



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

May 24, 2022

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

RE: Tower Share Application  
720 Thompson Road, Thompson, CT 06277  
Latitude: 41.977777  
Longitude: -71.846533  
Site #: 828402\_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 720 Thompson Road, Thompson, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 131-foot level of the existing 156-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the fenced compound. Included are plans by NB+C, dated January 5, 2022, Exhibit C. Also included is a structural analysis prepared by Morrison Hershfield, dated September 8, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was approved by the Connecticut Siting Council, Docket No. 157 on March 16, 1993. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Ken Beausoleil, First Selectman and Tyra Penn-Gesek, Director of Planning & Development for the Town of Thompson as well as the tower owner (Crown Castle) and property owner (Nutmeg Realty II LLC).

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 156-feet and the Dish Wireless LLC antennas will be located at a center line height of 131-feet.
2. The proposed modifications will not result in an increase of the site boundary as depicted on the attached site plan.



**NSS** **NORTHEAST**  
SITE SOLUTIONS

*Turnkey Wireless Development*

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 6.17% 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 D.

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

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 131-foot level of the existing 156-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 Thompson.

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](mailto:denise@northeastsitesolutions.com)



**NSS**

**NORTHEAST**  
SITE SOLUTIONS

*Turnkey Wireless Development*

Attachments

Cc:

Ken Beausoleil, First Selectman  
Town of Thompson  
815 Riverside Drive  
P. O. Box 899  
North Grosvenordale, CT 06255

Tyra Penn-Gesek, Director of Planning & Development  
Town of Thompson  
815 Riverside Drive  
P. O. Box 899  
North Grosvenordale, CT 06255

Nutmeg Realty II LLC - Property Owner  
455 Sackett Point Rd  
North Haven, CT 06473

Crown Castle, Tower Owner

# Exhibit A

## **Original Facility Approval**

DOCKET NO. 157 - An application of the Department of Public Safety, Division of State Police for a Certificate of Environmental Compatibility and Public Need for the construction, operation, and maintenance of telecommunications facilities located west of Ekonk Hill Road, Sterling; northeast of Mt. Hill Road, Thompson; south of Westcott Road behind Troop D Barracks, Killingly; and east of Valentine Road/Wolf Den Road, Brooklyn, Connecticut.

: Connecticut  
 : Siting  
 : Council  
 : March 16, 1993

DECISION AND ORDER

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of telecommunications towers, buildings, and associated equipment at the proposed sites in Brooklyn, Thompson, Sterling, and Killingly, Connecticut, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by 16-50k of the General Statutes of Connecticut (CGS), be issued to the Connecticut Department of Public Safety, Division of State Police, for the construction, operation, and maintenance of telecommunications towers, buildings, and associated equipment at the proposed sites located west of Ekonk Hill Road, Sterling; northeast of Mt. Hill Road, Thompson; south of Westcott Road behind Troop D Barracks, Killingly; and east of Valentine Road/Wolf Den Road, Brooklyn, Connecticut.

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

1. The proposed Troop D, self-supporting lattice tower, in Killingly, shall be designed no taller than necessary to provide the proposed communications, and in no event shall the proposed Troop D tower exceed the proposed height of 158 feet above ground level (AGL), with antennas and all appurtenances.
2. The proposed Ekonk Hill, self-supporting lattice tower, in Sterling, shall be designed no taller than necessary to provide the proposed communications, and in no event shall the tower exceed the proposed tower height of 154 feet AGL, with antennas and all appurtenances.

3. The height of the proposed Brooklyn, self-supporting lattice tower shall be reevaluated and modeled to the lowest height possible to provide the proposed 800 MHz and microwave services, and shall be approved by the Council in a Development and Management (D&M) plan, but that such height shall not exceed 194 feet AGL, with antennas and all appurtenances.
4. The proposed Thompson, self-supporting lattice tower shall not exceed a height of 154 feet AGL, with antennas and all appurtenances, but that this tower height may be extended to a maximum height of 194 feet AGL, with antennas and all appurtenances, if the Council approves a Union facility or an alternative to the Union facility that requires a microwave link to a 180-foot tower at the Thompson facility.
5. The Certificate holder shall prepare a D&M plan for all sites in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of State agencies. This D&M Plan shall be submitted and approved by the Council prior to the commencement of construction and shall also include a comprehensive site plan with the following components:
  - A) final detailed plans for tower heights, antenna placement, and tower locations relative to existing site development;
  - B) final resolution of tower heights for the Thompson and Brooklyn facilities consistent with conditions 3 and 4 of this Decision and Order;
  - C) site plans with final sizes of the equipment buildings;
  - D) detailed plans for the access roads including all proposed utilities serving the sites;
  - E) erosion and sedimentation control measures; and
  - F) architecturally-treated fencing and landscaping, where necessary.
6. The Certificate holder shall comply with existing and future radio frequency (RF) standards promulgated by State or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facility granted herein shall be brought into compliance with such standards.
7. The Certificate holder shall provide the Council a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally calculated and provided in the application.
8. The Certificate holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

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

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

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

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

The party to this proceeding is:

APPLICANT

Connecticut State Police

ITS REPRESENTATIVES

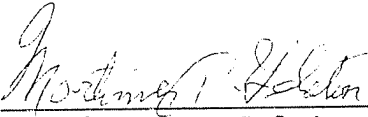
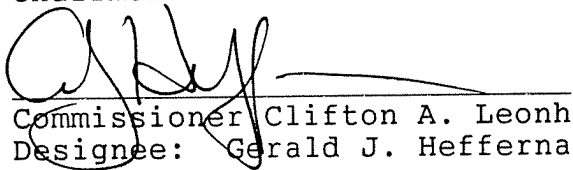

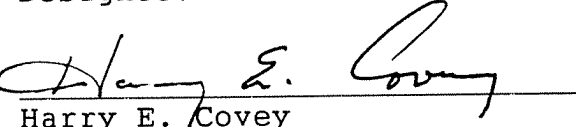
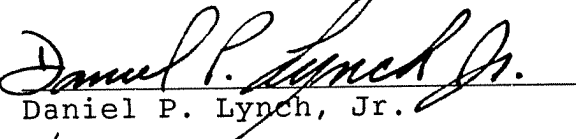
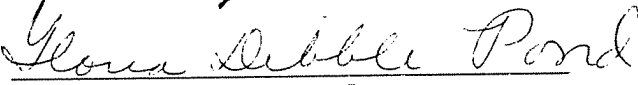
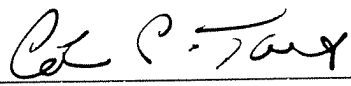
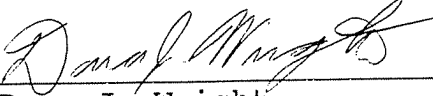
Mr. George L. Davis  
Emergency Telecommunications  
Engineer  
Telecommunications Section  
Department of Public Safety  
Division of State Police  
294 Colony Street - Building 5  
Meriden, CT 06450

L. D. McCallum and  
Stephen R. Sarnoski  
Office of the Attorney  
General  
Mackenzie Hall  
110 Sherman Street  
Hartford, CT 06105

6815E

CERTIFICATION

The undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in DOCKET NO. 157 - An application of the Department of Public Safety, Division of State Police for a Certificate of Environmental Compatibility and Public Need for the construction, operation, and maintenance of telecommunications facilities located west of Ekonk Hill Road, Sterling; northeast of Mt. Hill Road, Thompson; south of Westcott Road behind Troop D Barracks, Killingly; and east of Valentine Road/Wolf Den Road, Brooklyn, Connecticut, and voted as follows to approve these sites:

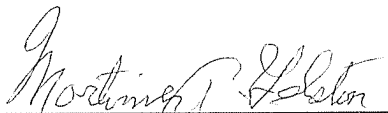

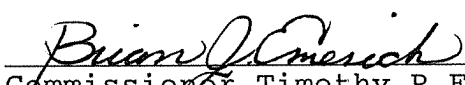
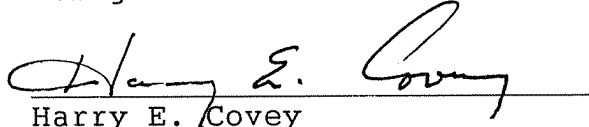
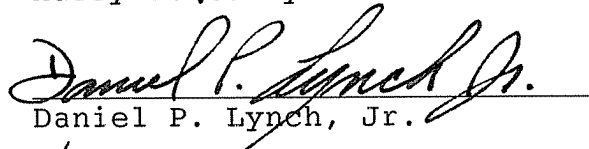
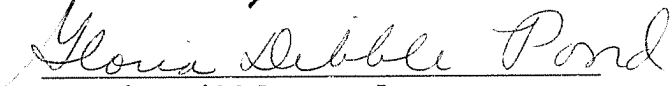
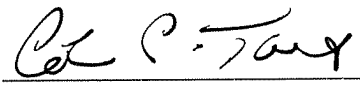

<u>Council Members</u>	<u>Vote Cast</u>
 Mortimer A. Gelston Chairman	YES
 Commissioner Clifton A. Leonhardt Designee: Gerald J. Heffernan	YES
 Commissioner Timothy R.E. Keeney Designee: Brian Emerick	YES
 Harry E. Covey	YES
 Daniel P. Lynch, Jr.	YES
 Gloria Dibble Pond	YES
_____ Paulann H. Sheets	ABSENT
 Colin C. Tait	YES
 Dana J. Wright	ABSTAIN

Dated at New Britain, Connecticut, March 16, 1993.



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<u>Council Members</u>	<u>Vote Cast</u>
 Mortimer A. Gelston Chairman	YES
 Commissioner Clifton A. Leonhardt Designee: Gerald J. Heffernan	YES
 Commissioner Timothy R.E. Keeney Designee: Brian Emerick	YES
 Harry E. Covey	YES
 Daniel P. Lynch, Jr.	YES
 Gloria Dibble Pond	YES
_____ Paulann H. Sheets	ABSENT
 Colin C. Tait	YES
 Dana J. Wright	ABSTAIN

Dated at New Britain, Connecticut, March 16, 1993.

# Exhibit B

## Property Card

# 720 THOMPSON RD

**Location** 720 THOMPSON RD

**Mblu** 120/ 30/ 14/ /

**Acct#** 003202

**Owner** NUTMEG REALTY II LLC

**Assessment** \$1,907,100

**Appraisal** \$2,724,300

**PID** 3749

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$2,123,700	\$600,600	\$2,724,300

Assessment			
Valuation Year	Improvements	Land	Total
2019	\$1,486,600	\$420,500	\$1,907,100

## Owner of Record

**Owner** NUTMEG REALTY II LLC  
**Co-Owner**  
**Address** 455 SACKETT POINT RD  
NORTH HAVEN, CT 06473

**Sale Price** \$1,350,000  
**Certificate**  
**Book & Page** 0929/0247  
**Sale Date** 01/24/2019  
**Instrument** 25

## Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
NUTMEG REALTY II LLC	\$1,350,000		0929/0247	25	01/24/2019
MELROSE ASSOCIATES LTD PARTNERSH	\$0		0163/0152		11/03/1983

## Building Information

### Building 1 : Section 1

**Year Built:** 1964  
**Living Area:** 123,434  
**Replacement Cost:** \$5,700,817  
**Building Percent Good:** 31

### Building Photo

 Building Photo  
(<http://images.vgsi.com/photos/ThompsonCTPhotos/\A00\00\00\56.jpg>)

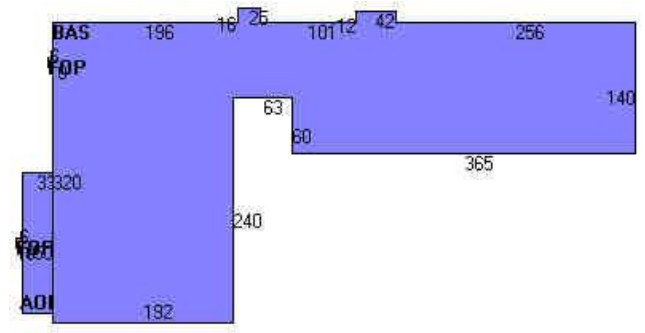
### Building Layout

**Replacement Cost**

**Less Depreciation:** \$1,767,300

**Building Attributes**

Field	Description
STYLE	Light Indust
MODEL	Ind/Comm
Grade	Average +10
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	Drywall/Sheet
Interior Floor 1	Concr-Finished
Interior Floor 2	Ceram Clay Til
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	None
Bldg Use	IND BLDG
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	4022
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	16
% Comn Wall	0



([http://images.vgsi.com/photos/ThompsonCTPhotos//Sketches/3749\\_3749](http://images.vgsi.com/photos/ThompsonCTPhotos//Sketches/3749_3749))

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	118,484	118,484
AOF	Office, (Average)	4,950	4,950
FOP	Porch, Open, Finished	120	0
		123,554	123,434

**Extra Features**

Extra Features				Legend
Code	Description	Size	Value	Bldg #
A/C	AIR CONDITION	4950 UNITS	\$4,600	1
MEZ3	W/PARTITIONS	280 S.F.	\$1,600	1
MEZ3	W/PARTITIONS	450 S.F.	\$2,500	1
SPR1	SPRINKLERS-WET	120412 S.F.	\$29,900	1

LDL1	LOAD LEVELERS	11 UNITS	\$9,900	1
OVD	OVERHEAD DOOR	196 S.F.	\$600	1
OVD	OVERHEAD DOOR	64 S.F.	\$200	1

## Land

### Land Use

**Use Code** 4022  
**Description** IND BLDG  
**Zone** IND  
**Neighborhood**  
**Alt Land Appr** No  
**Category**

### Land Line Valuation

**Size (Acres)** 49.5  
**Frontage** 1500  
**Depth** 0  
**Assessed Value** \$420,500  
**Appraised Value** \$600,600

## Outbuildings

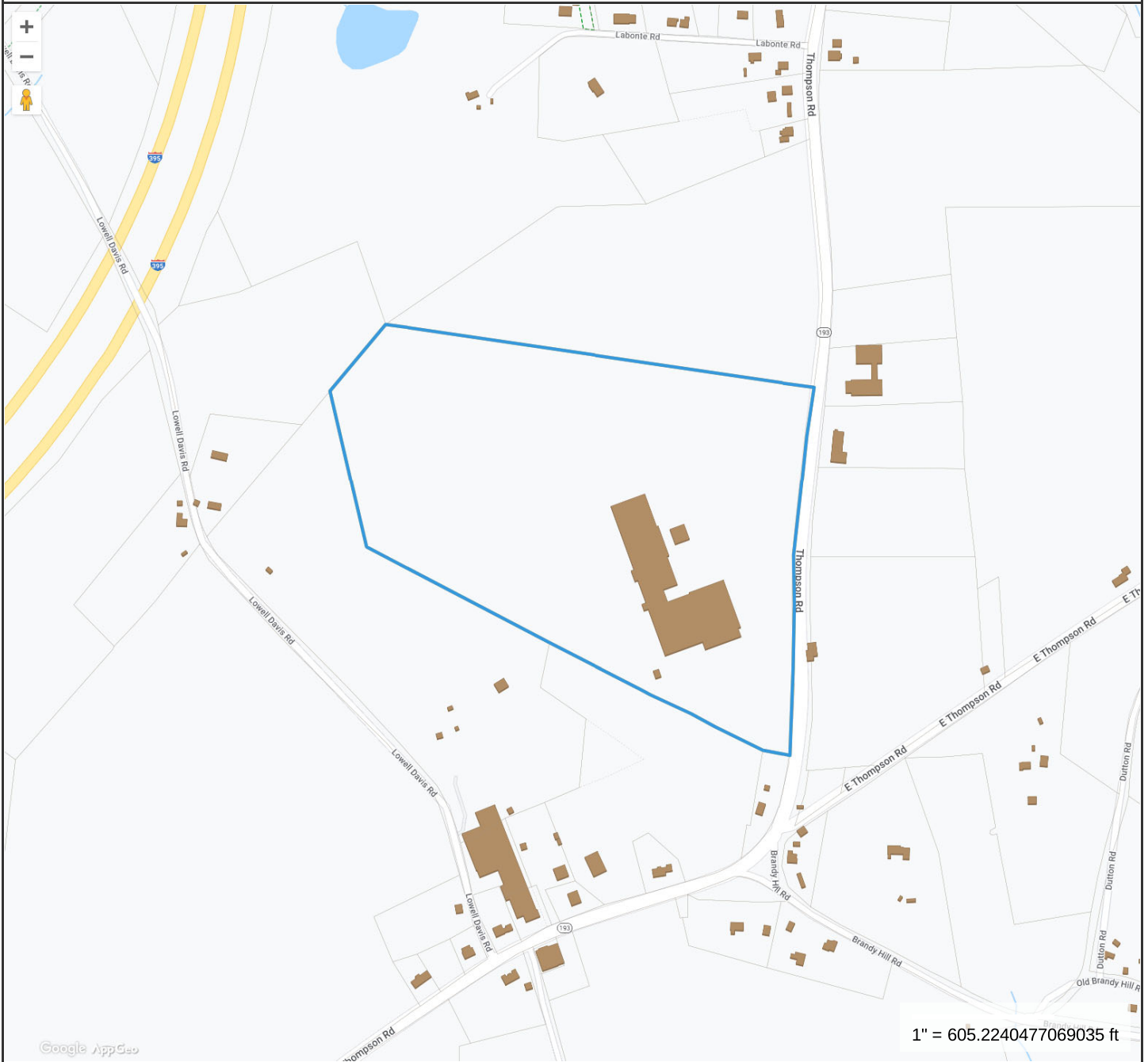
Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
TNK2	3000-10000 GAL			8000 GALS	\$12,800	1
TNK3	GT-10,000			12000 GALS	\$14,400	1
TNK5	ELEVATED TANK			200000 GALS	\$150,000	1
FGR1	GARAGE-AVE			3600 S.F.	\$73,400	1
SHD1	SHED FRAME			1000 S.F.	\$6,000	1
TNK5	ELEVATED TANK			1000 GALS	\$2,500	1
PAV1	PAVING-ASPHALT			47970 S.F.	\$48,000	1

## Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$3,325,400	\$618,300	\$3,943,700
2017	\$3,325,400	\$618,300	\$3,943,700
2016	\$3,325,400	\$618,300	\$3,943,700

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$2,327,700	\$432,900	\$2,760,600
2017	\$2,327,700	\$432,900	\$2,760,600
2016	\$2,327,700	\$432,900	\$2,760,600

# 720 THOMPSON ROAD



**Property Information**

Property ID 3749  
 Location 720 THOMPSON RD  
 Owner NUTMEG REALTY II LLC



**MAP FOR REFERENCE ONLY  
 NOT A LEGAL DOCUMENT**

Town of Thompson, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated October 19, 2021  
 Data updated March 20, 2019

Print map scale is approximate. Critical layout or measurement activities should not be done using this resource.

# Exhibit C

## **Construction Drawings**



DISH Wireless L.L.C. SITE ID:

**BOBOS00035A**

DISH Wireless L.L.C. SITE ADDRESS:

**720 THOMPSON RD  
THOMPSON, CT 06277**

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: <ul style="list-style-type: none"> <li>INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)</li> <li>INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT</li> <li>INSTALL PROPOSED JUMPERS</li> <li>INSTALL (6) PROPOSED RRUs (2 PER SECTOR)</li> <li>INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)</li> <li>INSTALL (1) PROPOSED HYBRID CABLE</li> <li>INSTALL (3) DOUBLE Z-BRACKETS (1 PER SECTOR)</li> </ul>
GROUND SCOPE OF WORK: <ul style="list-style-type: none"> <li>INSTALL (1) PROPOSED METAL PLATFORM</li> <li>INSTALL (1) PROPOSED ICE BRIDGE</li> <li>INSTALL (1) PROPOSED PPC CABINET</li> <li>INSTALL (1) PROPOSED EQUIPMENT CABINET</li> <li>INSTALL (1) PROPOSED POWER CONDUIT</li> <li>INSTALL (1) PROPOSED TELCO CONDUIT</li> <li>INSTALL (1) PROPOSED TELCO-FIBER BOX</li> <li>INSTALL (1) PROPOSED GPS UNIT</li> <li>INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)</li> <li>INSTALL (1) PROPOSED METER IN OPEN METER SOCKET</li> </ul>

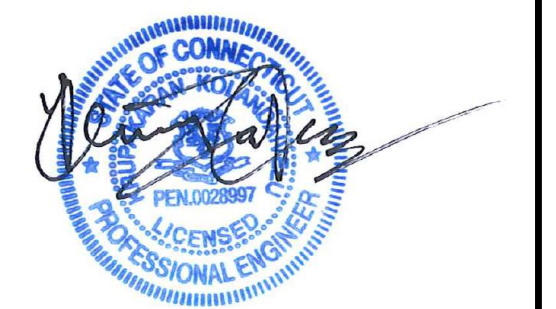
SITE INFORMATION	PROJECT DIRECTORY
PROPERTY OWNER: GLOBAL SIGNAL ACQUISITION	APPLICANT: DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
ADDRESS: PO BOX 277455 ATLANTA, GA 30384	TOWER OWNER: CROWN CASTLE USA INC. 2000 CORPORATE DR. CANONSBURG, PA 15317 (877) 486-9377
TOWER TYPE: MONOPOLE	TOWER CO SITE ID: 828402
TOWER APP NUMBER: 553315	SITE DESIGNER: NB+C ENGINEERING SERVICES, LLC 6095 MARSHALEE DRIVE, SUITE 300 ELKRIDGE, MD 21075 (410) 712-7092
COUNTY: WINDHAM	SITE ACQUISITION: CORWIN DIXON CORWIN.DIXON@CROWNCastle.COM
LATITUDE (NAD 83): 41° 58' 39.74" N 41.977706 N	CONSTRUCTION MANAGER: JAVIER SOTO JAVIER.SOTO@DISH.COM
LONGITUDE (NAD 83): 71° 50' 47.55" W 71.846542 W	RF ENGINEER: ARVIN SEBASTIAN ARVIN.SEBASTIAN@DISH.COM
ZONING JURISDICTION: WINDHAM COUNTY	
ZONING DISTRICT: INDUSTRIAL	
PARCEL NUMBER: THOM-000120-000030-000014	
OCCUPANCY GROUP: U	
CONSTRUCTION TYPE: II-B	
POWER COMPANY: NORTHEAST UTILITIES	
TELEPHONE COMPANY: CROWN CASTLE	



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



**NB+C ENGINEERING SERVICES, LLC.**  
6095 MARSHALEE DRIVE, SUITE 300  
ELKRIDGE, MD 21075  
(410) 712-7092



01/05/2022

KRUPAKARAN KOLANDAIVELU, P.E.  
STATE OF CONNECTICUT  
PROFESSIONAL ENGINEER  
LICENSE #PEN.0028997

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
SN	BRN	TA

RFDS REV #: ---

**CONSTRUCTION DOCUMENTS**

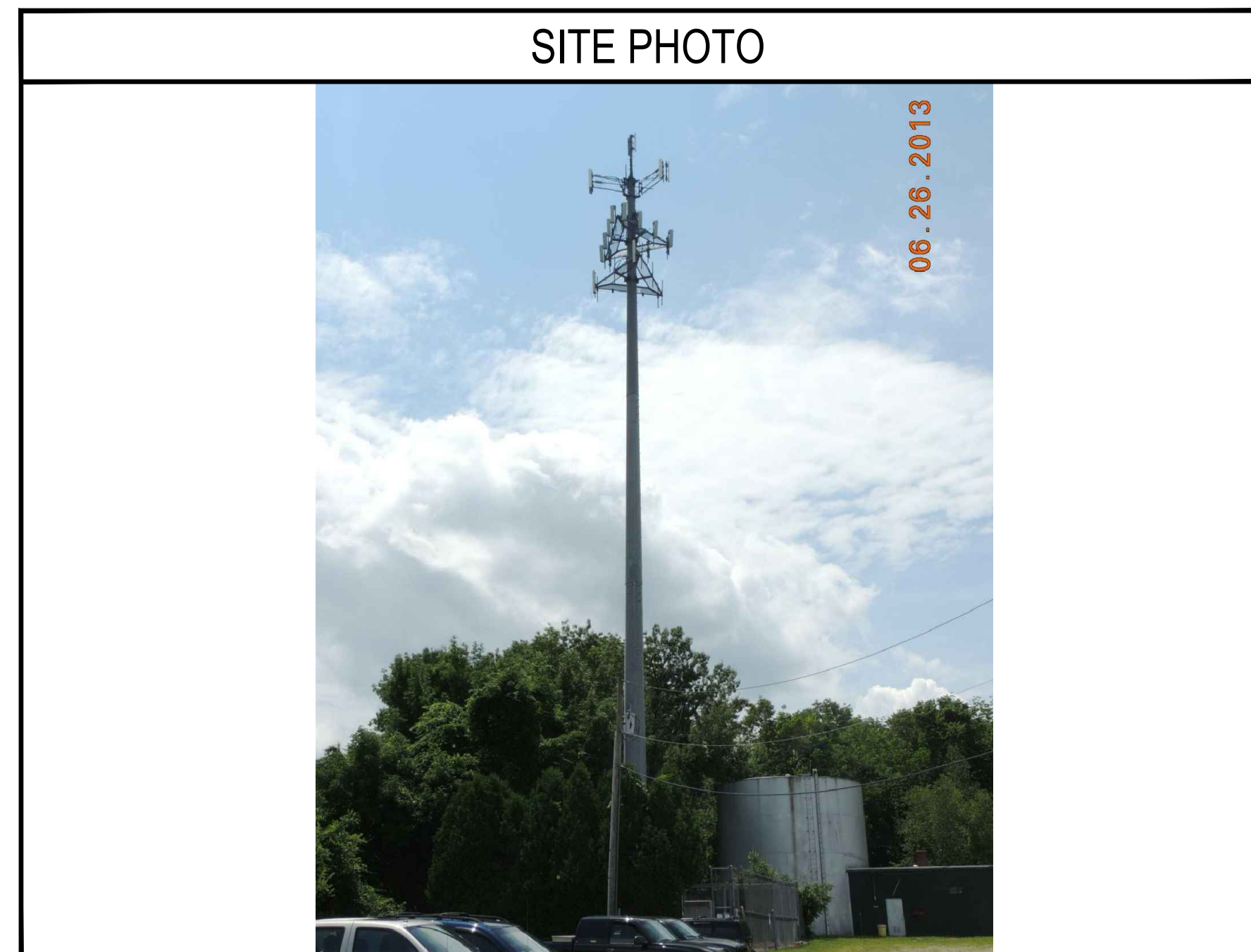
SUBMITTALS		
REV	DATE	DESCRIPTION
0	11/12/2021	ISSUED FOR CONSTRUCTION
1	01/05/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER  
**828402**

DISH Wireless L.L.C.  
PROJECT INFORMATION  
**BOBOS00035A**  
**720 THOMPSON RD**  
**THOMPSON, CT 06277**

SHEET TITLE  
**TITLE SHEET**

SHEET NUMBER  
**T-1**



**UNDERGROUND SERVICE ALERT CBYD 811**  
**UTILITY NOTIFICATION CENTER OF CONNECTICUT**  
(800) 922-4455  
[WWW.CBYD.COM](http://WWW.CBYD.COM)

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

**GENERAL NOTES**

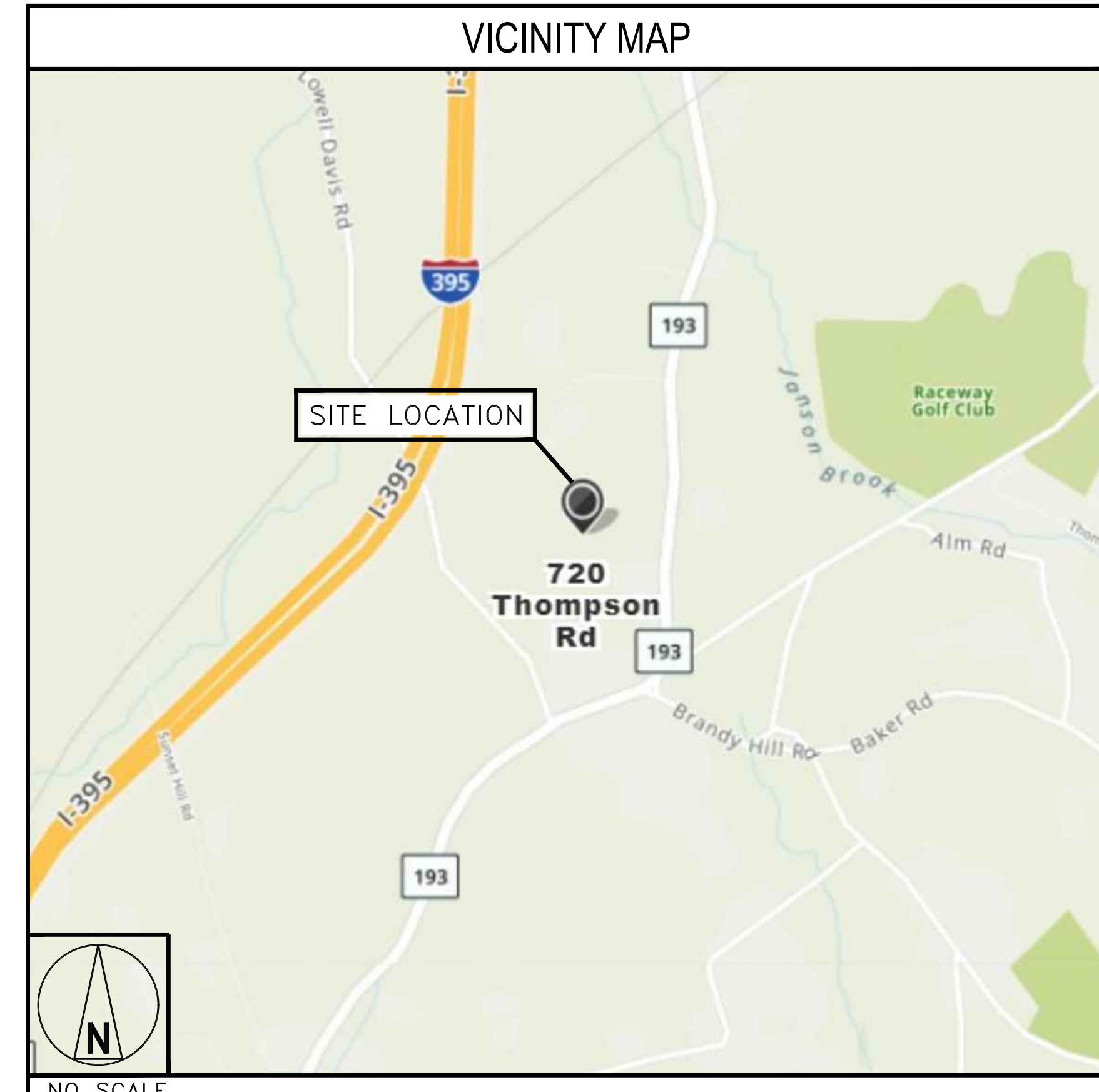
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE, NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE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

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

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

**DIRECTIONS**

**DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:**  
START OUT GOING WEST ON SCHOEPHOESTER RD TOWARD POSTAL RD. SCHOEPHOESTER RD BECOMES BRADLEY INTERNATIONAL AIRPORT CONNECTOR. TURN LEFT TO STAY ON BRADLEY INTERNATIONAL AIRPORT CONNECTOR. TAKE BRADLEY FIELD CONNECTOR TOWARD CT-20 E/1-91. BRADLEY FIELD CONNECTOR BECOMES CT-20 E. MERGE ONTO I-91 S TOWARD HARTFORD. MERGE ONTO I-291 E VIA EXIT 35A TOWARD MANCHESTER. MERGE ONTO I-84 E VIA THE EXIT ON THE LEFT TOWARD BOSTON. TAKE THE CT-190 EXIT, EXIT 73, TOWARD UNION. TURN RIGHT ONTO BUCKLEY HWY/CT-190. TURN RIGHT ONTO BIGELOW HOLLOW RD/CT-171/CT-197. TURN RIGHT ONTO EASTFORD RD/CT-198. EASTFORD RD IS 0.3 MILES PAST HERINDEEN LNDG. TURN LEFT ONTO ROUTE 171/CT-171. TURN RIGHT ONTO ROUTE 169/CONNECTICUT STATE ROUTE 169/CT-171/CT-169. CONTINUE TO FOLLOW CT-171. CT-171 IS 0.1 MILES PAST BROOKWOOD LN. TURN LEFT ONTO W THOMPSON RD. 720 THOMPSON RD, THOMPSON, CT 06277-1920, 720 THOMPSON RD IS ON THE LEFT.



**CONNECTICUT CODE OF COMPLIANCE**

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

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

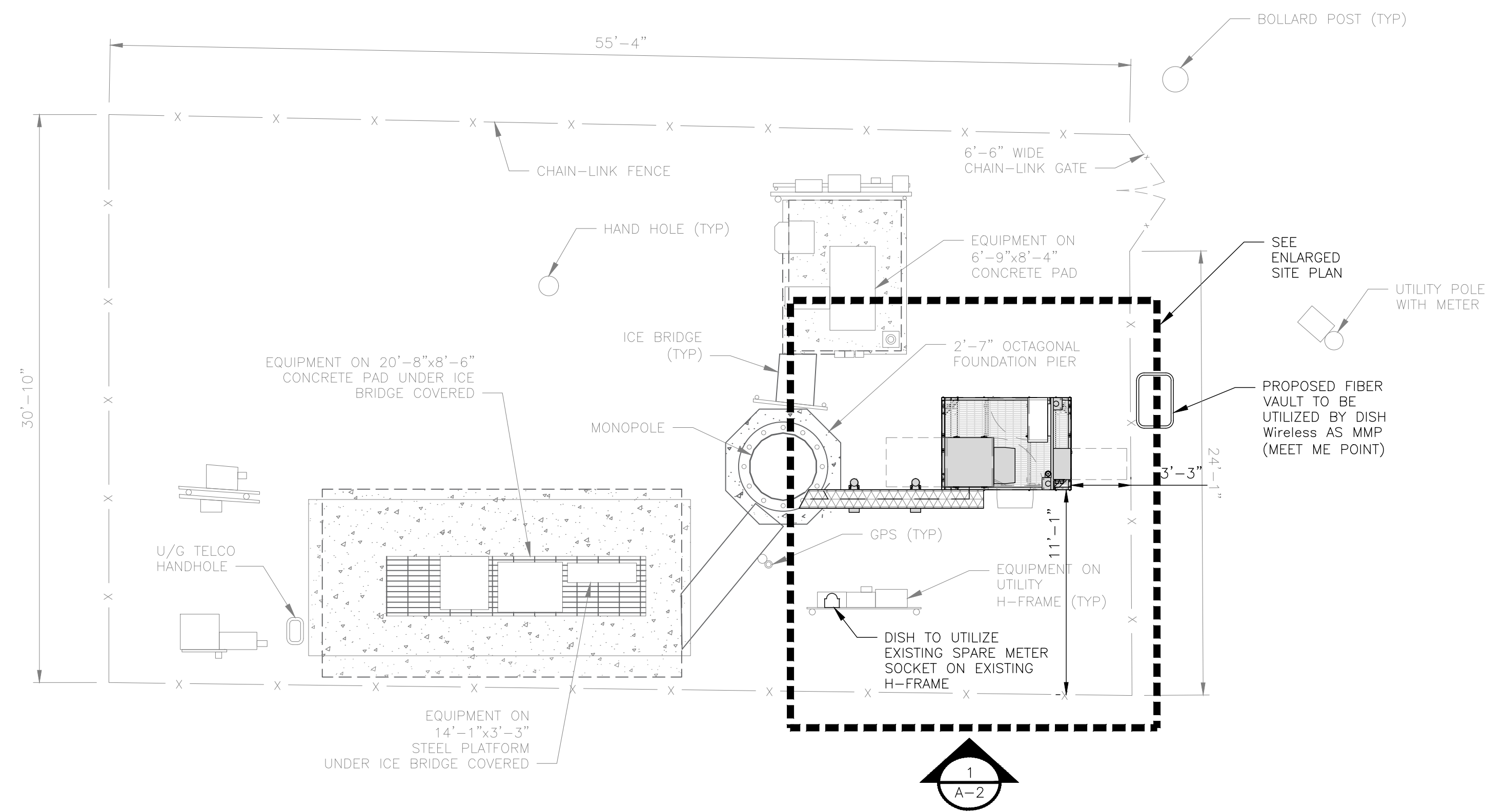
**SHEET INDEX**

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES

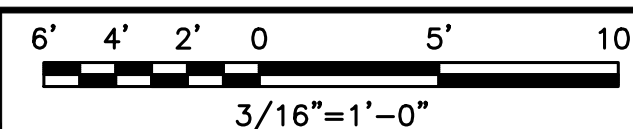


**NOTES**

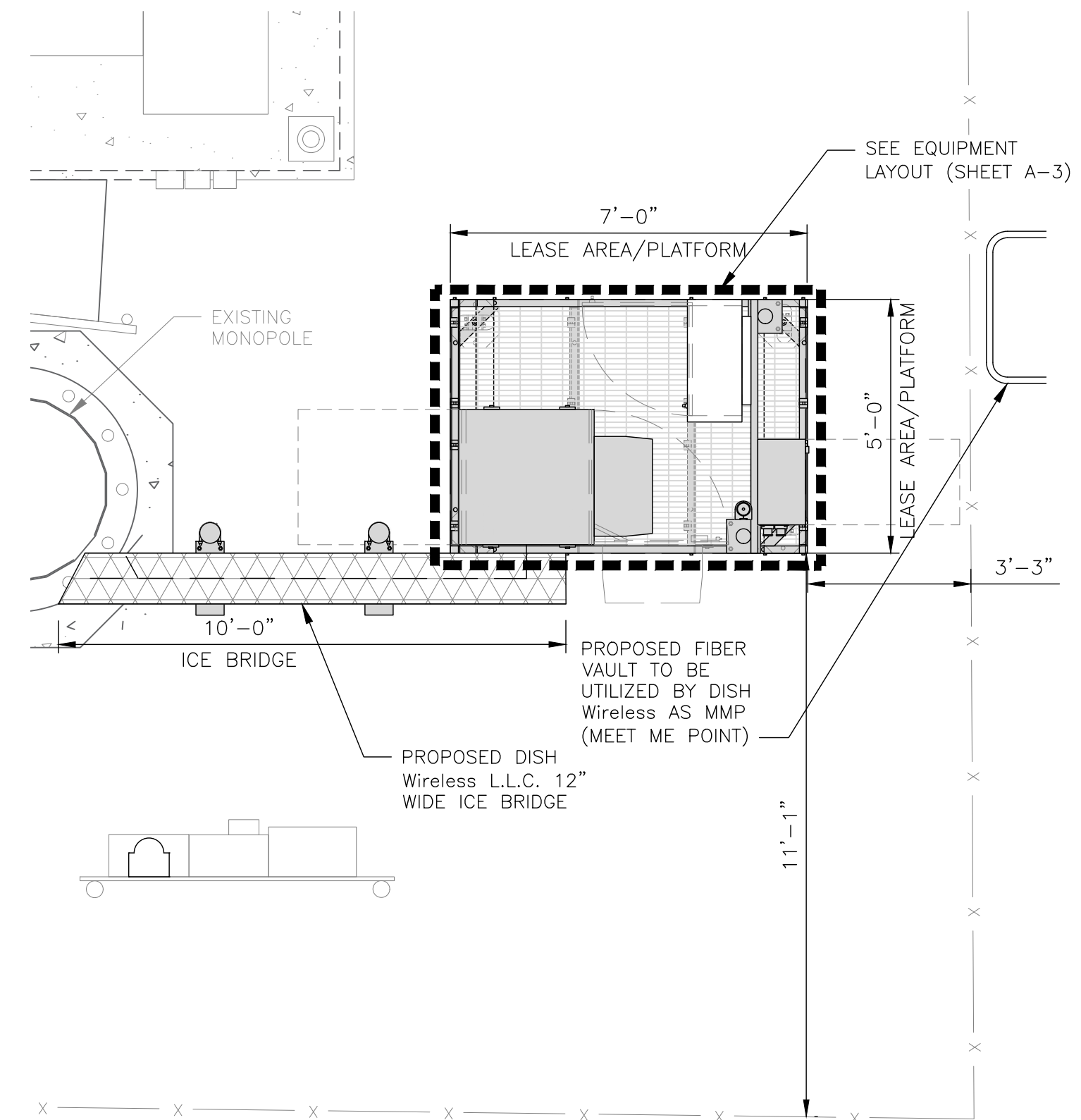
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



