NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

March 24, 2022

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

RE: Tower Share Application
338 Oxford Road, Oxford, CT 06478
Latitude: 41.427930
Longitude: -73.109008
Site #: 876362_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 338 Oxford Road, Oxford, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 107-foot level of the existing 150-foot monopole, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the existing fenced compound. Included are plans by Kimley Horn, dated March 3, 2022, Exhibit B. Also included is a structural analysis prepared by Paul J. Ford & Co., dated July 29, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit C. The facility was originally approved by the Town of Oxford, although a copy of the approval was not available.

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 George R. Temple, First Selectman and Steven Macary, Zoning Enforcement Official for the Town of Oxford, as well as the tower owner (Crown Castle) and property owner (Gina Braley & John Kapusta).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 150-feet and the Dish Wireless LLC antennas will be located at a centerline height of 107-feet.

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

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

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The combined site operations will result in a total power density of 11.86% as evidenced by Exhibit F.

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

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

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 monopole in Oxford. 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 E, 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 107-foot level of the existing 150-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

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: George R. Temple, First Selectman
Oxford Town Hall
486 Oxford Road
Oxford, CT 06478

Steven Macary, City Planner
Oxford Town Hall
486 Oxford Road
Oxford, CT 06478

Gina Braley & John Kapusta - Property Owners
338 Oxford Road
Oxford, CT 06478

Crown Castle – Tower Owner

Exhibit A

Property Location: 338 OXFORD RD | **MAP ID:** 34/ 9/ 34 A/ / | **Bldg Name:** | **State Use:** 101

Vision ID: 1406 | **Account #** F0133100 | **Bldg #:** 1 of 1 | **Sec #:** 1 of 1 | **Card** 1 of 1 | **Print Date:** 11/18/2020 18:36

CURRENT OWNER

BRALEY GINA & KAPUSTA JOHN

338 OXFORD RD

OXFORD, CT 06478

Additional Owners:

TOPO.		UTILITIES		STRT./ROAD		LOCATION	
0(	Clear	5	Well				
		6	Septic				

SUPPLEMENTAL DATA

Other ID:	34/9/34 A	Prop Remark	
Survey Map #		Total Acres	2.1
Census Tract	3461000	Zoning	COMM
490 Penalty		Town Line?	
Dev Rights		Callback Ltr	
Side	R 50A		
GIS ID:		ASSOC PID#	

CURRENT ASSESSMENT

Description	Code	Appraised Value	Assessed Value
RES LAND	1-1	98,300	68,800
RES EXCES	1-2	4,800	3,400
DWELLING	1-3	150,500	105,400
RES OUTBL	1-4	7,700	5,400
IND LAND	3-1	162,000	113,400
	Total	423,300	296,400

6108
OXFORD, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.
BRALEY GINA & KAPUSTA JOHN	431/1170	08/30/2019	U	I	235,000	25
FRITZ WILLIAM E JR & ELLEN S	84/ 199	10/01/2010	U	V	0	

PREVIOUS ASSESSMENTS (HISTORY)

Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
2019	1-1	68,800	2018	1-1	68,800	2017	1-1	68,800
2019	1-2	4,200	2018	1-2	4,200	2017	1-2	4,200
2019	1-3	104,000	2018	1-3	104,000	2017	1-3	104,000
2019	1-4	4,600	2018	1-4	4,600	2017	1-4	4,600
2019	3-1	109,800	2018	3-1	109,800	2017	3-1	109,800
	Total:	291,400		Total:	291,400		Total:	291,400

EXEMPTIONS

Year	Type	Description	Amount
		Total:	

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm. Int.

This signature acknowledges a visit by a Data Collector or Assessor

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	150,500
Appraised XF (B) Value (Bldg)	0
Appraised OB (L) Value (Bldg)	7,700
Appraised Land Value (Bldg)	265,100
Special Land Value	0
Total Appraised Parcel Value	423,300
Valuation Method:	C
Adjustment:	0
Net Total Appraised Parcel Value	423,300

ASSESSING NEIGHBORHOOD

NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
0001/A				

NOTES

CELLULAR COMMUNICATION TOWER; SHARED ACCESS, INTERIOR LOT

WHITE, EA IA

INT ORIG 1/10

2019 I&E O/O

2020-EST:POSTED:NO TRESPASSING

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments
B-20-151		BP	Permit	27		0		BARN=3 BAYS-SQ
B-18-114	05/22/2018	BP	Permit	20,000		100		CELL TOWER ALTER
B-17-007	01/20/2017	BP	Permit	8,000		100		ANTENNA ALTERATI
B-12-030	03/06/2012	BP	Permit	15,000	05/30/2012	100		REPLACE ALL 12 ANT
B-11-229	10/06/2011	BP		35,000		100		REPLACING EXISTIN
B-00-001	12/30/1999		CELLULAR COMMU	90,000		100		

VISIT/ CHANGE HISTORY

Date	Type	IS	ID	Cd.	Purpose/Result
06/22/2020			ES	20	Field Review
05/04/2020			VA	49	Data Mailer Sent
09/01/2015			LM	20	Field Review
07/30/2010			DM	53	Data Mailer - Research
01/22/2010			MB	00	Measure & Listed

LAND LINE VALUATION SECTION

B #	Use Code	Use Description	Zone	D	Front	Depth	Units		Unit Price	I. Factor	S.A.		C. Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing Spec Use	Special Pricing Spec Calc	S Adj Fact	Adj. Unit Price	Land Value
1	101	Res Dwelling	COMM				1.50	AC	112,800.00	0.7175	5		0.90	090	0.90	TF			1.00		98,300
1	101	Res Dwelling	COMM				0.60	AC	8,000.00	1.0000	0		1.00		0.00				1.00		4,800
1	307	Cell Tower					1.00	BL	162,000.00	1.0000	0		1.00		0.00	LAND LEASE VALUE			1.00		162,000

Total Card Land Units: 2.10 AC | **Parcel Total Land Area:** 2.1 AC | **Total Land Value:** 265,100

Property Location: 338 OXFORD RD **MAP ID:** 34/ 9/ 34 A/ / **Bldg Name:** **State Use:** 101

Vision ID: 1406 **Account #** F0133100 **Bldg #:** 1 of 1 **Sec #:** 1 of 1 **Card** 1 of 1 **Print Date:** 11/18/2020 18:36

CONSTRUCTION DETAIL

Element	Cd.	Ch.	Description
Style	01		Ranch
Model	01		Residential
Grade	03		C
Stories	1.00		
Occupancy	1		
Exterior Wall 1	25		Vinyl Siding
Exterior Wall 2			
Roof Structure	03		Gable
Roof Cover	03		Asphalt
Interior Wall 1	05		Drywall
Interior Wall 2	04		Panel
Interior Flr 1	12		Hardwood
Interior Flr 2	14		Carpet
Heat Fuel	02		Oil
Heat Type	04		Forced Hot Air
AC Type	03		Central
Total Bedrooms	03		3 Bedrooms
Full Bthrms	2		
Half Baths	0		
Extra Fixtures	0		
Total Rooms	6		
Bath Style	02		Average
Kitchen Style	02		Average
Extra Kitchens			
Fireplace(s)	1		
Extra Opening(s)			
Gas Fireplace(s)			
Blocked FPL(s)			
Woodstove(s)	0		
Bsmt Garage(s)	0		
SF Fin Bsmt	100		
FBM Quality	5		

CONSTRUCTION DETAIL (CONTINUED)

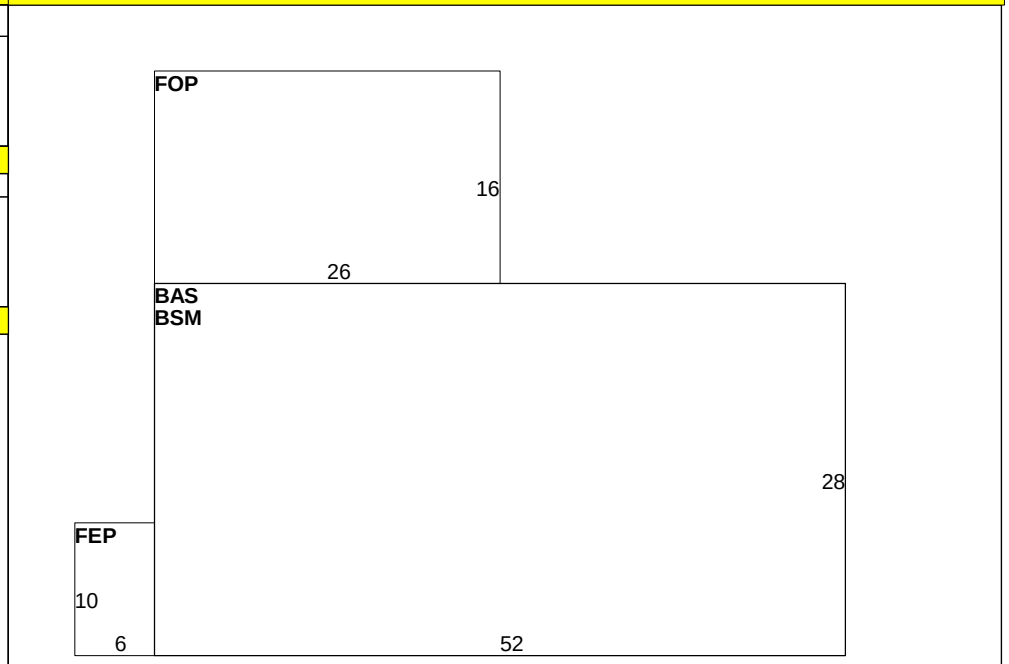
Element	Cd.	Ch.	Description
Dormer LF			
Int Millwork	1		Plain
Ext Millwork	1		Plain
Foundation	1		Poured Conc

MIXED USE

Code	Description	Percentage
101	Res Dwelling	100

COST/MARKET VALUATION

Adj. Base Rate:	107.36
Replace Cost	198,070
AYB	1976
Dep Code	A
Remodel Rating	
Year Remodeled	
Dep %	24
Functional Obslnc	
External Obslnc	
Cost Trend Factor	
Condition	
% Complete	
Overall % Cond	76
Apprais Val	150,500
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	0
Cost to Cure Ovr Comment	



OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)

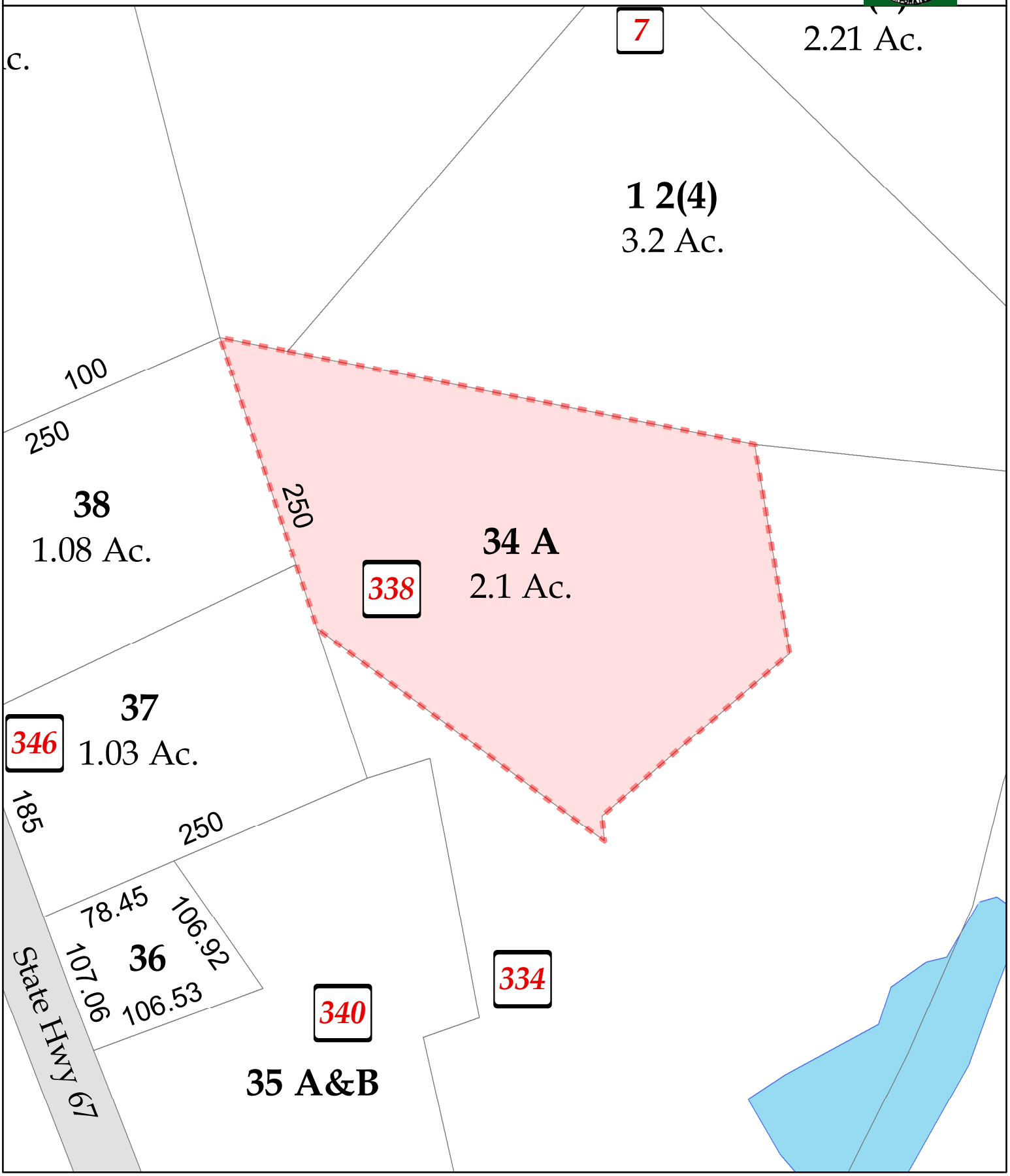
Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
FGR1	Garage	FR	Frame	L	528	29.00	2000	2		A	50	7,700

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value
BAS	First Floor	1,456	1,456		107.36	156,309
BSM	Basement	0	1,456		21.46	31,240
FEP	Finished Enclosed Porch	0	60		64.41	3,865
FOP	Open Porch	0	416		16.00	6,656
	Ttl. Gross Liv/Lease Area:	1,456	3,388			198,070

Town of Oxford, Connecticut - Assessment Parcel Map

Parcel: 34-9-34-A **Location:** 338 OXFORD RD



Approximate Scale: 1 inch = 100 feet

0 50 100 150 200 Feet

Map Produced: February 2021

Exhibit B

DISH Wireless L.L.C. SITE ID:

BOHVN00169A

DISH Wireless L.L.C. SITE ADDRESS:

338 OXFORD RD
OXFORD, CT 06478

SCOPE OF WORK

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

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

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED)
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)
- DISH Wireless L.L.C. TO UTILIZE EXISTING EMPTY METER SOCKET

SITE INFORMATION

PROPERTY OWNER:	JOHN & GINA KAPUSTA
ADDRESS:	338 OXFORD RD OXFORD, CT 06478
TOWER TYPE:	MONOPOLE
CROWN CASTLE SITE ID:	876362
CROWN CASTLE APP NUMBER:	553386
COUNTY:	NEW HAVEN
LATITUDE (NAD 83):	41° 25' 40.77" N 41.428000° N
LONGITUDE (NAD 83):	73° 6' 30.75" W 73.108556° W
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	COMM
PARCEL NUMBER:	000034-000009-000034-A000000
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	CONNECTICUT LIGHT & POWER CO
TELEPHONE COMPANY:	LIGHTOWER

PROJECT DIRECTORY

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

CONNECTICUT CODE OF COMPLIANCE

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

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

SITE PHOTO

DIRECTIONS

DIRECTIONS FROM TWEED NEW HAVEN AIRPORT:

x FOLLOW FORT HALE RD TO TOWNSEND AVE (0.4 MI)
x TAKE N FRONTAGE RD, CT-34 W/DERBY AVE, CT-114 E/RACEBROOK RD AND CT-313 W TO CT-67 W IN OXFORD (19.8 MI)

SHEET INDEX

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

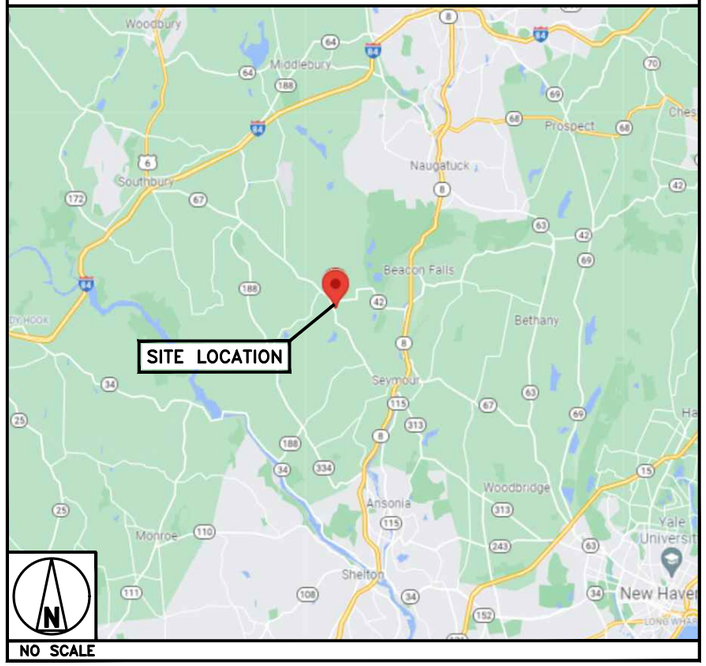
GENERAL NOTES

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

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

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

VICINITY MAP



NO SCALE

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

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

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Kyle Freehart
D8BEE252A3804C1...

DRAWN BY:	CHECKED BY:	APPROVED BY:
STR	MCK	MCK

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/04/2021	ISSUED FOR REVIEW
0	03/03/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
KHCLE-16546

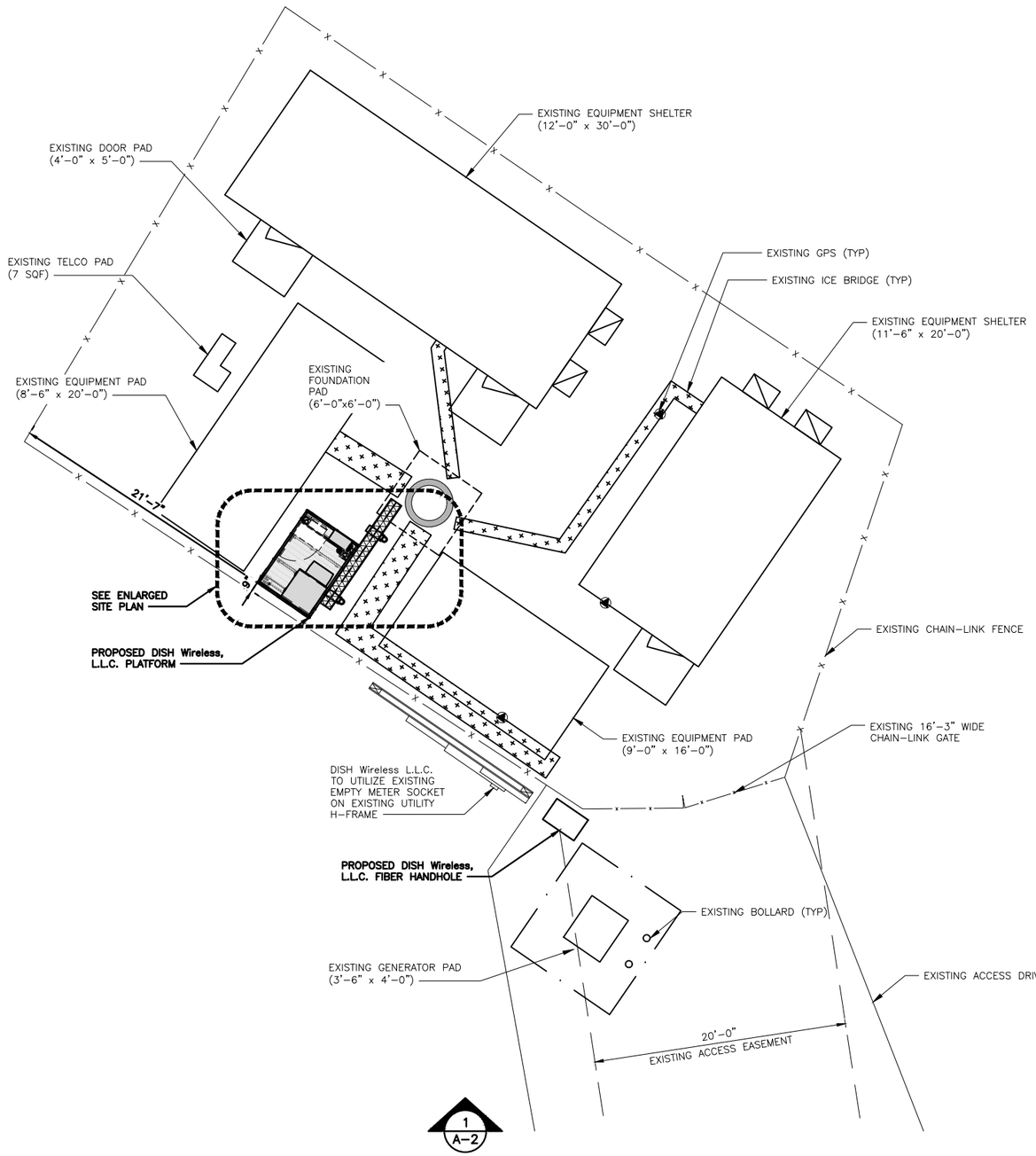
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00169A
338 OXFORD RD
OXFORD, CT 06478

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NOTES

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



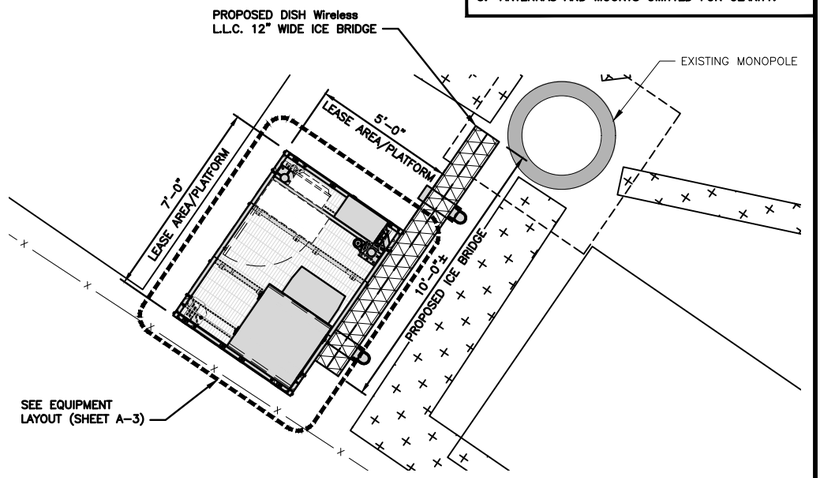
OVERALL SITE PLAN

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

1

NOTES

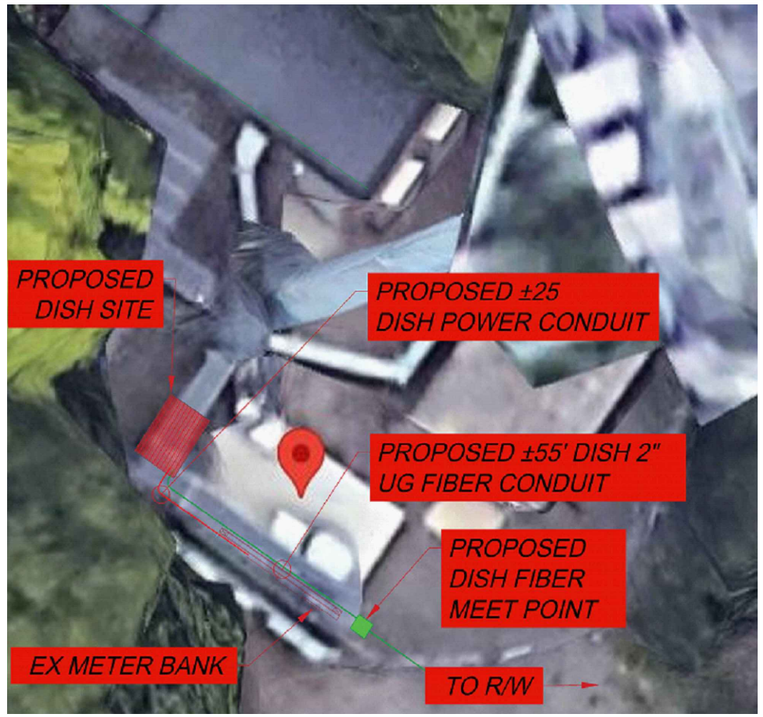
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN

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

2



OVERALL UTILITY ROUTE PLAN

NO SCALE

3

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

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

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Kyle Freehart
D9BEE252A3804C1...

DRAWN BY:	CHECKED BY:	APPROVED BY:
STR	MCK	MCK

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER
KHCLE-16546

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00169A
338 OXFORD RD
OXFORD, CT 06478

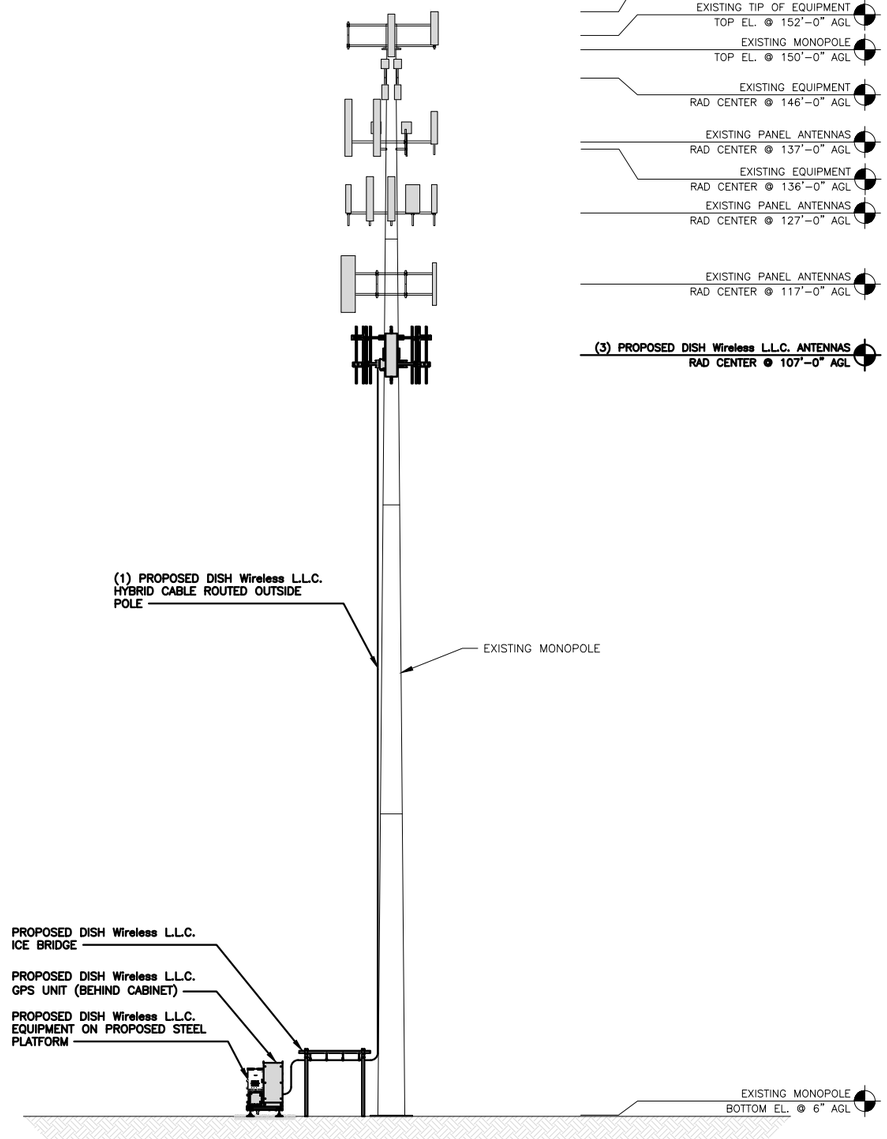
SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

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.

KIMLEY–HORN HAS NOT ANALYZED THE PROPOSED ANTENNA MOUNT(S) TO DETERMINE ADEQUATE STRUCTURAL CAPACITY FOR PROPOSED CARRIER LOADING. MOUNT ANALYSIS TO BE DONE BY OTHERS.



PROPOSED SOUTH ELEVATION

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

1

N

ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A2	PROPOSED	JMA – MX08FRO665–21	5G	72.0" x 20.0"	0°	107'–0"	(1) HIGH–CAPACITY HYBRID CABLE (140'–0" LONG)
BETA	B2	PROPOSED	JMA – MX08FRO665–21	5G	72.0" x 20.0"	120°	107'–0"	
GAMMA	G2	PROPOSED	JMA – MX08FRO665–21	5G	72.0" x 20.0"	240°	107'–0"	

SECTOR	POSITION	RRH	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
ALPHA	A1	FUJITSU – TA08025–B604	5G
	A1	FUJITSU – TA08025–B605	5G
BETA	B1	FUJITSU – TA08025–B604	5G
	B1	FUJITSU – TA08025–B605	5G
GAMMA	G1	FUJITSU – TA08025–B604	5G
	G1	FUJITSU – TA08025–B605	5G

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

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

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

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER
DocuSigned by:
Kyle Freehart
D8BEE252A3804C1...

DRAWN BY:	CHECKED BY:	APPROVED BY:
STR	MCK	MCK

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

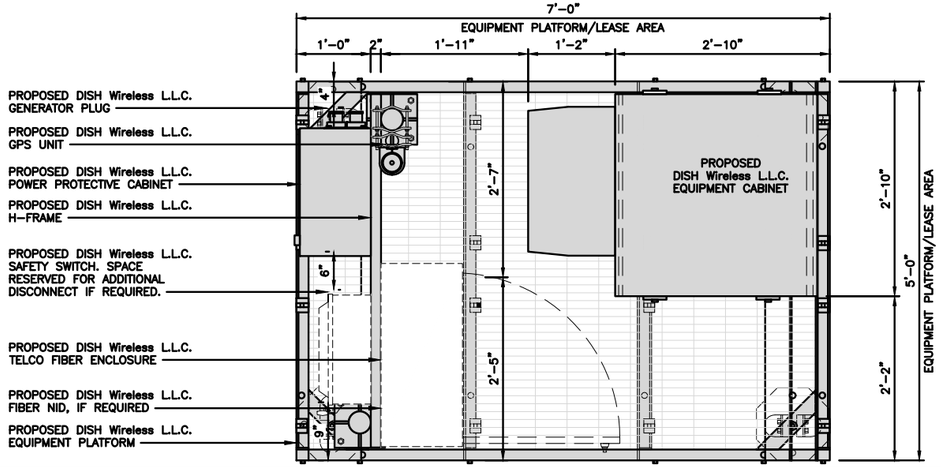
REV	DATE	DESCRIPTION
A	10/04/2021	ISSUED FOR REVIEW
0	03/03/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
KHCLE–16546

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00169A
338 OXFORD RD
OXFORD, CT 06478

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



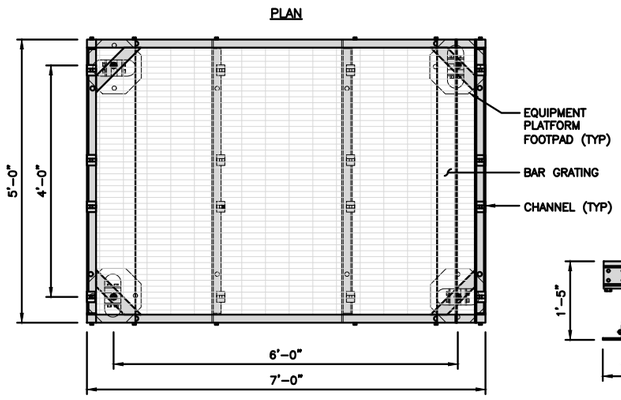
PLATFORM EQUIPMENT PLAN

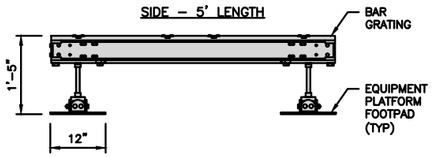
12" 9" 6" 3" 0 1' 2'
1"=1'-0"

1

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

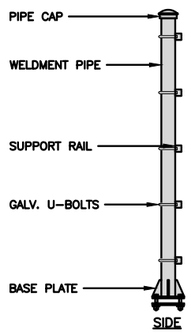
NOTE:
1. GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"
2. PLATFORM TO BE LEVEL WITHIN 1"



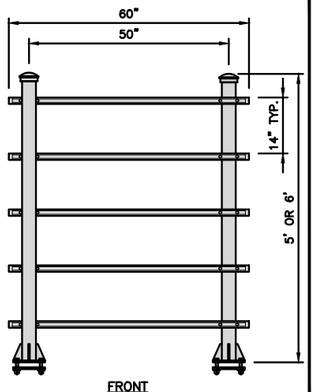


PLATFORM DETAIL | NO SCALE | 2

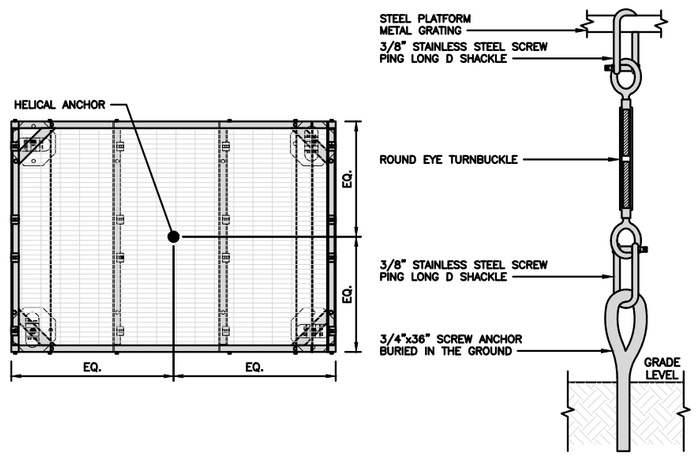
COMMSCOPE MTC4045HFLD H-FRAME	
UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs



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



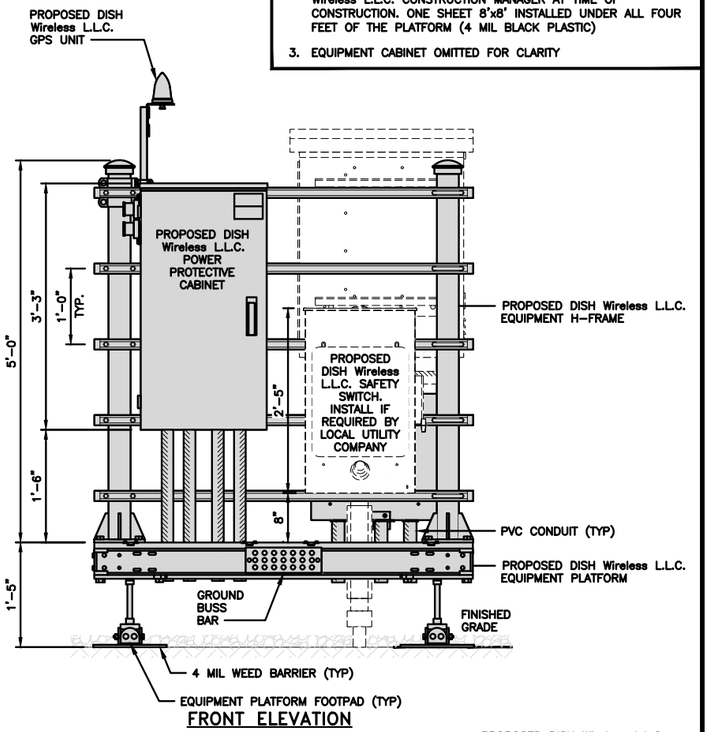
H-FRAME DETAIL | NO SCALE | 3



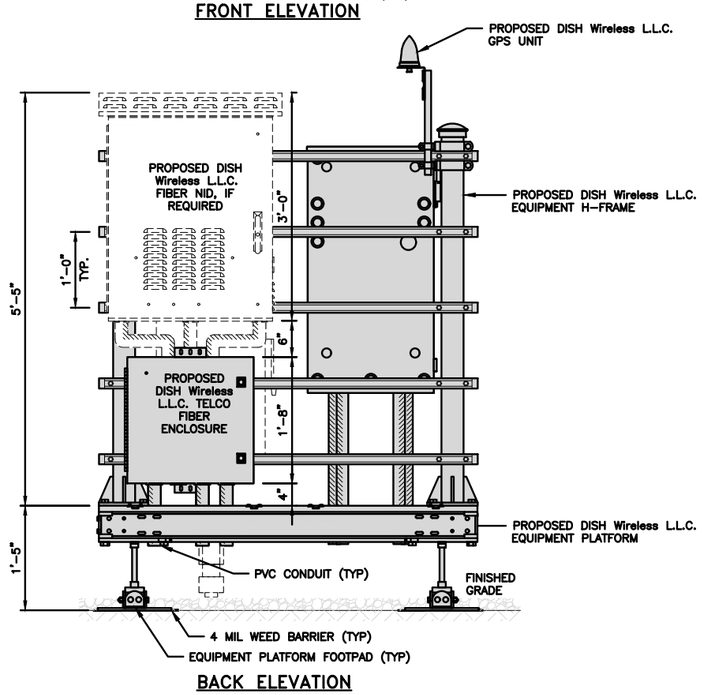
PLATFORM ANCHORAGE DETAIL | NO SCALE | 4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

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

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

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

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Kyle Freehart
D8BE1252A3804C1...

DRAWN BY:	CHECKED BY:	APPROVED BY:
STR	MCK	MCK

RFDS REV #: ---

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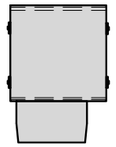
OXFORD, CT 06478

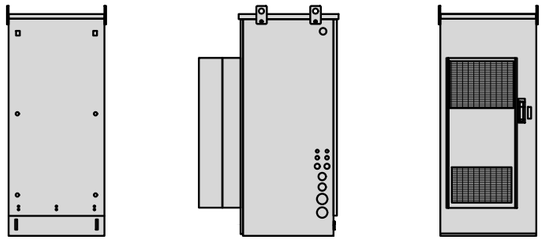
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

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



PLAN

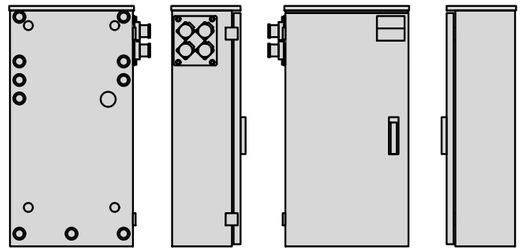


BACK SIDE FRONT

CABINET DETAIL — NO SCALE — 1

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

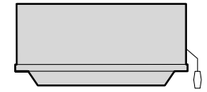
TOP



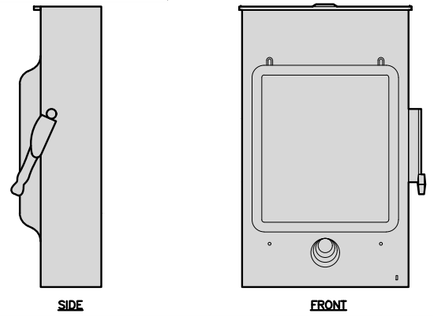
BACK SIDE FRONT SIDE

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

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



TOP



SIDE FRONT

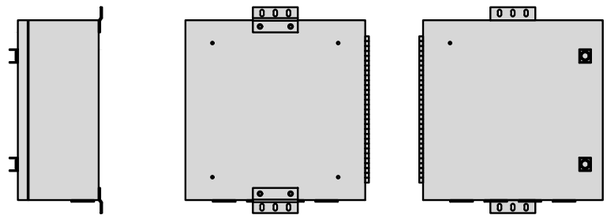
SAFETY SWITCH DETAIL — NO SCALE — 3

NOT USED — NO SCALE — 4

NOT USED — NO SCALE — 5

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

FRONT

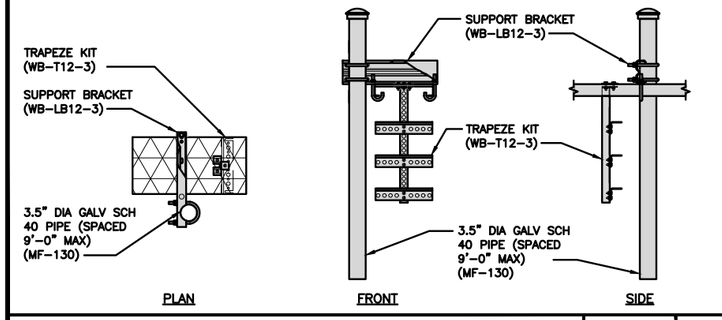


SIDE BACK FRONT

FIBER TELCO ENCLOSURE DETAIL — NO SCALE — 6

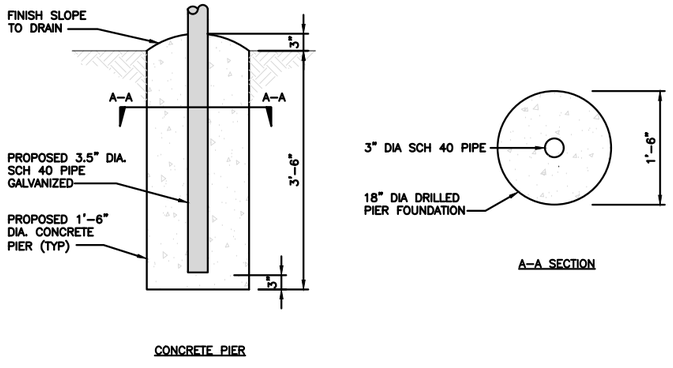
COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

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



PLAN FRONT SIDE

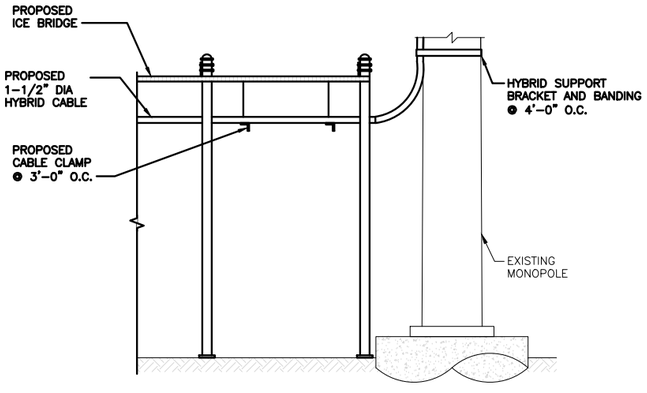
ICE BRIDGE DETAIL — NO SCALE — 7



CONCRETE PIER

A–A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL — NO SCALE — 8



HYBRID CABLE RUN — NO SCALE — 9

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

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

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Kyle Freehart
DBBEE252A3804C1...

DRAWN BY:	CHECKED BY:	APPROVED BY:
STR	MCK	MCK

RFDS REV #: ---

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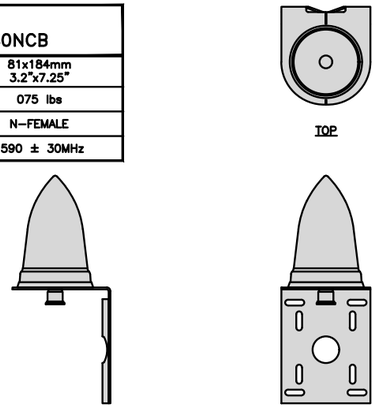
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00169A
338 OXFORD RD
OXFORD, CT 06478

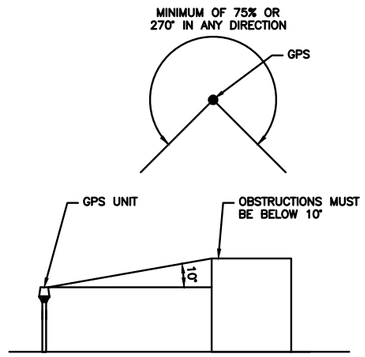
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

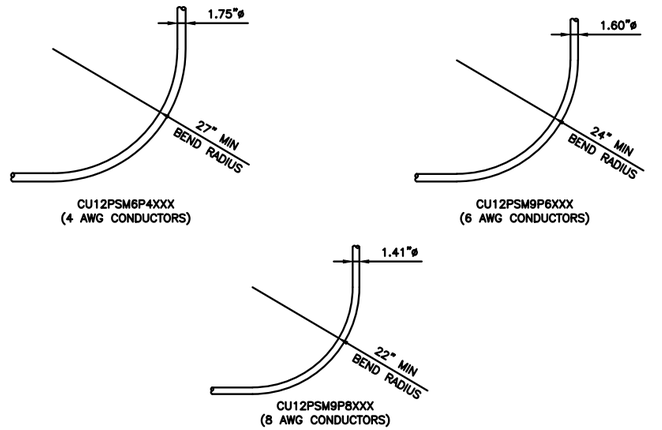
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



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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338 OXFORD RD
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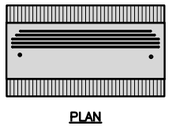
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

FUJITSU TRIPLE BAND TA08025-B605

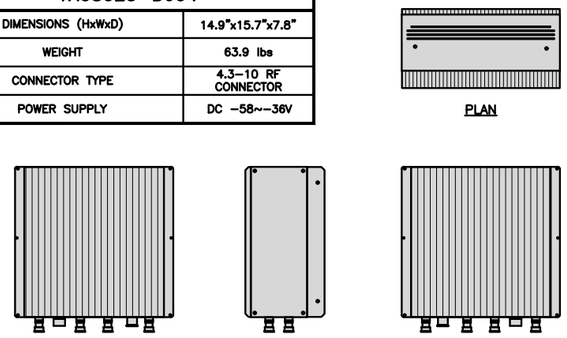
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



RRH DETAIL | NO SCALE | 1

FUJITSU DUAL BAND TA08025-B604

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

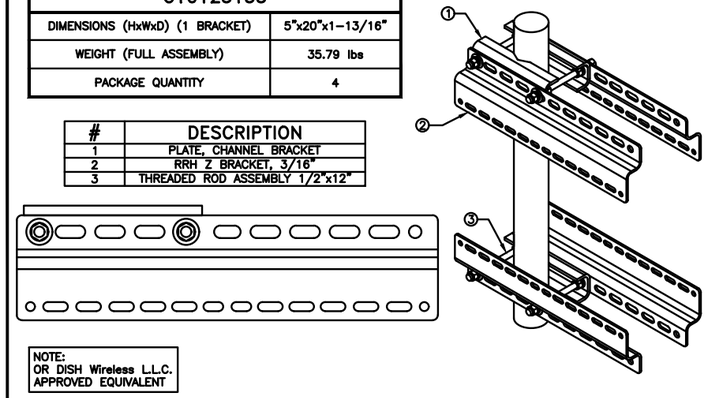


RRH DETAIL | NO SCALE | 2

SABRE DOUBLE Z-BRACKET C10123155

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

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

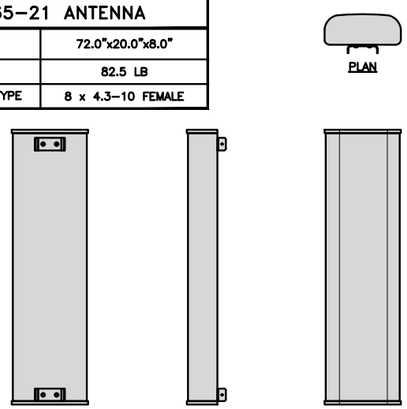


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

JMA WIRELESS MX08FRO665-21 ANTENNA

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



ANTENNA DETAIL | NO SCALE | 4

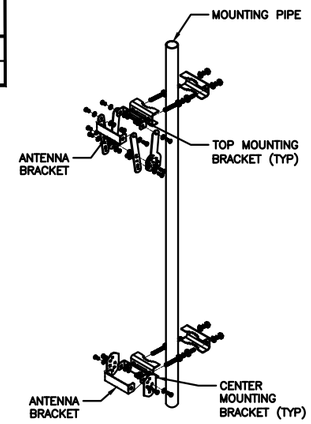
NOT USED | NO SCALE | 5

JMA ANTENNA MOUNTING BRACKET #91900318

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

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

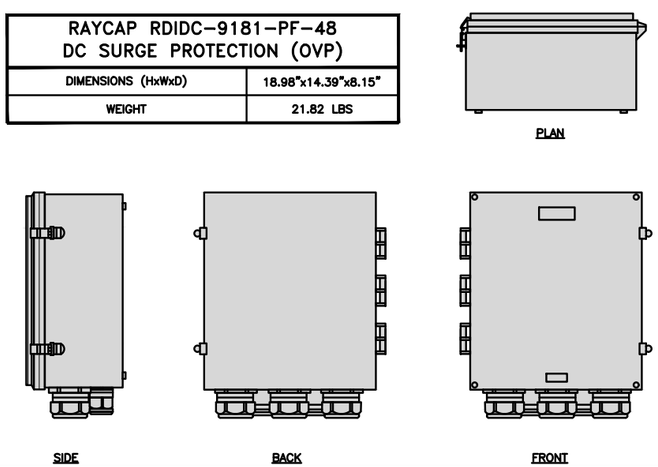
ANTENNA BRACKET NOT PART OF KIT



ANTENNA BRACKET DETAIL | NO SCALE | 6

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

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

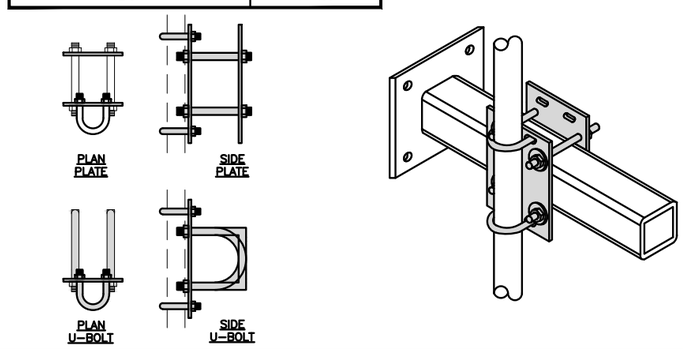


SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

COMMSCOPE XP-2040 CROSSOVER PLATE

DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

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

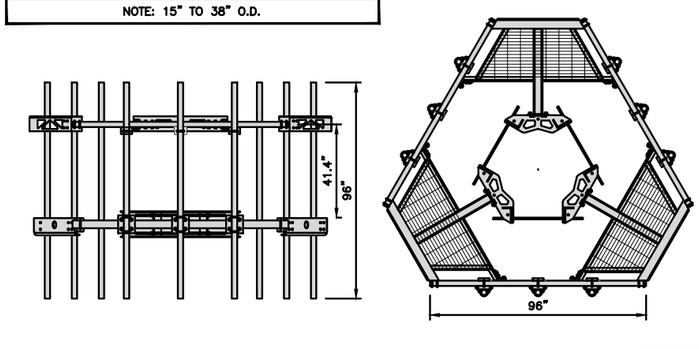


RRH/OVP MOUNT DETAIL | NO SCALE | 8

COMMSCOPE MC-PK8-DSH

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

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



ANTENNA PLATFORM DETAIL | NO SCALE | 9

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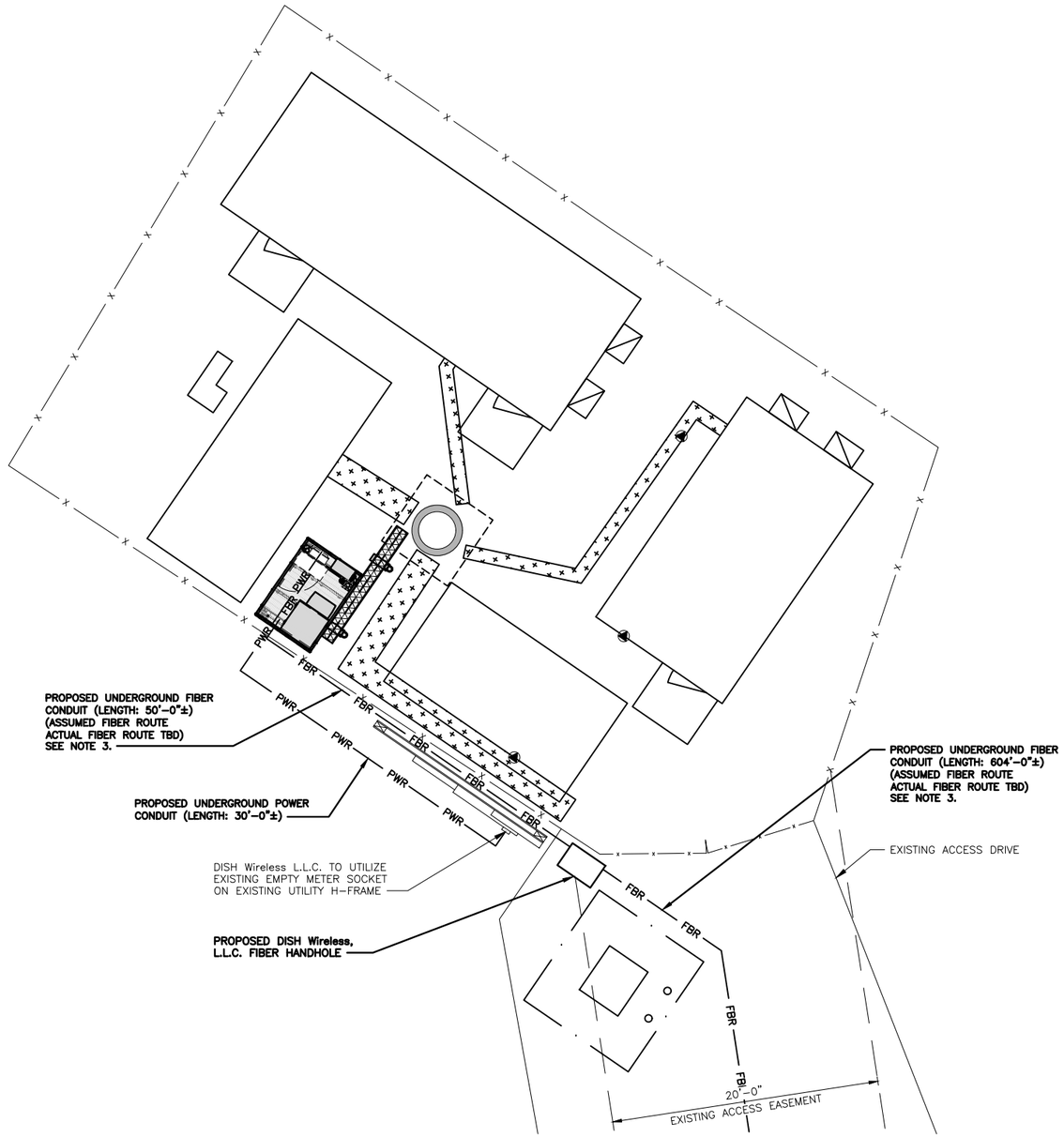
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

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



UTILITY ROUTE PLAN

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

1

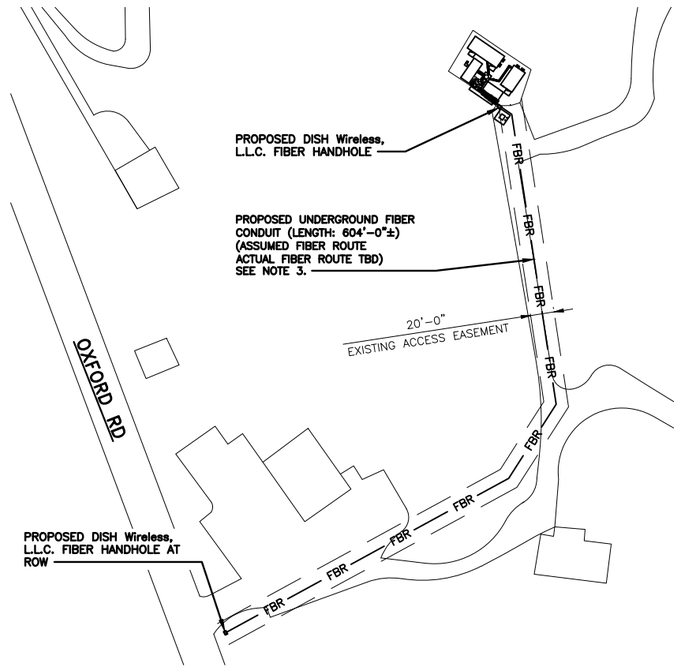
DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

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

ELECTRICAL NOTES

NO SCALE

2



OVERALL UTILITY ROUTE PLAN

64' 32' 0 64' 128'
1/64"=1'-0"

3

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LITTLETON, CO 80120

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

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER
DocuSigned by: Kyle Freehart
D8BEE252A3804C1...

