Plate Data

55.88" OD x 2.5" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

N/A

Pole Data

41.9" x 1.01875" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:		
Pu_c = 225.34	ϕPn_c = 268.39	**Stress Rating**
Vu = 3.53	ϕVn = 120.77	**84.7%**
Mu = 6.3	ϕMn = 128.14	**Pass**
GROUP 2:		
Pu_t = 235.99	ϕPn_t = 304.69	**Stress Rating**
Vu = 0	ϕVn = 186.38	**73.8%**
Mu = 0	ϕMn = 179.4	**Pass**

Base Plate Summary

Max Stress (ksi):	32.35	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**57.1%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

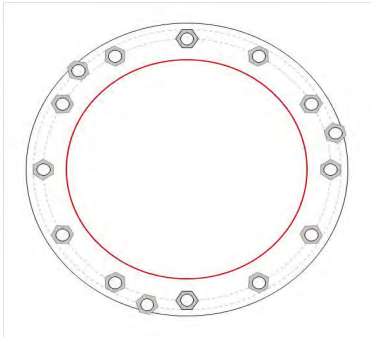
note: Bending interaction not considered when Grout Considered = "Yes"

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

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{er} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	2.25	A615-75	49.88	0.5	2.75	N-Included		No
2	1	30	2.25	A615-75	49.88	0.5	2.75	N-Included		No
3	1	60	2.25	A615-75	49.88	0.5	2.75	N-Included		No
4	1	90	2.25	A615-75	49.88	0.5	2.75	N-Included		No
5	1	120	2.25	A615-75	49.88	0.5	2.75	N-Included		No
6	1	150	2.25	A615-75	49.88	0.5	2.75	N-Included		No
7	1	180	2.25	A615-75	49.88	0.5	2.75	N-Included		No
8	1	210	2.25	A615-75	49.88	0.5	2.75	N-Included		No
9	1	240	2.25	A615-75	49.88	0.5	2.75	N-Included		No
10	1	270	2.25	A615-75	49.88	0.5	2.75	N-Included		No
11	1	300	2.25	A615-75	49.88	0.5	2.75	N-Included		No
12	1	330	2.25	A615-75	49.88	0.5	2.75	N-Included		No
13	2	15	2.25	A193 Gr. B7	53.38	0.5	8.5	N-Included		No
14	2	135	2.25	A193 Gr. B7	53.38	0.5	8.5	N-Included		No
15	2	255	2.25	A193 Gr. B7	53.38	0.5	8.5	N-Included		No

Plot Graphic



Pier and Pad Foundation

BU # :	806376
Site Name:	HRT 100 943239
App. Number:	556638 Rev 1

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp}:	58	kips
Base Shear, Vu_comp:	42	kips
Moment, M_u:	3540	ft-kips
Tower Height, **H**:	130	ft
BP Dist. Above Fdn, bp_{dist}:	5	in

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, **dpier**:	6	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	10	
Pier Rebar Quantity, **mc**:	36	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	3	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	8	ft
Pad Width, W_1:	22	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	10	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	17	
Pad Clear Cover, cc_{pad}:	3	in

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

Soil Properties		
Total Soil Unit Weight, γ:	115	pcf
Ultimate Gross Bearing, Qult:	10.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	33	degrees
SPT Blow Count, N_{blows}:	33	
Base Friction, μ:		
Neglected Depth, **N**:	3.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	15	ft

<--Toggle between Gross and Net

Foundation Analysis Checks				
	Capacity	**Demand**	**Rating***	**Check**
Lateral (Sliding) (kips)	289.96	42.00	**13.8%**	**Pass**
Bearing Pressure (ksf)	7.50	3.40	**45.3%**	**Pass**
*Overturning (kip*ft)*	5386.50	3914.50	**72.7%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	5778.60	3771.00	**62.2%**	**Pass**
Pier Compression (kip)	13497.04	85.99	**0.6%**	**Pass**
*Pad Flexure (kip*ft)*	2927.56	1780.57	**57.9%**	**Pass**
Pad Shear - 1-way (kips)	674.44	298.64	**42.2%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.000	**0.0%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	3867.66	2262.60	**55.7%**	**Pass**

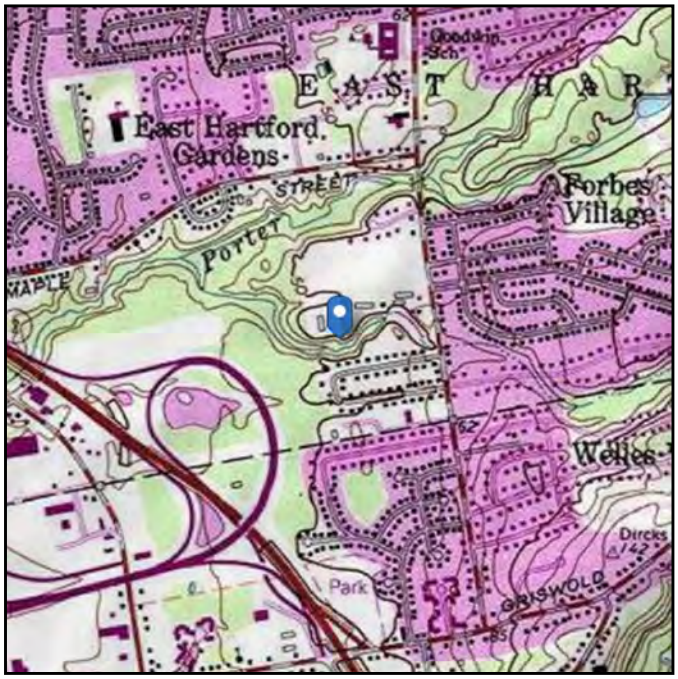
**Rating per TIA-222-H Section 15.5*

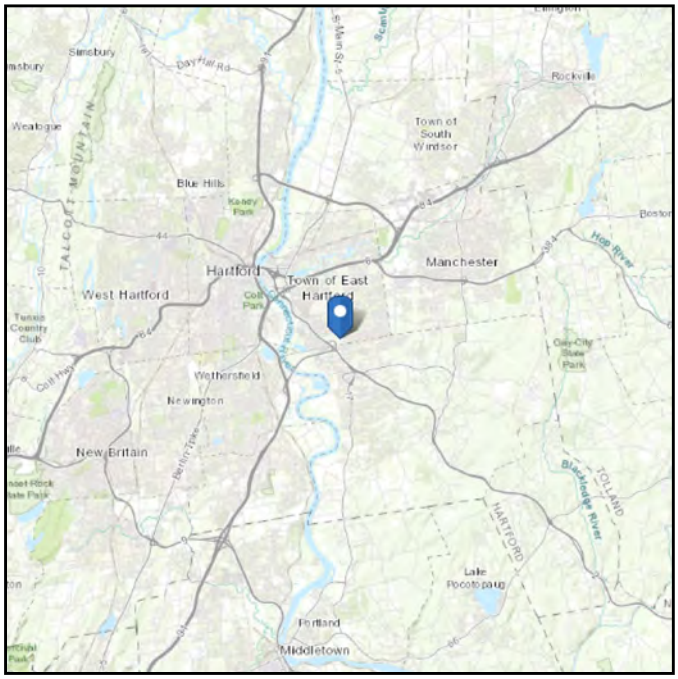
Structural Rating*:	**62.2%**
Soil Rating*:	**72.7%**

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	41.23 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.731472
Soil Class:	D - Stiff Soil	**Longitude:**	-72.607778





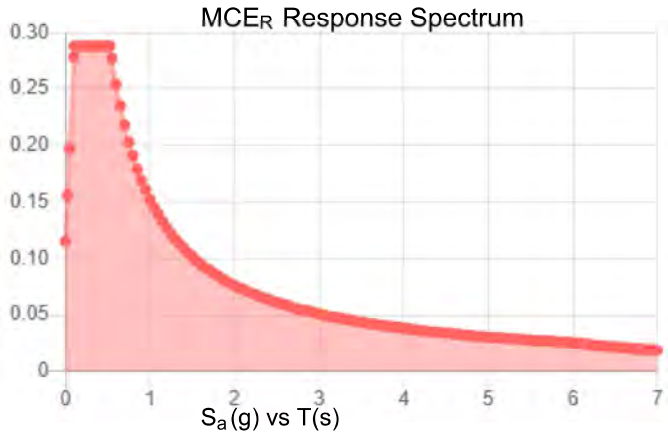
Seismic

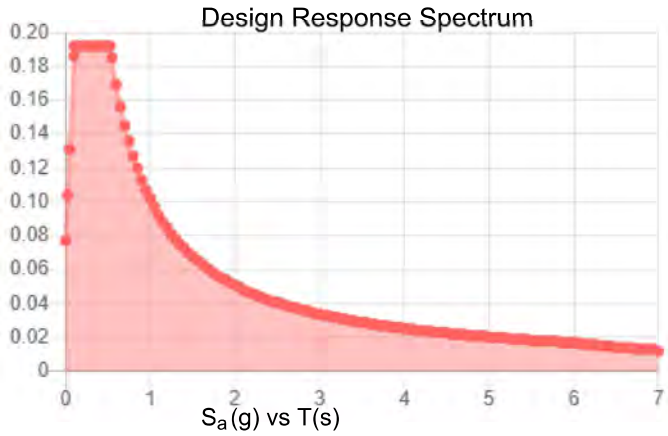
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.18	S_{DS} :	0.192
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.091
S_{MS} :	0.288	PGA_M :	0.145
S_{M1} :	0.152	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Wed Apr 21 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed Apr 21 2021

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

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

Exhibit E

Mount Analysis

Date: **July 30, 2021**

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

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

Subject:	**Mount Replacement Analysis Report**	
Carrier Designation:	**Dish Network Dish 5G**	
	Carrier Site Number:	BOBDL00047A
	Carrier Site Name:	CT-CCI-T-806376
Crown Castle Designation:	**Crown Castle BU Number:**	806376
	Crown Castle Site Name:	HRT 100 943239
	Crown Castle JDE Job Number:	650042
	Crown Castle Order Number:	556638 Rev. 1
Engineering Firm Designation:	**Trylon Report Designation:**	189056
Site Data:	**1455 Forbes Street, East Hartford, Hartford County, CT, 06118**	
	Latitude 41°43'53.30" Longitude -72°36'28.00"	
Structure Information:	**Tower Height & Type:**	**130.0 ft Monopole**
	Mount Elevation:	**77.0 ft**
	Mount Type:	**8.0 ft Platform**

Dear Darcy Tarr,

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

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

Platform **Sufficient***

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

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

Mount analysis prepared by: Aura Baltoiu

Respectfully Submitted by:
Cliff Abernathy, P.E.