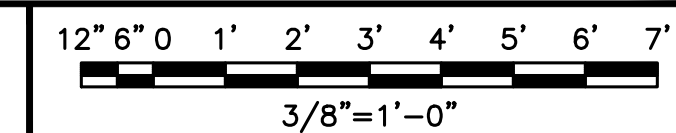
OVERALL SITE PLAN



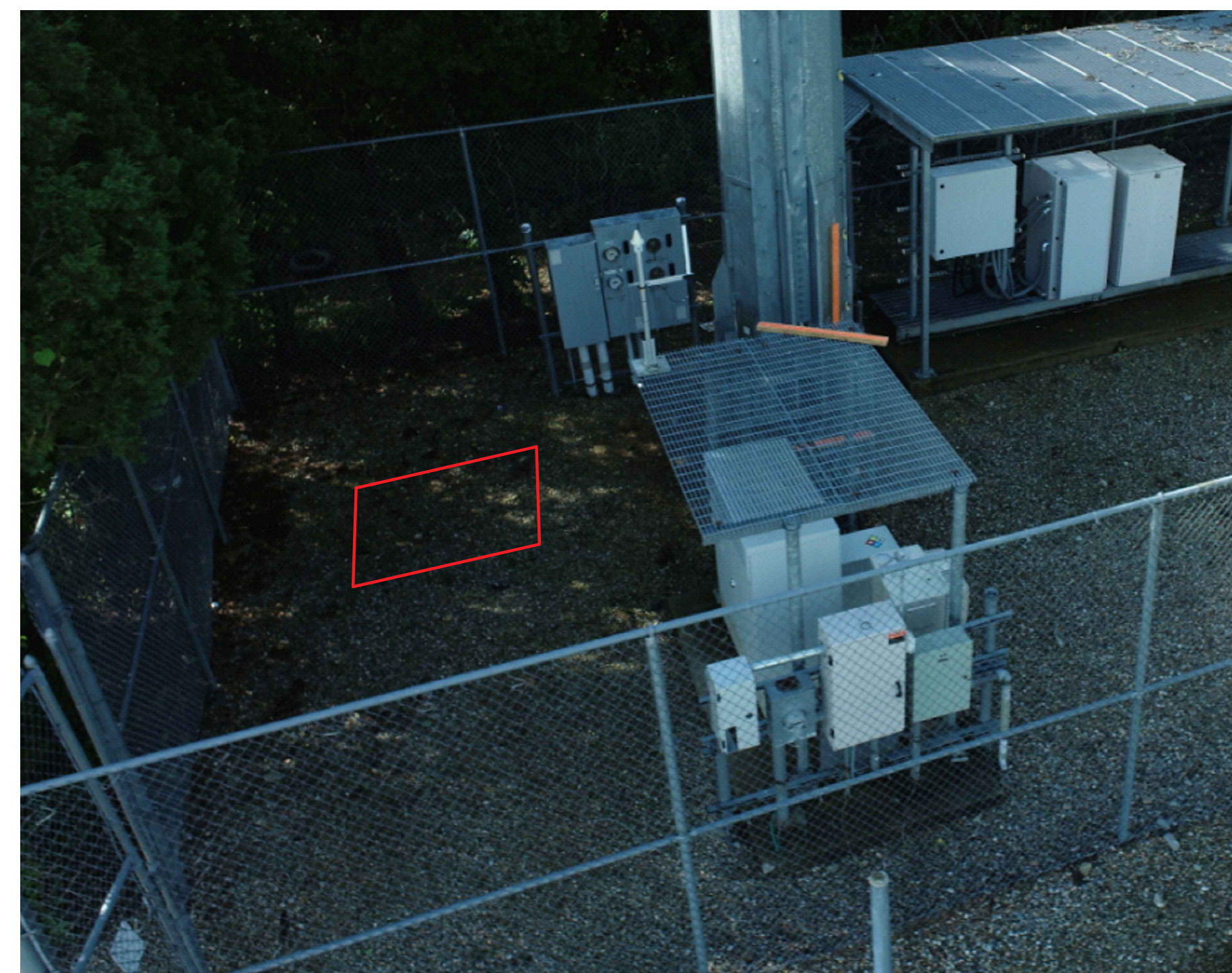
1



ENLARGED SITE PLAN



2



AERIAL VIEW

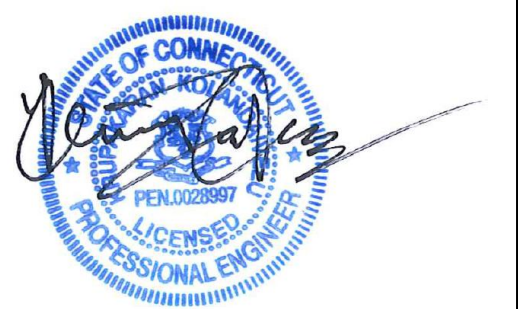
3

**dish**  
wireless.

5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120

**NB+C**  
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC.  
6095 MARSHALEE DRIVE, SUITE 300  
ELKRIDGE, MD 21075  
(410) 712-7092



01/05/2022

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LICENSE #PEN.0028997

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DRAWN BY: CHECKED BY: APPROVED BY:

SN BRN TA

RFDS REV #: ---

**CONSTRUCTION DOCUMENTS**

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REV	DATE	DESCRIPTION
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1	01/05/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER  
**828402**

DISH Wireless L.L.C.  
PROJECT INFORMATION

**BOBOS00035A**  
720 THOMPSON RD  
THOMPSON, CT 06277

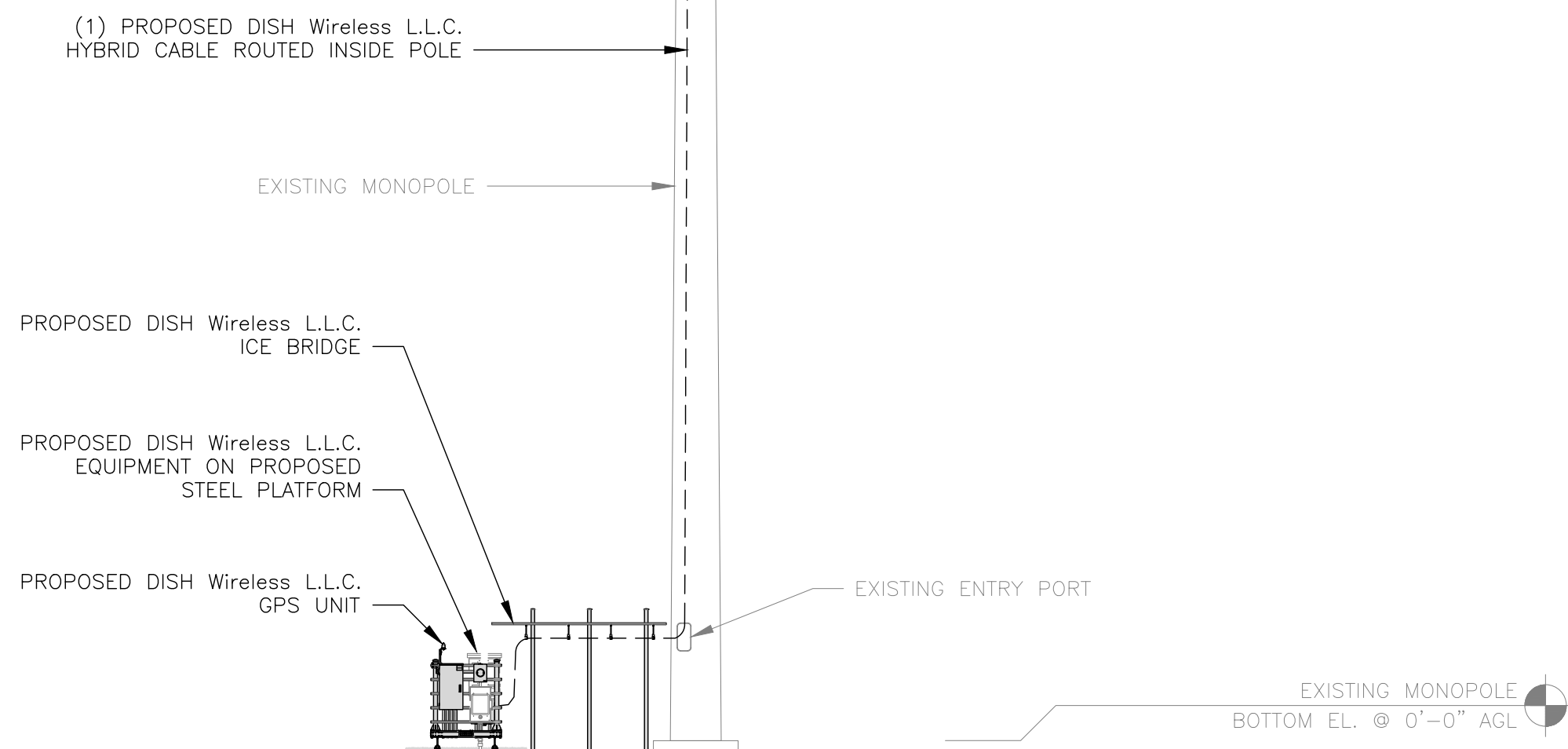
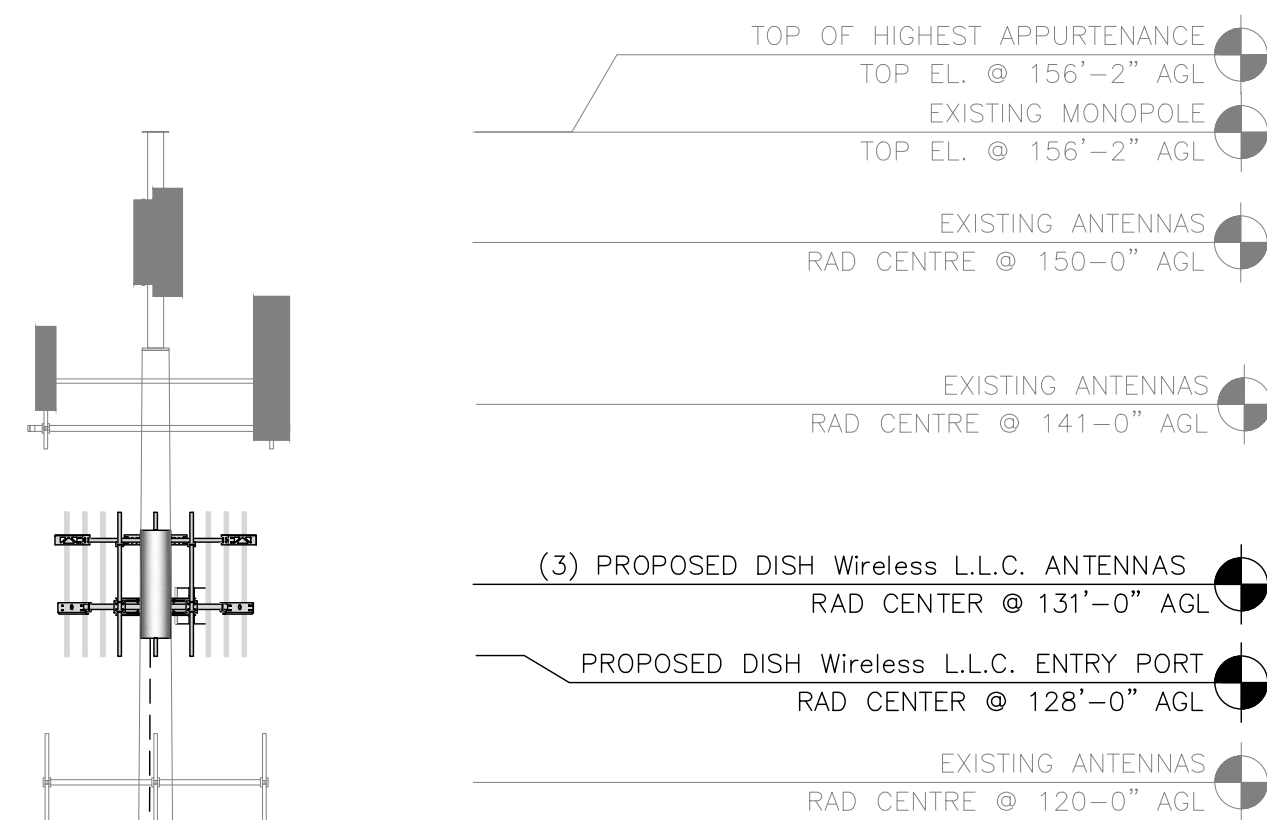
SHEET TITLE  
**OVERALL AND ENLARGED SITE PLAN**

SHEET NUMBER

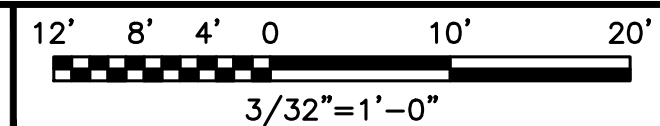
**A-1**

**NOTES**

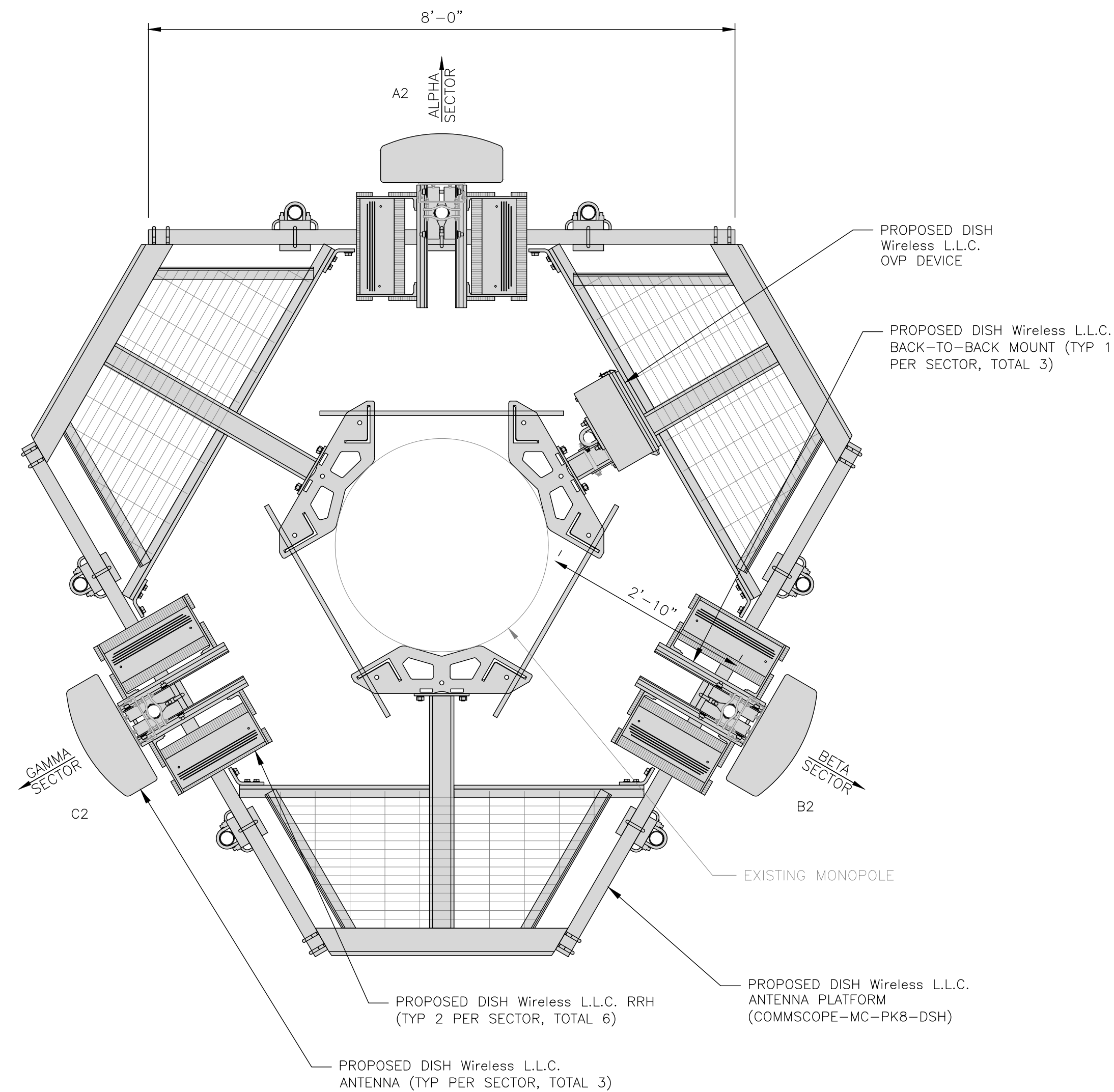
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



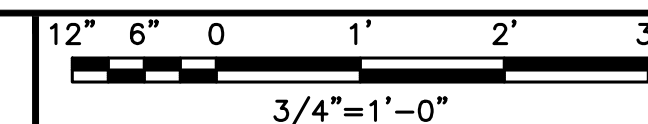
PROPOSED NORTH ELEVATION



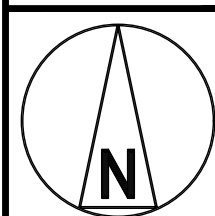
1



ANTENNA LAYOUT



2



SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECH	AZIMUTH	RAD CENTER		FEED LINE TYPE AND LENGTH	MANUFACTURER - MODEL NUMBER	TECH	
A1	--	--	--	--	--	(1) HIGH-CAPACITY 1.5" DIA. HYBRID CABLE (170' LONG)	FUJITSU - TA08025-B604	5G	A2	RAYCAP - RDIDC-9181 -PF-48
A2	PROPOSED	JMA - MX08FR0665-21	5G	0°	131'-0"		FUJITSU - TA08025-B605	5G	A2	
A3	--	--	--	--	--		--	--	--	
B1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU - TA08025-B604	5G	B2	SHARED W/ALPHA
B2	PROPOSED	JMA - MX08FR0665-21	5G	120°	131'-0"		FUJITSU - TA08025-B605	5G	B2	
B3	--	--	--	--	--		--	--	--	
C1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU - TA08025-B604	5G	C2	SHARED W/ALPHA
C2	PROPOSED	JMA - MX08FR0665-21	5G	240°	131'-0"		FUJITSU - TA08025-B605	5G	C2	
C3	--	--	--	--	--		--	--	--	

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

ANTENNA SCHEDULE

NO SCALE

3



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



**NB+C ENGINEERING SERVICES, LLC.**  
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ELKRIDGE, MD 21075  
(410) 712-7092



01/05/2022

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DISH Wireless L.L.C.  
PROJECT INFORMATION  
**BOBOS00035A**  
720 THOMPSON RD  
THOMPSON, CT 06277

SHEET TITLE  
**ELEVATION, ANTENNA LAYOUT AND SCHEDULE**

SHEET NUMBER

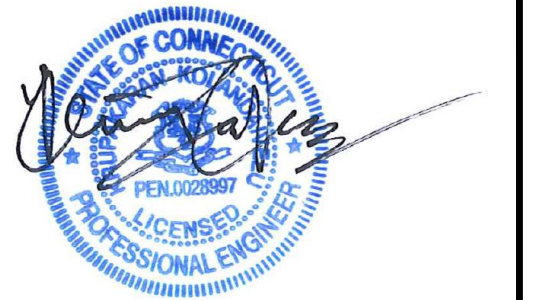
**A-2**



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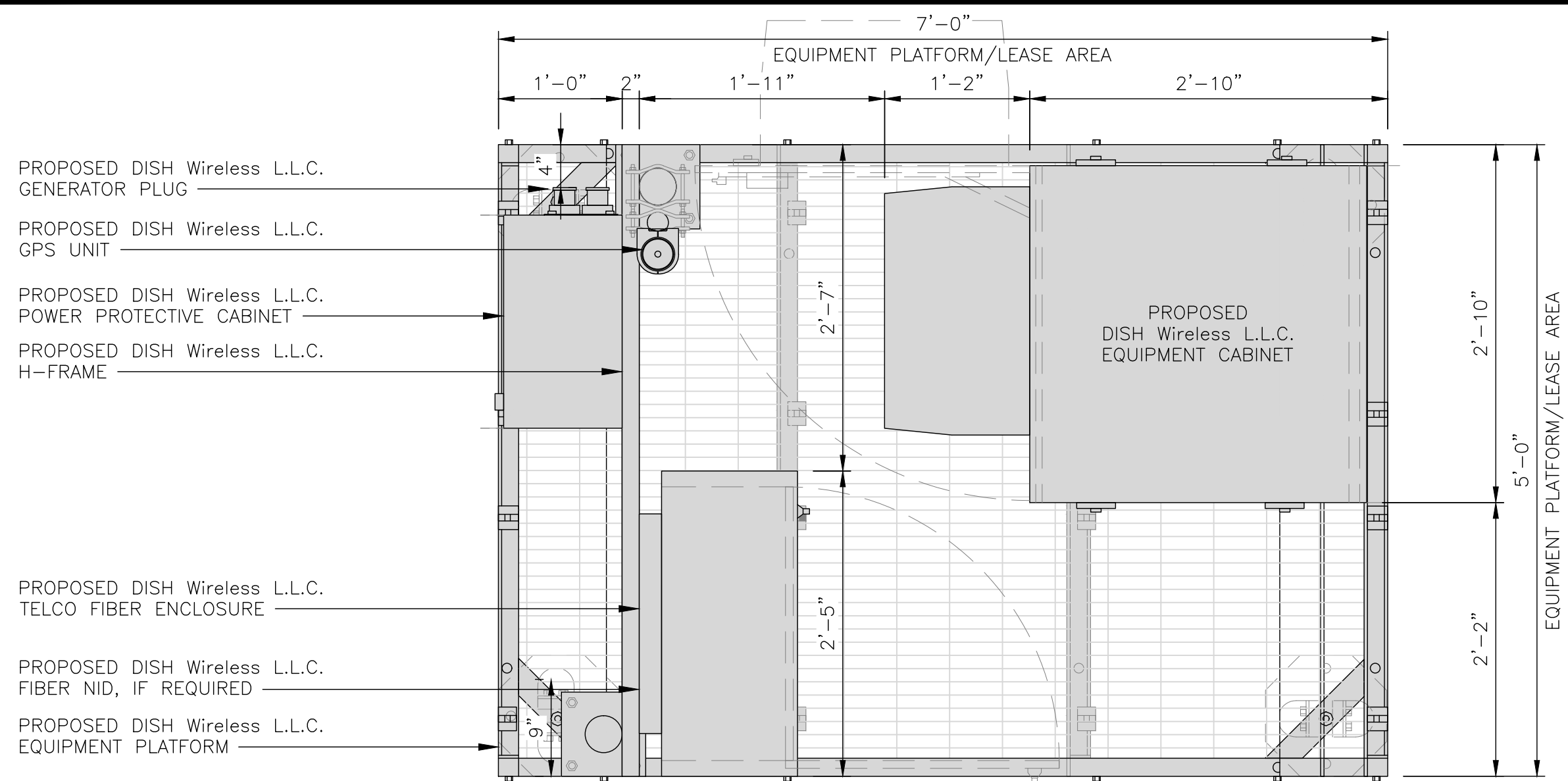
SHEET TITLE  
**EQUIPMENT PLATFORM AND  
H-FRAME DETAILS**

SHEET NUMBER

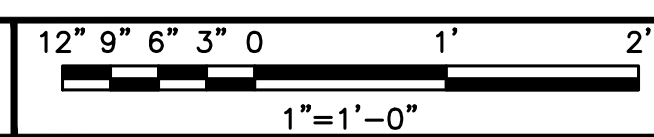
**A-3**

**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



PLATFORM EQUIPMENT PLAN

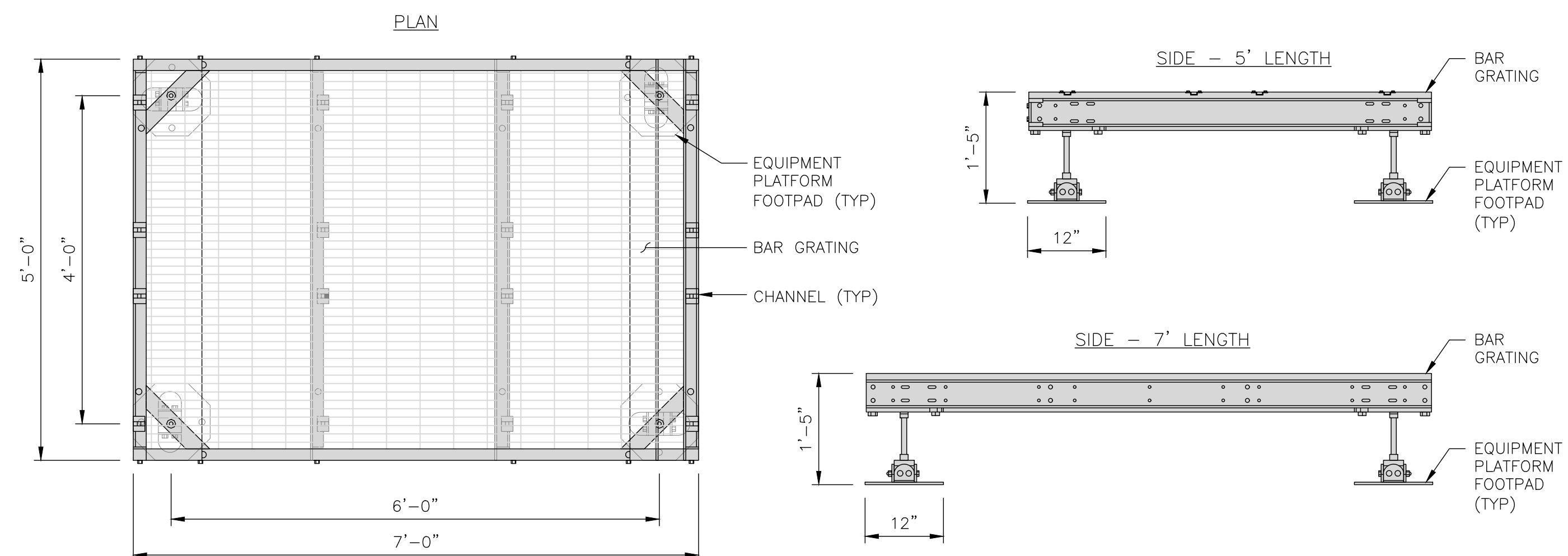


1

**COMMSCOPE MTC4045LP  
5X7 PLATFORM**

DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

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



PLATFORM DETAIL

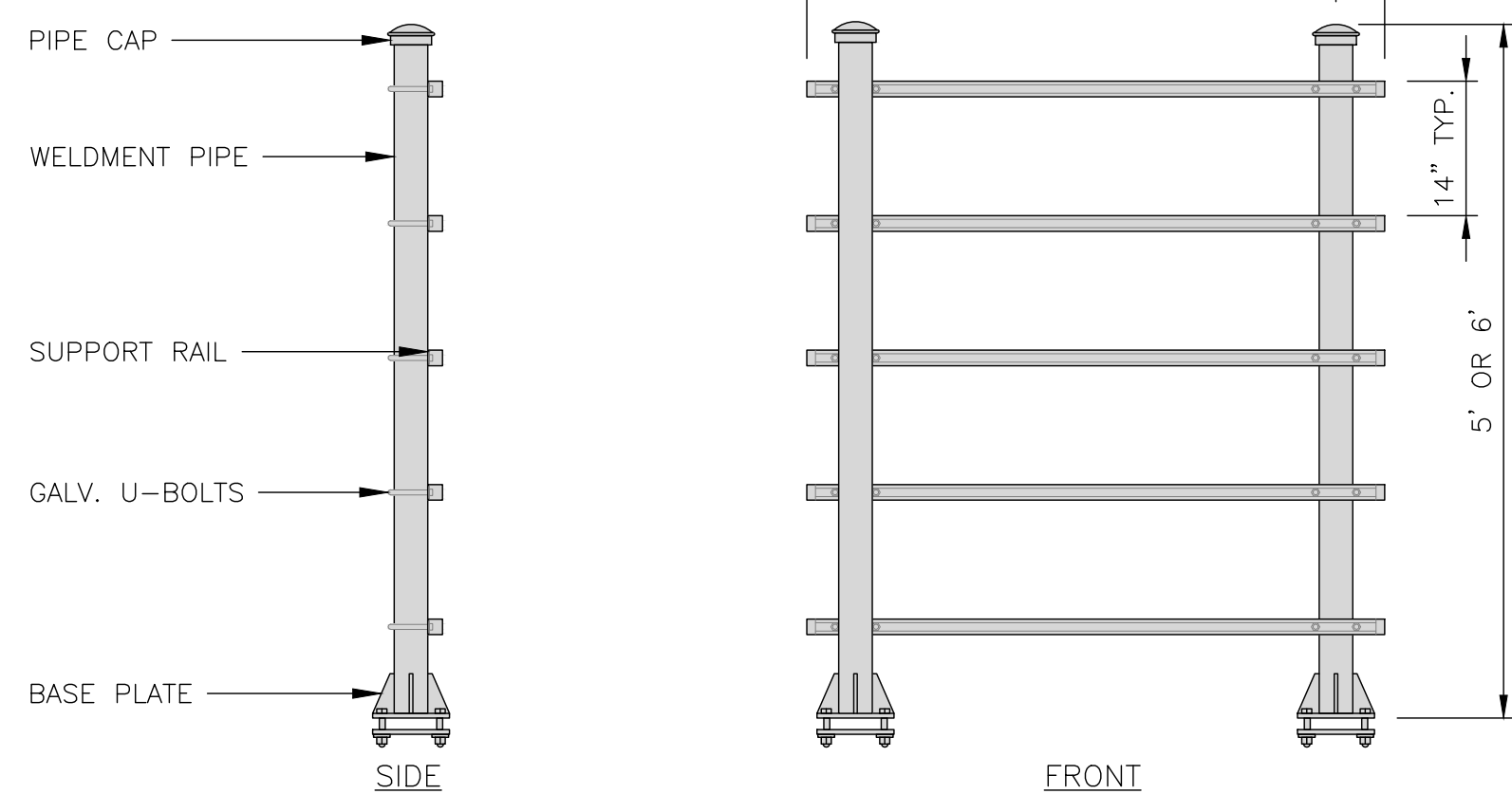
NO SCALE

2

**COMMSCOPE MTC4045HFLD  
H-FRAME**

UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs

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



H-FRAME DETAIL

NO SCALE

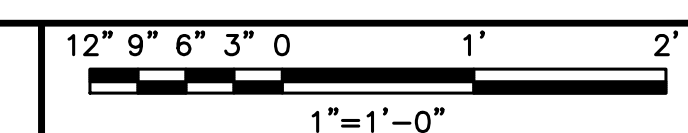
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NOT USED

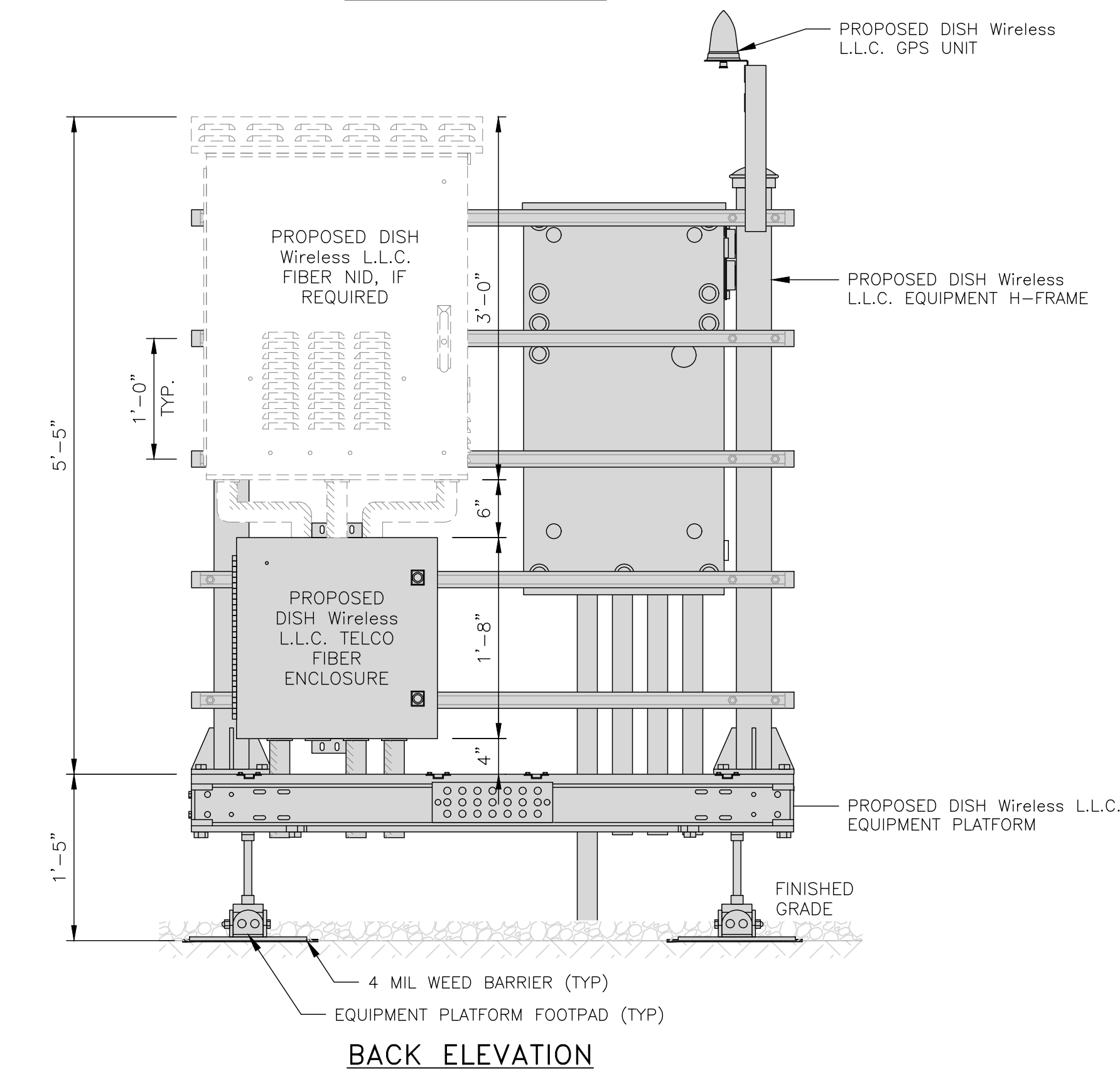
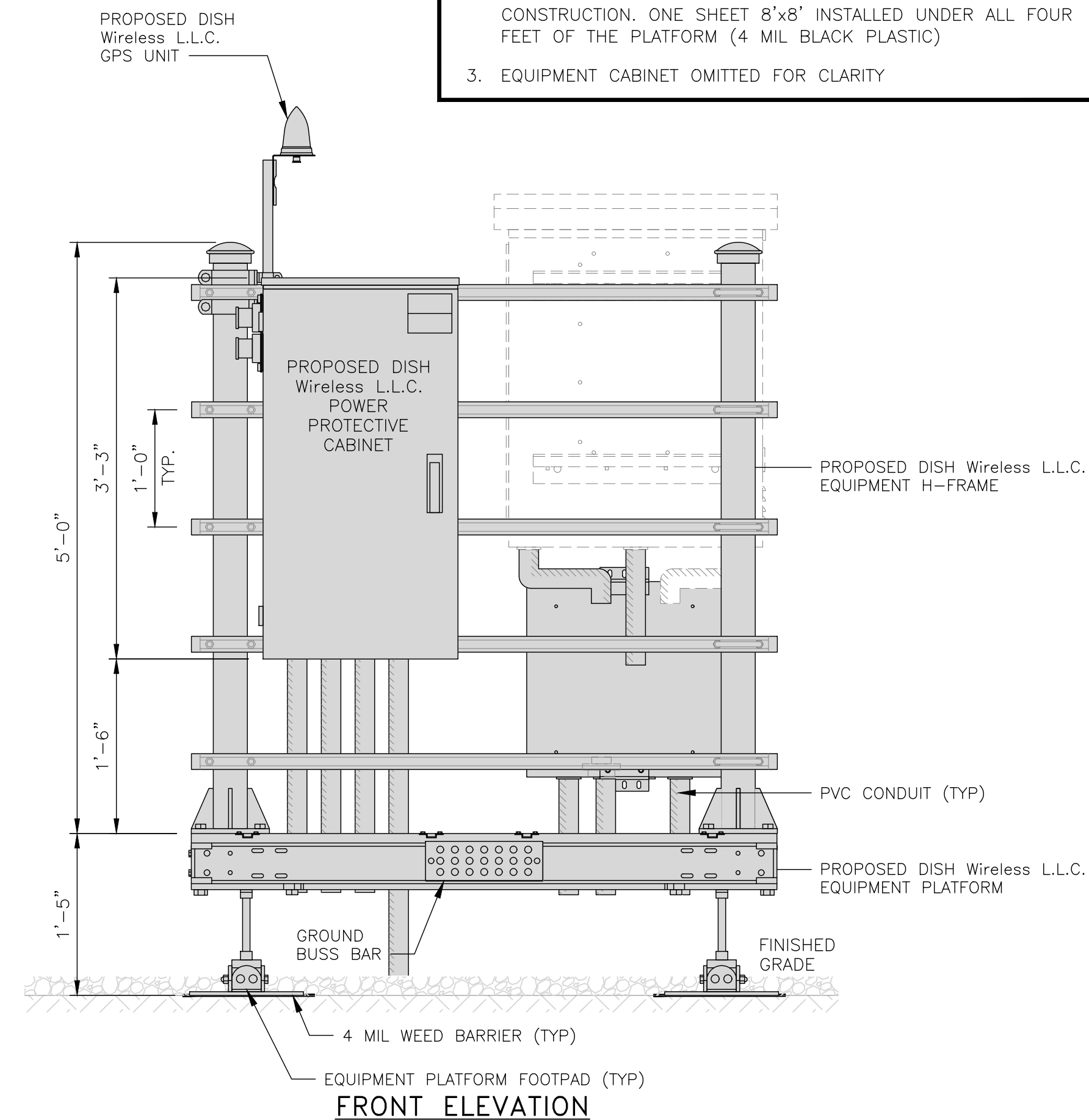
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4