DRAWN BY:	CHECKED BY:	APPROVED BY:
STR	MCK	MCK

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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0	03/03/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
KHCLE-16546

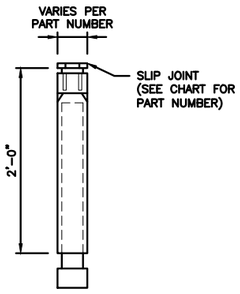
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00169A
338 OXFORD RD
OXFORD, CT 06478

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"

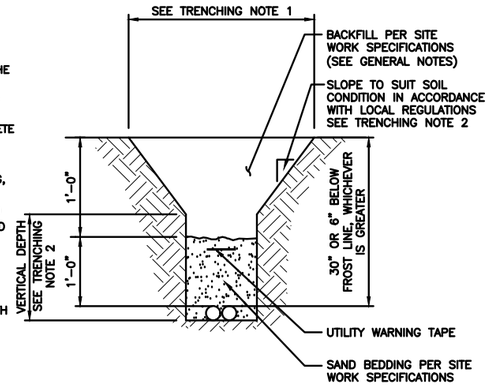


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

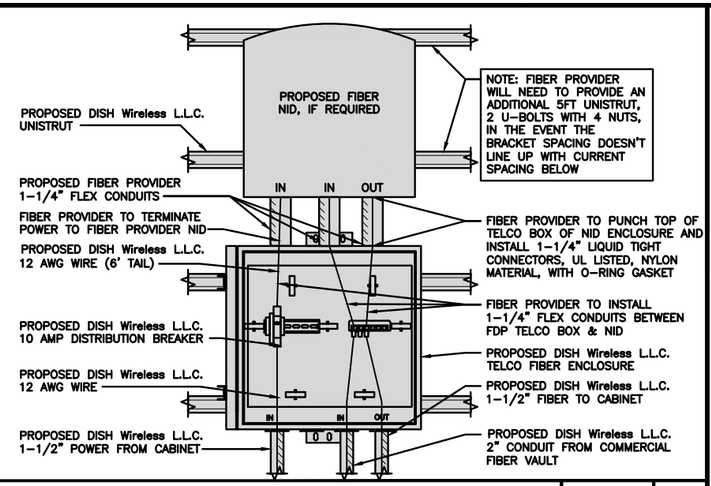
EXPANSION JOINT DETAIL | NO SCALE | 1

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



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL) | 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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Kimley»Horn
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RFDS REV #: ---

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DISH Wireless L.L.C.
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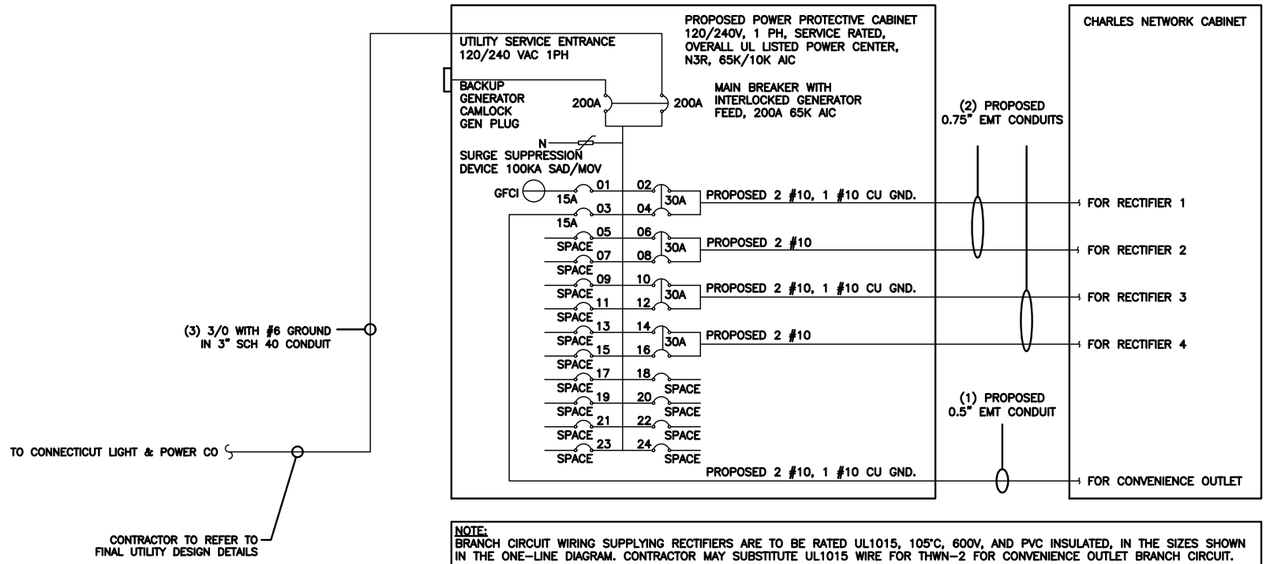
OXFORD, CT 06478

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



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

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

NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PPC ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE

NO SCALE | 2

NOT USED

NO SCALE | 3

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LITTLETON, CO 80120

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

STATE OF CONNECTICUT
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34906
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D8BEE252A3804C1...

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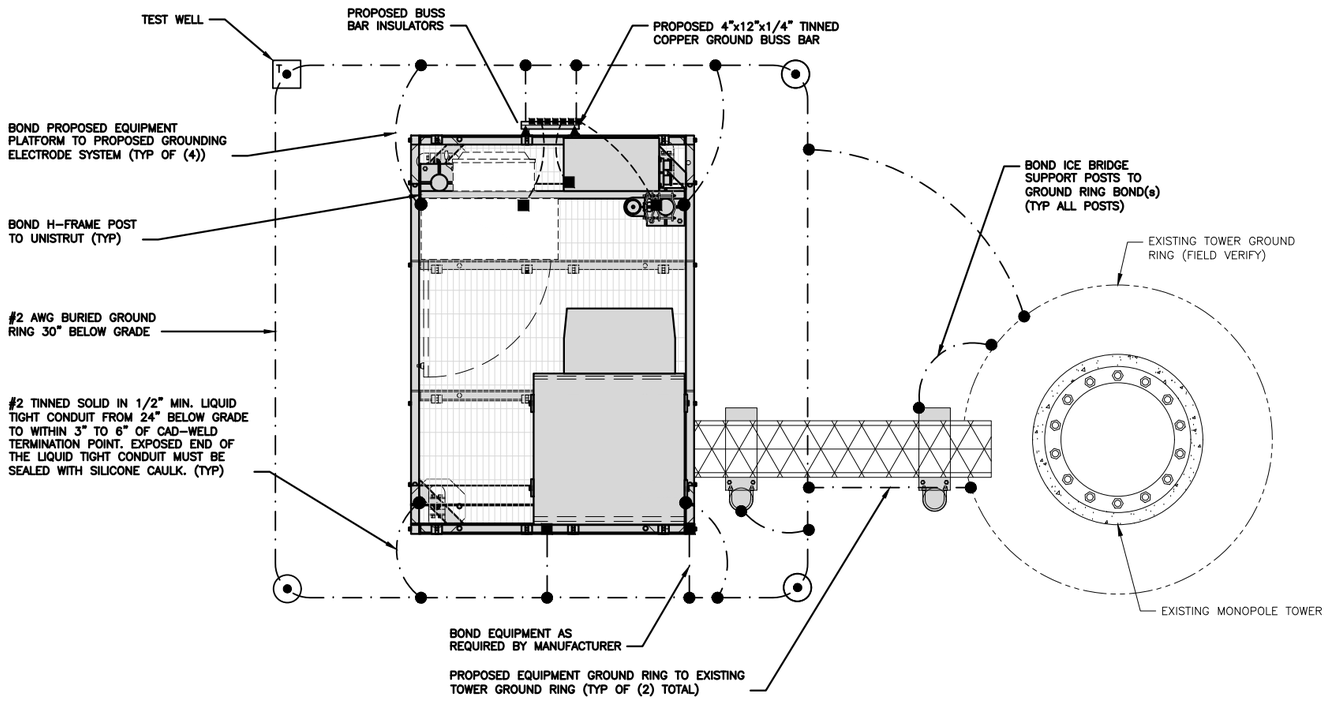
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00169A
338 OXFORD RD
OXFORD, CT 06478

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

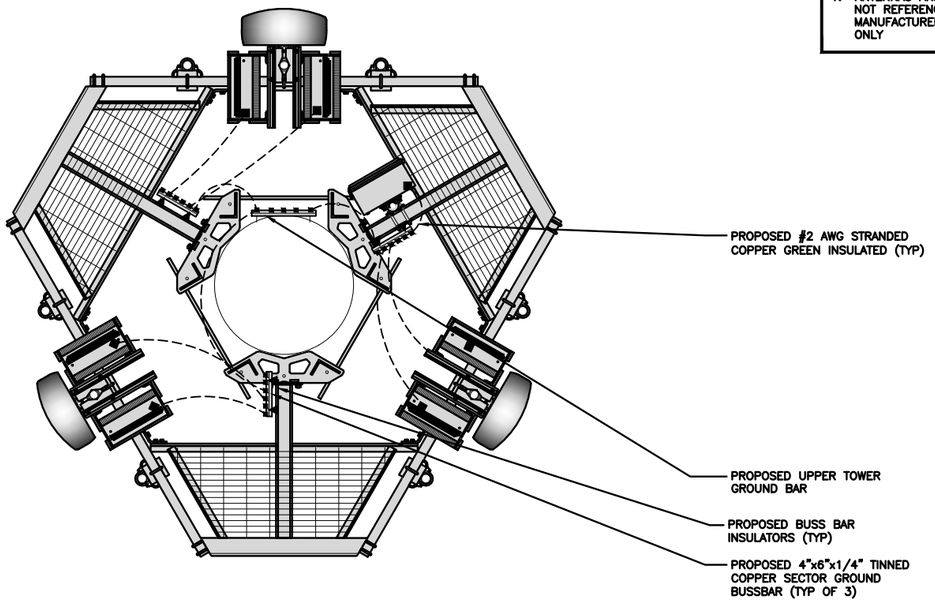
SHEET NUMBER
E-3



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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34906
LICENSED PROFESSIONAL ENGINEER

Docusigned by:
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19BBE252A380AC1...

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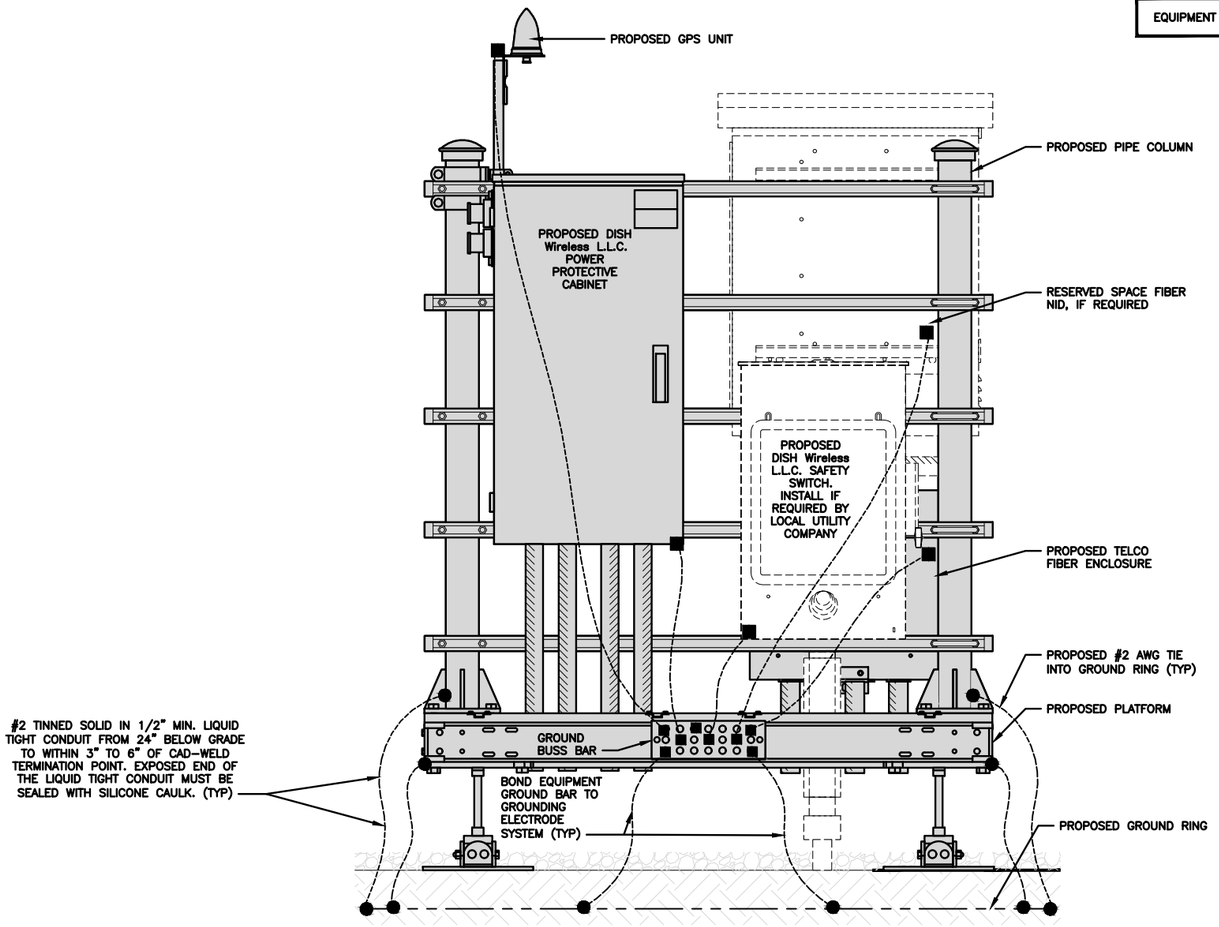
SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

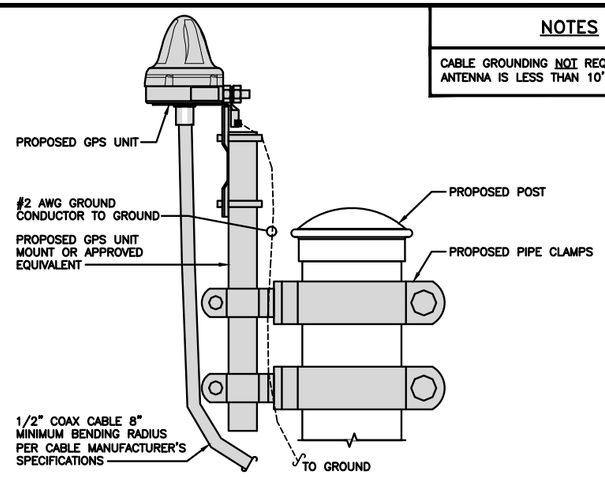
EQUIPMENT CABINET OMITTED FOR CLARITY



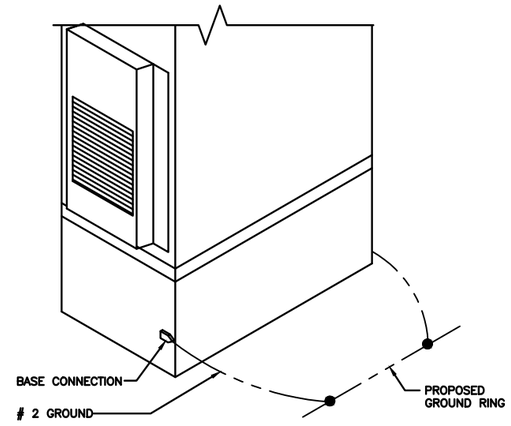
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

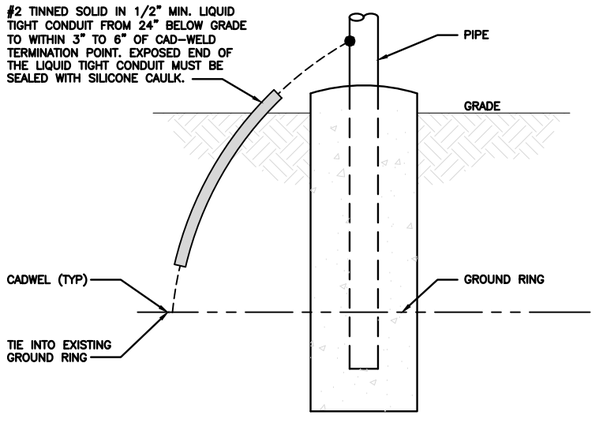
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



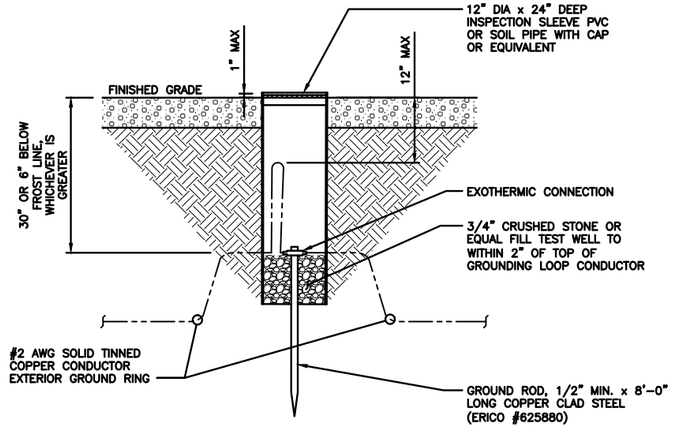
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



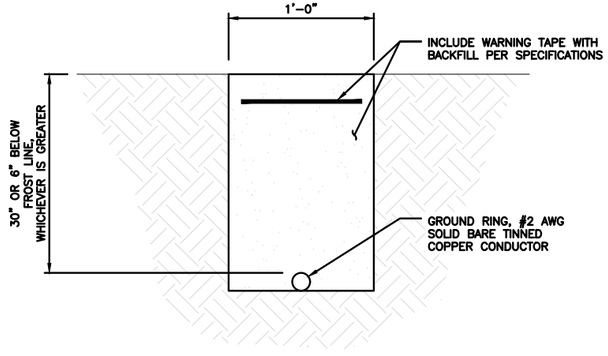
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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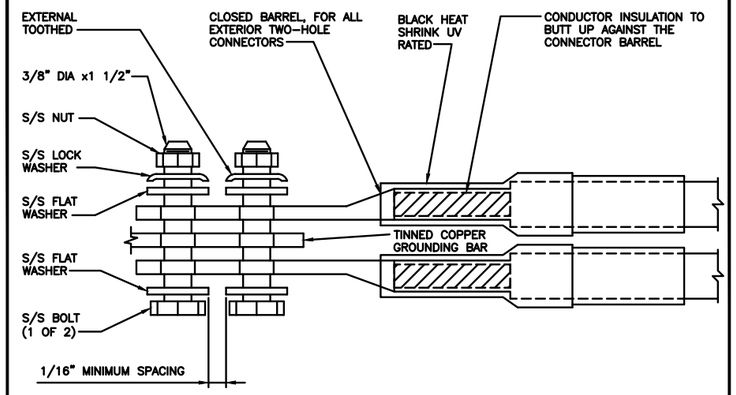
SHEET TITLE
GROUNDING DETAILS

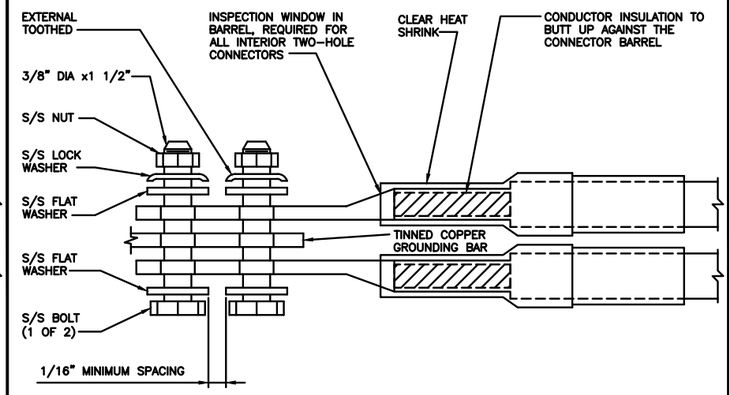
SHEET NUMBER
G-2

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

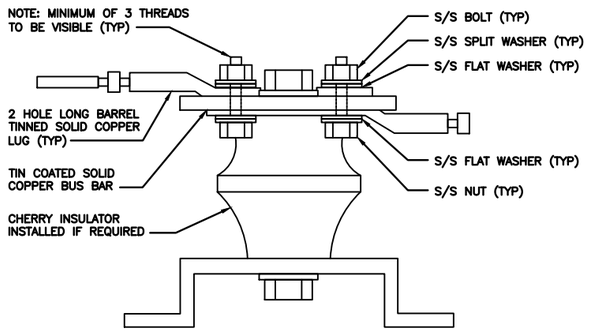
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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

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

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER
DocuSigned by: Kyle Freehart
19BEE2D2A3804C1...

DRAWN BY:	CHECKED BY:	APPROVED BY:
STR	MCK	MCK

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/04/2021	ISSUED FOR REVIEW
0	03/03/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
KHCLE-16546

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00169A
338 OXFORD RD
OXFORD, CT 06478

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

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

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

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

ALPHA RRH				BETA RRH				GAMMA RRH			
PORT 1 + SLANT	PORT 2 – SLANT	PORT 3 + SLANT	PORT 4 – SLANT	PORT 1 + SLANT	PORT 2 – SLANT	PORT 3 + SLANT	PORT 4 – SLANT	PORT 1 + SLANT	PORT 2 – SLANT	PORT 3 + SLANT	PORT 4 – SLANT
RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
ORANGE	ORANGE	RED	RED	ORANGE	ORANGE	BLUE	BLUE	ORANGE	ORANGE	GREEN	GREEN
	WHITE (–) PORT	ORANGE	ORANGE		WHITE (–) PORT	ORANGE	ORANGE		WHITE (–) PORT	ORANGE	ORANGE
			WHITE (–) PORT				WHITE (–) PORT				WHITE (–) PORT

MID–BAND RRH
(AWS BANDS N66+N70)

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

RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
PURPLE	PURPLE	RED	RED	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
	WHITE (–) PORT	PURPLE	PURPLE		WHITE (–) PORT	PURPLE	PURPLE		WHITE (–) PORT	PURPLE	PURPLE
			WHITE (–) PORT				WHITE (–) PORT				WHITE (–) PORT

HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

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

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

EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.

EXAMPLE 1	EXAMPLE 2	EXAMPLE 3 COAX#1 (ALPHA)	CANISTER COAX #2 (ALPHA)
RED	RED	RED	RED
BLUE	BLUE		RED
GREEN	GREEN		
ORANGE	YELLOW		
PURPLE			

FIBER JUMPERS TO RRHs

LOW–BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.

LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
ORANGE	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE

POWER CABLES TO RRHs

LOW–BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY

LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
ORANGE	PURPLE	ORANGE	PURPLE	ORANGE	PURPLE

RET MOTORS AT ANTENNAS

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

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

ANTENNA 1 MID BAND IN	ANTENNA 1 LOW BAND IN	ANTENNA 1 MID BAND IN	ANTENNA 1 LOW BAND IN	ANTENNA 1 MID BAND IN	ANTENNA 1 LOW BAND IN
RED	RED	BLUE	BLUE	GREEN	GREEN
PURPLE	ORANGE	PURPLE	ORANGE	PURPLE	ORANGE

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.

FORWARD AZIMUTH OF 0–120 DEGREES		FORWARD AZIMUTH OF 120–240 DEGREES		FORWARD AZIMUTH OF 240–359 DEGREES	
PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
RED	RED	BLUE	BLUE	GREEN	GREEN
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	RED		BLUE		GREEN
	WHITE		WHITE		WHITE

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	BETA SECTOR	GAMMA SECTOR
RED	BLUE	GREEN

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

dish wireless.
5701 SOUTH SANTA FE DRIVE
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Kimley»Horn
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RALEIGH, NC 27601

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
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LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Kyle Freehart
D8BEE252A3804C1...

DRAWN BY:	CHECKED BY:	APPROVED BY:
STR	MCK	MCK

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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 — X — X — X — X —

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W — W — W — W — W —

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

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

OVERHEAD POWER — OHP — OHP — OHP — OHP —

OVERHEAD TELCO — OHT — OHT — OHT — OHT —

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

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

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

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

WORKPOINT W.P.

SECTION REFERENCE (XX / X–X)

DETAIL REFERENCE (XX / X–X)

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

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

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

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER

Docusigned by:
Kyle Freehart
19BBE252A380AC1...

DRAWN BY:	CHECKED BY:	APPROVED BY:
STR	MCK	MCK

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/04/2021	ISSUED FOR REVIEW
0	03/03/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
KHCLE–16546

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00169A
338 OXFORD RD
OXFORD, CT 06478

SHEET TITLE
LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

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

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED
PROFESSIONAL ENGINEER

Docusigned by:
Kyle Freehart
19BBE252A380AC1...

DRAWN BY:	CHECKED BY:	APPROVED BY:
STR	MCK	MCK

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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0	03/03/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

KHCLE–16546

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00169A
338 OXFORD RD
OXFORD, CT 06478

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.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

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

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Kyle Freehart
D8BEE252A3804C1...

DRAWN BY:	CHECKED BY:	APPROVED BY:
STR	MCK	MCK

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	10/04/2021	ISSUED FOR REVIEW
0	03/03/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

KHCLE-16546

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00169A
338 OXFORD RD
OXFORD, CT 06478

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.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

Kimley»Horn

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

STATE OF CONNECTICUT
KYLE JENSEN FREEHART
34906
LICENSED PROFESSIONAL ENGINEER

DocuSigned by:
Kyle Freehart
D8BEF252A3804C1...

DRAWN BY:	CHECKED BY:	APPROVED BY:
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RFDS REV #: ---

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PROJECT INFORMATION

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OXFORD, CT 06478

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

DocuSign

Certificate Of Completion

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401 Fayetteville St.
Suite 600
Raleigh, NC 27601
Manuel.JaraPerez@kimley-horn.com
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Completed	Security Checked	3/7/2022 10:54:39 AM

Payment Events	Status	Timestamps

Exhibit C

PAUL J. FORD & COMPANY

Date: **July 29, 2021**

Paul J. Ford and Company
250 E. Broad St., Ste 600
Columbus, OH 43215
614-221-6679

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate**	
	Site Number:	BOHVN00169A
	Site Name:	CT-CCI-T-876362
Crown Castle Designation:	**BU Number:**	876362
	Site Name:	OXFORD / FRITZ PROPERTY
	JDE Job Number:	645187
	Work Order Number:	1966153
	Order Number:	553386 Rev. 0
Engineering Firm Designation:	**Paul J. Ford and Company Project Number:**	37521-0921.001.7805
Site Data:	**338 Oxford Rd., OXFORD, New Haven County, CT**	
	Latitude *41° 25' 40.77"*, Longitude *-73° 6' 30.75"*	
	150 Foot - Monopole Tower	

Paul J. Ford and Company 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 (85.2%)**

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

Respectfully submitted by:

Nathan C. Miller

Nathan C. Miller, E.I.
Structural Designer
nmiller@pauljford.com

RMF

STATE OF CONNECTICUT
JUSTIN T. KLINE
No. 30301
LICENSED PROFESSIONAL ENGINEER

2021.08.02
:01:40-04'00'

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 150 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC. in September of 1999.

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:	B
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
107.0	107.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	mounts	Commscope_MC-Pk8-DSH_Platform		
		1	raycap	RDIDC-9181-PF-48		

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)
152.0	153.0	3	alcatel lucent	TD-RRH8X20-25	4	1-1/4
		3	rfs celwave	APXVTM14-ALU-I20 w/ Mount Pipe		
	152.0	9	rfs celwave	ACU-A20-N		
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 602-1]		
146.0	146.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	---	---
		3	alcatel lucent	RRH2X50-800		
		3	alcatel lucent	RRH4X45-19		
		1	tower mounts	Pipe Mount [PM 601-3]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
137.0	139.0	6	adc	DD1900 FULL BAND W/850 BY-PASS MASTHEAD	12	1-1/4
		4	andrew	SBNH-1D6565C w/ Mount Pipe		
		6	communication components inc.	DTMABP7819VG12A		
		2	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe		
		3	powerwave technologies	7020.00		
		3	powerwave technologies	7770.00 w/ Mount Pipe		
		6	powerwave technologies	LGP21901		
		1	raycap	DC6-48-60-18-8F		
	137.0	1	tower mounts	Platform Mount [LP 712-1]		
136.0	136.0	6	ericsson	RRUS 11 B12	1 2 1	3/8 3/4 2" Conduit
		1	raycap	DC6-48-60-18-8F		
		4	tower mounts	Side Arm Mount [SO 102-3]		
127.0	129.0	3	alcatel lucent	RRH2X60-AWS	1 13	1/2 1-5/8
		3	alcatel lucent	RRH2X60-PCS		
		1	antel	BXA-70040/4CF w/ Mount Pipe		
		2	antel	BXA-70063-4CF-EDIN-X w/ Mount Pipe		
		6	commscope	HBXX-6517DS-A2M w/ Mount Pipe		
		1	gps	GPS_A		
		6	rfs celwave	APL866513-42T0 w/ Mount Pipe		
		1	rfs celwave	DB-T1-6Z-8AB-0Z		
		6	rfs celwave	FD9R6004/2C-3L		
	127.0	1	tower mounts	Platform Mount [LP 712-1]		
117.0	117.0	3	ericsson	RADIO 4449 B12/B71	1 7	3/8 1-5/8
		3	rfs celwave	APXV18-206517S-C-A20		
		3	rfs celwave	APXVAALL24_43-U-NA20		
		1	tower mounts	Platform Mount [LP 1302-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1531939	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1440552	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1441271	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2364904	CCISITES
4-POST-MODIFICATION INSPECTION	2364903	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3041498	CCISITES
4-POST-MODIFICATION INSPECTION	3192205	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3274216	CCISITES
4-POST-MODIFICATION INSPECTION	3872724	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	4870951	CCISITES
4-POST-MODIFICATION INSPECTION	5301920	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	5632043	CCISITES
4-POST-MODIFICATION INSPECTION	6119183	CCISITES

3.1) Analysis Method

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

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

3.2) Assumptions

1) Tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) The structure was modified in conformance with the referenced modification drawings as shown in the referenced post modification inspection.

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J. Ford and Company 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
150 - 145	Pole	TP16.08x15x0.1875	Pole	10.7%	Pass
145 - 140	Pole	TP17.16x16.08x0.1875	Pole	17.4%	Pass
140 - 135	Pole	TP18.239x17.16x0.1875	Pole	27.2%	Pass
135 - 130	Pole	TP19.319x18.239x0.1875	Pole	38.2%	Pass
130 - 126.59	Pole	TP20.74x19.319x0.1875	Pole	47.5%	Pass
126.59 - 122.25	Pole	TP20.603x19.68x0.25	Pole	44.9%	Pass
122.25 - 122	Pole + Reinf.	TP20.656x20.603x0.4125	Reinf. 18 Tension Rupture	51.0%	Pass
122 - 120.25	Pole + Reinf.	TP21.029x20.656x0.4125	Reinf. 18 Tension Rupture	54.8%	Pass
120.25 - 120	Pole + Reinf.	TP21.082x21.029x0.575	Reinf. 18 Tension Rupture	40.3%	Pass
120 - 115.5	Pole + Reinf.	TP22.039x21.082x0.5625	Reinf. 18 Tension Rupture	48.2%	Pass
115.5 - 115.25	Pole + Reinf.	TP22.092x22.039x0.4	Reinf. 16 Tension Rupture	66.3%	Pass
115.25 - 115	Pole + Reinf.	TP22.145x22.092x0.4	Reinf. 16 Tension Rupture	67.0%	Pass
115 - 114.75	Pole + Reinf.	TP22.198x22.145x0.55	Reinf. 16 Tension Rupture	49.6%	Pass
114.75 - 109.75	Pole + Reinf.	TP23.261x22.198x0.5375	Reinf. 16 Tension Rupture	58.8%	Pass
109.75 - 105.25	Pole + Reinf.	TP24.218x23.261x0.525	Reinf. 16 Tension Rupture	67.0%	Pass
105.25 - 105	Pole + Reinf.	TP24.271x24.218x0.7375	Reinf. 3 Tension Rupture	54.8%	Pass
105 - 100.4	Pole + Reinf.	TP25.249x24.271x0.7125	Reinf. 3 Tension Rupture	61.8%	Pass
100.4 - 100.15	Pole + Reinf.	TP25.303x25.249x0.7375	Reinf. 2 Tension Rupture	55.7%	Pass
100.15 - 95.15	Pole + Reinf.	TP26.366x25.303x0.7125	Reinf. 2 Tension Rupture	61.9%	Pass
95.15 - 90.15	Pole + Reinf.	TP27.429x26.366x0.7	Reinf. 2 Tension Rupture	67.6%	Pass
90.15 - 90.04	Pole + Reinf.	TP28.32x27.429x0.7	Reinf. 2 Tension Rupture	67.7%	Pass
90.04 - 85.04	Pole + Reinf.	TP28.018x26.952x0.75	Reinf. 2 Tension Rupture	68.4%	Pass
85.04 - 82	Pole + Reinf.	TP28.665x28.018x0.7375	Reinf. 2 Tension Rupture	71.1%	Pass
82 - 81.75	Pole + Reinf.	TP28.719x28.665x0.925	Reinf. 2 Tension Rupture	57.9%	Pass
81.75 - 77.25	Pole + Reinf.	TP29.677x28.719x0.9	Reinf. 2 Tension Rupture	61.1%	Pass
77.25 - 77	Pole + Reinf.	TP29.731x29.677x0.7875	Reinf. 2 Tension Rupture	69.7%	Pass
77 - 75	Pole + Reinf.	TP30.157x29.731x0.775	Reinf. 2 Tension Rupture	71.2%	Pass
75 - 74.75	Pole + Reinf.	TP30.21x30.157x0.825	Reinf. 2 Tension Rupture	67.0%	Pass
74.75 - 71.25	Pole + Reinf.	TP30.956x30.21x0.8125	Reinf. 2 Tension Rupture	69.4%	Pass
71.25 - 71	Pole + Reinf.	TP31.009x30.956x0.9375	Reinf. 2 Tension Rupture	61.4%	Pass
71 - 70.4	Pole + Reinf.	TP31.137x31.009x0.925	Reinf. 2 Tension Rupture	61.7%	Pass
70.4 - 70.15	Pole + Reinf.	TP31.19x31.137x0.9375	Reinf. 1 Tension Rupture	58.3%	Pass
70.15 - 65.15	Pole + Reinf.	TP32.255x31.19x0.9125	Reinf. 1 Tension Rupture	61.1%	Pass
65.15 - 60.15	Pole + Reinf.	TP33.32x32.255x0.8875	Reinf. 1 Tension Rupture	63.6%	Pass
60.15 - 55.15	Pole + Reinf.	TP34.386x33.32x0.8625	Reinf. 1 Tension Rupture	66.0%	Pass
55.15 - 50.15	Pole + Reinf.	TP35.451x34.386x0.85	Reinf. 1 Tension Rupture	68.3%	Pass
50.15 - 47.58	Pole + Reinf.	TP37.1x35.451x0.8375	Reinf. 1 Tension Rupture	69.4%	Pass
47.58 - 41.41	Pole + Reinf.	TP36.687x35.374x0.725	Reinf. 15 Tension Rupture	73.8%	Pass
41.41 - 36.41	Pole + Reinf.	TP37.751x36.687x0.7125	Reinf. 15 Tension Rupture	75.4%	Pass
36.41 - 36.25	Pole + Reinf.	TP37.785x37.751x0.7125	Reinf. 15 Tension Rupture	75.4%	Pass
36.25 - 36	Pole + Reinf.	TP37.838x37.785x0.75	Reinf. 11 Tension Rupture	74.9%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
36 - 31.25	Pole + Reinf.	TP38.849x37.838x0.75	Reinf. 11 Tension Rupture	76.3%	Pass
31.25 - 31	Pole + Reinf.	TP38.902x38.849x0.7375	Reinf. 11 Tension Rupture	76.4%	Pass
31 - 26	Pole + Reinf.	TP39.966x38.902x0.725	Reinf. 11 Tension Rupture	77.8%	Pass
26 - 21	Pole + Reinf.	TP41.031x39.966x0.725	Reinf. 11 Tension Rupture	79.1%	Pass
21 - 18.5	Pole + Reinf.	TP41.563x41.031x0.7125	Reinf. 11 Tension Rupture	79.7%	Pass
18.5 - 18.25	Pole + Reinf.	TP41.616x41.563x0.7	Reinf. 12 Tension Rupture	79.4%	Pass
18.25 - 15	Pole + Reinf.	TP42.308x41.616x0.6875	Reinf. 12 Tension Rupture	80.1%	Pass
15 - 14.75	Pole + Reinf.	TP42.361x42.308x0.65	Reinf. 12 Tension Rupture	82.5%	Pass
14.75 - 9.75	Pole + Reinf.	TP43.425x42.361x0.65	Reinf. 12 Tension Rupture	83.5%	Pass
9.75 - 4.75	Pole + Reinf.	TP44.489x43.425x0.6375	Reinf. 12 Tension Rupture	84.4%	Pass
4.75 - 0	Pole + Reinf.	TP45.5x44.489x0.6375	Reinf. 12 Tension Rupture	85.2%	Pass
				Summary	
			Pole	59.9%	Pass
			Reinforcement	85.2%	Pass
			Overall	85.2%	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	60.7	Pass
1	Base Plate	0	61.4	Pass
1	Base Foundation (Structure)	0	28.6	Pass

Structure Rating (max from all components) =	85.2%

Notes:

- All structural ratings are per TIA-222-H Section 15.5

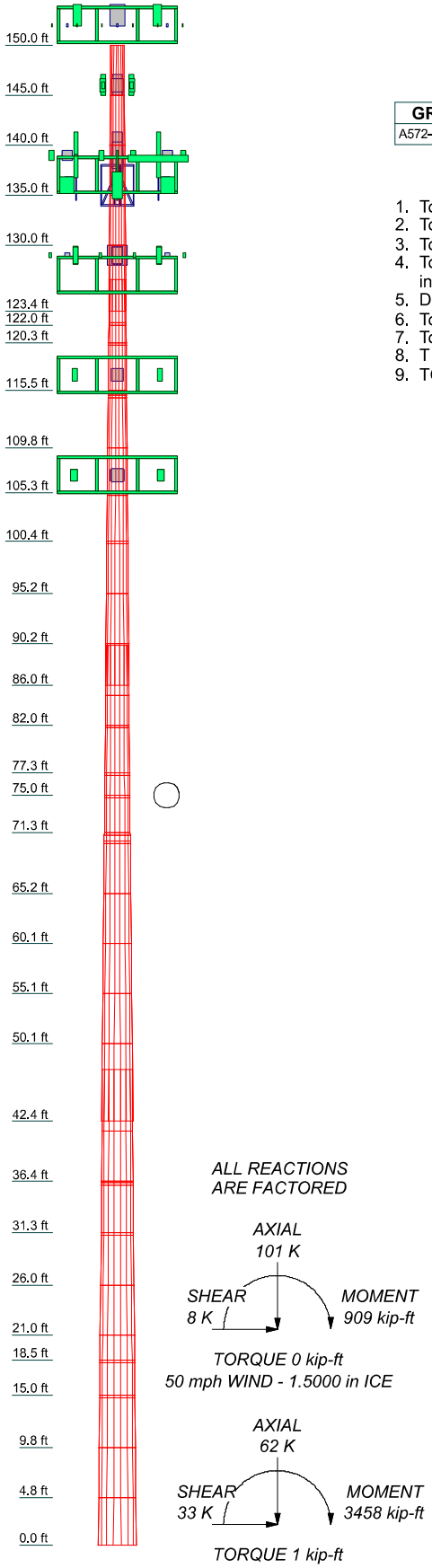
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.

4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT



Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.0000	18	0.1875		15.0000	16.0798	A572-65	0.2
2	5.0000	18	0.1875		16.0798	17.1595		0.2
3	5.0000	18	0.1875		17.1595	18.2393		0.2
4	5.0000	18	0.1875		18.2393	19.3190		0.2
5	[illegible]	18	[illegible]	3.1700	19.3190	20.7400		0.3
6	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
7	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
8	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
9	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
10	[illegible]	18	[illegible]		[illegible]	[illegible]		0.5
11	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
12	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
13	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
14	[illegible]	18	[illegible]		[illegible]	[illegible]		0.6
15	[illegible]	18	[illegible]		[illegible]	[illegible]		0.6
16	[illegible]	18	[illegible]		[illegible]	[illegible]		0.0
17	[illegible]	18	[illegible]		[illegible]	[illegible]		0.8
18	[illegible]	18	[illegible]		[illegible]	[illegible]		0.0
19	[illegible]	18	[illegible]		[illegible]	[illegible]		0.9
20	5.0000	18	0.7000		26.3658	27.4290		0.9
21	[illegible]	18	[illegible]	4.0800	[illegible]	[illegible]		0.8
22	[illegible]	18	[illegible]		[illegible]	[illegible]		1.0
23	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
24	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
25	[illegible]	18	[illegible]		[illegible]	[illegible]		1.1
26	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
27	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
28	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
29	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
30	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
31	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
32	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
33	5.0000	18	[illegible]		[illegible]	32.2552		1.4
34	5.0000	18	0.8875		32.2552	33.3205		1.4
35	5.0000	18	0.8625		33.3205	34.3857		1.4
36	5.0000	18	0.8500		34.3857	35.4510		1.4
37	[illegible]	18	0.8375	5.1700	35.4510	37.1000		2.3
38	[illegible]	18	[illegible]		[illegible]	[illegible]		1.6
39	[illegible]	18	[illegible]		[illegible]	[illegible]		1.3
40	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
41	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
42	[illegible]	18	[illegible]		[illegible]	[illegible]		1.4
43	[illegible]	18	[illegible]		[illegible]	[illegible]		0.1
44	[illegible]	18	[illegible]		[illegible]	[illegible]		1.5
45	5.0000	18	0.7250		[illegible]	[illegible]		1.5
46	[illegible]	18	[illegible]		[illegible]	[illegible]		0.8
47	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
48	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
49	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
50	[illegible]	18	[illegible]		[illegible]	[illegible]		1.6
51	5.0000	18	0.6375		43.4249	44.4891		1.6
52	4.7500	18	0.6375		44.4891	45.5000		1.5
								33.1

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.0000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 85.2%

ALL REACTIONS
ARE FACTORED

AXIAL
101 K

SHEAR
8 K

MOMENT
909 kip-ft

TORQUE 0 kip-ft
50 mph WIND - 1.5000 in ICE

AXIAL
62 K

SHEAR
33 K

MOMENT
3458 kip-ft

TORQUE 1 kip-ft
REACTIONS - 125 mph WIND

Paul J. Ford and Company 250 E. Broad St., Ste 600 Columbus, OH 43215 Phone: 614-221-6679 FAX:	Job: ***150' Monopole | Oxford - Fritz Property*** Project: ***PJF 37521-0921 | BU 876362*** Client: Crown Castle — Drawn by: Nathan Miller — App'd: Code: TIA-222-H — Date: 08/02/21 — Scale: NTS Path: — Dwg No. E-1

PJFLogo

Tower Input Data

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

1) Tower is located in New Haven County, Connecticut.
2) Tower base elevation above sea level: 372.7500 ft.
3) Basic wind speed of 125 mph.
4) Risk Category II.
5) Exposure Category B.
6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7) Topographic Category: 1.
8) Crest Height: 0.0000 ft.
9) Nominal ice thickness of 1.5000 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56.00 pcf.
12) A wind speed of 50 mph is used in combination with ice.
13) Temperature drop of 50 °F.
14) Deflections calculated using a wind speed of 60 mph.
15) TIA-222-H Annex S.
16) TOWER RATING: 85.2%.
17) A non-linear (P-delta) analysis was used.
18) Pressures are calculated at each section.
19) Stress ratio used in pole design is 1.
20) Tower analysis based on target reliabilities in accordance with Annex S.
21) Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
22) Maximum demand-capacity ratio is: 1.05.
23) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	*Elevation ft*	*Section Length ft*	*Splice Length ft*	*Number of Sides*	*Top Diameter in*	*Bottom Diameter in*	*Wall Thickness in*	*Bend Radius in*	*Pole Grade*
L1	150.0000-145.0000	5.0000	0.00	18	15.0000	16.0798	0.1875	0.7500	A572-65 (65 ksi)
L2	145.0000-140.0000	5.0000	0.00	18	16.0798	17.1595	0.1875	0.7500	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L3	140.0000-135.0000	5.0000	0.00	18	17.1595	18.2393	0.1875	0.7500	A572-65 (65 ksi)
L4	135.0000-130.0000	5.0000	0.00	18	18.2393	19.3190	0.1875	0.7500	A572-65 (65 ksi)
L5	130.0000-123.4200	6.5800	3.17	18	19.3190	20.7400	0.1875	0.7500	A572-65 (65 ksi)
L6	123.4200-122.2500	4.3400	0.00	18	19.6804	20.6033	0.2500	1.0000	A572-65 (65 ksi)
L7	122.2500-122.0000	0.2500	0.00	18	20.6033	20.6565	0.4125	1.6500	A572-65 (65 ksi)
L8	122.0000-120.2500	1.7500	0.00	18	20.6565	21.0286	0.4125	1.6500	A572-65 (65 ksi)
L9	120.2500-120.0000	0.2500	0.00	18	21.0286	21.0817	0.5750	2.3000	A572-65 (65 ksi)
L10	120.0000-115.5000	4.5000	0.00	18	21.0817	22.0386	0.5625	2.2500	A572-65 (65 ksi)
L11	115.5000-115.2500	0.2500	0.00	18	22.0386	22.0918	0.4000	1.6000	A572-65 (65 ksi)
L12	115.2500-115.0000	0.2500	0.00	18	22.0918	22.1449	0.4000	1.6000	A572-65 (65 ksi)
L13	115.0000-114.7500	0.2500	0.00	18	22.1449	22.1981	0.5500	2.2000	A572-65 (65 ksi)
L14	114.7500-109.7500	5.0000	0.00	18	22.1981	23.2613	0.5375	2.1500	A572-65 (65 ksi)
L15	109.7500-105.2500	4.5000	0.00	18	23.2613	24.2182	0.5250	2.1000	A572-65 (65 ksi)
L16	105.2500-105.0000	0.2500	0.00	18	24.2182	24.2713	0.7375	2.9500	A572-65 (65 ksi)
L17	105.0000-100.4000	4.6000	0.00	18	24.2713	25.2495	0.7125	2.8500	A572-65 (65 ksi)
L18	100.4000-100.1500	0.2500	0.00	18	25.2495	25.3026	0.7375	2.9500	A572-65 (65 ksi)
L19	100.1500-95.1500	5.0000	0.00	18	25.3026	26.3658	0.7125	2.8500	A572-65 (65 ksi)
L20	95.1500-90.1500	5.0000	0.00	18	26.3658	27.4290	0.7000	2.8000	A572-65 (65 ksi)
L21	90.1500-85.9600	4.1900	4.08	18	27.4290	28.3200	0.7000	2.8000	A572-65 (65 ksi)
L22	85.9600-85.0400	5.0000	0.00	18	26.9524	28.0177	0.7500	3.0000	A572-65 (65 ksi)
L23	85.0400-82.0000	3.0400	0.00	18	28.0177	28.6654	0.7375	2.9500	A572-65 (65 ksi)
L24	82.0000-81.7500	0.2500	0.00	18	28.6654	28.7186	0.9250	3.7000	A572-65 (65 ksi)
L25	81.7500-77.2500	4.5000	0.00	18	28.7186	29.6773	0.9000	3.6000	A572-65 (65 ksi)
L26	77.2500-77.0000	0.2500	0.00	18	29.6773	29.7306	0.7875	3.1500	A572-65 (65 ksi)
L27	77.0000-75.0000	2.0000	0.00	18	29.7306	30.1567	0.7750	3.1000	A572-65 (65 ksi)
L28	75.0000-74.7500	0.2500	0.00	18	30.1567	30.2100	0.8250	3.3000	A572-65 (65 ksi)
L29	74.7500-71.2500	3.5000	0.00	18	30.2100	30.9556	0.8125	3.2500	A572-65 (65 ksi)
L30	71.2500-71.0000	0.2500	0.00	18	30.9556	31.0089	0.9375	3.7500	A572-65 (65 ksi)
L31	71.0000-70.4000	0.6000	0.00	18	31.0089	31.1367	0.9250	3.7000	A572-65 (65 ksi)
L32	70.4000-70.1500	0.2500	0.00	18	31.1367	31.1900	0.9375	3.7500	A572-65 (65 ksi)
L33	70.1500-65.1500	5.0000	0.00	18	31.1900	32.2552	0.9125	3.6500	A572-65 (65 ksi)
L34	65.1500-60.1500	5.0000	0.00	18	32.2552	33.3205	0.8875	3.5500	A572-65 (65 ksi)
L35	60.1500-55.1500	5.0000	0.00	18	33.3205	34.3857	0.8625	3.4500	A572-65 (65 ksi)
L36	55.1500-50.1500	5.0000	0.00	18	34.3857	35.4510	0.8500	3.4000	A572-65 (65 ksi)
L37	50.1500-	7.7400	5.17	18	35.4510	37.1000	0.8375	3.3500	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
	42.4100								(65 ksi)
L38	42.4100-41.4100	6.1700	0.00	18	35.3735	36.6867	0.7250	2.9000	A572-65 (65 ksi)
L39	41.4100-36.4100	5.0000	0.00	18	36.6867	37.7508	0.7125	2.8500	A572-65 (65 ksi)
L40	36.4100-36.2500	0.1600	0.00	18	37.7508	37.7849	0.7125	2.8500	A572-65 (65 ksi)
L41	36.2500-36.0000	0.2500	0.00	18	37.7849	37.8381	0.7500	3.0000	A572-65 (65 ksi)
L42	36.0000-31.2500	4.7500	0.00	18	37.8381	38.8491	0.7500	3.0000	A572-65 (65 ksi)
L43	31.2500-31.0000	0.2500	0.00	18	38.8491	38.9023	0.7375	2.9500	A572-65 (65 ksi)
L44	31.0000-26.0000	5.0000	0.00	18	38.9023	39.9664	0.7250	2.9000	A572-65 (65 ksi)
L45	26.0000-21.0000	5.0000	0.00	18	39.9664	41.0306	0.7250	2.9000	A572-65 (65 ksi)
L46	21.0000-18.5000	2.5000	0.00	18	41.0306	41.5626	0.7125	2.8500	A572-65 (65 ksi)
L47	18.5000-18.2500	0.2500	0.00	18	41.5626	41.6158	0.7000	2.8000	A572-65 (65 ksi)
L48	18.2500-15.0000	3.2500	0.00	18	41.6158	42.3075	0.6875	2.7500	A572-65 (65 ksi)
L49	15.0000-14.7500	0.2500	0.00	18	42.3075	42.3608	0.6500	2.6000	A572-65 (65 ksi)
L50	14.7500-9.7500	5.0000	0.00	18	42.3608	43.4249	0.6500	2.6000	A572-65 (65 ksi)
L51	9.7500-4.7500	5.0000	0.00	18	43.4249	44.4891	0.6375	2.5500	A572-65 (65 ksi)
L52	4.7500-0.0000	4.7500		18	44.4891	45.5000	0.6375	2.5500	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	15.2025	8.8153	244.3603	5.2584	7.6200	32.0683	489.0422	4.4085	2.3100	12.32
	16.2989	9.4579	301.7884	5.6418	8.1685	36.9453	603.9739	4.7298	2.5000	13.334
L2	16.2989	9.4579	301.7884	5.6418	8.1685	36.9453	603.9739	4.7298	2.5000	13.334
	17.3953	10.1005	367.5751	6.0251	8.7170	42.1674	735.6339	5.0512	2.6901	14.347
L3	17.3953	10.1005	367.5751	6.0251	8.7170	42.1674	735.6339	5.0512	2.6901	14.347
	18.4917	10.7431	442.2884	6.4084	9.2656	47.7347	885.1589	5.3726	2.8801	15.361
L4	18.4917	10.7431	442.2884	6.4084	9.2656	47.7347	885.1589	5.3726	2.8801	15.361
	19.5881	11.3857	526.4962	6.7917	9.8141	53.6471	1053.6852	5.6939	3.0702	16.374
L5	19.5881	11.3857	526.4962	6.7917	9.8141	53.6471	1053.6852	5.6939	3.0702	16.374
	21.0310	12.2313	652.7391	7.2961	10.5359	61.9537	1306.3371	6.1168	3.3202	17.708
L6	20.6299	15.4180	735.4139	6.8978	9.9977	73.5586	1471.7954	7.7105	3.0238	12.095
	20.8826	16.1503	845.2561	7.2254	10.4665	80.7585	1691.6244	8.0767	3.1862	12.745
L7	20.8575	26.4353	1361.5335	7.1677	10.4665	130.0852	2724.8585	13.2202	2.9002	7.031
	20.9115	26.5049	1372.3161	7.1866	10.4935	130.7780	2746.4379	13.2550	2.9095	7.053
L8	20.9115	26.5049	1372.3161	7.1866	10.4935	130.7780	2746.4379	13.2550	2.9095	7.053
	21.2893	26.9921	1449.3926	7.3187	10.6825	135.6790	2900.6923	13.4986	2.9750	7.212
L9	21.2643	37.3288	1972.9662	7.2610	10.6825	184.6912	3948.5285	18.6679	2.6890	4.677
	21.3182	37.4258	1988.3898	7.2799	10.7095	185.6656	3979.3959	18.7165	2.6984	4.693
L10	21.3202	36.6345	1948.7231	7.2843	10.7095	181.9618	3900.0105	18.3207	2.7204	4.836
	22.2918	38.3429	2234.2606	7.6240	11.1956	199.5657	4471.4610	19.1751	2.8888	5.136
L11	22.3169	27.4724	1625.1464	7.6817	11.1956	145.1592	3252.4313	13.7388	3.1748	7.937
	22.3709	27.5399	1637.1535	7.7006	11.2226	145.8798	3276.4612	13.7726	3.1842	7.96
L12	22.3709	27.5399	1637.1535	7.7006	11.2226	145.8798	3276.4612	13.7726	3.1842	7.96
	22.4248	27.6074	1649.2195	7.7195	11.2496	146.6022	3300.6091	13.8063	3.1935	7.984
L13	22.4017	37.6983	2221.0714	7.6662	11.2496	197.4352	4445.0654	18.8527	2.9295	5.326
	22.4557	37.7911	2237.5146	7.6851	11.2766	198.4205	4477.9734	18.8991	2.9389	5.343
L14	22.4576	36.9535	2190.4520	7.6895	11.2766	194.2470	4383.7863	18.4803	2.9609	5.509
	23.5372	38.7674	2529.0957	8.0669	11.8167	214.0266	5061.5192	19.3874	3.1480	5.857
L15	23.5391	37.8866	2474.3583	8.0714	11.8167	209.3944	4951.9725	18.9469	3.1700	6.038
	24.5108	39.4811	2800.0984	8.4111	12.3028	227.5979	5603.8813	19.7443	3.3384	6.359
L16	24.4780	54.9641	3828.5821	8.3356	12.3028	311.1952	7662.2019	27.4873	2.9644	4.02

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
	24.5320	55.0886	3854.6446	8.3545	12.3298	312.6274	7714.3613	27.5495	2.9738	4.032
L17	24.5358	53.2777	3735.8593	8.3634	12.3298	302.9934	7476.6343	26.6439	3.0178	4.235
	25.5291	55.4898	4220.7770	8.7106	12.8267	329.0609	8447.1078	27.7502	3.1899	4.477
L18	25.5252	57.3782	4355.5341	8.7018	12.8267	339.5669	8716.7993	28.6946	3.1459	4.266
	25.5792	57.5027	4383.9336	8.7206	12.8537	341.0629	8773.6357	28.7568	3.1553	4.278
L19	25.5831	55.6100	4248.2698	8.7295	12.8537	330.5085	8502.1295	27.8103	3.1993	4.49
	26.6627	58.0144	4823.4840	9.1069	13.3938	360.1269	9653.3148	29.0127	3.3864	4.753
L20	26.6646	57.0244	4745.7921	9.1114	13.3938	354.3263	9497.8288	28.5176	3.4084	4.869
	27.7442	59.3866	5360.3407	9.4888	13.9340	384.6964	10727.7348	29.6989	3.5955	5.136
L21	27.7442	59.3866	5360.3407	9.4888	13.9340	384.6964	10727.7348	29.6989	3.5955	5.136
	28.6489	61.3661	5914.4373	9.8051	14.3866	411.1085	11836.6571	30.6889	3.7523	5.36
L22	28.1352	62.3749	5410.4108	9.3019	13.6918	395.1561	10827.9408	31.1934	3.4236	4.565
	28.3342	64.9107	6097.4761	9.6800	14.2330	428.4047	12202.9754	32.4615	3.6111	4.815
L23	28.3361	63.8581	6004.1011	9.6845	14.2330	421.8443	12016.1025	31.9351	3.6331	4.926
	28.9938	65.3742	6441.9731	9.9144	14.5620	442.3825	12892.4227	32.6933	3.7471	5.081
L24	28.9649	81.4443	7918.1170	9.8478	14.5620	543.7521	15846.6528	40.7299	3.4171	3.694
	29.0189	81.6007	7963.8143	9.8667	14.5891	545.8759	15938.1076	40.8081	3.4265	3.704
L25	29.0228	79.4666	7769.5041	9.8756	14.5891	532.5570	15549.2315	39.7409	3.4705	3.856
	29.9963	82.2053	8600.7978	10.2160	15.0761	570.4927	17212.9127	41.1105	3.6392	4.044
L26	30.0137	72.2109	7614.3047	10.2559	15.0761	505.0584	15238.6286	36.1123	3.8372	4.873
	30.0678	72.3440	7656.4962	10.2748	15.1031	506.9471	15323.0670	36.1789	3.8466	4.885
L27	30.0697	71.2264	7544.7314	10.2792	15.1031	499.5470	15099.3903	35.6200	3.8686	4.992
	30.5024	72.2746	7882.7333	10.4305	15.3196	514.5520	15775.8390	36.1442	3.9436	5.088
L28	30.4946	76.8065	8348.5302	10.4128	15.3196	544.9573	16708.0457	38.4106	3.8556	4.673
	30.5487	76.9460	8394.0928	10.4317	15.3467	546.9654	16799.2307	38.4803	3.8650	4.685
L29	30.5507	75.8124	8277.4640	10.4361	15.3467	539.3658	16565.8197	37.9134	3.8870	4.784
	31.3078	77.7354	8923.4568	10.7008	15.7255	567.4527	17858.6554	38.8751	4.0182	4.945
L30	31.2886	89.3227	10168.7343	10.6564	15.7255	646.6413	20350.8488	44.6698	3.7982	4.051
	31.3426	89.4812	10222.9584	10.6753	15.7525	648.9728	20459.3683	44.7491	3.8076	4.061
L31	31.3446	88.3248	10099.2359	10.6798	15.7525	641.1187	20211.7605	44.1708	3.8296	4.14
	31.4744	88.7001	10228.5221	10.7252	15.8175	646.6603	20470.5032	44.3585	3.8521	4.164
L32	31.4724	89.8616	10353.8831	10.7207	15.8175	654.5857	20721.3902	44.9393	3.8301	4.085
	31.5265	90.0201	10408.7639	10.7396	15.8445	656.9316	20831.2239	45.0186	3.8394	4.095
L33	31.5304	87.6919	10156.3342	10.7485	15.8445	640.9999	20326.0324	43.8543	3.8834	4.256
	32.6121	90.7772	11266.4800	11.1267	16.3857	687.5816	22547.7848	45.3972	4.0709	4.461
L34	32.6159	88.3606	10984.0512	11.1355	16.3857	670.3452	21982.5554	44.1887	4.1149	4.637
	33.6976	91.3613	12141.5412	11.5137	16.9268	717.2965	24299.0586	45.6893	4.3024	4.848
L35	33.7015	88.8562	11826.8330	11.5226	16.9268	698.7042	23669.2280	44.4365	4.3464	5.039
	34.7831	91.7724	13029.9141	11.9008	17.4680	745.9323	26076.9732	45.8949	4.5339	5.257