Cliff Abernathy Digitally signed by Cliff Abernathy
Date: 2021.07.30 16:34:06 -04'00'

TABLE OF CONTENTS

1) INTRODUCTION

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

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor at Base:	1.00
Topographic Factor at Mount:	1.00
Ice Thickness:	2.0 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.180
Seismic S_1:	0.064
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
77.0	77.0	3	JMA WIRELESS	MX08FRO665-21	8.0 ft Platform **[Commscope, MC-PK8-C]**
		3	FUJITSU	TA08025-B604	
		3	FUJITSU	TA08025-B605	
		1	RAYCAP	RDIDC-9181-PF-48	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	Dish Network Application	556638, Rev.1	CCI Sites
Mount Manufacturer Drawings	Commscope	MC–PK8–C	Trylon

3.1) Analysis Method

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

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

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

3.2) Assumptions

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

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

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

4) ANALYSIS RESULTS

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

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Mount Pipe(s)	MP9	77.0	36.1	Pass
	Horizontal(s)	H1		10.1	Pass
	Standoff(s)	SA3		57.4	Pass
	Bracing(s)	PB3		43.6	Pass
	Handrail(s)	M19		14.7	Pass
	Corner Angle(s)	CP2		5.6	Pass
	Plate(s)	CP6		24.1	Pass
	Mount Connection(s)	-		23.0	Pass

Structure Rating (max from all components) =	57.4%

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

4.1) Recommendations

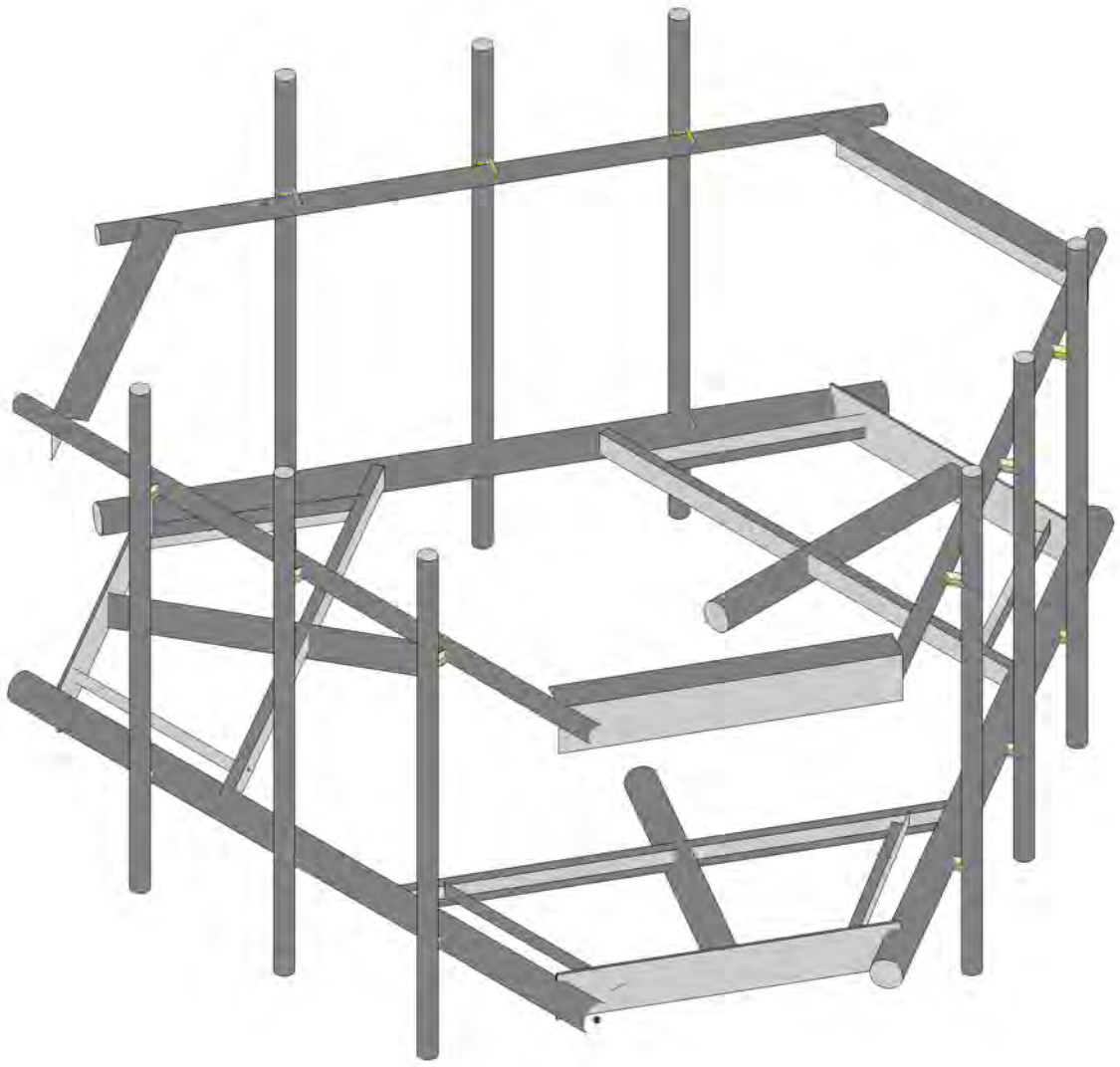
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the proposed mount listed below must be installed.

1. Commscope, MC-PK8-C.

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

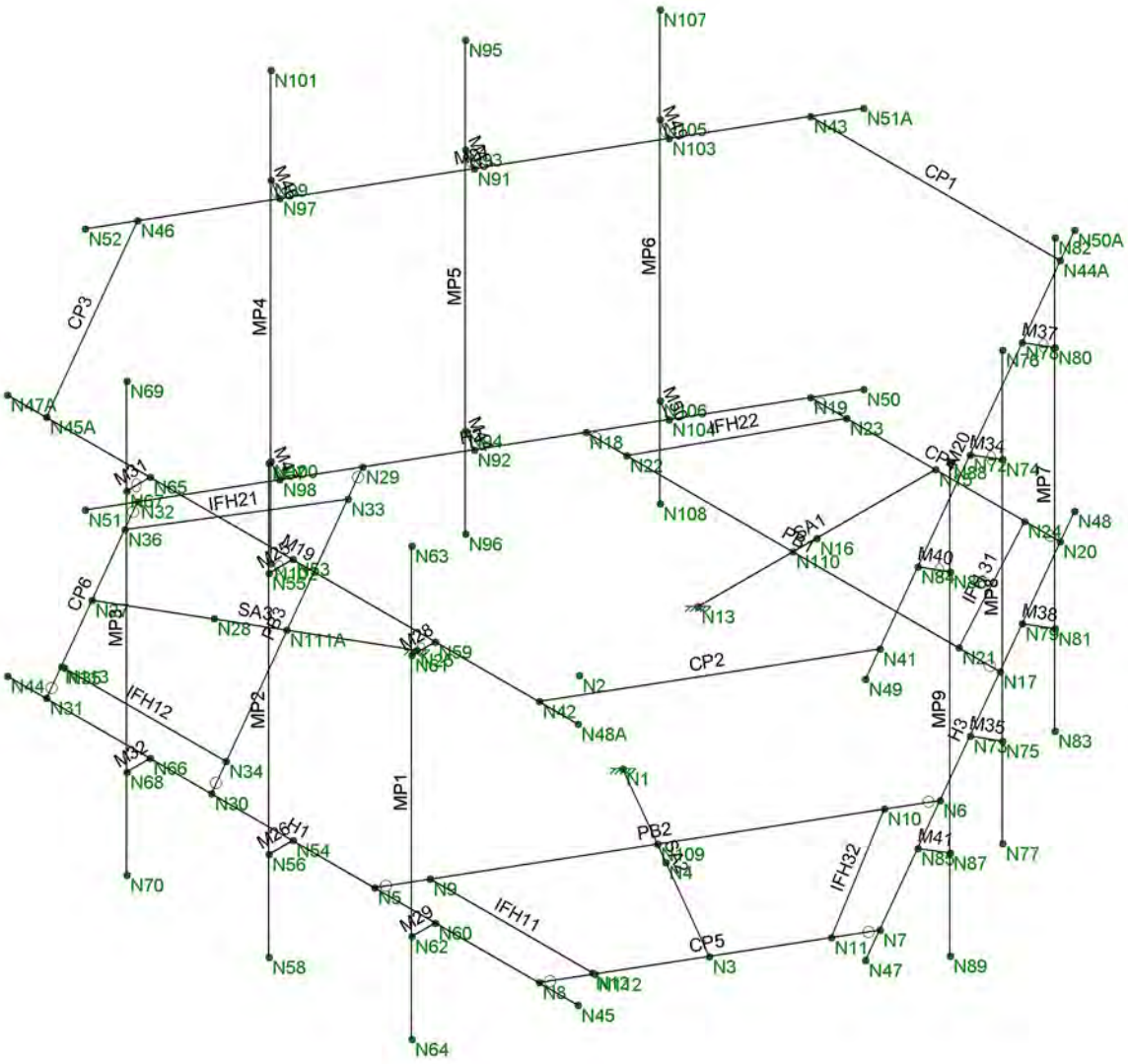
APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Trylon	806376	SK - 1
AB		July 28, 2021 at 8:21 AM
189056		806376.r3d