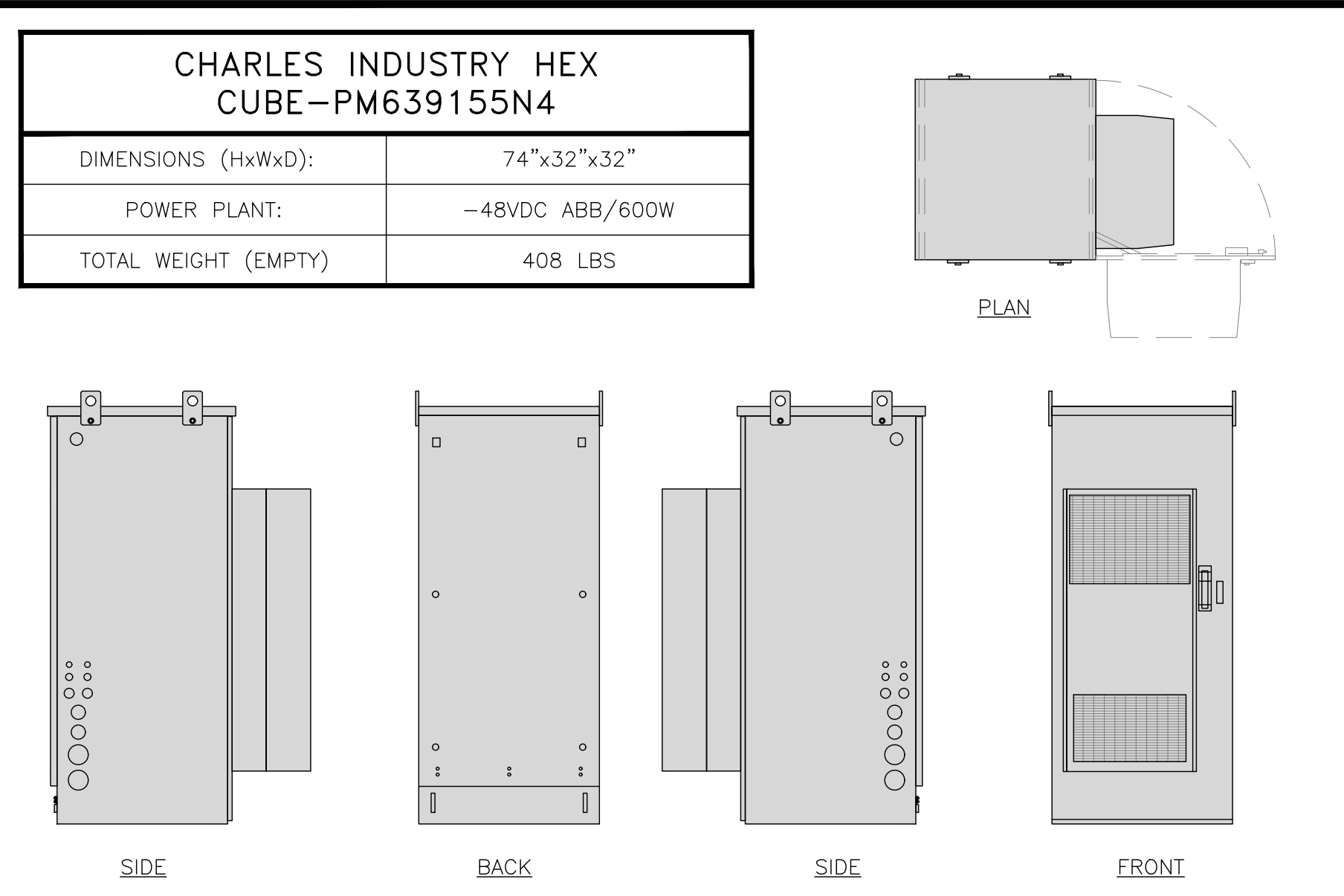
H-FRAME EQUIPMENT ELEVATION



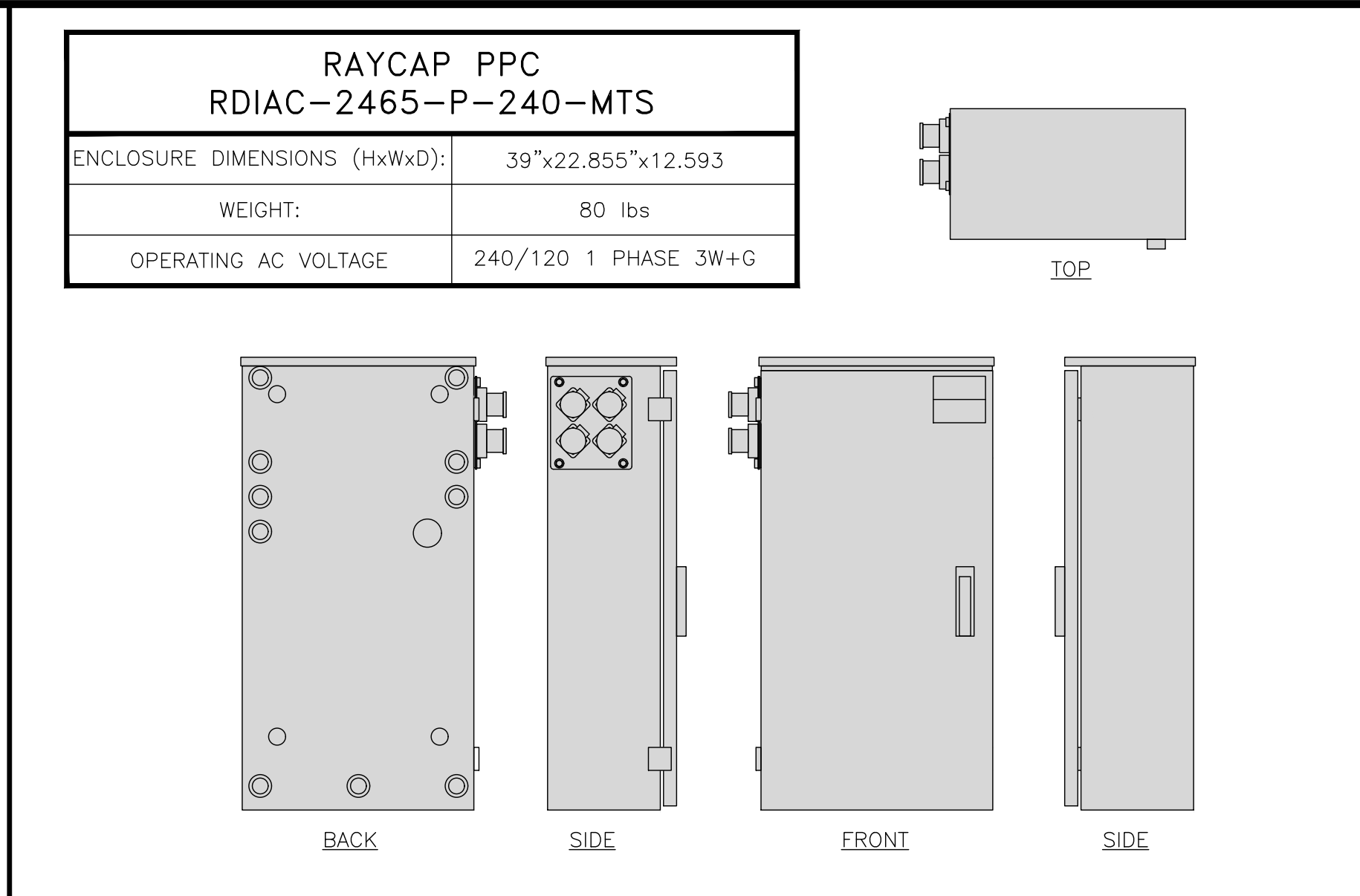
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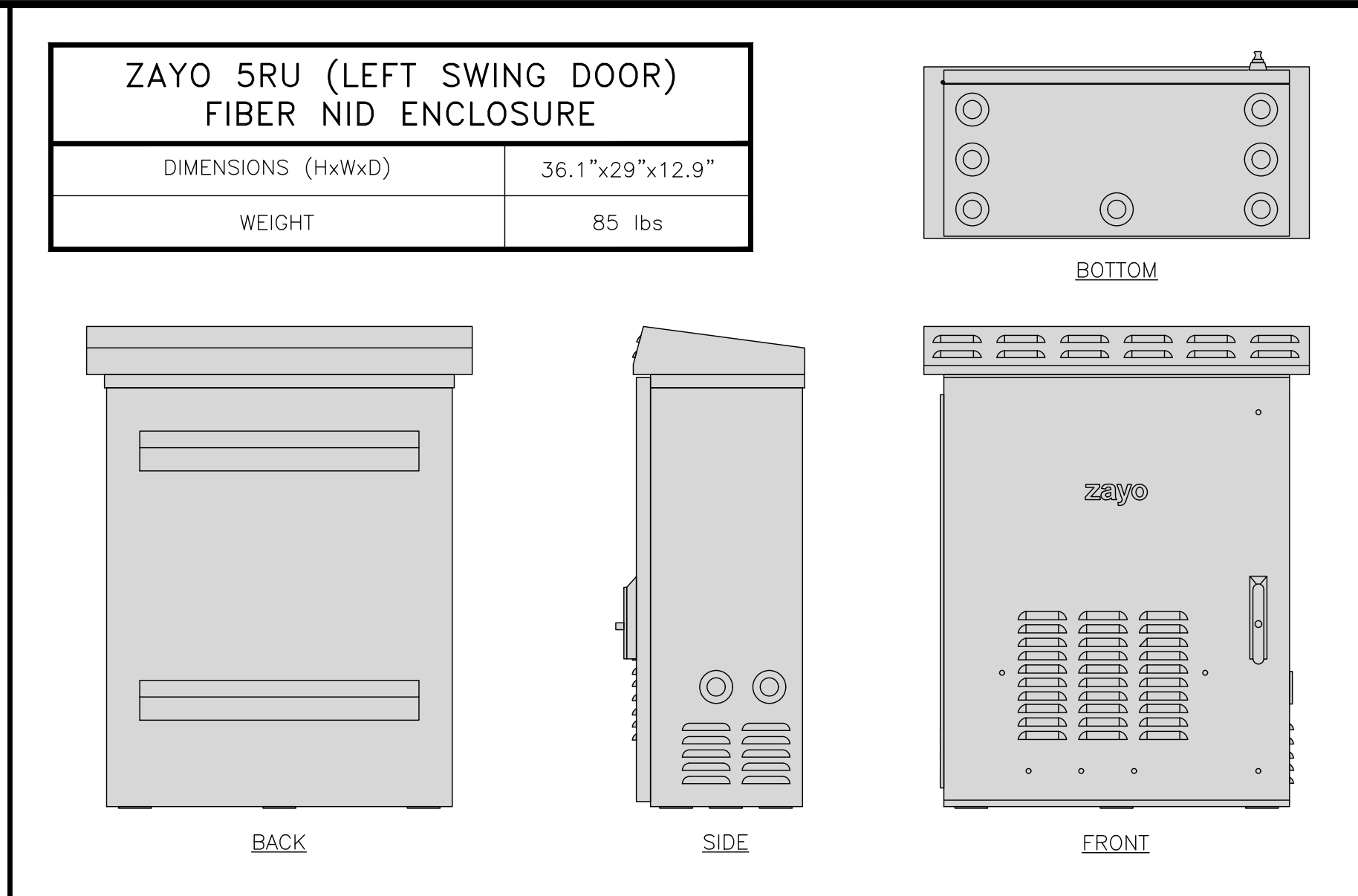
BACK ELEVATION



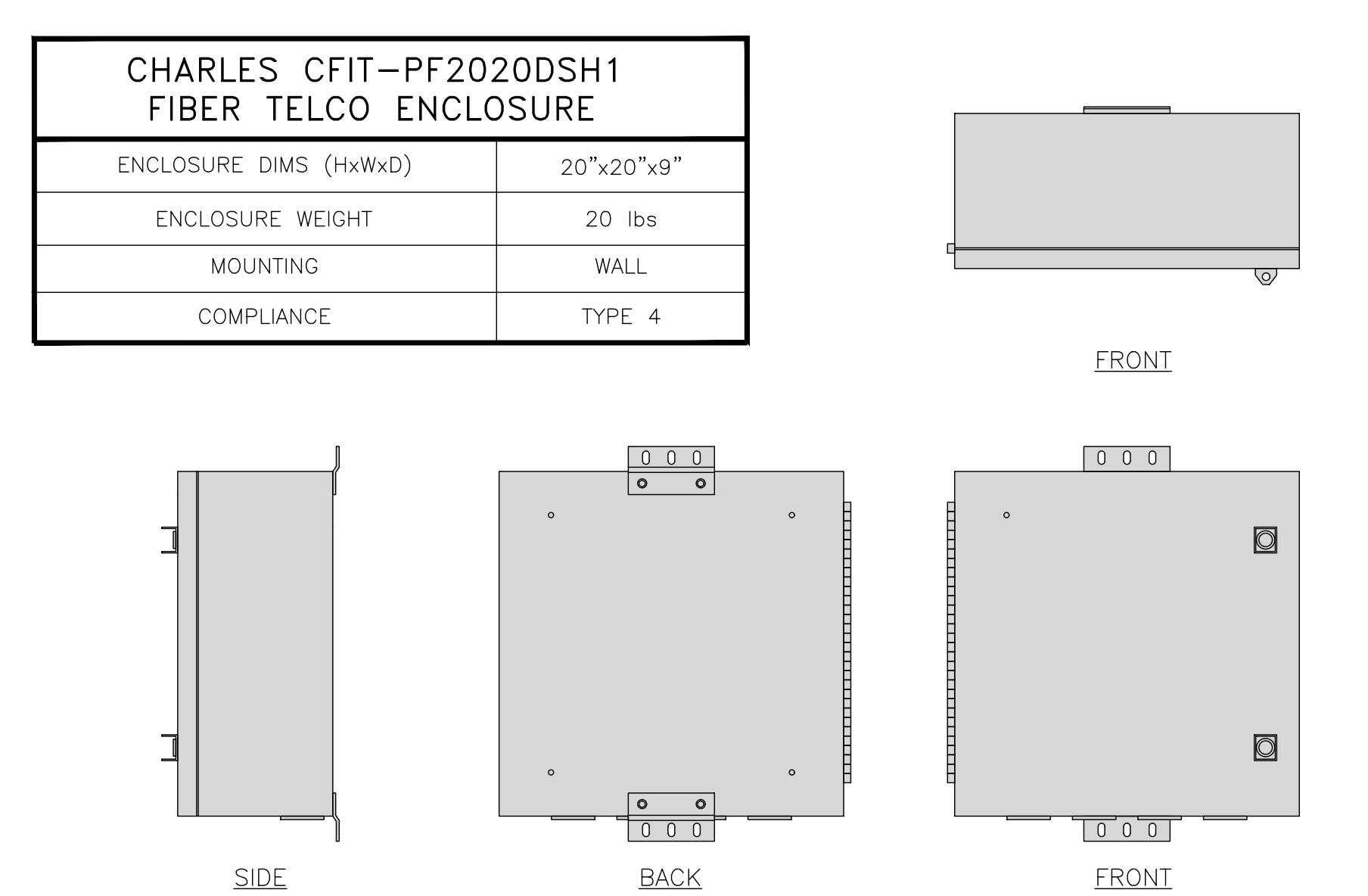
CABINET DETAIL NO SCALE 1



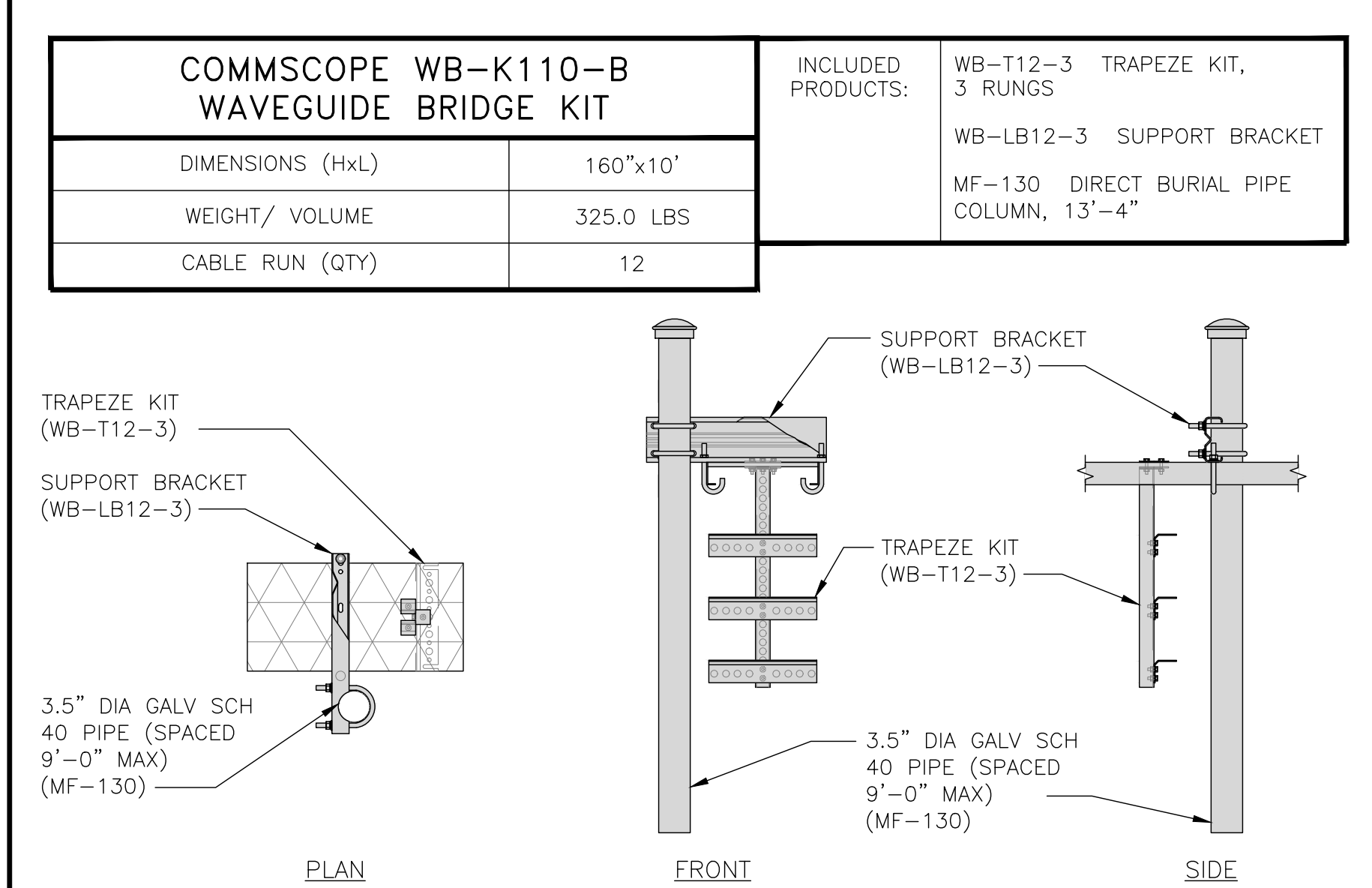
POWER PROTECTION CABINET (PPC) DETAIL NO SCALE 2



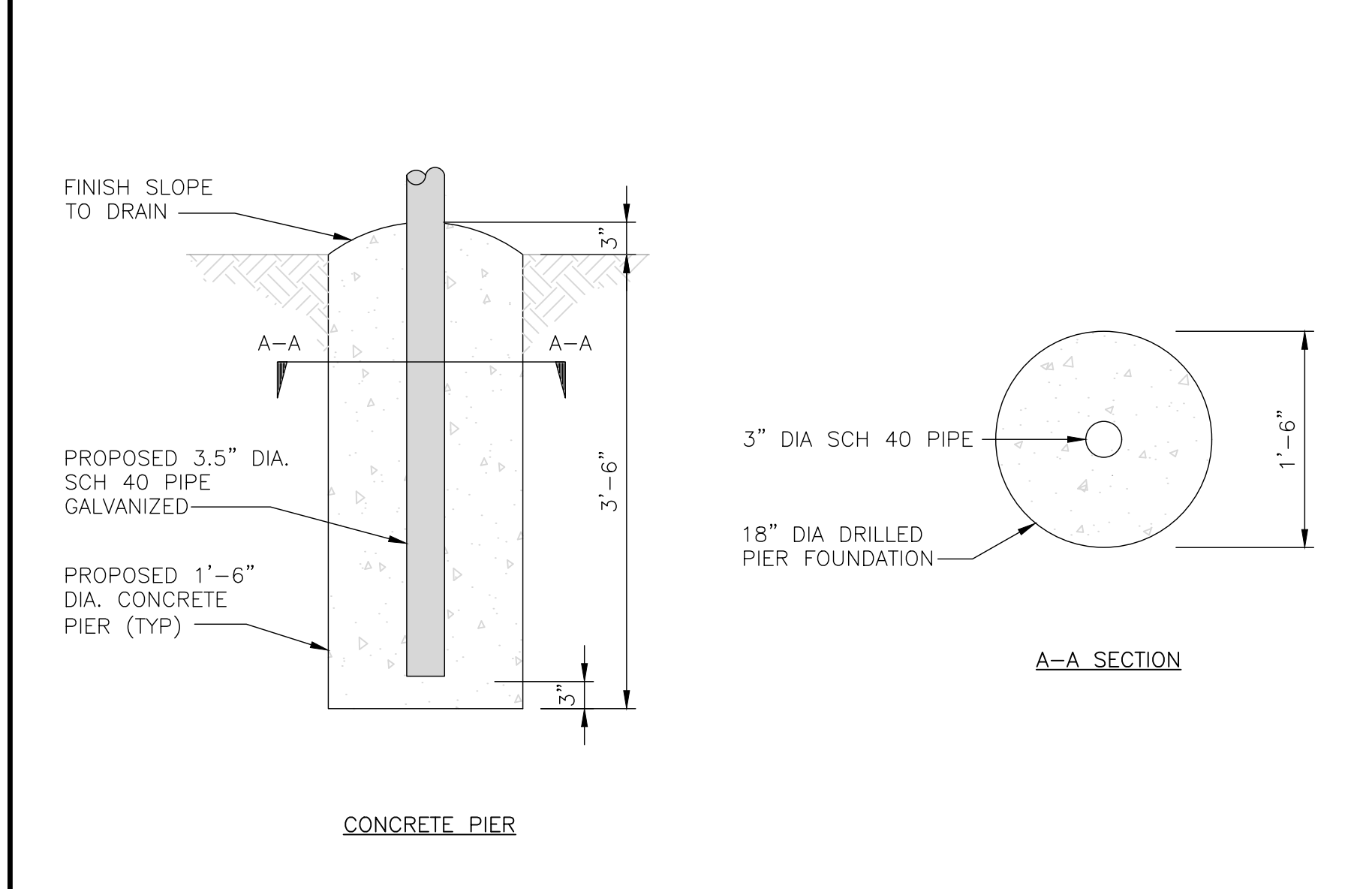
FIBER NID ENCLOSURE DETAIL NO SCALE 3



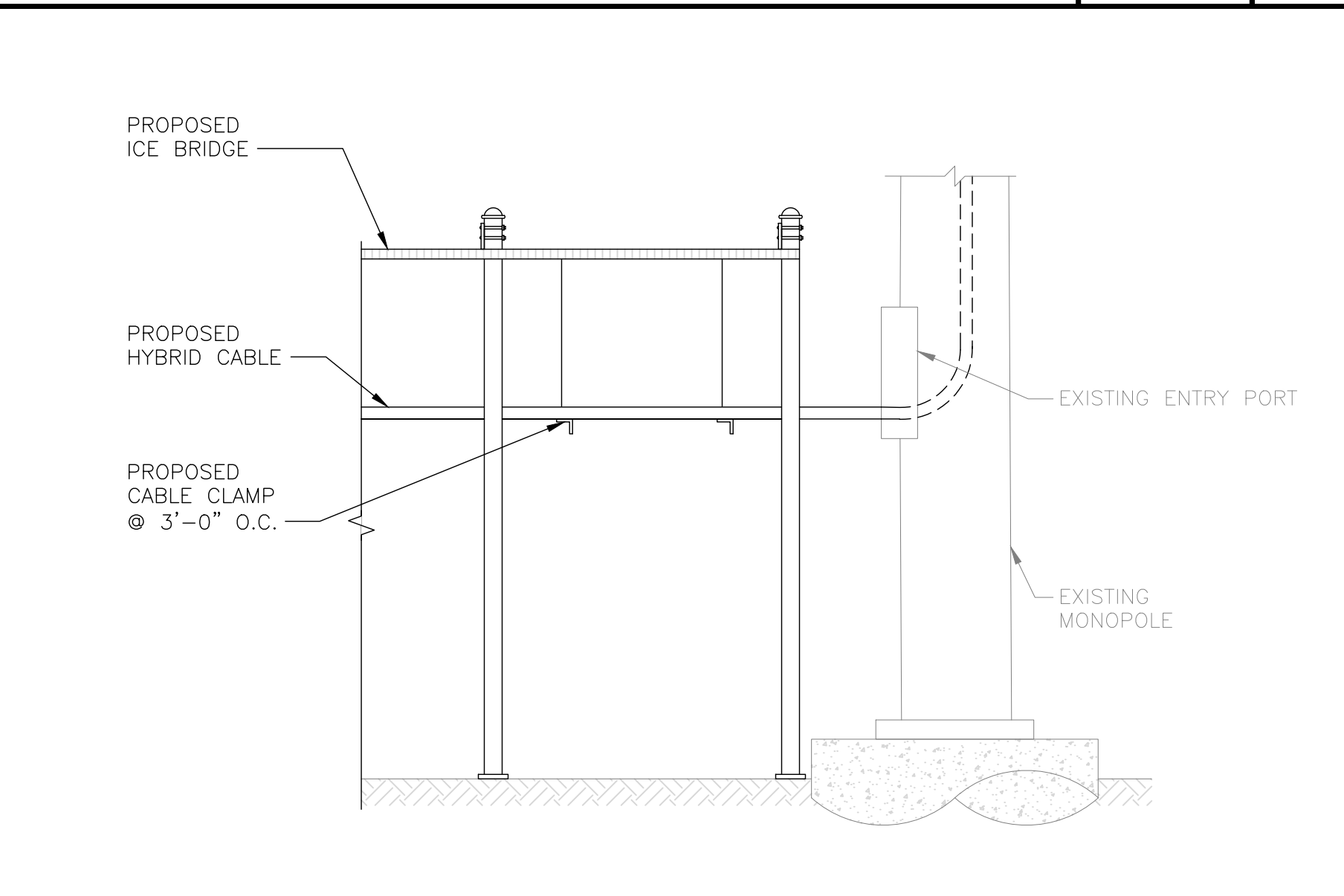
FIBER TELCO ENCLOSURE DETAIL NO SCALE 4



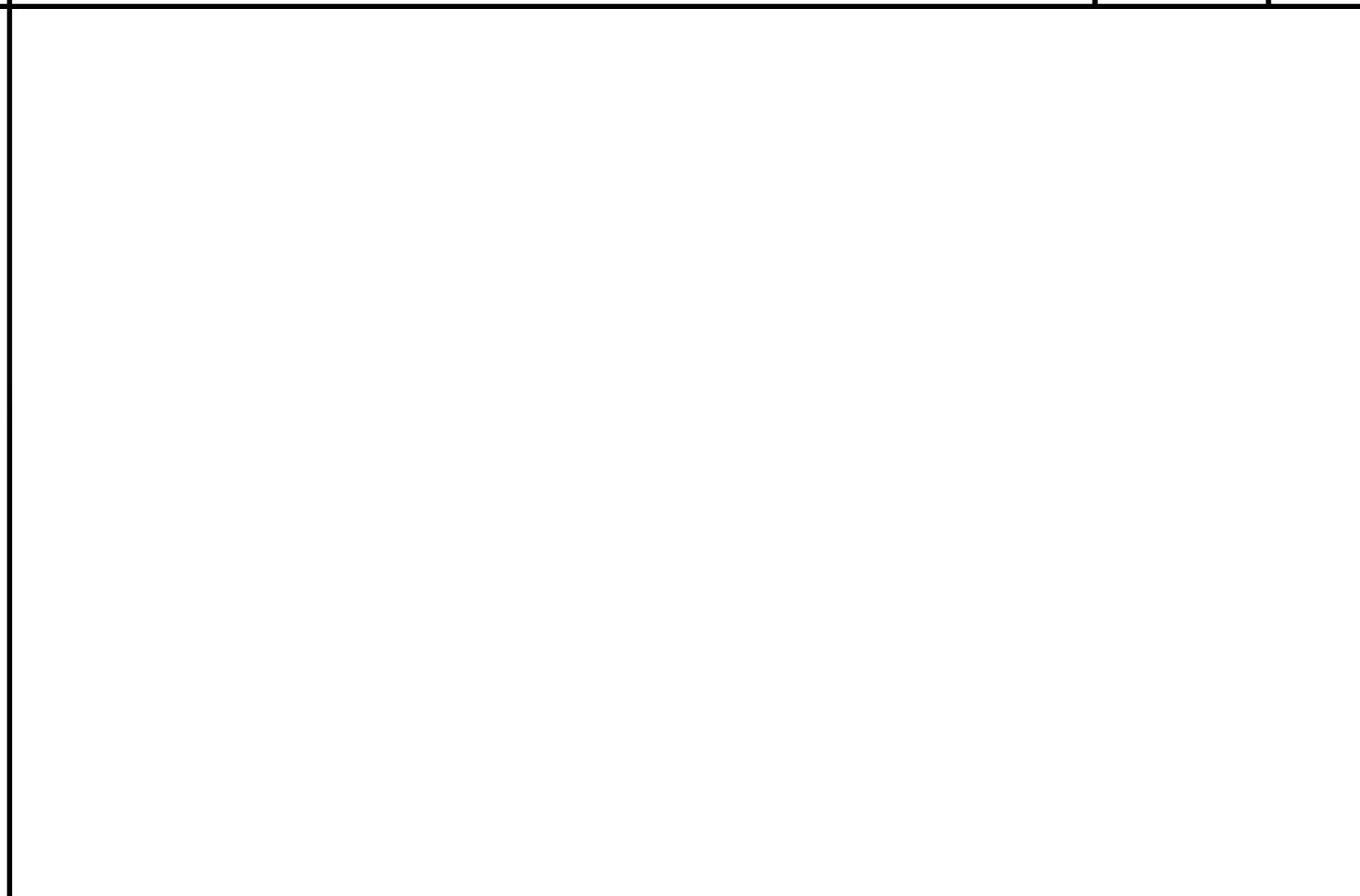
ICE BRIDGE DETAIL NO SCALE 5



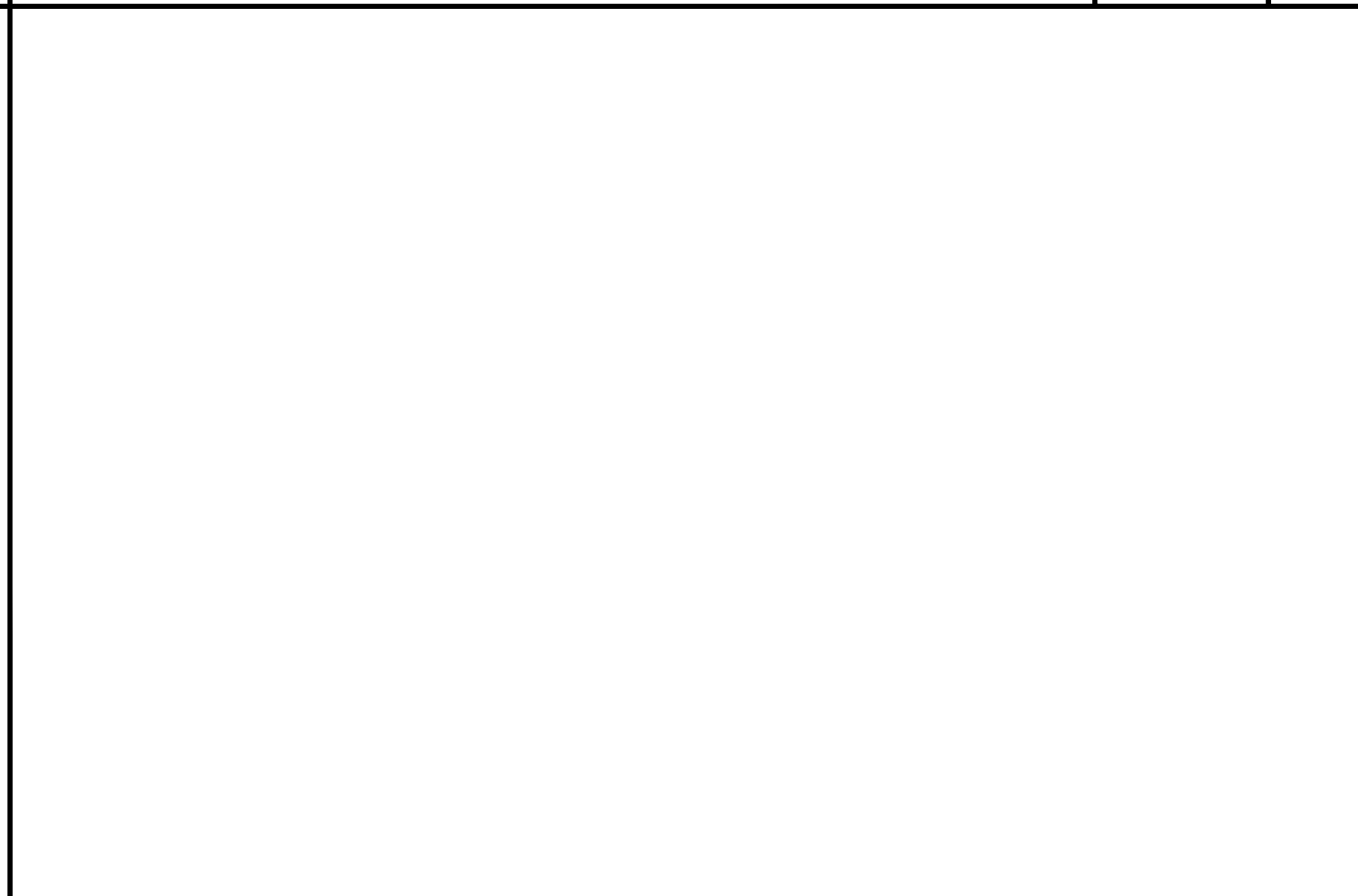
TYPICAL ICE BRIDGE CONCRETE PIER DETAIL NO SCALE 6



HYBRID CABLE RUN NO SCALE 7



NOT USED NO SCALE 8



NOT USED NO SCALE 9

5701 SOUTH SANTA FE DRIVE  
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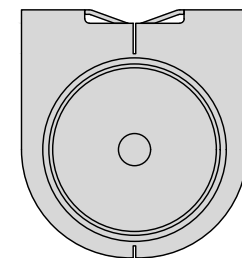
A&E PROJECT NUMBER  
828402

DISH Wireless L.L.C.  
PROJECT INFORMATION  
BOBOS00035A  
720 THOMPSON RD  
THOMPSON, CT 06277

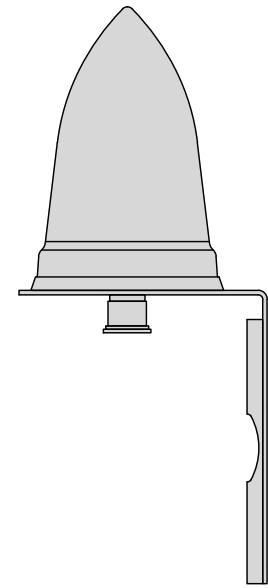
SHEET TITLE  
EQUIPMENT DETAILS

SHEET NUMBER  
**A-4**

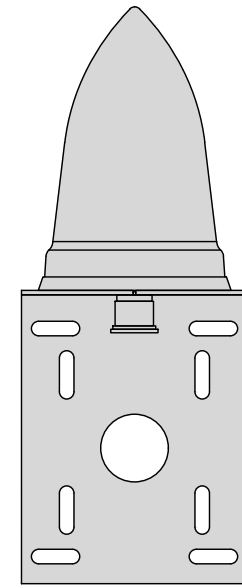
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± .30MHz



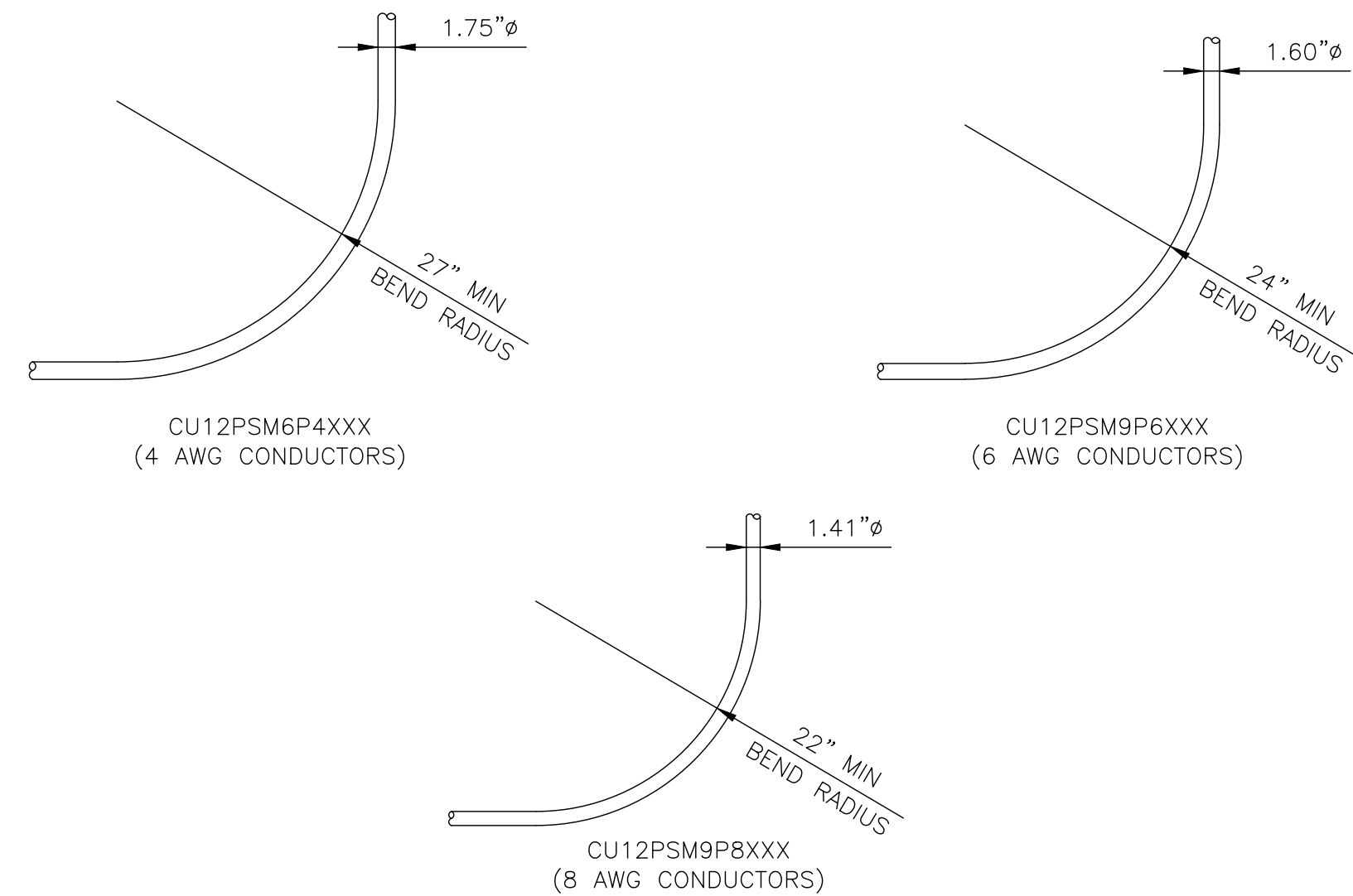
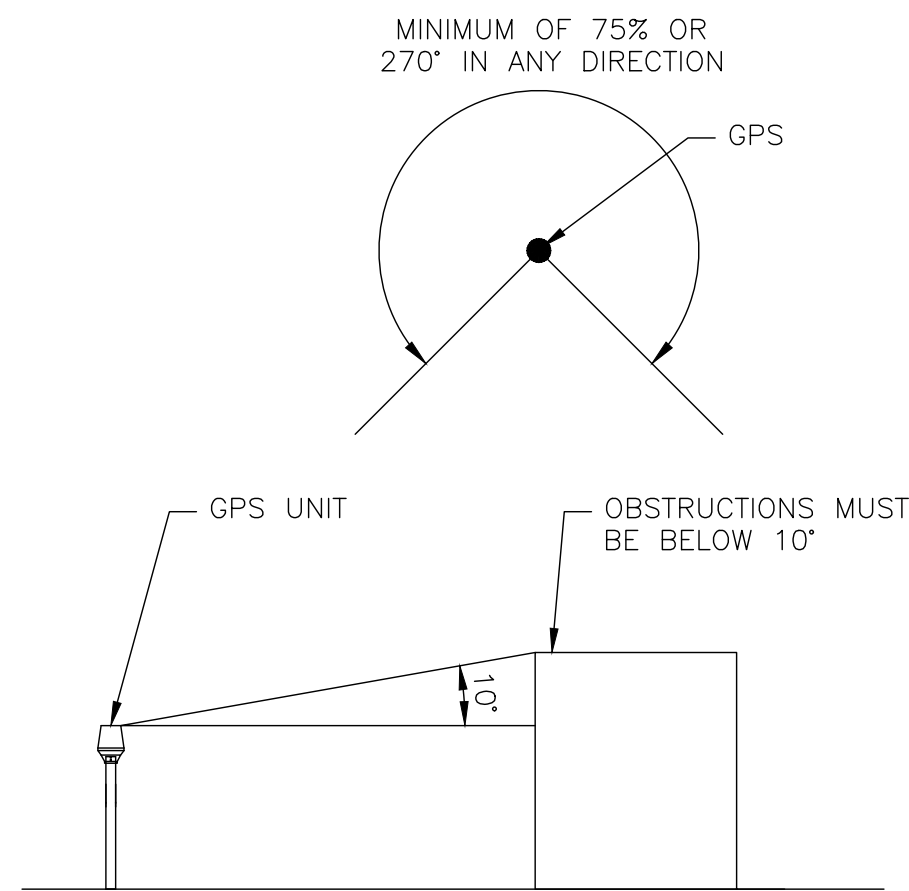
TOP