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
L36	34.7851	90.4761	12855.4445	11.9052	17.4680	735.9443	25727.8045	45.2466	4.5559	5.36
	35.8668	93.3500	14119.8143	12.2834	18.0091	784.0376	28258.2079	46.6839	4.7434	5.58
L37	35.8687	92.0105	13927.2532	12.2878	18.0091	773.3451	27872.8323	46.0140	4.7654	5.69
	37.5431	96.3939	16014.0955	12.8732	18.8468	849.6984	32049.2627	48.2061	5.0556	6.037
L38	36.9247	79.7315	12093.0781	12.3002	17.9698	672.9685	24202.0686	39.8733	4.9497	6.827
	37.1408	82.7533	13520.8140	12.7664	18.6368	725.4885	27059.4191	41.3845	5.1809	7.146
L39	37.1427	81.3547	13301.5575	12.7708	18.6368	713.7238	26620.6174	40.6851	5.2029	7.302
	38.2233	83.7613	14517.2391	13.1486	19.1774	756.9961	29053.5804	41.8886	5.3901	7.565
L40	38.2233	83.7613	14517.2391	13.1486	19.1774	756.9961	29053.5804	41.8886	5.3901	7.565
	38.2579	83.8383	14557.3161	13.1607	19.1947	758.4018	29133.7871	41.9271	5.3961	7.574
L41	38.2521	88.1616	15277.0370	13.1474	19.1947	795.8975	30574.1759	44.0892	5.3301	7.107
	38.3061	88.2882	15342.9771	13.1663	19.2218	798.2088	30706.1429	44.1525	5.3395	7.119
L42	38.3061	88.2882	15342.9771	13.1663	19.2218	798.2088	30706.1429	44.1525	5.3395	7.119
	39.3327	90.6948	16632.1392	13.5252	19.7353	842.7601	33286.1633	45.3560	5.5174	7.357
L43	39.3346	89.2125	16371.0399	13.5296	19.7353	829.5301	32763.6213	44.6147	5.5394	7.511
	39.3886	89.3370	16439.7031	13.5485	19.7623	831.8700	32901.0380	44.6770	5.5488	7.524
L44	39.3905	87.8516	16176.9488	13.5529	19.7623	818.5742	32375.1837	43.9341	5.5708	7.684
	40.4711	90.3004	17567.7533	13.9307	20.3029	865.2814	35158.6227	45.1588	5.7581	7.942
L45	40.4711	90.3004	17567.7533	13.9307	20.3029	865.2814	35158.6227	45.1588	5.7581	7.942
	41.5517	92.7491	19036.0713	14.3085	20.8435	913.2846	38097.1907	46.3834	5.9454	8.201
L46	41.5536	91.1783	18725.2742	14.3129	20.8435	898.3737	37475.1876	45.5978	5.9674	8.375
	42.0939	92.3816	19476.4511	14.5018	21.1138	922.4504	38978.5299	46.1996	6.0610	8.507
L47	42.0958	90.7886	19152.3299	14.5062	21.1138	907.0992	38329.8609	45.4029	6.0830	8.69
	42.1499	90.9068	19227.2432	14.5251	21.1408	909.4830	38479.7860	45.4621	6.0924	8.703
L48	42.1518	89.3108	18901.2122	14.5296	21.1408	894.0611	37827.2951	44.6639	6.1144	8.894
	42.8541	90.8201	19875.8043	14.7751	21.4922	924.7901	39777.7616	45.4187	6.2361	9.071
L49	42.8599	85.9437	18842.5096	14.7884	21.4922	876.7125	37709.8127	42.9800	6.3021	9.696
	42.9140	86.0535	18914.8015	14.8073	21.5193	878.9707	37854.4916	43.0349	6.3115	9.71
L50	42.9140	86.0535	18914.8015	14.8073	21.5193	878.9707	37854.4916	43.0349	6.3115	9.71
	43.9945	88.2489	20399.7507	15.1851	22.0599	924.7456	40826.3439	44.1328	6.4988	9.998
L51	43.9965	86.5771	20024.9931	15.1895	22.0599	907.7574	40076.3356	43.2968	6.5208	10.229
	45.0770	88.7303	21556.5664	15.5673	22.6004	953.8118	43141.4975	44.3736	6.7081	10.522
L52	45.0770	88.7303	21556.5664	15.5673	22.6004	953.8118	43141.4975	44.3736	6.7081	10.522
	46.1036	90.7759	23082.0818	15.9262	23.1140	998.6191	46194.5356	45.3966	6.8860	10.802

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 150.0000-145.0000				1	1	1			
L2 145.0000-140.0000				1	1	1			
L3 140.0000-135.0000				1	1	1			
L4 135.0000-130.0000				1	1	1			
L5 130.0000-123.4200				1	1	1			
L6 123.4200-122.2500				1	1	1			
L7 122.2500-122.0000				1	1	0.950498			
L8 122.0000-120.2500				1	1	0.944281			
L9 120.2500-120.0000				1	1	0.922642			
L10 120.0000-115.5000				1	1	0.920376			
L11 115.5000-115.2500				1	1	0.956133			
L12 115.2500-115.0000				1	1	0.955323			
L13 115.0000-114.7500				1	1	0.930814			
L14 114.7500-109.7500				1	1	0.929135			
L15 109.7500-105.2500				1	1	0.931569			
L16 105.2500-105.0000				1	1	0.898158			
L17 105.0000-100.4000				1	1	0.905652			
L18 100.4000-100.1500				1	1	0.907291			
L19 100.1500-95.1500				1	1	0.913831			
L20 95.1500-90.1500				1	1	0.906922			
L21 90.1500-85.9600				1	1	0.906441			
L22 85.9600-85.0400				1	1	0.920842			
L23 85.0400-82.0000				1	1	0.92414			
L24 82.0000-81.7500				1	1	0.906466			
L25 81.7500-77.2500				1	1	0.911366			
L26 77.2500-77.0000				1	1	0.915234			
L27 77.0000-75.0000				1	1	0.92196			
L28 75.0000-74.7500				1	1	0.918921			
L29 74.7500-				1	1	0.919104			

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
71.2500									
L30 71.2500-71.0000				1	1	0.899631			
L31 71.0000-70.4000				1	1	0.908982			
L32 70.4000-70.1500				1	1	0.911863			
L33 70.1500-65.1500				1	1	0.915897			
L34 65.1500-60.1500				1	1	0.921606			
L35 60.1500-55.1500				1	1	0.928991			
L36 55.1500-50.1500				1	1	0.92461			
L37 50.1500-42.4100				1	1	0.929274			
L38 42.4100-41.4100				1	1	0.944631			
L39 41.4100-36.4100				1	1	0.948384			
L40 36.4100-36.2500				1	1	0.947996			
L41 36.2500-36.0000				1	1	0.958983			
L42 36.0000-31.2500				1	1	0.946804			
L43 31.2500-31.0000				1	1	0.961903			
L44 31.0000-26.0000				1	1	0.965667			
L45 26.0000-21.0000				1	1	0.953828			
L46 21.0000-18.5000				1	1	0.964478			
L47 18.5000-18.2500				1	1	0.980821			
L48 18.2500-15.0000				1	1	0.990823			
L49 15.0000-14.7500				1	1	1.08276			
L50 14.7500-9.7500				1	1	1.07017			
L51 9.7500-4.7500				1	1	1.07864			
L52 4.7500-0.0000				1	1	1.06759			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
***										
CU12PSM9P6XXX(1-1/2)	A	No	Surface Ar (CaAa)	107.0000 - 0.0000	1	1	-0.253 -0.253	1.6000		2.35
***										
**********										
*******										
FP 4.25 x 1.25 Reinforcement	C	No	Surface Af (CaAa)	72.1500 - 42.4000	1	1	-0.460 -0.460	4.2500	11.0000	18.08
FP 4.25 x 1.25 Reinforcement	B	No	Surface Af (CaAa)	72.1500 - 42.4000	1	1	-0.460 -0.460	4.2500	11.0000	0.00
FP 4.25 x 1.25 Reinforcement	A	No	Surface Af (CaAa)	72.1500 - 42.4000	1	1	-0.460 -0.460	4.2500	11.0000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
FP 3.875 x 1.25 Reinforcement	C	No	Surface Af (CaAa)	101.9000 - 72.1500	1	1	-0.460 -0.460	3.8750	10.2500	0.00
FP 3.875 x 1.25 Reinforcement	B	No	Surface Af (CaAa)	101.9000 - 72.1500	1	1	-0.460 -0.460	3.8750	10.2500	0.00
FP 3.875 x 1.25 Reinforcement	A	No	Surface Af (CaAa)	101.9000 - 72.1500	1	1	-0.460 -0.460	3.8750	10.2500	0.00
FP 3.375 x 1.25 Reinforcement	C	No	Surface Af (CaAa)	106.5000 - 101.9000	1	1	-0.460 -0.460	3.3750	9.2500	0.00
FP 3.375 x 1.25 Reinforcement	B	No	Surface Af (CaAa)	106.5000 - 101.9000	1	1	-0.460 -0.460	3.3750	9.2500	0.00
FP 3.375 x 1.25 Reinforcement	A	No	Surface Af (CaAa)	106.5000 - 101.9000	1	1	-0.460 -0.460	3.3750	9.2500	0.00
**********										
MP3-03 Reinforcement	B	No	Surface Af (CaAa)	76.0000 - 46.0000	1	1	-0.127 -0.127	4.0600	11.2600	0.00
MP3-03 Reinforcement	A	No	Surface Af (CaAa)	76.0000 - 46.0000	1	1	-0.127 -0.127	4.0600	11.2600	0.00
MP3-03 Reinforcement	C	No	Surface Af (CaAa)	76.0000 - 46.0000	1	1	-0.127 -0.127	4.0600	11.2600	0.00
**********										
MP3-05 Reinforcement	C	No	Surface Af (CaAa)	21.2500 - 1.2500	1	1	-0.460 -0.460	5.3300	14.8400	0.00
MP3-05 Reinforcement	B	No	Surface Af (CaAa)	46.2500 - 16.2500	1	1	0.206 0.206	5.3300	14.8400	0.00
MP3-05 Reinforcement	A	No	Surface Af (CaAa)	31.2500 - 1.2500	1	1	0.206 0.206	5.3300	14.8400	0.00
MP3-05 Reinforcement	C	No	Surface Af (CaAa)	31.2500 - 1.2500	1	1	0.206 0.206	5.3300	14.8400	0.00
MP3-05 Reinforcement	A	No	Surface Af (CaAa)	43.2500 - 31.2500	1	1	0.206 0.206	5.3300	14.8400	0.00
MP3-05 Reinforcement	C	No	Surface Af (CaAa)	43.2500 - 31.2500	1	1	0.206 0.206	5.3300	14.8400	0.00
MP3-03 Reinforcement	B	No	Surface Af (CaAa)	76.2500 - 46.2500	1	1	0.206 0.206	4.0600	11.2600	0.00
MP3-03 Reinforcement	C	No	Surface Af (CaAa)	76.2500 - 46.2500	1	1	-0.294 -0.294	4.0600	11.2600	0.00
MP3-03 Reinforcement	C	No	Surface Af (CaAa)	76.2500 - 46.2500	1	1	0.206 0.206	4.0600	11.2600	0.00
MP3-03 Reinforcement	B	No	Surface Af (CaAa)	116.2500 - 76.2500	1	1	0.206 0.206	4.0600	11.2600	0.00
MP3-03 Reinforcement	A	No	Surface Af (CaAa)	116.2500 - 76.2500	1	1	0.206 0.206	4.0600	11.2600	0.00
MP3-03 Reinforcement	C	No	Surface Af (CaAa)	116.2500 - 76.2500	1	1	0.206 0.206	4.0600	11.2600	0.00
**********										
FP 5.50 x 1.25 Reinforcement	C	No	Surface Af (CaAa)	36.2500 - 1.2500	1	1	-0.294 -0.294	5.5000	13.5000	0.00
CCI-065125 Reinforcement	B	No	Surface Af (CaAa)	22.9600 - 1.2500	1	1	-0.294 -0.294	6.5000	15.5000	0.00
CCI-065125 Reinforcement	B	No	Surface Af (CaAa)	36.2500 - 22.9600	1	1	-0.294 -0.294	6.5000	15.5000	0.00
CCI-065125 Reinforcement	A	No	Surface Af (CaAa)	22.9600 - 11.5000	1	1	-0.294 -0.294	6.5000	15.5000	0.00
CCI-065125 Reinforcement	A	No	Surface Af (CaAa)	36.2500 - 22.9600	1	1	-0.294 -0.294	6.5000	15.5000	0.00
CCI-060100 Reinforcement	C	No	Surface Af (CaAa)	36.2840 - 36.2500	1	1	-0.294 -0.294	6.0000	14.0000	0.00
CCI-060100 Reinforcement	C	No	Surface Af (CaAa)	71.2500 - 36.2840	1	1	-0.294 -0.294	6.0000	14.0000	0.00
CCI-060100 Reinforcement	B	No	Surface Af (CaAa)	36.2840 - 36.2500	1	1	-0.294 -0.294	6.0000	14.0000	0.00
CCI-060100 Reinforcement	B	No	Surface Af (CaAa)	71.2500 - 36.2840	1	1	-0.294 -0.294	6.0000	14.0000	0.00
CCI-060100 Reinforcement	A	No	Surface Af (CaAa)	36.2840 - 36.2500	1	1	-0.294 -0.294	6.0000	14.0000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
CCI-060100 Reinforcement	A	No	Surface Af (CaAa)	71.2500 - 36.2840	1	1	-0.294 -0.294	6.0000	14.0000	0.00
CCI-040075 Reinforcement	C	No	Surface Af (CaAa)	100.7030 - 71.2500	1	1	-0.294 -0.294	4.0000	9.5000	0.00
CCI-040075 Reinforcement	C	No	Surface Af (CaAa)	121.2500 - 100.7030	1	1	-0.294 -0.294	4.0000	9.5000	0.00
CCI-040075 Reinforcement	B	No	Surface Af (CaAa)	100.7030 - 71.2500	1	1	-0.294 -0.294	4.0000	9.5000	0.00
CCI-040075 Reinforcement	B	No	Surface Af (CaAa)	121.2500 - 100.7030	1	1	-0.294 -0.294	4.0000	9.5000	0.00
CCI-040075 Reinforcement	A	No	Surface Af (CaAa)	100.7030 - 71.2500	1	1	-0.294 -0.294	4.0000	9.5000	0.00
CCI-040075 Reinforcement	A	No	Surface Af (CaAa)	121.2500 - 100.7030	1	1	-0.294 -0.294	4.0000	9.5000	0.00
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CCI-045100 Reinforcement	B	No	Surface Af (CaAa)	83.5000 - 73.5000	1	1	0.040 0.040	4.5000	11.0000	0.00
CCI-045100 Reinforcement	A	No	Surface Af (CaAa)	83.5000 - 73.5000	1	1	0.040 0.040	4.5000	11.0000	0.00
CCI-045100 Reinforcement	C	No	Surface Af (CaAa)	83.5000 - 73.5000	1	1	0.040 0.040	4.5000	11.0000	0.00
CCI-040075 Reinforcement	B	No	Surface Af (CaAa)	123.7500 - 113.7500	1	1	0.040 0.040	4.0000	9.5000	0.00
CCI-040075 Reinforcement	A	No	Surface Af (CaAa)	123.7500 - 113.7500	1	1	0.040 0.040	4.0000	9.5000	0.00
CCI-040075 Reinforcement	C	No	Surface Af (CaAa)	123.7500 - 113.7500	1	1	0.040 0.040	4.0000	9.5000	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
HB114-1-0813U4-M5J(1-1/4)	C	No	No	Inside Pole	150.0000 - 0.0000	3	No Ice	0.0000	1.20
							1/2" Ice	0.0000	1.20
							1" Ice	0.0000	1.20
							2" Ice	0.0000	1.20
HB114-21U3M12-XXXF(1-1/4)	C	No	No	Inside Pole	150.0000 - 0.0000	1	No Ice	0.0000	1.22
							1/2" Ice	0.0000	1.22
							1" Ice	0.0000	1.22
							2" Ice	0.0000	1.22
***									
LDF6-50A(1-1/4)	C	No	No	Inside Pole	137.0000 - 0.0000	12	No Ice	0.0000	0.60
							1/2" Ice	0.0000	0.60
							1" Ice	0.0000	0.60
							2" Ice	0.0000	0.60
FB-L98B-002-75000(3/8)	C	No	No	Inside Pole	136.0000 - 0.0000	1	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)	C	No	No	Inside Pole	136.0000 - 0.0000	2	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
2" (Nominal) Conduit	C	No	No	Inside Pole	136.0000 - 0.0000	1	No Ice	0.0000	0.72
							1/2" Ice	0.0000	0.72
							1" Ice	0.0000	0.72
							2" Ice	0.0000	0.72
***									
AVA7-50(1-5/8)	C	No	No	Inside Pole	127.0000 - 0.0000	12	No Ice	0.0000	0.70
							1/2" Ice	0.0000	0.70
							1" Ice	0.0000	0.70
							2" Ice	0.0000	0.70
LDF4-50A(1/2)	C	No	No	Inside Pole	127.0000 -	1	No Ice	0.0000	0.15

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
					0.0000		1/2" Ice	0.0000	0.15
							1" Ice	0.0000	0.15
							2" Ice	0.0000	0.15
HB158-1-08U8-S8J18(1-5/8)	C	No	No	Inside Pole	127.0000 - 0.0000	1	No Ice	0.0000	1.30
							1/2" Ice	0.0000	1.30
							1" Ice	0.0000	1.30
							2" Ice	0.0000	1.30
***									
FXL-1873(1-5/8)	C	No	No	Inside Pole	117.0000 - 0.0000	6	No Ice	0.0000	0.67
							1/2" Ice	0.0000	0.67
							1" Ice	0.0000	0.67
							2" Ice	0.0000	0.67
HCS 6X12 4AWG(1-5/8)	C	No	No	Inside Pole	117.0000 - 0.0000	1	No Ice	0.0000	2.40
							1/2" Ice	0.0000	2.40
							1" Ice	0.0000	2.40
							2" Ice	0.0000	2.40
860 10033(3/8)	C	No	No	Inside Pole	117.0000 - 0.0000	1	No Ice	0.0000	0.00
							1/2" Ice	0.0000	0.00
							1" Ice	0.0000	0.00
							2" Ice	0.0000	0.00

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	150.0000-145.0000	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	0.02
L2	145.0000-140.0000	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	0.02
L3	140.0000-135.0000	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	0.04
L4	135.0000-130.0000	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	0.07
L5	130.0000-123.4200	A	0.000	0.000	0.220	0.000	0.00
		B	0.000	0.000	0.220	0.000	0.00
		C	0.000	0.000	0.220	0.000	0.13
L6	123.4200-122.2500	A	0.000	0.000	0.780	0.000	0.00
		B	0.000	0.000	0.780	0.000	0.00
		C	0.000	0.000	0.780	0.000	0.03
L7	122.2500-122.0000	A	0.000	0.000	0.167	0.000	0.00
		B	0.000	0.000	0.167	0.000	0.00
		C	0.000	0.000	0.167	0.000	0.01
L8	122.0000-120.2500	A	0.000	0.000	1.833	0.000	0.00
		B	0.000	0.000	1.833	0.000	0.00
		C	0.000	0.000	1.833	0.000	0.04
L9	120.2500-120.0000	A	0.000	0.000	0.333	0.000	0.00
		B	0.000	0.000	0.333	0.000	0.00
		C	0.000	0.000	0.333	0.000	0.01
L10	120.0000-115.5000	A	0.000	0.000	6.508	0.000	0.00
		B	0.000	0.000	6.508	0.000	0.00
		C	0.000	0.000	6.508	0.000	0.12
L11	115.5000-115.2500	A	0.000	0.000	0.502	0.000	0.00
		B	0.000	0.000	0.502	0.000	0.00
		C	0.000	0.000	0.502	0.000	0.01
L12	115.2500-115.0000	A	0.000	0.000	0.502	0.000	0.00
		B	0.000	0.000	0.502	0.000	0.00
		C	0.000	0.000	0.502	0.000	0.01
L13	115.0000-114.7500	A	0.000	0.000	0.502	0.000	0.00
		B	0.000	0.000	0.502	0.000	0.00
		C	0.000	0.000	0.502	0.000	0.01
L14	114.7500-	A	0.000	0.000	7.383	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
	109.7500	B	0.000	0.000	7.383	0.000	0.00
		C	0.000	0.000	7.383	0.000	0.15
L15	109.7500-105.2500	A	0.000	0.000	6.915	0.000	0.00
		B	0.000	0.000	6.635	0.000	0.00
		C	0.000	0.000	6.635	0.000	0.14
L16	105.2500-105.0000	A	0.000	0.000	0.494	0.000	0.00
		B	0.000	0.000	0.454	0.000	0.00
		C	0.000	0.000	0.454	0.000	0.01
L17	105.0000-100.4000	A	0.000	0.000	9.347	0.000	0.01
		B	0.000	0.000	8.611	0.000	0.00
		C	0.000	0.000	8.611	0.000	0.14
L18	100.4000-100.1500	A	0.000	0.000	0.537	0.000	0.00
		B	0.000	0.000	0.497	0.000	0.00
		C	0.000	0.000	0.497	0.000	0.01
L19	100.1500-95.1500	A	0.000	0.000	10.746	0.000	0.01
		B	0.000	0.000	9.946	0.000	0.00
		C	0.000	0.000	9.946	0.000	0.15
L20	95.1500-90.1500	A	0.000	0.000	10.746	0.000	0.01
		B	0.000	0.000	9.946	0.000	0.00
		C	0.000	0.000	9.946	0.000	0.15
L21	90.1500-85.9600	A	0.000	0.000	9.005	0.000	0.01
		B	0.000	0.000	8.335	0.000	0.00
		C	0.000	0.000	8.335	0.000	0.13
L22	85.9600-85.0400	A	0.000	0.000	1.977	0.000	0.00
		B	0.000	0.000	1.830	0.000	0.00
		C	0.000	0.000	1.830	0.000	0.03
L23	85.0400-82.0000	A	0.000	0.000	7.658	0.000	0.01
		B	0.000	0.000	7.172	0.000	0.00
		C	0.000	0.000	7.172	0.000	0.09
L24	82.0000-81.7500	A	0.000	0.000	0.725	0.000	0.00
		B	0.000	0.000	0.685	0.000	0.00
		C	0.000	0.000	0.685	0.000	0.01
L25	81.7500-77.2500	A	0.000	0.000	13.046	0.000	0.01
		B	0.000	0.000	12.326	0.000	0.00
		C	0.000	0.000	12.326	0.000	0.14
L26	77.2500-77.0000	A	0.000	0.000	0.725	0.000	0.00
		B	0.000	0.000	0.685	0.000	0.00
		C	0.000	0.000	0.685	0.000	0.01
L27	77.0000-75.0000	A	0.000	0.000	5.629	0.000	0.00
		B	0.000	0.000	6.155	0.000	0.00
		C	0.000	0.000	7.001	0.000	0.06
L28	75.0000-74.7500	A	0.000	0.000	0.725	0.000	0.00
		B	0.000	0.000	0.854	0.000	0.00
		C	0.000	0.000	1.023	0.000	0.01
L29	74.7500-71.2500	A	0.000	0.000	8.516	0.000	0.01
		B	0.000	0.000	10.324	0.000	0.00
		C	0.000	0.000	12.693	0.000	0.12
L30	71.2500-71.0000	A	0.000	0.000	0.636	0.000	0.00
		B	0.000	0.000	0.765	0.000	0.00
		C	0.000	0.000	0.935	0.000	0.01
L31	71.0000-70.4000	A	0.000	0.000	1.527	0.000	0.00
		B	0.000	0.000	1.837	0.000	0.00
		C	0.000	0.000	2.243	0.000	0.03
L32	70.4000-70.1500	A	0.000	0.000	0.636	0.000	0.00
		B	0.000	0.000	0.765	0.000	0.00
		C	0.000	0.000	0.935	0.000	0.01
L33	70.1500-65.1500	A	0.000	0.000	12.725	0.000	0.01
		B	0.000	0.000	15.308	0.000	0.00
		C	0.000	0.000	18.692	0.000	0.24
L34	65.1500-60.1500	A	0.000	0.000	12.725	0.000	0.01
		B	0.000	0.000	15.308	0.000	0.00
		C	0.000	0.000	18.692	0.000	0.24
L35	60.1500-55.1500	A	0.000	0.000	12.725	0.000	0.01
		B	0.000	0.000	15.308	0.000	0.00
		C	0.000	0.000	18.692	0.000	0.24
L36	55.1500-50.1500	A	0.000	0.000	12.725	0.000	0.01
		B	0.000	0.000	15.308	0.000	0.00
		C	0.000	0.000	18.692	0.000	0.24
L37	50.1500-42.4100	A	0.000	0.000	18.015	0.000	0.02

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	22.081	0.000	0.00
		C	0.000	0.000	22.055	0.000	0.37
L38	42.4100-41.4100	A	0.000	0.000	2.055	0.000	0.00
		B	0.000	0.000	1.895	0.000	0.00
		C	0.000	0.000	1.895	0.000	0.03
L39	41.4100-36.4100	A	0.000	0.000	10.242	0.000	0.01
		B	0.000	0.000	9.442	0.000	0.00
		C	0.000	0.000	9.442	0.000	0.15
L40	36.4100-36.2500	A	0.000	0.000	0.314	0.000	0.00
		B	0.000	0.000	0.289	0.000	0.00
		C	0.000	0.000	0.289	0.000	0.00
L41	36.2500-36.0000	A	0.000	0.000	0.529	0.000	0.00
		B	0.000	0.000	0.489	0.000	0.00
		C	0.000	0.000	0.451	0.000	0.01
L42	36.0000-31.2500	A	0.000	0.000	10.048	0.000	0.01
		B	0.000	0.000	9.288	0.000	0.00
		C	0.000	0.000	8.574	0.000	0.14
L43	31.2500-31.0000	A	0.000	0.000	0.529	0.000	0.00
		B	0.000	0.000	0.489	0.000	0.00
		C	0.000	0.000	0.451	0.000	0.01
L44	31.0000-26.0000	A	0.000	0.000	10.577	0.000	0.01
		B	0.000	0.000	9.777	0.000	0.00
		C	0.000	0.000	9.025	0.000	0.15
L45	26.0000-21.0000	A	0.000	0.000	10.459	0.000	0.01
		B	0.000	0.000	9.809	0.000	0.00
		C	0.000	0.000	9.247	0.000	0.15
L46	21.0000-18.5000	A	0.000	0.000	5.139	0.000	0.01
		B	0.000	0.000	4.929	0.000	0.00
		C	0.000	0.000	6.733	0.000	0.08
L47	18.5000-18.2500	A	0.000	0.000	0.514	0.000	0.00
		B	0.000	0.000	0.493	0.000	0.00
		C	0.000	0.000	0.673	0.000	0.01
L48	18.2500-15.0000	A	0.000	0.000	6.680	0.000	0.01
		B	0.000	0.000	5.298	0.000	0.00
		C	0.000	0.000	8.753	0.000	0.10
L49	15.0000-14.7500	A	0.000	0.000	0.514	0.000	0.00
		B	0.000	0.000	0.271	0.000	0.00
		C	0.000	0.000	0.673	0.000	0.01
L50	14.7500-9.7500	A	0.000	0.000	8.515	0.000	0.01
		B	0.000	0.000	5.417	0.000	0.00
		C	0.000	0.000	13.467	0.000	0.15
L51	9.7500-4.7500	A	0.000	0.000	5.242	0.000	0.01
		B	0.000	0.000	5.417	0.000	0.00
		C	0.000	0.000	13.467	0.000	0.15
L52	4.7500-0.0000	A	0.000	0.000	3.869	0.000	0.01
		B	0.000	0.000	3.792	0.000	0.00
		C	0.000	0.000	9.427	0.000	0.14

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	150.0000-145.0000	A	1.481	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	0.02
L2	145.0000-140.0000	A	1.476	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	0.02
L3	140.0000-135.0000	A	1.471	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	0.04
L4	135.0000-130.0000	A	1.465	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.07
L5	130.0000-123.4200	A	1.459	0.000	0.000	0.286	0.000	0.00
		B		0.000	0.000	0.286	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	0.286	0.000	0.13
L6	123.4200-122.2500	A	1.454	0.000	0.000	1.013	0.000	0.01
		B		0.000	0.000	1.013	0.000	0.01
		C		0.000	0.000	1.013	0.000	0.04
L7	122.2500-122.0000	A	1.453	0.000	0.000	0.216	0.000	0.00
		B		0.000	0.000	0.216	0.000	0.00
		C		0.000	0.000	0.216	0.000	0.01
L8	122.0000-120.2500	A	1.452	0.000	0.000	2.471	0.000	0.02
		B		0.000	0.000	2.471	0.000	0.02
		C		0.000	0.000	2.471	0.000	0.06
L9	120.2500-120.0000	A	1.451	0.000	0.000	0.455	0.000	0.00
		B		0.000	0.000	0.455	0.000	0.00
		C		0.000	0.000	0.455	0.000	0.01
L10	120.0000-115.5000	A	1.448	0.000	0.000	8.919	0.000	0.08
		B		0.000	0.000	8.919	0.000	0.08
		C		0.000	0.000	8.919	0.000	0.20
L11	115.5000-115.2500	A	1.445	0.000	0.000	0.696	0.000	0.01
		B		0.000	0.000	0.696	0.000	0.01
		C		0.000	0.000	0.696	0.000	0.01
L12	115.2500-115.0000	A	1.445	0.000	0.000	0.696	0.000	0.01
		B		0.000	0.000	0.696	0.000	0.01
		C		0.000	0.000	0.696	0.000	0.01
L13	115.0000-114.7500	A	1.444	0.000	0.000	0.696	0.000	0.01
		B		0.000	0.000	0.696	0.000	0.01
		C		0.000	0.000	0.696	0.000	0.01
L14	114.7500-109.7500	A	1.441	0.000	0.000	10.463	0.000	0.10
		B		0.000	0.000	10.463	0.000	0.10
		C		0.000	0.000	10.463	0.000	0.25
L15	109.7500-105.2500	A	1.435	0.000	0.000	10.194	0.000	0.10
		B		0.000	0.000	9.411	0.000	0.09
		C		0.000	0.000	9.411	0.000	0.23
L16	105.2500-105.0000	A	1.432	0.000	0.000	0.747	0.000	0.01
		B		0.000	0.000	0.636	0.000	0.01
		C		0.000	0.000	0.636	0.000	0.01
L17	105.0000-100.4000	A	1.428	0.000	0.000	14.196	0.000	0.15
		B		0.000	0.000	12.146	0.000	0.12
		C		0.000	0.000	12.146	0.000	0.26
L18	100.4000-100.1500	A	1.425	0.000	0.000	0.822	0.000	0.01
		B		0.000	0.000	0.711	0.000	0.01
		C		0.000	0.000	0.711	0.000	0.01
L19	100.1500-95.1500	A	1.421	0.000	0.000	16.430	0.000	0.17
		B		0.000	0.000	14.209	0.000	0.13
		C		0.000	0.000	14.209	0.000	0.28
L20	95.1500-90.1500	A	1.414	0.000	0.000	16.400	0.000	0.17
		B		0.000	0.000	14.187	0.000	0.13
		C		0.000	0.000	14.187	0.000	0.28
L21	90.1500-85.9600	A	1.406	0.000	0.000	13.719	0.000	0.14
		B		0.000	0.000	11.870	0.000	0.11
		C		0.000	0.000	11.870	0.000	0.23
L22	85.9600-85.0400	A	1.402	0.000	0.000	3.012	0.000	0.03
		B		0.000	0.000	2.606	0.000	0.02
		C		0.000	0.000	2.606	0.000	0.05
L23	85.0400-82.0000	A	1.399	0.000	0.000	11.299	0.000	0.11
		B		0.000	0.000	9.962	0.000	0.09
		C		0.000	0.000	9.962	0.000	0.18
L24	82.0000-81.7500	A	1.396	0.000	0.000	1.044	0.000	0.01
		B		0.000	0.000	0.934	0.000	0.01
		C		0.000	0.000	0.934	0.000	0.02
L25	81.7500-77.2500	A	1.392	0.000	0.000	18.770	0.000	0.19
		B		0.000	0.000	16.797	0.000	0.15
		C		0.000	0.000	16.797	0.000	0.29
L26	77.2500-77.0000	A	1.388	0.000	0.000	1.042	0.000	0.01
		B		0.000	0.000	0.932	0.000	0.01
		C		0.000	0.000	0.932	0.000	0.02
L27	77.0000-75.0000	A	1.386	0.000	0.000	8.093	0.000	0.08
		B		0.000	0.000	8.410	0.000	0.08
		C		0.000	0.000	9.603	0.000	0.15
L28	75.0000-74.7500	A	1.384	0.000	0.000	1.041	0.000	0.01
		B		0.000	0.000	1.170	0.000	0.01

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	1.408	0.000	0.02
L29	74.7500-71.2500	A	1.380	0.000	0.000	12.577	0.000	0.12
		B		0.000	0.000	14.385	0.000	0.13
		C		0.000	0.000	17.720	0.000	0.28
L30	71.2500-71.0000	A	1.377	0.000	0.000	0.912	0.000	0.01
		B		0.000	0.000	1.041	0.000	0.01
		C		0.000	0.000	1.279	0.000	0.02
L31	71.0000-70.4000	A	1.376	0.000	0.000	2.187	0.000	0.02
		B		0.000	0.000	2.497	0.000	0.02
		C		0.000	0.000	3.069	0.000	0.06
L32	70.4000-70.1500	A	1.375	0.000	0.000	0.911	0.000	0.01
		B		0.000	0.000	1.040	0.000	0.01
		C		0.000	0.000	1.278	0.000	0.02
L33	70.1500-65.1500	A	1.370	0.000	0.000	18.204	0.000	0.17
		B		0.000	0.000	20.788	0.000	0.18
		C		0.000	0.000	25.541	0.000	0.47
L34	65.1500-60.1500	A	1.359	0.000	0.000	18.163	0.000	0.17
		B		0.000	0.000	20.746	0.000	0.18
		C		0.000	0.000	25.489	0.000	0.46
L35	60.1500-55.1500	A	1.348	0.000	0.000	18.117	0.000	0.17
		B		0.000	0.000	20.701	0.000	0.18
		C		0.000	0.000	25.432	0.000	0.46
L36	55.1500-50.1500	A	1.336	0.000	0.000	18.069	0.000	0.17
		B		0.000	0.000	20.652	0.000	0.18
		C		0.000	0.000	25.371	0.000	0.46
L37	50.1500-42.4100	A	1.319	0.000	0.000	25.356	0.000	0.24
		B		0.000	0.000	29.300	0.000	0.25
		C		0.000	0.000	29.412	0.000	0.62
L38	42.4100-41.4100	A	1.306	0.000	0.000	2.732	0.000	0.03
		B		0.000	0.000	2.426	0.000	0.02
		C		0.000	0.000	2.308	0.000	0.05
L39	41.4100-36.4100	A	1.296	0.000	0.000	13.550	0.000	0.13
		B		0.000	0.000	12.034	0.000	0.10
		C		0.000	0.000	11.454	0.000	0.25
L40	36.4100-36.2500	A	1.287	0.000	0.000	0.416	0.000	0.00
		B		0.000	0.000	0.367	0.000	0.00
		C		0.000	0.000	0.349	0.000	0.01
L41	36.2500-36.0000	A	1.287	0.000	0.000	0.663	0.000	0.01
		B		0.000	0.000	0.587	0.000	0.01
		C		0.000	0.000	0.551	0.000	0.01
L42	36.0000-31.2500	A	1.277	0.000	0.000	12.575	0.000	0.13
		B		0.000	0.000	11.144	0.000	0.09
		C		0.000	0.000	10.458	0.000	0.23
L43	31.2500-31.0000	A	1.268	0.000	0.000	0.689	0.000	0.01
		B		0.000	0.000	0.586	0.000	0.00
		C		0.000	0.000	0.578	0.000	0.01
L44	31.0000-26.0000	A	1.256	0.000	0.000	13.756	0.000	0.13
		B		0.000	0.000	11.699	0.000	0.10
		C		0.000	0.000	11.538	0.000	0.24
L45	26.0000-21.0000	A	1.232	0.000	0.000	13.580	0.000	0.13
		B		0.000	0.000	11.922	0.000	0.10
		C		0.000	0.000	11.773	0.000	0.24
L46	21.0000-18.5000	A	1.211	0.000	0.000	6.673	0.000	0.06
		B		0.000	0.000	6.140	0.000	0.05
		C		0.000	0.000	8.550	0.000	0.14
L47	18.5000-18.2500	A	1.202	0.000	0.000	0.666	0.000	0.01
		B		0.000	0.000	0.613	0.000	0.00
		C		0.000	0.000	0.854	0.000	0.01
L48	18.2500-15.0000	A	1.190	0.000	0.000	8.642	0.000	0.08
		B		0.000	0.000	6.548	0.000	0.05
		C		0.000	0.000	11.075	0.000	0.18
L49	15.0000-14.7500	A	1.177	0.000	0.000	0.663	0.000	0.01
		B		0.000	0.000	0.330	0.000	0.00
		C		0.000	0.000	0.850	0.000	0.01
L50	14.7500-9.7500	A	1.155	0.000	0.000	11.226	0.000	0.10
		B		0.000	0.000	6.571	0.000	0.04
		C		0.000	0.000	16.930	0.000	0.28
L51	9.7500-4.7500	A	1.096	0.000	0.000	7.433	0.000	0.07
		B		0.000	0.000	6.512	0.000	0.04

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	16.753	0.000	0.27
L52	4.7500-0.0000	A	0.980	0.000	0.000	5.486	0.000	0.05
		B		0.000	0.000	4.477	0.000	0.03
		C		0.000	0.000	11.484	0.000	0.22

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	150.0000-145.0000	0.0000	0.0000	0.0000	0.0000
L2	145.0000-140.0000	0.0000	0.0000	0.0000	0.0000
L3	140.0000-135.0000	0.0000	0.0000	0.0000	0.0000
L4	135.0000-130.0000	0.0000	0.0000	0.0000	0.0000
L5	130.0000-123.4200	0.0000	0.0000	0.0000	0.0000
L6	123.4200-122.2500	0.0000	0.0000	0.0000	0.0000
L7	122.2500-122.0000	0.0000	0.0000	0.0000	0.0000
L8	122.0000-120.2500	0.0000	0.0000	0.0000	0.0000
L9	120.2500-120.0000	0.0000	0.0000	0.0000	0.0000
L10	120.0000-115.5000	0.0000	0.0000	0.0000	0.0000
L11	115.5000-115.2500	0.0000	0.0000	0.0000	0.0000
L12	115.2500-115.0000	0.0000	0.0000	0.0000	0.0000
L13	115.0000-114.7500	0.0000	0.0000	0.0000	0.0000
L14	114.7500-109.7500	0.0000	0.0000	0.0000	0.0000
L15	109.7500-105.2500	-0.1155	0.0008	-0.2434	0.0016
L16	105.2500-105.0000	-0.2553	0.0017	-0.5312	0.0034
L17	105.0000-100.4000	-0.2537	0.0016	-0.5247	0.0034
L18	100.4000-100.1500	-0.2464	0.0016	-0.5039	0.0033
L19	100.1500-95.1500	-0.2503	0.0016	-0.5122	0.0033
L20	95.1500-90.1500	-0.2576	0.0017	-0.5274	0.0034
L21	90.1500-85.9600	-0.2940	0.0019	-0.5401	0.0035
L22	85.9600-85.0400	-0.2944	0.0019	-0.5408	0.0035
L23	85.0400-82.0000	-0.2617	0.0017	-0.4907	0.0032
L24	82.0000-81.7500	-0.2143	0.0014	-0.4477	0.0029
L25	81.7500-77.2500	-0.2172	0.0014	-0.4537	0.0029
L26	77.2500-77.0000	-0.2420	0.0016	-0.4594	0.0030
L27	77.0000-75.0000	0.4853	0.8209	0.3178	0.8814
L28	75.0000-74.7500	0.8250	1.2078	0.6955	1.2915
L29	74.7500-71.2500	0.9287	1.3594	0.7768	1.4416
L30	71.2500-71.0000	0.9063	1.3265	0.7726	1.4329
L31	71.0000-70.4000	0.9085	1.3296	0.7746	1.4364
L32	70.4000-70.1500	0.9104	1.3323	0.7764	1.4396
L33	70.1500-65.1500	0.9230	1.3506	0.7883	1.4603
L34	65.1500-60.1500	0.9466	1.3848	0.8107	1.4990
L35	60.1500-55.1500	0.9693	1.4176	0.8325	1.5364
L36	55.1500-50.1500	0.9915	1.4496	0.8540	1.5730
L37	50.1500-42.4100	1.0284	1.0069	0.8482	1.1014
L38	42.4100-41.4100	-0.3703	0.0024	-0.5030	0.0638
L39	41.4100-36.4100	-0.3762	0.0024	-0.5058	0.0641

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L40	36.4100-36.2500	-0.3925	0.0025	-0.5243	0.0663
L41	36.2500-36.0000	-0.7413	-0.1690	-0.5714	0.0407
L42	36.0000-31.2500	-0.7494	-0.1708	-0.5769	0.0399
L43	31.2500-31.0000	-0.7574	-0.1726	-0.7775	-0.0217
L44	31.0000-26.0000	-0.7658	-0.1744	-0.7835	-0.0229
L45	26.0000-21.0000	-0.5775	-0.2504	-0.6220	-0.1736
L46	21.0000-18.5000	1.8101	-0.5150	1.8302	-0.6117
L47	18.5000-18.2500	1.8180	-0.5176	1.8387	-0.6145
L48	18.2500-15.0000	1.1569	-0.7504	1.1302	-0.8673
L49	15.0000-14.7500	-0.0010	-1.1532	-0.1182	-1.3076
L50	14.7500-9.7500	0.7483	-1.7276	0.5966	-1.8633
L51	9.7500-4.7500	2.3036	-2.9185	2.0838	-3.0137
L52	4.7500-0.0000	2.3804	-3.2134	1.5889	-2.6080