Envelope Only Solution

Trylon	806376	SK - 2
AB		July 28, 2021 at 8:21 AM
189056		806376.r3d

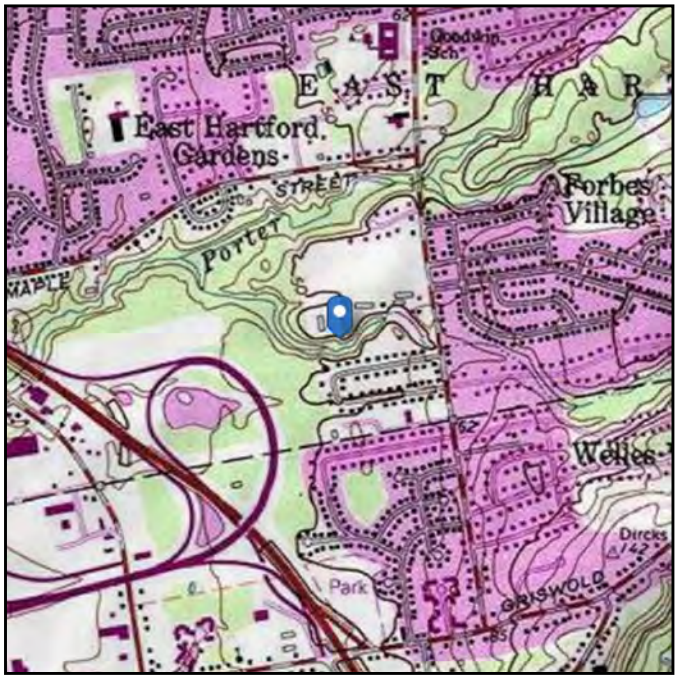
APPENDIX B

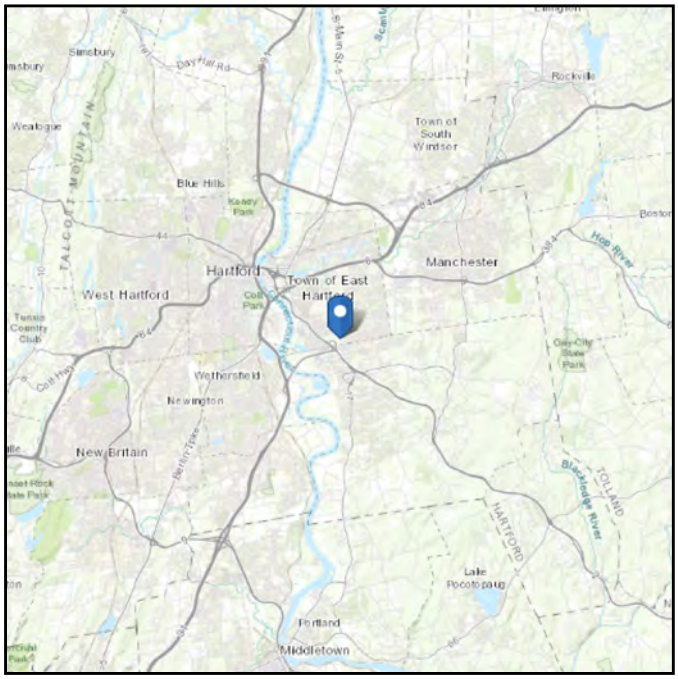
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	41.23 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.731472
Soil Class:	D - Stiff Soil	**Longitude:**	-72.607778





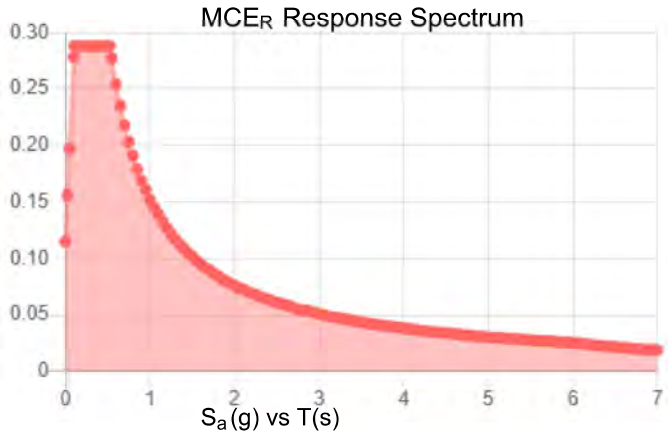
Seismic

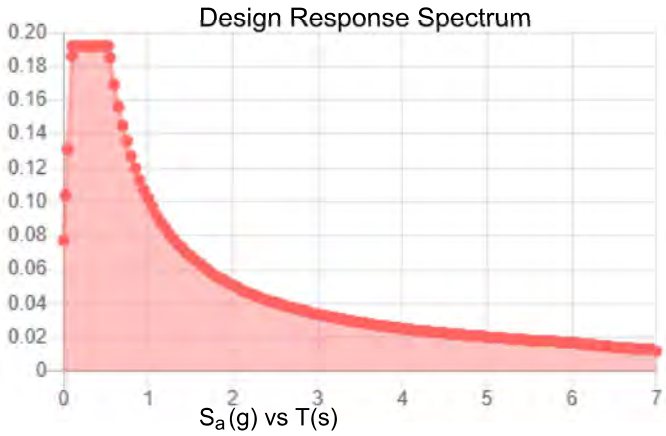
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.18	S_{DS} :	0.192
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.091
S_{MS} :	0.288	PGA_M :	0.145
S_{M1} :	0.152	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Wed Jul 28 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed Jul 28 2021

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

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

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

TIA LOAD CALCULATOR 2.0

PROJECT DATA	
Job Code:	189056
Carrier Site ID:	BOBDL00047A
Carrier Site Name:	CT-CCI-T-806376

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

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	77.0	ft.
Number of Sectors:	3	--
Structure Type:	Monopole	--
Structure Height:	130.0	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	C	--
Site Class:	D - Stiff Soil	--
Ground Elevation:	41.23	ft.

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

WIND PARAMETERS		
Design Wind Speed:	125	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	1.20	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (Gh):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	45.45	psf

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness (t_i):	2.00	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	45.45	psf
Mount Ice Thickness (t_{iz}):	2.18	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	81.81	psf
Round Member Pressure:	49.09	psf
Ice Wind Pressure:	7.14	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel .(S_s):	0.180	g
1 Second Accel (S_1):	0.064	g
Short Period Des. (S_{DS}):	0.19	g
1 Second Des. (S_{D1}):	0.10	g
Short Period Coeff. (F_a):	1.60	--
1 Second Coeff. (F_v):	2.40	--
Response Coefficient (Cs):	0.10	--
Amplification Factor (A_S):	1.20	--

LOAD COMBINATIONS [LRFD]

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

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

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

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

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

EQUIPMENT LOADING

Appurtenance Name/Location	*Qty.*	*Elevation [ft]*	*--*	*EPA $_{N}$ (ft2)*	*EPA $_{T}$ (ft2)*	*Weight (lbs)*
MX08FRO665-21	3	77	No Ice	8.01	3.21	82.50
MP2/MP5/MP8, 0/100/220	--	--	w/ Ice	10.18	5.12	371.12
TA08025-B604	3	77	No Ice	1.96	0.98	63.90
MP2/MP5/MP8, 0/120/240	--	--	w/ Ice	2.51	1.41	93.72
TA08025-B605	3	77	No Ice	1.96	1.13	75.00
MP2/MP5/MP8, 0/120/240	--	--	w/ Ice	2.51	1.58	99.60
RDIDC-9181-PF-48	1	77	No Ice	2.01	1.17	21.85
MP2, 0	--	--	w/ Ice	2.57	1.63	98.23
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
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			No Ice			
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			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT LOADING [CONT.]