BACK



SIDE



GPS DETAIL

NO SCALE

1

GPS MINIMUM SKY VIEW REQUIREMENTS

NO SCALE

2

CABLES UNLIMITED HYBRID CABLE  
MINIMUM BEND RADIUSES

NO SCALE

3

DESC	QTY	
SITE ID #:	BOBOS00035A	
TWR TYPE:	MONOPOLE	
HYBRID BEND RADIUS	30"	The preparer must determine the lengths below.
RAD CENTER (ft)	131.0	This is the RAD center for the antennas on towers. For a rooftop, this is the total length of all vertical sections of the hybrid.
ICE BRIDGE HEIGHT (ft)	10.0	This is the height of the bridge coverings.
ICE BRIDGE LENGTH (ft)	10.0	This is the length of the total ice bridge coverings, if more than one ice bridge is used or total horizontal lengths of hybrid if this is inside a building.
LENGTH ACROSS PLATFORM (ft)	6.0	This is the length from the cabinet to the first bend up the ice bridge or inside a radio room.
LENGTH FROM TOWER TOP TO OVP (ft)	6.0	This is the horizontal length from the tower to the OVP at the antenna level or the total horizontal lengths of hybrid on a building or large self supporting tower.
VERTICAL LENGTH OF HYBRID INTO TOWER TOP OVP (ft)	1.0	This is the vertical length of hybrid that comes out to the tower top OVP to the beginning of the first bend that is going into the monopole port.
	LENGTH (ft)	
Additional Excess Hybrid to be added (To be determined by preparer)	0	
<b>Total Hybrid Length to Order (Rounded up to nearest whole number)</b>	<b>170</b>	

HYBRID CABLE CALCULATOR

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

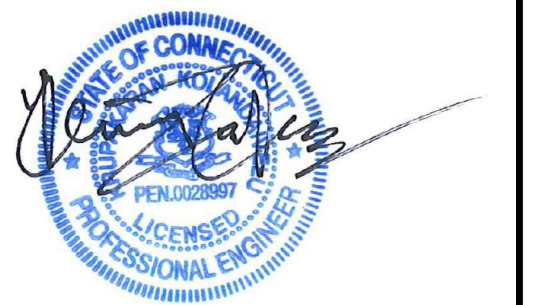
9

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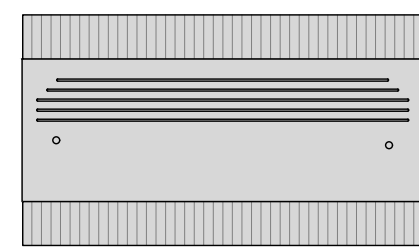
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SHEET TITLE  
EQUIPMENT DETAILS

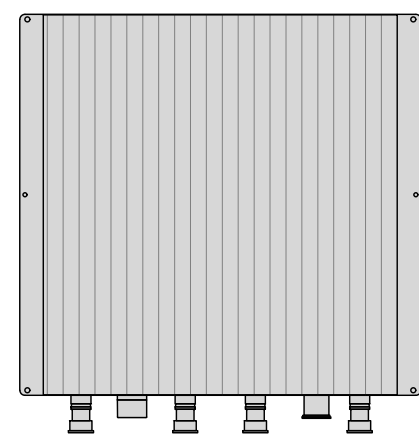
SHEET NUMBER

**A-5**

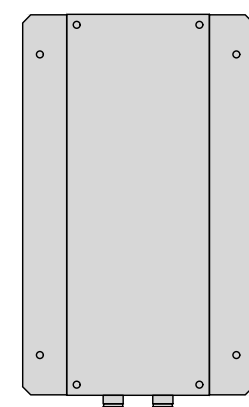
FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



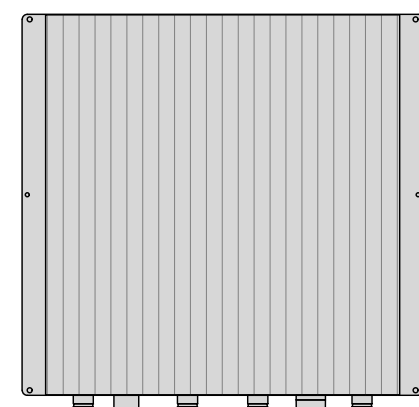
PLAN



BACK



SIDE



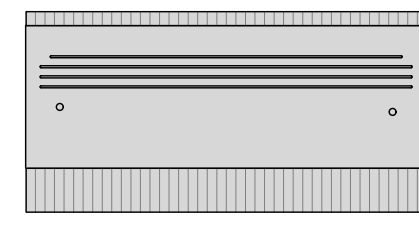
FRONT

RRH DETAIL

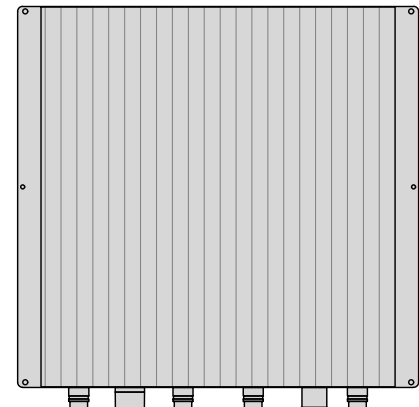
NO SCALE

1

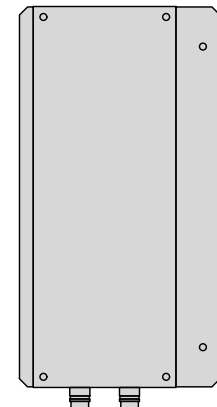
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



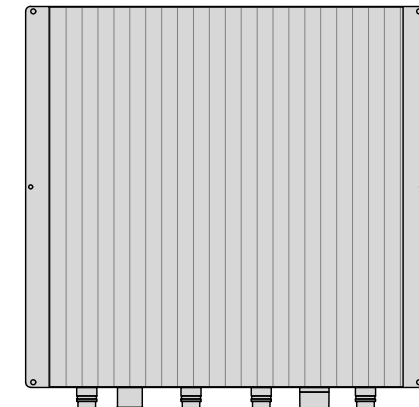
PLAN



BACK



SIDE



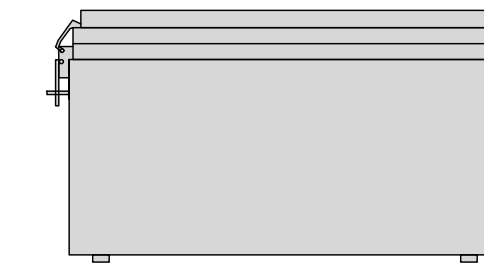
FRONT

RRH DETAIL

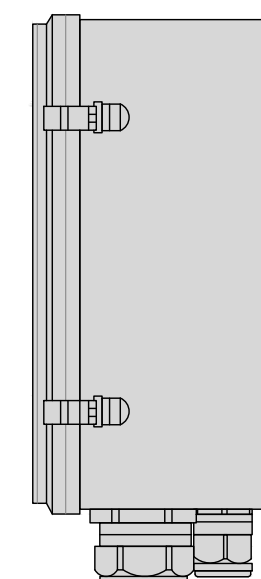
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2

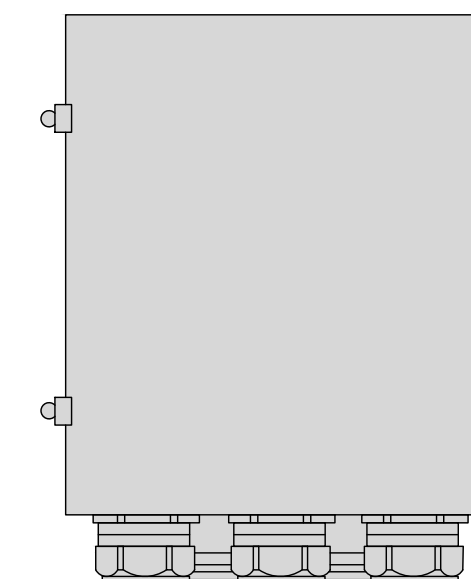
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



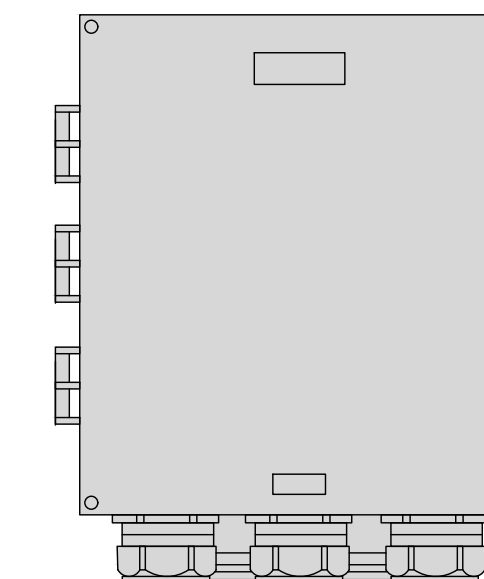
PLAN



SIDE



BACK



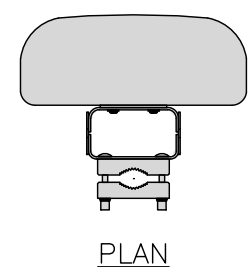
FRONT

SURGE SUPPRESSION DETAIL (OVP)

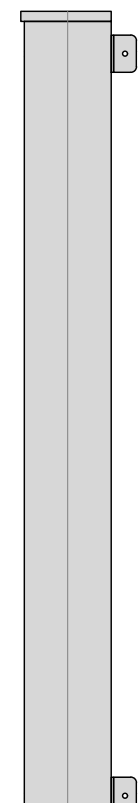
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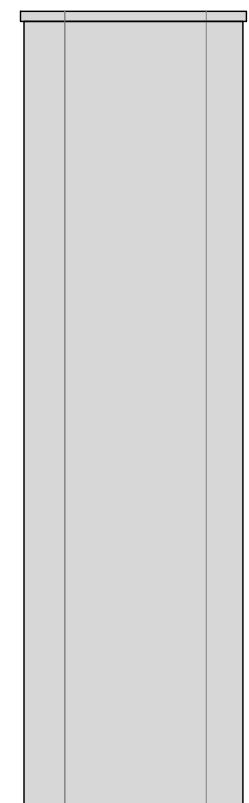
JMA MX08FRO665-21	
DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



PLAN



SIDE



FRONT

ANTENNA DETAIL

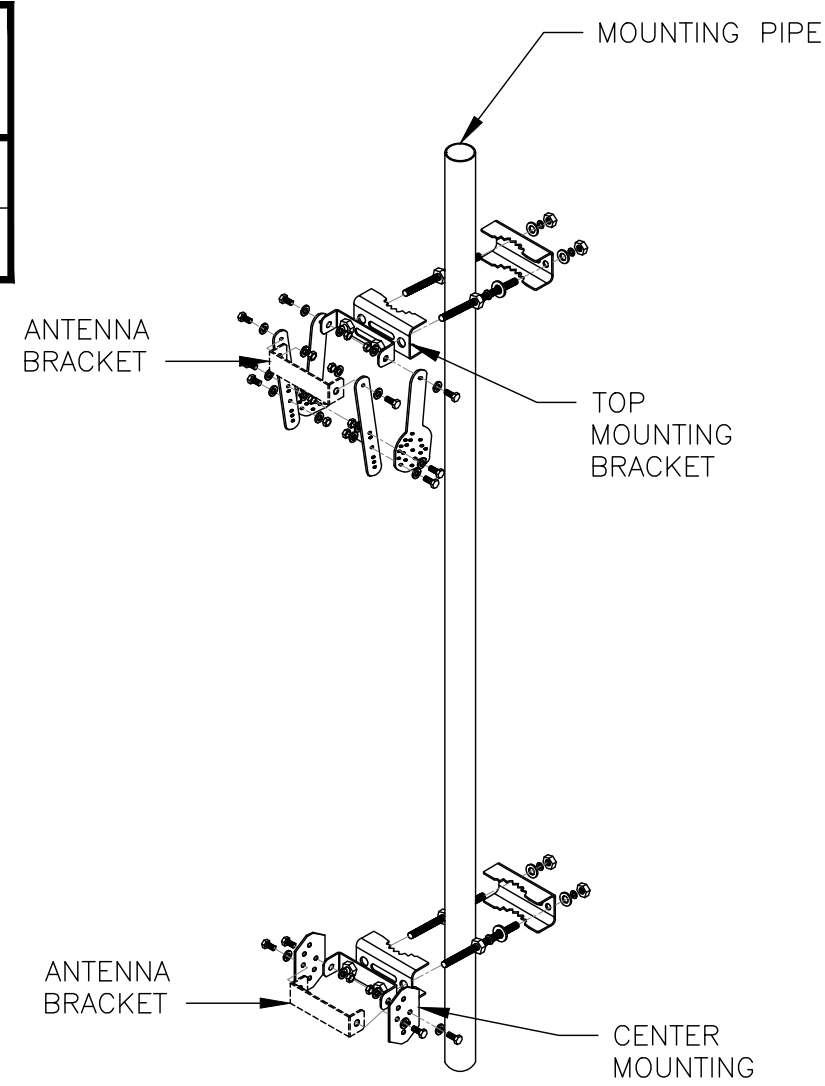
NO SCALE

4

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

NOTE:  
KIT #91900318: TOP AND BOTTOM BRACKETS  
FOR 4-, 6-, AND 8-FOOT ANTENNAS  
ANTENNA BRACKET NOT PART OF KIT

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



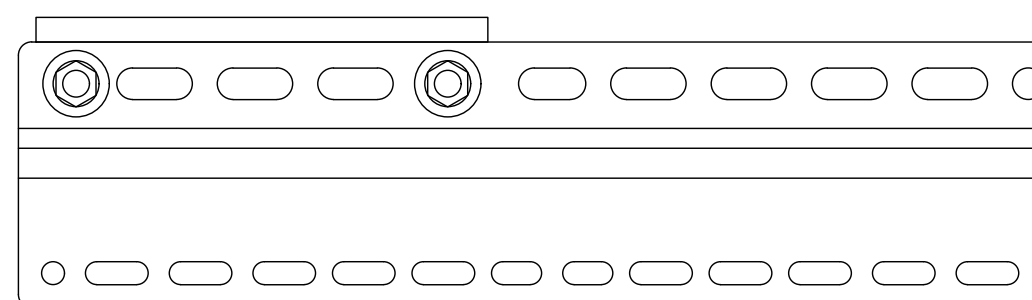
ANTENNA BRACKET DETAIL

NO SCALE

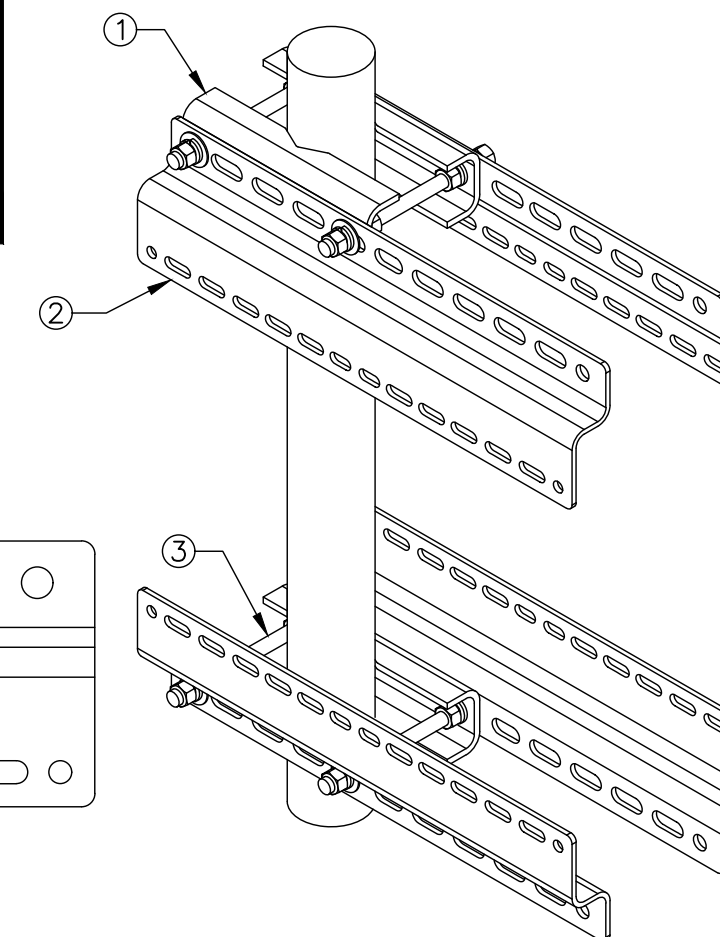
5

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



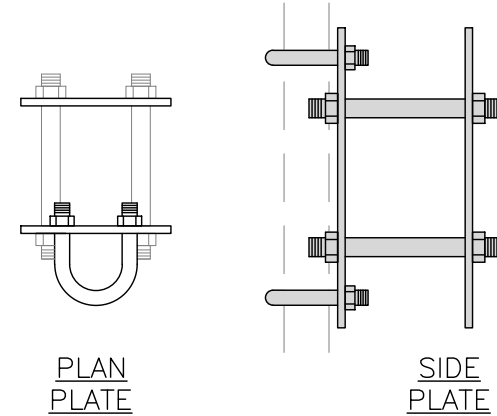
RRH MOUNT DETAIL

NO SCALE

6

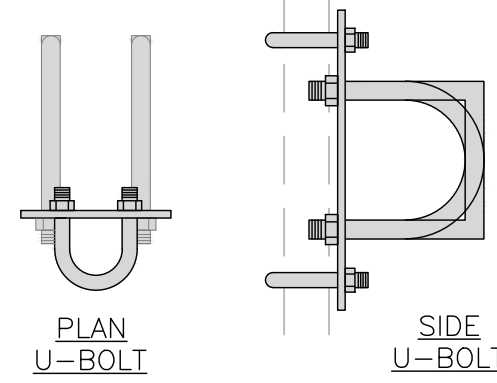
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

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



PLAN  
PLATE

SIDE  
PLATE



PLAN  
U-BOLT

SIDE  
U-BOLT

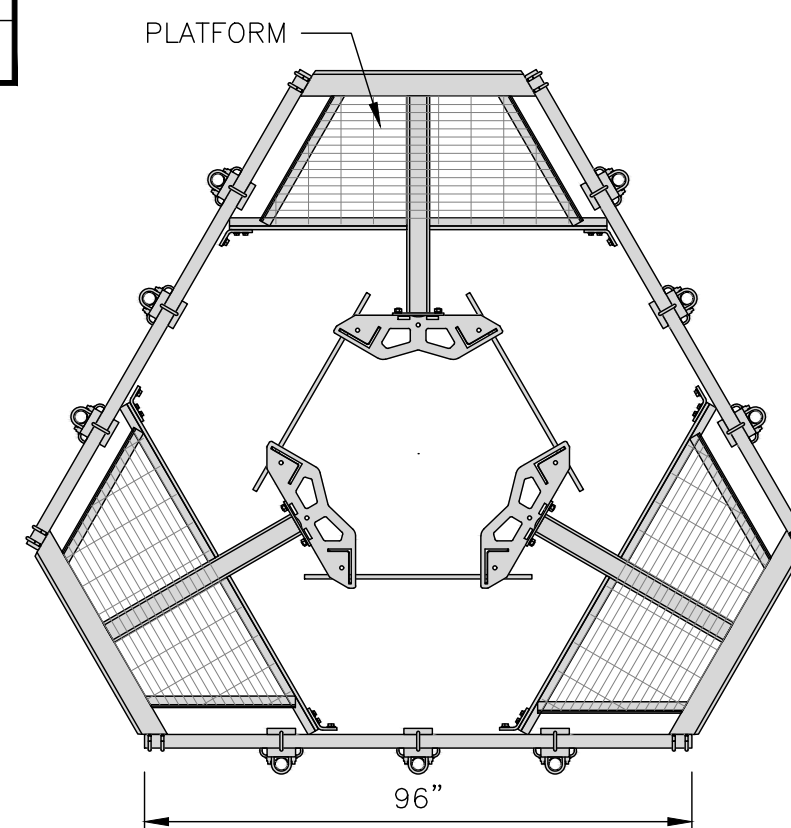
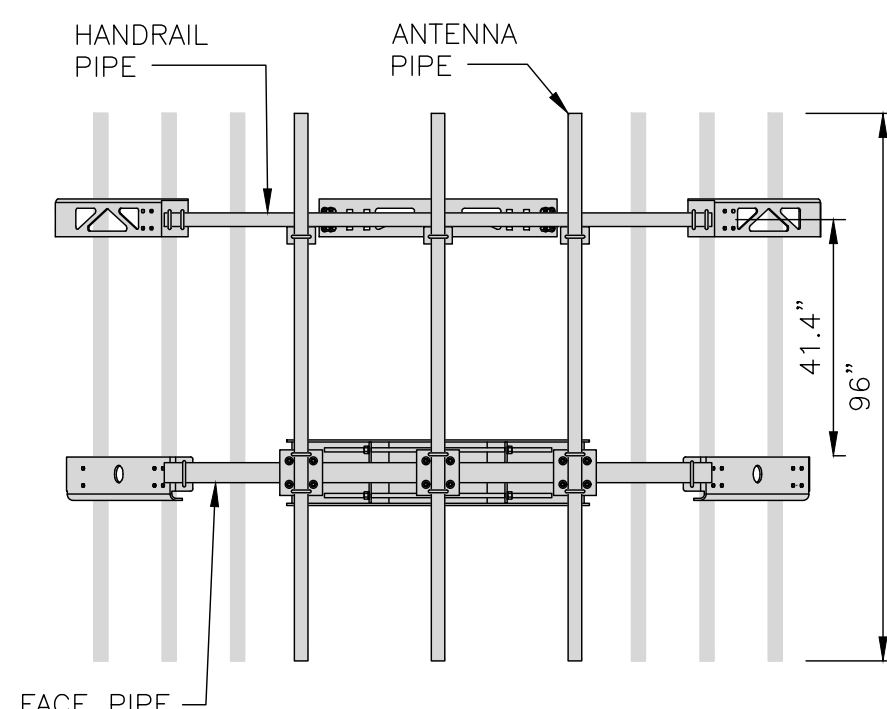
RRH/OVP MOUNT DETAIL

NO SCALE

7

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

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



ANTENNA PLATFORM DETAIL

NO SCALE

8

NOT USED

NO SCALE

9

**dish**  
wireless.

5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120

**NB+C**  
TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, L.L.C.  
6095 MARSHALEE DRIVE, SUITE 300  
ELKRIDGE, MD 21075  
(410) 712-7092



01/05/2022

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LICENSE #PEN.0028997

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DRAWN BY: CHECKED BY: APPROVED BY:

SN BRN TA

RFDS REV #: ---

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A&E PROJECT NUMBER  
828402

DISH Wireless L.L.C.  
PROJECT INFORMATION

BOBOS00035A  
720 THOMPSON RD  
THOMPSON, CT 06277

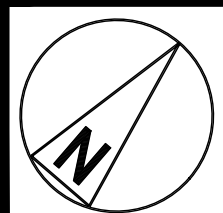
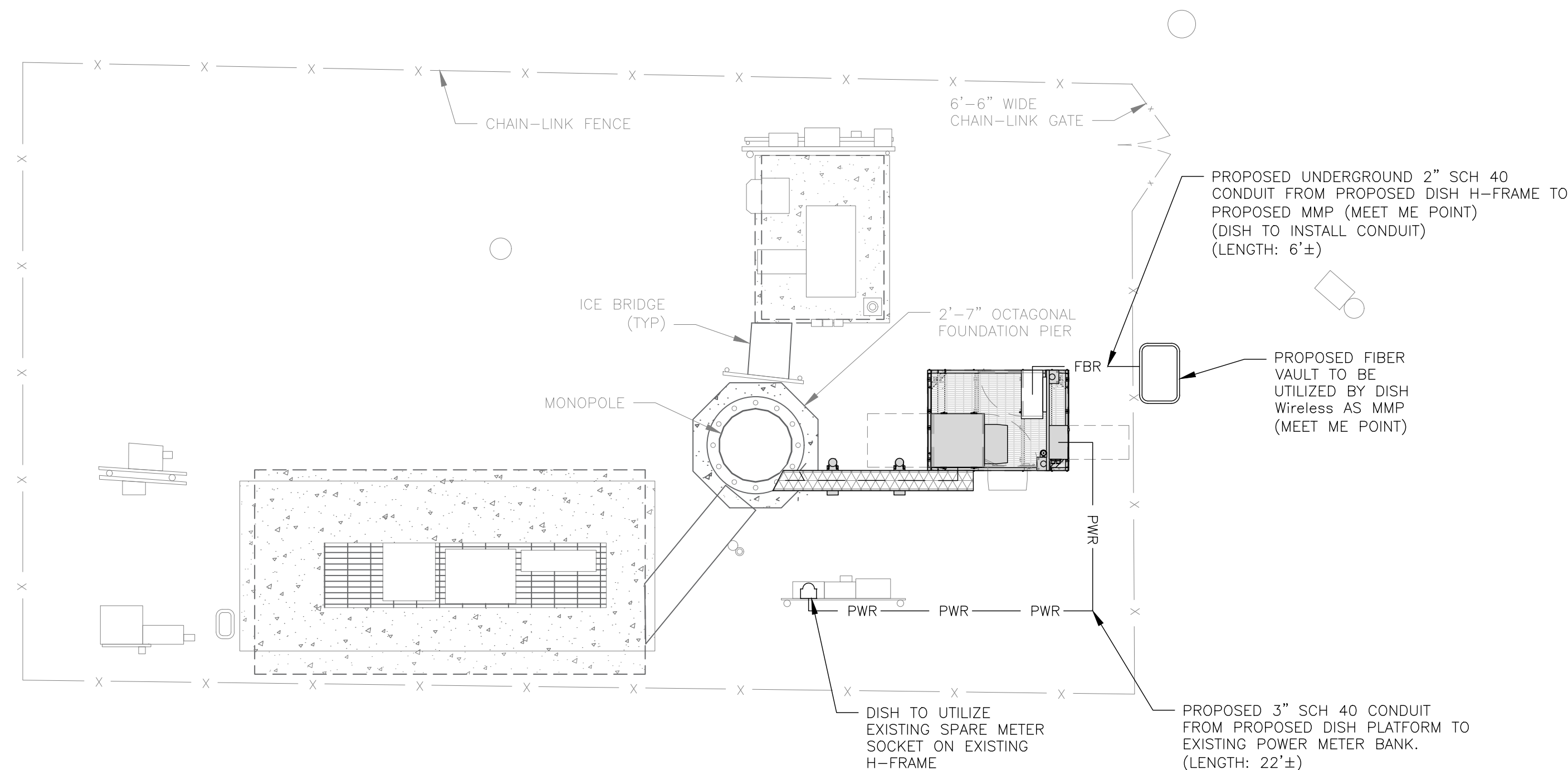
SHEET TITLE  
EQUIPMENT DETAILS

SHEET NUMBER

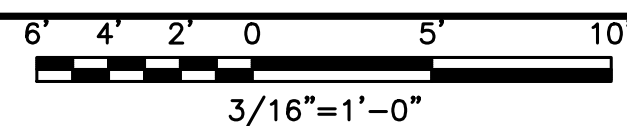
**A-6**

**EASEMENT RIGHTS**

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 PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS MATERIALLY INCONSISTENT WITH THE "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 AND SAID VARIANCE IS NOT NOTED ON CDS, PLEASE NOTIFY CROWN CASTLE REAL ESTATE AS FURTHER COORDINATION MAY BE NEEDED.



UTILITY ROUTE PLAN



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



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



**NB+C ENGINEERING SERVICES, LLC.**  
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ELKRIDGE, MD 21075  
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01/05/2022

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SN BRN TA

RFDS REV #: ---

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A&E PROJECT NUMBER  
**828402**

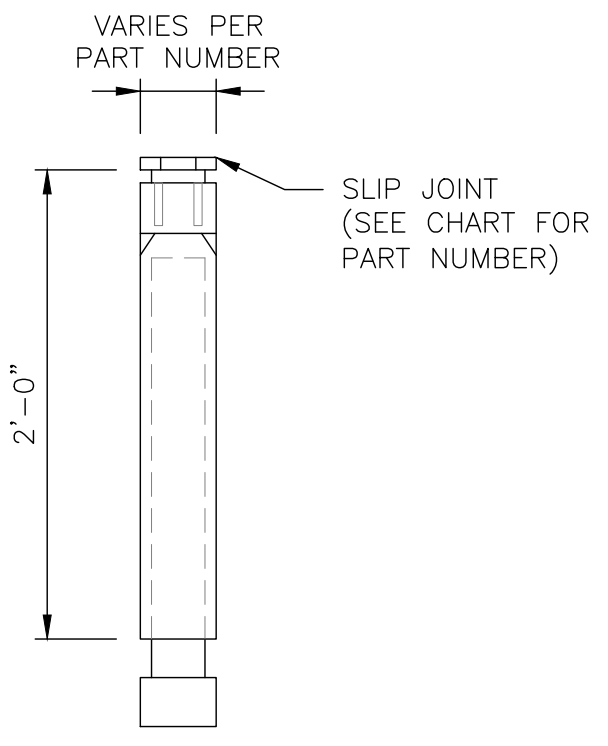
DISH Wireless L.L.C.  
PROJECT INFORMATION  
**BOBOS00035A**  
720 THOMPSON RD  
THOMPSON, CT 06277

SHEET TITLE  
**ELECTRICAL/FIBER ROUTE  
PLAN AND NOTES**

SHEET NUMBER  
**E-1**

**CARLON EXPANSION FITTINGS**

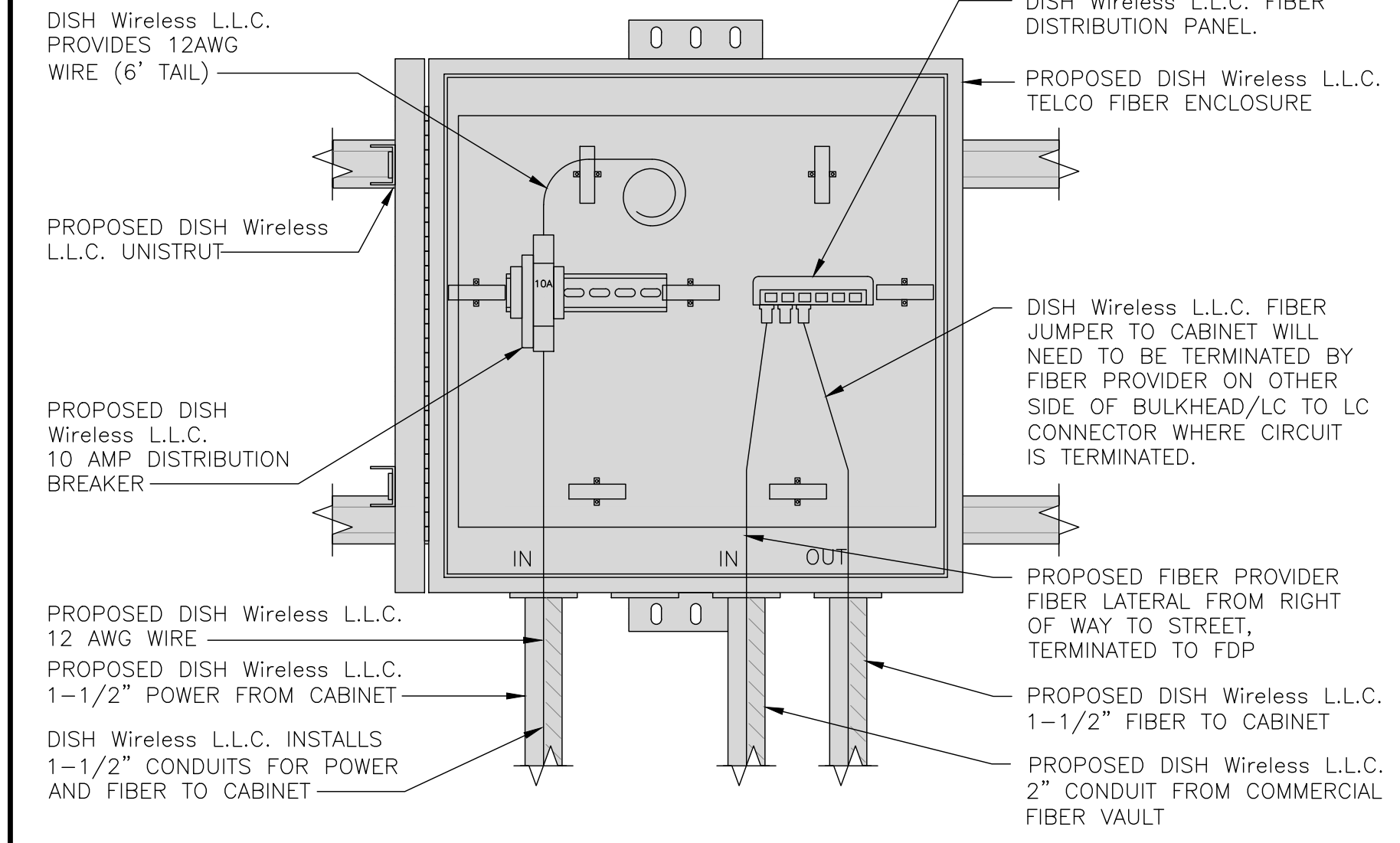
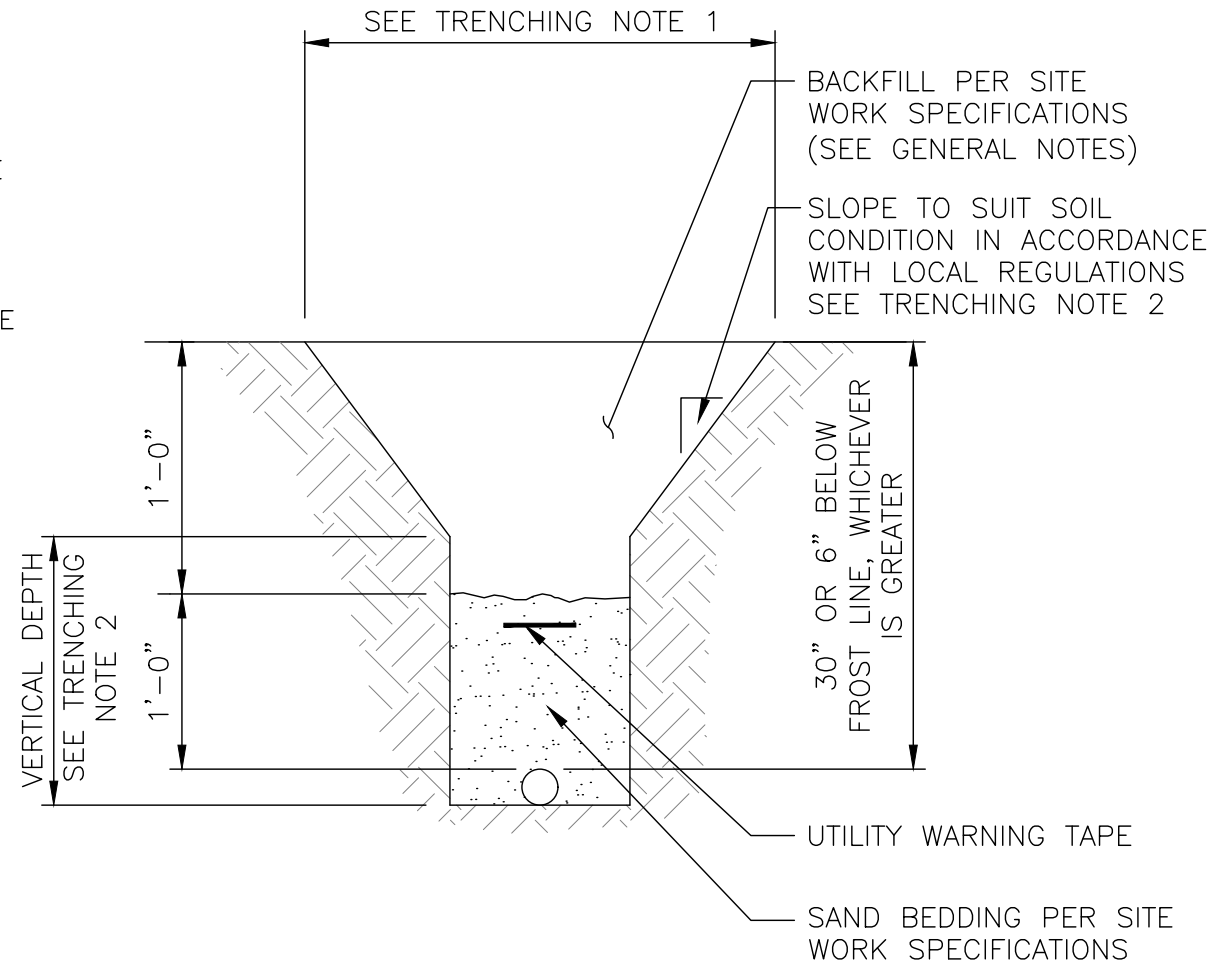
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"
E945M	E945MX	3 1/2"	5	8"
E945N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

**TRENCHING NOTES**

- 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.
- TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
- 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.