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L5	69	CCI-040075 Reinforcement	123.42 - 123.75	1.0000	1.0000
L5	70	CCI-040075 Reinforcement	123.42 - 123.75	1.0000	1.0000
L5	71	CCI-040075 Reinforcement	123.42 - 123.75	1.0000	1.0000
L6	69	CCI-040075 Reinforcement	122.25 - 123.42	1.0000	1.0000
L6	70	CCI-040075 Reinforcement	122.25 - 123.42	1.0000	1.0000
L6	71	CCI-040075 Reinforcement	122.25 - 123.42	1.0000	1.0000
L7	69	CCI-040075 Reinforcement	122.00 - 122.25	1.0000	1.0000
L7	70	CCI-040075 Reinforcement	122.00 - 122.25	1.0000	1.0000
L7	71	CCI-040075 Reinforcement	122.00 - 122.25	1.0000	1.0000
L8	60	CCI-040075 Reinforcement	120.25 - 121.25	1.0000	1.0000
L8	62	CCI-040075 Reinforcement	120.25 - 121.25	1.0000	1.0000
L8	64	CCI-040075 Reinforcement	120.25 - 121.25	1.0000	1.0000
L8	69	CCI-040075 Reinforcement	120.25 - 122.00	1.0000	1.0000
L8	70	CCI-040075 Reinforcement	120.25 - 122.00	1.0000	1.0000
L8	71	CCI-040075 Reinforcement	120.25 - 122.00	1.0000	1.0000
L9	60	CCI-040075 Reinforcement	120.00 - 120.25	1.0000	1.0000
L9	62	CCI-040075 Reinforcement	120.00 - 120.25	1.0000	1.0000
L9	64	CCI-040075 Reinforcement	120.00 - 120.25	1.0000	1.0000
L9	69	CCI-040075 Reinforcement	120.00 - 120.25	1.0000	1.0000
L9	70	CCI-040075 Reinforcement	120.00 - 120.25	1.0000	1.0000
L9	71	CCI-040075 Reinforcement	120.00 - 120.25	1.0000	1.0000
L10	44	MP3-03 Reinforcement	115.50 - 116.25	1.0000	1.0000
L10	45	MP3-03 Reinforcement	115.50 - 116.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L10	46	MP3-03 Reinforcement	115.50 - 116.25	1.0000	1.0000
L10	60	CCI-040075 Reinforcement	115.50 - 120.00	1.0000	1.0000
L10	62	CCI-040075 Reinforcement	115.50 - 120.00	1.0000	1.0000
L10	64	CCI-040075 Reinforcement	115.50 - 120.00	1.0000	1.0000
L10	69	CCI-040075 Reinforcement	115.50 - 120.00	1.0000	1.0000
L10	70	CCI-040075 Reinforcement	115.50 - 120.00	1.0000	1.0000
L10	71	CCI-040075 Reinforcement	115.50 - 120.00	1.0000	1.0000
L11	44	MP3-03 Reinforcement	115.25 - 115.50	1.0000	1.0000
L11	45	MP3-03 Reinforcement	115.25 - 115.50	1.0000	1.0000
L11	46	MP3-03 Reinforcement	115.25 - 115.50	1.0000	1.0000
L11	60	CCI-040075 Reinforcement	115.25 - 115.50	1.0000	1.0000
L11	62	CCI-040075 Reinforcement	115.25 - 115.50	1.0000	1.0000
L11	64	CCI-040075 Reinforcement	115.25 - 115.50	1.0000	1.0000
L11	69	CCI-040075 Reinforcement	115.25 - 115.50	1.0000	1.0000
L11	70	CCI-040075 Reinforcement	115.25 - 115.50	1.0000	1.0000
L11	71	CCI-040075 Reinforcement	115.25 - 115.50	1.0000	1.0000
L12	44	MP3-03 Reinforcement	115.00 - 115.25	1.0000	1.0000
L12	45	MP3-03 Reinforcement	115.00 - 115.25	1.0000	1.0000
L12	46	MP3-03 Reinforcement	115.00 - 115.25	1.0000	1.0000
L12	60	CCI-040075 Reinforcement	115.00 - 115.25	1.0000	1.0000
L12	62	CCI-040075 Reinforcement	115.00 - 115.25	1.0000	1.0000
L12	64	CCI-040075 Reinforcement	115.00 - 115.25	1.0000	1.0000
L12	69	CCI-040075 Reinforcement	115.00 - 115.25	1.0000	1.0000
L12	70	CCI-040075 Reinforcement	115.00 - 115.25	1.0000	1.0000
L12	71	CCI-040075 Reinforcement	115.00 - 115.25	1.0000	1.0000
L13	44	MP3-03 Reinforcement	114.75 - 115.00	1.0000	1.0000
L13	45	MP3-03 Reinforcement	114.75 - 115.00	1.0000	1.0000
L13	46	MP3-03 Reinforcement	114.75 - 115.00	1.0000	1.0000
L13	60	CCI-040075 Reinforcement	114.75 - 115.00	1.0000	1.0000
L13	62	CCI-040075 Reinforcement	114.75 - 115.00	1.0000	1.0000
L13	64	CCI-040075 Reinforcement	114.75 - 115.00	1.0000	1.0000
L13	69	CCI-040075 Reinforcement	114.75 - 115.00	1.0000	1.0000
L13	70	CCI-040075 Reinforcement	114.75 - 115.00	1.0000	1.0000
L13	71	CCI-040075 Reinforcement	114.75 - 115.00	1.0000	1.0000
L14	44	MP3-03 Reinforcement	109.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			114.75		
L14	45	MP3-03 Reinforcement	109.75 - 114.75	1.0000	1.0000
L14	46	MP3-03 Reinforcement	109.75 - 114.75	1.0000	1.0000
L14	60	CCI-040075 Reinforcement	109.75 - 114.75	1.0000	1.0000
L14	62	CCI-040075 Reinforcement	109.75 - 114.75	1.0000	1.0000
L14	64	CCI-040075 Reinforcement	109.75 - 114.75	1.0000	1.0000
L14	69	CCI-040075 Reinforcement	113.75 - 114.75	1.0000	1.0000
L14	70	CCI-040075 Reinforcement	113.75 - 114.75	1.0000	1.0000
L14	71	CCI-040075 Reinforcement	113.75 - 114.75	1.0000	1.0000
L15	17	CU12PSM9P6XXX(1-1/2)	105.25 - 107.00	1.0000	1.0000
L15	27	FP 3.375 x 1.25 Reinforcement	105.25 - 106.50	1.0000	1.0000
L15	28	FP 3.375 x 1.25 Reinforcement	105.25 - 106.50	1.0000	1.0000
L15	29	FP 3.375 x 1.25 Reinforcement	105.25 - 106.50	1.0000	1.0000
L15	44	MP3-03 Reinforcement	105.25 - 109.75	1.0000	1.0000
L15	45	MP3-03 Reinforcement	105.25 - 109.75	1.0000	1.0000
L15	46	MP3-03 Reinforcement	105.25 - 109.75	1.0000	1.0000
L15	60	CCI-040075 Reinforcement	105.25 - 109.75	1.0000	1.0000
L15	62	CCI-040075 Reinforcement	105.25 - 109.75	1.0000	1.0000
L15	64	CCI-040075 Reinforcement	105.25 - 109.75	1.0000	1.0000
L16	17	CU12PSM9P6XXX(1-1/2)	105.00 - 105.25	1.0000	1.0000
L16	27	FP 3.375 x 1.25 Reinforcement	105.00 - 105.25	1.0000	1.0000
L16	28	FP 3.375 x 1.25 Reinforcement	105.00 - 105.25	1.0000	1.0000
L16	29	FP 3.375 x 1.25 Reinforcement	105.00 - 105.25	1.0000	1.0000
L16	44	MP3-03 Reinforcement	105.00 - 105.25	1.0000	1.0000
L16	45	MP3-03 Reinforcement	105.00 - 105.25	1.0000	1.0000
L16	46	MP3-03 Reinforcement	105.00 - 105.25	1.0000	1.0000
L16	60	CCI-040075 Reinforcement	105.00 - 105.25	1.0000	1.0000
L16	62	CCI-040075 Reinforcement	105.00 - 105.25	1.0000	1.0000
L16	64	CCI-040075 Reinforcement	105.00 - 105.25	1.0000	1.0000
L17	17	CU12PSM9P6XXX(1-1/2)	100.40 - 105.00	1.0000	1.0000
L17	24	FP 3.875 x 1.25 Reinforcement	100.40 - 101.90	1.0000	1.0000
L17	25	FP 3.875 x 1.25 Reinforcement	100.40 - 101.90	1.0000	1.0000
L17	26	FP 3.875 x 1.25 Reinforcement	100.40 - 101.90	1.0000	1.0000
L17	27	FP 3.375 x 1.25 Reinforcement	101.90 - 105.00	1.0000	1.0000
L17	28	FP 3.375 x 1.25 Reinforcement	101.90 - 105.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L17	29	FP 3.375 x 1.25 Reinforcement	101.90 - 105.00	1.0000	1.0000
L17	44	MP3-03 Reinforcement	100.40 - 105.00	1.0000	1.0000
L17	45	MP3-03 Reinforcement	100.40 - 105.00	1.0000	1.0000
L17	46	MP3-03 Reinforcement	100.40 - 105.00	1.0000	1.0000
L17	59	CCI-040075 Reinforcement	100.40 - 100.70	1.0000	1.0000
L17	60	CCI-040075 Reinforcement	100.70 - 105.00	1.0000	1.0000
L17	61	CCI-040075 Reinforcement	100.40 - 100.70	1.0000	1.0000
L17	62	CCI-040075 Reinforcement	100.70 - 105.00	1.0000	1.0000
L17	63	CCI-040075 Reinforcement	100.40 - 100.70	1.0000	1.0000
L17	64	CCI-040075 Reinforcement	100.70 - 105.00	1.0000	1.0000
L18	17	CU12PSM9P6XXX(1-1/2)	100.15 - 100.40	1.0000	1.0000
L18	24	FP 3.875 x 1.25 Reinforcement	100.15 - 100.40	1.0000	1.0000
L18	25	FP 3.875 x 1.25 Reinforcement	100.15 - 100.40	1.0000	1.0000
L18	26	FP 3.875 x 1.25 Reinforcement	100.15 - 100.40	1.0000	1.0000
L18	44	MP3-03 Reinforcement	100.15 - 100.40	1.0000	1.0000
L18	45	MP3-03 Reinforcement	100.15 - 100.40	1.0000	1.0000
L18	46	MP3-03 Reinforcement	100.15 - 100.40	1.0000	1.0000
L18	59	CCI-040075 Reinforcement	100.15 - 100.40	1.0000	1.0000
L18	61	CCI-040075 Reinforcement	100.15 - 100.40	1.0000	1.0000
L18	63	CCI-040075 Reinforcement	100.15 - 100.40	1.0000	1.0000
L19	17	CU12PSM9P6XXX(1-1/2)	95.15 - 100.15	1.0000	1.0000
L19	24	FP 3.875 x 1.25 Reinforcement	95.15 - 100.15	1.0000	1.0000
L19	25	FP 3.875 x 1.25 Reinforcement	95.15 - 100.15	1.0000	1.0000
L19	26	FP 3.875 x 1.25 Reinforcement	95.15 - 100.15	1.0000	1.0000
L19	44	MP3-03 Reinforcement	95.15 - 100.15	1.0000	1.0000
L19	45	MP3-03 Reinforcement	95.15 - 100.15	1.0000	1.0000
L19	46	MP3-03 Reinforcement	95.15 - 100.15	1.0000	1.0000
L19	59	CCI-040075 Reinforcement	95.15 - 100.15	1.0000	1.0000
L19	61	CCI-040075 Reinforcement	95.15 - 100.15	1.0000	1.0000
L19	63	CCI-040075 Reinforcement	95.15 - 100.15	1.0000	1.0000
L20	17	CU12PSM9P6XXX(1-1/2)	90.15 - 95.15	1.0000	1.0000
L20	24	FP 3.875 x 1.25 Reinforcement	90.15 - 95.15	1.0000	1.0000
L20	25	FP 3.875 x 1.25 Reinforcement	90.15 - 95.15	1.0000	1.0000
L20	26	FP 3.875 x 1.25 Reinforcement	90.15 - 95.15	1.0000	1.0000
L20	44	MP3-03 Reinforcement	90.15 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			95.15		
L20	45	MP3-03 Reinforcement	90.15 - 95.15	1.0000	1.0000
L20	46	MP3-03 Reinforcement	90.15 - 95.15	1.0000	1.0000
L20	59	CCI-040075 Reinforcement	90.15 - 95.15	1.0000	1.0000
L20	61	CCI-040075 Reinforcement	90.15 - 95.15	1.0000	1.0000
L20	63	CCI-040075 Reinforcement	90.15 - 95.15	1.0000	1.0000
L21	17	CU12PSM9P6XXX(1-1/2)	85.96 - 90.15	1.0000	1.0000
L21	24	FP 3.875 x 1.25 Reinforcement	85.96 - 90.15	1.0000	1.0000
L21	25	FP 3.875 x 1.25 Reinforcement	85.96 - 90.15	1.0000	1.0000
L21	26	FP 3.875 x 1.25 Reinforcement	85.96 - 90.15	1.0000	1.0000
L21	44	MP3-03 Reinforcement	85.96 - 90.15	1.0000	1.0000
L21	45	MP3-03 Reinforcement	85.96 - 90.15	1.0000	1.0000
L21	46	MP3-03 Reinforcement	85.96 - 90.15	1.0000	1.0000
L21	59	CCI-040075 Reinforcement	85.96 - 90.15	1.0000	1.0000
L21	61	CCI-040075 Reinforcement	85.96 - 90.15	1.0000	1.0000
L21	63	CCI-040075 Reinforcement	85.96 - 90.15	1.0000	1.0000
L22	17	CU12PSM9P6XXX(1-1/2)	85.04 - 85.96	1.0000	1.0000
L22	24	FP 3.875 x 1.25 Reinforcement	85.04 - 85.96	1.0000	1.0000
L22	25	FP 3.875 x 1.25 Reinforcement	85.04 - 85.96	1.0000	1.0000
L22	26	FP 3.875 x 1.25 Reinforcement	85.04 - 85.96	1.0000	1.0000
L22	44	MP3-03 Reinforcement	85.04 - 85.96	1.0000	1.0000
L22	45	MP3-03 Reinforcement	85.04 - 85.96	1.0000	1.0000
L22	46	MP3-03 Reinforcement	85.04 - 85.96	1.0000	1.0000
L22	59	CCI-040075 Reinforcement	85.04 - 85.96	1.0000	1.0000
L22	61	CCI-040075 Reinforcement	85.04 - 85.96	1.0000	1.0000
L22	63	CCI-040075 Reinforcement	85.04 - 85.96	1.0000	1.0000
L23	17	CU12PSM9P6XXX(1-1/2)	82.00 - 85.04	1.0000	1.0000
L23	24	FP 3.875 x 1.25 Reinforcement	82.00 - 85.04	1.0000	1.0000
L23	25	FP 3.875 x 1.25 Reinforcement	82.00 - 85.04	1.0000	1.0000
L23	26	FP 3.875 x 1.25 Reinforcement	82.00 - 85.04	1.0000	1.0000
L23	44	MP3-03 Reinforcement	82.00 - 85.04	1.0000	1.0000
L23	45	MP3-03 Reinforcement	82.00 - 85.04	1.0000	1.0000
L23	46	MP3-03 Reinforcement	82.00 - 85.04	1.0000	1.0000
L23	59	CCI-040075 Reinforcement	82.00 - 85.04	1.0000	1.0000
L23	61	CCI-040075 Reinforcement	82.00 - 85.04	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L23	63	CCI-040075 Reinforcement	82.00 - 85.04	1.0000	1.0000
L23	66	CCI-045100 Reinforcement	82.00 - 83.50	1.0000	1.0000
L23	67	CCI-045100 Reinforcement	82.00 - 83.50	1.0000	1.0000
L23	68	CCI-045100 Reinforcement	82.00 - 83.50	1.0000	1.0000
L24	17	CU12PSM9P6XXX(1-1/2)	81.75 - 82.00	1.0000	1.0000
L24	24	FP 3.875 x 1.25 Reinforcement	81.75 - 82.00	1.0000	1.0000
L24	25	FP 3.875 x 1.25 Reinforcement	81.75 - 82.00	1.0000	1.0000
L24	26	FP 3.875 x 1.25 Reinforcement	81.75 - 82.00	1.0000	1.0000
L24	44	MP3-03 Reinforcement	81.75 - 82.00	1.0000	1.0000
L24	45	MP3-03 Reinforcement	81.75 - 82.00	1.0000	1.0000
L24	46	MP3-03 Reinforcement	81.75 - 82.00	1.0000	1.0000
L24	59	CCI-040075 Reinforcement	81.75 - 82.00	1.0000	1.0000
L24	61	CCI-040075 Reinforcement	81.75 - 82.00	1.0000	1.0000
L24	63	CCI-040075 Reinforcement	81.75 - 82.00	1.0000	1.0000
L24	66	CCI-045100 Reinforcement	81.75 - 82.00	1.0000	1.0000
L24	67	CCI-045100 Reinforcement	81.75 - 82.00	1.0000	1.0000
L24	68	CCI-045100 Reinforcement	81.75 - 82.00	1.0000	1.0000
L25	17	CU12PSM9P6XXX(1-1/2)	77.25 - 81.75	1.0000	1.0000
L25	24	FP 3.875 x 1.25 Reinforcement	77.25 - 81.75	1.0000	1.0000
L25	25	FP 3.875 x 1.25 Reinforcement	77.25 - 81.75	1.0000	1.0000
L25	26	FP 3.875 x 1.25 Reinforcement	77.25 - 81.75	1.0000	1.0000
L25	44	MP3-03 Reinforcement	77.25 - 81.75	1.0000	1.0000
L25	45	MP3-03 Reinforcement	77.25 - 81.75	1.0000	1.0000
L25	46	MP3-03 Reinforcement	77.25 - 81.75	1.0000	1.0000
L25	59	CCI-040075 Reinforcement	77.25 - 81.75	1.0000	1.0000
L25	61	CCI-040075 Reinforcement	77.25 - 81.75	1.0000	1.0000
L25	63	CCI-040075 Reinforcement	77.25 - 81.75	1.0000	1.0000
L25	66	CCI-045100 Reinforcement	77.25 - 81.75	1.0000	1.0000
L25	67	CCI-045100 Reinforcement	77.25 - 81.75	1.0000	1.0000
L25	68	CCI-045100 Reinforcement	77.25 - 81.75	1.0000	1.0000
L26	17	CU12PSM9P6XXX(1-1/2)	77.00 - 77.25	1.0000	1.0000
L26	24	FP 3.875 x 1.25 Reinforcement	77.00 - 77.25	1.0000	1.0000
L26	25	FP 3.875 x 1.25 Reinforcement	77.00 - 77.25	1.0000	1.0000
L26	26	FP 3.875 x 1.25 Reinforcement	77.00 - 77.25	1.0000	1.0000
L26	44	MP3-03 Reinforcement	77.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			77.25		
L26	45	MP3-03 Reinforcement	77.00 - 77.25	1.0000	1.0000
L26	46	MP3-03 Reinforcement	77.00 - 77.25	1.0000	1.0000
L26	59	CCI-040075 Reinforcement	77.00 - 77.25	1.0000	1.0000
L26	61	CCI-040075 Reinforcement	77.00 - 77.25	1.0000	1.0000
L26	63	CCI-040075 Reinforcement	77.00 - 77.25	1.0000	1.0000
L26	66	CCI-045100 Reinforcement	77.00 - 77.25	1.0000	1.0000
L26	67	CCI-045100 Reinforcement	77.00 - 77.25	1.0000	1.0000
L26	68	CCI-045100 Reinforcement	77.00 - 77.25	1.0000	1.0000
L27	17	CU12PSM9P6XXX(1-1/2)	75.00 - 77.00	1.0000	1.0000
L27	24	FP 3.875 x 1.25 Reinforcement	75.00 - 77.00	1.0000	1.0000
L27	25	FP 3.875 x 1.25 Reinforcement	75.00 - 77.00	1.0000	1.0000
L27	26	FP 3.875 x 1.25 Reinforcement	75.00 - 77.00	1.0000	1.0000
L27	31	MP3-03 Reinforcement	75.00 - 76.00	1.0000	1.0000
L27	32	MP3-03 Reinforcement	75.00 - 76.00	1.0000	1.0000
L27	33	MP3-03 Reinforcement	75.00 - 76.00	1.0000	1.0000
L27	41	MP3-03 Reinforcement	75.00 - 76.25	1.0000	1.0000
L27	42	MP3-03 Reinforcement	75.00 - 76.25	1.0000	1.0000
L27	43	MP3-03 Reinforcement	75.00 - 76.25	1.0000	1.0000
L27	44	MP3-03 Reinforcement	76.25 - 77.00	1.0000	1.0000
L27	45	MP3-03 Reinforcement	76.25 - 77.00	1.0000	1.0000
L27	46	MP3-03 Reinforcement	76.25 - 77.00	1.0000	1.0000
L27	59	CCI-040075 Reinforcement	75.00 - 77.00	1.0000	1.0000
L27	61	CCI-040075 Reinforcement	75.00 - 77.00	1.0000	1.0000
L27	63	CCI-040075 Reinforcement	75.00 - 77.00	1.0000	1.0000
L27	66	CCI-045100 Reinforcement	75.00 - 77.00	1.0000	1.0000
L27	67	CCI-045100 Reinforcement	75.00 - 77.00	1.0000	1.0000
L27	68	CCI-045100 Reinforcement	75.00 - 77.00	1.0000	1.0000
L28	17	CU12PSM9P6XXX(1-1/2)	74.75 - 75.00	1.0000	1.0000
L28	24	FP 3.875 x 1.25 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	25	FP 3.875 x 1.25 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	26	FP 3.875 x 1.25 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	31	MP3-03 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	32	MP3-03 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	33	MP3-03 Reinforcement	74.75 - 75.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L28	41	MP3-03 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	42	MP3-03 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	43	MP3-03 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	59	CCI-040075 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	61	CCI-040075 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	63	CCI-040075 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	66	CCI-045100 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	67	CCI-045100 Reinforcement	74.75 - 75.00	1.0000	1.0000
L28	68	CCI-045100 Reinforcement	74.75 - 75.00	1.0000	1.0000
L29	17	CU12PSM9P6XXX(1-1/2)	71.25 - 74.75	1.0000	1.0000
L29	21	FP 4.25 x 1.25 Reinforcement	71.25 - 72.15	1.0000	1.0000
L29	22	FP 4.25 x 1.25 Reinforcement	71.25 - 72.15	1.0000	1.0000
L29	23	FP 4.25 x 1.25 Reinforcement	71.25 - 72.15	1.0000	1.0000
L29	24	FP 3.875 x 1.25 Reinforcement	72.15 - 74.75	1.0000	1.0000
L29	25	FP 3.875 x 1.25 Reinforcement	72.15 - 74.75	1.0000	1.0000
L29	26	FP 3.875 x 1.25 Reinforcement	72.15 - 74.75	1.0000	1.0000
L29	31	MP3-03 Reinforcement	71.25 - 74.75	1.0000	1.0000
L29	32	MP3-03 Reinforcement	71.25 - 74.75	1.0000	1.0000
L29	33	MP3-03 Reinforcement	71.25 - 74.75	1.0000	1.0000
L29	41	MP3-03 Reinforcement	71.25 - 74.75	1.0000	1.0000
L29	42	MP3-03 Reinforcement	71.25 - 74.75	1.0000	1.0000
L29	43	MP3-03 Reinforcement	71.25 - 74.75	1.0000	1.0000
L29	59	CCI-040075 Reinforcement	71.25 - 74.75	1.0000	1.0000
L29	61	CCI-040075 Reinforcement	71.25 - 74.75	1.0000	1.0000
L29	63	CCI-040075 Reinforcement	71.25 - 74.75	1.0000	1.0000
L29	66	CCI-045100 Reinforcement	73.50 - 74.75	1.0000	1.0000
L29	67	CCI-045100 Reinforcement	73.50 - 74.75	1.0000	1.0000
L29	68	CCI-045100 Reinforcement	73.50 - 74.75	1.0000	1.0000
L30	17	CU12PSM9P6XXX(1-1/2)	71.00 - 71.25	1.0000	1.0000
L30	21	FP 4.25 x 1.25 Reinforcement	71.00 - 71.25	1.0000	1.0000
L30	22	FP 4.25 x 1.25 Reinforcement	71.00 - 71.25	1.0000	1.0000
L30	23	FP 4.25 x 1.25 Reinforcement	71.00 - 71.25	1.0000	1.0000
L30	31	MP3-03 Reinforcement	71.00 - 71.25	1.0000	1.0000
L30	32	MP3-03 Reinforcement	71.00 - 71.25	1.0000	1.0000
L30	33	MP3-03 Reinforcement	71.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			71.25		
L30	41	MP3-03 Reinforcement	71.00 - 71.25	1.0000	1.0000
L30	42	MP3-03 Reinforcement	71.00 - 71.25	1.0000	1.0000
L30	43	MP3-03 Reinforcement	71.00 - 71.25	1.0000	1.0000
L30	54	CCI-060100 Reinforcement	71.00 - 71.25	1.0000	1.0000
L30	56	CCI-060100 Reinforcement	71.00 - 71.25	1.0000	1.0000
L30	58	CCI-060100 Reinforcement	71.00 - 71.25	1.0000	1.0000
L31	17	CU12PSM9P6XXX(1-1/2)	70.40 - 71.00	1.0000	1.0000
L31	21	FP 4.25 x 1.25 Reinforcement	70.40 - 71.00	1.0000	1.0000
L31	22	FP 4.25 x 1.25 Reinforcement	70.40 - 71.00	1.0000	1.0000
L31	23	FP 4.25 x 1.25 Reinforcement	70.40 - 71.00	1.0000	1.0000
L31	31	MP3-03 Reinforcement	70.40 - 71.00	1.0000	1.0000
L31	32	MP3-03 Reinforcement	70.40 - 71.00	1.0000	1.0000
L31	33	MP3-03 Reinforcement	70.40 - 71.00	1.0000	1.0000
L31	41	MP3-03 Reinforcement	70.40 - 71.00	1.0000	1.0000
L31	42	MP3-03 Reinforcement	70.40 - 71.00	1.0000	1.0000
L31	43	MP3-03 Reinforcement	70.40 - 71.00	1.0000	1.0000
L31	54	CCI-060100 Reinforcement	70.40 - 71.00	1.0000	1.0000
L31	56	CCI-060100 Reinforcement	70.40 - 71.00	1.0000	1.0000
L31	58	CCI-060100 Reinforcement	70.40 - 71.00	1.0000	1.0000
L32	17	CU12PSM9P6XXX(1-1/2)	70.15 - 70.40	1.0000	1.0000
L32	21	FP 4.25 x 1.25 Reinforcement	70.15 - 70.40	1.0000	1.0000
L32	22	FP 4.25 x 1.25 Reinforcement	70.15 - 70.40	1.0000	1.0000
L32	23	FP 4.25 x 1.25 Reinforcement	70.15 - 70.40	1.0000	1.0000
L32	31	MP3-03 Reinforcement	70.15 - 70.40	1.0000	1.0000
L32	32	MP3-03 Reinforcement	70.15 - 70.40	1.0000	1.0000
L32	33	MP3-03 Reinforcement	70.15 - 70.40	1.0000	1.0000
L32	41	MP3-03 Reinforcement	70.15 - 70.40	1.0000	1.0000
L32	42	MP3-03 Reinforcement	70.15 - 70.40	1.0000	1.0000
L32	43	MP3-03 Reinforcement	70.15 - 70.40	1.0000	1.0000
L32	54	CCI-060100 Reinforcement	70.15 - 70.40	1.0000	1.0000
L32	56	CCI-060100 Reinforcement	70.15 - 70.40	1.0000	1.0000
L32	58	CCI-060100 Reinforcement	70.15 - 70.40	1.0000	1.0000
L33	17	CU12PSM9P6XXX(1-1/2)	65.15 - 70.15	1.0000	1.0000
L33	21	FP 4.25 x 1.25 Reinforcement	65.15 - 70.15	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L33	22	FP 4.25 x 1.25 Reinforcement	65.15 - 70.15	1.0000	1.0000
L33	23	FP 4.25 x 1.25 Reinforcement	65.15 - 70.15	1.0000	1.0000
L33	31	MP3-03 Reinforcement	65.15 - 70.15	1.0000	1.0000
L33	32	MP3-03 Reinforcement	65.15 - 70.15	1.0000	1.0000
L33	33	MP3-03 Reinforcement	65.15 - 70.15	1.0000	1.0000
L33	41	MP3-03 Reinforcement	65.15 - 70.15	1.0000	1.0000
L33	42	MP3-03 Reinforcement	65.15 - 70.15	1.0000	1.0000
L33	43	MP3-03 Reinforcement	65.15 - 70.15	1.0000	1.0000
L33	54	CCI-060100 Reinforcement	65.15 - 70.15	1.0000	1.0000
L33	56	CCI-060100 Reinforcement	65.15 - 70.15	1.0000	1.0000
L33	58	CCI-060100 Reinforcement	65.15 - 70.15	1.0000	1.0000
L34	17	CU12PSM9P6XXX(1-1/2)	60.15 - 65.15	1.0000	1.0000
L34	21	FP 4.25 x 1.25 Reinforcement	60.15 - 65.15	1.0000	1.0000
L34	22	FP 4.25 x 1.25 Reinforcement	60.15 - 65.15	1.0000	1.0000
L34	23	FP 4.25 x 1.25 Reinforcement	60.15 - 65.15	1.0000	1.0000
L34	31	MP3-03 Reinforcement	60.15 - 65.15	1.0000	1.0000
L34	32	MP3-03 Reinforcement	60.15 - 65.15	1.0000	1.0000
L34	33	MP3-03 Reinforcement	60.15 - 65.15	1.0000	1.0000
L34	41	MP3-03 Reinforcement	60.15 - 65.15	1.0000	1.0000
L34	42	MP3-03 Reinforcement	60.15 - 65.15	1.0000	1.0000
L34	43	MP3-03 Reinforcement	60.15 - 65.15	1.0000	1.0000
L34	54	CCI-060100 Reinforcement	60.15 - 65.15	1.0000	1.0000
L34	56	CCI-060100 Reinforcement	60.15 - 65.15	1.0000	1.0000
L34	58	CCI-060100 Reinforcement	60.15 - 65.15	1.0000	1.0000
L35	17	CU12PSM9P6XXX(1-1/2)	55.15 - 60.15	1.0000	1.0000
L35	21	FP 4.25 x 1.25 Reinforcement	55.15 - 60.15	1.0000	1.0000
L35	22	FP 4.25 x 1.25 Reinforcement	55.15 - 60.15	1.0000	1.0000
L35	23	FP 4.25 x 1.25 Reinforcement	55.15 - 60.15	1.0000	1.0000
L35	31	MP3-03 Reinforcement	55.15 - 60.15	1.0000	1.0000
L35	32	MP3-03 Reinforcement	55.15 - 60.15	1.0000	1.0000
L35	33	MP3-03 Reinforcement	55.15 - 60.15	1.0000	1.0000
L35	41	MP3-03 Reinforcement	55.15 - 60.15	1.0000	1.0000
L35	42	MP3-03 Reinforcement	55.15 - 60.15	1.0000	1.0000
L35	43	MP3-03 Reinforcement	55.15 - 60.15	1.0000	1.0000
L35	54	CCI-060100	55.15 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		Reinforcement	60.15		
L35	56	CCI-060100 Reinforcement	55.15 - 60.15	1.0000	1.0000
L35	58	CCI-060100 Reinforcement	55.15 - 60.15	1.0000	1.0000
L36	17	CU12PSM9P6XXX(1-1/2)	50.15 - 55.15	1.0000	1.0000
L36	21	FP 4.25 x 1.25 Reinforcement	50.15 - 55.15	1.0000	1.0000
L36	22	FP 4.25 x 1.25 Reinforcement	50.15 - 55.15	1.0000	1.0000
L36	23	FP 4.25 x 1.25 Reinforcement	50.15 - 55.15	1.0000	1.0000
L36	31	MP3-03 Reinforcement	50.15 - 55.15	1.0000	1.0000
L36	32	MP3-03 Reinforcement	50.15 - 55.15	1.0000	1.0000
L36	33	MP3-03 Reinforcement	50.15 - 55.15	1.0000	1.0000
L36	41	MP3-03 Reinforcement	50.15 - 55.15	1.0000	1.0000
L36	42	MP3-03 Reinforcement	50.15 - 55.15	1.0000	1.0000
L36	43	MP3-03 Reinforcement	50.15 - 55.15	1.0000	1.0000
L36	54	CCI-060100 Reinforcement	50.15 - 55.15	1.0000	1.0000
L36	56	CCI-060100 Reinforcement	50.15 - 55.15	1.0000	1.0000
L36	58	CCI-060100 Reinforcement	50.15 - 55.15	1.0000	1.0000
L37	17	CU12PSM9P6XXX(1-1/2)	42.41 - 50.15	1.0000	1.0000
L37	21	FP 4.25 x 1.25 Reinforcement	42.41 - 50.15	1.0000	1.0000
L37	22	FP 4.25 x 1.25 Reinforcement	42.41 - 50.15	1.0000	1.0000
L37	23	FP 4.25 x 1.25 Reinforcement	42.41 - 50.15	1.0000	1.0000
L37	31	MP3-03 Reinforcement	46.00 - 50.15	1.0000	1.0000
L37	32	MP3-03 Reinforcement	46.00 - 50.15	1.0000	1.0000
L37	33	MP3-03 Reinforcement	46.00 - 50.15	1.0000	1.0000
L37	36	MP3-05 Reinforcement	42.41 - 46.25	1.0000	1.0000
L37	39	MP3-05 Reinforcement	42.41 - 43.25	1.0000	1.0000
L37	40	MP3-05 Reinforcement	42.41 - 43.25	1.0000	1.0000
L37	41	MP3-03 Reinforcement	46.25 - 50.15	1.0000	1.0000
L37	42	MP3-03 Reinforcement	46.25 - 50.15	1.0000	1.0000
L37	43	MP3-03 Reinforcement	46.25 - 50.15	1.0000	1.0000
L37	54	CCI-060100 Reinforcement	42.41 - 50.15	1.0000	1.0000
L37	56	CCI-060100 Reinforcement	42.41 - 50.15	1.0000	1.0000
L37	58	CCI-060100 Reinforcement	42.41 - 50.15	1.0000	1.0000
L38	17	CU12PSM9P6XXX(1-1/2)	41.41 - 42.41	1.0000	1.0000
L38	21	FP 4.25 x 1.25 Reinforcement	42.40 - 42.41	1.0000	1.0000
L38	22	FP 4.25 x 1.25 Reinforcement	42.40 - 42.41	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L38	23	FP 4.25 x 1.25 Reinforcement	42.40 - 42.41	1.0000	1.0000
L38	36	MP3-05 Reinforcement	41.41 - 42.41	1.0000	1.0000
L38	39	MP3-05 Reinforcement	41.41 - 42.41	1.0000	1.0000
L38	40	MP3-05 Reinforcement	41.41 - 42.41	1.0000	1.0000
L38	54	CCI-060100 Reinforcement	41.41 - 42.41	1.0000	1.0000
L38	56	CCI-060100 Reinforcement	41.41 - 42.41	1.0000	1.0000
L38	58	CCI-060100 Reinforcement	41.41 - 42.41	1.0000	1.0000
L39	17	CU12PSM9P6XXX(1-1/2)	36.41 - 41.41	1.0000	1.0000
L39	36	MP3-05 Reinforcement	36.41 - 41.41	1.0000	1.0000
L39	39	MP3-05 Reinforcement	36.41 - 41.41	1.0000	1.0000
L39	40	MP3-05 Reinforcement	36.41 - 41.41	1.0000	1.0000
L39	54	CCI-060100 Reinforcement	36.41 - 41.41	1.0000	1.0000
L39	56	CCI-060100 Reinforcement	36.41 - 41.41	1.0000	1.0000
L39	58	CCI-060100 Reinforcement	36.41 - 41.41	1.0000	1.0000
L40	17	CU12PSM9P6XXX(1-1/2)	36.25 - 36.41	1.0000	1.0000
L40	36	MP3-05 Reinforcement	36.25 - 36.41	1.0000	1.0000
L40	39	MP3-05 Reinforcement	36.25 - 36.41	1.0000	1.0000
L40	40	MP3-05 Reinforcement	36.25 - 36.41	1.0000	1.0000
L40	53	CCI-060100 Reinforcement	36.25 - 36.28	1.0000	1.0000
L40	54	CCI-060100 Reinforcement	36.28 - 36.41	1.0000	1.0000
L40	55	CCI-060100 Reinforcement	36.25 - 36.28	1.0000	1.0000
L40	56	CCI-060100 Reinforcement	36.28 - 36.41	1.0000	1.0000
L40	57	CCI-060100 Reinforcement	36.25 - 36.28	1.0000	1.0000
L40	58	CCI-060100 Reinforcement	36.28 - 36.41	1.0000	1.0000
L41	17	CU12PSM9P6XXX(1-1/2)	36.00 - 36.25	1.0000	1.0000
L41	36	MP3-05 Reinforcement	36.00 - 36.25	1.0000	1.0000
L41	39	MP3-05 Reinforcement	36.00 - 36.25	1.0000	1.0000
L41	40	MP3-05 Reinforcement	36.00 - 36.25	1.0000	1.0000
L41	48	FP 5.50 x 1.25 Reinforcement	36.00 - 36.25	1.0000	1.0000
L41	50	CCI-065125 Reinforcement	36.00 - 36.25	1.0000	1.0000
L41	52	CCI-065125 Reinforcement	36.00 - 36.25	1.0000	1.0000
L42	17	CU12PSM9P6XXX(1-1/2)	31.25 - 36.00	1.0000	1.0000
L42	36	MP3-05 Reinforcement	31.25 - 36.00	1.0000	1.0000
L42	39	MP3-05 Reinforcement	31.25 - 36.00	1.0000	1.0000
L42	40	MP3-05 Reinforcement	31.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			36.00		
L42	48	FP 5.50 x 1.25 Reinforcement	31.25 - 36.00	1.0000	1.0000
L42	50	CCI-065125 Reinforcement	31.25 - 36.00	1.0000	1.0000
L42	52	CCI-065125 Reinforcement	31.25 - 36.00	1.0000	1.0000
L43	17	CU12PSM9P6XXX(1-1/2)	31.00 - 31.25	1.0000	1.0000
L43	36	MP3-05 Reinforcement	31.00 - 31.25	1.0000	1.0000
L43	37	MP3-05 Reinforcement	31.00 - 31.25	1.0000	1.0000
L43	38	MP3-05 Reinforcement	31.00 - 31.25	1.0000	1.0000
L43	48	FP 5.50 x 1.25 Reinforcement	31.00 - 31.25	1.0000	1.0000
L43	50	CCI-065125 Reinforcement	31.00 - 31.25	1.0000	1.0000
L43	52	CCI-065125 Reinforcement	31.00 - 31.25	1.0000	1.0000
L44	17	CU12PSM9P6XXX(1-1/2)	26.00 - 31.00	1.0000	1.0000
L44	36	MP3-05 Reinforcement	26.00 - 31.00	1.0000	1.0000
L44	37	MP3-05 Reinforcement	26.00 - 31.00	1.0000	1.0000
L44	38	MP3-05 Reinforcement	26.00 - 31.00	1.0000	1.0000
L44	48	FP 5.50 x 1.25 Reinforcement	26.00 - 31.00	1.0000	1.0000
L44	50	CCI-065125 Reinforcement	26.00 - 31.00	1.0000	1.0000
L44	52	CCI-065125 Reinforcement	26.00 - 31.00	1.0000	1.0000
L45	17	CU12PSM9P6XXX(1-1/2)	21.00 - 26.00	1.0000	1.0000
L45	35	MP3-05 Reinforcement	21.00 - 21.25	1.0000	1.0000
L45	36	MP3-05 Reinforcement	21.00 - 26.00	1.0000	1.0000
L45	37	MP3-05 Reinforcement	21.00 - 26.00	1.0000	1.0000
L45	38	MP3-05 Reinforcement	21.00 - 26.00	1.0000	1.0000
L45	48	FP 5.50 x 1.25 Reinforcement	21.00 - 26.00	1.0000	1.0000
L45	49	CCI-065125 Reinforcement	21.00 - 22.96	1.0000	1.0000
L45	50	CCI-065125 Reinforcement	22.96 - 26.00	1.0000	1.0000
L45	51	CCI-065125 Reinforcement	21.00 - 22.96	1.0000	1.0000
L45	52	CCI-065125 Reinforcement	22.96 - 26.00	1.0000	1.0000
L46	17	CU12PSM9P6XXX(1-1/2)	18.50 - 21.00	1.0000	1.0000
L46	35	MP3-05 Reinforcement	18.50 - 21.00	1.0000	1.0000
L46	36	MP3-05 Reinforcement	18.50 - 21.00	1.0000	1.0000
L46	37	MP3-05 Reinforcement	18.50 - 21.00	1.0000	1.0000
L46	38	MP3-05 Reinforcement	18.50 - 21.00	1.0000	1.0000
L46	48	FP 5.50 x 1.25 Reinforcement	18.50 - 21.00	1.0000	1.0000
L46	49	CCI-065125 Reinforcement	18.50 - 21.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L46	51	CCI-065125 Reinforcement	18.50 - 21.00	1.0000	1.0000
L47	17	CU12PSM9P6XXX(1-1/2)	18.25 - 18.50	1.0000	1.0000
L47	35	MP3-05 Reinforcement	18.25 - 18.50	1.0000	1.0000
L47	36	MP3-05 Reinforcement	18.25 - 18.50	1.0000	1.0000
L47	37	MP3-05 Reinforcement	18.25 - 18.50	1.0000	1.0000
L47	38	MP3-05 Reinforcement	18.25 - 18.50	1.0000	1.0000
L47	48	FP 5.50 x 1.25 Reinforcement	18.25 - 18.50	1.0000	1.0000
L47	49	CCI-065125 Reinforcement	18.25 - 18.50	1.0000	1.0000
L47	51	CCI-065125 Reinforcement	18.25 - 18.50	1.0000	1.0000
L48	17	CU12PSM9P6XXX(1-1/2)	15.00 - 18.25	1.0000	1.0000
L48	35	MP3-05 Reinforcement	15.00 - 18.25	1.0000	1.0000
L48	36	MP3-05 Reinforcement	16.25 - 18.25	1.0000	1.0000
L48	37	MP3-05 Reinforcement	15.00 - 18.25	1.0000	1.0000
L48	38	MP3-05 Reinforcement	15.00 - 18.25	1.0000	1.0000
L48	48	FP 5.50 x 1.25 Reinforcement	15.00 - 18.25	1.0000	1.0000
L48	49	CCI-065125 Reinforcement	15.00 - 18.25	1.0000	1.0000
L48	51	CCI-065125 Reinforcement	15.00 - 18.25	1.0000	1.0000
L49	17	CU12PSM9P6XXX(1-1/2)	14.75 - 15.00	1.0000	1.0000
L49	35	MP3-05 Reinforcement	14.75 - 15.00	1.0000	1.0000
L49	37	MP3-05 Reinforcement	14.75 - 15.00	1.0000	1.0000
L49	38	MP3-05 Reinforcement	14.75 - 15.00	1.0000	1.0000
L49	48	FP 5.50 x 1.25 Reinforcement	14.75 - 15.00	1.0000	1.0000
L49	49	CCI-065125 Reinforcement	14.75 - 15.00	1.0000	1.0000
L49	51	CCI-065125 Reinforcement	14.75 - 15.00	1.0000	1.0000
L50	17	CU12PSM9P6XXX(1-1/2)	9.75 - 14.75	1.0000	1.0000
L50	35	MP3-05 Reinforcement	9.75 - 14.75	1.0000	1.0000
L50	37	MP3-05 Reinforcement	9.75 - 14.75	1.0000	1.0000
L50	38	MP3-05 Reinforcement	9.75 - 14.75	1.0000	1.0000
L50	48	FP 5.50 x 1.25 Reinforcement	9.75 - 14.75	1.0000	1.0000
L50	49	CCI-065125 Reinforcement	9.75 - 14.75	1.0000	1.0000
L50	51	CCI-065125 Reinforcement	11.50 - 14.75	1.0000	1.0000
L51	17	CU12PSM9P6XXX(1-1/2)	4.75 - 9.75	1.0000	1.0000
L51	35	MP3-05 Reinforcement	4.75 - 9.75	1.0000	1.0000
L51	37	MP3-05 Reinforcement	4.75 - 9.75	1.0000	1.0000
L51	38	MP3-05 Reinforcement	4.75 - 9.75	1.0000	1.0000
L51	48	FP 5.50 x 1.25 Reinforcement	4.75 - 9.75	1.0000	1.0000
L51	49	CCI-065125 Reinforcement	4.75 - 9.75	1.0000	1.0000
L52	17	CU12PSM9P6XXX(1-1/2)	0.00 - 4.75	1.0000	1.0000
L52	35	MP3-05 Reinforcement	1.25 - 4.75	1.0000	1.0000
L52	37	MP3-05 Reinforcement	1.25 - 4.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L52	38	MP3-05 Reinforcement	1.25 - 4.75	1.0000	1.0000
L52	48	FP 5.50 x 1.25 Reinforcement	1.25 - 4.75	1.0000	1.0000
L52	49	CCI-065125 Reinforcement	1.25 - 4.75	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
L5	69	CCI-040075 Reinforcement	123.42 - 123.75	Auto	0.1715
L5	70	CCI-040075 Reinforcement	123.42 - 123.75	Auto	0.1715
L5	71	CCI-040075 Reinforcement	123.42 - 123.75	Auto	0.1715
L6	69	CCI-040075 Reinforcement	122.25 - 123.42	Auto	0.2089
L6	70	CCI-040075 Reinforcement	122.25 - 123.42	Auto	0.2089
L6	71	CCI-040075 Reinforcement	122.25 - 123.42	Auto	0.2089
L7	69	CCI-040075 Reinforcement	122.00 - 122.25	Auto	0.2738
L7	70	CCI-040075 Reinforcement	122.00 - 122.25	Auto	0.2738
L7	71	CCI-040075 Reinforcement	122.00 - 122.25	Auto	0.2738
L8	60	CCI-040075 Reinforcement	120.25 - 121.25	Auto	0.2609
L8	62	CCI-040075 Reinforcement	120.25 - 121.25	Auto	0.2609
L8	64	CCI-040075 Reinforcement	120.25 - 121.25	Auto	0.2609
L8	69	CCI-040075 Reinforcement	120.25 - 122.00	Auto	0.2644
L8	70	CCI-040075 Reinforcement	120.25 - 122.00	Auto	0.2644
L8	71	CCI-040075 Reinforcement	120.25 - 122.00	Auto	0.2644
L9	60	CCI-040075 Reinforcement	120.00 - 120.25	Auto	0.3266
L9	62	CCI-040075 Reinforcement	120.00 - 120.25	Auto	0.3266
L9	64	CCI-040075 Reinforcement	120.00 - 120.25	Auto	0.3266
L9	69	CCI-040075 Reinforcement	120.00 - 120.25	Auto	0.3266
L9	70	CCI-040075 Reinforcement	120.00 - 120.25	Auto	0.3266
L9	71	CCI-040075 Reinforcement	120.00 - 120.25	Auto	0.3266
L10	44	MP3-03 Reinforcement	115.50 - 116.25	Manual	1.0000
L10	45	MP3-03 Reinforcement	115.50 - 116.25	Manual	1.0000
L10	46	MP3-03 Reinforcement	115.50 - 116.25	Manual	1.0000
L10	60	CCI-040075 Reinforcement	115.50 - 120.00	Auto	0.2989
L10	62	CCI-040075 Reinforcement	115.50 - 120.00	Auto	0.2989
L10	64	CCI-040075 Reinforcement	115.50 - 120.00	Auto	0.2989

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L10	69	CCI-040075 Reinforcement	115.50 - 120.00	Auto	0.2989
L10	70	CCI-040075 Reinforcement	115.50 - 120.00	Auto	0.2989
L10	71	CCI-040075 Reinforcement	115.50 - 120.00	Auto	0.2989
L11	44	MP3-03 Reinforcement	115.25 - 115.50	Manual	1.0000
L11	45	MP3-03 Reinforcement	115.25 - 115.50	Manual	1.0000
L11	46	MP3-03 Reinforcement	115.25 - 115.50	Manual	1.0000
L11	60	CCI-040075 Reinforcement	115.25 - 115.50	Auto	0.2051
L11	62	CCI-040075 Reinforcement	115.25 - 115.50	Auto	0.2051
L11	64	CCI-040075 Reinforcement	115.25 - 115.50	Auto	0.2051
L11	69	CCI-040075 Reinforcement	115.25 - 115.50	Auto	0.2051
L11	70	CCI-040075 Reinforcement	115.25 - 115.50	Auto	0.2051
L11	71	CCI-040075 Reinforcement	115.25 - 115.50	Auto	0.2051
L12	44	MP3-03 Reinforcement	115.00 - 115.25	Manual	1.0000
L12	45	MP3-03 Reinforcement	115.00 - 115.25	Manual	1.0000
L12	46	MP3-03 Reinforcement	115.00 - 115.25	Manual	1.0000
L12	60	CCI-040075 Reinforcement	115.00 - 115.25	Auto	0.2028
L12	62	CCI-040075 Reinforcement	115.00 - 115.25	Auto	0.2028
L12	64	CCI-040075 Reinforcement	115.00 - 115.25	Auto	0.2028
L12	69	CCI-040075 Reinforcement	115.00 - 115.25	Auto	0.2028
L12	70	CCI-040075 Reinforcement	115.00 - 115.25	Auto	0.2028
L12	71	CCI-040075 Reinforcement	115.00 - 115.25	Auto	0.2028
L13	44	MP3-03 Reinforcement	114.75 - 115.00	Manual	1.0000
L13	45	MP3-03 Reinforcement	114.75 - 115.00	Manual	1.0000
L13	46	MP3-03 Reinforcement	114.75 - 115.00	Manual	1.0000
L13	60	CCI-040075 Reinforcement	114.75 - 115.00	Auto	0.2665
L13	62	CCI-040075 Reinforcement	114.75 - 115.00	Auto	0.2665
L13	64	CCI-040075 Reinforcement	114.75 - 115.00	Auto	0.2665
L13	69	CCI-040075 Reinforcement	114.75 - 115.00	Auto	0.2665
L13	70	CCI-040075 Reinforcement	114.75 - 115.00	Auto	0.2665
L13	71	CCI-040075 Reinforcement	114.75 - 115.00	Auto	0.2665
L14	44	MP3-03 Reinforcement	109.75 - 114.75	Manual	1.0000
L14	45	MP3-03 Reinforcement	109.75 - 114.75	Manual	1.0000
L14	46	MP3-03 Reinforcement	109.75 - 114.75	Manual	1.0000
L14	60	CCI-040075 Reinforcement	109.75 - 114.75	Auto	0.2364

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L14	62	CCI-040075 Reinforcement	109.75 - 114.75	Auto	0.2364
L14	64	CCI-040075 Reinforcement	109.75 - 114.75	Auto	0.2364
L14	69	CCI-040075 Reinforcement	113.75 - 114.75	Auto	0.2551
L14	70	CCI-040075 Reinforcement	113.75 - 114.75	Auto	0.2551
L14	71	CCI-040075 Reinforcement	113.75 - 114.75	Auto	0.2551
L15	27	FP 3.375 x 1.25 Reinforcement	105.25 - 106.50	Auto	0.0178
L15	28	FP 3.375 x 1.25 Reinforcement	105.25 - 106.50	Auto	0.0178
L15	29	FP 3.375 x 1.25 Reinforcement	105.25 - 106.50	Auto	0.0178
L15	44	MP3-03 Reinforcement	105.25 - 109.75	Manual	1.0000
L15	45	MP3-03 Reinforcement	105.25 - 109.75	Manual	1.0000
L15	46	MP3-03 Reinforcement	105.25 - 109.75	Manual	1.0000
L15	60	CCI-040075 Reinforcement	105.25 - 109.75	Auto	0.1865
L15	62	CCI-040075 Reinforcement	105.25 - 109.75	Auto	0.1865
L15	64	CCI-040075 Reinforcement	105.25 - 109.75	Auto	0.1865
L16	27	FP 3.375 x 1.25 Reinforcement	105.00 - 105.25	Auto	0.1203
L16	28	FP 3.375 x 1.25 Reinforcement	105.00 - 105.25	Auto	0.1203
L16	29	FP 3.375 x 1.25 Reinforcement	105.00 - 105.25	Auto	0.1203
L16	44	MP3-03 Reinforcement	105.00 - 105.25	Manual	1.0000
L16	45	MP3-03 Reinforcement	105.00 - 105.25	Manual	1.0000
L16	46	MP3-03 Reinforcement	105.00 - 105.25	Manual	1.0000
L16	60	CCI-040075 Reinforcement	105.00 - 105.25	Auto	0.2577
L16	62	CCI-040075 Reinforcement	105.00 - 105.25	Auto	0.2577
L16	64	CCI-040075 Reinforcement	105.00 - 105.25	Auto	0.2577
L17	24	FP 3.875 x 1.25 Reinforcement	100.40 - 101.90	Auto	0.1840
L17	25	FP 3.875 x 1.25 Reinforcement	100.40 - 101.90	Auto	0.1840
L17	26	FP 3.875 x 1.25 Reinforcement	100.40 - 101.90	Auto	0.1840
L17	27	FP 3.375 x 1.25 Reinforcement	101.90 - 105.00	Auto	0.0887
L17	28	FP 3.375 x 1.25 Reinforcement	101.90 - 105.00	Auto	0.0887
L17	29	FP 3.375 x 1.25 Reinforcement	101.90 - 105.00	Auto	0.0887
L17	44	MP3-03 Reinforcement	100.40 - 105.00	Manual	1.0000
L17	45	MP3-03 Reinforcement	100.40 - 105.00	Manual	1.0000
L17	46	MP3-03 Reinforcement	100.40 - 105.00	Manual	1.0000
L17	59	CCI-040075 Reinforcement	100.40 - 100.70	Auto	0.2039
L17	60	CCI-040075 Reinforcement	100.70 - 105.00	Auto	0.2255

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L17	61	CCI-040075 Reinforcement	100.40 - 100.70	Auto	0.2039
L17	62	CCI-040075 Reinforcement	100.70 - 105.00	Auto	0.2255
L17	63	CCI-040075 Reinforcement	100.40 - 100.70	Auto	0.2039
L17	64	CCI-040075 Reinforcement	100.70 - 105.00	Auto	0.2255
L18	24	FP 3.875 x 1.25 Reinforcement	100.15 - 100.40	Auto	0.1869
L18	25	FP 3.875 x 1.25 Reinforcement	100.15 - 100.40	Auto	0.1869
L18	26	FP 3.875 x 1.25 Reinforcement	100.15 - 100.40	Auto	0.1869
L18	44	MP3-03 Reinforcement	100.15 - 100.40	Manual	1.0000
L18	45	MP3-03 Reinforcement	100.15 - 100.40	Manual	1.0000
L18	46	MP3-03 Reinforcement	100.15 - 100.40	Manual	1.0000
L18	59	CCI-040075 Reinforcement	100.15 - 100.40	Auto	0.2124
L18	61	CCI-040075 Reinforcement	100.15 - 100.40	Auto	0.2124
L18	63	CCI-040075 Reinforcement	100.15 - 100.40	Auto	0.2124
L19	24	FP 3.875 x 1.25 Reinforcement	95.15 - 100.15	Auto	0.1502
L19	25	FP 3.875 x 1.25 Reinforcement	95.15 - 100.15	Auto	0.1502
L19	26	FP 3.875 x 1.25 Reinforcement	95.15 - 100.15	Auto	0.1502
L19	44	MP3-03 Reinforcement	95.15 - 100.15	Manual	1.0000
L19	45	MP3-03 Reinforcement	95.15 - 100.15	Manual	1.0000
L19	46	MP3-03 Reinforcement	95.15 - 100.15	Manual	1.0000
L19	59	CCI-040075 Reinforcement	95.15 - 100.15	Auto	0.1768
L19	61	CCI-040075 Reinforcement	95.15 - 100.15	Auto	0.1768
L19	63	CCI-040075 Reinforcement	95.15 - 100.15	Auto	0.1768
L20	24	FP 3.875 x 1.25 Reinforcement	90.15 - 95.15	Auto	0.0963
L20	25	FP 3.875 x 1.25 Reinforcement	90.15 - 95.15	Auto	0.0963
L20	26	FP 3.875 x 1.25 Reinforcement	90.15 - 95.15	Auto	0.0963
L20	44	MP3-03 Reinforcement	90.15 - 95.15	Manual	1.0000
L20	45	MP3-03 Reinforcement	90.15 - 95.15	Manual	1.0000
L20	46	MP3-03 Reinforcement	90.15 - 95.15	Manual	1.0000
L20	59	CCI-040075 Reinforcement	90.15 - 95.15	Auto	0.1245
L20	61	CCI-040075 Reinforcement	90.15 - 95.15	Auto	0.1245
L20	63	CCI-040075 Reinforcement	90.15 - 95.15	Auto	0.1245
L21	24	FP 3.875 x 1.25 Reinforcement	85.96 - 90.15	Auto	0.0519
L21	25	FP 3.875 x 1.25 Reinforcement	85.96 - 90.15	Auto	0.0519
L21	26	FP 3.875 x 1.25 Reinforcement	85.96 - 90.15	Auto	0.0519

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L21	44	MP3-03 Reinforcement	85.96 - 90.15	Manual	1.0000
L21	45	MP3-03 Reinforcement	85.96 - 90.15	Manual	1.0000
L21	46	MP3-03 Reinforcement	85.96 - 90.15	Manual	1.0000
L21	59	CCI-040075 Reinforcement	85.96 - 90.15	Auto	0.0815
L21	61	CCI-040075 Reinforcement	85.96 - 90.15	Auto	0.0815
L21	63	CCI-040075 Reinforcement	85.96 - 90.15	Auto	0.0815
L22	24	FP 3.875 x 1.25 Reinforcement	85.04 - 85.96	Auto	0.0726
L22	25	FP 3.875 x 1.25 Reinforcement	85.04 - 85.96	Auto	0.0726
L22	26	FP 3.875 x 1.25 Reinforcement	85.04 - 85.96	Auto	0.0726
L22	44	MP3-03 Reinforcement	85.04 - 85.96	Manual	1.0000
L22	45	MP3-03 Reinforcement	85.04 - 85.96	Manual	1.0000
L22	46	MP3-03 Reinforcement	85.04 - 85.96	Manual	1.0000
L22	59	CCI-040075 Reinforcement	85.04 - 85.96	Auto	0.1015
L22	61	CCI-040075 Reinforcement	85.04 - 85.96	Auto	0.1015
L22	63	CCI-040075 Reinforcement	85.04 - 85.96	Auto	0.1015
L23	24	FP 3.875 x 1.25 Reinforcement	82.00 - 85.04	Auto	0.0477
L23	25	FP 3.875 x 1.25 Reinforcement	82.00 - 85.04	Auto	0.0477
L23	26	FP 3.875 x 1.25 Reinforcement	82.00 - 85.04	Auto	0.0477
L23	44	MP3-03 Reinforcement	82.00 - 85.04	Manual	1.0000
L23	45	MP3-03 Reinforcement	82.00 - 85.04	Manual	1.0000
L23	46	MP3-03 Reinforcement	82.00 - 85.04	Manual	1.0000
L23	59	CCI-040075 Reinforcement	82.00 - 85.04	Auto	0.0775
L23	61	CCI-040075 Reinforcement	82.00 - 85.04	Auto	0.0775
L23	63	CCI-040075 Reinforcement	82.00 - 85.04	Auto	0.0775
L23	66	CCI-045100 Reinforcement	82.00 - 83.50	Auto	0.1736
L23	67	CCI-045100 Reinforcement	82.00 - 83.50	Auto	0.1736
L23	68	CCI-045100 Reinforcement	82.00 - 83.50	Auto	0.1736
L24	24	FP 3.875 x 1.25 Reinforcement	81.75 - 82.00	Auto	0.1170
L24	25	FP 3.875 x 1.25 Reinforcement	81.75 - 82.00	Auto	0.1170
L24	26	FP 3.875 x 1.25 Reinforcement	81.75 - 82.00	Auto	0.1170
L24	44	MP3-03 Reinforcement	81.75 - 82.00	Manual	1.0000
L24	45	MP3-03 Reinforcement	81.75 - 82.00	Manual	1.0000
L24	46	MP3-03 Reinforcement	81.75 - 82.00	Manual	1.0000
L24	59	CCI-040075 Reinforcement	81.75 - 82.00	Auto	0.1446

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L24	61	CCI-040075 Reinforcement	81.75 - 82.00	Auto	0.1446
L24	63	CCI-040075 Reinforcement	81.75 - 82.00	Auto	0.1446
L24	66	CCI-045100 Reinforcement	81.75 - 82.00	Auto	0.2396
L24	67	CCI-045100 Reinforcement	81.75 - 82.00	Auto	0.2396
L24	68	CCI-045100 Reinforcement	81.75 - 82.00	Auto	0.2396
L25	24	FP 3.875 x 1.25 Reinforcement	77.25 - 81.75	Auto	0.0826
L25	25	FP 3.875 x 1.25 Reinforcement	77.25 - 81.75	Auto	0.0826
L25	26	FP 3.875 x 1.25 Reinforcement	77.25 - 81.75	Auto	0.0826
L25	44	MP3-03 Reinforcement	77.25 - 81.75	Manual	1.0000
L25	45	MP3-03 Reinforcement	77.25 - 81.75	Manual	1.0000
L25	46	MP3-03 Reinforcement	77.25 - 81.75	Manual	1.0000
L25	59	CCI-040075 Reinforcement	77.25 - 81.75	Auto	0.1113
L25	61	CCI-040075 Reinforcement	77.25 - 81.75	Auto	0.1113
L25	63	CCI-040075 Reinforcement	77.25 - 81.75	Auto	0.1113
L25	66	CCI-045100 Reinforcement	77.25 - 81.75	Auto	0.2100
L25	67	CCI-045100 Reinforcement	77.25 - 81.75	Auto	0.2100
L25	68	CCI-045100 Reinforcement	77.25 - 81.75	Auto	0.2100
L26	24	FP 3.875 x 1.25 Reinforcement	77.00 - 77.25	Auto	0.0085
L26	25	FP 3.875 x 1.25 Reinforcement	77.00 - 77.25	Auto	0.0085
L26	26	FP 3.875 x 1.25 Reinforcement	77.00 - 77.25	Auto	0.0085
L26	44	MP3-03 Reinforcement	77.00 - 77.25	Manual	1.0000
L26	45	MP3-03 Reinforcement	77.00 - 77.25	Manual	1.0000
L26	46	MP3-03 Reinforcement	77.00 - 77.25	Manual	1.0000
L26	59	CCI-040075 Reinforcement	77.00 - 77.25	Auto	0.0395
L26	61	CCI-040075 Reinforcement	77.00 - 77.25	Auto	0.0395
L26	63	CCI-040075 Reinforcement	77.00 - 77.25	Auto	0.0395
L26	66	CCI-045100 Reinforcement	77.00 - 77.25	Auto	0.1462
L26	67	CCI-045100 Reinforcement	77.00 - 77.25	Auto	0.1462
L26	68	CCI-045100 Reinforcement	77.00 - 77.25	Auto	0.1462
L27	24	FP 3.875 x 1.25 Reinforcement	75.00 - 77.00	Auto	0.0001
L27	25	FP 3.875 x 1.25 Reinforcement	75.00 - 77.00	Auto	0.0001
L27	26	FP 3.875 x 1.25 Reinforcement	75.00 - 77.00	Auto	0.0001
L27	31	MP3-03 Reinforcement	75.00 - 76.00	Manual	1.0000
L27	32	MP3-03 Reinforcement	75.00 - 76.00	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L27	33	MP3-03 Reinforcement	75.00 - 76.00	Manual	1.0000
L27	41	MP3-03 Reinforcement	75.00 - 76.25	Manual	1.0000
L27	42	MP3-03 Reinforcement	75.00 - 76.25	Manual	1.0000
L27	43	MP3-03 Reinforcement	75.00 - 76.25	Manual	1.0000
L27	44	MP3-03 Reinforcement	76.25 - 77.00	Manual	1.0000
L27	45	MP3-03 Reinforcement	76.25 - 77.00	Manual	1.0000
L27	46	MP3-03 Reinforcement	76.25 - 77.00	Manual	1.0000
L27	59	CCI-040075 Reinforcement	75.00 - 77.00	Auto	0.0235
L27	61	CCI-040075 Reinforcement	75.00 - 77.00	Auto	0.0235
L27	63	CCI-040075 Reinforcement	75.00 - 77.00	Auto	0.0235
L27	66	CCI-045100 Reinforcement	75.00 - 77.00	Auto	0.1320
L27	67	CCI-045100 Reinforcement	75.00 - 77.00	Auto	0.1320
L27	68	CCI-045100 Reinforcement	75.00 - 77.00	Auto	0.1320
L28	24	FP 3.875 x 1.25 Reinforcement	74.75 - 75.00	Auto	0.0038
L28	25	FP 3.875 x 1.25 Reinforcement	74.75 - 75.00	Auto	0.0038
L28	26	FP 3.875 x 1.25 Reinforcement	74.75 - 75.00	Auto	0.0038
L28	31	MP3-03 Reinforcement	74.75 - 75.00	Manual	1.0000
L28	32	MP3-03 Reinforcement	74.75 - 75.00	Manual	1.0000
L28	33	MP3-03 Reinforcement	74.75 - 75.00	Manual	1.0000
L28	41	MP3-03 Reinforcement	74.75 - 75.00	Manual	1.0000
L28	42	MP3-03 Reinforcement	74.75 - 75.00	Manual	1.0000
L28	43	MP3-03 Reinforcement	74.75 - 75.00	Manual	1.0000
L28	59	CCI-040075 Reinforcement	74.75 - 75.00	Auto	0.0349
L28	61	CCI-040075 Reinforcement	74.75 - 75.00	Auto	0.0349
L28	63	CCI-040075 Reinforcement	74.75 - 75.00	Auto	0.0349
L28	66	CCI-045100 Reinforcement	74.75 - 75.00	Auto	0.1422
L28	67	CCI-045100 Reinforcement	74.75 - 75.00	Auto	0.1422
L28	68	CCI-045100 Reinforcement	74.75 - 75.00	Auto	0.1422
L29	21	FP 4.25 x 1.25 Reinforcement	71.25 - 72.15	Auto	0.0585
L29	22	FP 4.25 x 1.25 Reinforcement	71.25 - 72.15	Auto	0.0585
L29	23	FP 4.25 x 1.25 Reinforcement	71.25 - 72.15	Auto	0.0585
L29	24	FP 3.875 x 1.25 Reinforcement	72.15 - 74.75	Auto	0.0000
L29	25	FP 3.875 x 1.25 Reinforcement	72.15 - 74.75	Auto	0.0000
L29	26	FP 3.875 x 1.25 Reinforcement	72.15 - 74.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L29	31	MP3-03 Reinforcement	71.25 - 74.75	Manual	1.0000
L29	32	MP3-03 Reinforcement	71.25 - 74.75	Manual	1.0000
L29	33	MP3-03 Reinforcement	71.25 - 74.75	Manual	1.0000
L29	41	MP3-03 Reinforcement	71.25 - 74.75	Manual	1.0000
L29	42	MP3-03 Reinforcement	71.25 - 74.75	Manual	1.0000
L29	43	MP3-03 Reinforcement	71.25 - 74.75	Manual	1.0000
L29	59	CCI-040075 Reinforcement	71.25 - 74.75	Auto	0.0122
L29	61	CCI-040075 Reinforcement	71.25 - 74.75	Auto	0.0122
L29	63	CCI-040075 Reinforcement	71.25 - 74.75	Auto	0.0122
L29	66	CCI-045100 Reinforcement	73.50 - 74.75	Auto	0.1310
L29	67	CCI-045100 Reinforcement	73.50 - 74.75	Auto	0.1310
L29	68	CCI-045100 Reinforcement	73.50 - 74.75	Auto	0.1310
L30	21	FP 4.25 x 1.25 Reinforcement	71.00 - 71.25	Auto	0.1052
L30	22	FP 4.25 x 1.25 Reinforcement	71.00 - 71.25	Auto	0.1052
L30	23	FP 4.25 x 1.25 Reinforcement	71.00 - 71.25	Auto	0.1052
L30	31	MP3-03 Reinforcement	71.00 - 71.25	Manual	1.0000
L30	32	MP3-03 Reinforcement	71.00 - 71.25	Manual	1.0000
L30	33	MP3-03 Reinforcement	71.00 - 71.25	Manual	1.0000
L30	41	MP3-03 Reinforcement	71.00 - 71.25	Manual	1.0000
L30	42	MP3-03 Reinforcement	71.00 - 71.25	Manual	1.0000
L30	43	MP3-03 Reinforcement	71.00 - 71.25	Manual	1.0000
L30	54	CCI-060100 Reinforcement	71.00 - 71.25	Auto	0.3662
L30	56	CCI-060100 Reinforcement	71.00 - 71.25	Auto	0.3662
L30	58	CCI-060100 Reinforcement	71.00 - 71.25	Auto	0.3662
L31	21	FP 4.25 x 1.25 Reinforcement	70.40 - 71.00	Auto	0.0963
L31	22	FP 4.25 x 1.25 Reinforcement	70.40 - 71.00	Auto	0.0963
L31	23	FP 4.25 x 1.25 Reinforcement	70.40 - 71.00	Auto	0.0963
L31	31	MP3-03 Reinforcement	70.40 - 71.00	Manual	1.0000
L31	32	MP3-03 Reinforcement	70.40 - 71.00	Manual	1.0000
L31	33	MP3-03 Reinforcement	70.40 - 71.00	Manual	1.0000
L31	41	MP3-03 Reinforcement	70.40 - 71.00	Manual	1.0000
L31	42	MP3-03 Reinforcement	70.40 - 71.00	Manual	1.0000
L31	43	MP3-03 Reinforcement	70.40 - 71.00	Manual	1.0000
L31	54	CCI-060100 Reinforcement	70.40 - 71.00	Auto	0.3599