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

EQUIPMENT WIND CALCULATIONS

Appurtenance Name	Qty.	Elevation [ft]	K_{zt}	K_z	K_d	t_d	q_z [psf]	q_{zi} [psf]
MX08FRO665-21	3	77	1.00	1.20	0.95	2.18	45.45	7.27
TA08025-B604	3	77	1.00	1.20	0.95	2.18	45.45	7.27
TA08025-B605	3	77	1.00	1.20	0.95	2.18	45.45	7.27
RDIDC-9181-PF-48	1	77	1.00	1.20	0.95	2.18	45.45	7.27

EQUIPMENT LATERAL WIND FORCE CALCULATIONS

Appurtenance Name	Qty.	--	0° 180°	30° 210°	60° 240°	90° 270°	120° 300°	150° 330°
MX08FRO665-21	3	No Ice	327.65	180.39	278.57	131.31	278.57	180.39
MP2/MP5/MP8, 0/100/220	--	w/ Ice	66.65	41.79	58.36	33.50	58.36	41.79
TA08025-B604	3	No Ice	80.32	50.18	70.27	40.13	70.27	50.18
MP2/MP5/MP8, 0/120/240	--	w/ Ice	16.43	11.03	14.63	9.23	14.63	11.03
TA08025-B605	3	No Ice	80.32	54.73	71.79	46.20	71.79	54.73
MP2/MP5/MP8, 0/120/240	--	w/ Ice	16.43	11.84	14.90	10.31	14.90	11.84
RDIDC-9181-PF-48	1	No Ice	82.30	56.41	73.67	47.79	73.67	56.41
MP2, 0	--	w/ Ice	16.80	12.21	15.27	10.68	15.27	12.21
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
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		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						

EQUIPMENT LATERAL WIND FORCE CALCULATIONS [CONT.]

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

EQUIPMENT SEISMIC FORCE CALCULATIONS

Appurtenance Name	Qty.	Elevation [ft]	Weight [lbs]	F_p [lbs]
MX08FRO665-21	3	77	82.5	9.50
TA08025-B604	3	77	63.9	7.36
TA08025-B605	3	77	75	8.64
RDIDC-9181-PF-48	1	77	21.85	2.52

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

(Global) Model Settings

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

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

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

(Global) Model Settings, Continued

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

Hot Rolled Steel Properties

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

Cold Formed Steel Properties

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

Hot Rolled Steel Section Sets

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

Hot Rolled Steel Section Sets (Continued)

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

Cold Formed Steel Section Sets

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

Joint Boundary Conditions

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

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area (M...	Surface...
1	Self Weight	DL			-1		13		3	
2	Structure Wind X	WLX						33		
3	Structure Wind Y	WLY						33		
4	Wind Load 0 AZI	WLX					13			
5	Wind Load 30 AZI	None					26			
6	Wind Load 45 AZI	None					26			
7	Wind Load 60 AZI	None					26			
8	Wind Load 90 AZI	WLY					13			
9	Wind Load 120 AZI	None					26			
10	Wind Load 135 AZI	None					26			
11	Wind Load 150 AZI	None					26			
12	Ice Weight	OL1					13	33	3	
13	Structure Ice Wind X	OL2						33		
14	Structure Ice Wind Y	OL3						33		
15	Ice Wind Load 0 AZI	OL2					13			
16	Ice Wind Load 30 AZI	None					26			
17	Ice Wind Load 45 AZI	None					26			
18	Ice Wind Load 60 AZI	None					26			
19	Ice Wind Load 90 AZI	OL3					13			
20	Ice Wind Load 120 AZI	None					26			
21	Ice Wind Load 135 AZI	None					26			
22	Ice Wind Load 150 AZI	None					26			
23	Seismic Load X	ELX	-.115				13			
24	Seismic Load Y	ELY		-.115			13			
25	Live Load 1 (Lv)	LL					1			
26	Live Load 2 (Lv)	LL					1			
27	Live Load 3 (Lv)	LL					1			
28	Live Load 4 (Lv)	LL					1			
29	Live Load 5 (Lv)	LL					1			
30	Live Load 6 (Lv)	LL					1			
31	Maintenance Load 1 (Lm)	None					1			
32	Maintenance Load 2 (Lm)	None					1			
33	Maintenance Load 3 (Lm)	None					1			

Basic Load Cases (Continued)

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

Load Combinations

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

Load Combinations (Continued)

	Description	Solve	PD...	SR...	B...	Factor	BLC	Factor	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
37	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	.5	14	.866	18	1												
38	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13		14	1	19	1												
39	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-.5	14	.866	20	1												
40	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-.7...	14	.707	21	1												
41	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-.8...	14	.5	22	1												
42	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-1	14		15	-1												
43	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-.8...	14	-.5	16	-1												
44	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-.7...	14	-.7...	17	-1												
45	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	-.5	14	-.8...	18	-1												
46	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13		14	-1	19	-1												
47	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	.5	14	-.8...	20	-1												
48	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	.707	14	-.7...	21	-1												
49	1.2DL + 1DLi + 1W L...	Yes	Y		DL	1.2	OL1	1	13	.866	14	-.5	22	-1												
50	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	1	E...																	
51	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	.866	E...	.5																
52	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	.707	E...	.707																
53	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	.5	E...	.866																
54	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX		E...	1																
55	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	-.5	E...	.866																
56	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	-.707	E...	.707																
57	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	-.866	E...	.5																
58	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	-1	E...																	
59	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	-.866	E...	-.5																
60	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	-.707	E...	-.7...																
61	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	-.5	E...	-.8...																
62	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX		E...	-1																
63	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	.5	E...	-.8...																
64	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	.707	E...	-.7...																
65	(1.2+0.2Sds) + 1.0E ...	Yes	Y		DL	1.238	ELX	.866	E...	-.5																
66	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	1	E...																	
67	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	.866	E...	.5																
68	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	.707	E...	.707																
69	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	.5	E...	.866																
70	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX		E...	1																
71	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	-.5	E...	.866																
72	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	-.707	E...	.707																
73	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	-.866	E...	.5																
74	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	-1	E...																	
75	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	-.866	E...	-.5																
76	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	-.707	E...	-.7...																
77	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	-.5	E...	-.8...																
78	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX		E...	-1																
79	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	.5	E...	-.8...																
80	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	.707	E...	-.7...																
81	(0.9-0.2Sds) + 1.0E ...	Yes	Y		DL	.862	ELX	.866	E...	-.5																
82	1.2D + 1.5 Lv1	Yes	Y		DL	1.2	25	1.5																		
83	1.2D + 1.5 Lv2	Yes	Y		DL	1.2	26	1.5																		
84	1.2D + 1.5 Lv3	Yes	Y		DL	1.2	27	1.5																		
85	1.2D + 1.5 Lv4	Yes	Y		DL	1.2	28	1.5																		
86	1.2D + 1.5 Lv5	Yes	Y		DL	1.2	29	1.5																		
87	1.2D + 1.5 Lv6	Yes	Y		DL	1.2	30	1.5																		
88	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	4	.058	2	.058	3													

Load Combinations (Continued)

	Description	Solve	PD...	SR...	B...	Factor	BLC	Factor	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
89	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	5	.058	2	.05	3	.029												
90	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	6	.058	2	.041	3	.041												
91	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	7	.058	2	.029	3	.05												
92	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	8	.058	2		3	.058												
93	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	9	.058	2	-.0...	3	.05												
94	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	10	.058	2	-.0...	3	.041												
95	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	11	.058	2	-.05	3	.029												
96	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	4	.058	2	-.0...	3													
97	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	5	.058	2	-.05	3	-.0...												
98	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	6	.058	2	-.0...	3	-.0...												
99	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	7	.058	2	-.0...	3	-.05												
100	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	8	.058	2		3	-.0...												
101	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	9	.058	2	.029	3	-.05												
102	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	10	.058	2	.041	3	-.0...												
103	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	31	1.5	11	.058	2	.05	3	-.0...												
104	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	4	.058	2	.058	3													
105	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	5	.058	2	.05	3	.029												
106	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	6	.058	2	.041	3	.041												
107	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	7	.058	2	.029	3	.05												
108	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	8	.058	2		3	.058												
109	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	9	.058	2	-.0...	3	.05												
110	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	10	.058	2	-.0...	3	.041												
111	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	11	.058	2	-.05	3	.029												
112	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	4	.058	2	-.0...	3													
113	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	5	.058	2	-.05	3	-.0...												
114	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	6	.058	2	-.0...	3	-.0...												
115	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	7	.058	2	-.0...	3	-.05												
116	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	8	.058	2		3	-.0...												
117	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	9	.058	2	.029	3	-.05												
118	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	10	.058	2	.041	3	-.0...												
119	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	32	1.5	11	.058	2	.05	3	-.0...												
120	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	4	.058	2	.058	3													
121	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	5	.058	2	.05	3	.029												
122	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	6	.058	2	.041	3	.041												
123	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	7	.058	2	.029	3	.05												
124	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	8	.058	2		3	.058												
125	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	9	.058	2	-.0...	3	.05												
126	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	10	.058	2	-.0...	3	.041												
127	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	11	.058	2	-.05	3	.029												
128	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	4	.058	2	-.0...	3													
129	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	5	.058	2	-.05	3	-.0...												
130	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	6	.058	2	-.0...	3	-.0...												
131	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	7	.058	2	-.0...	3	-.05												
132	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	8	.058	2		3	-.0...												
133	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	9	.058	2	.029	3	-.05												
134	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	10	.058	2	.041	3	-.0...												
135	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	33	1.5	11	.058	2	.05	3	-.0...												
136	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	4	.058	2	.058	3													
137	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	5	.058	2	.05	3	.029												
138	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	6	.058	2	.041	3	.041												
139	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	7	.058	2	.029	3	.05												
140	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	8	.058	2		3	.058												

Load Combinations (Continued)