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



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EXPANSION JOINT DETAIL

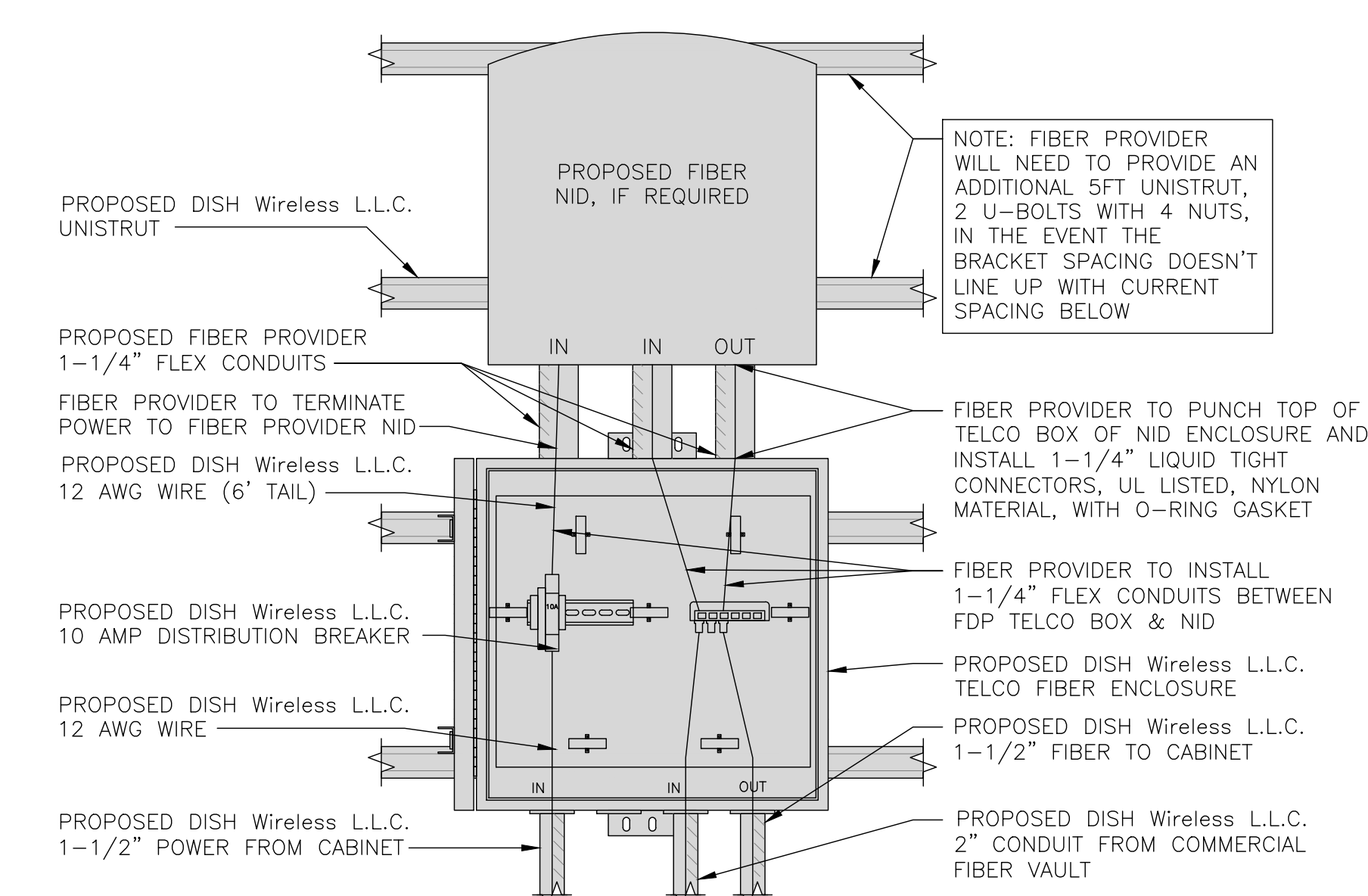
NO SCALE 1

TYPICAL UNDERGROUND TRENCH DETAIL

NO SCALE 2

DARK TELCO BOX – INTERIOR WIRING LAYOUT

NO SCALE 3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL)

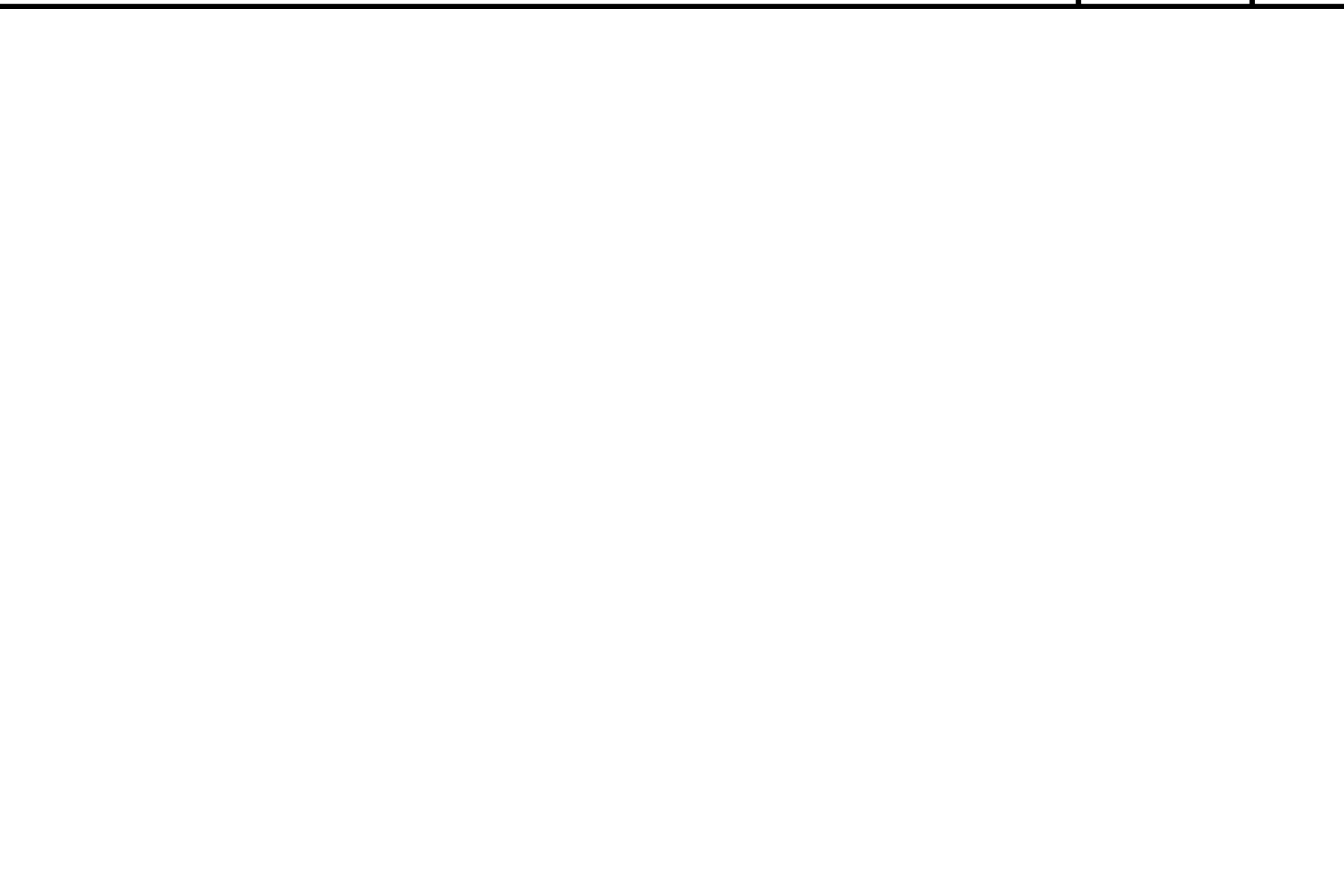
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NOT USED

NO SCALE 5

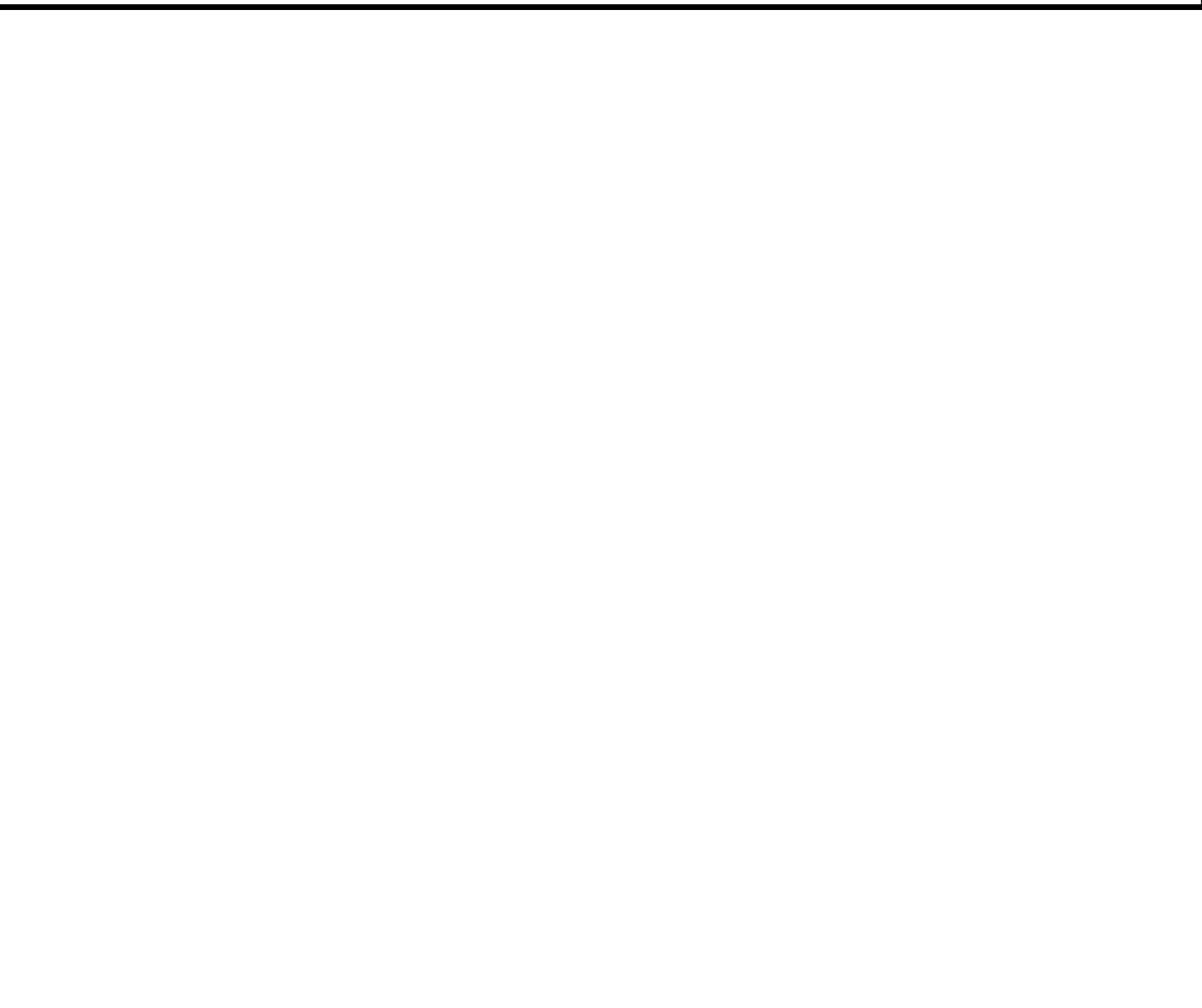
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NO SCALE 6



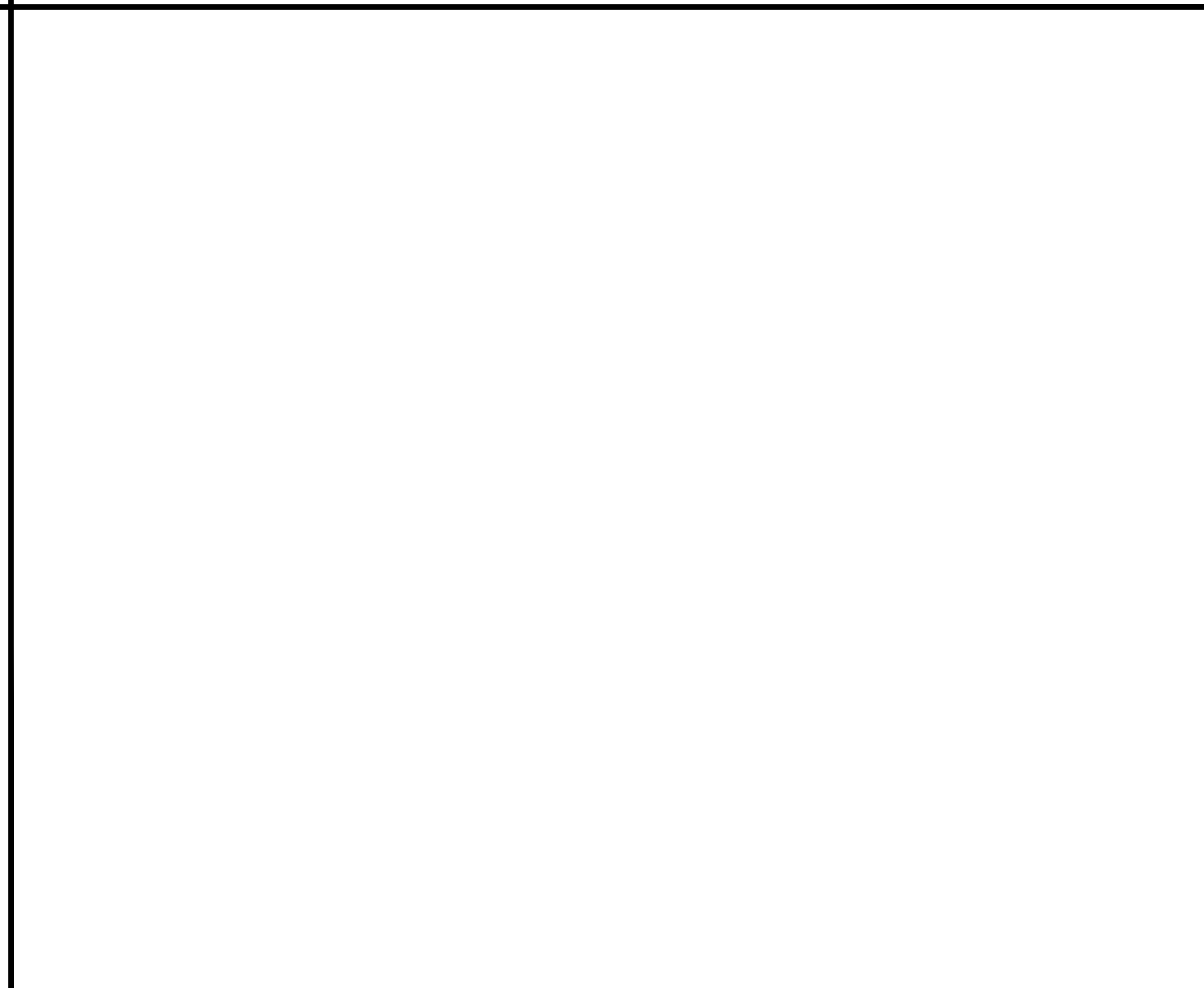
NOT USED

NO SCALE 7



NOT USED

NO SCALE 8



NOT USED

NO SCALE 9



01/05/2022  
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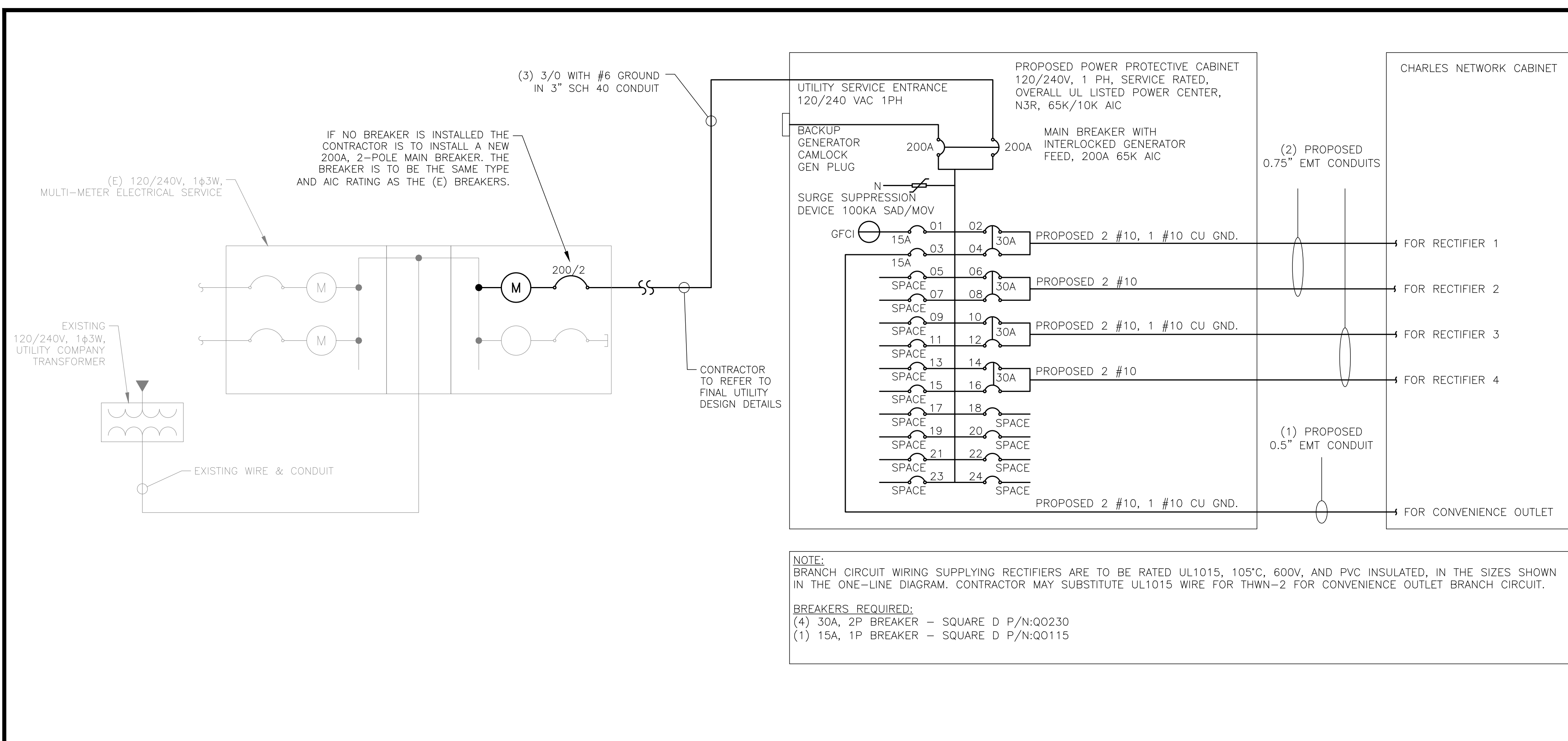
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DISH Wireless L.L.C.  
PROJECT INFORMATION  
**BOBOS00035A**  
720 THOMPSON RD  
THOMPSON, CT 06277

SHEET TITLE  
**ELECTRICAL DETAILS**

SHEET NUMBER  
**E-2**





PPC ONE-LINE DIAGRAM

NO SCALE

1

**PROPOSED CHARLES PANEL SCHEDULE**

LOAD SERVED	VOLT AMPS (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS)		LOAD SERVED	
	L1	L2						L1	L2		
PPC GFCI OUTLET	180	180	15A	1	A	2	30A	2880	2880	ABB/GE INFINITY RECTIFIER 1	
CHARLES GFCI OUTLET			15A	3	B	4					
-SPACE-				5	A	6	30A	2880	2880	ABB/GE INFINITY RECTIFIER 2	
-SPACE-				7	B	8					
-SPACE-				9	A	10	30A	2880	2880	ABB/GE INFINITY RECTIFIER 3	
-SPACE-				11	B	12					
-SPACE-				13	A	14	30A	2880	2880	ABB/GE INFINITY RECTIFIER 4	
-SPACE-				15	B	16					
-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						
				98	98						
				98							
				123							

PANEL SCHEDULE

NO SCALE

2

NOT USED

NO SCALE

3

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)(g) 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.



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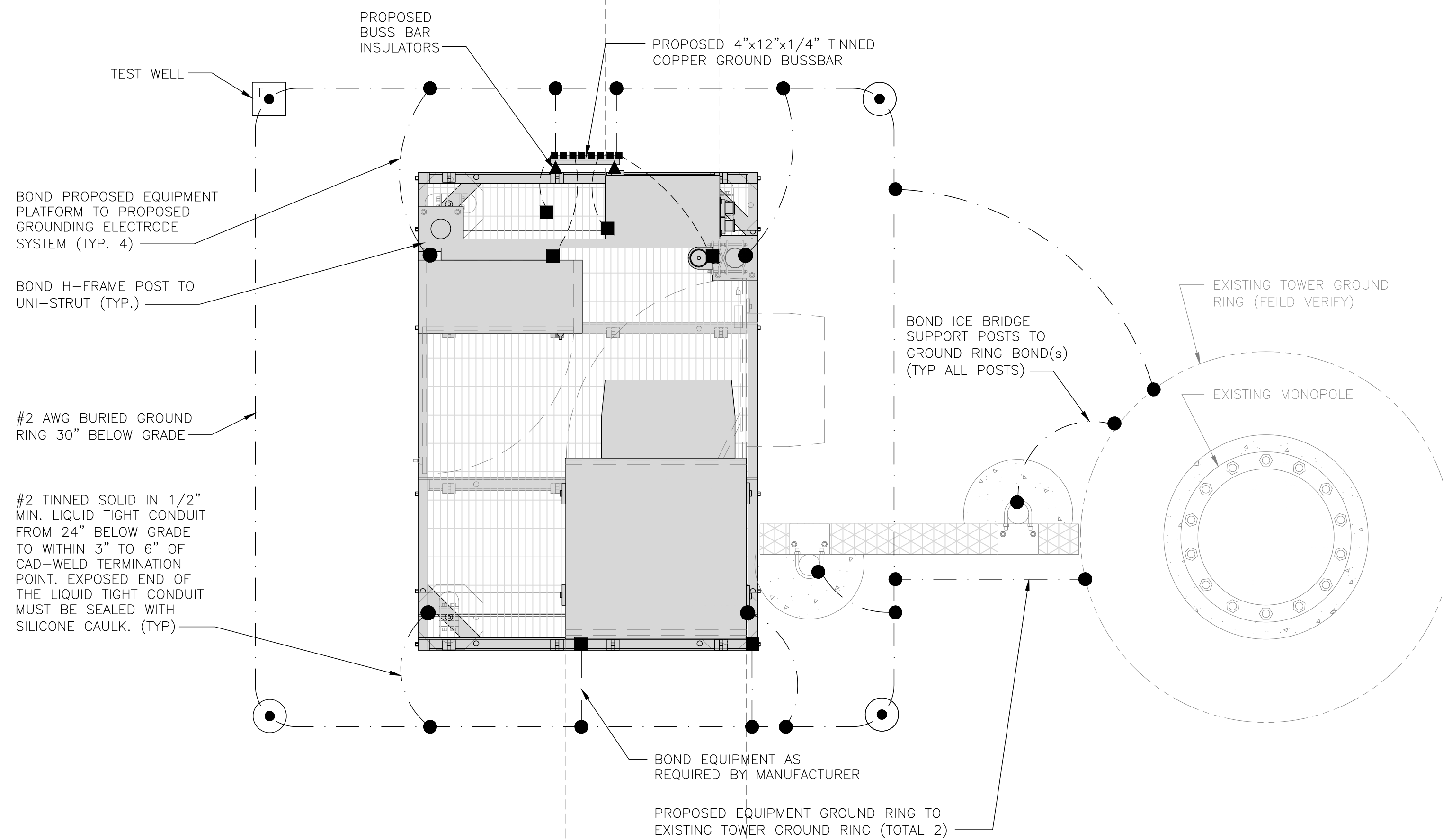
A&E PROJECT NUMBER  
**828402**

DISH Wireless L.L.C.  
PROJECT INFORMATION  
**BOBOS00035A**  
720 THOMPSON RD  
THOMPSON, CT 06277

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

SHEET NUMBER

**E-3**

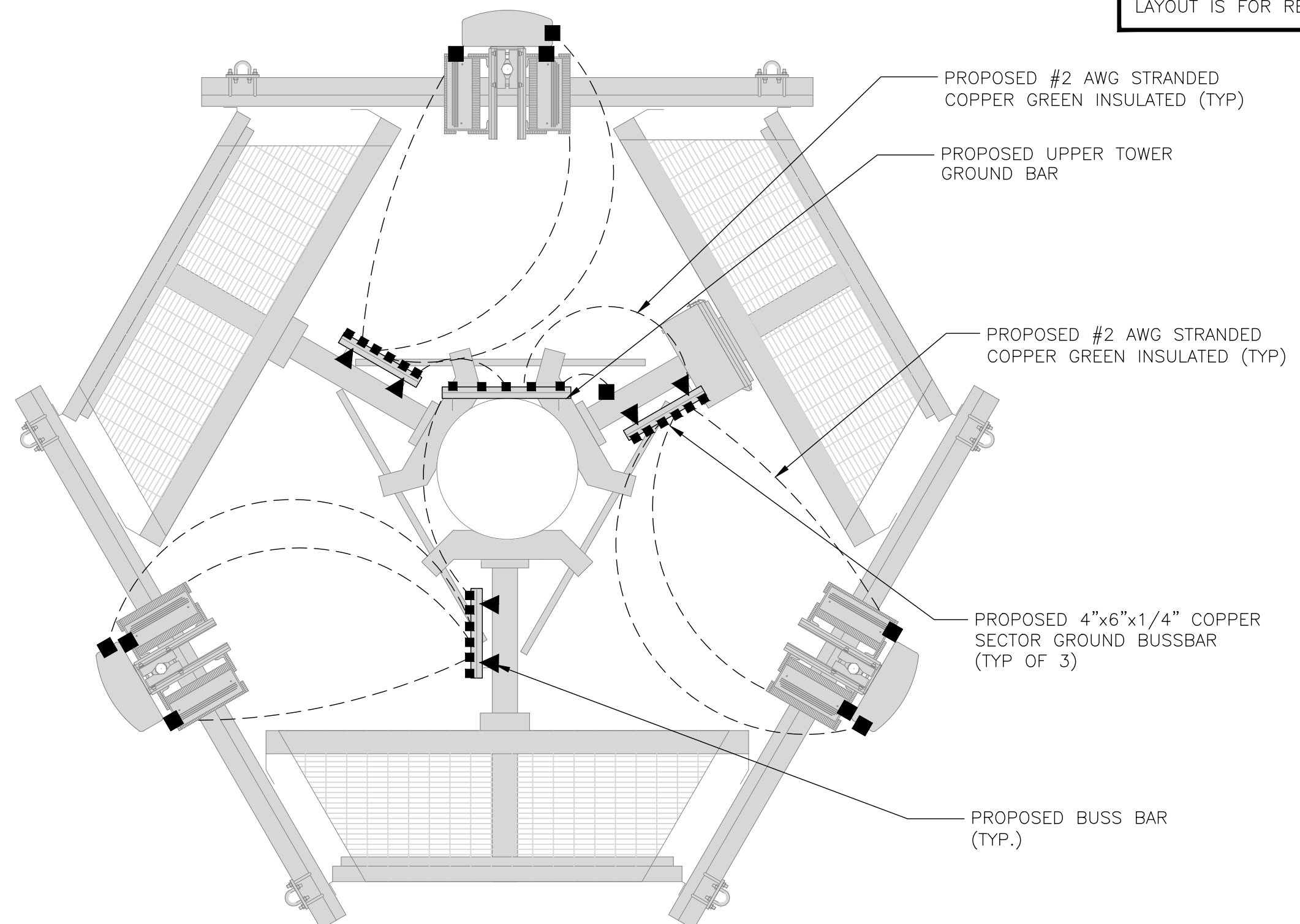


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1

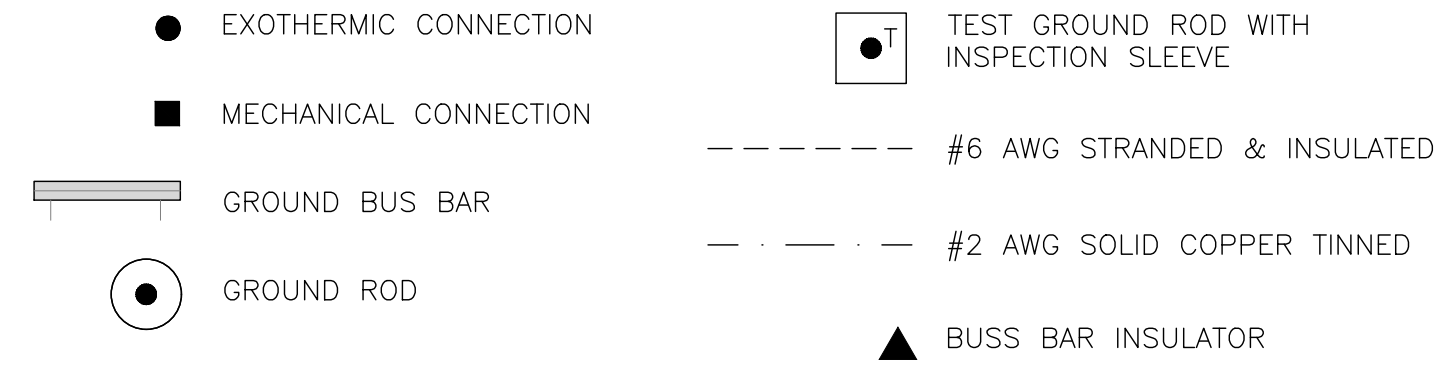
NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2



GROUNDING LEGEND

- GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
- 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.
- 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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LITTLETON, CO 80120



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6095 MARSHALEE DRIVE, SUITE 300  
ELKRIDGE, MD 21075  
(410) 712-7092



01/05/2022

KRUPAKARAN KOLANDAIVELU, P.E.  
STATE OF CONNECTICUT  
PROFESSIONAL ENGINEER  
LICENSE #PEN.0028997

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CONSTRUCTION DOCUMENTS

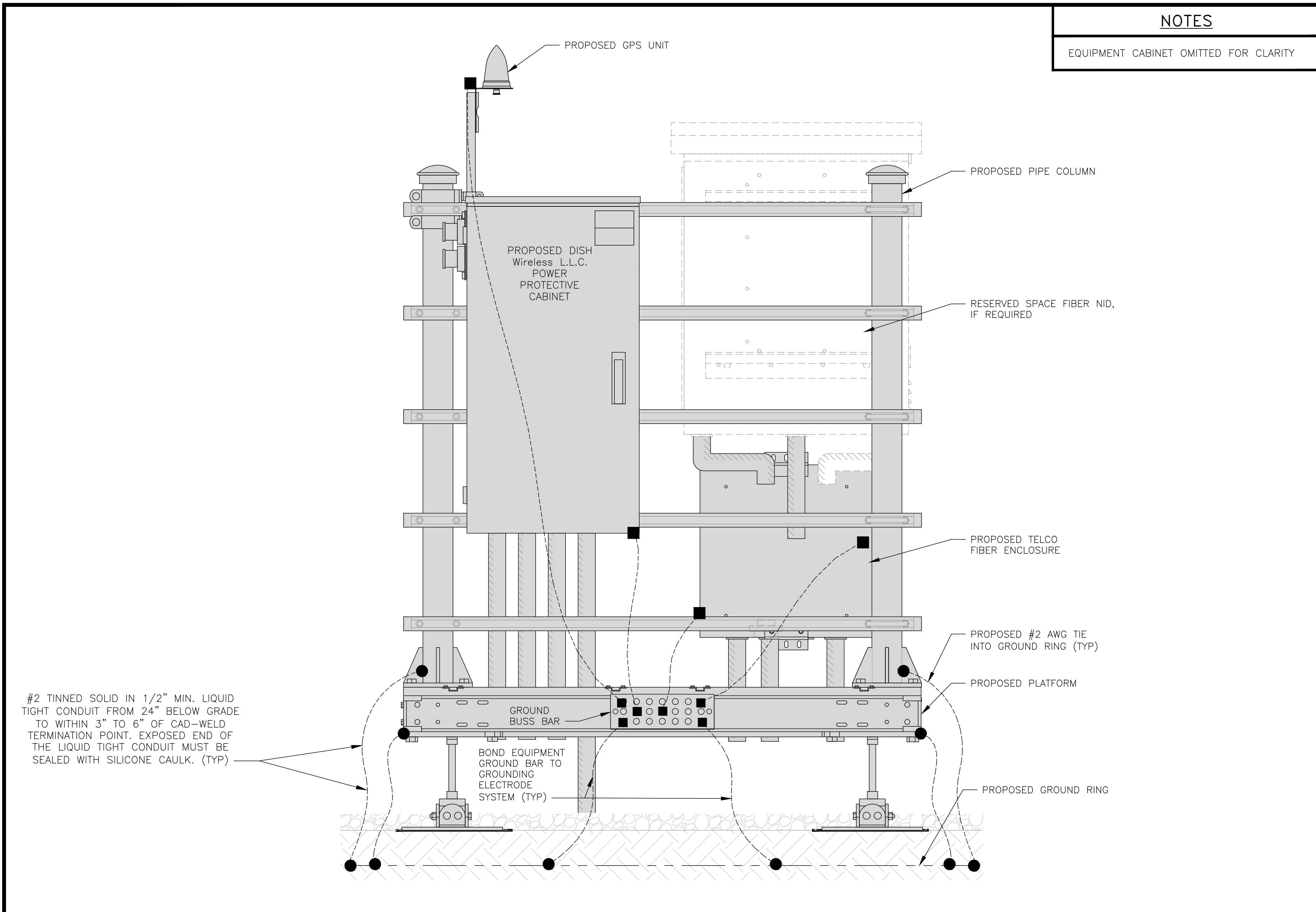
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THOMPSON, CT 06277

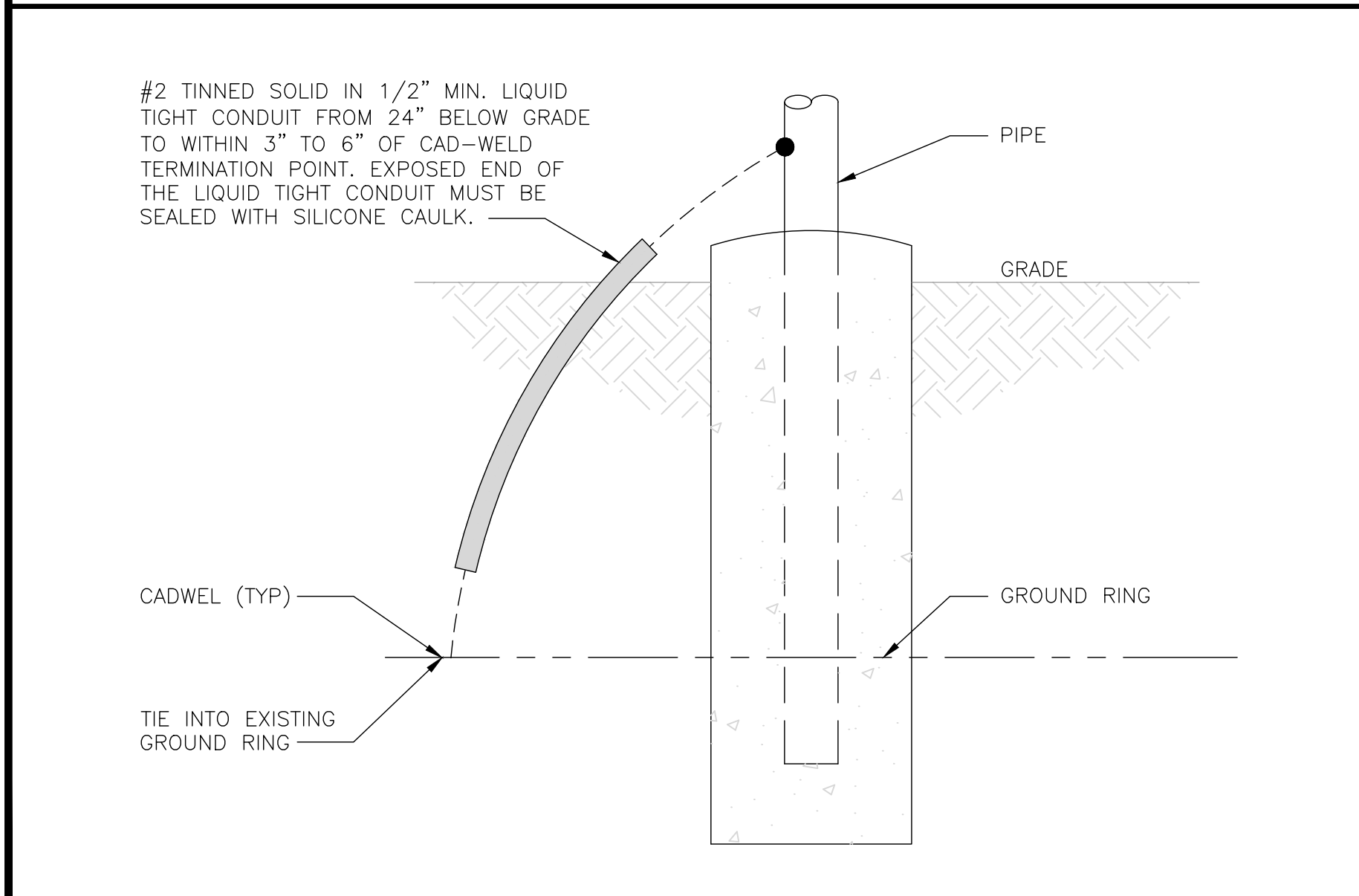
SHEET TITLE  
**GROUNDING PLANS AND NOTES**