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L31	56	CCI-060100 Reinforcement	70.40 - 71.00	Auto	0.3599
L31	58	CCI-060100 Reinforcement	70.40 - 71.00	Auto	0.3599
L32	21	FP 4.25 x 1.25 Reinforcement	70.15 - 70.40	Auto	0.0977
L32	22	FP 4.25 x 1.25 Reinforcement	70.15 - 70.40	Auto	0.0977
L32	23	FP 4.25 x 1.25 Reinforcement	70.15 - 70.40	Auto	0.0977
L32	31	MP3-03 Reinforcement	70.15 - 70.40	Manual	1.0000
L32	32	MP3-03 Reinforcement	70.15 - 70.40	Manual	1.0000
L32	33	MP3-03 Reinforcement	70.15 - 70.40	Manual	1.0000
L32	41	MP3-03 Reinforcement	70.15 - 70.40	Manual	1.0000
L32	42	MP3-03 Reinforcement	70.15 - 70.40	Manual	1.0000
L32	43	MP3-03 Reinforcement	70.15 - 70.40	Manual	1.0000
L32	54	CCI-060100 Reinforcement	70.15 - 70.40	Auto	0.3609
L32	56	CCI-060100 Reinforcement	70.15 - 70.40	Auto	0.3609
L32	58	CCI-060100 Reinforcement	70.15 - 70.40	Auto	0.3609
L33	21	FP 4.25 x 1.25 Reinforcement	65.15 - 70.15	Auto	0.0642
L33	22	FP 4.25 x 1.25 Reinforcement	65.15 - 70.15	Auto	0.0642
L33	23	FP 4.25 x 1.25 Reinforcement	65.15 - 70.15	Auto	0.0642
L33	31	MP3-03 Reinforcement	65.15 - 70.15	Manual	1.0000
L33	32	MP3-03 Reinforcement	65.15 - 70.15	Manual	1.0000
L33	33	MP3-03 Reinforcement	65.15 - 70.15	Manual	1.0000
L33	41	MP3-03 Reinforcement	65.15 - 70.15	Manual	1.0000
L33	42	MP3-03 Reinforcement	65.15 - 70.15	Manual	1.0000
L33	43	MP3-03 Reinforcement	65.15 - 70.15	Manual	1.0000
L33	54	CCI-060100 Reinforcement	65.15 - 70.15	Auto	0.3371
L33	56	CCI-060100 Reinforcement	65.15 - 70.15	Auto	0.3371
L33	58	CCI-060100 Reinforcement	65.15 - 70.15	Auto	0.3371
L34	21	FP 4.25 x 1.25 Reinforcement	60.15 - 65.15	Auto	0.0114
L34	22	FP 4.25 x 1.25 Reinforcement	60.15 - 65.15	Auto	0.0114
L34	23	FP 4.25 x 1.25 Reinforcement	60.15 - 65.15	Auto	0.0114
L34	31	MP3-03 Reinforcement	60.15 - 65.15	Manual	1.0000
L34	32	MP3-03 Reinforcement	60.15 - 65.15	Manual	1.0000
L34	33	MP3-03 Reinforcement	60.15 - 65.15	Manual	1.0000
L34	41	MP3-03 Reinforcement	60.15 - 65.15	Manual	1.0000
L34	42	MP3-03 Reinforcement	60.15 - 65.15	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L34	43	MP3-03 Reinforcement	60.15 - 65.15	Manual	1.0000
L34	54	CCI-060100 Reinforcement	60.15 - 65.15	Auto	0.2986
L34	56	CCI-060100 Reinforcement	60.15 - 65.15	Auto	0.2986
L34	58	CCI-060100 Reinforcement	60.15 - 65.15	Auto	0.2986
L35	21	FP 4.25 x 1.25 Reinforcement	55.15 - 60.15	Auto	0.0000
L35	22	FP 4.25 x 1.25 Reinforcement	55.15 - 60.15	Auto	0.0000
L35	23	FP 4.25 x 1.25 Reinforcement	55.15 - 60.15	Auto	0.0000
L35	31	MP3-03 Reinforcement	55.15 - 60.15	Manual	1.0000
L35	32	MP3-03 Reinforcement	55.15 - 60.15	Manual	1.0000
L35	33	MP3-03 Reinforcement	55.15 - 60.15	Manual	1.0000
L35	41	MP3-03 Reinforcement	55.15 - 60.15	Manual	1.0000
L35	42	MP3-03 Reinforcement	55.15 - 60.15	Manual	1.0000
L35	43	MP3-03 Reinforcement	55.15 - 60.15	Manual	1.0000
L35	54	CCI-060100 Reinforcement	55.15 - 60.15	Auto	0.2600
L35	56	CCI-060100 Reinforcement	55.15 - 60.15	Auto	0.2600
L35	58	CCI-060100 Reinforcement	55.15 - 60.15	Auto	0.2600
L36	21	FP 4.25 x 1.25 Reinforcement	50.15 - 55.15	Auto	0.0000
L36	22	FP 4.25 x 1.25 Reinforcement	50.15 - 55.15	Auto	0.0000
L36	23	FP 4.25 x 1.25 Reinforcement	50.15 - 55.15	Auto	0.0000
L36	31	MP3-03 Reinforcement	50.15 - 55.15	Manual	1.0000
L36	32	MP3-03 Reinforcement	50.15 - 55.15	Manual	1.0000
L36	33	MP3-03 Reinforcement	50.15 - 55.15	Manual	1.0000
L36	41	MP3-03 Reinforcement	50.15 - 55.15	Manual	1.0000
L36	42	MP3-03 Reinforcement	50.15 - 55.15	Manual	1.0000
L36	43	MP3-03 Reinforcement	50.15 - 55.15	Manual	1.0000
L36	54	CCI-060100 Reinforcement	50.15 - 55.15	Auto	0.2251
L36	56	CCI-060100 Reinforcement	50.15 - 55.15	Auto	0.2251
L36	58	CCI-060100 Reinforcement	50.15 - 55.15	Auto	0.2251
L37	21	FP 4.25 x 1.25 Reinforcement	42.41 - 50.15	Auto	0.0000
L37	22	FP 4.25 x 1.25 Reinforcement	42.41 - 50.15	Auto	0.0000
L37	23	FP 4.25 x 1.25 Reinforcement	42.41 - 50.15	Auto	0.0000
L37	31	MP3-03 Reinforcement	46.00 - 50.15	Manual	1.0000
L37	32	MP3-03 Reinforcement	46.00 - 50.15	Manual	1.0000
L37	33	MP3-03 Reinforcement	46.00 - 50.15	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L37	36	MP3-05 Reinforcement	42.41 - 46.25	Manual	1.0000
L37	39	MP3-05 Reinforcement	42.41 - 43.25	Manual	1.0000
L37	40	MP3-05 Reinforcement	42.41 - 43.25	Manual	1.0000
L37	41	MP3-03 Reinforcement	46.25 - 50.15	Manual	1.0000
L37	42	MP3-03 Reinforcement	46.25 - 50.15	Manual	1.0000
L37	43	MP3-03 Reinforcement	46.25 - 50.15	Manual	1.0000
L37	54	CCI-060100 Reinforcement	42.41 - 50.15	Auto	0.1816
L37	56	CCI-060100 Reinforcement	42.41 - 50.15	Auto	0.1816
L37	58	CCI-060100 Reinforcement	42.41 - 50.15	Auto	0.1816
L38	21	FP 4.25 x 1.25 Reinforcement	42.40 - 42.41	Auto	0.0000
L38	22	FP 4.25 x 1.25 Reinforcement	42.40 - 42.41	Auto	0.0000
L38	23	FP 4.25 x 1.25 Reinforcement	42.40 - 42.41	Auto	0.0000
L38	36	MP3-05 Reinforcement	41.41 - 42.41	Manual	1.0000
L38	39	MP3-05 Reinforcement	41.41 - 42.41	Manual	1.0000
L38	40	MP3-05 Reinforcement	41.41 - 42.41	Manual	1.0000
L38	54	CCI-060100 Reinforcement	41.41 - 42.41	Auto	0.1396
L38	56	CCI-060100 Reinforcement	41.41 - 42.41	Auto	0.1396
L38	58	CCI-060100 Reinforcement	41.41 - 42.41	Auto	0.1396
L39	36	MP3-05 Reinforcement	36.41 - 41.41	Manual	1.0000
L39	39	MP3-05 Reinforcement	36.41 - 41.41	Manual	1.0000
L39	40	MP3-05 Reinforcement	36.41 - 41.41	Manual	1.0000
L39	54	CCI-060100 Reinforcement	36.41 - 41.41	Auto	0.1172
L39	56	CCI-060100 Reinforcement	36.41 - 41.41	Auto	0.1172
L39	58	CCI-060100 Reinforcement	36.41 - 41.41	Auto	0.1172
L40	36	MP3-05 Reinforcement	36.25 - 36.41	Manual	1.0000
L40	39	MP3-05 Reinforcement	36.25 - 36.41	Manual	1.0000
L40	40	MP3-05 Reinforcement	36.25 - 36.41	Manual	1.0000
L40	53	CCI-060100 Reinforcement	36.25 - 36.28	Auto	0.1007
L40	54	CCI-060100 Reinforcement	36.28 - 36.41	Auto	0.1012
L40	55	CCI-060100 Reinforcement	36.25 - 36.28	Auto	0.1007
L40	56	CCI-060100 Reinforcement	36.28 - 36.41	Auto	0.1012
L40	57	CCI-060100 Reinforcement	36.25 - 36.28	Auto	0.1007
L40	58	CCI-060100 Reinforcement	36.28 - 36.41	Auto	0.1012
L41	36	MP3-05 Reinforcement	36.00 - 36.25	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L41	39	MP3-05 Reinforcement	36.00 - 36.25	Manual	1.0000
L41	40	MP3-05 Reinforcement	36.00 - 36.25	Manual	1.0000
L41	48	FP 5.50 x 1.25 Reinforcement	36.00 - 36.25	Auto	0.0300
L41	50	CCI-065125 Reinforcement	36.00 - 36.25	Auto	0.1793
L41	52	CCI-065125 Reinforcement	36.00 - 36.25	Auto	0.1793
L42	36	MP3-05 Reinforcement	31.25 - 36.00	Manual	1.0000
L42	39	MP3-05 Reinforcement	31.25 - 36.00	Manual	1.0000
L42	40	MP3-05 Reinforcement	31.25 - 36.00	Manual	1.0000
L42	48	FP 5.50 x 1.25 Reinforcement	31.25 - 36.00	Auto	0.0132
L42	50	CCI-065125 Reinforcement	31.25 - 36.00	Auto	0.1649
L42	52	CCI-065125 Reinforcement	31.25 - 36.00	Auto	0.1649
L43	36	MP3-05 Reinforcement	31.00 - 31.25	Manual	1.0000
L43	37	MP3-05 Reinforcement	31.00 - 31.25	Manual	1.0000
L43	38	MP3-05 Reinforcement	31.00 - 31.25	Manual	1.0000
L43	48	FP 5.50 x 1.25 Reinforcement	31.00 - 31.25	Auto	0.0000
L43	50	CCI-065125 Reinforcement	31.00 - 31.25	Auto	0.1471
L43	52	CCI-065125 Reinforcement	31.00 - 31.25	Auto	0.1471
L44	36	MP3-05 Reinforcement	26.00 - 31.00	Manual	1.0000
L44	37	MP3-05 Reinforcement	26.00 - 31.00	Manual	1.0000
L44	38	MP3-05 Reinforcement	26.00 - 31.00	Manual	1.0000
L44	48	FP 5.50 x 1.25 Reinforcement	26.00 - 31.00	Auto	0.0000
L44	50	CCI-065125 Reinforcement	26.00 - 31.00	Auto	0.1285
L44	52	CCI-065125 Reinforcement	26.00 - 31.00	Auto	0.1285
L45	35	MP3-05 Reinforcement	21.00 - 21.25	Manual	1.0000
L45	36	MP3-05 Reinforcement	21.00 - 26.00	Manual	1.0000
L45	37	MP3-05 Reinforcement	21.00 - 26.00	Manual	1.0000
L45	38	MP3-05 Reinforcement	21.00 - 26.00	Manual	1.0000
L45	48	FP 5.50 x 1.25 Reinforcement	21.00 - 26.00	Auto	0.0000
L45	49	CCI-065125 Reinforcement	21.00 - 22.96	Auto	0.0910
L45	50	CCI-065125 Reinforcement	22.96 - 26.00	Auto	0.1054
L45	51	CCI-065125 Reinforcement	21.00 - 22.96	Auto	0.0910
L45	52	CCI-065125 Reinforcement	22.96 - 26.00	Auto	0.1054
L46	35	MP3-05 Reinforcement	18.50 - 21.00	Manual	1.0000
L46	36	MP3-05 Reinforcement	18.50 - 21.00	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L46	37	MP3-05 Reinforcement	18.50 - 21.00	Manual	1.0000
L46	38	MP3-05 Reinforcement	18.50 - 21.00	Manual	1.0000
L46	48	FP 5.50 x 1.25 Reinforcement	18.50 - 21.00	Auto	0.0000
L46	49	CCI-065125 Reinforcement	18.50 - 21.00	Auto	0.0747
L46	51	CCI-065125 Reinforcement	18.50 - 21.00	Auto	0.0747
L47	35	MP3-05 Reinforcement	18.25 - 18.50	Manual	1.0000
L47	36	MP3-05 Reinforcement	18.25 - 18.50	Manual	1.0000
L47	37	MP3-05 Reinforcement	18.25 - 18.50	Manual	1.0000
L47	38	MP3-05 Reinforcement	18.25 - 18.50	Manual	1.0000
L47	48	FP 5.50 x 1.25 Reinforcement	18.25 - 18.50	Auto	0.0000
L47	49	CCI-065125 Reinforcement	18.25 - 18.50	Auto	0.0634
L47	51	CCI-065125 Reinforcement	18.25 - 18.50	Auto	0.0634
L48	35	MP3-05 Reinforcement	15.00 - 18.25	Manual	1.0000
L48	36	MP3-05 Reinforcement	16.25 - 18.25	Manual	1.0000
L48	37	MP3-05 Reinforcement	15.00 - 18.25	Manual	1.0000
L48	38	MP3-05 Reinforcement	15.00 - 18.25	Manual	1.0000
L48	48	FP 5.50 x 1.25 Reinforcement	15.00 - 18.25	Auto	0.0000
L48	49	CCI-065125 Reinforcement	15.00 - 18.25	Auto	0.0500
L48	51	CCI-065125 Reinforcement	15.00 - 18.25	Auto	0.0500
L49	35	MP3-05 Reinforcement	14.75 - 15.00	Manual	1.0000
L49	37	MP3-05 Reinforcement	14.75 - 15.00	Manual	1.0000
L49	38	MP3-05 Reinforcement	14.75 - 15.00	Manual	1.0000
L49	48	FP 5.50 x 1.25 Reinforcement	14.75 - 15.00	Auto	0.0000
L49	49	CCI-065125 Reinforcement	14.75 - 15.00	Auto	0.0297
L49	51	CCI-065125 Reinforcement	14.75 - 15.00	Auto	0.0297
L50	35	MP3-05 Reinforcement	9.75 - 14.75	Manual	1.0000
L50	37	MP3-05 Reinforcement	9.75 - 14.75	Manual	1.0000
L50	38	MP3-05 Reinforcement	9.75 - 14.75	Manual	1.0000
L50	48	FP 5.50 x 1.25 Reinforcement	9.75 - 14.75	Auto	0.0000
L50	49	CCI-065125 Reinforcement	9.75 - 14.75	Auto	0.0146
L50	51	CCI-065125 Reinforcement	11.50 - 14.75	Auto	0.0196
L51	35	MP3-05 Reinforcement	4.75 - 9.75	Manual	1.0000
L51	37	MP3-05 Reinforcement	4.75 - 9.75	Manual	1.0000
L51	38	MP3-05 Reinforcement	4.75 - 9.75	Manual	1.0000
L51	48	FP 5.50 x 1.25 Reinforcement	4.75 - 9.75	Auto	0.0000
L51	49	CCI-065125 Reinforcement	4.75 - 9.75	Auto	0.0000
L52	35	MP3-05 Reinforcement	1.25 - 4.75	Manual	1.0000
L52	37	MP3-05 Reinforcement	1.25 - 4.75	Manual	1.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L52	38	MP3-05 Reinforcement	1.25 - 4.75	Manual	1.0000
L52	48	FP 5.50 x 1.25 Reinforcement	1.25 - 4.75	Auto	0.0000
L52	49	CCI-065125 Reinforcement	1.25 - 4.75	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVTM14-ALU-I20 w/ Mount Pipe	A	From Leg	4.0000 0.00 1.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0900 4.4800 4.8800 5.7100	2.8600 3.2300 3.6100 4.4000	0.08 0.13 0.19 0.33
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Leg	4.0000 0.00 1.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0900 4.4800 4.8800 5.7100	2.8600 3.2300 3.6100 4.4000	0.08 0.13 0.19 0.33
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Leg	4.0000 0.00 1.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0900 4.4800 4.8800 5.7100	2.8600 3.2300 3.6100 4.4000	0.08 0.13 0.19 0.33
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.6000 5.0500 5.5000 6.4400	4.0100 4.4500 4.8900 5.8200	0.10 0.16 0.23 0.42
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.6000 5.0500 5.5000 6.4400	4.0100 4.4500 4.8900 5.8200	0.10 0.16 0.23 0.42
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.6000 5.0500 5.5000 6.4400	4.0100 4.4500 4.8900 5.8200	0.10 0.16 0.23 0.42
TD-RRH8X20-25	A	From Leg	4.0000 0.00 1.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
TD-RRH8X20-25	B	From Leg	4.0000 0.00 1.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
TD-RRH8X20-25	C	From Leg	4.0000 0.00 1.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
(3) ACU-A20-N	A	From Leg	4.0000 0.00 0.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0667 0.1037 0.1481 0.2593	0.1167 0.1620 0.2148 0.3426	0.00 0.00 0.00 0.01

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(3) ACU-A20-N	B	From Leg	4.0000 0.00 0.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0667 0.1037 0.1481 0.2593	0.1167 0.1620 0.2148 0.3426	0.00 0.00 0.00 0.01
(3) ACU-A20-N	C	From Leg	4.0000 0.00 0.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0667 0.1037 0.1481 0.2593	0.1167 0.1620 0.2148 0.3426	0.00 0.00 0.00 0.01
Platform Mount [LP 602-1]	C	None		0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	31.0700 34.8200 38.4800 45.6000	31.0700 34.8200 38.4800 45.6000	1.34 1.97 2.67 4.31
8-ft Ladder	C	From Face	2.0000 0.00 -2.00	0.00	152.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.0700 9.7300 11.1900 13.9800	7.0700 9.7300 11.1900 13.9800	0.04 0.07 0.08 0.11
***									
800 EXTERNAL NOTCH FILTER	A	From Leg	1.0000 0.00 0.00	0.00	146.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.6601 0.7627 0.8727 1.1149	0.3211 0.3983 0.4830 0.6744	0.01 0.02 0.02 0.04
800 EXTERNAL NOTCH FILTER	B	From Leg	1.0000 0.00 0.00	0.00	146.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.6601 0.7627 0.8727 1.1149	0.3211 0.3983 0.4830 0.6744	0.01 0.02 0.02 0.04
800 EXTERNAL NOTCH FILTER	C	From Leg	1.0000 0.00 0.00	0.00	146.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.6601 0.7627 0.8727 1.1149	0.3211 0.3983 0.4830 0.6744	0.01 0.02 0.02 0.04
RRH4X45-19	A	From Leg	1.0000 0.00 0.00	0.00	146.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3125 2.5168 2.7284 3.1740	2.3750 2.5809 2.7943 3.2431	0.06 0.08 0.11 0.18
RRH4X45-19	B	From Leg	1.0000 0.00 0.00	0.00	146.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3125 2.5168 2.7284 3.1740	2.3750 2.5809 2.7943 3.2431	0.06 0.08 0.11 0.18
RRH4X45-19	C	From Leg	1.0000 0.00 0.00	0.00	146.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3125 2.5168 2.7284 3.1740	2.3750 2.5809 2.7943 3.2431	0.06 0.08 0.11 0.18
RRH2X50-800	A	From Leg	1.0000 0.00 0.00	0.00	146.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.7008 1.8640 2.0345 2.3979	1.2822 1.4275 1.5803 1.9081	0.05 0.07 0.09 0.14
RRH2X50-800	B	From Leg	1.0000 0.00 0.00	0.00	146.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.7008 1.8640 2.0345 2.3979	1.2822 1.4275 1.5803 1.9081	0.05 0.07 0.09 0.14
RRH2X50-800	C	From Leg	1.0000 0.00 0.00	0.00	146.0000	No Ice 1/2" Ice 1" Ice	1.7008 1.8640 2.0345 2.3979	1.2822 1.4275 1.5803 1.9081	0.05 0.07 0.09 0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
							2" Ice			
Pipe Mount [PM 601-3]	C	None			0.00	146.0000	No Ice	3.1700	3.1700	0.20
							1/2" Ice	3.7900	3.7900	0.23
							1" Ice	4.4200	4.4200	0.28
							2" Ice	5.7600	5.7600	0.40
***										
7770.00 w/ Mount Pipe	A	From Leg	4.0000		0.00	137.0000	No Ice	5.7460	4.2543	0.06
			0.00				1/2" Ice	6.1791	5.0137	0.10
			2.00				1" Ice	6.6067	5.7109	0.16
							2" Ice	7.4880	7.1553	0.29
7770.00 w/ Mount Pipe	B	From Leg	4.0000		0.00	137.0000	No Ice	5.7460	4.2543	0.06
			0.00				1/2" Ice	6.1791	5.0137	0.10
			2.00				1" Ice	6.6067	5.7109	0.16
							2" Ice	7.4880	7.1553	0.29
7770.00 w/ Mount Pipe	C	From Leg	4.0000		0.00	137.0000	No Ice	5.7460	4.2543	0.06
			0.00				1/2" Ice	6.1791	5.0137	0.10
			2.00				1" Ice	6.6067	5.7109	0.16
							2" Ice	7.4880	7.1553	0.29
(2) SBNH-1D6565C w/ Mount Pipe	A	From Leg	4.0000		0.00	137.0000	No Ice	5.5600	4.4700	0.08
			0.00				1/2" Ice	6.0700	4.9700	0.17
			2.00				1" Ice	6.5900	5.4700	0.26
							2" Ice	7.6500	6.5200	0.50
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.0000		0.00	137.0000	No Ice	4.6300	3.2700	0.07
			0.00				1/2" Ice	5.0600	3.6900	0.13
			2.00				1" Ice	5.5100	4.1200	0.20
							2" Ice	6.4300	5.0000	0.38
(2) SBNH-1D6565C w/ Mount Pipe	C	From Leg	4.0000		0.00	137.0000	No Ice	5.5600	4.4700	0.08
			0.00				1/2" Ice	6.0700	4.9700	0.17
			2.00				1" Ice	6.5900	5.4700	0.26
							2" Ice	7.6500	6.5200	0.50
7020.00	A	From Leg	4.0000		0.00	137.0000	No Ice	0.1021	0.1750	0.00
			0.00				1/2" Ice	0.1469	0.2393	0.01
			2.00				1" Ice	0.1991	0.3109	0.01
							2" Ice	0.3258	0.4765	0.02
7020.00	B	From Leg	4.0000		0.00	137.0000	No Ice	0.1021	0.1750	0.00
			0.00				1/2" Ice	0.1469	0.2393	0.01
			2.00				1" Ice	0.1991	0.3109	0.01
							2" Ice	0.3258	0.4765	0.02
7020.00	C	From Leg	4.0000		0.00	137.0000	No Ice	0.1021	0.1750	0.00
			0.00				1/2" Ice	0.1469	0.2393	0.01
			2.00				1" Ice	0.1991	0.3109	0.01
							2" Ice	0.3258	0.4765	0.02
(2) LGP21901	A	From Leg	4.0000		0.00	137.0000	No Ice	0.2310	0.1575	0.01
			0.00				1/2" Ice	0.2941	0.2129	0.01
			2.00				1" Ice	0.3647	0.2756	0.01
							2" Ice	0.5280	0.4234	0.02
(2) LGP21901	B	From Leg	4.0000		0.00	137.0000	No Ice	0.2310	0.1575	0.01
			0.00				1/2" Ice	0.2941	0.2129	0.01
			2.00				1" Ice	0.3647	0.2756	0.01
							2" Ice	0.5280	0.4234	0.02
(2) LGP21901	C	From Leg	4.0000		0.00	137.0000	No Ice	0.2310	0.1575	0.01
			0.00				1/2" Ice	0.2941	0.2129	0.01
			2.00				Ice	0.3647	0.2756	0.01

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	0.5280	0.4234	0.02
						2" Ice			
(2) DTMABP7819VG12A	A	From Leg	4.0000	0.00	137.0000	No Ice	0.9762	0.3387	0.02
			0.00			1/2"	1.1002	0.4192	0.03
			2.00			Ice	1.2316	0.5098	0.04
						1" Ice	1.5166	0.7143	0.06
						2" Ice			
(2) DTMABP7819VG12A	B	From Leg	4.0000	0.00	137.0000	No Ice	0.9762	0.3387	0.02
			0.00			1/2"	1.1002	0.4192	0.03
			2.00			Ice	1.2316	0.5098	0.04
						1" Ice	1.5166	0.7143	0.06
						2" Ice			
(2) DTMABP7819VG12A	C	From Leg	4.0000	0.00	137.0000	No Ice	0.9762	0.3387	0.02
			0.00			1/2"	1.1002	0.4192	0.03
			2.00			Ice	1.2316	0.5098	0.04
						1" Ice	1.5166	0.7143	0.06
						2" Ice			
(2) DD1900 FULL BAND W/850 BY-PASS MASTHEAD	A	From Leg	4.0000	0.00	137.0000	No Ice	1.1018	0.2900	0.02
			0.00			1/2"	1.2332	0.3714	0.02
			2.00			Ice	1.3721	0.4598	0.03
						1" Ice	1.6721	0.6576	0.06
						2" Ice			
(2) DD1900 FULL BAND W/850 BY-PASS MASTHEAD	B	From Leg	4.0000	0.00	137.0000	No Ice	1.1018	0.2900	0.02
			0.00			1/2"	1.2332	0.3714	0.02
			2.00			Ice	1.3721	0.4598	0.03
						1" Ice	1.6721	0.6576	0.06
						2" Ice			
(2) DD1900 FULL BAND W/850 BY-PASS MASTHEAD	C	From Leg	4.0000	0.00	137.0000	No Ice	1.1018	0.2900	0.02
			0.00			1/2"	1.2332	0.3714	0.02
			2.00			Ice	1.3721	0.4598	0.03
						1" Ice	1.6721	0.6576	0.06
						2" Ice			
DC6-48-60-18-8F	A	From Leg	4.0000	0.00	137.0000	No Ice	1.2117	1.2117	0.03
			0.00			1/2"	1.8924	1.8924	0.05
			2.00			Ice	2.1051	2.1051	0.08
						1" Ice	2.5703	2.5703	0.14
						2" Ice			
Platform Mount [LP 712-1]	C	None		0.00	137.0000	No Ice	24.5600	24.5600	1.34
						1/2"	27.9200	27.9200	1.91
						Ice	31.2700	31.2700	2.55
						1" Ice	37.9800	37.9800	3.97
						2" Ice			
2.375" OD x 5' Mount Pipe	A	From Face	4.0000	0.00	137.0000	No Ice	1.1875	1.1875	0.02
			0.00			1/2"	1.4956	1.4956	0.03
			0.00			Ice	1.8071	1.8071	0.04
						1" Ice	2.4580	2.4580	0.08
						2" Ice			
2.375" OD x 5' Mount Pipe	B	From Face	4.0000	0.00	137.0000	No Ice	1.1875	1.1875	0.02
			0.00			1/2"	1.4956	1.4956	0.03
			0.00			Ice	1.8071	1.8071	0.04
						1" Ice	2.4580	2.4580	0.08
						2" Ice			
2.375" OD x 5' Mount Pipe	C	From Face	4.0000	0.00	137.0000	No Ice	1.1875	1.1875	0.02
			0.00			1/2"	1.4956	1.4956	0.03
			0.00			Ice	1.8071	1.8071	0.04
						1" Ice	2.4580	2.4580	0.08
						2" Ice			
***									
(2) RRUS 11 B12	A	From Face	2.0000	0.00	136.0000	No Ice	2.8333	1.1821	0.05
			0.00			1/2"	3.0426	1.3299	0.07
			0.00			Ice	3.2593	1.4848	0.10
						1" Ice	3.7148	1.8259	0.15
						2" Ice			
(2) RRUS 11 B12	B	From Face	2.0000	-30.00	136.0000	No Ice	2.8333	1.1821	0.05
			0.00			1/2"	3.0426	1.3299	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			Ice	3.2593	1.4848	0.10
						1" Ice	3.7148	1.8259	0.15
						2" Ice			
(2) RRUS 11 B12	C	From Face	2.0000	-60.00	136.0000	No Ice	2.8333	1.1821	0.05
			0.00			1/2"	3.0426	1.3299	0.07
			0.00			Ice	3.2593	1.4848	0.10
						1" Ice	3.7148	1.8259	0.15
						2" Ice			
DC6-48-60-18-8F	C	From Face	2.0000	30.00	136.0000	No Ice	1.2117	1.2117	0.03
			0.00			1/2"	1.8924	1.8924	0.05
			0.00			Ice	2.1051	2.1051	0.08
						1" Ice	2.5703	2.5703	0.14
						2" Ice			
Side Arm Mount [SO 102-3]	A	From Face	0.0000	0.00	136.0000	No Ice	3.6000	3.6000	0.07
			0.00			1/2"	4.1800	4.1800	0.11
			0.00			Ice	4.7500	4.7500	0.14
						1" Ice	5.9000	5.9000	0.20
						2" Ice			
Side Arm Mount [SO 102-3]	B	From Face	0.0000	-30.00	136.0000	No Ice	3.6000	3.6000	0.07
			0.00			1/2"	4.1800	4.1800	0.11
			0.00			Ice	4.7500	4.7500	0.14
						1" Ice	5.9000	5.9000	0.20
						2" Ice			
Side Arm Mount [SO 102-3]	C	From Face	0.0000	-60.00	136.0000	No Ice	3.6000	3.6000	0.07
			0.00			1/2"	4.1800	4.1800	0.11
			0.00			Ice	4.7500	4.7500	0.14
						1" Ice	5.9000	5.9000	0.20
						2" Ice			
Side Arm Mount [SO 102-3]	C	From Face	0.0000	30.00	136.0000	No Ice	3.6000	3.6000	0.07
			0.00			1/2"	4.1800	4.1800	0.11
			0.00			Ice	4.7500	4.7500	0.14
						1" Ice	5.9000	5.9000	0.20
						2" Ice			
***									
(2) APL866513-42T0 w/ Mount Pipe	A	From Leg	4.0000	0.00	127.0000	No Ice	3.9600	4.2500	0.03
			0.00			1/2"	4.4400	4.7400	0.07
			2.00			Ice	4.9300	5.2500	0.12
						1" Ice	5.9800	6.3000	0.24
						2" Ice			
(2) APL866513-42T0 w/ Mount Pipe	B	From Leg	4.0000	0.00	127.0000	No Ice	3.9600	4.2500	0.03
			0.00			1/2"	4.4400	4.7400	0.07
			2.00			Ice	4.9300	5.2500	0.12
						1" Ice	5.9800	6.3000	0.24
						2" Ice			
(2) APL866513-42T0 w/ Mount Pipe	C	From Leg	4.0000	0.00	127.0000	No Ice	3.9600	4.2500	0.03
			0.00			1/2"	4.4400	4.7400	0.07
			2.00			Ice	4.9300	5.2500	0.12
						1" Ice	5.9800	6.3000	0.24
						2" Ice			
(2) HBXX-6517DS-A2M w/ Mount Pipe	A	From Leg	4.0000	0.00	127.0000	No Ice	7.9700	5.9900	0.08
			0.00			1/2"	8.7300	6.7200	0.14
			2.00			Ice	9.5000	7.4700	0.22
						1" Ice	11.1100	9.0200	0.40
						2" Ice			
(2) HBXX-6517DS-A2M w/ Mount Pipe	B	From Leg	4.0000	0.00	127.0000	No Ice	7.9700	5.9900	0.08
			0.00			1/2"	8.7300	6.7200	0.14
			2.00			Ice	9.5000	7.4700	0.22
						1" Ice	11.1100	9.0200	0.40
						2" Ice			
(2) HBXX-6517DS-A2M w/ Mount Pipe	C	From Leg	4.0000	0.00	127.0000	No Ice	7.9700	5.9900	0.08
			0.00			1/2"	8.7300	6.7200	0.14
			2.00			Ice	9.5000	7.4700	0.22
						1" Ice	11.1100	9.0200	0.40
						2" Ice			
BXA-70040/4CF w/ Mount	A	From Leg	4.0000	0.00	127.0000	No Ice	8.1500	3.6200	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Pipe			0.00				1/2" Ice	8.6600	4.0300	0.11
			2.00				1" Ice	9.1800	4.4600	0.18
							2" Ice	10.2700	5.3600	0.36
BXA-70063-4CF-EDIN-X w/ Mount Pipe	B	From Leg	4.0000		0.00	127.0000	No Ice	4.8400	3.5400	0.04
			0.00				1/2" Ice	5.3500	4.0300	0.08
			2.00				1" Ice	5.8800	4.5300	0.12
							2" Ice	6.9900	5.5900	0.24
BXA-70063-4CF-EDIN-X w/ Mount Pipe	C	From Leg	4.0000		0.00	127.0000	No Ice	4.8400	3.5400	0.04
			0.00				1/2" Ice	5.3500	4.0300	0.08
			2.00				1" Ice	5.8800	4.5300	0.12
							2" Ice	6.9900	5.5900	0.24
GPS_A	B	From Leg	4.0000		0.00	127.0000	No Ice	0.2550	0.2550	0.00
			0.00				1/2" Ice	0.3205	0.3205	0.00
			2.00				1" Ice	0.3934	0.3934	0.01
							2" Ice	0.5614	0.5614	0.02
(2) FD9R6004/2C-3L	A	From Leg	4.0000		0.00	127.0000	No Ice	0.3142	0.0762	0.00
			0.00				1/2" Ice	0.3862	0.1189	0.01
			2.00				1" Ice	0.4656	0.1685	0.01
							2" Ice	0.6468	0.2940	0.02
(2) FD9R6004/2C-3L	B	From Leg	4.0000		0.00	127.0000	No Ice	0.3142	0.0762	0.00
			0.00				1/2" Ice	0.3862	0.1189	0.01
			2.00				1" Ice	0.4656	0.1685	0.01
							2" Ice	0.6468	0.2940	0.02
(2) FD9R6004/2C-3L	C	From Leg	4.0000		0.00	127.0000	No Ice	0.3142	0.0762	0.00
			0.00				1/2" Ice	0.3862	0.1189	0.01
			2.00				1" Ice	0.4656	0.1685	0.01
							2" Ice	0.6468	0.2940	0.02
DB-T1-6Z-8AB-0Z	A	From Leg	4.0000		0.00	127.0000	No Ice	4.8000	2.0000	0.04
			0.00				1/2" Ice	5.0704	2.1926	0.08
			2.00				1" Ice	5.3481	2.3926	0.12
							2" Ice	5.9259	2.8148	0.21
RRH2X60-PCS	A	From Leg	4.0000		0.00	127.0000	No Ice	2.2000	1.7233	0.06
			0.00				1/2" Ice	2.3926	1.9015	0.08
			2.00				1" Ice	2.5926	2.0870	0.10
							2" Ice	3.0148	2.4804	0.16
RRH2X60-PCS	B	From Leg	4.0000		0.00	127.0000	No Ice	2.2000	1.7233	0.06
			0.00				1/2" Ice	2.3926	1.9015	0.08
			2.00				1" Ice	2.5926	2.0870	0.10
							2" Ice	3.0148	2.4804	0.16
RRH2X60-PCS	C	From Leg	4.0000		0.00	127.0000	No Ice	2.2000	1.7233	0.06
			0.00				1/2" Ice	2.3926	1.9015	0.08
			2.00				1" Ice	2.5926	2.0870	0.10
							2" Ice	3.0148	2.4804	0.16
RRH2X60-AWS	A	From Leg	4.0000		0.00	127.0000	No Ice	1.8775	1.2359	0.04
			0.00				1/2" Ice	2.0551	1.3858	0.06
			2.00				1" Ice	2.2401	1.5441	0.08
							2" Ice	2.6323	1.8930	0.13
RRH2X60-AWS	B	From Leg	4.0000		0.00	127.0000	No Ice	1.8775	1.2359	0.04
			0.00				1/2" Ice	2.0551	1.3858	0.06
			2.00				1" Ice	2.2401	1.5441	0.08
							2" Ice	2.6323	1.8930	0.13
RRH2X60-AWS	C	From Leg	4.0000		0.00	127.0000	No Ice	1.8775	1.2359	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00				1/2" Ice	2.0551	1.3858	0.06
			2.00				1" Ice	2.2401	1.5441	0.08
							2" Ice	2.6323	1.8930	0.13
Platform Mount [LP 712-1]	C	None			0.00	127.0000	No Ice	24.5600	24.5600	1.34
							1/2" Ice	27.9200	27.9200	1.91
							1" Ice	31.2700	31.2700	2.55
							2" Ice	37.9800	37.9800	3.97
***										
APXV18-206517S-C-A20	A	From Leg	4.0000		0.00	117.0000	No Ice	3.8300	1.8100	0.03
			0.00				1/2" Ice	4.4600	2.4100	0.05
			0.00				1" Ice	5.1100	3.0300	0.09
							2" Ice	6.4400	4.3100	0.17
APXV18-206517S-C-A20	B	From Leg	4.0000		0.00	117.0000	No Ice	3.8300	1.8100	0.03
			0.00				1/2" Ice	4.4600	2.4100	0.05
			0.00				1" Ice	5.1100	3.0300	0.09
							2" Ice	6.4400	4.3100	0.17
APXV18-206517S-C-A20	C	From Leg	4.0000		0.00	117.0000	No Ice	3.8300	1.8100	0.03
			0.00				1/2" Ice	4.4600	2.4100	0.05
			0.00				1" Ice	5.1100	3.0300	0.09
							2" Ice	6.4400	4.3100	0.17
APXVAALL24_43-U-NA20	A	From Leg	4.0000		0.00	117.0000	No Ice	14.6700	5.3200	0.15
			0.00				1/2" Ice	15.4300	5.9900	0.26
			0.00				1" Ice	16.2100	6.6800	0.38
							2" Ice	17.8100	8.0800	0.65
APXVAALL24_43-U-NA20	B	From Leg	4.0000		0.00	117.0000	No Ice	14.6700	5.3200	0.15
			0.00				1/2" Ice	15.4300	5.9900	0.26
			0.00				1" Ice	16.2100	6.6800	0.38
							2" Ice	17.8100	8.0800	0.65
APXVAALL24_43-U-NA20	C	From Leg	4.0000		0.00	117.0000	No Ice	14.6700	5.3200	0.15
			0.00				1/2" Ice	15.4300	5.9900	0.26
			0.00				1" Ice	16.2100	6.6800	0.38
							2" Ice	17.8100	8.0800	0.65
RADIO 4449 B12/B71	A	From Leg	4.0000		0.00	117.0000	No Ice	1.6500	1.1625	0.07
			0.00				1/2" Ice	1.8104	1.3012	0.09
			0.00				1" Ice	1.9781	1.4473	0.11
							2" Ice	2.3359	1.7618	0.16
RADIO 4449 B12/B71	B	From Leg	4.0000		0.00	117.0000	No Ice	1.6500	1.1625	0.07
			0.00				1/2" Ice	1.8104	1.3012	0.09
			0.00				1" Ice	1.9781	1.4473	0.11
							2" Ice	2.3359	1.7618	0.16
RADIO 4449 B12/B71	C	From Leg	4.0000		0.00	117.0000	No Ice	1.6500	1.1625	0.07
			0.00				1/2" Ice	1.8104	1.3012	0.09
			0.00				1" Ice	1.9781	1.4473	0.11
							2" Ice	2.3359	1.7618	0.16
Platform Mount [LP 1302-1]	C	None			0.00	117.0000	No Ice	56.4000	56.4000	2.41
							1/2" Ice	67.5000	67.5000	3.13
							1" Ice	78.6000	78.6000	3.85
							2" Ice	100.8000	100.8000	5.29
***										
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.0000		0.00	107.0000	No Ice	8.0100	4.2300	0.11
			0.00				1/2" Ice	8.5200	4.6900	0.19
			0.00				1" Ice	9.0400	5.1600	0.29
							2" Ice	10.1100	6.1200	0.52

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice			
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	107.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.0100 8.5200 9.0400 10.1100	4.2300 4.6900 5.1600 6.1200	0.11 0.19 0.29 0.52
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	107.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.0100 8.5200 9.0400 10.1100	4.2300 4.6900 5.1600 6.1200	0.11 0.19 0.29 0.52
TA08025-B604	A	From Leg	4.0000 0.00 0.00	0.00	107.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9635 2.1378 2.3195 2.7052	0.9811 1.1117 1.2496 1.5477	0.06 0.08 0.10 0.15
TA08025-B604	B	From Leg	4.0000 0.00 0.00	0.00	107.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9635 2.1378 2.3195 2.7052	0.9811 1.1117 1.2496 1.5477	0.06 0.08 0.10 0.15
TA08025-B604	C	From Leg	4.0000 0.00 0.00	0.00	107.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9635 2.1378 2.3195 2.7052	0.9811 1.1117 1.2496 1.5477	0.06 0.08 0.10 0.15
TA08025-B605	A	From Leg	4.0000 0.00 0.00	0.00	107.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9635 2.1378 2.3195 2.7052	1.1295 1.2666 1.4112 1.7225	0.08 0.09 0.11 0.16
TA08025-B605	B	From Leg	4.0000 0.00 0.00	0.00	107.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9635 2.1378 2.3195 2.7052	1.1295 1.2666 1.4112 1.7225	0.08 0.09 0.11 0.16
TA08025-B605	C	From Leg	4.0000 0.00 0.00	0.00	107.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9635 2.1378 2.3195 2.7052	1.1295 1.2666 1.4112 1.7225	0.08 0.09 0.11 0.16
RDIDC-9181-PF-48	A	From Leg	4.0000 0.00 0.00	0.00	107.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0119 2.1886 2.3727 2.7631	1.1682 1.3109 1.4611 1.7837	0.02 0.04 0.06 0.11
Commscope_MC-Pk8-DSH_Platform	C	None		0.00	107.0000	No Ice 1/2" Ice 1" Ice 2" Ice	34.2400 62.9500 91.6600 149.0800	34.2400 62.9500 91.6600 149.0800	1.75 2.10 2.45 3.15
***									

Tower Pressures - No Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1 150.0000-145.0000	147.4710	1.104	0.04	6.563	A	0.000	6.563	6.563	100.00	0.000	0.000
					B	0.000	6.563		100.00	0.000	0.000
					C	0.000	6.563		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L2 145.0000-140.0000	142.4729	1.093	0.04	7.020	A	0.000	7.020	7.020	100.00	0.000	0.000
					B	0.000	7.020		100.00	0.000	0.000
					C	0.000	7.020		100.00	0.000	0.000
L3 140.0000-135.0000	137.4746	1.082	0.04	7.476	A	0.000	7.476	7.476	100.00	0.000	0.000
					B	0.000	7.476		100.00	0.000	0.000
					C	0.000	7.476		100.00	0.000	0.000
L4 135.0000-130.0000	132.4760	1.071	0.04	7.933	A	0.000	7.933	7.933	100.00	0.000	0.000
					B	0.000	7.933		100.00	0.000	0.000
					C	0.000	7.933		100.00	0.000	0.000
L5 130.0000-123.4200	126.6711	1.057	0.04	11.136	A	0.000	11.136	11.136	100.00	0.220	0.000
					B	0.000	11.136		100.00	0.220	0.000
					C	0.000	11.136		100.00	0.220	0.000
L6 123.4200-122.2500	122.8338	1.048	0.04	2.024	A	0.000	2.024	2.024	100.00	0.780	0.000
					B	0.000	2.024		100.00	0.780	0.000
					C	0.000	2.024		100.00	0.780	0.000
L7 122.2500-122.0000	122.1249	1.046	0.04	0.435	A	0.000	0.435	0.435	100.00	0.167	0.000
					B	0.000	0.435		100.00	0.167	0.000
					C	0.000	0.435		100.00	0.167	0.000
L8 122.0000-120.2500	121.1224	1.044	0.04	3.077	A	0.000	3.077	3.077	100.00	1.833	0.000
					B	0.000	3.077		100.00	1.833	0.000
					C	0.000	3.077		100.00	1.833	0.000
L9 120.2500-120.0000	120.1249	1.041	0.04	0.444	A	0.000	0.444	0.444	100.00	0.333	0.000
					B	0.000	0.444		100.00	0.333	0.000
					C	0.000	0.444		100.00	0.333	0.000
L10 120.0000-115.5000	117.7334	1.035	0.04	8.177	A	0.000	8.177	8.177	100.00	6.508	0.000
					B	0.000	8.177		100.00	6.508	0.000
					C	0.000	8.177		100.00	6.508	0.000
L11 115.5000-115.2500	115.3749	1.029	0.04	0.465	A	0.000	0.465	0.465	100.00	0.502	0.000
					B	0.000	0.465		100.00	0.502	0.000
					C	0.000	0.465		100.00	0.502	0.000
L12 115.2500-115.0000	115.1249	1.029	0.04	0.467	A	0.000	0.467	0.467	100.00	0.502	0.000
					B	0.000	0.467		100.00	0.502	0.000
					C	0.000	0.467		100.00	0.502	0.000
L13 115.0000-114.7500	114.8750	1.028	0.04	0.467	A	0.000	0.467	0.467	100.00	0.502	0.000
					B	0.000	0.467		100.00	0.502	0.000
					C	0.000	0.467		100.00	0.502	0.000
L14 114.7500-109.7500	112.2305	1.021	0.04	9.582	A	0.000	9.582	9.582	100.00	7.383	0.000
					B	0.000	9.582		100.00	7.383	0.000
					C	0.000	9.582		100.00	7.383	0.000
L15 109.7500-105.2500	107.4849	1.009	0.04	9.009	A	0.000	9.009	9.009	100.00	6.915	0.000
					B	0.000	9.009		100.00	6.635	0.000
					C	0.000	9.009		100.00	6.635	0.000
L16 105.2500-105.0000	105.1250	1.002	0.04	0.511	A	0.000	0.511	0.511	100.00	0.494	0.000
					B	0.000	0.511		100.00	0.454	0.000
					C	0.000	0.511		100.00	0.454	0.000
L17 105.0000-100.4000	102.6849	0.996	0.04	9.596	A	0.000	9.596	9.596	100.00	9.347	0.000
					B	0.000	9.596		100.00	8.611	0.000
					C	0.000	9.596		100.00	8.611	0.000
L18 100.4000-100.1500	100.2750	0.989	0.04	0.532	A	0.000	0.532	0.532	100.00	0.537	0.000
					B	0.000	0.532		100.00	0.497	0.000
					C	0.000	0.532		100.00	0.497	0.000
L19 100.1500-95.1500	97.6329	0.981	0.03	10.885	A	0.000	10.885	10.885	100.00	10.746	0.000
					B	0.000	10.885		100.00	9.946	0.000
					C	0.000	10.885		100.00	9.946	0.000
L20 95.1500-90.1500	92.6335	0.967	0.03	11.335	A	0.000	11.335	11.335	100.00	10.746	0.000
					B	0.000	11.335		100.00	9.946	0.000
					C	0.000	11.335		100.00	9.946	0.000
L21 90.1500-85.9600	88.0438	0.953	0.03	9.845	A	0.000	9.845	9.845	100.00	9.005	0.000
					B	0.000	9.845		100.00	8.335	0.000
					C	0.000	9.845		100.00	8.335	0.000
L22 85.9600-85.0400	85.4995	0.945	0.03	2.165	A	0.000	2.165	2.165	100.00	1.977	0.000
					B	0.000	2.165		100.00	1.830	0.000
					C	0.000	2.165		100.00	1.830	0.000
L23 85.0400-82.0000	83.5142	0.939	0.03	7.262	A	0.000	7.262	7.262	100.00	7.658	0.000
					B	0.000	7.262		100.00	7.172	0.000
					C	0.000	7.262		100.00	7.172	0.000
L24 82.0000-81.7500	81.8750	0.933	0.03	0.604	A	0.000	0.604	0.604	100.00	0.725	0.000
					B	0.000	0.604		100.00	0.685	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	0.604		100.00	0.685	0.000
L25 81.7500-77.2500	79.4877	0.925	0.03	11.066	A	0.000	11.066	11.066	100.00	13.046	0.000
					B	0.000	11.066		100.00	12.326	0.000
					C	0.000	11.066		100.00	12.326	0.000
L26 77.2500-77.0000	77.1250	0.918	0.03	0.626	A	0.000	0.626	0.626	100.00	0.725	0.000
					B	0.000	0.626		100.00	0.685	0.000
					C	0.000	0.626		100.00	0.685	0.000
L27 77.0000-75.0000	75.9976	0.914	0.03	5.048	A	0.000	5.048	5.048	100.00	5.629	0.000
					B	0.000	5.048		100.00	6.155	0.000
					C	0.000	5.048		100.00	7.001	0.000
L28 75.0000-74.7500	74.8750	0.91	0.03	0.636	A	0.000	0.636	0.636	100.00	0.725	0.000
					B	0.000	0.636		100.00	0.854	0.000
					C	0.000	0.636		100.00	1.023	0.000
L29 74.7500-71.2500	72.9929	0.903	0.03	9.021	A	0.000	9.021	9.021	100.00	8.516	0.000
					B	0.000	9.021		100.00	10.324	0.000
					C	0.000	9.021		100.00	12.693	0.000
L30 71.2500-71.0000	71.1250	0.897	0.03	0.652	A	0.000	0.652	0.652	100.00	0.636	0.000
					B	0.000	0.652		100.00	0.765	0.000
					C	0.000	0.652		100.00	0.935	0.000
L31 71.0000-70.4000	70.6998	0.895	0.03	1.570	A	0.000	1.570	1.570	100.00	1.527	0.000
					B	0.000	1.570		100.00	1.837	0.000
					C	0.000	1.570		100.00	2.243	0.000
L32 70.4000-70.1500	70.2750	0.893	0.03	0.656	A	0.000	0.656	0.656	100.00	0.636	0.000
					B	0.000	0.656		100.00	0.765	0.000
					C	0.000	0.656		100.00	0.935	0.000
L33 70.1500-65.1500	67.6360	0.884	0.03	13.363	A	0.000	13.363	13.363	100.00	12.725	0.000
					B	0.000	13.363		100.00	15.308	0.000
					C	0.000	13.363		100.00	18.692	0.000
L34 65.1500-60.1500	62.6365	0.865	0.03	13.815	A	0.000	13.815	13.815	100.00	12.725	0.000
					B	0.000	13.815		100.00	15.308	0.000
					C	0.000	13.815		100.00	18.692	0.000
L35 60.1500-55.1500	57.6369	0.844	0.03	14.268	A	0.000	14.268	14.268	100.00	12.725	0.000
					B	0.000	14.268		100.00	15.308	0.000
					C	0.000	14.268		100.00	18.692	0.000
L36 55.1500-50.1500	52.6373	0.823	0.03	14.719	A	0.000	14.719	14.719	100.00	12.725	0.000
					B	0.000	14.719		100.00	15.308	0.000
					C	0.000	14.719		100.00	18.692	0.000
L37 50.1500-42.4100	46.2507	0.793	0.03	23.675	A	0.000	23.675	23.675	100.00	18.015	0.000
					B	0.000	23.675		100.00	22.081	0.000
					C	0.000	23.675		100.00	22.055	0.000
L38 42.4100-41.4100	41.9095	0.771	0.03	3.086	A	0.000	3.086	3.086	100.00	2.055	0.000
					B	0.000	3.086		100.00	1.895	0.000
					C	0.000	3.086		100.00	1.895	0.000
L39 41.4100-36.4100	38.8981	0.755	0.03	15.701	A	0.000	15.701	15.701	100.00	10.242	0.000
					B	0.000	15.701		100.00	9.442	0.000
					C	0.000	15.701		100.00	9.442	0.000
L40 36.4100-36.2500	36.3300	0.74	0.03	0.510	A	0.000	0.510	0.510	100.00	0.314	0.000
					B	0.000	0.510		100.00	0.289	0.000
					C	0.000	0.510		100.00	0.289	0.000
L41 36.2500-36.0000	36.1250	0.739	0.03	0.797	A	0.000	0.797	0.797	100.00	0.529	0.000
					B	0.000	0.797		100.00	0.489	0.000
					C	0.000	0.797		100.00	0.451	0.000
L42 36.0000-31.2500	33.6146	0.724	0.03	15.366	A	0.000	15.366	15.366	100.00	10.048	0.000
					B	0.000	15.366		100.00	9.288	0.000
					C	0.000	15.366		100.00	8.574	0.000
L43 31.2500-31.0000	31.1250	0.708	0.03	0.820	A	0.000	0.820	0.820	100.00	0.529	0.000
					B	0.000	0.820		100.00	0.489	0.000
					C	0.000	0.820		100.00	0.451	0.000
L44 31.0000-26.0000	28.4888	0.7	0.02	16.638	A	0.000	16.638	16.638	100.00	10.577	0.000
					B	0.000	16.638		100.00	9.777	0.000
					C	0.000	16.638		100.00	9.025	0.000
L45 26.0000-21.0000	23.4891	0.7	0.02	17.088	A	0.000	17.088	17.088	100.00	10.459	0.000
					B	0.000	17.088		100.00	9.809	0.000
					C	0.000	17.088		100.00	9.247	0.000
L46 21.0000-18.5000	19.7473	0.7	0.02	8.713	A	0.000	8.713	8.713	100.00	5.139	0.000
					B	0.000	8.713		100.00	4.929	0.000
					C	0.000	8.713		100.00	6.733	0.000
L47 18.5000-	18.3750	0.7	0.02	0.878	A	0.000	0.878	0.878	100.00	0.514	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
18.2500					B	0.000	0.878		100.00	0.493	0.000
					C	0.000	0.878		100.00	0.673	0.000
L48 18.2500-15.0000	16.6205	0.7	0.02	11.511	A	0.000	11.511	11.511	100.00	6.680	0.000
					B	0.000	11.511		100.00	5.298	0.000
					C	0.000	11.511		100.00	8.753	0.000
L49 15.0000-14.7500	14.8750	0.7	0.02	0.893	A	0.000	0.893	0.893	100.00	0.514	0.000
					B	0.000	0.893		100.00	0.271	0.000
					C	0.000	0.893		100.00	0.673	0.000
L50 14.7500-9.7500	12.2397	0.7	0.02	18.106	A	0.000	18.106	18.106	100.00	8.515	0.000
					B	0.000	18.106		100.00	5.417	0.000
					C	0.000	18.106		100.00	13.467	0.000
L51 9.7500-4.7500	7.2399	0.7	0.02	18.557	A	0.000	18.557	18.557	100.00	5.242	0.000
					B	0.000	18.557		100.00	5.417	0.000
					C	0.000	18.557		100.00	13.467	0.000
L52 4.7500-0.0000	2.3661	0.7	0.02	18.046	A	0.000	18.046	18.046	100.00	3.869	0.000
					B	0.000	18.046		100.00	3.792	0.000
					C	0.000	18.046		100.00	9.427	0.000

Tower Pressure - With Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 150.0000-145.0000	147.4710	1.104	0.01	1.4809	7.797	A	0.000	7.797	7.797	100.00	0.000	0.000
						B	0.000	7.797		100.00	0.000	0.000
						C	0.000	7.797		100.00	0.000	0.000
L2 145.0000-140.0000	142.4729	1.093	0.01	1.4758	8.249	A	0.000	8.249	8.249	100.00	0.000	0.000
						B	0.000	8.249		100.00	0.000	0.000
						C	0.000	8.249		100.00	0.000	0.000
L3 140.0000-135.0000	137.4746	1.082	0.01	1.4706	8.702	A	0.000	8.702	8.702	100.00	0.000	0.000
						B	0.000	8.702		100.00	0.000	0.000
						C	0.000	8.702		100.00	0.000	0.000
L4 135.0000-130.0000	132.4760	1.071	0.01	1.4651	9.154	A	0.000	9.154	9.154	100.00	0.000	0.000
						B	0.000	9.154		100.00	0.000	0.000
						C	0.000	9.154		100.00	0.000	0.000
L5 130.0000-123.4200	126.6711	1.057	0.01	1.4586	12.736	A	0.000	12.736	12.736	100.00	0.286	0.000
						B	0.000	12.736		100.00	0.286	0.000
						C	0.000	12.736		100.00	0.286	0.000
L6 123.4200-122.2500	122.8338	1.048	0.01	1.4541	2.308	A	0.000	2.308	2.308	100.00	1.013	0.000
						B	0.000	2.308		100.00	1.013	0.000
						C	0.000	2.308		100.00	1.013	0.000
L7 122.2500-122.0000	122.1249	1.046	0.01	1.4532	0.496	A	0.000	0.496	0.496	100.00	0.216	0.000
						B	0.000	0.496		100.00	0.216	0.000
						C	0.000	0.496		100.00	0.216	0.000
L8 122.0000-120.2500	121.1224	1.044	0.01	1.4520	3.501	A	0.000	3.501	3.501	100.00	2.471	0.000
						B	0.000	3.501		100.00	2.471	0.000
						C	0.000	3.501		100.00	2.471	0.000
L9 120.2500-120.0000	120.1249	1.041	0.01	1.4508	0.504	A	0.000	0.504	0.504	100.00	0.455	0.000
						B	0.000	0.504		100.00	0.455	0.000
						C	0.000	0.504		100.00	0.455	0.000
L10 120.0000-115.5000	117.7334	1.035	0.01	1.4479	9.263	A	0.000	9.263	9.263	100.00	8.919	0.000
						B	0.000	9.263		100.00	8.919	0.000
						C	0.000	9.263		100.00	8.919	0.000
L11 115.5000-115.2500	115.3749	1.029	0.01	1.4450	0.526	A	0.000	0.526	0.526	100.00	0.696	0.000
						B	0.000	0.526		100.00	0.696	0.000
						C	0.000	0.526		100.00	0.696	0.000
L12 115.2500-115.0000	115.1249	1.029	0.01	1.4447	0.527	A	0.000	0.527	0.527	100.00	0.696	0.000
						B	0.000	0.527		100.00	0.696	0.000
						C	0.000	0.527		100.00	0.696	0.000
L13 115.0000-114.7500	114.8750	1.028	0.01	1.4444	0.527	A	0.000	0.527	0.527	100.00	0.696	0.000
						B	0.000	0.527		100.00	0.696	0.000
						C	0.000	0.527		100.00	0.696	0.000
L14 114.7500-109.7500	112.2305	1.021	0.01	1.4410	10.783	A	0.000	10.783	10.783	100.00	10.463	0.000
						B	0.000	10.783		100.00	10.463	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						C	0.000	10.783		100.00	10.463	0.000
L15 109.7500-105.2500	107.4849	1.009	0.01	1.4348	10.085	A	0.000	10.085	10.085	100.00	10.194	0.000
						B	0.000	10.085		100.00	9.411	0.000
						C	0.000	10.085		100.00	9.411	0.000
L16 105.2500-105.0000	105.1250	1.002	0.01	1.4316	0.570	A	0.000	0.570	0.570	100.00	0.747	0.000
						B	0.000	0.570		100.00	0.636	0.000
						C	0.000	0.570		100.00	0.636	0.000
L17 105.0000-100.4000	102.6849	0.996	0.01	1.4283	10.691	A	0.000	10.691	10.691	100.00	14.196	0.000
						B	0.000	10.691		100.00	12.146	0.000
						C	0.000	10.691		100.00	12.146	0.000
L18 100.4000-100.1500	100.2750	0.989	0.01	1.4249	0.592	A	0.000	0.592	0.592	100.00	0.822	0.000
						B	0.000	0.592		100.00	0.711	0.000
						C	0.000	0.592		100.00	0.711	0.000
L19 100.1500-95.1500	97.6329	0.981	0.01	1.4211	12.069	A	0.000	12.069	12.069	100.00	16.430	0.000
						B	0.000	12.069		100.00	14.209	0.000
						C	0.000	12.069		100.00	14.209	0.000
L20 95.1500-90.1500	92.6335	0.967	0.01	1.4136	12.513	A	0.000	12.513	12.513	100.00	16.400	0.000
						B	0.000	12.513		100.00	14.187	0.000
						C	0.000	12.513		100.00	14.187	0.000
L21 90.1500-85.9600	88.0438	0.953	0.01	1.4065	10.827	A	0.000	10.827	10.827	100.00	13.719	0.000
						B	0.000	10.827		100.00	11.870	0.000
						C	0.000	10.827		100.00	11.870	0.000
L22 85.9600-85.0400	85.4995	0.945	0.01	1.4023	2.380	A	0.000	2.380	2.380	100.00	3.012	0.000
						B	0.000	2.380		100.00	2.606	0.000
						C	0.000	2.380		100.00	2.606	0.000
L23 85.0400-82.0000	83.5142	0.939	0.01	1.3991	7.971	A	0.000	7.971	7.971	100.00	11.299	0.000
						B	0.000	7.971		100.00	9.962	0.000
						C	0.000	7.971		100.00	9.962	0.000
L24 82.0000-81.7500	81.8750	0.933	0.01	1.3963	0.662	A	0.000	0.662	0.662	100.00	1.044	0.000
						B	0.000	0.662		100.00	0.934	0.000
						C	0.000	0.662		100.00	0.934	0.000
L25 81.7500-77.2500	79.4877	0.925	0.01	1.3922	12.110	A	0.000	12.110	12.110	100.00	18.770	0.000
						B	0.000	12.110		100.00	16.797	0.000
						C	0.000	12.110		100.00	16.797	0.000
L26 77.2500-77.0000	77.1250	0.918	0.01	1.3880	0.684	A	0.000	0.684	0.684	100.00	1.042	0.000
						B	0.000	0.684		100.00	0.932	0.000
						C	0.000	0.684		100.00	0.932	0.000
L27 77.0000-75.0000	75.9976	0.914	0.01	1.3859	5.510	A	0.000	5.510	5.510	100.00	8.093	0.000
						B	0.000	5.510		100.00	8.410	0.000
						C	0.000	5.510		100.00	9.603	0.000
L28 75.0000-74.7500	74.8750	0.91	0.01	1.3839	0.694	A	0.000	0.694	0.694	100.00	1.041	0.000
						B	0.000	0.694		100.00	1.170	0.000
						C	0.000	0.694		100.00	1.408	0.000
L29 74.7500-71.2500	72.9929	0.903	0.01	1.3803	9.826	A	0.000	9.826	9.826	100.00	12.577	0.000
						B	0.000	9.826		100.00	14.385	0.000
						C	0.000	9.826		100.00	17.720	0.000
L30 71.2500-71.0000	71.1250	0.897	0.01	1.3768	0.710	A	0.000	0.710	0.710	100.00	0.912	0.000
						B	0.000	0.710		100.00	1.041	0.000
						C	0.000	0.710		100.00	1.279	0.000
L31 71.0000-70.4000	70.6998	0.895	0.01	1.3759	1.708	A	0.000	1.708	1.708	100.00	2.187	0.000
						B	0.000	1.708		100.00	2.497	0.000
						C	0.000	1.708		100.00	3.069	0.000
L32 70.4000-70.1500	70.2750	0.893	0.01	1.3751	0.714	A	0.000	0.714	0.714	100.00	0.911	0.000
						B	0.000	0.714		100.00	1.040	0.000
						C	0.000	0.714		100.00	1.278	0.000
L33 70.1500-65.1500	67.6360	0.884	0.01	1.3699	14.505	A	0.000	14.505	14.505	100.00	18.204	0.000
						B	0.000	14.505		100.00	20.788	0.000
						C	0.000	14.505		100.00	25.541	0.000
L34 65.1500-60.1500	62.6365	0.865	0.00	1.3594	14.948	A	0.000	14.948	14.948	100.00	18.163	0.000
						B	0.000	14.948		100.00	20.746	0.000
						C	0.000	14.948		100.00	25.489	0.000
L35 60.1500-55.1500	57.6369	0.844	0.00	1.3481	15.391	A	0.000	15.391	15.391	100.00	18.117	0.000
						B	0.000	15.391		100.00	20.701	0.000
						C	0.000	15.391		100.00	25.432	0.000
L36 55.1500-50.1500	52.6373	0.823	0.00	1.3359	15.832	A	0.000	15.832	15.832	100.00	18.069	0.000
						B	0.000	15.832		100.00	20.652	0.000
						C	0.000	15.832		100.00	25.371	0.000
L37 50.1500-	46.2507	0.793	0.00	1.3188	25.377	A	0.000	25.377	25.377	100.00	25.356	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
42.4100						B	0.000	25.377		100.00	29.300	0.000
						C	0.000	25.377		100.00	29.412	0.000
L38 42.4100-41.4100	41.9095	0.771	0.00	1.3058	3.306	A	0.000	3.306	3.306	100.00	2.732	0.000
						B	0.000	3.306		100.00	2.426	0.000
						C	0.000	3.306		100.00	2.308	0.000
L39 41.4100-36.4100	38.8981	0.755	0.00	1.2961	16.781	A	0.000	16.781	16.781	100.00	13.550	0.000
						B	0.000	16.781		100.00	12.034	0.000
						C	0.000	16.781		100.00	11.454	0.000
L40 36.4100-36.2500	36.3300	0.74	0.00	1.2873	0.544	A	0.000	0.544	0.544	100.00	0.416	0.000
						B	0.000	0.544		100.00	0.367	0.000
						C	0.000	0.544		100.00	0.349	0.000
L41 36.2500-36.0000	36.1250	0.739	0.00	1.2866	0.851	A	0.000	0.851	0.851	100.00	0.663	0.000
						B	0.000	0.851		100.00	0.587	0.000
						C	0.000	0.851		100.00	0.551	0.000
L42 36.0000-31.2500	33.6146	0.724	0.00	1.2774	16.377	A	0.000	16.377	16.377	100.00	12.575	0.000
						B	0.000	16.377		100.00	11.144	0.000
						C	0.000	16.377		100.00	10.458	0.000
L43 31.2500-31.0000	31.1250	0.708	0.00	1.2676	0.873	A	0.000	0.873	0.873	100.00	0.689	0.000
						B	0.000	0.873		100.00	0.586	0.000
						C	0.000	0.873		100.00	0.578	0.000
L44 31.0000-26.0000	28.4888	0.7	0.00	1.2564	17.685	A	0.000	17.685	17.685	100.00	13.756	0.000
						B	0.000	17.685		100.00	11.699	0.000
						C	0.000	17.685		100.00	11.538	0.000
L45 26.0000-21.0000	23.4891	0.7	0.00	1.2324	18.115	A	0.000	18.115	18.115	100.00	13.580	0.000
						B	0.000	18.115		100.00	11.922	0.000
						C	0.000	18.115		100.00	11.773	0.000
L46 21.0000-18.5000	19.7473	0.7	0.00	1.2112	9.218	A	0.000	9.218	9.218	100.00	6.673	0.000
						B	0.000	9.218		100.00	6.140	0.000
						C	0.000	9.218		100.00	8.550	0.000
L47 18.5000-18.2500	18.3750	0.7	0.00	1.2025	0.928	A	0.000	0.928	0.928	100.00	0.666	0.000
						B	0.000	0.928		100.00	0.613	0.000
						C	0.000	0.928		100.00	0.854	0.000
L48 18.2500-15.0000	16.6205	0.7	0.00	1.1905	12.156	A	0.000	12.156	12.156	100.00	8.642	0.000
						B	0.000	12.156		100.00	6.548	0.000
						C	0.000	12.156		100.00	11.075	0.000
L49 15.0000-14.7500	14.8750	0.7	0.00	1.1773	0.943	A	0.000	0.943	0.943	100.00	0.663	0.000
						B	0.000	0.943		100.00	0.330	0.000
						C	0.000	0.943		100.00	0.850	0.000
L50 14.7500-9.7500	12.2397	0.7	0.00	1.1546	19.068	A	0.000	19.068	19.068	100.00	11.226	0.000
						B	0.000	19.068		100.00	6.571	0.000
						C	0.000	19.068		100.00	16.930	0.000
L51 9.7500-4.7500	7.2399	0.7	0.00	1.0955	19.470	A	0.000	19.470	19.470	100.00	7.433	0.000
						B	0.000	19.470		100.00	6.512	0.000
						C	0.000	19.470		100.00	16.753	0.000
L52 4.7500-0.0000	2.3661	0.7	0.00	0.9796	18.822	A	0.000	18.822	18.822	100.00	5.486	0.000
						B	0.000	18.822		100.00	4.477	0.000
						C	0.000	18.822		100.00	11.484	0.000