	Description	Solve	PD...	SR...	B...	Factor	BLC	Factor	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
141	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	9	.058	2	-.0...	3	.05												
142	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	10	.058	2	-.0...	3	.041												
143	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	11	.058	2	-.05	3	.029												
144	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	4	.058	2	-.0...	3													
145	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	5	.058	2	-.05	3	-.0...												
146	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	6	.058	2	-.0...	3	-.0...												
147	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	7	.058	2	-.0...	3	-.05												
148	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	8	.058	2		3	-.0...												
149	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	9	.058	2	.029	3	-.05												
150	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	10	.058	2	.041	3	-.0...												
151	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	34	1.5	11	.058	2	.05	3	-.0...												
152	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	4	.058	2	.058	3													
153	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	5	.058	2	.05	3	.029												
154	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	6	.058	2	.041	3	.041												
155	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	7	.058	2	.029	3	.05												
156	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	8	.058	2		3	.058												
157	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	9	.058	2	-.0...	3	.05												
158	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	10	.058	2	-.0...	3	.041												
159	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	11	.058	2	-.05	3	.029												
160	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	4	.058	2	-.0...	3													
161	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	5	.058	2	-.05	3	-.0...												
162	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	6	.058	2	-.0...	3	-.0...												
163	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	7	.058	2	-.0...	3	-.05												
164	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	8	.058	2		3	-.0...												
165	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	9	.058	2	.029	3	-.05												
166	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	10	.058	2	.041	3	-.0...												
167	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	35	1.5	11	.058	2	.05	3	-.0...												
168	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	4	.058	2	.058	3													
169	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	5	.058	2	.05	3	.029												
170	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	6	.058	2	.041	3	.041												
171	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	7	.058	2	.029	3	.05												
172	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	8	.058	2		3	.058												
173	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	9	.058	2	-.0...	3	.05												
174	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	10	.058	2	-.0...	3	.041												
175	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	11	.058	2	-.05	3	.029												
176	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	4	.058	2	-.0...	3													
177	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	5	.058	2	-.05	3	-.0...												
178	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	6	.058	2	-.0...	3	-.0...												
179	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	7	.058	2	-.0...	3	-.05												
180	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	8	.058	2		3	-.0...												
181	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	9	.058	2	.029	3	-.05												
182	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	10	.058	2	.041	3	-.0...												
183	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	36	1.5	11	.058	2	.05	3	-.0...												
184	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	4	.058	2	.058	3													
185	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	5	.058	2	.05	3	.029												
186	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	6	.058	2	.041	3	.041												
187	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	7	.058	2	.029	3	.05												
188	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	8	.058	2		3	.058												
189	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	9	.058	2	-.0...	3	.05												
190	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	10	.058	2	-.0...	3	.041												
191	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	11	.058	2	-.05	3	.029												
192	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	4	.058	2	-.0...	3													

Load Combinations (Continued)

	Description	Solve	PD...	SR...	B...	Factor	BLC	Factor	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
193	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	5	.058	2	-.05	3	-.0...												
194	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	6	.058	2	-.0...	3	-.0...												
195	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	7	.058	2	-.0...	3	-.05												
196	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	8	.058	2		3	-.0...												
197	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	9	.058	2	.029	3	-.05												
198	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	10	.058	2	.041	3	-.0...												
199	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	37	1.5	11	.058	2	.05	3	-.0...												
200	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	4	.058	2	.058	3													
201	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	5	.058	2	.05	3	.029												
202	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	6	.058	2	.041	3	.041												
203	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	7	.058	2	.029	3	.05												
204	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	8	.058	2		3	.058												
205	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	9	.058	2	-.0...	3	.05												
206	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	10	.058	2	-.0...	3	.041												
207	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	11	.058	2	-.05	3	.029												
208	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	4	.058	2	-.0...	3													
209	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	5	.058	2	-.05	3	-.0...												
210	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	6	.058	2	-.0...	3	-.0...												
211	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	7	.058	2	-.0...	3	-.05												
212	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	8	.058	2		3	-.0...												
213	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	9	.058	2	.029	3	-.05												
214	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	10	.058	2	.041	3	-.0...												
215	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	38	1.5	11	.058	2	.05	3	-.0...												
216	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	4	.058	2	.058	3													
217	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	5	.058	2	.05	3	.029												
218	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	6	.058	2	.041	3	.041												
219	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	7	.058	2	.029	3	.05												
220	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	8	.058	2		3	.058												
221	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	9	.058	2	-.0...	3	.05												
222	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	10	.058	2	-.0...	3	.041												
223	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	11	.058	2	-.05	3	.029												
224	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	4	.058	2	-.0...	3													
225	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	5	.058	2	-.05	3	-.0...												
226	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	6	.058	2	-.0...	3	-.0...												
227	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	7	.058	2	-.0...	3	-.05												
228	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	8	.058	2		3	-.0...												
229	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	9	.058	2	.029	3	-.05												
230	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	10	.058	2	.041	3	-.0...												
231	1.2D + 1.5Lm + 1.0...	Yes	Y		DL	1.2	39	1.5	11	.058	2	.05	3	-.0...												

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N25	max	1580.52	3	961.27	20	2328.63	39	507.26	31	546.48	33	1827.37	3
2		min	-1576.74	27	-967.5	12	-104.71	31	-4106.44	39	-2527.12	41	-1826.91	27
3	N1	max	1665.75	17	991.51	8	2324.86	45	4102.48	46	511.67	19	1920.9	25
4		min	-1661.94	25	-985.24	32	-82.5	21	-471.17	22	-2521.15	43	-1921.35	17
5	N13	max	352.14	18	1610.85	22	2235.66	34	732.02	14	4593.49	34	1551.54	14
6		min	-360.03	10	-1610.87	30	-135.37	26	-731.55	6	-657.99	26	-1551.56	6
7	Totals:	max	3188.37	18	2933.42	6	6594.78	36						
8		min	-3188.37	10	-2933.42	14	1367.67	76						

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

	Member	Shape	Code Check	Loc[in]	LC	She...	Lo...	...	...	phi*P ...	phi*P ...	phi*M...	phi*M.....	Eqn
1	SA3	PIPE_3.5	.603	40	39	.190	40		11	64491...	78750	7953....	7953.....	H1-1b
2	SA2	PIPE_3.5	.602	40	45	.199	40		9	64491...	78750	7953....	7953.....	H1-1b
3	SA1	PIPE_3.5	.578	40	34	.176	40		14	64491...	78750	7953....	7953.....	H1-1b
4	PB3	C3X5	.458	34.86	39	.169	63....	y	35	32858...	47628	981.26	4104	... H1-1b
5	PB2	C3X5	.456	34.86	45	.169	6.54	y	49	32858...	47628	981.26	4104	... H1-1b
6	PB1	C3X5	.433	34.86	49	.158	6.54	y	38	32858...	47628	981.26	4104	... H1-1b
7	MP9	PIPE_2.0	.380	57	10	.045	57		15	20866...	32130	1871....	1871.....	H1-1b
8	MP1	PIPE_2.0	.365	57	16	.046	57		10	20866...	32130	1871....	1871.....	H1-1b
9	MP3	PIPE_2.0	.359	57	5	.053	57		10	20866...	32130	1871....	1871....	1 H1-1b
10	MP6	PIPE_2.0	.354	57	15	.048	57		5	20866...	32130	1871....	1871.....	H1-1b
11	MP4	PIPE_2.0	.351	57	10	.043	57		6	20866...	32130	1871....	1871....	1 H1-1b
12	MP2	PIPE_2.0	.333	57	6	.049	57		5	20866...	32130	1871....	1871....	1 H1-1b
13	MP8	PIPE_2.0	.331	57	10	.044	57		10	20866...	32130	1871....	1871.....	H1-1b
14	MP7	PIPE_2.0	.328	57	3	.048	57		16	20866...	32130	1871....	1871....	1 H1-1b
15	MP5	PIPE_2.0	.323	57	9	.042	57		10	20866...	32130	1871....	1871....	1 H1-1b
16	CP6	6.5"x0.37" Plate	.254	21	8	.109	21	y	37	27548...	75757...	583.96	6395.....	H1-1b
17	CP4	6.5"x0.37" Plate	.249	21	2	.101	21	y	47	27548...	75757...	583.96	6186.....	H1-1b
18	CP5	6.5"x0.37" Plate	.244	21	13	.109	21	y	47	27548...	75757...	583.96	6219.....	H1-1b
19	M19	PIPE_2.0	.147	72	10	.155	72		2	14916...	32130	1871....	1871.....	H1-1b
20	M20	PIPE_2.0	.145	24	16	.154	72		8	14916...	32130	1871....	1871.....	H1-1b
21	M21	PIPE_2.0	.140	72	5	.143	72		13	14916...	32130	1871....	1871.....	H1-1b
22	IFH21	L2x2x3	.123	0	30	.035	0	z	43	18084...	23392...	557.72	1182....	1 H2-1
23	IFH32	L2x2x3	.119	0	14	.035	0	y	41	18084...	23392...	557.72	1182....	1 H2-1
24	IFH12	L2x2x3	.114	0	25	.034	0	y	35	18084...	23392...	557.72	1179....	1 H2-1
25	IFH11	L2x2x3	.113	0	3	.035	0	z	49	18084...	23392...	557.72	1179....	1 H2-1
26	H1	PIPE_3.5	.107	48	105	.102	72		10	60666...	78750	7953....	7953....	1 H1-1b
27	H3	PIPE_3.5	.104	48	207	.098	24		15	60666...	78750	7953....	7953....	1 H1-1b
28	IFH 31	L2x2x3	.104	0	26	.034	0	z	38	18084...	23392...	557.72	1182....	1 H2-1
29	H2	PIPE_3.5	.102	48	159	.095	72		5	60666...	78750	7953....	7953....	1 H1-1b
30	IFH22	L2x2x3	.101	0	2	.034	0	y	46	18084...	23392...	557.72	1182....	1 H2-1
31	CP2	6.6x4.46x0.25	.059	0	26	.045	42	y	17	51170...	87561	2464....	7125....	1 H2-1
32	CP3	6.6x4.46x0.25	.058	0	22	.042	0	y	3	51170...	87561	2464....	7125....	1 H2-1
33	CP1	6.6x4.46x0.25	.054	18.81	18	.041	0	y	14	51170...	87561	2464....	7125....	1 H2-1