SHEET NUMBER  
**G-1**

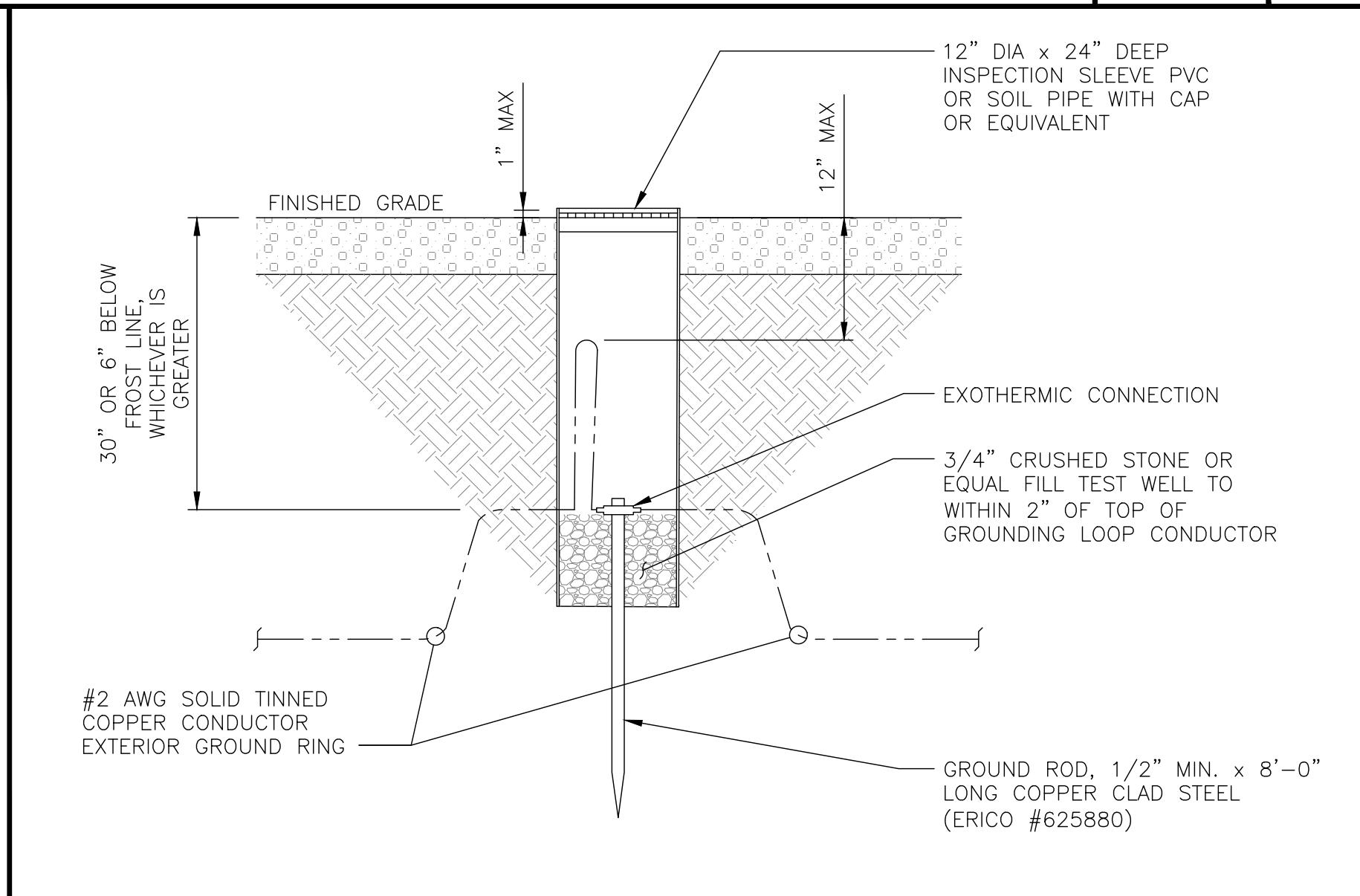


**NOTES**  
EQUIPMENT CABINET OMITTED FOR CLARITY

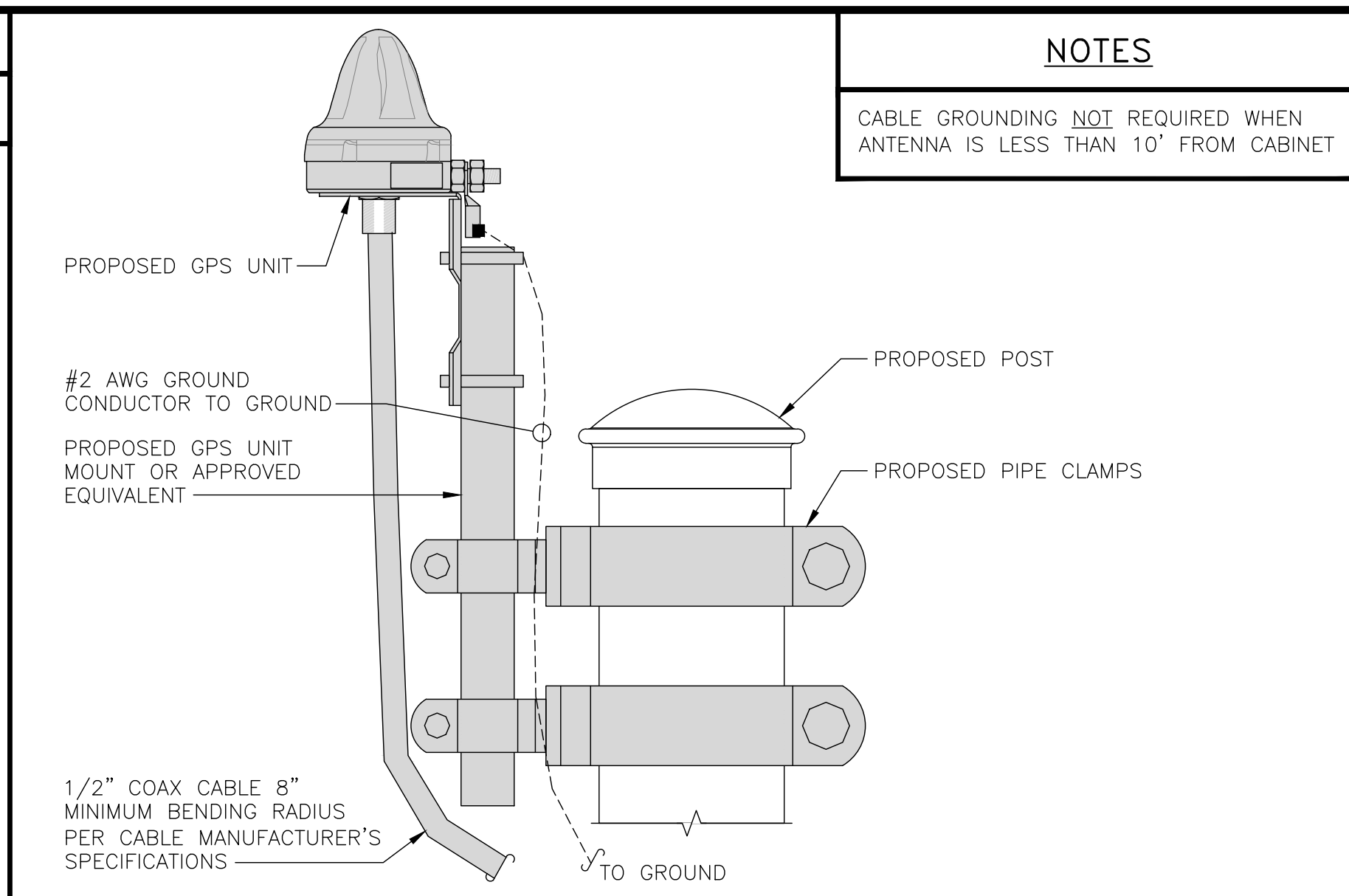
**H-FRAME GROUNDING DETAIL** NO SCALE **1**



**TRANSITIONING GROUND DETAIL** NO SCALE **4**

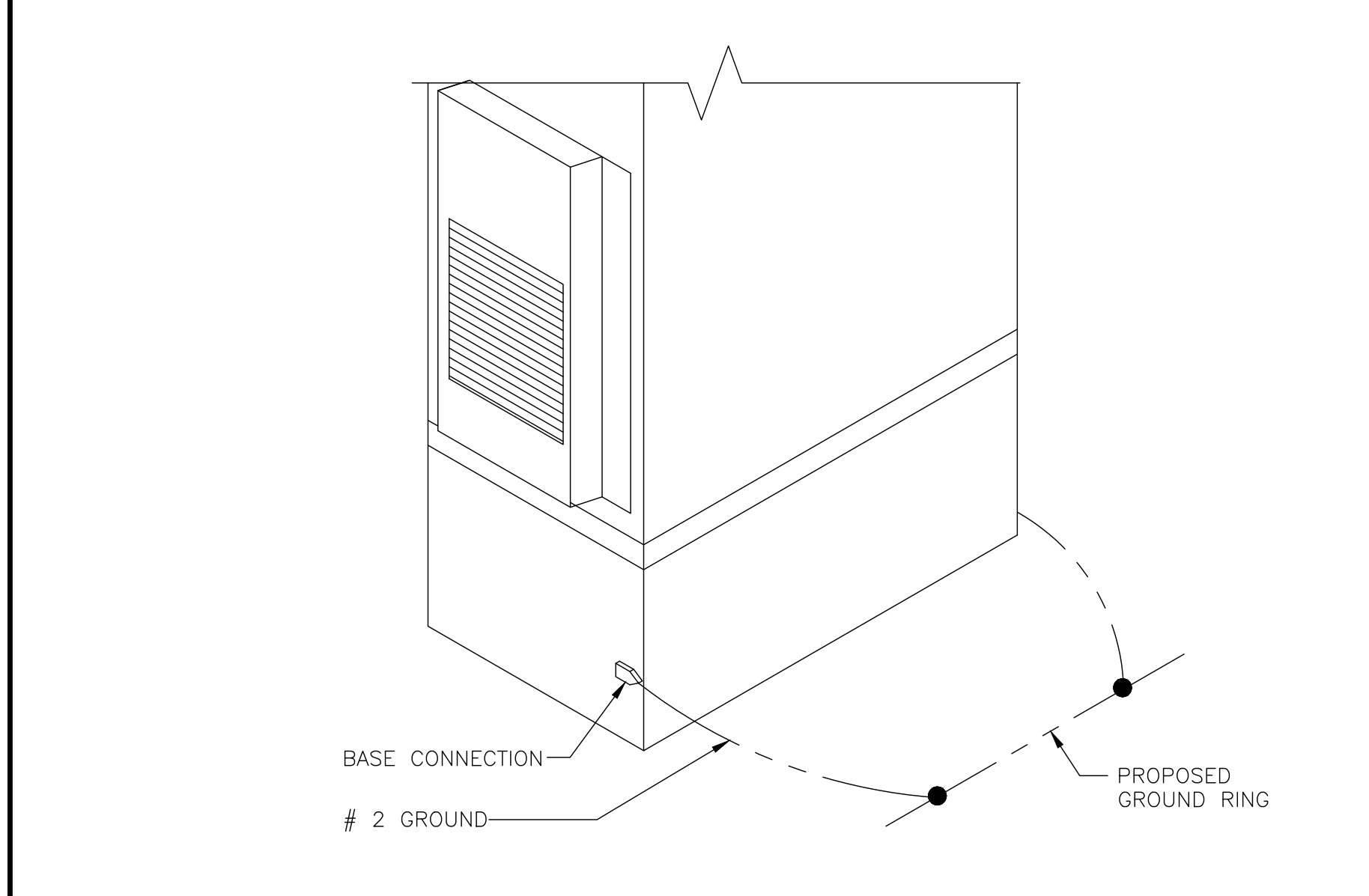


**TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE** NO SCALE **5**

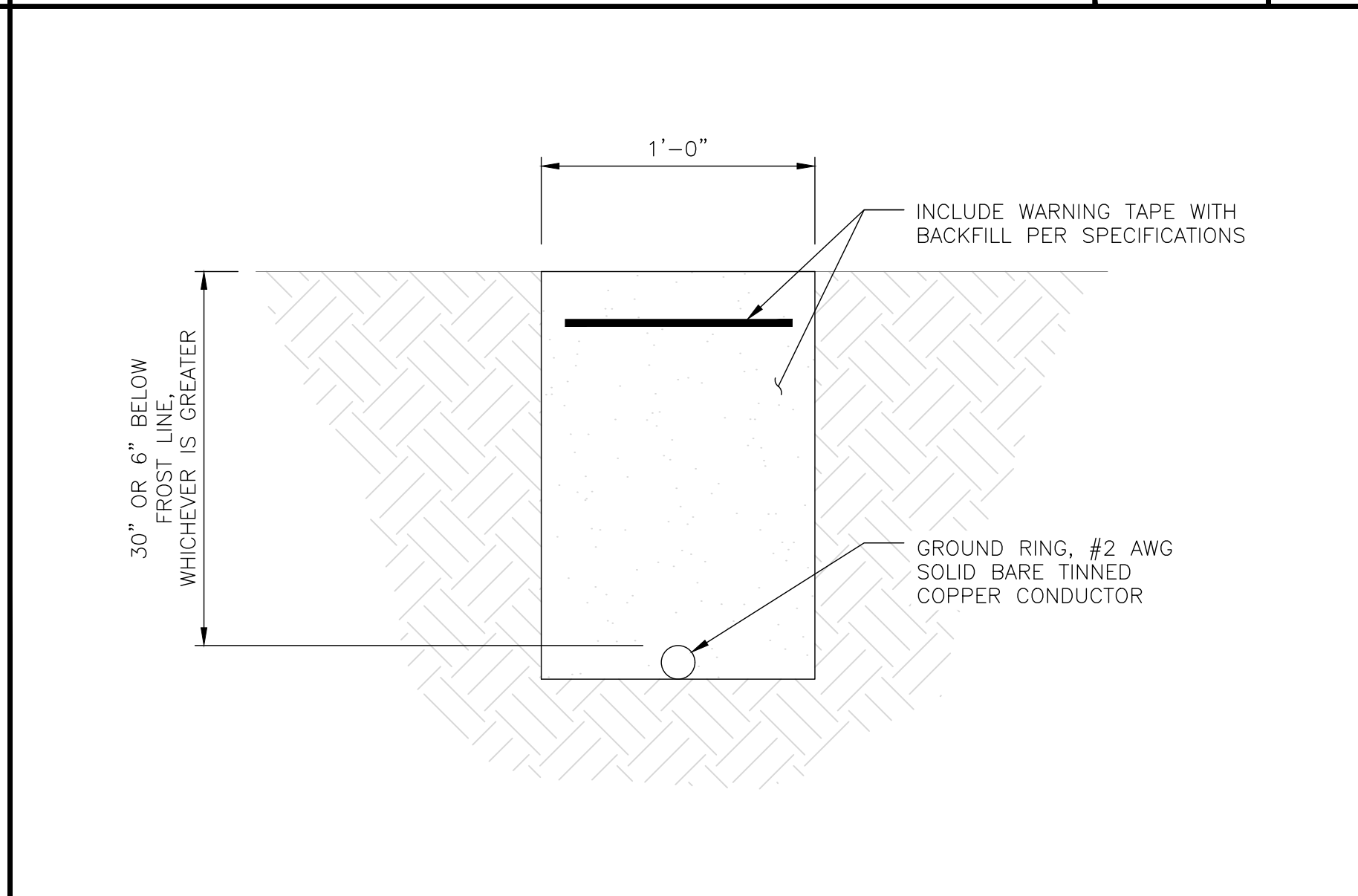


**NOTES**  
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET

**TYPICAL GPS UNIT GROUNDING** NO SCALE **2**



**OUTDOOR CABINET GROUNDING** NO SCALE **3**



**TYPICAL GROUND RING TRENCH** NO SCALE **6**

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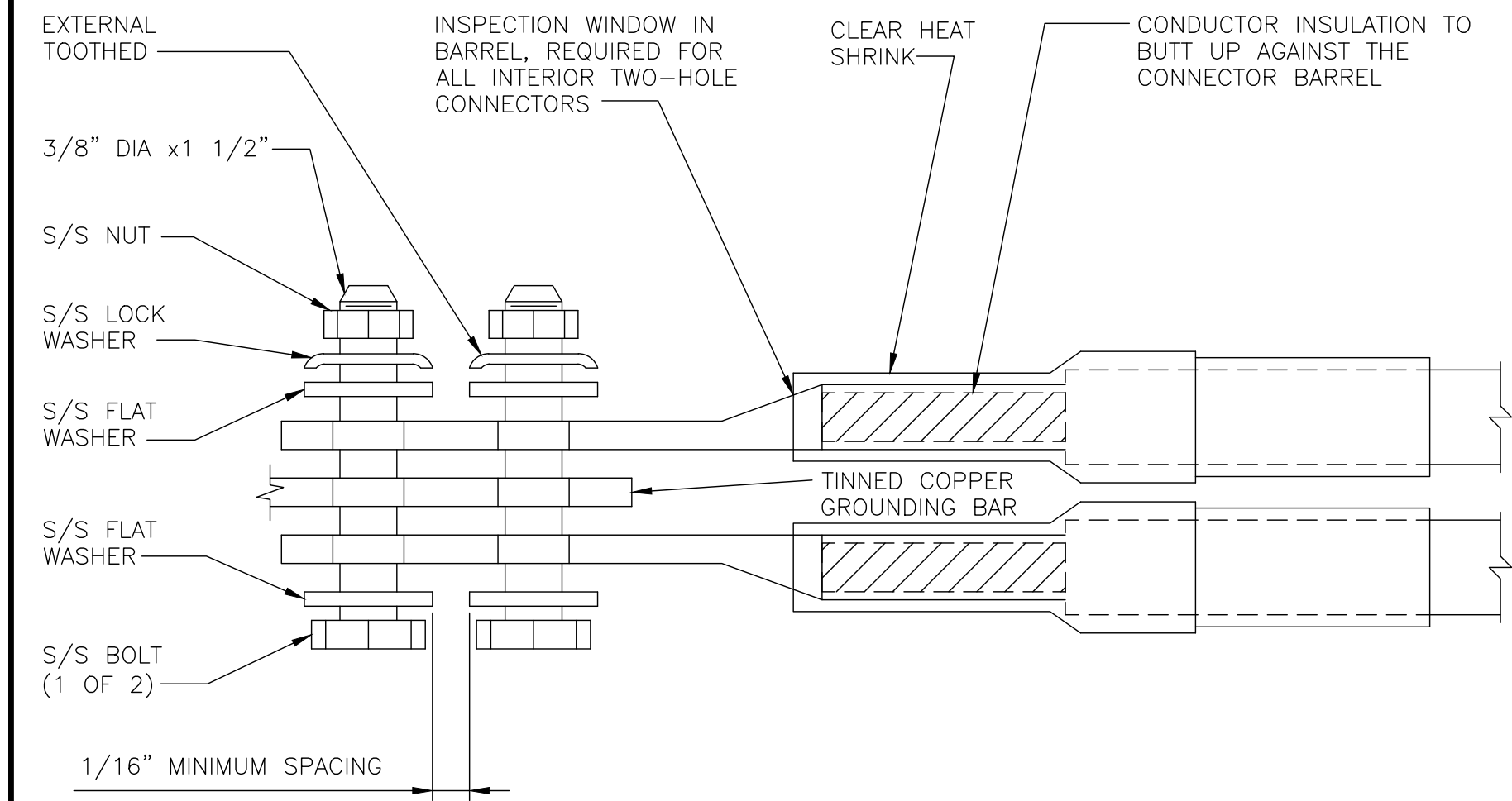
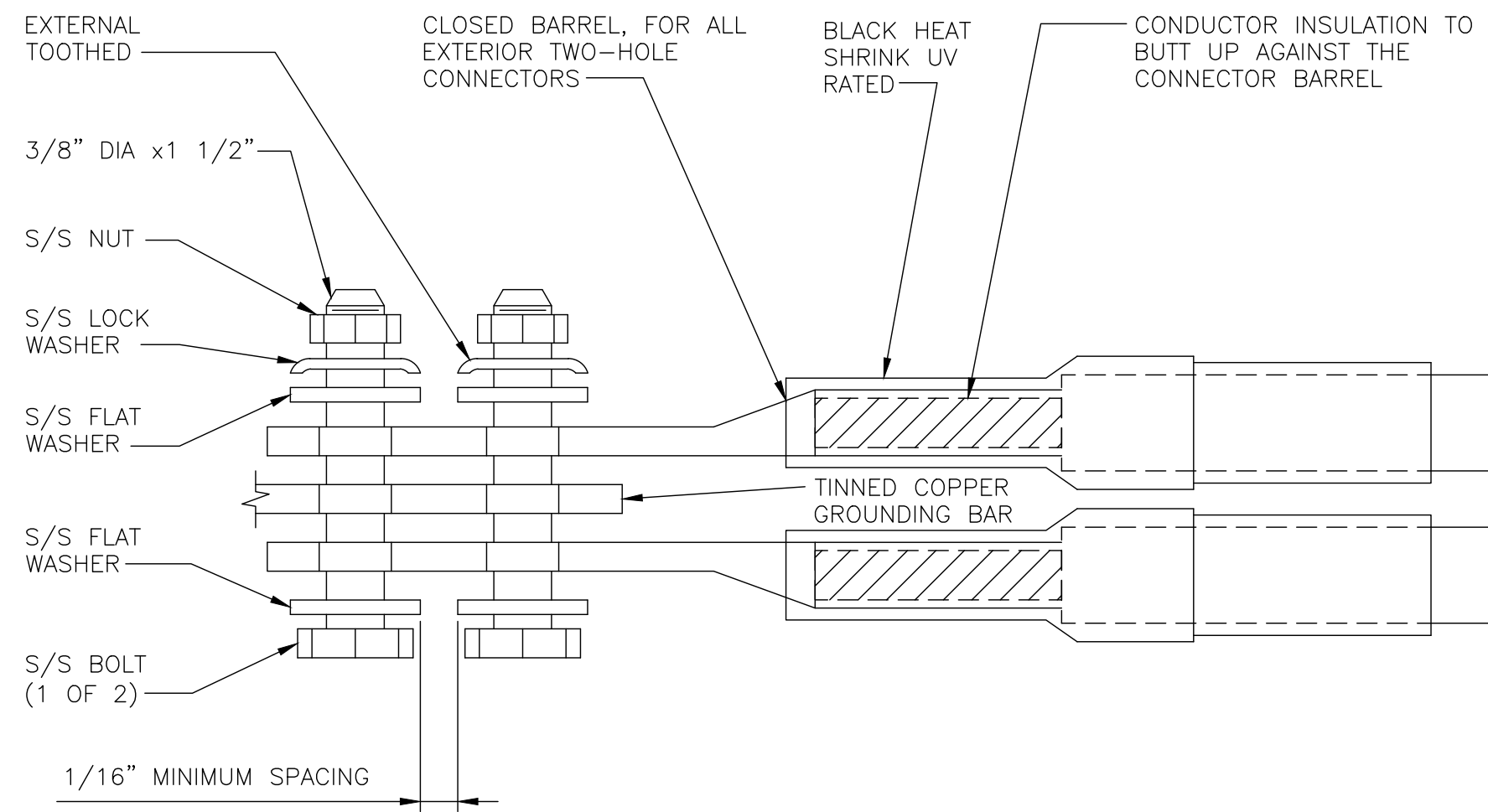
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THOMPSON, CT 06277

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

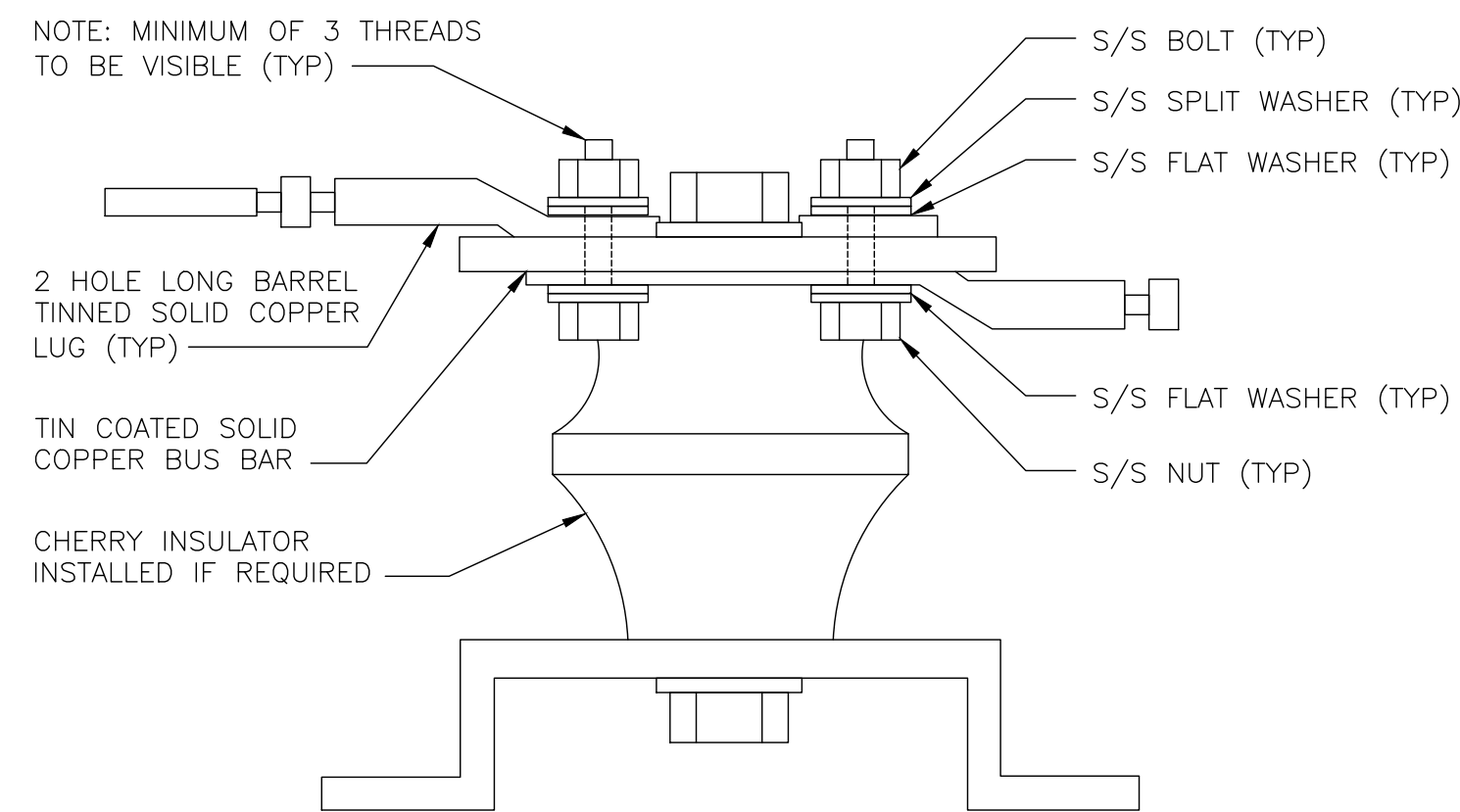
NO SCALE

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

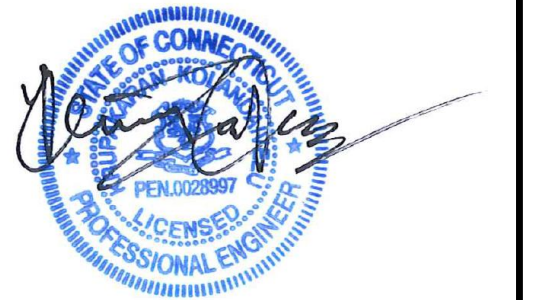
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GROUNDING DETAILS

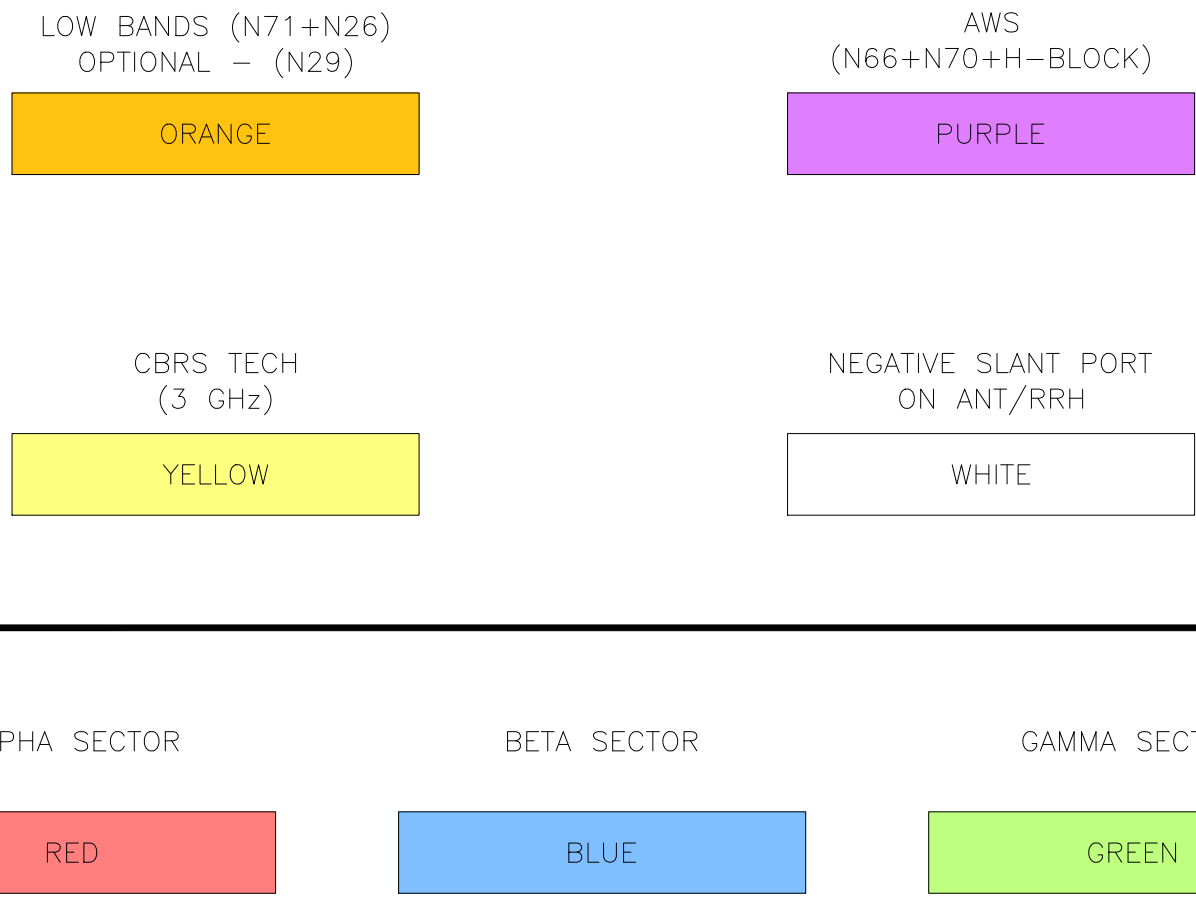
SHEET NUMBER

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	
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	
HYBRID/DISCREET CABLES		EXAMPLE 1	EXAMPLE 2	EXAMPLE 3	CANISTER COAX #1 (ALPHA)		CANISTER COAX #2 (ALPHA)						
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.		RED BLUE GREEN ORANGE PURPLE	RED BLUE GREEN YELLOW	RED RED	RED RED								
FIBER JUMPERS TO RRHS		LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH				
LOW-BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.		RED ORANGE	RED PURPLE	BLUE ORANGE	BLUE PURPLE	GREEN ORANGE	GREEN PURPLE						
POWER CABLES TO RRHS		LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH	LOW BAND RRH	MID BAND RRH				
LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY		RED ORANGE	RED PURPLE	BLUE ORANGE	BLUE PURPLE	GREEN ORANGE	GREEN PURPLE						
RET MOTORS AT ANTENNAS		ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND	ANTENNA 1 MID BAND	ANTENNA 1 LOW BAND				
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.		IN RED PURPLE	IN RED ORANGE	IN BLUE PURPLE	IN BLUE ORANGE	IN GREEN PURPLE	IN GREEN ORANGE						
MICROWAVE RADIO LINKS		FORWARD AZIMUTH OF 0-120 DEGREES		FORWARD AZIMUTH OF 120-240 DEGREES		FORWARD AZIMUTH OF 240-359 DEGREES							
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.		PRIMARY WHITE RED WHITE	SECONDARY WHITE RED WHITE	PRIMARY WHITE BLUE WHITE	SECONDARY WHITE BLUE WHITE	PRIMARY WHITE GREEN WHITE	SECONDARY WHITE GREEN WHITE						

RF CABLE COLOR CODES

1



COLOR IDENTIFIER

2

NOT USED

3

NOT USED

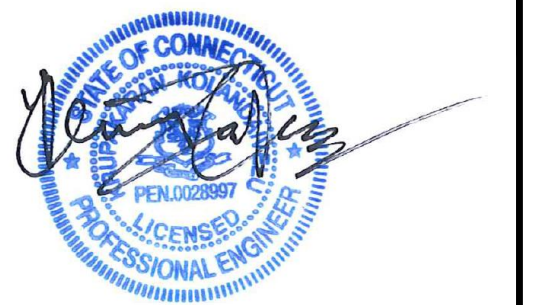
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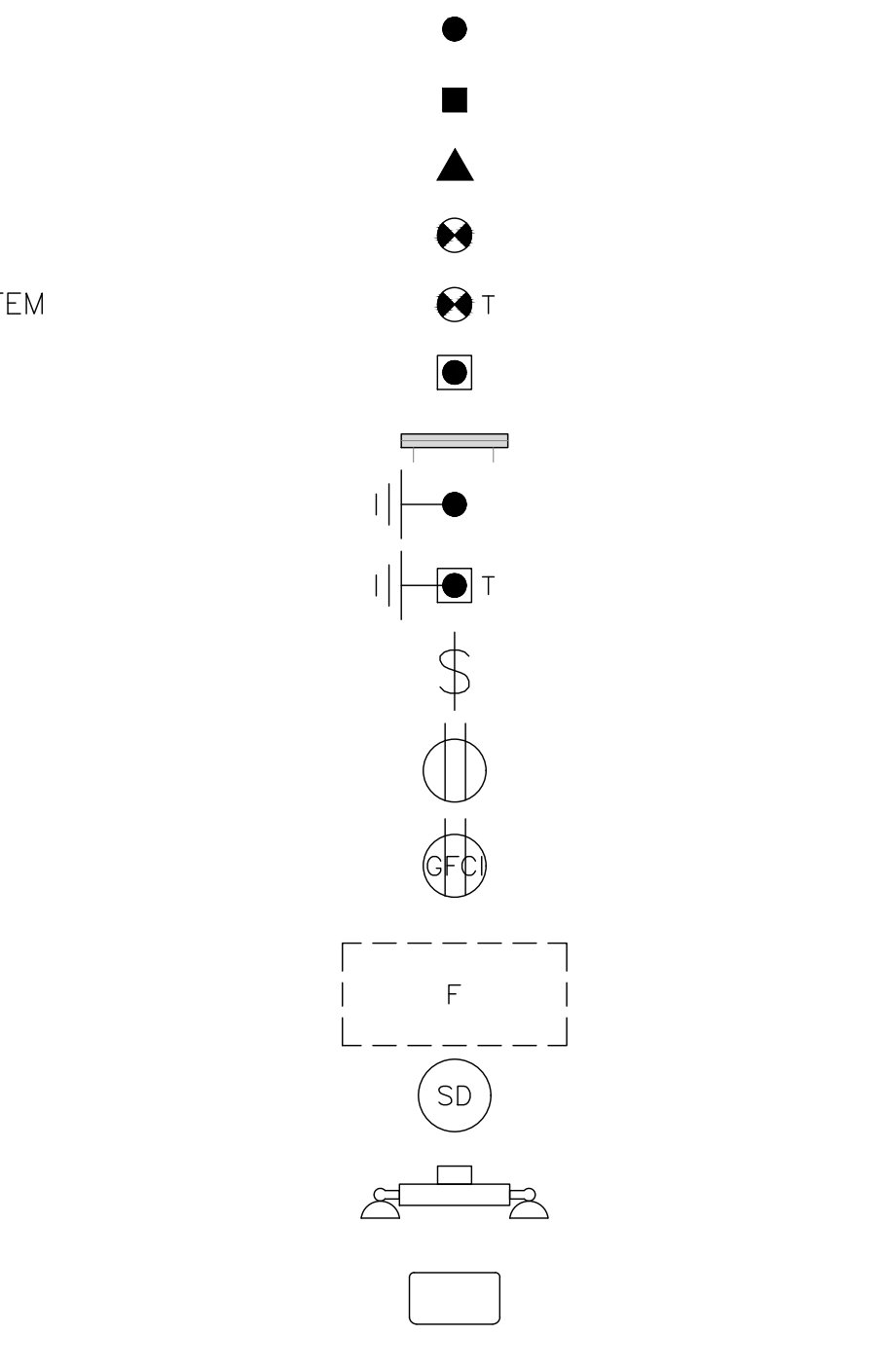
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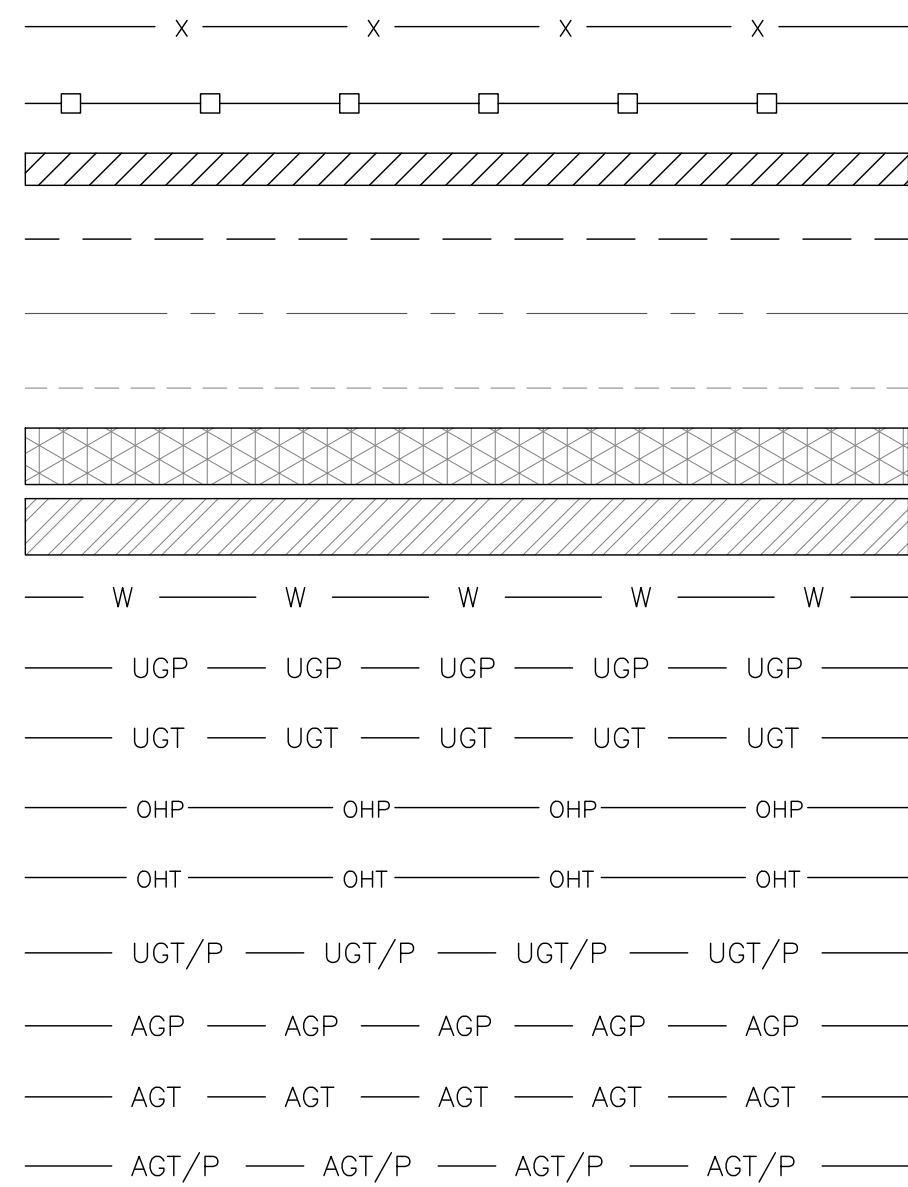
SHEET TITLE  
RF  
CABLE COLOR CODES