Tower Pressure - Service

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 150.0000-145.0000	147.4710	1.104	0.01	6.563	A	0.000	6.563	6.563	100.00	0.000	0.000
					B	0.000	6.563		100.00	0.000	0.000
					C	0.000	6.563		100.00	0.000	0.000
L2 145.0000-140.0000	142.4729	1.093	0.01	7.020	A	0.000	7.020	7.020	100.00	0.000	0.000
					B	0.000	7.020		100.00	0.000	0.000
					C	0.000	7.020		100.00	0.000	0.000
L3 140.0000-135.0000	137.4746	1.082	0.01	7.476	A	0.000	7.476	7.476	100.00	0.000	0.000
					B	0.000	7.476		100.00	0.000	0.000
					C	0.000	7.476		100.00	0.000	0.000
L4 135.0000-130.0000	132.4760	1.071	0.01	7.933	A	0.000	7.933	7.933	100.00	0.000	0.000
					B	0.000	7.933		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	7.933		100.00	0.000	0.000
L5 130.0000-123.4200	126.6711	1.057	0.01	11.136	A	0.000	11.136	11.136	100.00	0.220	0.000
					B	0.000	11.136		100.00	0.220	0.000
					C	0.000	11.136		100.00	0.220	0.000
L6 123.4200-122.2500	122.8338	1.048	0.01	2.024	A	0.000	2.024	2.024	100.00	0.780	0.000
					B	0.000	2.024		100.00	0.780	0.000
					C	0.000	2.024		100.00	0.780	0.000
L7 122.2500-122.0000	122.1249	1.046	0.01	0.435	A	0.000	0.435	0.435	100.00	0.167	0.000
					B	0.000	0.435		100.00	0.167	0.000
					C	0.000	0.435		100.00	0.167	0.000
L8 122.0000-120.2500	121.1224	1.044	0.01	3.077	A	0.000	3.077	3.077	100.00	1.833	0.000
					B	0.000	3.077		100.00	1.833	0.000
					C	0.000	3.077		100.00	1.833	0.000
L9 120.2500-120.0000	120.1249	1.041	0.01	0.444	A	0.000	0.444	0.444	100.00	0.333	0.000
					B	0.000	0.444		100.00	0.333	0.000
					C	0.000	0.444		100.00	0.333	0.000
L10 120.0000-115.5000	117.7334	1.035	0.01	8.177	A	0.000	8.177	8.177	100.00	6.508	0.000
					B	0.000	8.177		100.00	6.508	0.000
					C	0.000	8.177		100.00	6.508	0.000
L11 115.5000-115.2500	115.3749	1.029	0.01	0.465	A	0.000	0.465	0.465	100.00	0.502	0.000
					B	0.000	0.465		100.00	0.502	0.000
					C	0.000	0.465		100.00	0.502	0.000
L12 115.2500-115.0000	115.1249	1.029	0.01	0.467	A	0.000	0.467	0.467	100.00	0.502	0.000
					B	0.000	0.467		100.00	0.502	0.000
					C	0.000	0.467		100.00	0.502	0.000
L13 115.0000-114.7500	114.8750	1.028	0.01	0.467	A	0.000	0.467	0.467	100.00	0.502	0.000
					B	0.000	0.467		100.00	0.502	0.000
					C	0.000	0.467		100.00	0.502	0.000
L14 114.7500-109.7500	112.2305	1.021	0.01	9.582	A	0.000	9.582	9.582	100.00	7.383	0.000
					B	0.000	9.582		100.00	7.383	0.000
					C	0.000	9.582		100.00	7.383	0.000
L15 109.7500-105.2500	107.4849	1.009	0.01	9.009	A	0.000	9.009	9.009	100.00	6.915	0.000
					B	0.000	9.009		100.00	6.635	0.000
					C	0.000	9.009		100.00	6.635	0.000
L16 105.2500-105.0000	105.1250	1.002	0.01	0.511	A	0.000	0.511	0.511	100.00	0.494	0.000
					B	0.000	0.511		100.00	0.454	0.000
					C	0.000	0.511		100.00	0.454	0.000
L17 105.0000-100.4000	102.6849	0.996	0.01	9.596	A	0.000	9.596	9.596	100.00	9.347	0.000
					B	0.000	9.596		100.00	8.611	0.000
					C	0.000	9.596		100.00	8.611	0.000
L18 100.4000-100.1500	100.2750	0.989	0.01	0.532	A	0.000	0.532	0.532	100.00	0.537	0.000
					B	0.000	0.532		100.00	0.497	0.000
					C	0.000	0.532		100.00	0.497	0.000
L19 100.1500-95.1500	97.6329	0.981	0.01	10.885	A	0.000	10.885	10.885	100.00	10.746	0.000
					B	0.000	10.885		100.00	9.946	0.000
					C	0.000	10.885		100.00	9.946	0.000
L20 95.1500-90.1500	92.6335	0.967	0.01	11.335	A	0.000	11.335	11.335	100.00	10.746	0.000
					B	0.000	11.335		100.00	9.946	0.000
					C	0.000	11.335		100.00	9.946	0.000
L21 90.1500-85.9600	88.0438	0.953	0.01	9.845	A	0.000	9.845	9.845	100.00	9.005	0.000
					B	0.000	9.845		100.00	8.335	0.000
					C	0.000	9.845		100.00	8.335	0.000
L22 85.9600-85.0400	85.4995	0.945	0.01	2.165	A	0.000	2.165	2.165	100.00	1.977	0.000
					B	0.000	2.165		100.00	1.830	0.000
					C	0.000	2.165		100.00	1.830	0.000
L23 85.0400-82.0000	83.5142	0.939	0.01	7.262	A	0.000	7.262	7.262	100.00	7.658	0.000
					B	0.000	7.262		100.00	7.172	0.000
					C	0.000	7.262		100.00	7.172	0.000
L24 82.0000-81.7500	81.8750	0.933	0.01	0.604	A	0.000	0.604	0.604	100.00	0.725	0.000
					B	0.000	0.604		100.00	0.685	0.000
					C	0.000	0.604		100.00	0.685	0.000
L25 81.7500-77.2500	79.4877	0.925	0.01	11.066	A	0.000	11.066	11.066	100.00	13.046	0.000
					B	0.000	11.066		100.00	12.326	0.000
					C	0.000	11.066		100.00	12.326	0.000
L26 77.2500-77.0000	77.1250	0.918	0.01	0.626	A	0.000	0.626	0.626	100.00	0.725	0.000
					B	0.000	0.626		100.00	0.685	0.000
					C	0.000	0.626		100.00	0.685	0.000
L27 77.0000-	75.9976	0.914	0.01	5.048	A	0.000	5.048	5.048	100.00	5.629	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
75.0000					B	0.000	5.048		100.00	6.155	0.000
					C	0.000	5.048		100.00	7.001	0.000
L28 75.0000-74.7500	74.8750	0.91	0.01	0.636	A	0.000	0.636	0.636	100.00	0.725	0.000
					B	0.000	0.636		100.00	0.854	0.000
					C	0.000	0.636		100.00	1.023	0.000
L29 74.7500-71.2500	72.9929	0.903	0.01	9.021	A	0.000	9.021	9.021	100.00	8.516	0.000
					B	0.000	9.021		100.00	10.324	0.000
					C	0.000	9.021		100.00	12.693	0.000
L30 71.2500-71.0000	71.1250	0.897	0.01	0.652	A	0.000	0.652	0.652	100.00	0.636	0.000
					B	0.000	0.652		100.00	0.765	0.000
					C	0.000	0.652		100.00	0.935	0.000
L31 71.0000-70.4000	70.6998	0.895	0.01	1.570	A	0.000	1.570	1.570	100.00	1.527	0.000
					B	0.000	1.570		100.00	1.837	0.000
					C	0.000	1.570		100.00	2.243	0.000
L32 70.4000-70.1500	70.2750	0.893	0.01	0.656	A	0.000	0.656	0.656	100.00	0.636	0.000
					B	0.000	0.656		100.00	0.765	0.000
					C	0.000	0.656		100.00	0.935	0.000
L33 70.1500-65.1500	67.6360	0.884	0.01	13.363	A	0.000	13.363	13.363	100.00	12.725	0.000
					B	0.000	13.363		100.00	15.308	0.000
					C	0.000	13.363		100.00	18.692	0.000
L34 65.1500-60.1500	62.6365	0.865	0.01	13.815	A	0.000	13.815	13.815	100.00	12.725	0.000
					B	0.000	13.815		100.00	15.308	0.000
					C	0.000	13.815		100.00	18.692	0.000
L35 60.1500-55.1500	57.6369	0.844	0.01	14.268	A	0.000	14.268	14.268	100.00	12.725	0.000
					B	0.000	14.268		100.00	15.308	0.000
					C	0.000	14.268		100.00	18.692	0.000
L36 55.1500-50.1500	52.6373	0.823	0.01	14.719	A	0.000	14.719	14.719	100.00	12.725	0.000
					B	0.000	14.719		100.00	15.308	0.000
					C	0.000	14.719		100.00	18.692	0.000
L37 50.1500-42.4100	46.2507	0.793	0.01	23.675	A	0.000	23.675	23.675	100.00	18.015	0.000
					B	0.000	23.675		100.00	22.081	0.000
					C	0.000	23.675		100.00	22.055	0.000
L38 42.4100-41.4100	41.9095	0.771	0.01	3.086	A	0.000	3.086	3.086	100.00	2.055	0.000
					B	0.000	3.086		100.00	1.895	0.000
					C	0.000	3.086		100.00	1.895	0.000
L39 41.4100-36.4100	38.8981	0.755	0.01	15.701	A	0.000	15.701	15.701	100.00	10.242	0.000
					B	0.000	15.701		100.00	9.442	0.000
					C	0.000	15.701		100.00	9.442	0.000
L40 36.4100-36.2500	36.3300	0.74	0.01	0.510	A	0.000	0.510	0.510	100.00	0.314	0.000
					B	0.000	0.510		100.00	0.289	0.000
					C	0.000	0.510		100.00	0.289	0.000
L41 36.2500-36.0000	36.1250	0.739	0.01	0.797	A	0.000	0.797	0.797	100.00	0.529	0.000
					B	0.000	0.797		100.00	0.489	0.000
					C	0.000	0.797		100.00	0.451	0.000
L42 36.0000-31.2500	33.6146	0.724	0.01	15.366	A	0.000	15.366	15.366	100.00	10.048	0.000
					B	0.000	15.366		100.00	9.288	0.000
					C	0.000	15.366		100.00	8.574	0.000
L43 31.2500-31.0000	31.1250	0.708	0.01	0.820	A	0.000	0.820	0.820	100.00	0.529	0.000
					B	0.000	0.820		100.00	0.489	0.000
					C	0.000	0.820		100.00	0.451	0.000
L44 31.0000-26.0000	28.4888	0.7	0.01	16.638	A	0.000	16.638	16.638	100.00	10.577	0.000
					B	0.000	16.638		100.00	9.777	0.000
					C	0.000	16.638		100.00	9.025	0.000
L45 26.0000-21.0000	23.4891	0.7	0.01	17.088	A	0.000	17.088	17.088	100.00	10.459	0.000
					B	0.000	17.088		100.00	9.809	0.000
					C	0.000	17.088		100.00	9.247	0.000
L46 21.0000-18.5000	19.7473	0.7	0.01	8.713	A	0.000	8.713	8.713	100.00	5.139	0.000
					B	0.000	8.713		100.00	4.929	0.000
					C	0.000	8.713		100.00	6.733	0.000
L47 18.5000-18.2500	18.3750	0.7	0.01	0.878	A	0.000	0.878	0.878	100.00	0.514	0.000
					B	0.000	0.878		100.00	0.493	0.000
					C	0.000	0.878		100.00	0.673	0.000
L48 18.2500-15.0000	16.6205	0.7	0.01	11.511	A	0.000	11.511	11.511	100.00	6.680	0.000
					B	0.000	11.511		100.00	5.298	0.000
					C	0.000	11.511		100.00	8.753	0.000
L49 15.0000-14.7500	14.8750	0.7	0.01	0.893	A	0.000	0.893	0.893	100.00	0.514	0.000
					B	0.000	0.893		100.00	0.271	0.000
					C	0.000	0.893		100.00	0.673	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L50 14.7500-9.7500	12.2397	0.7	0.01	18.106	A	0.000	18.106	18.106	100.00	8.515	0.000
					B	0.000	18.106		100.00	5.417	0.000
					C	0.000	18.106		100.00	13.467	0.000
L51 9.7500-4.7500	7.2399	0.7	0.01	18.557	A	0.000	18.557	18.557	100.00	5.242	0.000
					B	0.000	18.557		100.00	5.417	0.000
					C	0.000	18.557		100.00	13.467	0.000
L52 4.7500-0.0000	2.3661	0.7	0.01	18.046	A	0.000	18.046	18.046	100.00	3.869	0.000
					B	0.000	18.046		100.00	3.792	0.000
					C	0.000	18.046		100.00	9.427	0.000

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	150 - 145	Pole	Max Tension	26	0.00	-0.00	-0.00
			Max. Compression	26	-7.97	0.01	-0.27
			Max. Mx	8	-2.98	-24.30	-0.04
			Max. My	14	-2.98	-0.00	-24.42
			Max. Vy	8	4.22	-24.30	-0.04
			Max. Vx	14	4.22	-0.00	-24.42
			Max. Torque	20			0.82
L2	145 - 140	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-8.37	0.01	-0.26
			Max. Mx	8	-3.20	-45.98	-0.05
			Max. My	14	-3.20	-0.00	-46.11
			Max. Vy	8	4.46	-45.98	-0.05
			Max. Vx	14	4.46	-0.00	-46.11
			Max. Torque	20			0.82
L3	140 - 135	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-17.79	0.75	0.27
			Max. Mx	20	-6.63	80.31	0.13
			Max. My	14	-6.62	-0.02	-80.23
			Max. Vy	8	9.13	-80.14	-0.06
			Max. Vx	14	9.07	-0.02	-80.23
			Max. Torque	22			1.00
L4	135 - 130	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18.29	0.76	0.29
			Max. Mx	20	-6.96	126.50	0.42
			Max. My	14	-6.95	-0.31	-126.14
			Max. Vy	8	9.37	-126.36	-0.36
			Max. Vx	14	9.31	-0.31	-126.14
			Max. Torque	22			1.00
L5	130 - 123.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.79	0.70	1.54
			Max. Mx	20	-9.81	166.65	0.85
			Max. My	2	-9.79	0.67	166.70
			Max. Vy	8	13.91	-166.53	-0.32
			Max. Vx	14	14.05	-0.51	-166.32
			Max. Torque	22			1.00
L6	123.42 - 122.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.66	0.70	1.55
			Max. Mx	20	-10.39	227.47	1.10
			Max. My	2	-10.36	0.93	228.15
			Max. Vy	8	14.15	-227.39	-0.58
			Max. Vx	14	14.29	-0.76	-227.79
			Max. Torque	22			0.72
L7	122.25 - 122	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.71	0.71	1.56
			Max. Mx	20	-10.43	231.01	1.12
			Max. My	2	-10.41	0.94	231.72
			Max. Vy	8	14.15	-230.93	-0.60
			Max. Vx	14	14.30	-0.78	-231.36
			Max. Torque	22			0.72
L8	122 - 120.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.08	0.71	1.56
			Max. Mx	20	-10.66	255.84	1.22
			Max. My	2	-10.64	1.05	256.81
			Max. Vy	8	14.25	-255.78	-0.70
			Max. Vx	14	14.40	-0.88	-256.46
			Max. Torque	22			0.72
L9	120.25 - 120	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.14	0.71	1.56
			Max. Mx	20	-10.72	259.40	1.24
			Max. My	2	-10.69	1.06	260.41
			Max. Vy	8	14.26	-259.34	-0.72
			Max. Vx	14	14.41	-0.89	-260.06
			Max. Torque	22			0.72
L10	120 - 115.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.74	0.71	1.58

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	20	-14.98	330.10	1.50
			Max. My	2	-14.95	1.33	331.76
			Max. Vy	8	18.51	-330.08	-0.99
			Max. Vx	14	18.65	-1.16	-331.44
			Max. Torque	22			0.72
L11	115.5 - 115.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.80	0.71	1.58
			Max. Mx	20	-15.02	334.73	1.52
			Max. My	2	-14.99	1.35	336.43
			Max. Vy	8	18.53	-334.71	-1.00
			Max. Vx	14	18.67	-1.17	-336.10
			Max. Torque	22			0.72
L12	115.25 - 115	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.87	0.71	1.58
			Max. Mx	20	-15.06	339.36	1.53
			Max. My	2	-15.03	1.36	341.09
			Max. Vy	8	18.55	-339.34	-1.02
			Max. Vx	14	18.70	-1.19	-340.77
			Max. Torque	22			0.72
L13	115 - 114.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.95	0.72	1.58
			Max. Mx	20	-15.10	344.00	1.55
			Max. My	2	-15.08	1.38	345.77
			Max. Vy	8	18.57	-343.98	-1.03
			Max. Vx	14	18.72	-1.20	-345.45
			Max. Torque	22			0.72
L14	114.75 - 109.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.35	0.72	1.60
			Max. Mx	8	-16.02	-438.05	-1.34
			Max. My	2	-16.01	1.68	440.47
			Max. Vy	8	19.07	-438.05	-1.34
			Max. Vx	14	19.20	-1.50	-440.22
			Max. Torque	22			0.72
L15	109.75 - 105.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.95	0.73	2.03
			Max. Mx	8	-19.73	-529.12	-1.50
			Max. My	2	-19.72	1.95	532.22
			Max. Vy	8	21.98	-529.12	-1.50
			Max. Vx	14	22.14	-1.77	-531.84
			Max. Torque	22			0.72
L16	105.25 - 105	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.04	0.74	2.04
			Max. Mx	8	-19.80	-534.61	-1.51
			Max. My	2	-19.79	1.97	537.75
			Max. Vy	8	22.00	-534.61	-1.51
			Max. Vx	14	22.17	-1.78	-537.37
			Max. Torque	22			0.57
L17	105 - 100.4	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.74	0.77	2.05
			Max. Mx	8	-20.94	-636.86	-1.79
			Max. My	2	-20.93	2.26	640.60
			Max. Vy	8	22.48	-636.86	-1.79
			Max. Vx	14	22.64	-2.05	-640.37
			Max. Torque	22			0.57
L18	100.4 - 100.15	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.83	0.77	2.06
			Max. Mx	8	-21.01	-642.48	-1.80
			Max. My	2	-21.00	2.28	646.25
			Max. Vy	8	22.50	-642.48	-1.80
			Max. Vx	14	22.67	-2.06	-646.03
			Max. Torque	22			0.57
L19	100.15 - 95.15	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-48.74	0.81	2.08
			Max. Mx	8	-22.31	-756.23	-2.10

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	-22.30	2.60	760.61
			Max. Vy	8	23.02	-756.23	-2.10
			Max. Vx	14	23.18	-2.35	-760.58
			Max. Torque	22			0.57
L20	95.15 - 90.15	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.68	0.85	2.10
			Max. Mx	8	-23.64	-872.59	-2.39
			Max. My	14	-23.62	-2.64	-877.71
			Max. Vy	8	23.54	-872.59	-2.39
			Max. Vx	14	23.70	-2.64	-877.71
			Max. Torque	22			0.57
L21	90.15 - 85.96	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.72	0.86	2.11
			Max. Mx	8	-23.67	-875.18	-2.40
			Max. My	14	-23.66	-2.64	-880.32
			Max. Vy	8	23.56	-875.18	-2.40
			Max. Vx	14	23.75	-2.64	-880.32
			Max. Torque	22			0.57
L22	85.96 - 85.04	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.90	0.89	2.12
			Max. Mx	8	-25.99	-994.47	-2.70
			Max. My	14	-25.97	-2.93	-1000.38
			Max. Vy	8	24.17	-994.47	-2.70
			Max. Vx	14	24.32	-2.93	-1000.38
			Max. Torque	22			0.57
L23	85.04 - 82	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.20	0.92	2.13
			Max. Mx	8	-26.89	-1068.38	-2.88
			Max. My	14	-26.87	-3.11	-1074.74
			Max. Vy	8	24.48	-1068.38	-2.88
			Max. Vx	14	24.63	-3.11	-1074.74
			Max. Torque	22			0.57
L24	82 - 81.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.33	0.92	2.14
			Max. Mx	8	-26.99	-1074.50	-2.89
			Max. My	14	-26.97	-3.12	-1080.90
			Max. Vy	8	24.50	-1074.50	-2.89
			Max. Vx	14	24.66	-3.12	-1080.90
			Max. Torque	22			0.57
L25	81.75 - 77.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.58	0.96	2.15
			Max. Mx	8	-28.55	-1185.84	-3.16
			Max. My	14	-28.54	-3.38	-1192.91
			Max. Vy	8	25.00	-1185.84	-3.16
			Max. Vx	14	25.15	-3.38	-1192.91
			Max. Torque	22			0.57
L26	77.25 - 77	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.69	0.96	2.16
			Max. Mx	8	-28.64	-1192.09	-3.17
			Max. My	14	-28.62	-3.39	-1199.20
			Max. Vy	8	25.03	-1192.09	-3.17
			Max. Vx	14	25.18	-3.39	-1199.20
			Max. Torque	22			0.57
L27	77 - 75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.66	0.96	2.13
			Max. Mx	8	-29.28	-1242.33	-3.29
			Max. My	14	-29.26	-3.51	-1249.73
			Max. Vy	8	25.24	-1242.33	-3.29
			Max. Vx	14	25.39	-3.51	-1249.73
			Max. Torque	22			0.57
L28	75 - 74.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.79	0.96	2.14
			Max. Mx	8	-29.37	-1248.64	-3.31
			Max. My	14	-29.36	-3.52	-1256.08
			Max. Vy	8	25.26	-1248.64	-3.31

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	25.42	-3.52	-1256.08
			Max. Torque	22			0.57
L29	74.75 - 71.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.55	0.91	2.04
			Max. Mx	8	-30.57	-1337.69	-3.54
			Max. My	14	-30.56	-3.74	-1345.65
			Max. Vy	8	25.64	-1337.69	-3.54
			Max. Vx	14	25.79	-3.74	-1345.65
			Max. Torque	22			0.57
L30	71.25 - 71	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.69	0.91	2.04
			Max. Mx	8	-30.68	-1344.10	-3.56
			Max. My	14	-30.67	-3.76	-1352.10
			Max. Vy	8	25.66	-1344.10	-3.56
			Max. Vx	14	25.82	-3.76	-1352.10
			Max. Torque	22			0.57
L31	71 - 70.4	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.03	0.89	2.01
			Max. Mx	8	-30.92	-1359.53	-3.61
			Max. My	14	-30.90	-3.81	-1367.62
			Max. Vy	8	25.73	-1359.53	-3.61
			Max. Vx	14	25.88	-3.81	-1367.62
			Max. Torque	22			0.57
L32	70.4 - 70.15	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.17	0.88	2.00
			Max. Mx	8	-31.02	-1365.97	-3.63
			Max. My	14	-31.01	-3.84	-1374.10
			Max. Vy	8	25.75	-1365.97	-3.63
			Max. Vx	14	25.92	-3.84	-1374.10
			Max. Torque	22			0.57
L33	70.15 - 65.15	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.99	0.72	1.76
			Max. Mx	8	-33.05	-1496.21	-4.08
			Max. My	14	-33.03	-4.25	-1505.14
			Max. Vy	8	26.32	-1496.21	-4.08
			Max. Vx	14	26.48	-4.25	-1505.14
			Max. Torque	22			0.57
L34	65.15 - 60.15	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.84	0.55	1.51
			Max. Mx	8	-35.10	-1629.24	-4.52
			Max. My	14	-35.09	-4.67	-1638.99
			Max. Vy	8	26.87	-1629.24	-4.52
			Max. Vx	14	27.03	-4.67	-1638.99
			Max. Torque	22			0.57
L35	60.15 - 55.15	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.71	0.38	1.26
			Max. Mx	8	-37.19	-1764.98	-4.97
			Max. My	14	-37.17	-5.10	-1775.57
			Max. Vy	8	27.40	-1764.98	-4.97
			Max. Vx	14	27.57	-5.10	-1775.57
			Max. Torque	22			0.57
L36	55.15 - 50.15	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.60	0.20	1.00
			Max. Mx	8	-39.30	-1903.37	-5.43
			Max. My	14	-39.28	-5.52	-1914.84
			Max. Vy	8	27.93	-1903.37	-5.43
			Max. Vx	14	28.10	-5.52	-1914.84
			Max. Torque	22			0.57
L37	50.15 - 42.41	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.05	0.11	0.90
			Max. Mx	8	-40.40	-1975.37	-5.66
			Max. My	14	-40.38	-5.75	-1987.44
			Max. Vy	8	28.08	-1975.37	-5.66

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	28.36	-5.75	-1987.44
			Max. Torque	22			0.57
L38	42.41 - 41.41	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.43	-0.06	0.70
			Max. Mx	8	-44.61	-2150.13	-6.20
			Max. My	14	-44.58	-6.25	-2164.82
			Max. Vy	8	28.57	-2150.13	-6.20
			Max. Vx	14	29.09	-6.25	-2164.82
			Max. Torque	22			0.57
L39	41.41 - 36.41	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.85	-0.01	0.72
			Max. Mx	8	-46.50	-2293.98	-6.49
			Max. My	14	-46.48	-6.53	-2311.25
			Max. Vy	8	29.01	-2293.98	-6.49
			Max. Vx	14	29.52	-6.53	-2311.25
			Max. Torque	22			0.57
L40	36.41 - 36.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.93	-0.00	0.74
			Max. Mx	8	-46.57	-2298.62	-6.50
			Max. My	14	-46.55	-6.54	-2315.97
			Max. Vy	8	29.02	-2298.62	-6.50
			Max. Vx	14	29.56	-6.54	-2315.97
			Max. Torque	22			0.57
L41	36.25 - 36	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.06	-0.00	0.73
			Max. Mx	8	-46.67	-2305.87	-6.51
			Max. My	14	-46.65	-6.55	-2323.35
			Max. Vy	8	29.04	-2305.87	-6.51
			Max. Vx	14	29.56	-6.55	-2323.35
			Max. Torque	22			0.57
L42	36 - 31.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.48	0.05	0.76
			Max. Mx	8	-48.58	-2444.71	-6.78
			Max. My	14	-48.56	-6.81	-2464.62
			Max. Vy	8	29.46	-2444.71	-6.78
			Max. Vx	14	29.97	-6.81	-2464.62
			Max. Torque	22			0.57
L43	31.25 - 31	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.61	0.05	0.77
			Max. Mx	8	-48.69	-2452.07	-6.80
			Max. My	14	-48.67	-6.83	-2472.11
			Max. Vy	8	29.47	-2452.07	-6.80
			Max. Vx	14	29.99	-6.83	-2472.11
			Max. Torque	22			0.57
L44	31 - 26	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87.19	0.10	0.80
			Max. Mx	8	-50.73	-2600.38	-7.08
			Max. My	14	-50.71	-7.10	-2622.96
			Max. Vy	8	29.89	-2600.38	-7.08
			Max. Vx	14	30.40	-7.10	-2622.96
			Max. Torque	22			0.57
L45	26 - 21	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-89.79	0.16	0.83
			Max. Mx	8	-52.81	-2750.75	-7.36
			Max. My	14	-52.79	-7.37	-2775.84
			Max. Vy	8	30.31	-2750.75	-7.36
			Max. Vx	14	30.81	-7.37	-2775.84
			Max. Torque	22			0.57
L46	21 - 18.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-91.12	0.15	0.80
			Max. Mx	8	-53.86	-2826.72	-7.50
			Max. My	14	-53.84	-7.51	-2853.06
			Max. Vy	8	30.52	-2826.72	-7.50
			Max. Vx	14	31.02	-7.51	-2853.06
			Max. Torque	22			0.57
L47	18.5 - 18.25	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-91.25	0.15	0.80
			Max. Mx	8	-53.97	-2834.34	-7.51
			Max. My	14	-53.96	-7.52	-2860.81
			Max. Vy	8	30.52	-2834.34	-7.51
			Max. Vx	14	31.03	-7.52	-2860.81
			Max. Torque	22			0.57
L48	18.25 - 15	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-92.97	0.16	0.77
			Max. Mx	8	-55.34	-2933.93	-7.69
			Max. My	14	-55.34	-7.70	-2961.77
			Max. Vy	8	30.80	-2933.93	-7.69
			Max. Vx	14	31.15	-7.70	-2961.77
			Max. Torque	22			0.57
L49	15 - 14.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-93.11	0.17	0.77
			Max. Mx	8	-55.46	-2941.63	-7.71
			Max. My	14	-55.46	-7.71	-2969.55
			Max. Vy	8	30.81	-2941.63	-7.71
			Max. Vx	14	31.15	-7.71	-2969.55
			Max. Torque	22			0.56
L50	14.75 - 9.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-95.78	0.20	0.70
			Max. Mx	8	-57.67	-3096.61	-7.98
			Max. My	14	-57.66	-7.98	-3125.61
			Max. Vy	8	31.22	-3096.61	-7.98
			Max. Vx	14	31.32	-7.98	-3125.61
			Max. Torque	22			0.56
L51	9.75 - 4.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-98.43	0.18	0.65
			Max. Mx	8	-59.91	-3253.59	-8.25
			Max. My	14	-59.91	-8.24	-3282.48
			Max. Vy	8	31.62	-3253.59	-8.25
			Max. Vx	14	31.48	-8.24	-3282.48
			Max. Torque	22			0.56
L52	4.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-100.88	0.18	0.62
			Max. Mx	8	-62.06	-3404.03	-8.51
			Max. My	14	-62.06	-8.49	-3432.24
			Max. Vy	8	31.78	-3404.03	-8.51
			Max. Vx	14	31.63	-8.49	-3432.24
			Max. Torque	22			0.56

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	100.88	-0.00	-0.00
	Max. H_x	20	62.07	30.23	0.06
	Max. H_z	3	46.56	0.06	31.17
	Max. M_x	2	3387.17	0.06	31.17
	Max. M_z	8	3404.03	-31.75	-0.06
	Max. Torsion	22	0.56	27.64	16.07
	Min. Vert	15	46.56	-0.06	-31.60
	Min. H_x	8	62.07	-31.75	-0.06
	Min. H_z	15	46.56	-0.06	-31.60
	Min. M_x	14	-3432.24	-0.06	-31.60
	Min. M_z	20	-3337.83	30.23	0.06
	Min. Torsion	10	-0.55	-24.81	-14.44

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	51.73	0.00	0.00	0.32	-0.29	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	62.07	-0.06	-31.17	-3387.17	7.76	-0.31
0.9 Dead+1.0 Wind 0 deg - No Ice	46.56	-0.06	-31.17	-3342.99	7.74	-0.30
1.2 Dead+1.0 Wind 30 deg - No Ice	62.07	14.97	-26.12	-2900.70	-1660.15	-0.02
0.9 Dead+1.0 Wind 30 deg - No Ice	46.56	14.97	-26.12	-2862.71	-1638.27	-0.02
1.2 Dead+1.0 Wind 60 deg - No Ice	62.07	27.26	-15.79	-1710.72	-2954.09	0.26
0.9 Dead+1.0 Wind 60 deg - No Ice	46.56	27.26	-15.79	-1688.56	-2915.56	0.25
1.2 Dead+1.0 Wind 90 deg - No Ice	62.07	31.75	0.06	8.51	-3404.03	0.46
0.9 Dead+1.0 Wind 90 deg - No Ice	46.56	31.75	0.06	8.29	-3359.57	0.46
1.2 Dead+1.0 Wind 120 deg - No Ice	62.07	24.81	14.44	1648.00	-2827.86	0.55
0.9 Dead+1.0 Wind 120 deg - No Ice	46.56	24.81	14.44	1626.00	-2790.20	0.54
1.2 Dead+1.0 Wind 150 deg - No Ice	62.07	14.69	25.52	2875.76	-1654.68	0.49
0.9 Dead+1.0 Wind 150 deg - No Ice	46.56	14.69	25.52	2837.69	-1632.74	0.49
1.2 Dead+1.0 Wind 180 deg - No Ice	62.07	0.06	31.60	3432.24	-8.49	0.31
0.9 Dead+1.0 Wind 180 deg - No Ice	46.56	0.06	31.60	3387.52	-8.27	0.30
1.2 Dead+1.0 Wind 210 deg - No Ice	62.07	-15.69	27.37	2970.96	1699.54	0.04
0.9 Dead+1.0 Wind 210 deg - No Ice	46.56	-15.69	27.37	2932.19	1677.52	0.04
1.2 Dead+1.0 Wind 240 deg - No Ice	62.07	-26.09	15.11	1677.76	2894.92	-0.24
0.9 Dead+1.0 Wind 240 deg - No Ice	46.56	-26.09	15.11	1655.65	2857.02	-0.24
1.2 Dead+1.0 Wind 270 deg - No Ice	62.07	-30.23	-0.06	-7.74	3337.83	-0.47
0.9 Dead+1.0 Wind 270 deg - No Ice	46.56	-30.23	-0.06	-7.72	3294.10	-0.46
1.2 Dead+1.0 Wind 300 deg - No Ice	62.07	-27.64	-16.07	-1732.67	2975.13	-0.56
0.9 Dead+1.0 Wind 300 deg - No Ice	46.56	-27.64	-16.07	-1710.25	2936.58	-0.56
1.2 Dead+1.0 Wind 330 deg - No Ice	62.07	-16.23	-28.20	-2997.32	1724.59	-0.51
0.9 Dead+1.0 Wind 330 deg - No Ice	46.56	-16.23	-28.20	-2958.53	1702.30	-0.50
1.2 Dead+1.0 Ice+1.0 Temp	100.88	0.00	0.00	-0.62	0.18	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	100.88	-0.01	-7.60	-906.13	1.86	-0.09
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	100.88	3.77	-6.58	-784.29	-448.56	-0.02
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	100.88	6.54	-3.79	-452.41	-778.94	0.05
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	100.88	7.55	0.01	0.69	-899.96	0.11
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	100.88	6.52	3.79	451.76	-777.74	0.14
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	100.88	3.77	6.56	781.95	-450.05	0.13
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	100.88	0.01	7.59	904.14	-1.29	0.09
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	100.88	-3.77	6.57	782.54	449.14	0.02

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
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	100.88	-6.53	3.78	450.02	778.43	-0.05
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	100.88	-7.57	-0.01	-2.46	901.03	-0.11
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	100.88	-6.59	-3.83	-456.33	783.14	-0.14
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	100.88	-3.81	-6.62	-788.16	453.18	-0.13
Dead+Wind 0 deg - Service	51.73	-0.01	-6.77	-729.53	1.45	-0.07
Dead+Wind 30 deg - Service	51.73	3.25	-5.67	-624.78	-357.94	-0.01
Dead+Wind 60 deg - Service	51.73	5.92	-3.43	-368.40	-636.79	0.05
Dead+Wind 90 deg - Service	51.73	6.89	0.01	2.07	-733.64	0.10
Dead+Wind 120 deg - Service	51.73	5.39	3.13	355.31	-609.50	0.12
Dead+Wind 150 deg - Service	51.73	3.19	5.54	619.87	-356.75	0.11
Dead+Wind 180 deg - Service	51.73	0.01	6.86	739.78	-2.05	0.07
Dead+Wind 210 deg - Service	51.73	-3.41	5.94	640.45	366.02	0.01
Dead+Wind 240 deg - Service	51.73	-5.66	3.28	361.75	623.56	-0.05
Dead+Wind 270 deg - Service	51.73	-6.56	-0.01	-1.42	718.90	-0.10
Dead+Wind 300 deg - Service	51.73	-6.00	-3.49	-373.14	640.91	-0.12
Dead+Wind 330 deg - Service	51.73	-3.52	-6.12	-645.67	371.42	-0.11

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-51.73	0.00	-0.00	51.73	0.00	0.000%
2	-0.06	-62.07	-31.17	0.06	62.07	31.17	0.001%
3	-0.06	-46.56	-31.17	0.06	46.56	31.17	0.001%
4	14.97	-62.07	-26.12	-14.97	62.07	26.12	0.000%
5	14.97	-46.56	-26.12	-14.97	46.56	26.12	0.000%
6	27.26	-62.07	-15.79	-27.26	62.07	15.79	0.000%
7	27.26	-46.56	-15.79	-27.26	46.56	15.79	0.000%
8	31.75	-62.07	0.06	-31.75	62.07	-0.06	0.001%
9	31.75	-46.56	0.06	-31.75	46.56	-0.06	0.001%
10	24.81	-62.07	14.44	-24.81	62.07	-14.44	0.000%
11	24.81	-46.56	14.44	-24.81	46.56	-14.44	0.000%
12	14.69	-62.07	25.52	-14.69	62.07	-25.52	0.000%
13	14.69	-46.56	25.52	-14.69	46.56	-25.52	0.000%
14	0.06	-62.07	31.61	-0.06	62.07	-31.60	0.002%
15	0.06	-46.56	31.61	-0.06	46.56	-31.60	0.002%
16	-15.69	-62.07	27.37	15.69	62.07	-27.37	0.000%
17	-15.69	-46.56	27.37	15.69	46.56	-27.37	0.000%
18	-26.09	-62.07	15.11	26.09	62.07	-15.11	0.000%
19	-26.09	-46.56	15.11	26.09	46.56	-15.11	0.000%
20	-30.23	-62.07	-0.06	30.23	62.07	0.06	0.001%
21	-30.23	-46.56	-0.06	30.23	46.56	0.06	0.002%
22	-27.64	-62.07	-16.07	27.64	62.07	16.07	0.000%
23	-27.64	-46.56	-16.07	27.64	46.56	16.07	0.000%
24	-16.23	-62.07	-28.20	16.23	62.07	28.20	0.000%
25	-16.23	-46.56	-28.20	16.23	46.56	28.20	0.000%
26	0.00	-100.88	0.00	-0.00	100.88	-0.00	0.001%
27	-0.01	-100.88	-7.60	0.01	100.88	7.60	0.000%
28	3.77	-100.88	-6.58	-3.77	100.88	6.58	0.000%
29	6.54	-100.88	-3.79	-6.54	100.88	3.79	0.000%
30	7.55	-100.88	0.01	-7.55	100.88	-0.01	0.000%
31	6.52	-100.88	3.79	-6.52	100.88	-3.79	0.000%
32	3.77	-100.88	6.56	-3.77	100.88	-6.56	0.000%
33	0.01	-100.88	7.59	-0.01	100.88	-7.59	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
34	-3.77	-100.88	6.57	3.77	100.88	-6.57	0.000%
35	-6.53	-100.88	3.78	6.53	100.88	-3.78	0.000%
36	-7.57	-100.88	-0.01	7.57	100.88	0.01	0.000%
37	-6.59	-100.88	-3.83	6.59	100.88	3.83	0.000%
38	-3.81	-100.88	-6.62	3.81	100.88	6.62	0.000%
39	-0.01	-51.73	-6.77	0.01	51.73	6.77	0.002%
40	3.25	-51.73	-5.67	-3.25	51.73	5.67	0.000%
41	5.92	-51.73	-3.43	-5.92	51.73	3.43	0.000%
42	6.89	-51.73	0.01	-6.89	51.73	-0.01	0.002%
43	5.39	-51.73	3.13	-5.39	51.73	-3.13	0.000%
44	3.19	-51.73	5.54	-3.19	51.73	-5.54	0.000%
45	0.01	-51.73	6.86	-0.01	51.73	-6.86	0.002%
46	-3.41	-51.73	5.94	3.41	51.73	-5.94	0.000%
47	-5.66	-51.73	3.28	5.66	51.73	-3.28	0.000%
48	-6.56	-51.73	-0.01	6.56	51.73	0.01	0.002%
49	-6.00	-51.73	-3.49	6.00	51.73	3.49	0.000%
50	-3.52	-51.73	-6.12	3.52	51.73	6.12	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	19	0.00000001	0.00012916
3	Yes	19	0.00000001	0.00009374
4	Yes	25	0.00000001	0.00011061
5	Yes	25	0.00000001	0.00000000
6	Yes	25	0.00000001	0.00011347
7	Yes	25	0.00000001	0.00000000
8	Yes	20	0.00000001	0.00008234
9	Yes	19	0.00000001	0.00011995
10	Yes	25	0.00000001	0.00011117
11	Yes	25	0.00000001	0.00000000
12	Yes	25	0.00000001	0.00011035
13	Yes	25	0.00000001	0.00000000
14	Yes	18	0.00002941	0.00014677
15	Yes	18	0.00001913	0.00008954
16	Yes	25	0.00000001	0.00011419
17	Yes	25	0.00000001	0.00000000
18	Yes	25	0.00000001	0.00011181
19	Yes	25	0.00000001	0.00000000
20	Yes	19	0.00000001	0.00009164
21	Yes	18	0.00000001	0.00012045
22	Yes	25	0.00000001	0.00011510
23	Yes	25	0.00000001	0.00000000
24	Yes	25	0.00000001	0.00011709
25	Yes	25	0.00000001	0.00000000
26	Yes	8	0.00000001	0.00003350
27	Yes	23	0.00000001	0.00009427
28	Yes	23	0.00000001	0.00011768
29	Yes	23	0.00000001	0.00011750
30	Yes	23	0.00000001	0.00009327
31	Yes	23	0.00000001	0.00011713
32	Yes	23	0.00000001	0.00011705
33	Yes	23	0.00000001	0.00009354
34	Yes	23	0.00000001	0.00011727
35	Yes	23	0.00000001	0.00011692
36	Yes	23	0.00000001	0.00009356
37	Yes	23	0.00000001	0.00011866
38	Yes	23	0.00000001	0.00011926
39	Yes	16	0.00009267	0.00011103
40	Yes	19	0.00000001	0.00009467
41	Yes	19	0.00000001	0.00009697
42	Yes	16	0.00009263	0.00011479
43	Yes	19	0.00000001	0.00009673
44	Yes	19	0.00000001	0.00009280
45	Yes	16	0.00009261	0.00011036

46	Yes	19	0.00000001	0.00009845
47	Yes	19	0.00000001	0.00009664
48	Yes	16	0.00009270	0.00011133
49	Yes	19	0.00000001	0.00009762
50	Yes	19	0.00000001	0.00010300

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	21.13	50	1.35	0.01
L2	145 - 140	19.72	50	1.34	0.00
L3	140 - 135	18.34	50	1.30	0.00
L4	135 - 130	16.99	50	1.26	0.00
L5	130 - 123.42	15.71	50	1.19	0.00
L6	126.59 - 122.25	14.88	50	1.14	0.00
L7	122.25 - 122	13.86	50	1.09	0.00
L8	122 - 120.25	13.80	50	1.09	0.00
L9	120.25 - 120	13.40	50	1.07	0.00
L10	120 - 115.5	13.35	50	1.07	0.00
L11	115.5 - 115.25	12.36	50	1.03	0.00
L12	115.25 - 115	12.30	50	1.03	0.00
L13	115 - 114.75	12.25	50	1.03	0.00
L14	114.75 - 109.75	12.20	50	1.02	0.00
L15	109.75 - 105.25	11.15	50	0.97	0.00
L16	105.25 - 105	10.26	50	0.92	0.00
L17	105 - 100.4	10.21	50	0.92	0.00
L18	100.4 - 100.15	9.34	50	0.88	0.00
L19	100.15 - 95.15	9.30	50	0.88	0.00
L20	95.15 - 90.15	8.41	50	0.83	0.00
L21	90.15 - 85.96	7.57	50	0.78	0.00
L22	90.04 - 85.04	7.55	50	0.78	0.00
L23	85.04 - 82	6.75	50	0.75	0.00
L24	82 - 81.75	6.28	50	0.72	0.00
L25	81.75 - 77.25	6.25	50	0.71	0.00
L26	77.25 - 77	5.59	50	0.68	0.00
L27	77 - 75	5.56	50	0.67	0.00
L28	75 - 74.75	5.28	50	0.65	0.00
L29	74.75 - 71.25	5.24	50	0.65	0.00
L30	71.25 - 71	4.78	50	0.62	0.00
L31	71 - 70.4	4.75	50	0.62	0.00
L32	70.4 - 70.15	4.67	50	0.61	0.00
L33	70.15 - 65.15	4.64	50	0.61	0.00
L34	65.15 - 60.15	4.02	50	0.57	0.00
L35	60.15 - 55.15	3.45	50	0.53	0.00
L36	55.15 - 50.15	2.92	50	0.48	0.00
L37	50.15 - 42.41	2.43	50	0.44	0.00
L38	47.58 - 41.41	2.20	50	0.42	0.00
L39	41.41 - 36.41	1.68	50	0.39	0.00
L40	36.41 - 36.25	1.30	50	0.34	0.00
L41	36.25 - 36	1.28	50	0.34	0.00
L42	36 - 31.25	1.27	50	0.33	0.00
L43	31.25 - 31	0.96	50	0.29	0.00
L44	31 - 26	0.94	50	0.29	0.00
L45	26 - 21	0.66	50	0.24	0.00
L46	21 - 18.5	0.43	50	0.20	0.00
L47	18.5 - 18.25	0.34	50	0.17	0.00
L48	18.25 - 15	0.33	50	0.17	0.00
L49	15 - 14.75	0.22	50	0.14	0.00
L50	14.75 - 9.75	0.21	50	0.14	0.00
L51	9.75 - 4.75	0.09	50	0.09	0.00
L52	4.75 - 0	0.02	50	0.04	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.0000	APXVTM14-ALU-I20 w/ Mount Pipe	50	21.13	1.35	0.01	11495
146.0000	800 EXTERNAL NOTCH FILTER	50	20.00	1.34	0.00	11495
137.0000	7770.00 w/ Mount Pipe	50	17.53	1.28	0.00	6031
136.0000	(2) RRUS 11 B12	50	17.26	1.27	0.00	5595
127.0000	(2) APL866513-42T0 w/ Mount Pipe	50	14.98	1.15	0.00	4528
117.0000	APXV18-206517S-C-A20	50	12.68	1.05	0.00	6189
107.0000	MX08FRO665-21 w/ Mount Pipe	50	10.60	0.94	0.00	5346

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	98.01	24	6.28	0.02
L2	145 - 140	91.49	24	6.20	0.02
L3	140 - 135	85.09	24	6.05	0.01
L4	135 - 130	78.87	24	5.84	0.01
L5	130 - 123.42	72.92	24	5.54	0.01
L6	126.59 - 122.25	69.06	24	5.29	0.01
L7	122.25 - 122	64.34	24	5.08	0.00
L8	122 - 120.25	64.08	24	5.07	0.00
L9	120.25 - 120	62.24	24	4.98	0.00
L10	120 - 115.5	61.98	24	4.98	0.00
L11	115.5 - 115.25	57.38	24	4.80	0.00
L12	115.25 - 115	57.13	24	4.78	0.00
L13	115 - 114.75	56.88	24	4.77	0.00
L14	114.75 - 109.75	56.63	24	4.75	0.00
L15	109.75 - 105.25	51.78	24	4.52	0.00
L16	105.25 - 105	47.64	24	4.28	0.00
L17	105 - 100.4	47.42	24	4.27	0.00
L18	100.4 - 100.15	43.40	24	4.08	0.00
L19	100.15 - 95.15	43.19	24	4.07	0.00
L20	95.15 - 90.15	39.05	24	3.85	0.00
L21	90.15 - 85.96	35.15	24	3.61	0.00
L22	90.04 - 85.04	35.07	24	3.61	0.00
L23	85.04 - 82	31.36	24	3.47	0.00
L24	82 - 81.75	29.19	24	3.33	0.00
L25	81.75 - 77.25	29.02	24	3.32	0.00
L26	77.25 - 77	25.98	24	3.14	0.00
L27	77 - 75	25.82	24	3.13	0.00
L28	75 - 74.75	24.53	24	3.04	0.00
L29	74.75 - 71.25	24.37	24	3.03	0.00
L30	71.25 - 71	22.21	24	2.88	0.00
L31	71 - 70.4	22.06	24	2.87	0.00
L32	70.4 - 70.15	21.70	24	2.84	0.00
L33	70.15 - 65.15	21.55	24	2.83	0.00
L34	65.15 - 60.15	18.69	24	2.64	0.00
L35	60.15 - 55.15	16.02	24	2.45	0.00
L36	55.15 - 50.15	13.56	24	2.25	0.00
L37	50.15 - 42.41	11.31	24	2.06	0.00
L38	47.58 - 41.41	10.23	24	1.96	0.00
L39	41.41 - 36.41	7.79	24	1.80	0.00
L40	36.41 - 36.25	6.02	24	1.57	0.00
L41	36.25 - 36	5.97	24	1.57	0.00
L42	36 - 31.25	5.89	24	1.55	0.00
L43	31.25 - 31	4.44	24	1.35	0.00
L44	31 - 26	4.37	24	1.34	0.00
L45	26 - 21	3.08	24	1.12	0.00
L46	21 - 18.5	2.01	24	0.91	0.00
L47	18.5 - 18.25	1.56	24	0.81	0.00
L48	18.25 - 15	1.52	24	0.80	0.00
L49	15 - 14.75	1.03	24	0.66	0.00

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L50	14.75 - 9.75	0.99	24	0.65	0.00
L51	9.75 - 4.75	0.43	24	0.43	0.00
L52	4.75 - 0	0.10	24	0.20	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
152.0000	APXVTM14-ALU-I20 w/ Mount Pipe	24	98.01	6.28	0.02	2567
146.0000	800 EXTERNAL NOTCH FILTER	24	92.79	6.22	0.02	2567
137.0000	7770.00 w/ Mount Pipe	24	81.33	5.94	0.01	1328
136.0000	(2) RRUS 11 B12	24	80.10	5.89	0.01	1231
127.0000	(2) APL866513-42T0 w/ Mount Pipe	24	69.52	5.32	0.01	996
117.0000	APXV18-206517S-C-A20	24	58.89	4.87	0.00	1357
107.0000	MX08FRO665-21 w/ Mount Pipe	24	49.23	4.36	0.00	1168

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K
L1	150 - 145 (1)	TP16.0798x15x0.1875	5.0000	0.0000	0.0	9.4579	-2.98
L2	145 - 140 (2)	TP17.1595x16.0798x0.1875	5.0000	0.0000	0.0	10.1005	-3.20
L3	140 - 135 (3)	TP18.2393x17.1595x0.1875	5.0000	0.0000	0.0	10.7431	-6.61
L4	135 - 130 (4)	TP19.319x18.2393x0.1875	5.0000	0.0000	0.0	11.3857	-6.94
L5	130 - 123.42 (5)	TP20.74x19.319x0.1875	6.5800	0.0000	0.0	11.8239	-9.79
L6	123.42 - 122.25 (6)	TP20.6033x19.6804x0.25	4.3400	0.0000	0.0	16.1503	-10.35
L7	122.25 - 122 (7)	TP20.6565x20.6033x0.4125	0.2500	0.0000	0.0	26.5049	-10.39
L8	122 - 120.25 (8)	TP21.0286x20.6565x0.4125	1.7500	0.0000	0.0	26.9921	-10.63
L9	120.25 - 120 (9)	TP21.0817x21.0286x0.575	0.2500	0.0000	0.0	37.4258	-10.68
L10	120 - 115.5 (10)	TP22.0386x21.0817x0.5625	4.5000	0.0000	0.0	38.3429	-14.93
L11	115.5 - 115.25 (11)	TP22.0918x22.0386x0.4	0.2500	0.0000	0.0	27.5399	-14.98
L12	115.25 - 115 (12)	TP22.1449x22.0918x0.4	0.2500	0.0000	0.0	27.6074	-15.01
L13	115 - 114.75 (13)	TP22.1981x22.1449x0.55	0.2500	0.0000	0.0	37.7911	-15.06
L14	114.75 - 109.75 (14)	TP23.2613x22.1981x0.5375	5.0000	0.0000	0.0	38.7674	-15.99
L15	109.75 - 105.25 (15)	TP24.2182x23.2613x0.525	4.5000	0.0000	0.0	39.4811	-19.70
L16	105.25 - 105 (16)	TP24.2713x24.2182x0.7375	0.2500	0.0000	0.0	55.0886	-19.77
L17	105 - 100.4 (17)	TP25.2495x24.2713x0.7125	4.6000	0.0000	0.0	55.4898	-20.91
L18	100.4 - 100.15 (18)	TP25.3026x25.2495x0.7375	0.2500	0.0000	0.0	57.5027	-20.98
L19	100.15 - 95.15 (19)	TP26.3658x25.3026x0.7125	5.0000	0.0000	0.0	58.0144	-22.28
L20	95.15 - 90.15 (20)	TP27.429x26.3658x0.7	5.0000	0.0000	0.0	59.3866	-23.61

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K
L21	90.15 - 85.96 (21)	TP28.32x27.429x0.7	4.1900	0.0000	0.0	59.4385	-23.65
L22	85.96 - 85.04 (22)	TP28.0177x26.9524x0.75	5.0000	0.0000	0.0	64.9107	-25.96
L23	85.04 - 82 (23)	TP28.6654x28.0177x0.7375	3.0400	0.0000	0.0	65.3742	-26.86
L24	82 - 81.75 (24)	TP28.7186x28.6654x0.925	0.2500	0.0000	0.0	81.6007	-26.96
L25	81.75 - 77.25 (25)	TP29.6773x28.7186x0.9	4.5000	0.0000	0.0	82.2053	-28.53
L26	77.25 - 77 (26)	TP29.7306x29.6773x0.7875	0.2500	0.0000	0.0	72.3440	-28.62
L27	77 - 75 (27)	TP30.1567x29.7306x0.775	2.0000	0.0000	0.0	72.2746	-29.26
L28	75 - 74.75 (28)	TP30.21x30.1567x0.825	0.2500	0.0000	0.0	76.9460	-29.35
L29	74.75 - 71.25 (29)	TP30.9556x30.21x0.8125	3.5000	0.0000	0.0	77.7354	-30.55
L30	71.25 - 71 (30)	TP31.0089x30.9556x0.9375	0.2500	0.0000	0.0	89.4812	-30.66
L31	71 - 70.4 (31)	TP31.1367x31.0089x0.925	0.6000	0.0000	0.0	88.7001	-30.89
L32	70.4 - 70.15 (32)	TP31.19x31.1367x0.9375	0.2500	0.0000	0.0	90.0201	-31.00
L33	70.15 - 65.15 (33)	TP32.2552x31.19x0.9125	5.0000	0.0000	0.0	90.7772	-33.02
L34	65.15 - 60.15 (34)	TP33.3205x32.2552x0.8875	5.0000	0.0000	0.0	91.3613	-35.08
L35	60.15 - 55.15 (35)	TP34.3857x33.3205x0.8625	5.0000	0.0000	0.0	91.7724	-37.16
L36	55.15 - 50.15 (36)	TP35.451x34.3857x0.85	5.0000	0.0000	0.0	93.3500	-39.27
L37	50.15 - 42.41 (37)	TP37.1x35.451x0.8375	7.7400	0.0000	0.0	93.4659	-40.37
L38	42.41 - 41.41 (38)	TP36.6867x35.3735x0.725	6.1700	0.0000	0.0	82.7533	-44.57
L39	41.41 - 36.41 (39)	TP37.7508x36.6867x0.7125	5.0000	0.0000	0.0	83.7613	-46.46
L40	36.41 - 36.25 (40)	TP37.7849x37.7508x0.7125	0.1600	0.0000	0.0	83.8383	-46.54
L41	36.25 - 36 (41)	TP37.8381x37.7849x0.75	0.2500	0.0000	0.0	88.2882	-46.64
L42	36 - 31.25 (42)	TP38.8491x37.8381x0.75	4.7500	0.0000	0.0	90.6948	-48.55
L43	31.25 - 31 (43)	TP38.9023x38.8491x0.7375	0.2500	0.0000	0.0	89.3370	-48.66
L44	31 - 26 (44)	TP39.9664x38.9023x0.725	5.0000	0.0000	0.0	90.3004	-50.71
L45	26 - 21 (45)	TP41.0306x39.9664x0.725	5.0000	0.0000	0.0	92.7491	-52.79
L46	21 - 18.5 (46)	TP41.5626x41.0306x0.7125	2.5000	0.0000	0.0	92.3816	-53.84
L47	18.5 - 18.25 (47)	TP41.6158x41.5626x0.7	0.2500	0.0000	0.0	90.9068	-53.95
L48	18.25 - 15 (48)	TP42.3075x41.6158x0.6875	3.2500	0.0000	0.0	90.8201	-55.33
L49	15 - 14.75 (49)	TP42.3608x42.3075x0.65	0.2500	0.0000	0.0	86.0535	-55.45
L50	14.75 - 9.75 (50)	TP43.4249x42.3608x0.65	5.0000	0.0000	0.0	88.2489	-57.66
L51	9.75 - 4.75 (51)	TP44.4891x43.4249x0.6375	5.0000	0.0000	0.0	88.7303	-59.90
L52	4.75 - 0 (52)	TP45.5x44.4891x0.6375	4.7500	0.0000	0.0	89.7531	-61.00