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

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

APPENDIX D

ADDITIONAL CALCUATIONS

Trylon

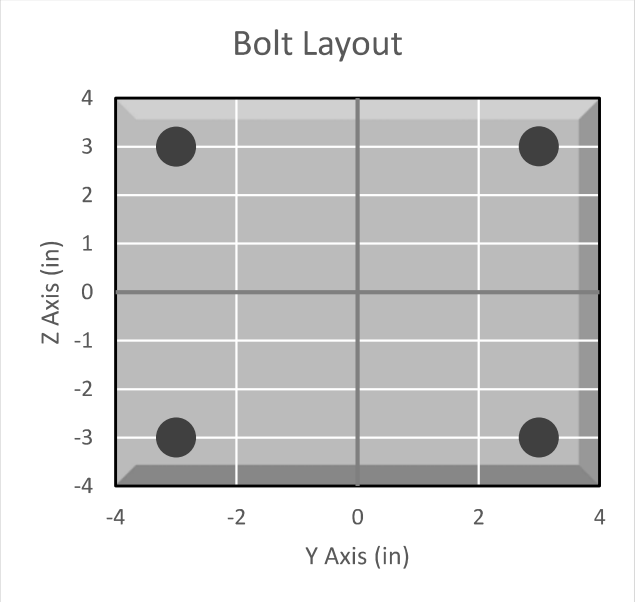
Analysis date: 07/29/21

BOLT TOOL 1.5.2

Project Data	
Job Code:	189056
Carrier Site ID:	BOBDL00047A
Carrier Site Name:	CT-CCI-T-806376

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

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



Connection Description
Standoff to Monopole

Bolt Check*		
Tensile Capacity (ϕT_n):	20340.1	lbs
Shear Capacity (ϕV_n):	17257.3	lbs
Tension Force (T_u):	4914.3	lbs
Shear Force (V_u):	698.8	lbs
Tension Usage:	23.0%	--
Shear Usage:	3.9%	--
Interaction:	23.0%	Pass
Controlling Member:	SA2	--
Controlling LC:	42	--

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

APPENDIX E

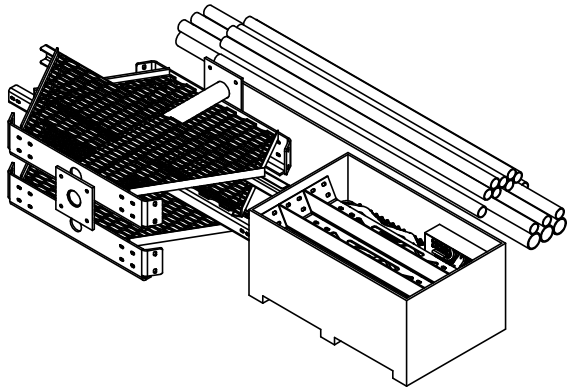
SUPPLEMENTAL DRAWINGS

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

C

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

FOR BOM ENTRY ONLY

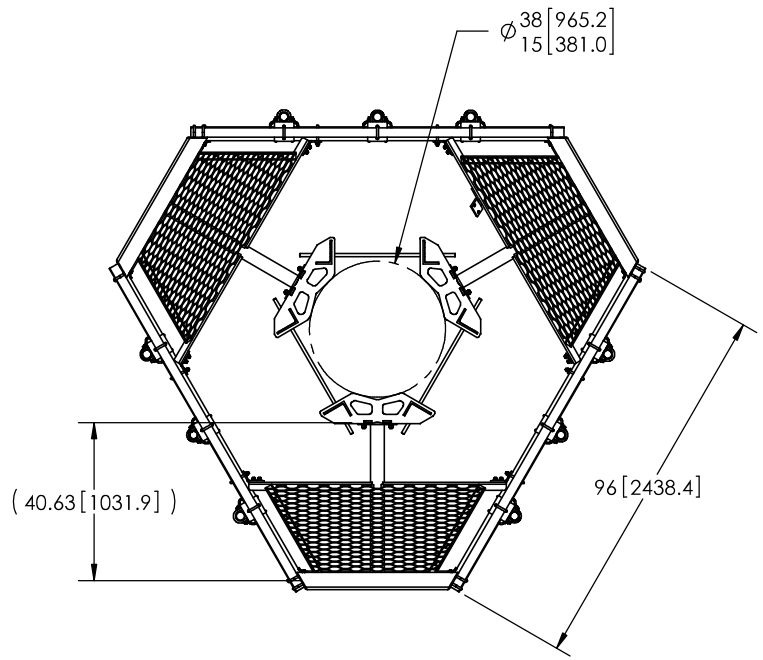


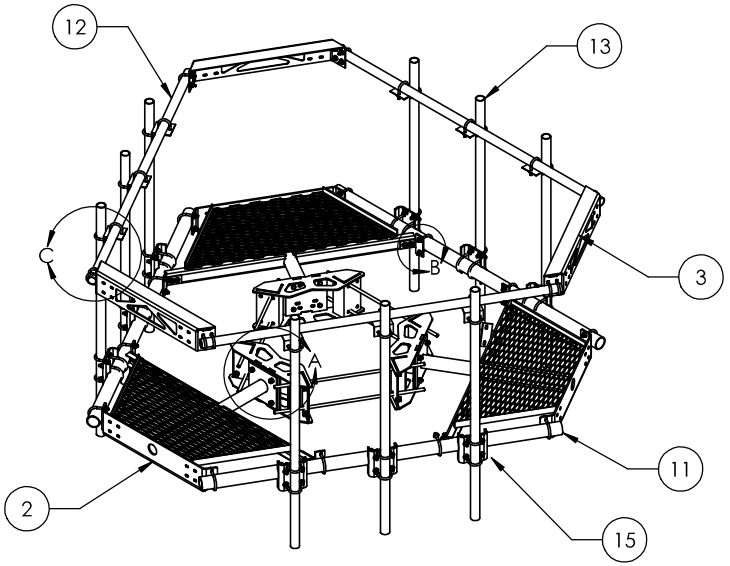
NOTES:
1. CUSTOMER ASSEMBLY SHEETS 2–3.

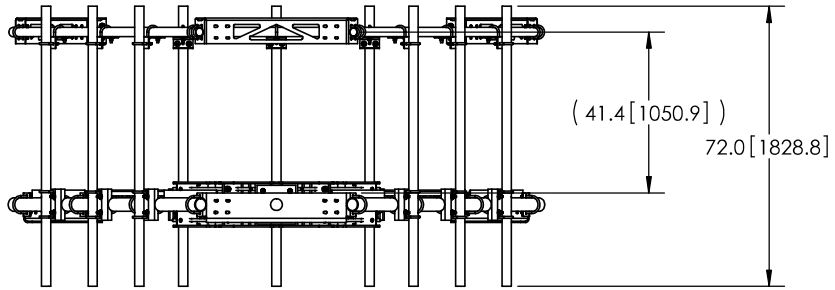
ALL DIMENSIONS ARE IN INCHES U.O.S.
TOLERANCES UNLESS OTHERWISE SPECIFIED:
.X = ± .12 ANGLES ±2°
.XX = ± .06 FRACTIONS ±1/32
.XXX= ± .03
REMOVE BURRS AND BREAK EDGES .005

DO NOT SCALE THIS PRINT

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





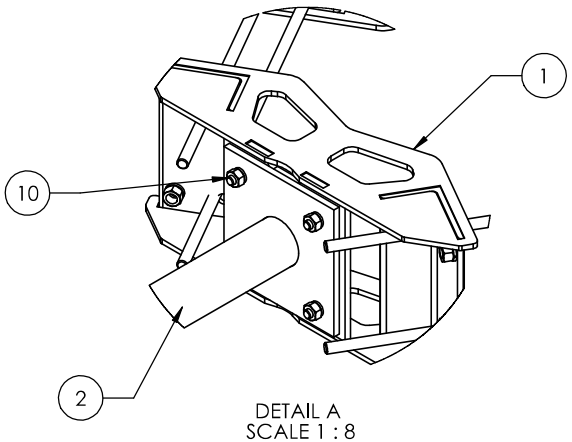


ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT
C				
1	MC-RM1550-3	12" - 50" OD RINGMOUNT	1	230.42 LBS
2	MTC300601	Low Profile Co-Location Platform Snub Nose	3	134.21 LBS
3	MT195801	Corner Weldment Snub Nose Handrail	3	27.10 LBS
4	XA2020.01	CROSS OVER ANGLE	9	2.65 LBS
5	GUB-4356	1/2" X 3-5/8" X 6" GALV U-BOLT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

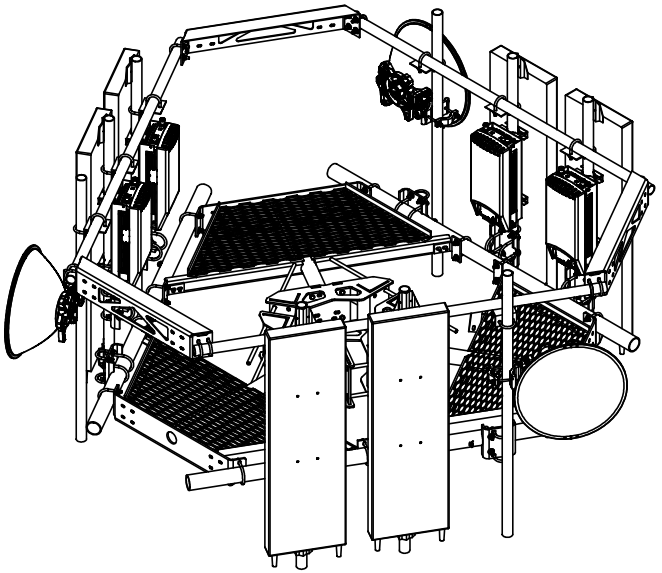
NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.
2. WILL FIT MONOPOLES 15"–38" OD.