SHEET NUMBER  
**RF-1**

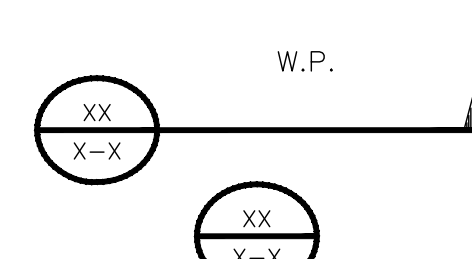
EXOTHERMIC CONNECTION  
 MECHANICAL CONNECTION  
 BUSS BAR INSULATOR  
 CHEMICAL ELECTROLYTIC GROUNDING SYSTEM  
 TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM  
 EXOTHERMIC WITH INSPECTION SLEEVE  
 GROUNDING BAR  
 GROUND ROD  
 TEST GROUND ROD WITH INSPECTION SLEEVE  
 SINGLE POLE SWITCH  
 DUPLEX RECEPTACLE  
 DUPLEX GFCI RECEPTACLE  
 FLUORESCENT LIGHTING FIXTURE  
 (2) TWO LAMPS 48-T8  
 SMOKE DETECTION (DC)  
 EMERGENCY LIGHTING (DC)  
 SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW  
 LED-1-25A400/51K-SR4-120-PE-DEBTXD



CHAIN LINK FENCE  
 WOOD/WROUGHT IRON FENCE  
 WALL STRUCTURE  
 LEASE AREA  
 PROPERTY LINE (PL)  
 SETBACKS  
 ICE BRIDGE  
 CABLE TRAY  
 WATER LINE  
 UNDERGROUND POWER  
 UNDERGROUND TELCO  
 OVERHEAD POWER  
 OVERHEAD TELCO  
 UNDERGROUND TELCO/POWER  
 ABOVE GROUND POWER  
 ABOVE GROUND TELCO  
 ABOVE GROUND TELCO/POWER



WORKPOINT  
 SECTION REFERENCE  
 DETAIL REFERENCE



LEGEND

AB ANCHOR BOLT  
 ABV ABOVE  
 AC ALTERNATING CURRENT  
 ADDL ADDITIONAL  
 AFF ABOVE FINISHED FLOOR  
 AFG ABOVE FINISHED GRADE  
 AGL ABOVE GROUND LEVEL  
 AIC AMPERAGE INTERRUPTION CAPACITY  
 ALUM ALUMINUM  
 ALT ALTERNATE  
 ANT ANTENNA  
 APPROX APPROXIMATE  
 ARCH ARCHITECTURAL  
 ATS AUTOMATIC TRANSFER SWITCH  
 AWG AMERICAN WIRE GAUGE  
 BATT BATTERY  
 BLDG BUILDING  
 BLK BLOCK  
 BLKG BLOCKING  
 BM BEAM  
 BTC BARE TINNED COPPER CONDUCTOR  
 BOF BOTTOM OF FOOTING  
 CAB CABINET  
 CANT CANTILEVERED  
 CHG CHARGING  
 CLG CEILING  
 CLR CLEAR  
 COL COLUMN  
 COMM COMMON  
 CONC CONCRETE  
 CONSTR CONSTRUCTION  
 DBL DOUBLE  
 DC DIRECT CURRENT  
 DEPT DEPARTMENT  
 DF DOUGLAS FIR  
 DIA DIAMETER  
 DIAG DIAGONAL  
 DIM DIMENSION  
 DWG DRAWING  
 DWL DOWEL  
 EA EACH  
 EC ELECTRICAL CONDUCTOR  
 EL ELEVATION  
 ELEC ELECTRICAL  
 EMT ELECTRICAL METALLIC TUBING  
 ENG ENGINEER  
 EQ EQUAL  
 EXP EXPANSION  
 EXT EXTERIOR  
 EW EACH WAY  
 FAB FABRICATION  
 FF FINISH FLOOR  
 FG FINISH GRADE  
 FIF FACILITY INTERFACE FRAME  
 FIN FINISH(ED)  
 FLR FLOOR  
 FDN FOUNDATION  
 FOC FACE OF CONCRETE  
 FOM FACE OF MASONRY  
 FOS FACE OF STUD  
 FOW FACE OF WALL  
 FS FINISH SURFACE  
 FT FOOT  
 FTG FOOTING  
 GA GAUGE  
 GEN GENERATOR  
 GFCI GROUND FAULT CIRCUIT INTERRUPTER  
 GLB GLUE LAMINATED BEAM  
 GLV GALVANIZED  
 GPS GLOBAL POSITIONING SYSTEM  
 GND GROUND  
 GSM GLOBAL SYSTEM FOR MOBILE  
 HDG HOT DIPPED GALVANIZED  
 HDR HEADER  
 HGR HANGER  
 HVAC HEAT/VENTILATION/AIR CONDITIONING  
 HT HEIGHT  
 IGR INTERIOR GROUND RING

IN INCH  
 INT INTERIOR  
 LB(S) POUND(S)  
 LF LINEAR FEET  
 LTE LONG TERM EVOLUTION  
 MAS MASONRY  
 MAX MAXIMUM  
 MB MACHINE BOLT  
 MECH MECHANICAL  
 MFR MANUFACTURER  
 MGB MASTER GROUND BAR  
 MIN MINIMUM  
 MISC MISCELLANEOUS  
 MTL METAL  
 MTS MANUAL TRANSFER SWITCH  
 MW MICROWAVE  
 NEC NATIONAL ELECTRIC CODE  
 NM NEWTON METERS  
 NO. NUMBER  
 # NUMBER  
 NTS NOT TO SCALE  
 OC ON-CENTER  
 OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION  
 OPNG OPENING  
 P/C PRECAST CONCRETE  
 PCS PERSONAL COMMUNICATION SERVICES  
 PCU PRIMARY CONTROL UNIT  
 PRC PRIMARY RADIO CABINET  
 PP POLARIZING PRESERVING  
 PSF POUNDS PER SQUARE FOOT  
 PSI POUNDS PER SQUARE INCH  
 PT PRESSURE TREATED  
 PWR POWER CABINET  
 QTY QUANTITY  
 RAD RADIUS  
 RECT RECTIFIER  
 REF REFERENCE  
 REINF REINFORCEMENT  
 REQ'D REQUIRED  
 RET REMOTE ELECTRIC TILT  
 RF RADIO FREQUENCY  
 RMC RIGID METALLIC CONDUIT  
 RRH REMOTE RADIO HEAD  
 RRU REMOTE RADIO UNIT  
 RWY RACEWAY  
 SCH SCHEDULE  
 SHT SHEET  
 SIAD SMART INTEGRATED ACCESS DEVICE  
 SIM SIMILAR  
 SPEC SPECIFICATION  
 SQ SQUARE  
 SS STAINLESS STEEL  
 STD STANDARD  
 STL STEEL  
 TEMP TEMPORARY  
 THK THICKNESS  
 TMA TOWER MOUNTED AMPLIFIER  
 TN TOE NAIL  
 TOA TOP OF ANTENNA  
 TOC TOP OF CURB  
 TOF TOP OF FOUNDATION  
 TOP TOP OF PLATE (PARAPET)  
 TOS TOP OF STEEL  
 TOW TOP OF WALL  
 TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION  
 TYP TYPICAL  
 UG UNDERGROUND  
 UL UNDERWRITERS LABORATORY  
 UNO UNLESS NOTED OTHERWISE  
 UMTS UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM  
 UPS UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)  
 VIF VERIFIED IN FIELD  
 W WIDE  
 W/ WITH  
 WD WOOD  
 WP WEATHERPROOF  
 WT WEIGHT

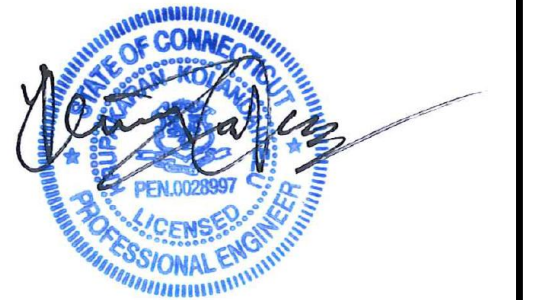
ABBREVIATIONS



5701 SOUTH SANTA FE DRIVE  
 LITTLETON, CO 80120



**TOTALLY COMMITTED.**  
 NB+C ENGINEERING SERVICES, LLC.  
 6095 MARSHALEE DRIVE, SUITE 300  
 ELKRIDGE, MD 21075  
 (410) 712-7092



01/05/2022

KRUPAKARAN KOLANDAIVELU, P.E.  
 STATE OF CONNECTICUT  
 PROFESSIONAL ENGINEER  
 LICENSE #PEN.0028997

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 UNLESS THEY ARE ACTING UNDER THE DIRECTION  
 OF A LICENSED PROFESSIONAL ENGINEER,  
 TO ALTER THIS DOCUMENT.

DRAWN BY:	CHECKED BY:	APPROVED BY:
SN	BRN	TA

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
0	11/12/2021	ISSUED FOR CONSTRUCTION
1	01/05/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER  
**828402**

DISH Wireless L.L.C.  
 PROJECT INFORMATION  
**BOBOS00035A**  
 720 THOMPSON RD  
 THOMPSON, CT 06277

SHEET TITLE  
**LEGEND AND ABBREVIATIONS**

SHEET NUMBER  
**GN-1**

SITE ACTIVITY REQUIREMENTS:

- 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.
- “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.
- 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.
- 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).
- 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.”
- 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.
- 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.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
- 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.
- ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
- 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.
- 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.
- 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.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER’S EQUIPMENT AND TOWER AREAS.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- 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.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
- 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:

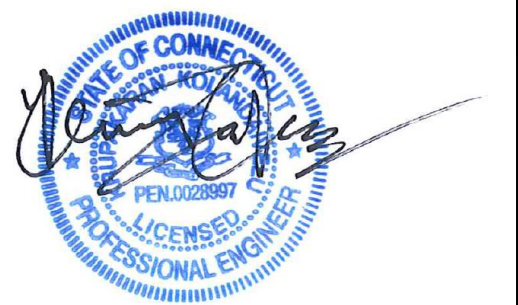
- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION  
CARRIER:DISH Wireless L.L.C.  
TOWER OWNER:TOWER OWNER
- THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- 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.
- 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.
- 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
- 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



**TOTALLY COMMITTED.**  
NB+C ENGINEERING SERVICES, LLC.  
6095 MARSHALEE DRIVE, SUITE 300  
ELKRIDGE, MD 21075  
(410) 712-7092



01/05/2022

KRUPAKARAN KOLANDAIVELU, P.E.  
STATE OF CONNECTICUT  
PROFESSIONAL ENGINEER  
LICENSE #PEN.0028997

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DRAWN BY: CHECKED BY: APPROVED BY:

SN BRN TA

RFDS REV #: ---

**CONSTRUCTION DOCUMENTS**

SUBMITTALS		
REV	DATE	DESCRIPTION
0	11/12/2021	ISSUED FOR CONSTRUCTION
1	01/05/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER  
**828402**

DISH Wireless L.L.C.  
PROJECT INFORMATION  
**BOBOS00035A**  
**720 THOMPSON RD**  
**THOMPSON, CT 06277**

SHEET TITLE  
**GENERAL NOTES**

SHEET NUMBER  
**GN-2**

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
  - ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
  - 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.
- 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.
- 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).
- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
- TIE WRAPS ARE NOT ALLOWED.
- 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.
- 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.
- POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
- 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.
- 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).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
- ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

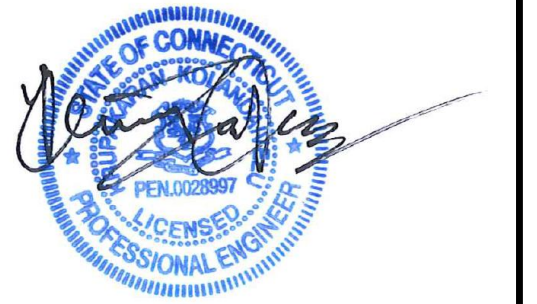
- ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
- WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
- SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".
- ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



**TOTALLY COMMITTED.**  
NB+C ENGINEERING SERVICES, LLC.  
6095 MARSHALEE DRIVE, SUITE 300  
ELKRIDGE, MD 21075  
(410) 712-7092



01/05/2022

KRUPAKARAN KOLANDAIVELU, P.E.  
STATE OF CONNECTICUT  
PROFESSIONAL ENGINEER  
LICENSE #PEN.0028997

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DRAWN BY:	CHECKED BY:	APPROVED BY:
SN	BRN	TA

RFDS REV #: ---

**CONSTRUCTION DOCUMENTS**

SUBMITTALS		
REV	DATE	DESCRIPTION
0	11/12/2021	ISSUED FOR CONSTRUCTION
1	01/05/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER  
**828402**

DISH Wireless L.L.C.  
PROJECT INFORMATION  
**BOBOS00035A**  
**720 THOMPSON RD**  
**THOMPSON, CT 06277**

SHEET TITLE  
**GENERAL NOTES**

SHEET NUMBER  
**GN-3**



GROUNDING NOTES:

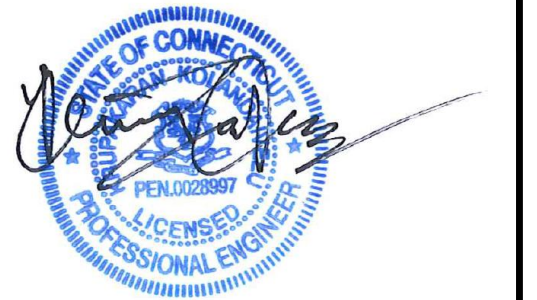
1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (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 GROUND 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.



5701 SOUTH SANTA FE DRIVE  
LITTLETON, CO 80120



**NB+C ENGINEERING SERVICES, LLC.**  
6095 MARSHALEE DRIVE, SUITE 300  
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01/05/2022

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SN BRN TA

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A&E PROJECT NUMBER

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DISH Wireless L.L.C.  
PROJECT INFORMATION

**BOBOS00035A**  
**720 THOMPSON RD**  
**THOMPSON, CT 06277**

SHEET TITLE

**GENERAL NOTES**

SHEET NUMBER

**GN-4**

# Exhibit D

## **Structural Analysis Report**

Date: **September 20, 2021**

Paul J. Ford & Company  
250 East Broad St., Suite 600  
Columbus, OH 43215  
(614) 221-6679

**Subject:** Structural Analysis Report

**Carrier Designation:** DISH Network Co-Locate  
**Site Number:** BOBOS00035A  
**Site Name:** CT-CCI-T-828402

**Crown Castle Designation:** BU Number: 828402  
**Site Name:** Thompson/ I-395 X99\_1  
**JDE Job Number:** 645138  
**Work Order Number:** 1966336  
**Order Number:** 553315 Rev. 1

**Engineering Firm Designation:** Paul J. Ford & Company Project Number: 37521-1143.001.7805

**Site Data:** 720 Thompson Rd, Thompson, Windham County, CT  
Latitude 41° 58' 39.74", Longitude -71° 50' 47.55"  
156 Foot - Monopole Tower

Paul J. Ford & 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:

LC5: Proposed Equipment Configuration

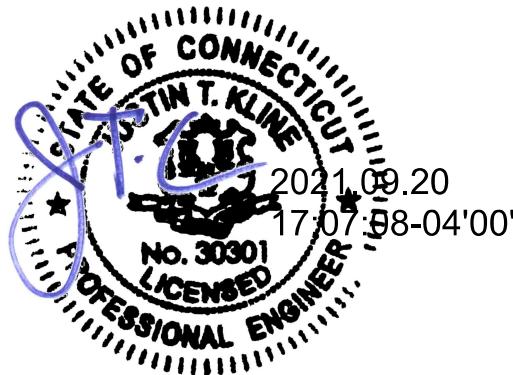
**Sufficient Capacity - 84.3%**

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

Respectfully submitted by:

  
Jaime Acuna  
Structural Designer  
jacuna@pauljford.com

RMF



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## 1) INTRODUCTION

This tower is a 156 ft Monopole tower designed by FRED A. NUDD CORPORATION in April of 1998.

The tower has been modified per reinforcement drawings prepared by All-Points Technology Corp., P.C. in May of 2005. Reinforcement consist of base plate stiffeners.

The tower has been modified per reinforcement drawings prepared by PJF in August of 2018. Reinforcement consist of shaft reinforcing, post installed anchor rods, and transition stiffeners.

## 2) ANALYSIS CRITERIA

<b>TIA-222 Revision:</b>	TIA-222-H
<b>Risk Category:</b>	II
<b>Wind Speed:</b>	120 mph
<b>Exposure Category:</b>	C
<b>Topographic Factor:</b>	1
<b>Ice Thickness:</b>	1 in
<b>Wind Speed with Ice:</b>	50 mph
<b>Service Wind Speed:</b>	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)
131.0	131.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope Mount MC-PK8-DSH		

**Table 2 - Other Considered Equipment**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150.0	150.0	3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ	4	1-1/4
		6	alcatel lucent	RRH2X50-800		
		3	alcatel lucent	TD-RRH8X20-25		
		3	commscope	NNVV-65B-R4		
		3	rfs celwave	APXVTM14-ALU-I20		
		1	tower mounts	T-Arm Mount [TA 702-3]		
143.0	143.0	6	commscope	TMAT1921B68-21-43	12 1	1-1/4 1-5/8
		3	ericsson	RADIO 4449 B71/B85A		
		3	rfs celwave	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe		
		3	rfs celwave	APXVAA24_43-U-A20 w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 701-1_HR-1]		
120.0	120.0	2	decibel	980H120T4E-M w/ Mount Pipe	2	1-5/8s
		1	tower mounts	Platform Mount [LP 1201-1]		

### 3) ANALYSIS PROCEDURE

**Table 3 - Documents Provided**

Document	Reference	Source
4-TOWER MANUFACTURER DRAWINGS	3508519	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3675126	CCISITES
4-POST-MODIFICATION INSPECTION	3675131	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	3918434	CCISITES
4-GEOTECHNICAL REPORTS	4726392	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	7744596	CCISITES
4-POST-MODIFICATION INSPECTION	8524608	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 monopole manufacturer drawings did not match the geometry of the FDH tower mapping (CCI Ref# 3508519). We have based our geometry off the FDH tower mapping; we have also assumed the pole shaft and base plate steel yield strength(s) ( $F_y$ ) as shown in the attached calculations. Anchor rods are assumed to be 2.0" diam, ( $F_u = 58$  ksi,  $F_y = 42$  ksi).
- 4) 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 & 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
156 - 151	Pole	TP10.75x10.75x0.365	Pole	0.4%	Pass
151 - 146	Pole	TP10.75x10.75x0.365	Pole	12.6%	Pass
146 - 144.5	Pole	TP10.75x10.75x0.365	Pole	16.4%	Pass
144.5 - 144	Pole	TP18x10.75x0.365	Pole	6.3%	Pass
144 - 139	Pole	TP18.944x18x0.25	Pole	24.0%	Pass
139 - 134	Pole	TP19.887x18.944x0.25	Pole	38.0%	Pass
134 - 129	Pole	TP20.831x19.887x0.25	Pole	53.2%	Pass
129 - 128.25	Pole	TP20.972x20.831x0.25	Pole	55.6%	Pass
128.25 - 128	Pole + Reinf.	TP21.019x20.972x0.575	Pole	25.1%	Pass
128 - 123	Pole + Reinf.	TP21.963x21.019x0.5625	Pole	32.9%	Pass
123 - 118	Pole + Reinf.	TP22.906x21.963x0.55	Pole	40.6%	Pass
118 - 113	Pole + Reinf.	TP23.85x22.906x0.525	Pole	48.3%	Pass
113 - 108	Pole + Reinf.	TP24.793x23.85x0.5125	Pole	55.3%	Pass
108 - 103	Pole + Reinf.	TP25.737x24.793x0.5	Pole	61.7%	Pass
103 - 98	Pole + Reinf.	TP26.68x25.737x0.4938	Pole	67.7%	Pass
98 - 96.5	Pole + Reinf.	TP27.624x26.68x0.4875	Pole	69.4%	Pass
96.5 - 92	Pole + Reinf.	TP27.313x26.464x0.7	Pole	54.8%	Pass
92 - 87	Pole + Reinf.	TP28.257x27.313x0.675	Pole	59.3%	Pass
87 - 82	Pole + Reinf.	TP29.201x28.257x0.65	Pole	63.9%	Pass
82 - 77.5	Pole + Reinf.	TP30.05x29.201x0.6375	Pole	67.8%	Pass
77.5 - 72.5	Pole + Reinf.	TP30.994x30.05x0.6875	Pole	63.2%	Pass
72.5 - 70.58	Pole + Reinf.	TP31.356x30.994x0.6875	Pole	64.3%	Pass
70.58 - 70.33	Pole + Reinf.	TP31.403x31.356x0.6875	Pole	64.4%	Pass
70.33 - 67.08	Pole + Reinf.	TP32.016x31.403x0.675	Pole	66.3%	Pass
67.08 - 66.83	Pole + Reinf.	TP32.063x32.016x0.975	Pole	47.5%	Pass
66.83 - 61.83	Pole + Reinf.	TP33.007x32.063x0.95	Pole	49.7%	Pass
61.83 - 61.75	Pole + Reinf.	TP33.824x33.007x0.95	Pole	49.7%	Pass
61.75 - 56.75	Pole + Reinf.	TP33.341x32.397x0.9375	Pole	53.1%	Pass
56.75 - 51.75	Pole + Reinf.	TP34.284x33.341x0.9125	Pole	55.1%	Pass
51.75 - 46.75	Pole + Reinf.	TP35.228x34.284x0.9	Pole	57.5%	Pass
46.75 - 41.75	Pole + Reinf.	TP36.171x35.228x0.8875	Pole	59.9%	Pass
41.75 - 39.8	Pole + Reinf.	TP36.539x36.171x0.875	Pole	60.8%	Pass
39.8 - 39.33	Pole + Reinf.	TP36.628x36.539x0.95	Pole	55.8%	Pass
39.33 - 39.08	Pole + Reinf.	TP36.675x36.628x0.9375	Pole	55.9%	Pass
39.08 - 38.33	Pole + Reinf.	TP36.816x36.675x0.9375	Pole	56.1%	Pass
38.33 - 38.08	Pole + Reinf.	TP36.864x36.816x0.8875	Pole	60.5%	Pass
38.08 - 33.08	Pole + Reinf.	TP37.807x36.864x0.875	Pole	62.1%	Pass
33.08 - 30.75	Pole + Reinf.	TP38.247x37.807x0.8625	Pole	62.9%	Pass
30.75 - 30.5	Pole + Reinf.	TP38.294x38.247x0.9375	Pole	58.1%	Pass
30.5 - 25.5	Pole + Reinf.	TP39.238x38.294x0.925	Pole	59.6%	Pass
25.5 - 20.5	Pole + Reinf.	TP40.182x39.238x0.9	Pole	61.0%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
20.5 - 15.5	Pole + Reinf.	TP41.125x40.182x0.8875	Pole	62.3%	Pass
15.5 - 15.05	Pole + Reinf.	TP42.201x41.125x0.8875	Pole	62.4%	Pass
15.05 - 8.8	Pole + Reinf.	TP41.639x40.46x0.875	Pole	65.9%	Pass
8.8 - 8.25	Pole + Reinf.	TP41.743x41.639x0.875	Pole	66.1%	Pass
8.25 - 8	Pole + Reinf.	TP41.79x41.743x0.875	Pole	66.6%	Pass
8 - 4.25	Pole + Reinf.	TP42.498x41.79x0.875	Pole	67.9%	Pass
4.25 - 4	Pole + Reinf.	TP42.545x42.498x1.05	Pole	56.8%	Pass
4 - 3	Pole + Reinf.	TP42.734x42.545x1.05	Pole	57.2%	Pass
3 - 2.75	Pole + Reinf.	TP42.781x42.734x1.075	Pole	56.9%	Pass
2.75 - 2.16	Pole + Reinf.	TP42.892x42.781x1.0625	Pole	57.1%	Pass
2.16 - 1.91	Pole + Reinf.	TP42.94x42.892x1.2	Pole	50.6%	Pass
1.91 - 0	Pole + Reinf.	TP43.3x42.94x1.2	Pole	51.2%	Pass
				Summary	
			Pole	69.4%	Pass
			Reinforcement	59.9%	Pass
			Overall	69.4%	Pass

**Table 5 - Tower Component Stresses vs. Capacity**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	144	1.4	Pass
	Flange Plate		3.1	Pass
1	Anchor Rods	0	66.8	Pass
1	Base Plate	0	75.6	Pass
1	Base Foundation (Structure)	0	84.3	Pass
1	Base Foundation (Soil Interaction)	0	24.1	Pass

<b>Structure Rating (max from all components) =</b>	<b>84.3%</b>
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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.

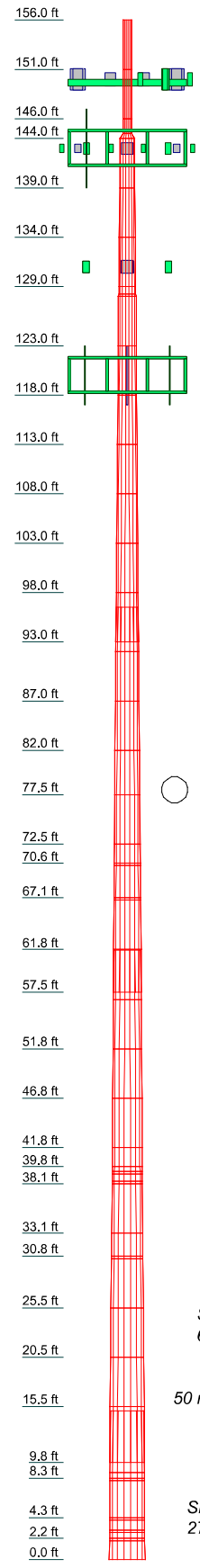
#### 4.1) Recommendations

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

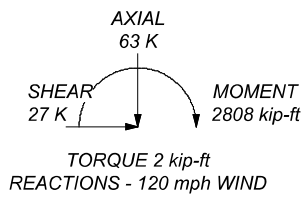
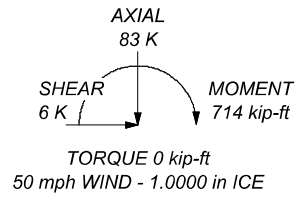


**APPENDIX A**  
**TNXTOWER OUTPUT**

Section	5:35:43	47	484	43	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Length (ft)	1.0000	0.9500	0.9000	0.8500	0.8000	0.7500	0.7000	0.6500	0.6000	0.5500	0.5000	0.4500	0.4000	0.3500	0.3000	0.2500	0.2000	0.1500	0.1000	0.0500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
Number of Sides	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Thickness (in)	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125	1.2125			
Socket Length (ft)																																																				
Top Dia (in)	42.0000	40.1816	39.2379	38.2942	37.3505	36.4068	35.4631	34.5194	33.5757	32.6320	31.6883	30.7446	29.8009	28.8572	27.9135	26.9698	26.0261	25.0824	24.1387	23.1950	22.2513	21.3076	20.3639	19.4202	18.4765	17.5328	16.5891	15.6454	14.7017	13.7580	12.8143	11.8706	10.9269	9.9832	9.0395	8.0958	7.1521	6.2084	5.2647	4.3210	3.3773	2.4336	1.4899	0.5462								
Bot Dia (in)	43.4375	41.6223	40.1816	39.2379	38.2942	37.3505	36.4068	35.4631	34.5194	33.5757	32.6320	31.6883	30.7446	29.8009	28.8572	27.9135	26.9698	26.0261	25.0824	24.1387	23.1950	22.2513	21.3076	20.3639	19.4202	18.4765	17.5328	16.5891	15.6454	14.7017	13.7580	12.8143	11.8706	10.9269	9.9832	9.0395	8.0958	7.1521	6.2084	5.2647	4.3210	3.3773	2.4336	1.4899	0.5462							
Grade																																																				
Weight (K)	38.10	38.00	37.90	37.80	37.70	37.60	37.50	37.40	37.30	37.20	37.10	37.00	36.90	36.80	36.70	36.60	36.50	36.40	36.30	36.20	36.10	36.00	35.90	35.80	35.70	35.60	35.50	35.40	35.30	35.20	35.10	35.00	34.90	34.80	34.70	34.60	34.50	34.40	34.30	34.20	34.10	34.00	33.90	33.80	33.70	33.60	33.50	33.40	33.30	33.20	33.10	33.00



ALL REACTIONS ARE FACTORED



**MATERIAL STRENGTH**

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

**TOWER DESIGN NOTES**

- Tower is located in Windham County, Connecticut.
- Tower designed for Exposure C to the TIA-222-H Standard.
- Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
- Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
- Deflections are based upon a 60 mph wind.
- Tower Risk Category II.
- Topographic Category 1 with Crest Height of 0.0000 ft
- TIA-222-H Annex S
- TOWER RATING: 69.4%

**Paul J. Ford & Company**  
 250 East Broad st., Suite 600  
 Columbus, OH 43215  
 Phone: (614) 221-6679  
 FAX:

Job: **156' MP; Thompson/ I-395 X99\_1; Thompson, C**  
 Project: **PJF# 37521-1143.001.7805 / BU# 828402**  
 Client: CCI Drawn by: jacuna App'd:  
 Code: TIA-222-H Date: 09/20/21 Scale: NTS  
 Path: Dwg No. E-1

## Tower Input Data

The tower is a monopole.

This tower is designed using the TIA-222-H standard.

The following design criteria apply:

- 1) Tower is located in Windham County, Connecticut.
- 2) Tower base elevation above sea level: 623.8000 ft.
- 3) Basic wind speed of 120 mph.
- 4) Risk Category II.
- 5) Exposure Category C.
- 6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- 7) Topographic Category: 1.
- 8) Crest Height: 0.0000 ft.
- 9) Nominal ice thickness of 1.0000 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: 77.7%.
- 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 Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile  Include Bolts In Member Capacity  Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt.  Autocalc Torque Arm Areas  Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption  <div style="text-align: center; background-color: #e0e0e0; padding: 2px;"><b>Poles</b></div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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## 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	156.0000- 151.0000	5.0000	0.00	Round	10.7500	10.7500	0.3650		A53-B-35 (35 ksi)
L2	151.0000- 146.0000	5.0000	0.00	Round	10.7500	10.7500	0.3650		A53-B-35 (35 ksi)
L3	146.0000- 144.5000	1.5000	0.00	Round	10.7500	10.7500	0.3650		A53-B-35 (35 ksi)
L4	144.5000- 144.0000	0.5000	0.00	Round	10.7500	18.0000	0.3650		A53-B-35 (35 ksi)
L5	144.0000- 139.0000	5.0000	0.00	12	18.0000	18.9435	0.2500	1.0000	A36 (36 ksi)
L6	139.0000- 134.0000	5.0000	0.00	12	18.9435	19.8871	0.2500	1.0000	A36 (36 ksi)
L7	134.0000- 129.0000	5.0000	0.00	12	19.8871	20.8306	0.2500	1.0000	A36 (36 ksi)
L8	129.0000- 128.2500	0.7500	0.00	12	20.8306	20.9721	0.2500	1.0000	A36 (36 ksi)
L9	128.2500- 128.0000	0.2500	0.00	12	20.9721	21.0193	0.5750	2.3000	A36 (36 ksi)
L10	128.0000- 123.0000	5.0000	0.00	12	21.0193	21.9628	0.5625	2.2500	A36 (36 ksi)
L11	123.0000- 118.0000	5.0000	0.00	12	21.9628	22.9064	0.5500	2.2000	A36 (36 ksi)
L12	118.0000- 113.0000	5.0000	0.00	12	22.9064	23.8499	0.5250	2.1000	A36 (36 ksi)
L13	113.0000- 108.0000	5.0000	0.00	12	23.8499	24.7934	0.5125	2.0500	A36 (36 ksi)
L14	108.0000- 103.0000	5.0000	0.00	12	24.7934	25.7369	0.5000	2.0000	A36 (36 ksi)
L15	103.0000- 98.0000	5.0000	0.00	12	25.7369	26.6805	0.4938	1.9750	A36 (36 ksi)
L16	98.0000- 93.0000	5.0000	3.50	12	26.6805	27.6240	0.4875	1.9500	A36 (36 ksi)
L17	93.0000- 92.0000	4.5000	0.00	12	26.4635	27.3130	0.7000	2.8000	A36 (36 ksi)
L18	92.0000- 87.0000	5.0000	0.00	12	27.3130	28.2568	0.6750	2.7000	A36 (36 ksi)
L19	87.0000- 82.0000	5.0000	0.00	12	28.2568	29.2006	0.6500	2.6000	A36 (36 ksi)
L20	82.0000- 77.5000	4.5000	0.00	12	29.2006	30.0500	0.6375	2.5500	A36 (36 ksi)
L21	77.5000- 72.5000	5.0000	0.00	12	30.0500	30.9935	0.6875	2.7500	A36 (36 ksi)
L22	72.5000- 70.5800	1.9200	0.00	12	30.9935	31.3558	0.6875	2.7500	A36 (36 ksi)
L23	70.5800- 70.3300	0.2500	0.00	12	31.3558	31.4030	0.6875	2.7500	A36 (36 ksi)
L24	70.3300- 67.0800	3.2500	0.00	12	31.4030	32.0163	0.6750	2.7000	A36 (36 ksi)
L25	67.0800- 66.8300	0.2500	0.00	12	32.0163	32.0634	0.9750	3.9000	A36 (36 ksi)
L26	66.8300- 61.8300	5.0000	0.00	12	32.0634	33.0069	0.9500	3.8000	A36 (36 ksi)
L27	61.8300- 57.5000	4.3300	4.25	12	33.0069	33.8240	0.9500	3.8000	A36 (36 ksi)
L28	57.5000- 56.7500	5.0000	0.00	12	32.3970	33.3405	0.9375	3.7500	A36 (36 ksi)
L29	56.7500- 51.7500	5.0000	0.00	12	33.3405	34.2840	0.9125	3.6500	A36 (36 ksi)
L30	51.7500- 46.7500	5.0000	0.00	12	34.2840	35.2275	0.9000	3.6000	A36 (36 ksi)
L31	46.7500- 41.7500	5.0000	0.00	12	35.2275	36.1710	0.8875	3.5500	A36 (36 ksi)
L32	41.7500- 39.8000	1.9500	0.00	12	36.1710	36.5390	0.8750	3.5000	A36 (36 ksi)
L33	39.8000- 39.3300	0.4700	0.00	12	36.5390	36.6277	0.9500	3.8000	A36 (36 ksi)
L34	39.3300- 39.0800	0.2500	0.00	12	36.6277	36.6749	0.9375	3.7500	A36 (36 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
L35	39.0800-38.3300	0.7500	0.00	12	36.6749	36.8164	0.9375	3.7500	A36 (36 ksi)
L36	38.3300-38.0800	0.2500	0.00	12	36.8164	36.8636	0.8875	3.5500	A36 (36 ksi)
L37	38.0800-33.0800	5.0000	0.00	12	36.8636	37.8073	0.8750	3.5000	A36 (36 ksi)
L38	33.0800-30.7500	2.3300	0.00	12	37.8073	38.2470	0.8625	3.4500	A36 (36 ksi)
L39	30.7500-30.5000	0.2500	0.00	12	38.2470	38.2942	0.9375	3.7500	A36 (36 ksi)
L40	30.5000-25.5000	5.0000	0.00	12	38.2942	39.2379	0.9250	3.7000	A36 (36 ksi)
L41	25.5000-20.5000	5.0000	0.00	12	39.2379	40.1816	0.9000	3.6000	A36 (36 ksi)
L42	20.5000-15.5000	5.0000	0.00	12	40.1816	41.1252	0.8875	3.5500	A36 (36 ksi)
L43	15.5000-9.8000	5.7000	5.25	12	41.1252	42.2010	0.8875	3.5500	A36 (36 ksi)
L44	9.8000-8.8000	6.2500	0.00	12	40.4601	41.6395	0.8750	3.5000	A36 (36 ksi)
L45	8.8000-8.2500	0.5500	0.00	12	41.6395	41.7433	0.8750	3.5000	A36 (36 ksi)
L46	8.2500-8.0000	0.2500	0.00	12	41.7433	41.7904	0.8750	3.5000	A36 (36 ksi)
L47	8.0000-4.2500	3.7500	0.00	12	41.7904	42.4980	0.8750	3.5000	A36 (36 ksi)
L48	4.2500-4.0000	0.2500	0.00	12	42.4980	42.5452	1.0500	4.2000	A36 (36 ksi)
L49	4.0000-3.0000	1.0000	0.00	12	42.5452	42.7339	1.0500	4.2000	A36 (36 ksi)
L50	3.0000-2.7500	0.2500	0.00	12	42.7339	42.7811	1.0750	4.3000	A36 (36 ksi)
L51	2.7500-2.1600	0.5900	0.00	12	42.7811	42.8924	1.0625	4.2500	A36 (36 ksi)
L52	2.1600-1.9100	0.2500	0.00	12	42.8924	42.9396	1.2000	4.8000	A36 (36 ksi)
L53	1.9100-0.0000	1.9100		12	42.9396	43.3000	1.2000	4.8000	A36 (36 ksi)

### Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	It/Q in <sup>2</sup>	w in	w/t
L1	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
L2	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
L3	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
L4	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
L5	18.5468	14.2888	574.6149	6.3545	9.3240	61.6275	1164.3256	7.0325	4.1540	16.616
L6	19.5236	15.0483	671.2058	6.6923	9.8127	68.4014	1360.0450	7.4063	4.4069	17.627
L7	20.5004	15.8078	778.0566	7.0301	10.3015	75.5285	1576.5535	7.7801	4.6597	18.639
L8	21.4772	16.5674	895.6847	7.3679	10.7902	83.0088	1814.9001	8.1540	4.9126	19.65
L9	21.4772	16.6813	914.2906	7.4185	10.8636	84.1613	1852.6006	8.2100	4.9505	19.802
L10	21.5091	17.7653	2005.4696	7.3022	10.8636	184.6052	4063.6252	18.5869	4.0795	7.095
L11	21.5579	37.8526	2019.4171	7.3191	10.8880	185.4719	4091.8864	18.6299	4.0922	7.117
L12	21.5623	37.0524	1979.1425	7.3235	10.8880	181.7729	4010.2793	18.2360	4.1257	7.335
L13	22.5392	38.7613	2265.8199	7.6613	11.3767	199.1624	4591.1655	19.0772	4.3785	7.784
L14	22.5436	37.9221	2219.3528	7.6658	11.3767	195.0781	4497.0106	18.6641	4.4120	8.022
L15	23.5204	39.5931	2525.8490	8.0036	11.8655	212.8735	5118.0549	19.4865	4.6649	8.482