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	M_{uy} kip-ft
L1	150 - 145 (1)	TP16.0798x15x0.1875	24.40	0.00
L2	145 - 140 (2)	TP17.1595x16.0798x0.1875	46.11	0.00
L3	140 - 135 (3)	TP18.2393x17.1595x0.1875	80.39	0.00
L4	135 - 130 (4)	TP19.319x18.2393x0.1875	126.79	0.00
L5	130 - 123.42 (5)	TP20.74x19.319x0.1875	167.33	0.00
L6	123.42 - 122.25 (6)	TP20.6033x19.6804x0.25	228.88	0.00
L7	122.25 - 122 (7)	TP20.6565x20.6033x0.4125	232.46	0.00
L8	122 - 120.25 (8)	TP21.0286x20.6565x0.4125	257.58	0.00
L9	120.25 - 120 (9)	TP21.0817x21.0286x0.575	261.19	0.00
L10	120 - 115.5 (10)	TP22.0386x21.0817x0.5625	332.65	0.00
L11	115.5 - 115.25 (11)	TP22.0918x22.0386x0.4	337.32	0.00
L12	115.25 - 115 (12)	TP22.1449x22.0918x0.4	342.00	0.00
L13	115 - 114.75 (13)	TP22.1981x22.1449x0.55	346.68	0.00
L14	114.75 - 109.75 (14)	TP23.2613x22.1981x0.5375	441.56	0.00
L15	109.75 - 105.25 (15)	TP24.2182x23.2613x0.525	533.52	0.00
L16	105.25 - 105 (16)	TP24.2713x24.2182x0.7375	539.06	0.00
L17	105 - 100.4 (17)	TP25.2495x24.2713x0.7125	642.18	0.00
L18	100.4 - 100.15 (18)	TP25.3026x25.2495x0.7375	647.85	0.00
L19	100.15 - 95.15 (19)	TP26.3658x25.3026x0.7125	762.57	0.00
L20	95.15 - 90.15 (20)	TP27.429x26.3658x0.7	879.88	0.00
L21	90.15 - 85.96 (21)	TP28.32x27.429x0.7	882.49	0.00
L22	85.96 - 85.04 (22)	TP28.0177x26.9524x0.75	1002.75	0.00
L23	85.04 - 82 (23)	TP28.6654x28.0177x0.7375	1077.25	0.00
L24	82 - 81.75 (24)	TP28.7186x28.6654x0.925	1083.42	0.00
L25	81.75 - 77.25 (25)	TP29.6773x28.7186x0.9	1195.63	0.00
L26	77.25 - 77 (26)	TP29.7306x29.6773x0.7875	1201.93	0.00
L27	77 - 75 (27)	TP30.1567x29.7306x0.775	1252.58	0.00
L28	75 - 74.75 (28)	TP30.21x30.1567x0.825	1258.93	0.00
L29	74.75 - 71.25 (29)	TP30.9556x30.21x0.8125	1348.70	0.00
L30	71.25 - 71 (30)	TP31.0089x30.9556x0.9375	1355.17	0.00
L31	71 - 70.4 (31)	TP31.1367x31.0089x0.925	1370.69	0.00
L32	70.4 - 70.15 (32)	TP31.19x31.1367x0.9375	1377.18	0.00
L33	70.15 - 65.15 (33)	TP32.2552x31.19x0.9125	1508.45	0.00
L34	65.15 - 60.15 (34)	TP33.3205x32.2552x0.8875	1642.69	0.00

Section No.	Elevation ft	Size	M_{ux} kip-ft	M_{uy} kip-ft
L35	60.15 - 55.15 (35)	TP34.3857x33.3205x0.8625	1779.84	0.00
L36	55.15 - 50.15 (36)	TP35.451x34.3857x0.85	1919.84	0.00
L37	50.15 - 42.41 (37)	TP37.1x35.451x0.8375	1992.86	0.00
L38	42.41 - 41.41 (38)	TP36.6867x35.3735x0.725	2171.45	0.00
L39	41.41 - 36.41 (39)	TP37.7508x36.6867x0.7125	2319.24	0.00
L40	36.41 - 36.25 (40)	TP37.7849x37.7508x0.7125	2324.01	0.00
L41	36.25 - 36 (41)	TP37.8381x37.7849x0.75	2331.46	0.00
L42	36 - 31.25 (42)	TP38.8491x37.8381x0.75	2474.03	0.00
L43	31.25 - 31 (43)	TP38.9023x38.8491x0.7375	2481.59	0.00
L44	31 - 26 (44)	TP39.9664x38.9023x0.725	2633.81	0.00
L45	26 - 21 (45)	TP41.0306x39.9664x0.725	2788.06	0.00
L46	21 - 18.5 (46)	TP41.5626x41.0306x0.7125	2865.97	0.00
L47	18.5 - 18.25 (47)	TP41.6158x41.5626x0.7	2873.80	0.00
L48	18.25 - 15 (48)	TP42.3075x41.6158x0.6875	2975.96	0.00
L49	15 - 14.75 (49)	TP42.3608x42.3075x0.65	2983.85	0.00
L50	14.75 - 9.75 (50)	TP43.4249x42.3608x0.65	3142.82	0.00
L51	9.75 - 4.75 (51)	TP44.4891x43.4249x0.6375	3303.81	0.00
L52	4.75 - 0 (52)	TP45.5x44.4891x0.6375	3380.84	0.00

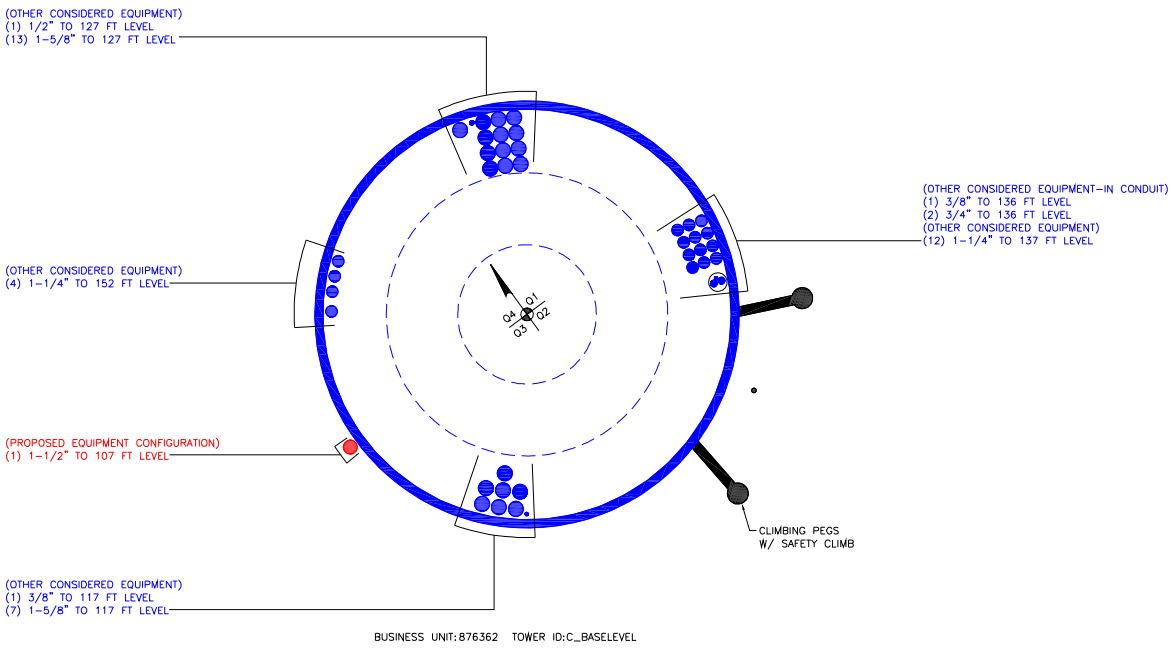
Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L1	150 - 145 (1)	TP16.0798x15x0.1875	4.22	0.41
L2	145 - 140 (2)	TP17.1595x16.0798x0.1875	4.46	0.00
L3	140 - 135 (3)	TP18.2393x17.1595x0.1875	9.17	1.00
L4	135 - 130 (4)	TP19.319x18.2393x0.1875	9.40	1.00
L5	130 - 123.42 (5)	TP20.74x19.319x0.1875	14.00	1.00
L6	123.42 - 122.25 (6)	TP20.6033x19.6804x0.25	14.30	0.60
L7	122.25 - 122 (7)	TP20.6565x20.6033x0.4125	14.32	0.60
L8	122 - 120.25 (8)	TP21.0286x20.6565x0.4125	14.41	0.60
L9	120.25 - 120 (9)	TP21.0817x21.0286x0.575	14.43	0.60
L10	120 - 115.5 (10)	TP22.0386x21.0817x0.5625	18.67	0.60
L11	115.5 - 115.25 (11)	TP22.0918x22.0386x0.4	18.69	0.60
L12	115.25 - 115 (12)	TP22.1449x22.0918x0.4	18.72	0.60
L13	115 - 114.75 (13)	TP22.1981x22.1449x0.55	18.74	0.60
L14	114.75 - 109.75 (14)	TP23.2613x22.1981x0.5375	19.23	0.60
L15	109.75 - 105.25 (15)	TP24.2182x23.2613x0.525	22.16	0.51
L16	105.25 - 105 (16)	TP24.2713x24.2182x0.7375	22.19	0.51
L17	105 - 100.4 (17)	TP25.2495x24.2713x0.7125	22.66	0.51
L18	100.4 - 100.15 (18)	TP25.3026x25.2495x0.7375	22.69	0.51
L19	100.15 - 95.15 (19)	TP26.3658x25.3026x0.7125	23.21	0.51
L20	95.15 - 90.15 (20)	TP27.429x26.3658x0.7	23.73	0.51

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L21	90.15 - 85.96 (21)	TP28.32x27.429x0.7	23.77	0.51
L22	85.96 - 85.04 (22)	TP28.0177x26.9524x0.75	24.36	0.51
L23	85.04 - 82 (23)	TP28.6654x28.0177x0.7375	24.67	0.51
L24	82 - 81.75 (24)	TP28.7186x28.6654x0.925	24.70	0.51
L25	81.75 - 77.25 (25)	TP29.6773x28.7186x0.9	25.19	0.51
L26	77.25 - 77 (26)	TP29.7306x29.6773x0.7875	25.22	0.51
L27	77 - 75 (27)	TP30.1567x29.7306x0.775	25.44	0.51
L28	75 - 74.75 (28)	TP30.21x30.1567x0.825	25.46	0.51
L29	74.75 - 71.25 (29)	TP30.9556x30.21x0.8125	25.87	0.51
L30	71.25 - 71 (30)	TP31.0089x30.9556x0.9375	25.90	0.51
L31	71 - 70.4 (31)	TP31.1367x31.0089x0.925	25.97	0.51
L32	70.4 - 70.15 (32)	TP31.19x31.1367x0.9375	26.00	0.51
L33	70.15 - 65.15 (33)	TP32.2552x31.19x0.9125	26.60	0.51
L34	65.15 - 60.15 (34)	TP33.3205x32.2552x0.8875	27.19	0.51
L35	60.15 - 55.15 (35)	TP34.3857x33.3205x0.8625	27.77	0.51
L36	55.15 - 50.15 (36)	TP35.451x34.3857x0.85	28.33	0.51
L37	50.15 - 42.41 (37)	TP37.1x35.451x0.8375	28.60	0.51
L38	42.41 - 41.41 (38)	TP36.6867x35.3735x0.725	29.36	0.51
L39	41.41 - 36.41 (39)	TP37.7508x36.6867x0.7125	29.79	0.51
L40	36.41 - 36.25 (40)	TP37.7849x37.7508x0.7125	29.80	0.51
L41	36.25 - 36 (41)	TP37.8381x37.7849x0.75	29.82	0.51
L42	36 - 31.25 (42)	TP38.8491x37.8381x0.75	30.24	0.51
L43	31.25 - 31 (43)	TP38.9023x38.8491x0.7375	30.24	0.51
L44	31 - 26 (44)	TP39.9664x38.9023x0.725	30.66	0.51
L45	26 - 21 (45)	TP41.0306x39.9664x0.725	31.07	0.51
L46	21 - 18.5 (46)	TP41.5626x41.0306x0.7125	31.29	0.51
L47	18.5 - 18.25 (47)	TP41.6158x41.5626x0.7	31.30	0.51
L48	18.25 - 15 (48)	TP42.3075x41.6158x0.6875	31.59	0.51
L49	15 - 14.75 (49)	TP42.3608x42.3075x0.65	31.59	0.51
L50	14.75 - 9.75 (50)	TP43.4249x42.3608x0.65	32.01	0.51
L51	9.75 - 4.75 (51)	TP44.4891x43.4249x0.6375	32.42	0.51
L52	4.75 - 0 (52)	TP45.5x44.4891x0.6375	32.53	0.51

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 127 FT LEVEL
(13) 1-5/8" TO 127 FT LEVEL
(OTHER CONSIDERED EQUIPMENT-IN CONDUIT)
(1) 3/8" TO 136 FT LEVEL
(2) 3/4" TO 136 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(12) 1-1/4" TO 137 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(4) 1-1/4" TO 152 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-1/2" TO 107 FT LEVEL
Q1
Q2
Q3
Q4
CLIMBING PEGS
W/ SAFETY CLIMB
(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" TO 117 FT LEVEL
(7) 1-5/8" TO 117 FT LEVEL
BUSINESS UNIT:876362 TOWER ID:C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876362

Work Order: 1966153

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	150	26.58	3.17	18	15	20.74	0.1875	Auto	A572-65
2	126.59	40.63	4.08	18	19.68	28.32	0.25	Auto	A572-65
3	90.04	47.63	5.17	18	26.95	37.1	0.3125	Auto	A572-65
4	47.58	47.58	0	18	35.37	45.5	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	44.17	70.4	plate	4.25 x 1.25; (1) (1.1875	3		o						o						o				
2	70.4	100.4	plate	3.875 x 1.25; (1) (1.187	3		o						o						o				
3	100.4	105.25	plate	3.375 x 1.25; (1) (1.187	3		o						o						o				
4	47	75	channel	MP3-03 (1.1875")	3						o						o						o
5	0	18.5	channel	MP3-05 (1.1875")	1		o																
6	0	31.25	channel	MP3-05 (1.1875")	2										o						o		
7	18.5	46.25	channel	MP3-05 (1.1875")	1				o														
8	31.25	46.25	channel	MP3-05 (1.1875")	2										o						o		
9	46.25	75	channel	MP3-03 (1.1875")	3				o						o						o		
10	77.25	115	channel	MP3-03 (1.1875")	3				o						o						o		
11	0	36.25	plate	5.5 x 1.25; (1) (1.1875	1	o																	
12	0	36.25	plate	6.5 x 1.25; (1) (1.1875	1							o											
13	15	36.25	plate	6.5 x 1.25; (1) (1.1875	1													o					
14	0	15	plate	FP 1.25 x 9_1	1												o						
15	36.25	71.25	plate	FP 6 x 1; (1) (1.1875)_1	3	o						o						o					
16	71.25	120.25	plate	P 4 x 0.75; (1) (1.1875)	3	o						o						o					
17	75	82	plate	P 4.5 x 1; (1) (1.1875)_	3					o						o						o	
18	115.5	122.25	plate	P 4 x 0.75; (1) (1.1875)	3					o						o						o	
19																							

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	4.25	1.25	5.3125	0.625	PC 8.8 - M20 (100)	21	PC 8.8 - M20 (100)	21.000	21.000	3.750	1.1875	A572-65
2	3.875	1.25	4.84375	0.625	None	n/a	PC 8.8 - M20 (100)	18.000	21.000	3.281	1.1875	A572-65
3	3.375	1.25	4.21875	0.625	None	n/a	PC 8.8 - M20 (100)	15.000	21.000	2.656	1.1875	A572-65
4	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.545	1.1875	A572-65
5	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
6	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
7	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
8	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
9	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.545	1.1875	A572-65
10	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.545	1.1875	A572-65
11	5.5	1.25	6.875	0.625	PC 8.8 - M20 (100)	42	PC 8.8 - M20 (100)	42.000	19.000	5.313	1.1875	A572-65
12	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	42	PC 8.8 - M20 (100)	42.000	19.000	6.563	1.1875	A572-65
13	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	42	PC 8.8 - M20 (100)	42.000	19.000	6.563	1.1875	A572-65
14	1.25	9	11.25	4.5	None	n/a	None	n/a	0.000	11.250	0.0000	A572-65
15	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
16	4	0.75	3	0.375	PC 8.8 - M20 (100)	12	PC 8.8 - M20 (100)	12.000	16.000	2.063	1.1875	A572-65
17	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
18	4	0.75	3	0.375	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	16.000	2.063	1.1875	A572-65

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)
FP 4.25 x 1.25; (1) (1.1875)_1	Top	7	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	7	N	3	3	-	-	-	-	-	-	-	-	-
FP 3.875 x 1.25; (1) (1.1875)_1	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-				-	-		-	-	-
FP 3.375 x 1.25; (1) (1.1875)_1	Top	5	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-				-	-		-	-	-
FP 5.5 x 1.25; (1) (1.1875)_1	Top	14	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	14	N	3	3	-	-	-	-	-	-	-	-	-
FP 6.5 x 1.25; (1) (1.1875)_1	Top	14	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	14	N	3	3	-	-	-	-	-	-	-	-	-
FP 1.25 x 9_1	Top					-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-				-	-		-	-	-
FP 6 x 1; (1) (1.1875)_1	Top	10	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	10	N	3	3	-	-	-	-	-	-	-	-	-
FP 4 x 0.75; (1) (1.1875)_1	Top	4	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	4	N	3	3	-	-	-	-	-	-	-	-	-
FP 4.5 x 1; (1) (1.1875)_1	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	6	N	3	3	-	-	-	-	-	-	-	-	-
FP 4 x 0.75; (1) (1.1875)_2	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	6	N	3	3	-	-	-	-	-	-	-	-	-

TNX Geometry Input

Increment (ft): 5 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	150 - 145	5		18	15.000	16.080	0.1875	A572-65	1.000
2	145 - 140	5		18	16.080	17.160	0.1875	A572-65	1.000
3	140 - 135	5		18	17.160	18.239	0.1875	A572-65	1.000
4	135 - 130	5		18	18.239	19.319	0.1875	A572-65	1.000
5	130 - 126.59	6.58	3.17	18	19.319	20.740	0.1875	A572-65	1.000
6	126.59 - 122.25	4.34		18	19.680	20.603	0.25	A572-65	1.000
7	122.25 - 122	0.25		18	20.603	20.656	0.4125	A572-65	0.950
8	122 - 120.25	1.75		18	20.656	21.029	0.4125	A572-65	0.944
9	120.25 - 120	0.25		18	21.029	21.082	0.575	A572-65	0.923
10	120 - 115.5	4.5		18	21.082	22.039	0.5625	A572-65	0.920
11	115.5 - 115.25	0.25		18	22.039	22.092	0.4	A572-65	0.956
12	115.25 - 115	0.25		18	22.092	22.145	0.4	A572-65	0.955
13	115 - 114.75	0.25		18	22.145	22.198	0.55	A572-65	0.931
14	114.75 - 109.75	5		18	22.198	23.261	0.5375	A572-65	0.929
15	109.75 - 105.25	4.5		18	23.261	24.218	0.525	A572-65	0.932
16	105.25 - 105	0.25		18	24.218	24.271	0.7375	A572-65	0.898
17	105 - 100.4	4.6		18	24.271	25.249	0.7125	A572-65	0.906
18	100.4 - 100.15	0.25		18	25.249	25.303	0.7375	A572-65	0.907
19	100.15 - 95.15	5		18	25.303	26.366	0.7125	A572-65	0.914
20	95.15 - 90.15	5		18	26.366	27.429	0.7	A572-65	0.907
21	90.15 - 90.04	4.19	4.08	18	27.429	28.320	0.7	A572-65	0.906
22	90.04 - 85.04	5		18	26.952	28.018	0.75	A572-65	0.921
23	85.04 - 82	3.04		18	28.018	28.665	0.7375	A572-65	0.924
24	82 - 81.75	0.25		18	28.665	28.719	0.925	A572-65	0.906
25	81.75 - 77.25	4.5		18	28.719	29.677	0.9	A572-65	0.911
26	77.25 - 77	0.25		18	29.677	29.731	0.7875	A572-65	0.915
27	77 - 75	2		18	29.731	30.157	0.775	A572-65	0.922
28	75 - 74.75	0.25		18	30.157	30.210	0.825	A572-65	0.919
29	74.75 - 71.25	3.5		18	30.210	30.956	0.8125	A572-65	0.919
30	71.25 - 71	0.25		18	30.956	31.009	0.9375	A572-65	0.900
31	71 - 70.4	0.6		18	31.009	31.137	0.925	A572-65	0.909
32	70.4 - 70.15	0.25		18	31.137	31.190	0.9375	A572-65	0.912
33	70.15 - 65.15	5		18	31.190	32.255	0.9125	A572-65	0.916
34	65.15 - 60.15	5		18	32.255	33.320	0.8875	A572-65	0.922
35	60.15 - 55.15	5		18	33.320	34.386	0.8625	A572-65	0.929
36	55.15 - 50.15	5		18	34.386	35.451	0.85	A572-65	0.925
37	50.15 - 47.58	7.74	5.17	18	35.451	37.100	0.8375	A572-65	0.929
38	47.58 - 41.41	6.17		18	35.374	36.687	0.725	A572-65	0.945
39	41.41 - 36.41	5		18	36.687	37.751	0.7125	A572-65	0.948
40	36.41 - 36.25	0.16		18	37.751	37.785	0.7125	A572-65	0.948
41	36.25 - 36	0.25		18	37.785	37.838	0.75	A572-65	0.959
42	36 - 31.25	4.75		18	37.838	38.849	0.75	A572-65	0.947
43	31.25 - 31	0.25		18	38.849	38.902	0.7375	A572-65	0.962
44	31 - 26	5		18	38.902	39.966	0.725	A572-65	0.966
45	26 - 21	5		18	39.966	41.031	0.725	A572-65	0.954
46	21 - 18.5	2.5		18	41.031	41.563	0.7125	A572-65	0.964
47	18.5 - 18.25	0.25		18	41.563	41.616	0.7	A572-65	0.981
48	18.25 - 15	3.25		18	41.616	42.308	0.6875	A572-65	0.991
49	15 - 14.75	0.25		18	42.308	42.361	0.65	A572-65	1.083
50	14.75 - 9.75	5		18	42.361	43.425	0.65	A572-65	1.070
51	9.75 - 4.75	5		18	43.425	44.489	0.6375	A572-65	1.079
52	4.75 - 0	4.75		18	44.489	45.500	0.6375	A572-65	1.068

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	150 - 145	2.98	24.42	4.22
2	145 - 140	3.20	46.11	4.46
3	140 - 135	6.61	80.39	9.17
4	135 - 130	6.94	126.79	9.40
5	130 - 126.59	9.79	167.33	14.00
6	126.59 - 122.25	10.35	228.88	14.30
7	122.25 - 122	10.39	232.46	14.32
8	122 - 120.25	10.63	257.58	14.41
9	120.25 - 120	10.68	261.19	14.43
10	120 - 115.5	14.93	332.65	18.67
11	115.5 - 115.25	14.98	337.32	18.69
12	115.25 - 115	15.01	342.00	18.72
13	115 - 114.75	15.06	346.68	18.74
14	114.75 - 109.75	15.99	441.56	19.23
15	109.75 - 105.25	19.70	533.52	22.16
16	105.25 - 105	19.77	539.06	22.19
17	105 - 100.4	20.91	642.18	22.66
18	100.4 - 100.15	20.98	647.85	22.69
19	100.15 - 95.15	22.28	762.57	23.21
20	95.15 - 90.15	23.61	879.88	23.73
21	90.15 - 90.04	23.65	882.49	23.77
22	90.04 - 85.04	25.96	1002.75	24.36
23	85.04 - 82	26.86	1077.25	24.67
24	82 - 81.75	26.96	1083.42	24.70
25	81.75 - 77.25	28.53	1195.63	25.19
26	77.25 - 77	28.62	1201.93	25.22
27	77 - 75	29.26	1252.57	25.44
28	75 - 74.75	29.35	1258.94	25.46
29	74.75 - 71.25	30.55	1348.70	25.87
30	71.25 - 71	30.66	1355.16	25.90
31	71 - 70.4	30.89	1370.69	25.97
32	70.4 - 70.15	31.00	1377.18	26.00
33	70.15 - 65.15	33.02	1508.45	26.60
34	65.15 - 60.15	35.08	1642.69	27.19
35	60.15 - 55.15	37.16	1779.84	27.77
36	55.15 - 50.15	39.27	1919.84	28.33
37	50.15 - 47.58	40.37	1992.86	28.60
38	47.58 - 41.41	44.57	2171.45	29.36
39	41.41 - 36.41	46.46	2319.25	29.79
40	36.41 - 36.25	46.54	2324.01	29.79
41	36.25 - 36	46.64	2331.46	29.82
42	36 - 31.25	48.55	2474.04	30.24
43	31.25 - 31	48.66	2481.59	30.24
44	31 - 26	50.71	2633.81	30.66
45	26 - 21	52.79	2788.06	31.07
46	21 - 18.5	53.84	2865.98	31.29
47	18.5 - 18.25	53.96	2873.80	31.30
48	18.25 - 15	55.33	2975.96	31.59
49	15 - 14.75	55.45	2983.85	31.59
50	14.75 - 9.75	57.66	3142.82	32.01
51	9.75 - 4.75	59.90	3303.80	32.42
52	4.75 - 0	62.06	3458.05	32.57

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP16.08x15x0.1875	Pole	10.7%	Pass
145 - 140	Pole	TP17.16x16.08x0.1875	Pole	17.4%	Pass
140 - 135	Pole	TP18.239x17.16x0.1875	Pole	27.2%	Pass
135 - 130	Pole	TP19.319x18.239x0.1875	Pole	38.2%	Pass
130 - 126.59	Pole	TP20.74x19.319x0.1875	Pole	47.5%	Pass
126.59 - 122.25	Pole	TP20.603x19.68x0.25	Pole	44.9%	Pass
122.25 - 122	Pole + Reinf.	TP20.656x20.603x0.4125	Reinf. 18 Tension Rupture	51.0%	Pass
122 - 120.25	Pole + Reinf.	TP21.029x20.656x0.4125	Reinf. 18 Tension Rupture	54.8%	Pass
120.25 - 120	Pole + Reinf.	TP21.082x21.029x0.575	Reinf. 18 Tension Rupture	40.3%	Pass
120 - 115.5	Pole + Reinf.	TP22.039x21.082x0.5625	Reinf. 18 Tension Rupture	48.2%	Pass
115.5 - 115.25	Pole + Reinf.	TP22.092x22.039x0.4	Reinf. 16 Tension Rupture	66.3%	Pass
115.25 - 115	Pole + Reinf.	TP22.145x22.092x0.4	Reinf. 16 Tension Rupture	67.0%	Pass
115 - 114.75	Pole + Reinf.	TP22.198x22.145x0.55	Reinf. 16 Tension Rupture	49.6%	Pass
114.75 - 109.75	Pole + Reinf.	TP23.261x22.198x0.5375	Reinf. 16 Tension Rupture	58.8%	Pass
109.75 - 105.25	Pole + Reinf.	TP24.218x23.261x0.525	Reinf. 16 Tension Rupture	67.0%	Pass
105.25 - 105	Pole + Reinf.	TP24.271x24.218x0.7375	Reinf. 3 Tension Rupture	54.8%	Pass
105 - 100.4	Pole + Reinf.	TP25.249x24.271x0.7125	Reinf. 3 Tension Rupture	61.8%	Pass
100.4 - 100.15	Pole + Reinf.	TP25.303x25.249x0.7375	Reinf. 2 Tension Rupture	55.7%	Pass
100.15 - 95.15	Pole + Reinf.	TP26.366x25.303x0.7125	Reinf. 2 Tension Rupture	61.9%	Pass
95.15 - 90.15	Pole + Reinf.	TP27.429x26.366x0.7	Reinf. 2 Tension Rupture	67.6%	Pass
90.15 - 90.04	Pole + Reinf.	TP28.32x27.429x0.7	Reinf. 2 Tension Rupture	67.7%	Pass
90.04 - 85.04	Pole + Reinf.	TP28.018x26.952x0.75	Reinf. 2 Tension Rupture	68.4%	Pass
85.04 - 82	Pole + Reinf.	TP28.665x28.018x0.7375	Reinf. 2 Tension Rupture	71.1%	Pass
82 - 81.75	Pole + Reinf.	TP28.719x28.665x0.925	Reinf. 2 Tension Rupture	57.9%	Pass
81.75 - 77.25	Pole + Reinf.	TP29.677x28.719x0.9	Reinf. 2 Tension Rupture	61.1%	Pass
77.25 - 77	Pole + Reinf.	TP29.731x29.677x0.7875	Reinf. 2 Tension Rupture	69.7%	Pass
77 - 75	Pole + Reinf.	TP30.157x29.731x0.775	Reinf. 2 Tension Rupture	71.2%	Pass
75 - 74.75	Pole + Reinf.	TP30.21x30.157x0.825	Reinf. 2 Tension Rupture	67.0%	Pass
74.75 - 71.25	Pole + Reinf.	TP30.956x30.21x0.8125	Reinf. 2 Tension Rupture	69.4%	Pass
71.25 - 71	Pole + Reinf.	TP31.009x30.956x0.9375	Reinf. 2 Tension Rupture	61.4%	Pass
71 - 70.4	Pole + Reinf.	TP31.137x31.009x0.925	Reinf. 2 Tension Rupture	61.7%	Pass
70.4 - 70.15	Pole + Reinf.	TP31.19x31.137x0.9375	Reinf. 1 Tension Rupture	58.3%	Pass
70.15 - 65.15	Pole + Reinf.	TP32.255x31.19x0.9125	Reinf. 1 Tension Rupture	61.1%	Pass
65.15 - 60.15	Pole + Reinf.	TP33.32x32.255x0.8875	Reinf. 1 Tension Rupture	63.6%	Pass
60.15 - 55.15	Pole + Reinf.	TP34.386x33.32x0.8625	Reinf. 1 Tension Rupture	66.0%	Pass
55.15 - 50.15	Pole + Reinf.	TP35.451x34.386x0.85	Reinf. 1 Tension Rupture	68.3%	Pass
50.15 - 47.58	Pole + Reinf.	TP37.1x35.451x0.8375	Reinf. 1 Tension Rupture	69.4%	Pass
47.58 - 41.41	Pole + Reinf.	TP36.687x35.374x0.725	Reinf. 15 Tension Rupture	73.8%	Pass
41.41 - 36.41	Pole + Reinf.	TP37.751x36.687x0.7125	Reinf. 15 Tension Rupture	75.4%	Pass
36.41 - 36.25	Pole + Reinf.	TP37.785x37.751x0.7125	Reinf. 15 Tension Rupture	75.4%	Pass
36.25 - 36	Pole + Reinf.	TP37.838x37.785x0.75	Reinf. 11 Tension Rupture	74.9%	Pass
36 - 31.25	Pole + Reinf.	TP38.849x37.838x0.75	Reinf. 11 Tension Rupture	76.3%	Pass
31.25 - 31	Pole + Reinf.	TP38.902x38.849x0.7375	Reinf. 11 Tension Rupture	76.4%	Pass
31 - 26	Pole + Reinf.	TP39.966x38.902x0.725	Reinf. 11 Tension Rupture	77.8%	Pass
26 - 21	Pole + Reinf.	TP41.031x39.966x0.725	Reinf. 11 Tension Rupture	79.1%	Pass
21 - 18.5	Pole + Reinf.	TP41.563x41.031x0.7125	Reinf. 11 Tension Rupture	79.7%	Pass
18.5 - 18.25	Pole + Reinf.	TP41.616x41.563x0.7	Reinf. 12 Tension Rupture	79.4%	Pass
18.25 - 15	Pole + Reinf.	TP42.308x41.616x0.6875	Reinf. 12 Tension Rupture	80.1%	Pass
15 - 14.75	Pole + Reinf.	TP42.361x42.308x0.65	Reinf. 12 Tension Rupture	82.5%	Pass
14.75 - 9.75	Pole + Reinf.	TP43.425x42.361x0.65	Reinf. 12 Tension Rupture	83.5%	Pass
9.75 - 4.75	Pole + Reinf.	TP44.489x43.425x0.6375	Reinf. 12 Tension Rupture	84.4%	Pass
4.75 - 0	Pole + Reinf.	TP45.5x44.489x0.6375	Reinf. 12 Tension Rupture	85.2%	Pass
				Summary	
			Pole	59.9%	Pass
			Reinforcement	85.2%	Pass
			Overall	85.2%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*																
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18
150 - 145	302	n/a	302	9.46	n/a	9.46	10.7%																		
145 - 140	367	n/a	367	10.10	n/a	10.10	17.4%																		
140 - 135	442	n/a	442	10.74	n/a	10.74	27.2%																		
135 - 130	526	n/a	526	11.39	n/a	11.39	38.2%																		
130 - 126.59	589	n/a	589	11.82	n/a	11.82	47.5%																		
126.59 - 122.25	845	n/a	845	16.15	n/a	16.15	44.9%																		
122.25 - 122	852	522	1373	16.19	9.00	25.19	27.7%																		51.0%
122 - 120.25	899	540	1439	16.49	9.00	25.49	29.8%																		54.8%
120.25 - 120	906	1085	1991	16.53	18.00	34.53	21.9%																40.3%		40.3%
120 - 115.5	1037	1181	2218	17.29	18.00	35.29	26.3%																48.2%		48.2%
115.5 - 115.25	1044	593	1637	17.33	9.00	26.33	36.1%																66.3%		
115.25 - 115	1052	596	1648	17.37	9.00	26.37	36.5%																67.0%		
115 - 114.75	1060	1200	2259	17.42	17.76	35.18	27.0%										42.1%						49.6%		
114.75 - 109.75	1221	1312	2533	18.26	17.76	36.02	32.0%										49.8%						58.8%		
109.75 - 105.25	1380	1417	2797	19.02	17.76	36.78	36.7%										56.7%						67.0%		
105.25 - 105	1389	2460	3849	19.06	30.42	49.48	27.0%			54.8%							41.7%						49.3%		
105 - 100.4	1566	2652	4218	19.84	30.42	50.25	30.8%			61.8%							47.0%						55.6%		
100.4 - 100.15	1576	2831	4407	19.88	32.29	52.17	29.8%		55.7%								45.5%						53.8%		
100.15 - 95.15	1785	3062	4847	20.72	32.29	53.01	33.5%		61.9%								50.6%						59.9%		
95.15 - 90.15	2012	3303	5315	21.57	32.29	53.86	37.0%		67.6%								55.3%						65.5%		
90.15 - 90.04	2017	3308	5325	21.58	32.29	53.88	37.1%		67.7%								55.4%						65.6%		
90.04 - 85.04	2664	3439	6103	27.48	32.29	59.77	36.2%		68.4%								55.9%						66.3%		
85.04 - 82	2855	3593	6449	28.12	32.29	60.41	37.7%		71.1%								58.1%						68.9%		
82 - 81.75	2871	5108	7980	28.17	45.79	73.97	30.7%		57.9%								47.4%						56.1%	53.9%	
81.75 - 77.25	3172	5441	8613	29.13	45.79	74.92	32.4%		61.1%								50.0%						59.2%	56.9%	
77.25 - 77	3189	4410	7600	29.18	37.03	66.21	37.0%		69.7%														67.6%	64.9%	
77 - 75	3330	4533	7862	29.60	37.03	66.63	37.9%		71.2%														69.1%	66.3%	
75 - 74.75	3348	5056	8403	29.65	41.05	70.70	35.7%		67.0%		54.8%					54.8%							65.0%		
74.75 - 71.25	3604	5298	8903	30.39	41.05	71.44	37.2%		69.4%		56.8%					56.8%							67.3%		
71.25 - 71	3623	6508	10131	30.45	50.05	80.50	32.9%		61.4%		50.2%					50.2%						52.2%			
71 - 70.4	3669	6559	10228	30.57	50.05	80.62	33.1%		61.7%		50.5%					50.5%						52.5%			
70.4 - 70.15	3688	6769	10457	30.63	51.46	82.08	32.6%	58.3%			49.7%					49.7%						51.7%			
70.15 - 65.15	4083	7219	11302	31.68	51.46	83.14	34.5%	61.1%			52.0%					52.0%						54.1%			
65.15 - 60.15	4505	7684	12189	32.74	51.46	84.20	36.3%	63.6%			54.2%					54.2%						56.4%			
60.15 - 55.15	4955	8164	13119	33.80	51.46	85.25	38.0%	66.0%			56.3%					56.3%						58.6%			
55.15 - 50.15	5435	8658	14093	34.85	51.46	86.31	39.7%	68.3%			58.2%					58.2%						60.6%			
50.15 - 47.58	5693	8917	14610	35.39	51.46	86.85	40.5%	69.4%			59.1%					59.1%						61.6%			
47.58 - 41.41	7197	6337	13534	43.22	34.95	78.17	46.5%							68.7%	68.7%							73.8%			
41.41 - 36.41	7849	6695	14543	44.48	34.95	79.43	47.9%							70.2%	70.2%							75.4%			
36.41 - 36.25	7870	6706	14577	44.53	34.95	79.48	47.9%							70.3%	70.3%							75.4%			
36.25 - 36	7908	7514	15422	44.59	40.08	84.66	46.2%							65.7%	65.7%			74.9%	68.6%	68.6%					
36 - 31.25	8565	7904	16469	45.79	40.08	85.87	47.5%							67.0%	67.0%			76.3%	69.9%	69.9%					
31.25 - 31	8601	7924	16525	45.86	40.08	85.93	47.5%						67.1%	67.0%				76.4%	70.0%	70.0%					
31 - 26	9333	8346	17679	47.12	40.08	87.20	48.8%						68.3%	68.3%				77.8%	71.3%	71.3%					
26 - 21	10106	8778	18884	48.39	40.08	88.46	50.0%						69.5%	69.4%				79.1%	72.6%	72.6%					
21 - 18.5	10508	8998	19506	49.02	40.08	89.10	50.6%						70.0%	70.0%				79.7%	73.1%	73.1%					
18.5 - 18.25	10574	8566	19140	49.09	40.08	89.16	53.5%					67.8%	69.8%					71.7%	79.4%	76.5%					
18.25 - 15	11114	8843	19957	49.91	40.08	89.98	54.2%					68.5%	70.4%					72.5%	80.1%	77.2%					
15 - 14.75	11143	7951	19094	49.97	43.20	93.17	56.7%					61.2%	74.3%					67.8%	82.5%		60.4%				
14.75 - 9.75	12012	8335	20347	51.24	43.20	94.44	57.8%					62.2%	75.3%					68.8%	83.5%		61.3%				
9.75 - 4.75	12924	8728	21652	52.50	43.20	95.70	58.9%					63.2%	76.2%					69.9%	84.4%		62.1%				
4.75 - 0	13832	9111	22943	53.71	43.20	96.91	59.9%					64.0%	77.0%					70.7%	85.2%		62.8%				

Note: Section capacity checked assuming all reinforcements are effective and using 5 degree increments.
Rating per TIA-222-H Section 15.5.

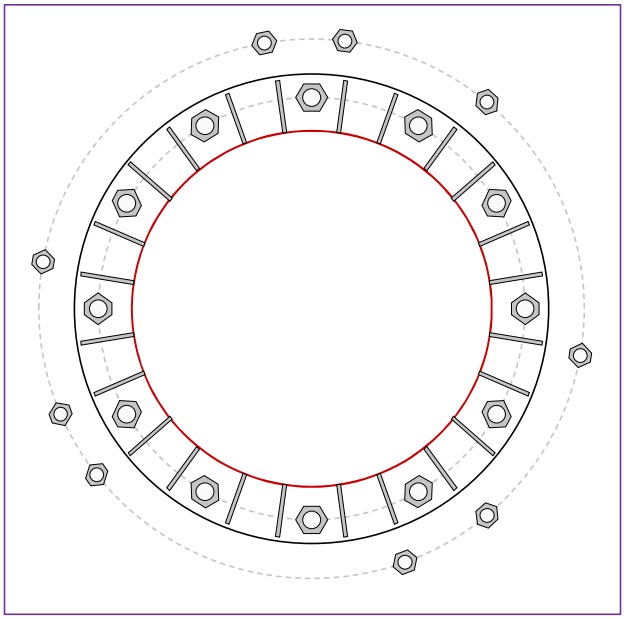
Monopole Base Plate Connection

Site Info	
BU #	876362
Site Name	XFORD / FRITZ PROPER
Order #	553386 Rev. 0

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

Applied Loads	
Moment (kip-ft)	3458.05
Axial Force (kips)	62.06
Shear Force (kips)	32.57

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

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

GROUP 2: (9) 1-3/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 69" BC

pos. (deg): 50, 170, 290, 100, 218, 350, 83, 203, 310

Base Plate Data

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

Stiffener Data

(24) 13.75"H x 6.75"W x 0.5"T, Notch: 0.75"

plate: Fy= 50 ksi ; weld: Fy= 80 ksi

horiz. weld: 0.25" groove, 45° dbl bevel, 0.375" fillet

vert. weld: 0.375" fillet

Pole Data

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

Analysis Results

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

GROUP 1:		
Pu_t = 147.22	ϕPn_t = 243.75	**Stress Rating**
Vu = 2.71	ϕVn = 149.1	**57.5%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 113.47	ϕPn_t = 178.13	**Stress Rating**
Vu = 0	ϕVn = 112.75	**60.7%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	34.83	(Roark's Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**61.4%**	**Pass**

Stiffener Summary

Horizontal Weld:	**39.7%**	**Pass**
Vertical Weld:	**24.9%**	**Pass**
Plate Flexure+Shear:	**19.5%**	**Pass**
Plate Tension+Shear:	**41.3%**	**Pass**
Plate Compression:	**54.8%**	**Pass**

Pole Summary

Punching Shear:	**9.9%**	**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	

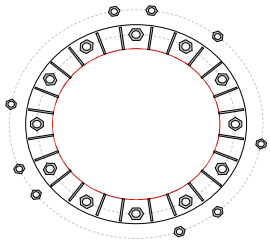
Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_e, (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	2.25	A615-75	54	0.5	1.75	N-Included		No
2	1	30	2.25	A615-75	54	0.5	1.75	N-Included		No
3	1	60	2.25	A615-75	54	0.5	1.75	N-Included		No
4	1	90	2.25	A615-75	54	0.5	1.75	N-Included		No
5	1	120	2.25	A615-75	54	0.5	1.75	N-Included		No
6	1	150	2.25	A615-75	54	0.5	1.75	N-Included		No
7	1	180	2.25	A615-75	54	0.5	1.75	N-Included		No
8	1	210	2.25	A615-75	54	0.5	1.75	N-Included		No
9	1	240	2.25	A615-75	54	0.5	1.75	N-Included		No
10	1	270	2.25	A615-75	54	0.5	1.75	N-Included		No
11	1	300	2.25	A615-75	54	0.5	1.75	N-Included		No
12	1	330	2.25	A615-75	54	0.5	1.75	N-Included		No
13	2	50	1.75	A193 Gr. B7	69	0.5	0	N-Included		No
14	2	170	1.75	A193 Gr. B7	69	0.5	0	N-Included		No
15	2	290	1.75	A193 Gr. B7	69	0.5	0	N-Included		No
16	2	100	1.75	A193 Gr. B7	69	0.5	0	N-Included		No
17	2	218	1.75	A193 Gr. B7	69	0.5	0	N-Included		No
18	2	350	1.75	A193 Gr. B7	69	0.5	0	N-Included		No
19	2	83	1.75	A193 Gr. B7	69	0.5	0	N-Included		No
20	2	203	1.75	A193 Gr. B7	69	0.5	0	N-Included		No
21	2	310	1.75	A193 Gr. B7	69	0.5	0	N-Included		No

Custom Stiffener Connection

Stiffener	Stiffener Group ID	Location (deg.)	Width (in)	Height (in)	Thickness (in)	H. Notch (in)	V. Notch (in)	Grade (ksi)	Weld Type	Groove Depth (in)	Groove Angle (deg.)	H. Fillet Weld Size (in)	V. Fillet Weld Size (in)	Weld Strength (ksi)
1	1	8.5140802	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
2	1	21.4859198	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
3	1	38.5140802	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
4	1	51.4859198	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
5	1	68.5140802	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
6	1	81.4859198	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
7	1	98.5140802	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
8	1	111.48592	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
9	1	128.51408	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
10	1	141.48592	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
11	1	158.51408	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
12	1	171.48592	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
13	1	188.51408	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
14	1	201.48592	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
15	1	218.51408	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
16	1	231.48592	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
17	1	248.51408	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
18	1	261.48592	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
19	1	278.51408	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
20	1	291.48592	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
21	1	308.51408	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
22	1	321.48592	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
23	1	338.51408	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80
24	1	351.48592	6.75	13.75	0.5	0.75	0.75	50	Both	0.25	45	0.375	0.375	80

Plot Graphic



PAUL J. FORD & COMPANY

Date:	8/2/2021	**Page:**	1 of 2
Job Number:	37521-0921.001.7805		
Engineer:	NCM		
Site Number:	876362		
Site Name:	Oxford / Fritz Property		
Version:	2.9	**Effective:**	4/18/2019

Flexible Foundation Analysis

Applied Reactions for RISA-3D

TNX Moment =	3458.05	k-ft
TNX Axial =	62.06	kips
TNX Shear =	32.57	kips
Total Unfactored Axial =	51.7	kips
TIA Standard =	H	

Passive Pressure on Pad/Mat

Horiz Subgr Modulus =	1105	kcf
Plate Width =	0.5	ft
Depth to Ignore =	3.3333333	ft
Pad Thickness =	4.5	ft
k (side) =	76.74	k/in
k (corner) =	38.37	k/in

Pad/Mat & Pier Input

Pier Number Sides =	Round	
Pier Width/Diameter =	6	ft
Pier Height =	1.5	ft
Ht Above Grade =	1	ft (Pier or Pad)
Pad Thickness =	4.5	ft
Pad Width =	22.75	ft
Pad Length =	22.75	ft
Concrete Density =	150	pcf
Concrete f'c =	4	ksi
β1 =	0.85	
Rebar Fy =	60	ksi

	Width	Length	
Location =			
Top Bar Quantity =	31		
Top Bar Size #	8		
Top Clear Cover =	3		in
Bottom Bar Quantity =	31		
Bottom Bar Size #	8		
Bottom Clear Cover =	3		in
As, min =	26.54		in^2
Use Comp Side Rebar?	No		
Mu (Comp Top) =	1614.776		k-ft
Mu (Comp Bot) =	673.231		k-ft

Pad/Mat Analysis

Location	Comp Side	c, in	d, in	εt, in/in	Mu, k-ft	Φ	ΦMn, k-ft	Ratio
Width	Top	1.86	49.50	-0.077	1614.8	0.90	5367.9	28.6%
Width	Bot	1.86	49.50	-0.077	673.2	0.90	5367.9	11.9%

Soil Weight

Soil Unit Weight=	100	pcf
Apply Soil Weight =	Surface Load	
Volume =	244.6	ft^3
Weight =		kips
Weight per Sq Ft =	0.05	ksf

Soil Modulus by Layer

Layer	Start, ft	End, ft	Vert, pci	Horiz, pci
1	0.0	4.5	639.6	639.6
2	4.5	5	717.6	717.6
3	5.0	7.5	726.6	726.6
4				
5				
6				
7				
8				
9				

Rock Anchor Capacity

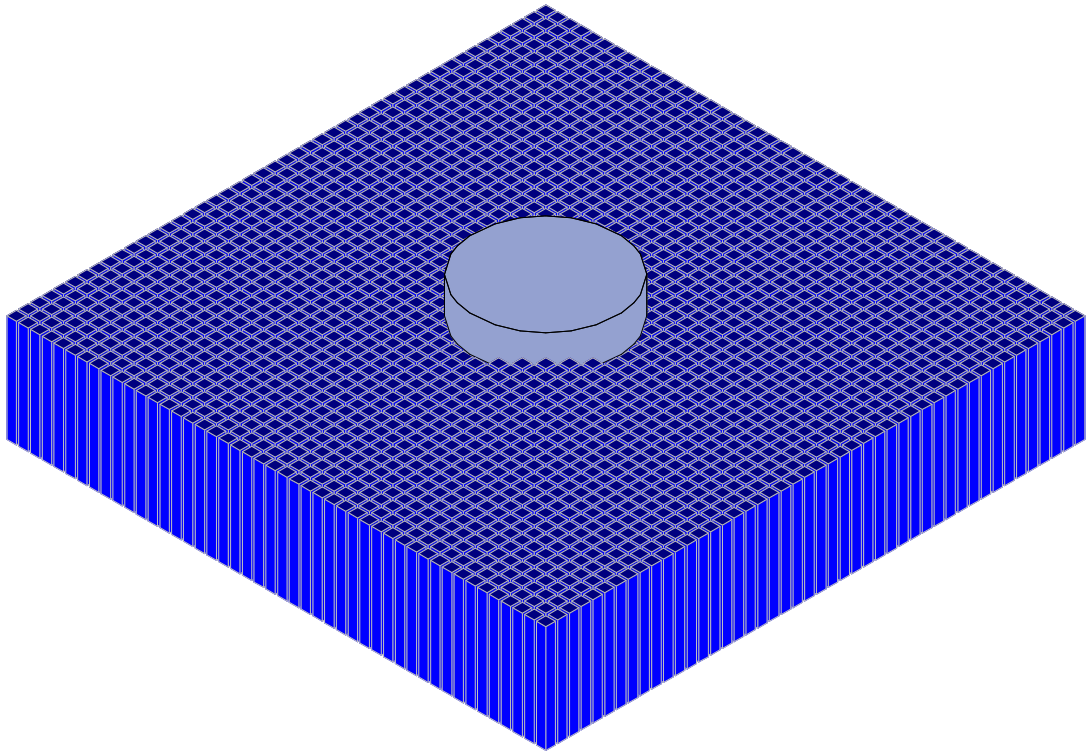
Anchor Type =	Rock Anchor	
Pile Type =	1.25" WILLIAMS R71	
Ag =	1.33	in^2
Ag Override =		in^2
E =	29000	ksi
Lu =	15	ft
k = An (E) / Lu =	213.5	k/in
Pu =	187.5	ksi
Capacity = 0.8 (Pu) =	150.0	kips
Capacity Override =		kips
Max Tension from RISA =	16.2	kips
Ratio =	10.3%	**OK**

Bearing Check

Max Bearing Load =	1.248	kip
Plate Width =	0.494565	ft
Plate Length =	0.5	ft
Design Brg Capacity =	60.55	ksf = Φqn
Bearing Pressure =	5.1	ksf
Ratio =	10.7%	**OK**

Subgrade Modulus Conversion

Subgrade Modulus =	726.6	pci
ks =	1255.6	kcf



Envelope Only Solution

Paul J. Ford and Company	Oxford / Fritz Property / BU 876362	SK - 1
NCM		Aug 2, 2021 at 8:17 AM
37521-0921.001.7805		37521-0921.001.7805_Flexible Fo...

(Global) Model Settings

Display Sections for Member Calcs	2
Max Internal Sections for Member Calcs	100
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 (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	None
RISAConnection Code	None
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	ACI 318-14
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	None

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?	No
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 (ft)	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	4
Cd X	4
Rho Z	1
Rho X	1

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead	None		-1		1				
2	Wind 0	None				2				
3	Wind 45	None				4				
4	Wind 90	None				2				
5	Wind 135	None				4				

Load Combinations

	Description	Solve	P...	S...	BLC	Factor	BLC	Fac.....	...	...	...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	1.2 Dead + Wind 0	Yes	Y		1	1.2	2	1															
2	0.9 Dead + Wind 0	Yes	Y		1	.9	2	1															
3	1.2 Dead + Wind ...	Yes	Y		1	1.2	3	1															
4	0.9 Dead + Wind ...	Yes	Y		1	.9	3	1															
5	1.2 Dead + Wind ...		Y		1	1.2	4	1															
6	0.9 Dead + Wind ...		Y		1	.9	4	1															
7	1.2 Dead + Wind ...		Y		1	1.2	5	1															
8	0.9 Dead + Wind ...		Y		1	.9	5	1															
9	1.2 Dead + Wind ...		Y		1	1.2	2	-1															
10	0.9 Dead + Wind ...		Y		1	.9	2	-1															
11	1.2 Dead + Wind ...		Y		1	1.2	3	-1															
12	0.9 Dead + Wind ...		Y		1	.9	3	-1															
13	1.2 Dead + Wind ...		Y		1	1.2	4	-1															
14	0.9 Dead + Wind ...		Y		1	.9	4	-1															
15	1.2 Dead + Wind ...		Y		1	1.2	5	-1															
16	0.9 Dead + Wind ...		Y		1	.9	5	-1															

Joint Loads and Enforced Displacements (BLC 1 : Dead)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	CENTER	L	Y	-51.72

Joint Loads and Enforced Displacements (BLC 2 : Wind 0)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	CENTER	L	Mx	3457
2	CENTER	L	Z	32.55

Joint Loads and Enforced Displacements (BLC 3 : Wind 45)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	CENTER	L	Mz	2444.348
2	CENTER	L	Mx	2444.348
3	CENTER	L	X	-23.016
4	CENTER	L	Z	23.016

Joint Loads and Enforced Displacements (BLC 4 : Wind 90)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	CENTER	L	Mz	3456.83
2	CENTER	L	X	-33

Joint Loads and Enforced Displacements (BLC 5 : Wind 135)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	CENTER	L	Mz	2444.348
2	CENTER	L	Mx	-2444.348
3	CENTER	L	X	-23.016
4	CENTER	L	Z	-23.016

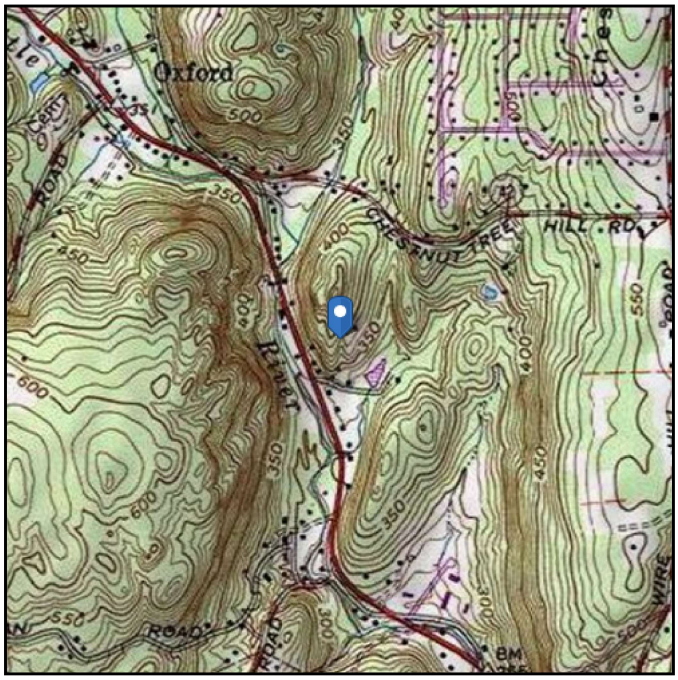
Concrete Properties

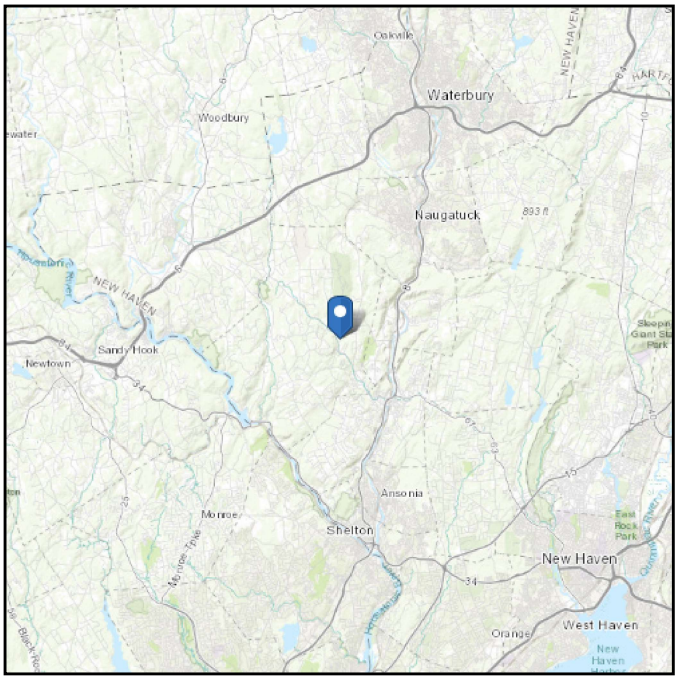
	Label	E [ksi]	G [ksi]	Nu	Therm (/1...	Density[k/ft^3]	f'c[ksi]	Lambda	Flex Steel...	Shear Ste...
1	Conc3000NW	3156	1372	.15	.6	.145	3	1	60	60
2	Conc3500NW	3409	1482	.15	.6	.145	3.5	1	60	60
3	Conc4000NW	3644	1584	.15	.6	.145	4	1	60	60
4	Conc3000LW	2085	907	.15	.6	.11	3	.75	60	60
5	Conc3500LW	2252	979	.15	.6	.11	3.5	.75	60	60
6	Conc4000LW	2408	1047	.15	.6	.11	4	.75	60	60

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	372.75 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.427992
Soil Class:	D - Stiff Soil	**Longitude:**	-73.108542





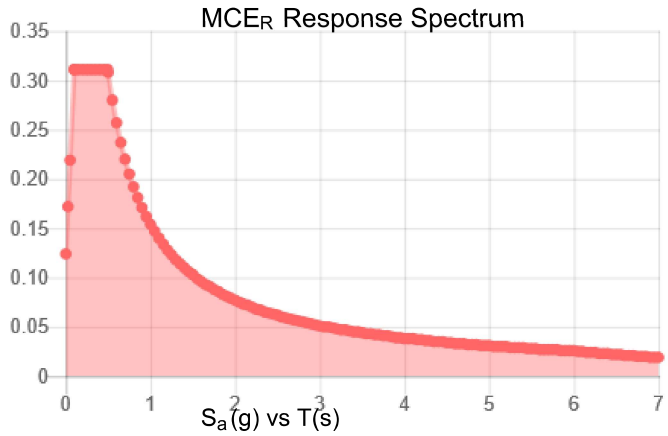
Seismic

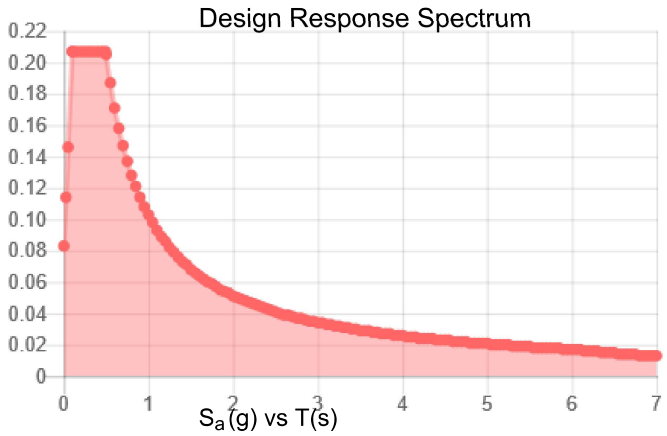
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.194	S_{DS} :	0.207
S_1 :	0.064	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.102
S_{MS} :	0.311	PGA_M :	0.163
S_{M1} :	0.154	F_{PGA} :	1.595
		I_e :	1

Seismic Design Category B





Data Accessed: Mon Jun 17 2019

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Mon Jun 17 2019

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 D

Date: **September 14, 2021**

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

Subject:	**Mount Analysis - Conditional Passing Report**	
Carrier Designation:	**DISH Network Equipment Change-Out**	
	Carrier Site Number:	BOHVN00169A
	Carrier Site Name:	CT-CCI-T-876362
Crown Castle Designation:	**BU Number:**	876362
	Site Name:	Oxford/Fritz Property
	JDE Job Number:	645187
	Order Number:	553386, Rev. 2
Engineering Firm Designation:	**Kimley-Horn Project Number:**	019558056
Site Data:	**338 Oxford Rd., Oxford, New Haven County, CT 06478**	
	Latitude 41°25'40.8"N Longitude 73°06'30.8"W	
Structure Information:	**Tower Height & Type:**	**150 ft Monopole**
	Mount Elevation:	**107 ft**
	Mount Type:	**8 ft Platform w/ Support Rails**

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

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

Platform w/ Support Rails **Sufficient**
*** See Section 4.1 for loading and structural modifications required for the mount to support the loading listed in Table 1.**

This analysis utilizes an ultimate 3-second gust wind speed of 121 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: Jeffery Rahming

Respectfully Submitted by:

Kyle Freehart, P.E.