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

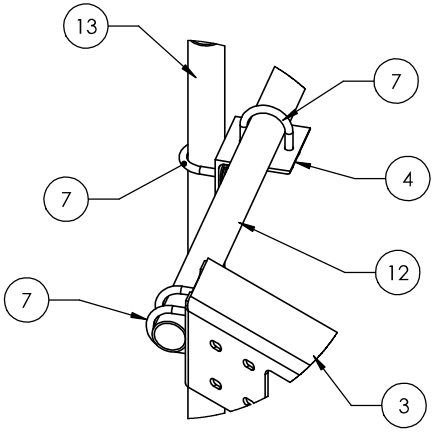
DRAWN BY: MSM	SHEET: 2 of 3	PART NUMBER: MC-PK8-C	
CHECKED BY: TP	SCALE: NTS	DESCRIPTION: 25" OD Snub Nose MT-196	
DATE: 10/18/11	MATERIAL: A36, A53	DRAWING TYPE: ASSEMBLY DRAWING	
REVISION: C	FINISH: GALV A123	WEIGHT: 1361.27 LBS	ANDREW® WESTCHESTER, IL. 60154 U.S.A.



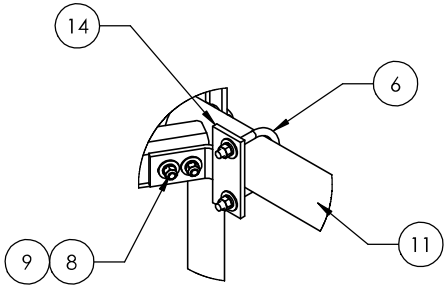
DETAIL A
SCALE 1 : 8



WITH ANTENNAS



DETAIL C
SCALE 1 : 8



DETAIL B
SCALE 1 : 8

NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.

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

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

Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: BOBDL00047A

806376
1455 Forbes Street
East Hartford, Connecticut 06118

September 28, 2021

EBI Project Number: 6221005703

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**59.24%**

September 28, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00047A - 806376

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **1455 Forbes Street** in **East Hartford, 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 1455 Forbes Street in East Hartford, 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 77 feet above ground level (AGL).

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

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

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz
Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd
Height (AGL):	77 feet	Height (AGL):	77 feet	Height (AGL):	77 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts
ERP (W):	3,065.51	ERP (W):	3,065.51	ERP (W):	3,065.51
Antenna A1 MPE %:	**3.14%**	Antenna B1 MPE %:	**3.14%**	Antenna C1 MPE %:	**3.14%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	3.14%
Sprint	6.41%
Clearwire	0.22%
AT&T	9.72%
Verizon	9.8%
T-Mobile	29.95%
Site Total MPE % :	59.24%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	3.14%
Dish Wireless Sector B Total:	3.14%
Dish Wireless Sector C Total:	3.14%
Site Total MPE % :	59.24%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	77.0	6.38	600 MHz n71	400	1.60%
Dish Wireless 1900 MHz n70	4	542.70	77.0	15.48	1900 MHz n70	1000	1.55%
						Total:	**3.14%**

• 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:	3.14%
Sector B:	3.14%
Sector C:	3.14%
Dish Wireless Maximum MPE % (Sector A):	3.14%
Site Total:	59.24%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **59.24%** 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:
1455 FORBES STREET, EAST HARTFORD, CT 06118

CROWN ATLANTIC COMPANY 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: 806376/HRT 100 943239
Customer Site ID: BOBDL00047A/CT-CCI-T-806376
Site Address: 1455 FORBES STREET, EAST HARTFORD, CT 06118

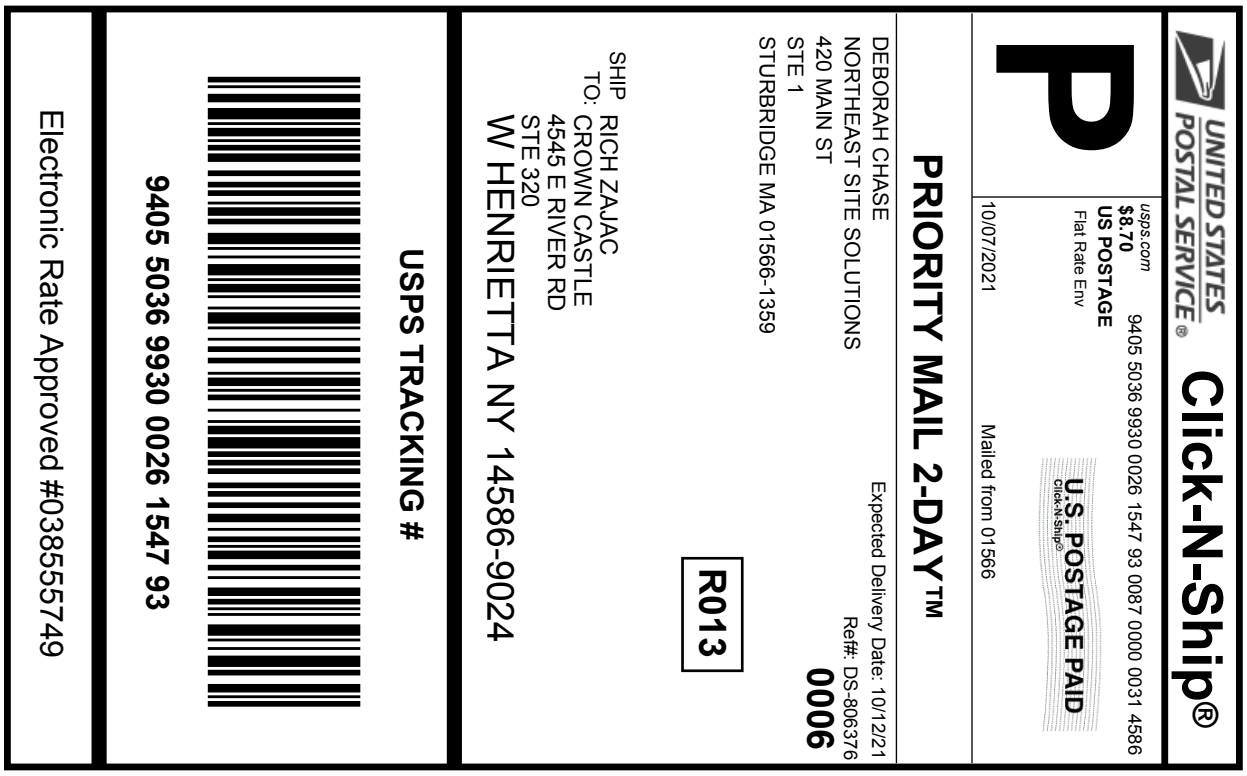
Crown Castle

By: _____ Date: 10/4/2021

Richard Zajac
Real Estate Specialist

Exhibit H

Recipient Mailings



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0026 1547 93

Trans. #:	545423559
Print Date:	10/07/2021
Ship Date:	10/07/2021
Expected Delivery Date:	10/12/2021

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

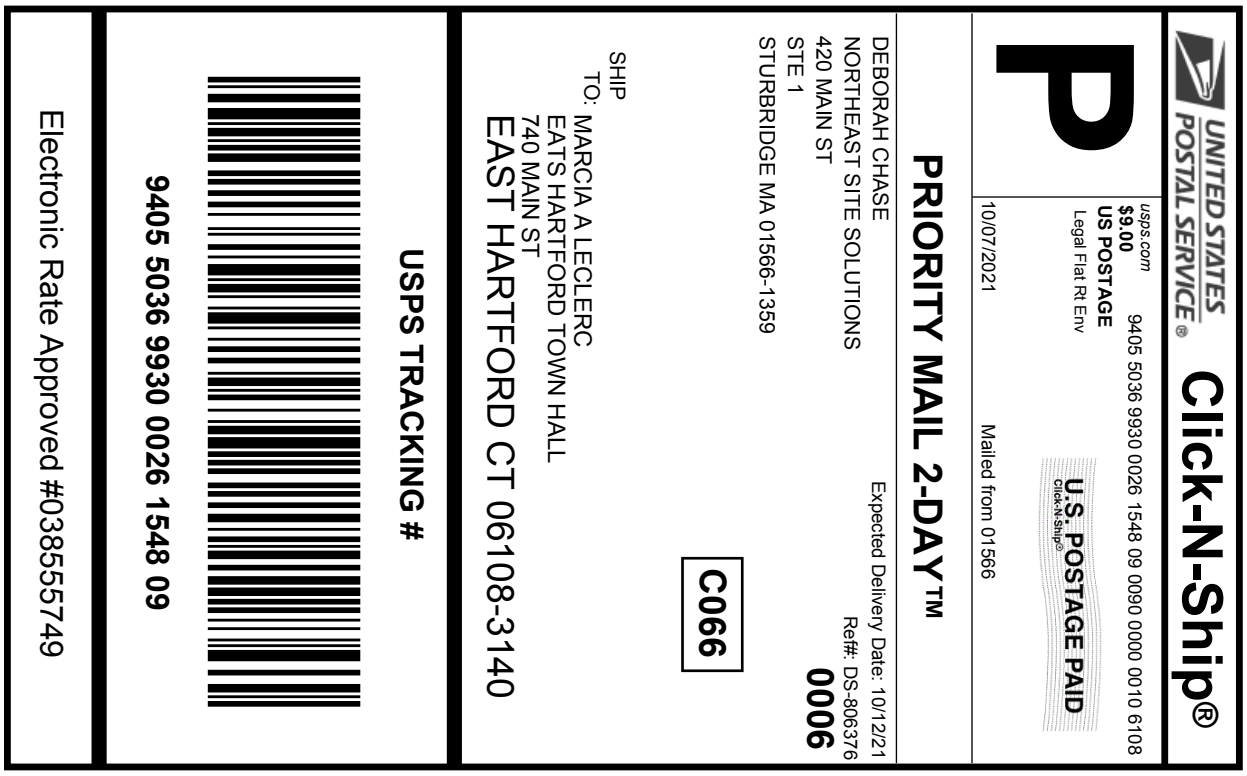
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-806376

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

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

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



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0026 1548 09

Trans. #:	545423559
Print Date:	10/07/2021
Ship Date:	10/07/2021
Expected Delivery Date:	10/12/2021

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

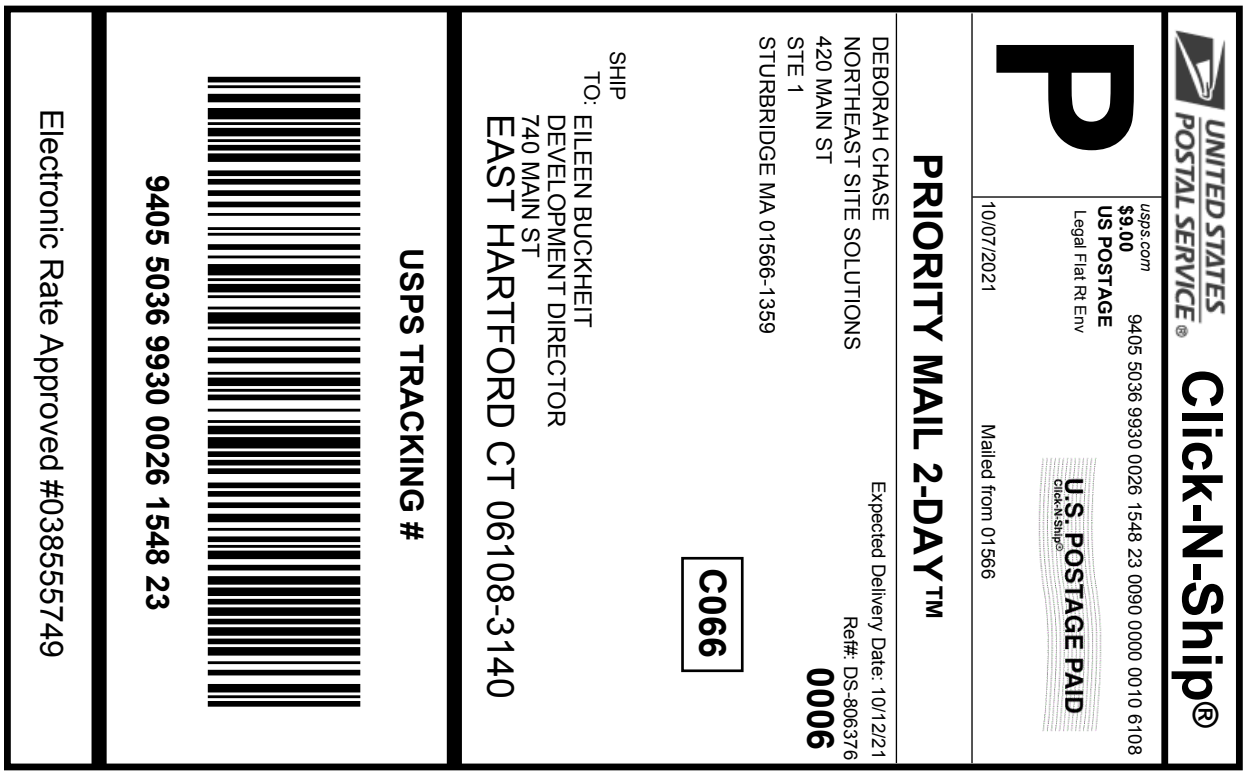
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-806376

To: MARCIA A LECLERC
EATS HARTFORD TOWN HALL
740 MAIN ST
EAST HARTFORD CT 06108-3140

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

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



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0026 1548 23

Trans. #:	545423559
Print Date:	10/07/2021
Ship Date:	10/07/2021
Expected Delivery Date:	10/12/2021

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

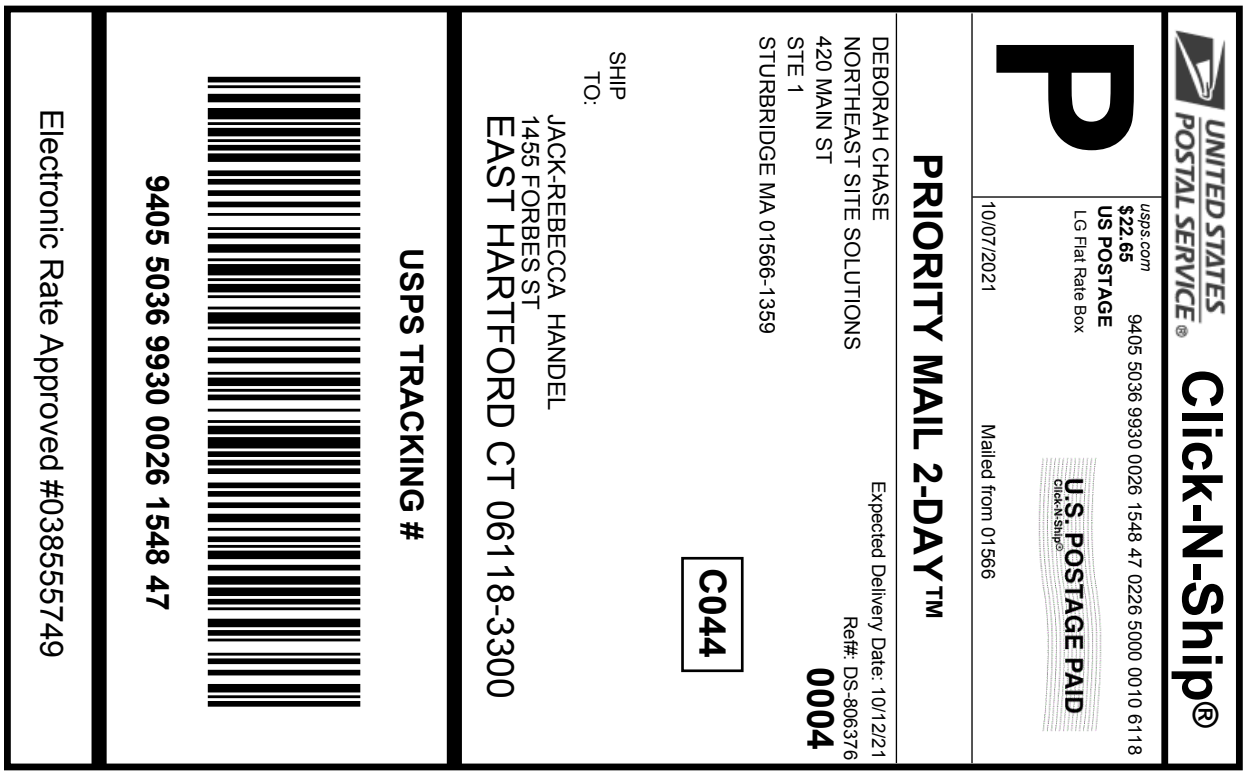
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-806376

To: EILEEN BUCKHEIT
DEVELOPMENT DIRECTOR
740 MAIN ST
EAST HARTFORD CT 06108-3140

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

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



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0026 1548 47

Trans. #:	545423559
Print Date:	10/07/2021
Ship Date:	10/07/2021
Expected Delivery Date:	10/12/2021

Priority Mail® Postage:	**$22.65**
Total:	**$22.65**

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

Ref#: DS-806376

To: JACK-REBECCA HANDEL
1455 FORBES ST
EAST HARTFORD CT 06118-3300

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

Thank you for shipping with the United States Postal Service!
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806376

UNITED STATES POSTAL SERVICE.

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

10/08/2021 01:43 PM

Product	Qty	Unit Price	Price
Prepaid Mail West Henrietta, NY 14586 Weight: 0 lb 2.10 oz Acceptance Date: Fri 10/08/2021 Tracking #: 9405 5036 9930 0026 1547 93	1		$0.00
Prepaid Mail East Hartford, CT 06108 Weight: 1 lb 2.40 oz Acceptance Date: Fri 10/08/2021 Tracking #: 9405 5036 9930 0026 1548 09	1		$0.00
Prepaid Mail East Hartford, CT 06118 Weight: 1 lb 2.50 oz Acceptance Date: Fri 10/08/2021 Tracking #: 9405 5036 9930 0026 1548 47	1		$0.00
Prepaid Mail East Hartford, CT 06108 Weight: 1 lb 2.40 oz Acceptance Date: Fri 10/08/2021 Tracking #: 9405 5036 9930 0026 1548 23	1		$0.00
Grand Total:			$0.00