Lic. #PEN.0034906, Exp. 01/31/2022
Kimley-Horn and Associates, Inc. COA #PEC.0000738

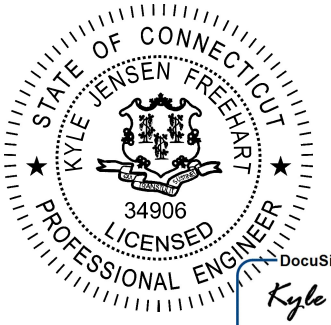


TABLE OF CONTENTS

1) INTRODUCTION

The mounting configuration consists of a proposed 8 ft Platform w/ Support Rails designed by CommScope.

2) ANALYSIS CRITERIA

Building Code:	2018 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	121 mph
Exposure Category:	B
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 – Proposed Equipment Configuration

Elevation (ft)		Antennas			Mount / Modification Details
Mount	Centerline	#	Manufacturer	Model	
107	107	3	Fujitsu	TA08025-B604	Proposed 8 ft Platform w/ Support Rails designed by CommScope
		3	Fujitsu	TA08025-B605	
		3	Jma wireless	MX08FRO665-21	
		1	Raycap	RDIDC-9181-PF-48	

3) ANALYSIS PROCEDURE

Table 2 – Documents Provided

Document	Remarks	Reference	Source
Structural Analysis	Paul J. Ford & Company	9917044	CCIsites

3.1) Analysis Method

RISA-3D (version 17.00), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

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

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

3.2) Assumptions

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

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

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

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1, 2	Connections	-	107	22%	Pass
1, 2	Platform Base	M62		21%	Pass
1, 2	Stand Off Horizontals	M12		21%	Pass
1, 2	Mount Pipes	MP6		13%	Pass

Structure Rating (max from all components) =	22%

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

4.1) Recommendations

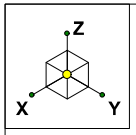
The mounting configuration will have sufficient capacity to carry the referenced loading once the following modifications are completed:

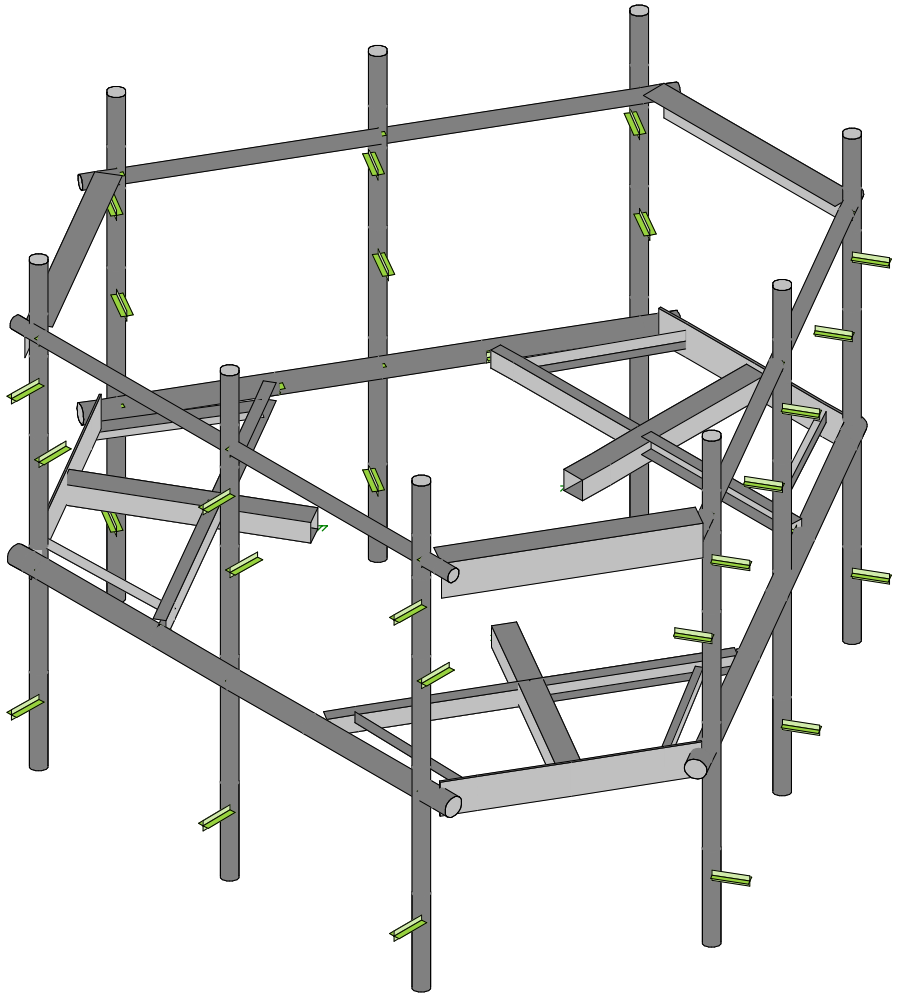
- **Install proposed Commscope MC-PK8-DSH platform**

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

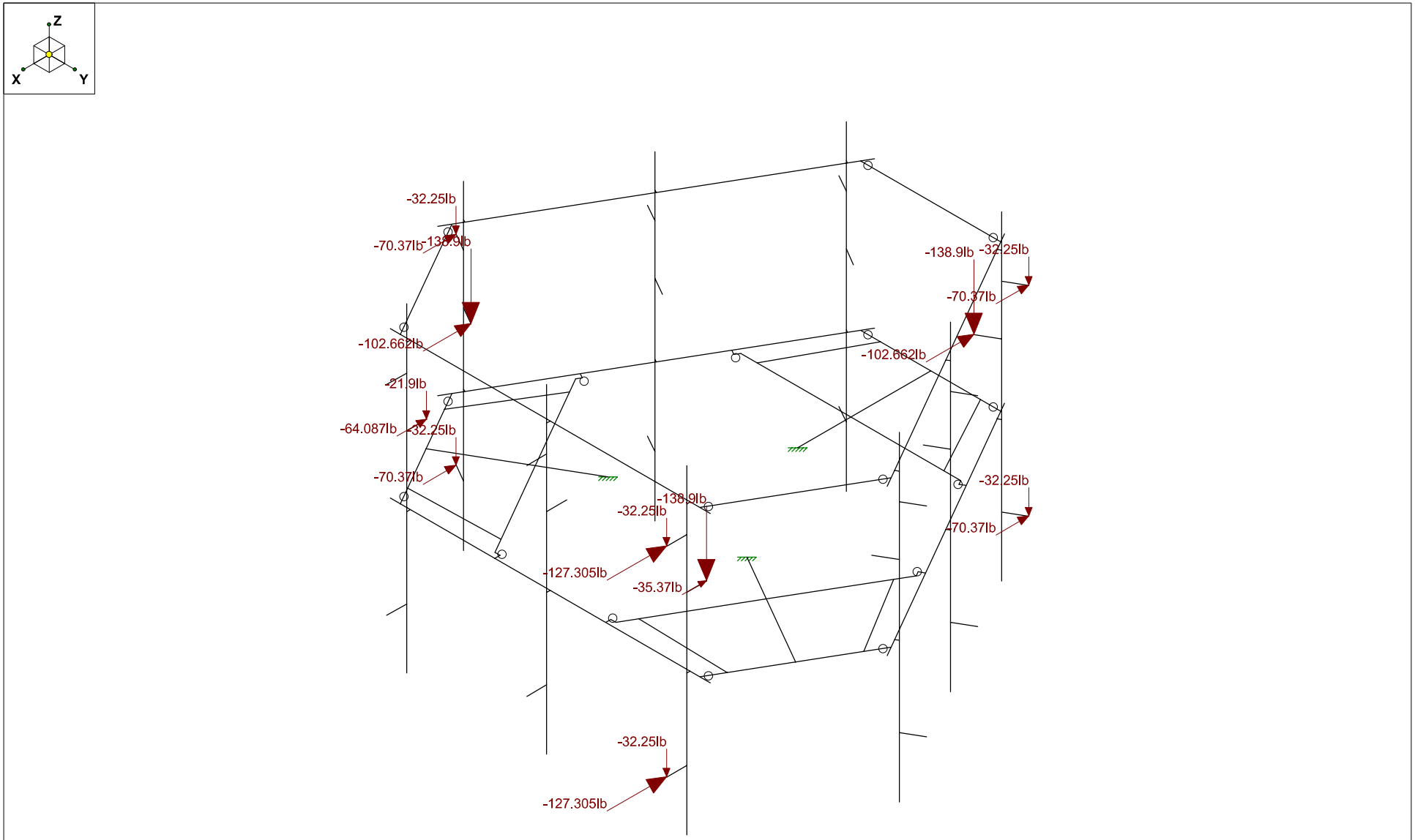
APPENDIX A

WIRE FRAME AND RENDERED MODELS





Kimley-Horn & Associates, Inc.	876362	SK - 1
JJR		Sept 14, 2021 at 4:00 PM
019558056		876362.r3d



Loads: LC 1, Summary: 1.0D + 1.0W

Kimley-Horn & Associates, Inc.	876362	SK - 2
JJR		Sept 14, 2021 at 4:01 PM
019558056		876362.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

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

Site-Specific Criteria	
Exposure Category	B
Topographic Factor, K_{zt}	1.00
Structure Base Elev. (AMSL), z_s (ft)	372.75
Ground Effect Factor, K_e	0.99

Mount & Structure Criteria	
Mount Elevation (AGL) (ft)	107.00
Structure Height (ft)	150.00
Structure Type	Monopole

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

Wind Summary	
Basic Wind Speed w/o Ice, V (mph)	121.00
Velocity Pressure Coeff., K_z	1.01
Velocity Pressure, q_z (w/o Ice) (psf)	35.39

Ice Load Summary	
Basic Wind Speed w/ Ice, V_i (mph)	50.00
Design Ice Thick. (ASCE 7-10) , t_i (in)	0.75
Velocity Pressure, q_z (w/ Ice) (psf)	6.04
Escalated Ice Thick. @ Mount, t_{iz} (in)	1.69

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

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

Kimley»Horn

Date	September 14, 2021
Client	Crown Castle
Site #	876362
Site Name	Oxford/Fritz Property
Project #	19558056

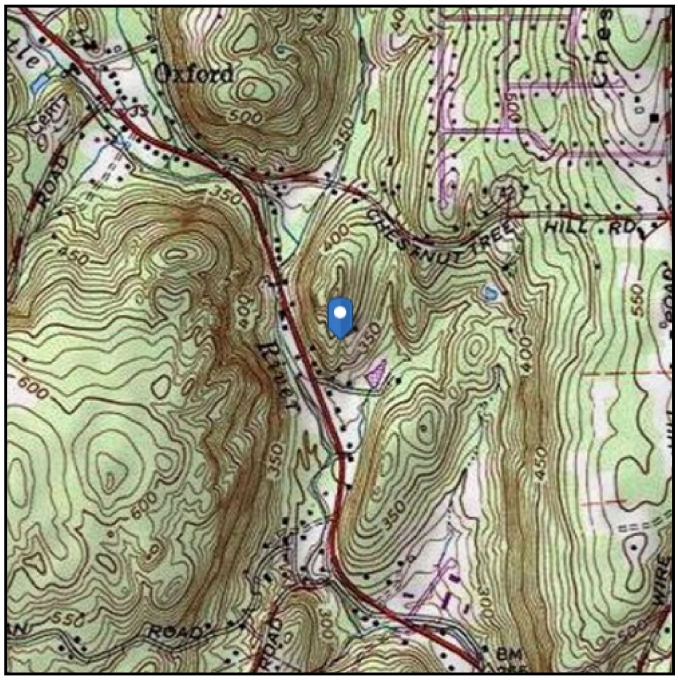
Antenna Name	Qty	Shape	Dimensions (in)			Weight (lb)	Joint Labels								EPA (ft²)		Wind Force, F_A (lb)			
																	No Ice		With Ice	
			H	W	D		Alpha		Beta		Gamma		Delta		Front	Side	Front	Side	Front	Side
MX08FRO665-21	3	Flat	72	20	8	64.5	A1T	A1B	B1T	B1B	G1T	G1B			7.99	3.23	254.61	102.78	52.48	24.64
TA08025-B604	3	Flat	15.8	15	7.9	63.9	A1R		B1R		G1R				0.52	1.96	16.45	62.55	4.87	15.89
TA08025-B605	3	Flat	15.8	15	9.1	75	A1R		B1R		G1R				0.59	1.96	18.92	62.55	5.39	15.89
RDIDC-9181-PF-48	1	Flat	16.6	14.6	8.5	21.9	A3R								2.01	1.17	64.09	37.21	16.22	10.7

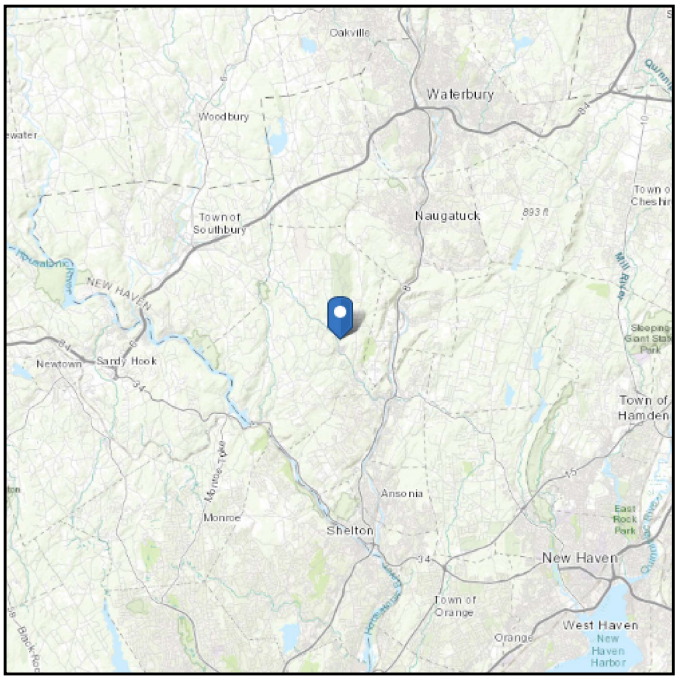
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 372.75 ft (NAVD 88)
Latitude: 41.428
Longitude: -73.108556





Wind

Results:

Wind Speed:	121 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

Data Accessed: Wed Sep 08 2021

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

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

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

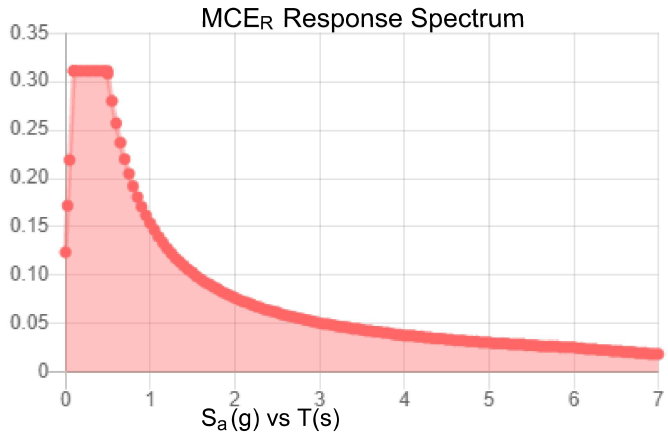
Seismic

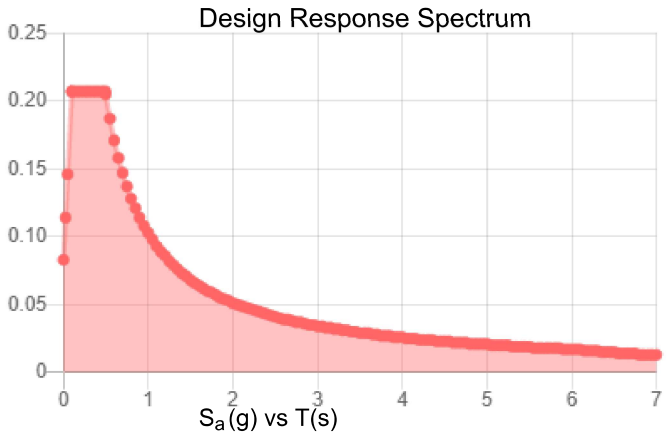
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.194	S_{DS} :	0.207
S_1 :	0.064	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.102
S_{MS} :	0.311	PGA_M :	0.163
S_{M1} :	0.154	F_{PGA} :	1.595
		I_e :	1

Seismic Design Category B





Data Accessed: Wed Sep 08 2021

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed Sep 08 2021

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

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

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1
9	A500 GR.C	29000	11154	.3	.65	.49	46	1.6	60	1.2
10	A529 Gr. 50	29000	11154	.3	.65	.49	50	1.1	65	1.1
11	A1011-33Ksi	29000	11154	.3	.65	.49	33	1.5	58	1.2
12	A1011 36 Ksi	29000	11154	.3	.65	.49	36	1.5	58	1.2
13	A1018 50 Ksi	29000	11154	.3	.65	.49	50	1.5	65	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	6.5"x0.37" Plate	PL6.5x0.375	Beam	None	A1011 36 Ksi	Typical	2.438	.029	8.582	.11
2	6"x0.37" Plate	Plate 6x.37	Beam	None	A1011 36 Ksi	Typical	2.22	.025	6.66	.097
3	L 2"x2"x1/4"	L2x2x4	Beam	None	A529 Gr. 50	Typical	.944	.346	.346	.021
4	Face Pipes(3.5x.16)	Pipe3.5x0.1...	Beam	None	A500 GR.C	Typical	1.729	2.409	2.409	4.819
5	Antenna Pipes	Pipe 2.875x...	Beam	None	A500 GR.C	Typical	1.039	.987	.987	1.975
6	Channel(3.38x2.06)	C3.38x2.06...	Beam	None	A1011 36 Ksi	Typical	1.75	.715	3.026	.034
7	Square Tubing	HSS4X4X6	Beam	None	A500 GR.C	Typical	4.78	10.3	10.3	17.5
8	Handrail Connector	L6.6x4.46x0...	Beam	None	A1011 36 Ksi	Typical	2.703	4.759	12.473	.055
9	Handrail	PIPE_2.0	Beam	None	A500 GR.C	Typical	1.02	.627	.627	1.25

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	M2	Square Tubi...	40			Lbyy						Lateral
2	M3	L 2"x2"x1/4"	27.295			Lbyy						Lateral
3	M4	L 2"x2"x1/4"	27.295			Lbyy						Lateral
4	M5	6.5"x0.37" P...	42			Lbyy						Lateral
5	M7	Square Tubi...	40			Lbyy						Lateral
6	M8	L 2"x2"x1/4"	27.295			Lbyy						Lateral
7	M9	L 2"x2"x1/4"	27.295			Lbyy						Lateral
8	M10	6.5"x0.37" P...	42			Lbyy						Lateral
9	M12	Square Tubi...	40			Lbyy						Lateral
10	M13	L 2"x2"x1/4"	27.295			Lbyy						Lateral
11	M14	L 2"x2"x1/4"	27.295			Lbyy						Lateral
12	M15	6.5"x0.37" P...	42			Lbyy						Lateral
13	M18	Face Pipes(...	96			Lbyy						Lateral
14	MP9	Antenna Pip...	96			Lbyy						Lateral
15	MP7	Antenna Pip...	96			Lbyy						Lateral
16	M25	Handrail	96			Lbyy						Lateral
17	M28	Handrail Co...	42			Lbyy						Lateral
18	M29	Handrail Co...	42			Lbyy						Lateral
19	M30	Handrail Co...	42			Lbyy						Lateral
20	M61A	Channel(3.3...	33			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
21	M63A	Channel(3.3...	33			Lbyy						Lateral
22	M60A	Channel(3.3...	33			Lbyy						Lateral
23	M61B	Channel(3.3...	33			Lbyy						Lateral
24	M62A	Channel(3.3...	33			Lbyy						Lateral
25	M63B	Channel(3.3...	33			Lbyy						Lateral
26	M75	PL 2.375x0.5	1.5									Lateral
27	MP8	Antenna Pip...	96			Lbyy						Lateral
28	M48	Face Pipes(...	96			Lbyy						Lateral
29	MP3	Antenna Pip...	96			Lbyy						Lateral
30	MP1	Antenna Pip...	96			Lbyy						Lateral
31	M51	Handrail	96			Lbyy						Lateral
32	M62	Face Pipes(...	96			Lbyy						Lateral
33	MP6	Antenna Pip...	96			Lbyy						Lateral
34	MP4	Antenna Pip...	96			Lbyy						Lateral
35	M65A	Handrail	96			Lbyy						Lateral
36	MP2	Antenna Pip...	96			Lbyy						Lateral
37	MP5	Antenna Pip...	96			Lbyy						Lateral

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead	DL			-1	13				
2	Dead of Ice	RL				13		37		
4	Structure Wind (0)	None						74		
5	Structure Wind (30)	None						74		
6	Structure Wind (45)	None						74		
7	Structure Wind (60)	None						74		
8	Structure Wind (90)	None						74		
9	Structure Wind (120)	None						74		
10	Structure Wind (135)	None						74		
11	Structure Wind (150)	None						74		
12	Structure Wind w/ Ice...	None						74		
13	Structure Wind w/ Ice...	None						74		
14	Structure Wind w/ Ice...	None						74		
15	Structure Wind w/ Ice...	None						74		
16	Structure Wind w/ Ice...	None						74		
17	Structure Wind w/ Ice...	None						74		
18	Structure Wind w/ Ice...	None						74		
19	Structure Wind w/ Ice...	None						74		
20	Antenna Wind (0)	None				26				
21	Antenna Wind (30)	None				26				
22	Antenna Wind (45)	None				26				
23	Antenna Wind (60)	None				26				
24	Antenna Wind (90)	None				26				
25	Antenna Wind (120)	None				26				
26	Antenna Wind (135)	None				26				
27	Antenna Wind (150)	None				26				
28	Antenna Wind w/ Ice ...	None				26				
29	Antenna Wind w/ Ice ...	None				26				
30	Antenna Wind w/ Ice ...	None				26				
31	Antenna Wind w/ Ice ...	None				26				

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
32	Antenna Wind w/ Ice ...	None				26				
33	Antenna Wind w/ Ice ...	None				26				
34	Antenna Wind w/ Ice ...	None				26				
35	Antenna Wind w/ Ice ...	None				26				
36	Maintenance Live Lm ...	OL1				1				
37	Maintenance Live Lm ...	OL2				1				
41	Maintenance Live Lv (...	OL6					1			
42	Maintenance Live Lv (...	OL7					1			
43	Maintenance Live Lv (...	OL8					1			

Load Combinations

	Description	Sol...	PD...	SR...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	Summary:...	Yes	Y		DL	1	20	1																
2	1.4D	Yes	Y		DL	1.4																		
3	1.2D + 1.0...	Yes	Y		DL	1.2	4	1	20	1														
4	1.2D + 1.0...	Yes	Y		DL	1.2	5	1	21	1														
5	1.2D + 1.0...	Yes	Y		DL	1.2	6	1	22	1														
6	1.2D + 1.0...	Yes	Y		DL	1.2	7	1	23	1														
7	1.2D + 1.0...	Yes	Y		DL	1.2	8	1	24	1														
8	1.2D + 1.0...	Yes	Y		DL	1.2	9	1	25	1														
9	1.2D + 1.0...	Yes	Y		DL	1.2	10	1	26	1														
10	1.2D + 1.0...	Yes	Y		DL	1.2	11	1	27	1														
11	1.2D + 1.0...	Yes	Y		DL	1.2	4	-1	20	-1														
12	1.2D + 1.0...	Yes	Y		DL	1.2	5	-1	21	-1														
13	1.2D + 1.0...	Yes	Y		DL	1.2	6	-1	22	-1														
14	1.2D + 1.0...	Yes	Y		DL	1.2	7	-1	23	-1														
15	1.2D + 1.0...	Yes	Y		DL	1.2	8	-1	24	-1														
16	1.2D + 1.0...	Yes	Y		DL	1.2	9	-1	25	-1														
17	1.2D + 1.0...	Yes	Y		DL	1.2	10	-1	26	-1														
18	1.2D + 1.0...	Yes	Y		DL	1.2	11	-1	27	-1														
19	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	12	1	28	1												
20	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	13	1	29	1												
21	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	14	1	30	1												
22	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	15	1	31	1												
23	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	16	1	32	1												
24	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	17	1	33	1												
25	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	18	1	34	1												
26	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	19	1	35	1												
27	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	12	-1	28	-1												
28	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	13	-1	39	-1												
29	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	14	-1	30	-1												
30	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	15	-1	31	-1												
31	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	16	-1	32	-1												
32	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	17	-1	33	-1												
33	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	18	-1	34	-1												
34	1.2D + 1.0...	Yes	Y		DL	1.2	RL	1	19	-1	35	-1												
35	1.2D + 1.5...	Yes	Y		DL	1.2	4	.061	20	.061	OL1	1.5												
36	1.2D + 1.5...	Yes	Y		DL	1.2	5	.061	21	.061	OL1	1.5												
37	1.2D + 1.5...	Yes	Y		DL	1.2	6	.061	22	.061	OL1	1.5												
38	1.2D + 1.5...	Yes	Y		DL	1.2	7	.061	23	.061	OL1	1.5												

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
39	1.2D + 1.5..	Yes	Y		DL	1.2	8	.061	24	.061	OL1	1.5												
40	1.2D + 1.5..	Yes	Y		DL	1.2	9	.061	25	.061	OL1	1.5												
41	1.2D + 1.5..	Yes	Y		DL	1.2	10	.061	26	.061	OL1	1.5												
42	1.2D + 1.5..	Yes	Y		DL	1.2	11	.061	27	.061	OL1	1.5												
43	1.2D + 1.5..	Yes	Y		DL	1.2	4	-.061	20	-.061	OL1	1.5												
44	1.2D + 1.5..	Yes	Y		DL	1.2	5	-.061	21	-.061	OL1	1.5												
45	1.2D + 1.5..	Yes	Y		DL	1.2	6	-.061	22	-.061	OL1	1.5												
46	1.2D + 1.5..	Yes	Y		DL	1.2	7	-.061	23	-.061	OL1	1.5												
47	1.2D + 1.5..	Yes	Y		DL	1.2	8	-.061	24	-.061	OL1	1.5												
48	1.2D + 1.5..	Yes	Y		DL	1.2	9	-.061	25	-.061	OL1	1.5												
49	1.2D + 1.5..	Yes	Y		DL	1.2	10	-.061	26	-.061	OL1	1.5												
50	1.2D + 1.5..	Yes	Y		DL	1.2	11	-.061	27	-.061	OL1	1.5												
51	1.2D + 1.5..	Yes	Y		DL	1.2	4	.061	20	.061	OL2	1.5												
52	1.2D + 1.5..	Yes	Y		DL	1.2	5	.061	21	.061	OL2	1.5												
53	1.2D + 1.5..	Yes	Y		DL	1.2	6	.061	22	.061	OL2	1.5												
54	1.2D + 1.5..	Yes	Y		DL	1.2	7	.061	23	.061	OL2	1.5												
55	1.2D + 1.5..	Yes	Y		DL	1.2	8	.061	24	.061	OL2	1.5												
56	1.2D + 1.5..	Yes	Y		DL	1.2	9	.061	25	.061	OL2	1.5												
57	1.2D + 1.5..	Yes	Y		DL	1.2	10	.061	26	.061	OL2	1.5												
58	1.2D + 1.5..	Yes	Y		DL	1.2	11	.061	27	.061	OL2	1.5												
59	1.2D + 1.5..	Yes	Y		DL	1.2	4	-.061	20	-.061	OL2	1.5												
60	1.2D + 1.5..	Yes	Y		DL	1.2	5	-.061	21	-.061	OL2	1.5												
61	1.2D + 1.5..	Yes	Y		DL	1.2	6	-.061	22	-.061	OL2	1.5												
62	1.2D + 1.5..	Yes	Y		DL	1.2	7	-.061	23	-.061	OL2	1.5												
63	1.2D + 1.5..	Yes	Y		DL	1.2	8	-.061	24	-.061	OL2	1.5												
64	1.2D + 1.5..	Yes	Y		DL	1.2	9	-.061	25	-.061	OL2	1.5												
65	1.2D + 1.5..	Yes	Y		DL	1.2	10	-.061	26	-.061	OL2	1.5												
66	1.2D + 1.5..	Yes	Y		DL	1.2	11	-.061	27	-.061	OL2	1.5												
67	1.2D + 1.5..	Yes	Y		DL	1.2	4	.061	20	.061	OL6	1.5												
68	1.2D + 1.5..	Yes	Y		DL	1.2	5	.061	21	.061	OL6	1.5												
69	1.2D + 1.5..	Yes	Y		DL	1.2	6	.061	22	.061	OL6	1.5												
70	1.2D + 1.5..	Yes	Y		DL	1.2	7	.061	23	.061	OL6	1.5												
71	1.2D + 1.5..	Yes	Y		DL	1.2	8	.061	24	.061	OL6	1.5												
72	1.2D + 1.5..	Yes	Y		DL	1.2	9	.061	25	.061	OL6	1.5												
73	1.2D + 1.5..	Yes	Y		DL	1.2	10	.061	26	.061	OL6	1.5												
74	1.2D + 1.5..	Yes	Y		DL	1.2	11	.061	27	.061	OL6	1.5												
75	1.2D + 1.5..	Yes	Y		DL	1.2	4	-.061	20	-.061	OL6	1.5												
76	1.2D + 1.5..	Yes	Y		DL	1.2	5	-.061	21	-.061	OL6	1.5												
77	1.2D + 1.5..	Yes	Y		DL	1.2	6	-.061	22	-.061	OL6	1.5												
78	1.2D + 1.5..	Yes	Y		DL	1.2	7	-.061	23	-.061	OL6	1.5												
79	1.2D + 1.5..	Yes	Y		DL	1.2	8	-.061	24	-.061	OL6	1.5												
80	1.2D + 1.5..	Yes	Y		DL	1.2	9	-.061	25	-.061	OL6	1.5												
81	1.2D + 1.5..	Yes	Y		DL	1.2	10	-.061	26	-.061	OL6	1.5												
82	1.2D + 1.5..	Yes	Y		DL	1.2	11	-.061	27	-.061	OL6	1.5												
83	1.2D + 1.5..	Yes	Y		DL	1.2	4	.061	20	.061	OL7	1.5												
84	1.2D + 1.5..	Yes	Y		DL	1.2	5	.061	21	.061	OL7	1.5												
85	1.2D + 1.5..	Yes	Y		DL	1.2	6	.061	22	.061	OL7	1.5												
86	1.2D + 1.5..	Yes	Y		DL	1.2	7	.061	23	.061	OL7	1.5												
87	1.2D + 1.5..	Yes	Y		DL	1.2	8	.061	24	.061	OL7	1.5												
88	1.2D + 1.5..	Yes	Y		DL	1.2	9	.061	25	.061	OL7	1.5												
89	1.2D + 1.5..	Yes	Y		DL	1.2	10	.061	26	.061	OL7	1.5												
90	1.2D + 1.5..	Yes	Y		DL	1.2	11	.061	27	.061	OL7	1.5												

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
91	1.2D + 1.5..	Yes	Y		DL	1.2	4	-.061	20	-.061	OL7	1.5												
92	1.2D + 1.5..	Yes	Y		DL	1.2	5	-.061	21	-.061	OL7	1.5												
93	1.2D + 1.5..	Yes	Y		DL	1.2	6	-.061	22	-.061	OL7	1.5												
94	1.2D + 1.5..	Yes	Y		DL	1.2	7	-.061	23	-.061	OL7	1.5												
95	1.2D + 1.5..	Yes	Y		DL	1.2	8	-.061	24	-.061	OL7	1.5												
96	1.2D + 1.5..	Yes	Y		DL	1.2	9	-.061	25	-.061	OL7	1.5												
97	1.2D + 1.5..	Yes	Y		DL	1.2	10	-.061	26	-.061	OL7	1.5												
98	1.2D + 1.5..	Yes	Y		DL	1.2	11	-.061	27	-.061	OL7	1.5												
99	1.2D + 1.5..	Yes	Y		DL	1.2	4	.061	20	.061	OL8	1.5												
100	1.2D + 1.5..	Yes	Y		DL	1.2	5	.061	21	.061	OL8	1.5												
101	1.2D + 1.5..	Yes	Y		DL	1.2	6	.061	22	.061	OL8	1.5												
102	1.2D + 1.5..	Yes	Y		DL	1.2	7	.061	23	.061	OL8	1.5												
103	1.2D + 1.5..	Yes	Y		DL	1.2	8	.061	24	.061	OL8	1.5												
104	1.2D + 1.5..	Yes	Y		DL	1.2	9	.061	25	.061	OL8	1.5												
105	1.2D + 1.5..	Yes	Y		DL	1.2	10	.061	26	.061	OL8	1.5												
106	1.2D + 1.5..	Yes	Y		DL	1.2	11	.061	27	.061	OL8	1.5												
107	1.2D + 1.5..	Yes	Y		DL	1.2	4	-.061	20	-.061	OL8	1.5												
108	1.2D + 1.5..	Yes	Y		DL	1.2	5	-.061	21	-.061	OL8	1.5												
109	1.2D + 1.5..	Yes	Y		DL	1.2	6	-.061	22	-.061	OL8	1.5												
110	1.2D + 1.5..	Yes	Y		DL	1.2	7	-.061	23	-.061	OL8	1.5												
111	1.2D + 1.5..	Yes	Y		DL	1.2	8	-.061	24	-.061	OL8	1.5												
112	1.2D + 1.5..	Yes	Y		DL	1.2	9	-.061	25	-.061	OL8	1.5												
113	1.2D + 1.5..	Yes	Y		DL	1.2	10	-.061	26	-.061	OL8	1.5												
114	1.2D + 1.5..	Yes	Y		DL	1.2	11	-.061	27	-.061	OL8	1.5												

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	P24	max	975.479	18	760.383	16	1870.779	30	-.646	6	-.08	7	1.553	18
2		min	-976.417	10	-759.182	8	358.914	6	-4.255	30	-2.678	63	-1.552	10
3	P13	max	489.159	3	1083.348	15	1740.496	19	.925	31	4.161	19	1.439	7
4		min	-494.926	11	-1087.135	7	320.133	11	.189	8	.525	11	-1.428	15
5	P1	max	985.667	3	628.082	14	1699.928	24	2.957	24	-.48	16	1.418	12
6		min	-979.433	11	-625.301	6	313.406	16	.269	17	-3.138	40	-1.426	4
7	Totals:	max	2416.926	3	2390.873	15	5096.14	29						
8		min	-2416.925	11	-2390.887	7	1599.959	1						

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

	Member	Shape	Code C...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	M62A	C3.38x2.06x0...	.223	0	30	.043	28.188	z	100	47760.074	56700	2.203	5.752	1....	H1-1b
2	M12	HSS4X4X6	.216	40	27	.076	40	y	64	188250.4...	197892	22.046	22.046	1....	H1-1b
3	M61A	C3.38x2.06x0...	.205	0	24	.038	28.188	y	32	47760.074	56700	2.203	5.752	1....	H1-1b
4	M60A	C3.38x2.06x0...	.203	0	19	.038	28.188	y	27	47760.074	56700	2.203	5.752	1....	H1-1b
5	M7	HSS4X4X6	.200	40	22	.081	40	y	32	188250.4...	197892	22.046	22.046	1....	H1-1b
6	M63A	C3.38x2.06x0...	.194	0	9	.034	0	y	34	47760.074	56700	2.203	5.752	1....	H1-1b
7	M2	HSS4X4X6	.189	40	22	.108	40	y	39	188250.4...	197892	22.046	22.046	1....	H1-1b
8	M61B	C3.38x2.06x0...	.188	0	3	.033	0	y	29	47760.074	56700	2.203	5.752	1....	H1-1b
9	M10	PL6.5x0.375	.184	21	3	.109	36.313	y	31	3658.14	78975	.617	8.202	1....	H1-1b
10	M63B	C3.38x2.06x0...	.183	0	14	.032	0	y	23	47760.074	56700	2.203	5.752	1....	H1-1b
11	M15	PL6.5x0.375	.180	21	30	.077	5.687	y	51	3658.14	78975	.617	8.358	1....	H1-1b

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

	Member	Shape	Code C...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
12	M14	L2x2x4	.177	13.647	100	.025	27.295	y	105	29527.562	42480	.96	2.176	1....	H2-1
13	M5	PL6.5x0.375	.174	21	40	.102	36.312	y	35	3658.14	78975	.617	8.797	1....	H1-1b
14	M75	PL 2.375x0.5	.152	1.5	3	.177	0	y	22	38256.871	38475	.401	1.904	1....	H1-1b
15	M8	L2x2x4	.135	0	4	.008	0	y	11	29527.563	42480	.96	2.19	2....	H2-1
16	MP6	Pipe 2.875x0....	.135	42	10	.040	42		14	22398.073	42998.495	3.144	3.144	2....	H1-1b
17	MP3	Pipe 2.875x0....	.134	42	7	.051	78		12	22398.073	42998.495	3.144	3.144	1....	H1-1b
18	MP9	Pipe 2.875x0....	.131	42	4	.059	42		3	22398.073	42998.495	3.144	3.144	1....	H1-1b
19	M3	L2x2x4	.126	0	9	.009	0	y	17	29527.562	42480	.96	2.19	2....	H2-1
20	M13	L2x2x4	.125	0	15	.009	27.295	z	51	29527.563	42480	.96	2.19	2....	H2-1
21	MP8	Pipe 2.875x0....	.124	42	4	.038	42		12	22398.073	42998.495	3.144	3.144	2....	H1-1b
22	MP2	Pipe 2.875x0....	.117	42	15	.038	42		7	22398.073	42998.495	3.144	3.144	1....	H1-1b
23	MP5	Pipe 2.875x0....	.111	42	10	.043	42		18	22398.073	42998.495	3.144	3.144	2....	H1-1b
24	MP1	Pipe 2.875x0....	.105	42	7	.047	42		17	22398.073	42998.495	3.144	3.144	1....	H1-1b
25	MP4	Pipe 2.875x0....	.105	42	18	.037	42		11	22398.073	42998.495	3.144	3.144	2....	H1-1b
26	M65A	PIPE 2.0	.100	6	18	.035	6		3	15369.683	42228	2.46	2.46	1....	H1-1b
27	MP7	Pipe 2.875x0....	.094	42	12	.040	42		14	22398.073	42998.495	3.144	3.144	1....	H1-1b
28	M4	L2x2x4	.091	0	16	.016	27.295	y	20	29527.563	42480	.96	2.19	2....	H2-1
29	M25	PIPE 2.0	.091	6	12	.032	6		13	15369.683	42228	2.46	2.46	1....	H1-1b
30	M51	PIPE 2.0	.087	6	7	.035	6		16	15369.683	42228	2.46	2.46	1....	H1-1b
31	M48	Pipe3.5x0.165	.086	31	8	.045	90		35	45873.009	71580.6	6.338	6.338	2....	H1-1b
32	M9	L2x2x4	.086	0	11	.016	27.295	y	31	29527.563	42480	.96	2.19	2....	H2-1
33	M62	Pipe3.5x0.165	.084	31	3	.041	90		20	45873.009	71580.6	6.338	6.338	2....	H1-1b
34	M18	Pipe3.5x0.165	.083	31	14	.047	90		24	45873.009	71580.6	6.338	6.338	1....	H1-1b
35	M29	L6.6x4.46x0.25	.062	41.562	17	.010	42	z	11	51170.949	87561	2.465	7.125	1....	H2-1
36	M30	L6.6x4.46x0.25	.039	42	16	.010	42	z	17	51170.949	87561	4.505	13.024	1....	H2-1
37	M28	L6.6x4.46x0.25	.039	42	13	.010	0	z	7	51170.949	87561	4.505	11.712	1....	H2-1

APPENDIX D

ADDITIONAL CALCULATIONS

Square/Rectangular Flange Connection

TIA-222-H

Kimley»Horn

Site Number	876362
Job number	1019558056
Code	TIA-222-H

Member/Node Under Consideration	M12
Controlling Load Combination	30

Normalize usages per TIA-222-H, Sec. 15.5 ☐

REACTIONS		
Moment, Mu (kip-ft)	3.400	*About Y*
Axial, Pu (kips) - *Negative for tension*	0.051	
Shear, Vu (kips)	1.594	

BOLT CONFIGURATION	
Bolt Quantity, n_b	4
Bolt Diameter, d_b (in)	0.625
Bolt Grade	A325
Width between bolts, s (in)	7.00

BOLT USAGE	
Maximum Tension in Bolt, Tub (kip)	4.109
Nominal Tensile Strength, ϕRnt (kip)	20.340
Tensile Usage (Section 4.9.6.1)	**20%**

PLATE CONFIGURATION	
Plate Grade	A500-50
Thickness of plate, t (in)	0.750
Width of plate, w (in)	9.00

PLATE USAGE	
Ultimate flexural load in plate, Mu (kip-in)	6.518
Factored flexural capacity, ϕMn (kip-in)	28.430
Flexural Usage	**23%**

SUPPORT ARM CONFIGURATION	
Member Shape	Square
Member Grade	A500-46
Thickness of Member, t (in)	0.250
Width of member, w (in)	4.000

SUPPORT ARM USAGE	
Ultimate flexural load in member, Mu (kip-ft)	3.400
Factored flexural capacity, ϕMn (kip-ft)	18.220
Flexural Usage	**19%**

Stiffeners present? ☐

DocuSign

Certificate Of Completion

Envelope Id: C9C8626E4E31449C8873E7481AD4625B
Status: Completed
Subject: Please DocuSign: 876362_553386_Rev.2_Conditional_DISH_107ft_MM.DD.2021_signed.pdf
Source Envelope:
Document Pages: 22
Signatures: 1
Certificate Pages: 1
Initials: 0
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-05:00) Eastern Time (US & Canada)

Envelope Originator:
Manuel JaraPerez
401 Fayetteville St.
Suite 600
Raleigh, NC 27601
Manuel.JaraPerez@kimley-horn.com
IP Address: 208.127.231.172

Record Tracking

Status: Original
9/15/2021 4:52:21 PM
Holder: Manuel JaraPerez
Manuel.JaraPerez@kimley-horn.com
Location: DocuSign

Signer Events	Signature	Timestamp
Kyle Freehart kyle.freehart@kimley-horn.com Kimley-Horn Security Level: Email, Account Authentication (None)	DocuSigned by:  D8BEE252A3804C1... Signature Adoption: Pre-selected Style Using IP Address: 208.127.231.172	Sent: 9/15/2021 4:53:15 PM Viewed: 9/15/2021 5:41:07 PM Signed: 9/15/2021 5:41:16 PM

Electronic Record and Signature Disclosure:
Not Offered via DocuSign

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	9/15/2021 4:53:15 PM
Certified Delivered	Security Checked	9/15/2021 5:41:07 PM
Signing Complete	Security Checked	9/15/2021 5:41:16 PM
Completed	Security Checked	9/15/2021 5:41:16 PM

Payment Events	Status	Timestamps

Exhibit E

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:
338 OXFORD RD., OXFORD, CT 06478

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

Crown Site ID/Name: **876362/OXFORD / FRITZ PROPERTY**
Customer Site ID: **BOHVN00169A/CT-CCI-T-876362**
Site Address: **338 Oxford Rd., OXFORD, CT 06478**

Crown Castle

By: _____ Date: 3/21/2022

Richard Zajac
Site Acquisition Specialist

Exhibit F

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: BOHVN00169A

876362
338 Oxford Road
Oxford, Connecticut 06478

November 19, 2021

EBI Project Number: 6221007202

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**11.86%**

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

November 19, 2021

Dish Wireless

Emissions Analysis for Site: BOHVN00169A - 876362

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **338 Oxford Road** in **Oxford, 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 338 Oxford Road in Oxford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

3) 4 n66 channels (AWS Band - 2190 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

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

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

estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) The antennas used in this modeling are the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antenna mounting height centerline of the proposed antennas is 107 feet above ground level (AGL).

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

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

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-20	Make / Model:	JMA MX08FRO665-20	Make / Model:	JMA MX08FRO665-20
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd
Height (AGL):	107 feet	Height (AGL):	107 feet	Height (AGL):	107 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	5,236.31	ERP (W):	5,236.31	ERP (W):	5,236.31
Antenna A1 MPE %:	**2.32%**	Antenna B1 MPE %:	**2.32%**	Antenna C1 MPE %:	**2.32%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	2.32%
T-Mobile	2.5%
AT&T	1.72%
Verizon	2.76%
Sprint	2.56%
Site Total MPE % :	11.86%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	2.32%
Dish Wireless Sector B Total:	2.32%
Dish Wireless Sector C Total:	2.32%
Site Total MPE % :	11.86%

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	107.0	3.15	600 MHz n71	400	0.79%
Dish Wireless 1900 MHz n70	4	542.70	107.0	7.65	1900 MHz n70	1000	0.77%
Dish Wireless 2190 MHz n66	4	542.70	107.0	7.65	2190 MHz n66	1000	0.77%
						Total:	**2.32%**

• 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.

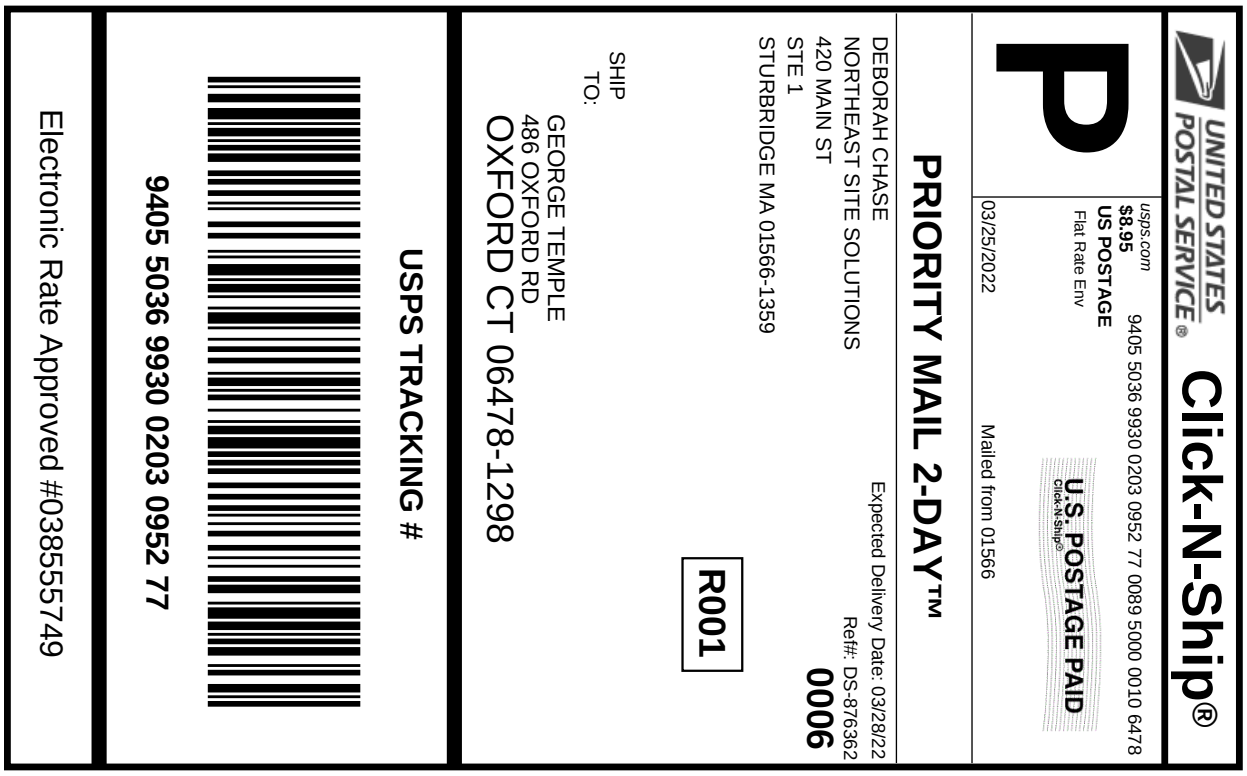
The anticipated maximum composite contributions from the Dish Wireless facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

Dish Wireless Sector	Power Density Value (%)
Sector A:	2.32%
Sector B:	2.32%
Sector C:	2.32%
Dish Wireless Maximum MPE % (Sector A):	2.32%
Site Total:	11.86%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **11.86%** 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



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 0203 0952 77

Trans. #:	559677328
Print Date:	03/25/2022
Ship Date:	03/25/2022
Expected Delivery Date:	03/28/2022

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

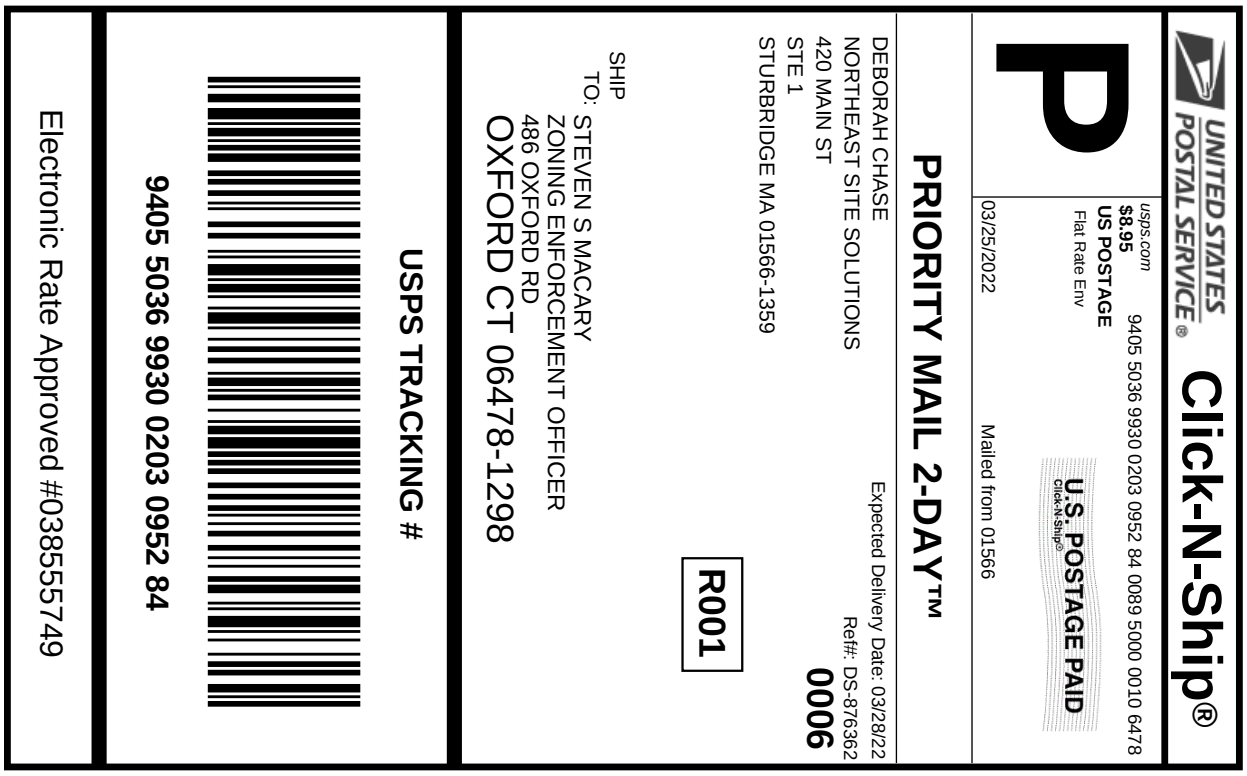
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-876362

To: GEORGE TEMPLE
486 OXFORD RD
OXFORD CT 06478-1298

* 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



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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0203 0952 84

Trans. #:	559677328
Print Date:	03/25/2022
Ship Date:	03/25/2022
Expected Delivery Date:	03/28/2022

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

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

Ref#: DS-876362

To: STEVEN S MACARY
ZONING ENFORCEMENT OFFICER
486 OXFORD RD
OXFORD CT 06478-1298

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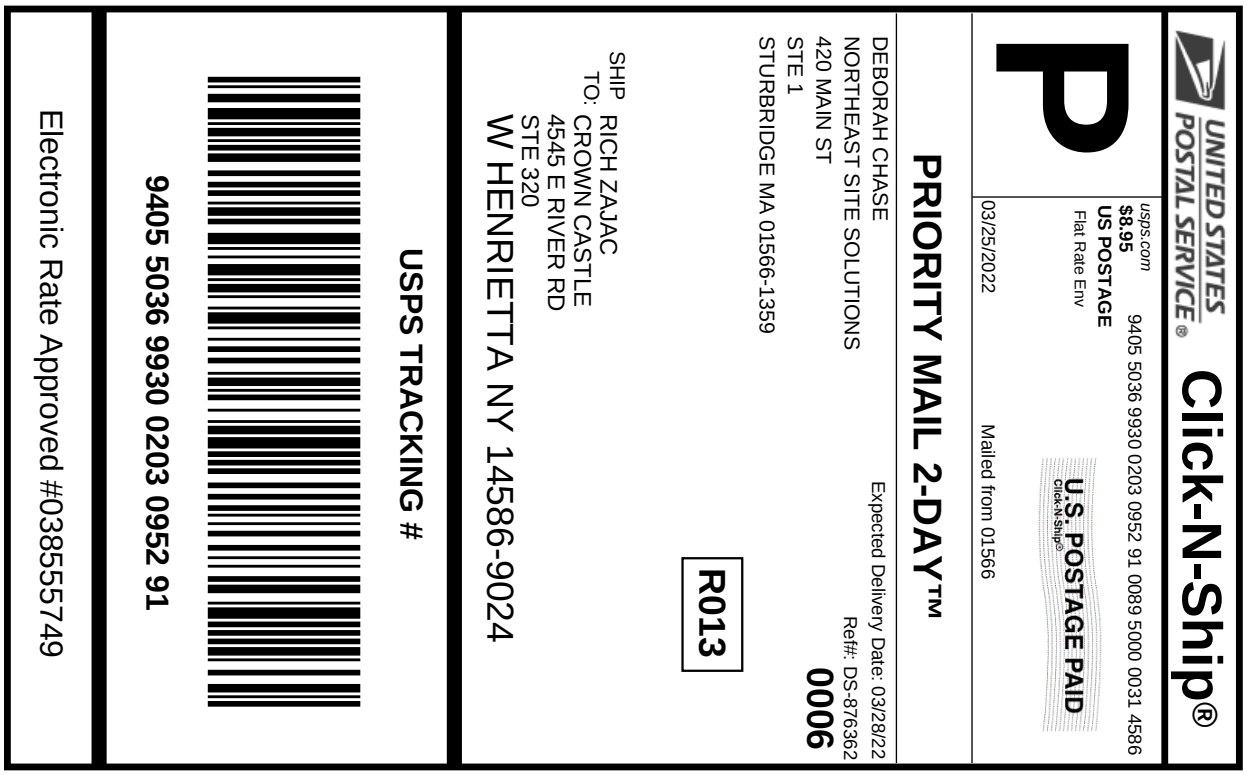

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0203 0952 91

Trans. #:	559677328
Print Date:	03/25/2022
Ship Date:	03/25/2022
Expected Delivery Date:	03/28/2022

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

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

Ref#: DS-876362

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.

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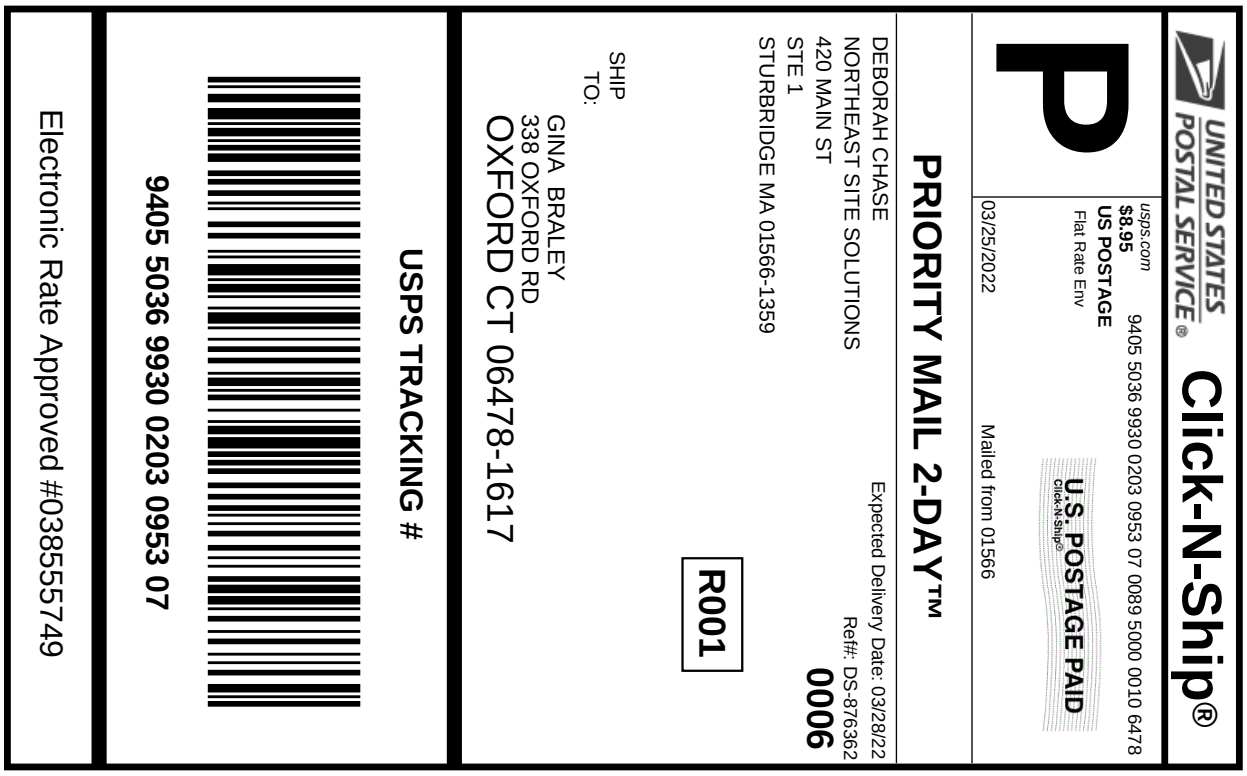

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0203 0953 07

Trans. #:	559677328
Print Date:	03/25/2022
Ship Date:	03/25/2022
Expected Delivery Date:	03/28/2022

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

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

Ref#: DS-876362

To: GINA BRALEY
338 OXFORD RD
OXFORD CT 06478-1617

* 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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876362 Crown DSL

UNITED STATES POSTAL SERVICE.

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

03/25/2022 01:55 PM

Product	Qty	Unit Price	Price
Prepaid Mail West Henrietta, NY 14586 Weight: 0 lb 2.00 oz Acceptance Date: Fri 03/25/2022 Tracking #: 9405 5036 9930 0203 0952 91	1		$0.00
Prepaid Mail Oxford, CT 06478 Weight: 0 lb 8.50 oz Acceptance Date: Fri 03/25/2022 Tracking #: 9405 5036 9930 0203 0953 07	1		$0.00
Prepaid Mail Oxford, CT 06478 Weight: 0 lb 8.60 oz Acceptance Date: Fri 03/25/2022 Tracking #: 9405 5036 9930 0203 0952 77	1		$0.00
Prepaid Mail Oxford, CT 06478 Weight: 0 lb 8.60 oz Acceptance Date: Fri 03/25/2022 Tracking #: 9405 5036 9930 0203 0952 84	1		$0.00
Grand Total:			$0.00