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L12	23.5292	37.8357	2419.1352	8.0125	11.8655	203.8799	4901.8237	18.6216	4.7319	9.013
	24.5060	39.4307	2738.1642	8.3503	12.3542	221.6376	5548.2631	19.4066	4.9848	9.495
L13	24.5104	38.5125	2677.2695	8.3548	12.3542	216.7086	5424.8739	18.9547	5.0183	9.792
	25.4872	40.0696	3015.3010	8.6926	12.8430	234.7819	6109.8174	19.7210	5.2711	10.285
L14	25.4916	39.1124	2946.3028	8.6970	12.8430	229.4095	5970.0082	19.2499	5.3046	10.609
	26.4685	40.6315	3303.1018	9.0348	13.3317	247.7623	6692.9798	19.9976	5.5575	11.115
L15	26.4707	40.1335	3264.2371	9.0371	13.3317	244.8471	6614.2293	19.7525	5.5743	11.29
	27.4475	41.6336	3644.1168	9.3748	13.8205	263.6751	7383.9687	20.4908	5.8271	11.802
L16	27.4497	41.1164	3600.5656	9.3771	13.8205	260.5238	7295.7221	20.2362	5.8439	11.987
	28.4265	42.5975	4003.8513	9.7149	14.3092	279.8090	8112.8882	20.9652	6.0967	12.506
L17	27.8341	58.0710	4919.8959	9.2233	13.7081	358.9041	9969.0430	28.5808	5.2162	7.452
	28.0295	59.9856	5422.7459	9.5274	14.1481	383.2841	10987.953	29.5231	5.4439	7.777
L18	28.0383	57.8976	5243.8268	9.5364	14.1481	370.6379	10625.414	28.4954	5.5109	8.164
	29.0154	59.9490	5821.1898	9.8743	14.6370	397.7036	11795.308	29.5051	5.7638	8.539
L19	29.0243	57.7810	5620.8466	9.8832	14.6370	384.0162	11389.359	28.4380	5.8308	8.97
	30.0014	59.7563	6217.2691	10.2211	15.1259	411.0347	12597.872	29.4103	6.0838	9.36
L20	30.0058	58.6328	6105.7188	10.2256	15.1259	403.6600	12371.841	28.8573	6.1173	9.596
	30.8852	60.3765	6666.8062	10.5297	15.5659	428.2956	13508.756	29.7155	6.3449	9.953
L21	30.8675	65.0012	7153.0888	10.5118	15.5659	459.5358	14494.097	31.9916	6.2109	9.034
	31.8443	67.0899	7865.0300	10.8495	16.0546	489.8916	15936.683	33.0196	6.4638	9.402
L22	31.8443	67.0899	7865.0300	10.8495	16.0546	489.8916	15936.683	33.0196	6.4638	9.402
	32.2194	67.8920	8150.4916	10.9793	16.2423	501.8063	16515.105	33.4144	6.5609	9.543
L23	32.2194	67.8920	8150.4916	10.9793	16.2423	501.8063	16515.105	33.4144	6.5609	9.543
	32.2682	67.9964	8188.1615	10.9961	16.2667	503.3682	16591.435	33.4658	6.5735	9.561
L24	32.2726	66.7873	8049.1049	11.0006	16.2667	494.8197	16309.668	32.8707	6.6070	9.788
	32.9076	68.1202	8540.7243	11.2202	16.5844	514.9848	17305.822	33.5267	6.7714	10.032
L25	32.8017	97.4540	11985.722	11.1128	16.5844	722.7098	24286.322	47.9639	5.9674	6.12
	32.8506	97.6021	12040.451	11.1297	16.6089	724.9416	24397.218	48.0368	5.9800	6.133
L26	32.8594	95.1760	11760.047	11.1386	16.6089	708.0588	23829.043	46.8427	6.0470	6.365
	33.8362	98.0621	12862.671	11.4764	17.0976	752.3091	26063.259	48.2632	6.2999	6.631
L27	33.8362	98.0621	12862.671	11.4764	17.0976	752.3091	26063.259	48.2632	6.2999	6.631
	34.6821	100.5616	13871.488	11.7689	17.5208	791.7141	28107.397	49.4933	6.5188	6.862
L28	34.0394	94.9684	11996.915	11.2625	16.7817	714.8825	24309.002	46.7406	6.1699	6.581
	34.1859	97.8166	13109.008	11.6003	17.2704	759.0452	26562.405	48.1424	6.4228	6.851
L29	34.1948	95.2817	12788.990	11.6092	17.2704	740.5153	25913.962	46.8947	6.4898	7.112
	35.1715	98.0539	13938.083	11.9470	17.7591	784.8405	28242.335	48.2591	6.7426	7.389
L30	35.1760	96.7469	13762.604	11.9515	17.7591	774.9595	27886.767	47.6159	6.7761	7.529
	36.1527	99.4812	14962.772	12.2893	18.2479	819.9740	30318.633	48.9616	7.0290	7.81
L31	36.1571	98.1352	14771.080	12.2937	18.2479	809.4691	29930.214	48.2992	7.0625	7.958
	37.1339	100.8315	16022.357	12.6315	18.7366	855.1371	32465.640	49.6262	7.3153	8.243

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>2</sup>	w in	w/t
L32	37.1383	99.4466	15813.4854	12.6360	18.7366	843.9893	32042.4087	48.9446	7.3488	8.399
	37.5193	100.4833	16313.2326	12.7677	18.9272	861.8935	33055.0320	49.4548	7.4475	8.511
L33	37.4928	108.8668	17600.0046	12.7409	18.9272	929.8788	35662.3810	53.5809	7.2465	7.628
	37.5847	109.1381	17731.9361	12.7726	18.9732	934.5804	35929.7099	53.7145	7.2702	7.653
L34	37.5891	107.7398	17517.0200	12.7771	18.9732	923.2531	35494.2316	53.0263	7.3037	7.791
	37.6379	107.8822	17586.5852	12.7940	18.9976	925.7271	35635.1896	53.0964	7.3164	7.804
L35	37.6379	107.8822	17586.5852	12.7940	18.9976	925.7271	35635.1896	53.0964	7.3164	7.804
	37.7845	108.3095	17796.3868	12.8447	19.0709	933.1690	36060.3046	53.3067	7.3543	7.845
L36	37.8021	102.6759	16917.7781	12.8626	19.0709	887.0984	34280.0051	50.5340	7.4883	8.438
	37.8510	102.8108	16984.5165	12.8795	19.0954	889.4580	34415.2352	50.6003	7.5010	8.452
L37	37.8554	101.3979	16762.7587	12.8839	19.0954	877.8448	33965.8937	49.9050	7.5345	8.611
	38.8323	104.0567	18116.2588	13.2218	19.5842	925.0458	36708.4518	51.2136	7.7874	8.9
L38	38.8367	102.6049	17875.5932	13.2262	19.5842	912.7570	36220.7981	50.4990	7.8209	9.068
	39.2920	103.8262	18521.5336	13.3837	19.8120	934.8661	37529.6486	51.1001	7.9387	9.204
L39	39.2655	112.6282	20011.1790	13.3568	19.8120	1010.0552	40548.0740	55.4322	7.7377	8.254
	39.3144	112.7706	20087.1957	13.3737	19.8364	1012.6429	40702.1043	55.5023	7.7504	8.267
L40	39.3188	111.3042	19839.2684	13.3782	19.8364	1000.1443	40199.7365	54.7806	7.7839	8.415
	40.2957	114.1149	21380.5164	13.7160	20.3252	1051.9203	43322.7228	56.1639	8.0368	8.688
L41	40.3046	111.1032	20843.4138	13.7250	20.3252	1025.4948	42234.4073	54.6816	8.1038	9.004
	41.2815	113.8379	22420.7574	14.0628	20.8140	1077.1937	45430.5330	56.0276	8.3567	9.285
L42	41.2859	112.2926	22130.4713	14.0673	20.8140	1063.2470	44842.3348	55.2670	8.3902	9.454
	42.2629	114.9893	23763.4929	14.4051	21.3029	1115.5070	48151.2792	56.5943	8.6431	9.739
L43	42.2629	114.9893	23763.4929	14.4051	21.3029	1115.5070	48151.2792	56.5943	8.6431	9.739
	43.3766	118.0637	25720.8994	14.7902	21.8601	1176.6130	52117.5155	58.1073	8.9314	10.064
L44	42.6044	111.5312	22307.2873	14.1715	20.9584	1064.3624	45200.6118	54.8922	8.4983	9.712
	42.7997	114.8540	24361.0450	14.5937	21.5693	1129.4337	49362.0819	56.5276	8.8144	10.074
L45	42.7997	114.8540	24361.0450	14.5937	21.5693	1129.4337	49362.0819	56.5276	8.8144	10.074
	42.9071	115.1464	24547.5809	14.6308	21.6230	1135.2525	49740.0541	56.6715	8.8422	10.105
L46	42.9071	115.1464	24547.5809	14.6308	21.6230	1135.2525	49740.0541	56.6715	8.8422	10.105
	42.9560	115.2793	24632.6827	14.6477	21.6475	1137.9023	49912.4933	56.7369	8.8548	10.12
L47	42.9560	115.2793	24632.6827	14.6477	21.6475	1137.9023	49912.4933	56.7369	8.8548	10.12
	43.6886	117.2729	25932.9275	14.9011	22.0140	1178.0204	52547.1419	57.7182	9.0445	10.337
L48	43.6268	140.1359	30728.6442	14.8384	22.0140	1395.8689	62264.5641	68.9706	8.5755	8.167
	43.6757	140.2953	30833.6849	14.8553	22.0384	1399.0875	62477.4050	69.0491	8.5881	8.179
L49	43.6757	140.2953	30833.6849	14.8553	22.0384	1399.0875	62477.4050	69.0491	8.5881	8.179

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	It/Q in <sup>2</sup>	w in	w/t
	43.8710	140.9333	31256.2368	14.9228	22.1362	1411.9985	63333.6097	69.3631	8.6387	8.227
L50	43.8622	144.2023	31942.8905	14.9139	22.1362	1443.0180	64724.9563	70.9720	8.5717	7.974
	43.9110	144.3656	32051.5285	14.9308	22.1606	1446.3291	64945.0864	71.0524	8.5843	7.985
L51	43.9154	142.7297	31707.3289	14.9353	22.1606	1430.7971	64247.6446	70.2472	8.6178	8.111
	44.0307	143.1106	31961.8466	14.9751	22.2183	1438.5387	64763.3665	70.4347	8.6477	8.139
L52	43.9822	161.0995	35743.2781	14.9259	22.2183	1608.7334	72425.5719	79.2883	8.2792	6.899
	44.0310	161.2818	35864.7435	14.9428	22.2427	1612.4269	72671.6937	79.3780	8.2918	6.91
L53	44.0310	161.2818	35864.7435	14.9428	22.2427	1612.4269	72671.6937	79.3780	8.2918	6.91
	44.4041	162.6744	36801.8250	15.0718	22.4294	1640.7851	74570.4749	80.0634	8.3884	6.99

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A <sub>r</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft <sup>2</sup>	in					in	in	in
L1 156.0000-151.0000				1	1	1			
L2 151.0000-146.0000				1	1	1			
L3 146.0000-144.5000				1	1	1			
L4 144.5000-144.0000				1	1	1			
L5 144.0000-139.0000				1	1	1			
L6 139.0000-134.0000				1	1	1			
L7 134.0000-129.0000				1	1	1			
L8 129.0000-128.2500				1	1	1			
L9 128.2500-128.0000				1	1	0.917905			
L10 128.0000-123.0000				1	1	0.915981			
L11 123.0000-118.0000				1	1	0.915921			
L12 118.0000-113.0000				1	1	0.938956			
L13 113.0000-108.0000				1	1	0.942941			
L14 108.0000-103.0000				1	1	0.948594			
L15 103.0000-98.0000				1	1	0.944005			
L16 98.0000-93.0000				1	1	0.951143			
L17 93.0000-92.0000				1	1	0.895321			
L18 92.0000-87.0000				1	1	0.908542			
L19 87.0000-82.0000				1	1	0.924185			



Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor $A_r$	Adjust. Factor $A_r$	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontal in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft <sup>2</sup>	in							
L20 82.0000-77.5000				1	1	0.926017			
L21 77.5000-72.5000				1	1	0.93596			
L22 72.5000-70.5800				1	1	0.930273			
L23 70.5800-70.3300				1	1	0.929542			
L24 70.3300-67.0800				1	1	0.936911			
L25 67.0800-66.8300				1	1	0.904489			
L26 66.8300-61.8300				1	1	0.909927			
L27 61.8300-57.5000				1	1	0.909654			
L28 57.5000-56.7500				1	1	0.915643			
L29 56.7500-51.7500				1	1	0.92311			
L30 51.7500-46.7500				1	1	0.919409			
L31 46.7500-41.7500				1	1	0.916512			
L32 41.7500-39.8000				1	1	0.923373			
L33 39.8000-39.3300				1	1	0.91724			
L34 39.3300-39.0800				1	1	0.928445			
L35 39.0800-38.3300				1	1	0.92636			
L36 38.3300-38.0800				1	1	0.952109			
L37 38.0800-33.0800				1	1	0.951659			
L38 33.0800-30.7500				1	1	0.958886			
L39 30.7500-30.5000				1	1	0.94994			
L40 30.5000-25.5000				1	1	0.948734			
L41 25.5000-20.5000				1	1	0.961052			
L42 20.5000-15.5000				1	1	0.961339			
L43 15.5000-9.8000				1	1	0.960204			
L44 9.8000-8.8000				1	1	0.967879			
L45 8.8000-8.2500				1	1	0.966509			
L46 8.2500-8.0000				1	1	1.03647			
L47 8.0000-4.2500				1	1	1.02614			
L48 4.2500-4.0000				1	1	0.938457			
L49 4.0000-3.0000				1	1	0.935825			
L50 3.0000-2.7500				1	1	0.900964			
L51 2.7500-2.1600				1	1	0.909805			
L52 2.1600-1.9100				1	1	0.900791			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor Ar	Adjust. Factor Ar	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft <sup>2</sup>	in					in	in	in
L53 1.9100-0.0000				1	1	0.895755			

**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 r in	Perimeter r in	Weight plf
*****										
*****										
CCI-085125 Reinforcement	A	No	Surface Af (CaAa)	35.5000 - 0.5000	1	1	0.000	8.5000	19.5000	34.03
CCI-085125 Reinforcement	C	No	Surface Af (CaAa)	35.5000 - 0.5000	1	1	0.000	8.5000	19.5000	0.00
CCI-085125 Reinforcement	C	No	Surface Af (CaAa)	35.5000 - 0.5000	1	1	0.250	8.5000	19.5000	0.00
CCI-085125 Reinforcement	B	No	Surface Af (CaAa)	35.5000 - 0.5000	1	1	0.250	8.5000	19.5000	0.00
CCI-085125 Reinforcement	A	No	Surface Af (CaAa)	35.5000 - 0.5000	1	1	0.250	8.5000	19.5000	0.00
CCI-065125 Reinforcement	B	No	Surface Af (CaAa)	35.5000 - 5.5000	1	1	0.000	6.5000	15.5000	0.00
CCI-065125 Reinforcement	C	No	Surface Af (CaAa)	70.5800 - 35.5000	1	1	0.250	6.5000	15.5000	0.00
CCI-065125 Reinforcement	B	No	Surface Af (CaAa)	70.5800 - 35.5000	1	1	0.250	6.5000	15.5000	0.00
CCI-065125 Reinforcement	A	No	Surface Af (CaAa)	70.5800 - 35.5000	1	1	0.250	6.5000	15.5000	0.00
CCI-085125 Reinforcement	A	No	Surface Af (CaAa)	48.7640 - 35.5000	1	1	0.000	8.5000	19.5000	0.00
CCI-085125 Reinforcement	A	No	Surface Af (CaAa)	70.5800 - 48.7640	1	1	0.000	8.5000	19.5000	0.00
CCI-085125 Reinforcement	C	No	Surface Af (CaAa)	48.7640 - 35.5000	1	1	0.000	8.5000	19.5000	0.00
CCI-085125 Reinforcement	C	No	Surface Af (CaAa)	70.5800 - 48.7640	1	1	0.000	8.5000	19.5000	0.00
CCI-085125 Reinforcement	B	No	Surface Af (CaAa)	48.7640 - 35.5000	1	1	0.000	8.5000	19.5000	0.00
CCI-085125 Reinforcement	B	No	Surface Af (CaAa)	70.5800 - 48.7640	1	1	0.000	8.5000	19.5000	0.00
CCI-085125 Reinforcement	A	No	Surface Af (CaAa)	100.6600 - 70.5800	1	1	0.000	8.5000	19.5000	0.00
CCI-085125 Reinforcement	C	No	Surface Af (CaAa)	100.6600 - 70.5800	1	1	0.000	8.5000	19.5000	0.00
CCI-085125 Reinforcement	B	No	Surface Af (CaAa)	100.6600 - 70.5800	1	1	0.000	8.5000	19.5000	0.00
CCI-060100 Reinforcement	A	No	Surface Af (CaAa)	107.4760 - 100.6600	1	1	0.000	6.0000	14.0000	0.00
CCI-060100 Reinforcement	A	No	Surface Af (CaAa)	130.7500 - 107.4760	1	1	0.000	6.0000	14.0000	0.00
CCI-060100 Reinforcement	C	No	Surface Af (CaAa)	107.4760 - 100.6600	1	1	0.000	6.0000	14.0000	0.00
CCI-060100 Reinforcement	C	No	Surface Af (CaAa)	130.7500 - 107.4760	1	1	0.000	6.0000	14.0000	0.00
CCI-060100 Reinforcement	B	No	Surface Af (CaAa)	107.4760 - 100.6600	1	1	0.000	6.0000	14.0000	0.00
CCI-060100 Reinforcement	B	No	Surface Af (CaAa)	130.7500 - 107.4760	1	1	0.000	6.0000	14.0000	0.00
*****										
*****										

### Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Componen t Type	Placement  ft	Total Number		C <sub>AA</sub>  ft <sup>2</sup> /ft	Weight  plf
*****									
**									
HB114-1-0813U4-M5J(1-1/4)	C	No	No	Inside Pole	150.0000 - 0.0000	3	No Ice 1/2" Ice 1" Ice	0.0000 0.0000 0.0000	1.20 1.20 1.20
HB114-13U3M12-XXXF(1-1/4)	C	No	No	Inside Pole	150.0000 - 0.0000	1	No Ice 1/2" Ice 1" Ice	0.0000 0.0000 0.0000	0.99 0.99 0.99
*****									
**									
LDF6-50A(1-1/4)	C	No	No	Inside Pole	141.0000 - 0.0000	12	No Ice 1/2" Ice 1" Ice	0.0000 0.0000 0.0000	0.60 0.60 0.60
HCS 6X12 4AWG(1-5/8)	C	No	No	Inside Pole	141.0000 - 0.0000	1	No Ice 1/2" Ice 1" Ice	0.0000 0.0000 0.0000	2.40 2.40 2.40
*****									
**									
CU12PSM9P6XXX (1-1/2)	C	No	No	Inside Pole	131.0000 - 0.0000	1	No Ice 1/2" Ice 1" Ice	0.0000 0.0000 0.0000	2.35 2.35 2.35
*****									
**									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	120.0000 - 0.0000	2	No Ice 1/2" Ice 1" Ice	0.0000 0.0000 0.0000	0.82 0.82 0.82
*****									
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### Feed Line/Linear Appurtenances Section Areas

Tower Sectio n	Tower Elevation ft	Face	A <sub>R</sub>  ft <sup>2</sup>	A <sub>F</sub>  ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight  K
L1	156.0000-	A	0.000	0.000	0.000	0.000	0.00
	151.0000	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	151.0000-	A	0.000	0.000	0.000	0.000	0.00
	146.0000	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L3	146.0000-	A	0.000	0.000	0.000	0.000	0.00
	144.5000	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.01
L4	144.5000-	A	0.000	0.000	0.000	0.000	0.00
	144.0000	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L5	144.0000-	A	0.000	0.000	0.000	0.000	0.00
	139.0000	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.04
L6	139.0000-	A	0.000	0.000	0.000	0.000	0.00
	134.0000	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.07
L7	134.0000-	A	0.000	0.000	1.750	0.000	0.00
	129.0000	B	0.000	0.000	1.750	0.000	0.00
		C	0.000	0.000	1.750	0.000	0.08
L8	129.0000-	A	0.000	0.000	0.750	0.000	0.00
	128.2500	B	0.000	0.000	0.750	0.000	0.00

Tower Section	Tower Elevation	Face	A <sub>R</sub>	A <sub>F</sub>	C <sub>AA</sub> <sub>A</sub> In Face	C <sub>AA</sub> <sub>A</sub> Out Face	Weight
n	ft		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	K
		C	0.000	0.000	0.750	0.000	0.01
L9	128.2500-128.0000	A	0.000	0.000	0.250	0.000	0.00
		B	0.000	0.000	0.250	0.000	0.00
		C	0.000	0.000	0.250	0.000	0.00
L10	128.0000-123.0000	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.08
L11	123.0000-118.0000	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.09
L12	118.0000-113.0000	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.09
L13	113.0000-108.0000	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.09
L14	108.0000-103.0000	A	0.000	0.000	4.138	0.000	0.00
		B	0.000	0.000	4.138	0.000	0.00
		C	0.000	0.000	4.138	0.000	0.09
L15	103.0000-98.0000	A	0.000	0.000	5.658	0.000	0.00
		B	0.000	0.000	5.658	0.000	0.00
		C	0.000	0.000	5.658	0.000	0.09
L16	98.0000-93.0000	A	0.000	0.000	7.083	0.000	0.00
		B	0.000	0.000	7.083	0.000	0.00
		C	0.000	0.000	7.083	0.000	0.09
L17	93.0000-92.0000	A	0.000	0.000	1.417	0.000	0.00
		B	0.000	0.000	1.417	0.000	0.00
		C	0.000	0.000	1.417	0.000	0.02
L18	92.0000-87.0000	A	0.000	0.000	7.083	0.000	0.00
		B	0.000	0.000	7.083	0.000	0.00
		C	0.000	0.000	7.083	0.000	0.09
L19	87.0000-82.0000	A	0.000	0.000	7.083	0.000	0.00
		B	0.000	0.000	7.083	0.000	0.00
		C	0.000	0.000	7.083	0.000	0.09
L20	82.0000-77.5000	A	0.000	0.000	6.375	0.000	0.00
		B	0.000	0.000	6.375	0.000	0.00
		C	0.000	0.000	6.375	0.000	0.08
L21	77.5000-72.5000	A	0.000	0.000	7.083	0.000	0.00
		B	0.000	0.000	7.083	0.000	0.00
		C	0.000	0.000	7.083	0.000	0.09
L22	72.5000-70.5800	A	0.000	0.000	2.720	0.000	0.00
		B	0.000	0.000	2.720	0.000	0.00
		C	0.000	0.000	2.720	0.000	0.03
L23	70.5800-70.3300	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.625	0.000	0.00
L24	70.3300-67.0800	A	0.000	0.000	8.125	0.000	0.00
		B	0.000	0.000	8.125	0.000	0.00
		C	0.000	0.000	8.125	0.000	0.06
L25	67.0800-66.8300	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.625	0.000	0.00
L26	66.8300-61.8300	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	12.500	0.000	0.09
L27	61.8300-57.5000	A	0.000	0.000	10.825	0.000	0.00
		B	0.000	0.000	10.825	0.000	0.00
		C	0.000	0.000	10.825	0.000	0.08
L28	57.5000-56.7500	A	0.000	0.000	1.875	0.000	0.00
		B	0.000	0.000	1.875	0.000	0.00
		C	0.000	0.000	1.875	0.000	0.01
L29	56.7500-51.7500	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	12.500	0.000	0.09
L30	51.7500-46.7500	A	0.000	0.000	12.192	0.000	0.00
		B	0.000	0.000	12.192	0.000	0.00
		C	0.000	0.000	12.192	0.000	0.09
L31	46.7500-41.7500	A	0.000	0.000	11.736	0.000	0.00
		B	0.000	0.000	11.736	0.000	0.00

Tower Section	Tower Elevation	Face	A <sub>R</sub>	A <sub>F</sub>	C <sub>AA</sub> <sub>A</sub> In Face	C <sub>AA</sub> <sub>A</sub> Out Face	Weight
n	ft		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>	K
L32	41.7500-39.8000	C	0.000	0.000	11.736	0.000	0.09
		A	0.000	0.000	4.577	0.000	0.00
		B	0.000	0.000	4.577	0.000	0.00
		C	0.000	0.000	4.577	0.000	0.04
L33	39.8000-39.3300	A	0.000	0.000	1.103	0.000	0.00
		B	0.000	0.000	1.103	0.000	0.00
		C	0.000	0.000	1.103	0.000	0.01
L34	39.3300-39.0800	A	0.000	0.000	0.587	0.000	0.00
		B	0.000	0.000	0.587	0.000	0.00
		C	0.000	0.000	0.587	0.000	0.00
L35	39.0800-38.3300	A	0.000	0.000	1.760	0.000	0.00
		B	0.000	0.000	1.760	0.000	0.00
		C	0.000	0.000	1.760	0.000	0.01
L36	38.3300-38.0800	A	0.000	0.000	0.587	0.000	0.00
		B	0.000	0.000	0.587	0.000	0.00
		C	0.000	0.000	0.587	0.000	0.00
L37	38.0800-33.0800	A	0.000	0.000	12.912	0.000	0.08
		B	0.000	0.000	12.106	0.000	0.00
		C	0.000	0.000	12.912	0.000	0.09
L38	33.0800-30.7500	A	0.000	0.000	6.602	0.000	0.08
		B	0.000	0.000	5.825	0.000	0.00
		C	0.000	0.000	6.602	0.000	0.04
L39	30.7500-30.5000	A	0.000	0.000	0.708	0.000	0.01
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L40	30.5000-25.5000	A	0.000	0.000	14.167	0.000	0.17
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	14.167	0.000	0.09
L41	25.5000-20.5000	A	0.000	0.000	14.167	0.000	0.17
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	14.167	0.000	0.09
L42	20.5000-15.5000	A	0.000	0.000	14.167	0.000	0.17
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	14.167	0.000	0.09
L43	15.5000-9.8000	A	0.000	0.000	16.150	0.000	0.19
		B	0.000	0.000	14.250	0.000	0.00
		C	0.000	0.000	16.150	0.000	0.10
L44	9.8000-8.8000	A	0.000	0.000	2.833	0.000	0.03
		B	0.000	0.000	2.500	0.000	0.00
		C	0.000	0.000	2.833	0.000	0.02
L45	8.8000-8.2500	A	0.000	0.000	1.558	0.000	0.02
		B	0.000	0.000	1.375	0.000	0.00
		C	0.000	0.000	1.558	0.000	0.01
L46	8.2500-8.0000	A	0.000	0.000	0.708	0.000	0.01
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L47	8.0000-4.2500	A	0.000	0.000	10.625	0.000	0.13
		B	0.000	0.000	8.021	0.000	0.00
		C	0.000	0.000	10.625	0.000	0.07
L48	4.2500-4.0000	A	0.000	0.000	0.708	0.000	0.01
		B	0.000	0.000	0.354	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L49	4.0000-3.0000	A	0.000	0.000	2.833	0.000	0.03
		B	0.000	0.000	1.417	0.000	0.00
		C	0.000	0.000	2.833	0.000	0.02
L50	3.0000-2.7500	A	0.000	0.000	0.708	0.000	0.01
		B	0.000	0.000	0.354	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L51	2.7500-2.1600	A	0.000	0.000	1.672	0.000	0.02
		B	0.000	0.000	0.836	0.000	0.00
		C	0.000	0.000	1.672	0.000	0.01
L52	2.1600-1.9100	A	0.000	0.000	0.708	0.000	0.01
		B	0.000	0.000	0.354	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L53	1.9100-0.0000	A	0.000	0.000	3.995	0.000	0.05
		B	0.000	0.000	1.998	0.000	0.00
		C	0.000	0.000	3.995	0.000	0.03

**Feed Line/Linear Appurtenances Section Areas - With Ice**

Tower Section	Tower Elevation	Face or Leg	Ice Thickness	A <sub>R</sub>	A <sub>F</sub>	C <sub>AA</sub>	C <sub>AA</sub>	Weight
n	ft		in	ft <sup>2</sup>	ft <sup>2</sup>	In Face	Out Face	K
L1	156.0000-151.0000	A	0.991	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L2	151.0000-146.0000	A	0.988	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	146.0000-144.5000	A	0.986	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	0.01
L4	144.5000-144.0000	A	0.985	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L5	144.0000-139.0000	A	0.983	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
L6	139.0000-134.0000	A	0.980	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
L7	134.0000-129.0000	A	0.976	0.000	0.000	2.092	0.000	0.01
		B		0.000	0.000	2.092	0.000	0.01
		C		0.000	0.000	2.092	0.000	0.09
L8	129.0000-128.2500	A	0.974	0.000	0.000	0.896	0.000	0.01
		B		0.000	0.000	0.896	0.000	0.01
		C		0.000	0.000	0.896	0.000	0.02
L9	128.2500-128.0000	A	0.973	0.000	0.000	0.299	0.000	0.00
		B		0.000	0.000	0.299	0.000	0.00
		C		0.000	0.000	0.299	0.000	0.01
L10	128.0000-123.0000	A	0.971	0.000	0.000	5.971	0.000	0.03
		B		0.000	0.000	5.971	0.000	0.03
		C		0.000	0.000	5.971	0.000	0.12
L11	123.0000-118.0000	A	0.968	0.000	0.000	5.968	0.000	0.03
		B		0.000	0.000	5.968	0.000	0.03
		C		0.000	0.000	5.968	0.000	0.12
L12	118.0000-113.0000	A	0.963	0.000	0.000	5.963	0.000	0.03
		B		0.000	0.000	5.963	0.000	0.03
		C		0.000	0.000	5.963	0.000	0.12
L13	113.0000-108.0000	A	0.959	0.000	0.000	5.959	0.000	0.03
		B		0.000	0.000	5.959	0.000	0.03
		C		0.000	0.000	5.959	0.000	0.12
L14	108.0000-103.0000	A	0.955	0.000	0.000	4.702	0.000	0.03
		B		0.000	0.000	4.702	0.000	0.03
		C		0.000	0.000	4.702	0.000	0.12
L15	103.0000-98.0000	A	0.950	0.000	0.000	6.405	0.000	0.04
		B		0.000	0.000	6.405	0.000	0.04
		C		0.000	0.000	6.405	0.000	0.13
L16	98.0000-93.0000	A	0.945	0.000	0.000	8.029	0.000	0.04
		B		0.000	0.000	8.029	0.000	0.04
		C		0.000	0.000	8.029	0.000	0.13
L17	93.0000-92.0000	A	0.942	0.000	0.000	1.606	0.000	0.01
		B		0.000	0.000	1.606	0.000	0.01
		C		0.000	0.000	1.606	0.000	0.03
L18	92.0000-87.0000	A	0.939	0.000	0.000	8.023	0.000	0.04
		B		0.000	0.000	8.023	0.000	0.04
		C		0.000	0.000	8.023	0.000	0.13
L19	87.0000-82.0000	A	0.934	0.000	0.000	8.017	0.000	0.04
		B		0.000	0.000	8.017	0.000	0.04
		C		0.000	0.000	8.017	0.000	0.13
L20	82.0000-77.5000	A	0.928	0.000	0.000	7.211	0.000	0.04
		B		0.000	0.000	7.211	0.000	0.04
		C		0.000	0.000	7.211	0.000	0.12
L21	77.5000-72.5000	A	0.923	0.000	0.000	8.006	0.000	0.04
		B		0.000	0.000	8.006	0.000	0.04
		C		0.000	0.000	8.006	0.000	0.13
L22	72.5000-70.5800	A	0.918	0.000	0.000	3.073	0.000	0.02
		B		0.000	0.000	3.073	0.000	0.02

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
L23	70.5800-70.3300	C		0.000	0.000	3.073	0.000	0.05
		A	0.917	0.000	0.000	0.717	0.000	0.00
		B		0.000	0.000	0.717	0.000	0.00
		C		0.000	0.000	0.717	0.000	0.01
L24	70.3300-67.0800	A	0.915	0.000	0.000	9.314	0.000	0.05
		B		0.000	0.000	9.314	0.000	0.05
		C		0.000	0.000	9.314	0.000	0.11
L25	67.0800-66.8300	A	0.912	0.000	0.000	0.716	0.000	0.00
		B		0.000	0.000	0.716	0.000	0.00
		C		0.000	0.000	0.716	0.000	0.01
L26	66.8300-61.8300	A	0.909	0.000	0.000	14.317	0.000	0.07
		B		0.000	0.000	14.317	0.000	0.07
		C		0.000	0.000	14.317	0.000	0.16
L27	61.8300-57.5000	A	0.902	0.000	0.000	12.387	0.000	0.06
		B		0.000	0.000	12.387	0.000	0.06
		C		0.000	0.000	12.387	0.000	0.14
L28	57.5000-56.7500	A	0.898	0.000	0.000	2.146	0.000	0.01
		B		0.000	0.000	2.146	0.000	0.01
		C		0.000	0.000	2.146	0.000	0.02
L29	56.7500-51.7500	A	0.893	0.000	0.000	14.287	0.000	0.07
		B		0.000	0.000	14.287	0.000	0.07
		C		0.000	0.000	14.287	0.000	0.16
L30	51.7500-46.7500	A	0.885	0.000	0.000	13.798	0.000	0.07
		B		0.000	0.000	13.798	0.000	0.07
		C		0.000	0.000	13.798	0.000	0.16
L31	46.7500-41.7500	A	0.875	0.000	0.000	13.086	0.000	0.07
		B		0.000	0.000	13.086	0.000	0.07
		C		0.000	0.000	13.086	0.000	0.16
L32	41.7500-39.8000	A	0.868	0.000	0.000	5.099	0.000	0.03
		B		0.000	0.000	5.099	0.000	0.03
		C		0.000	0.000	5.099	0.000	0.06
L33	39.8000-39.3300	A	0.866	0.000	0.000	1.229	0.000	0.01
		B		0.000	0.000	1.229	0.000	0.01
		C		0.000	0.000	1.229	0.000	0.02
L34	39.3300-39.0800	A	0.865	0.000	0.000	0.653	0.000	0.00
		B		0.000	0.000	0.653	0.000	0.00
		C		0.000	0.000	0.653	0.000	0.01
L35	39.0800-38.3300	A	0.864	0.000	0.000	1.960	0.000	0.01
		B		0.000	0.000	1.960	0.000	0.01
		C		0.000	0.000	1.960	0.000	0.02
L36	38.3300-38.0800	A	0.863	0.000	0.000	0.653	0.000	0.00
		B		0.000	0.000	0.653	0.000	0.00
		C		0.000	0.000	0.653	0.000	0.01
L37	38.0800-33.0800	A	0.856	0.000	0.000	14.423	0.000	0.15
		B		0.000	0.000	13.616	0.000	0.07
		C		0.000	0.000	14.423	0.000	0.16
L38	33.0800-30.7500	A	0.847	0.000	0.000	7.391	0.000	0.11
		B		0.000	0.000	6.615	0.000	0.03
		C		0.000	0.000	7.391	0.000	0.08
L39	30.7500-30.5000	A	0.844	0.000	0.000	0.793	0.000	0.01
		B		0.000	0.000	0.709	0.000	0.00
		C		0.000	0.000	0.793	0.000	0.01
L40	30.5000-25.5000	A	0.836	0.000	0.000	15.839	0.000	0.24
		B		0.000	0.000	14.172	0.000	0.07
		C		0.000	0.000	15.839	0.000	0.16
L41	25.5000-20.5000	A	0.820	0.000	0.000	15.806	0.000	0.24
		B		0.000	0.000	14.140	0.000	0.07
		C		0.000	0.000	15.806	0.000	0.16
L42	20.5000-15.5000	A	0.800	0.000	0.000	15.767	0.000	0.24
		B		0.000	0.000	14.100	0.000	0.06
		C		0.000	0.000	15.767	0.000	0.16
L43	15.5000-9.8000	A	0.772	0.000	0.000	17.911	0.000	0.27
		B		0.000	0.000	16.011	0.000	0.07
		C		0.000	0.000	17.911	0.000	0.18
L44	9.8000-8.8000	A	0.749	0.000	0.000	3.142	0.000	0.05
		B		0.000	0.000	2.809	0.000	0.01
		C		0.000	0.000	3.142	0.000	0.03
L45	8.8000-8.2500	A	0.742	0.000	0.000	1.722	0.000	0.03
		B		0.000	0.000	1.538	0.000	0.01

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$	$A_F$	$C_{AA}$ In Face	$C_{AA}$ Out Face	Weight
				$ft^2$	$ft^2$	$ft^2$	$ft^2$	$K$
L46	8.2500-8.0000	C	0.739	0.000	0.000	1.722	0.000	0.02
		A		0.000	0.000	0.782	0.000	0.01
		B		0.000	0.000	0.699	0.000	0.00
L47	8.0000-4.2500	C	0.718	0.000	0.000	0.782	0.000	0.01
		A		0.000	0.000	11.702	0.000	0.17
		B		0.000	0.000	8.919	0.000	0.04
L48	4.2500-4.0000	C	0.690	0.000	0.000	11.702	0.000	0.11
		A		0.000	0.000	0.777	0.000	0.01
		B		0.000	0.000	0.389	0.000	0.00
L49	4.0000-3.0000	C	0.679	0.000	0.000	0.777	0.000	0.01
		A		0.000	0.000	3.105	0.000	0.05
		B		0.000	0.000	1.552	0.000	0.01
L50	3.0000-2.7500	C	0.666	0.000	0.000	3.105	0.000	0.03
		A		0.000	0.000	0.775	0.000	0.01
		B		0.000	0.000	0.387	0.000	0.00
L51	2.7500-2.1600	C	0.655	0.000	0.000	0.775	0.000	0.01
		A		0.000	0.000	1.826	0.000	0.03
		B		0.000	0.000	0.913	0.000	0.00
L52	2.1600-1.9100	C	0.643	0.000	0.000	1.826	0.000	0.02
		A		0.000	0.000	0.773	0.000	0.01
		B		0.000	0.000	0.386	0.000	0.00
L53	1.9100-0.0000	C	0.596	0.000	0.000	0.773	0.000	0.01
		A		0.000	0.000	4.331	0.000	0.06
		B		0.000	0.000	2.166	0.000	0.01
		C		0.000	0.000	4.331	0.000	0.05

### Feed Line Center of Pressure

Section	Elevation ft	$CP_x$	$CP_z$	$CP_x$ Ice	$CP_z$ Ice
		in	in	in	in
L1	156.0000-151.0000	0.0000	0.0000	0.0000	0.0000
L2	151.0000-146.0000	0.0000	0.0000	0.0000	0.0000
L3	146.0000-144.5000	0.0000	0.0000	0.0000	0.0000
L4	144.5000-144.0000	0.0000	0.0000	0.0000	0.0000
L5	144.0000-139.0000	0.0000	0.0000	0.0000	0.0000
L6	139.0000-134.0000	0.0000	0.0000	0.0000	0.0000
L7	134.0000-129.0000	0.0000	0.0000	0.0000	0.0000
L8	129.0000-128.2500	0.0000	0.0000	0.0000	0.0000
L9	128.2500-128.0000	0.0000	0.0000	0.0000	0.0000
L10	128.0000-123.0000	0.0000	0.0000	0.0000	0.0000
L11	123.0000-118.0000	0.0000	0.0000	0.0000	0.0000
L12	118.0000-113.0000	0.0000	0.0000	0.0000	0.0000
L13	113.0000-108.0000	0.0000	0.0000	0.0000	0.0000
L14	108.0000-103.0000	0.0000	0.0000	0.0000	0.0000
L15	103.0000-98.0000	0.0000	0.0000	0.0000	0.0000
L16	98.0000-93.0000	0.0000	0.0000	0.0000	0.0000
L17	93.0000-92.0000	0.0000	0.0000	0.0000	0.0000
L18	92.0000-87.0000	0.0000	0.0000	0.0000	0.0000
L19	87.0000-82.0000	0.0000	0.0000	0.0000	0.0000
L20	82.0000-77.5000	0.0000	0.0000	0.0000	0.0000



Section	Elevation	CP <sub>x</sub>	CP <sub>z</sub>	CP <sub>x</sub> Ice	CP <sub>z</sub> Ice
	ft	in	in	in	in
L21	77.5000-72.5000	0.0000	0.0000	0.0000	0.0000
L22	72.5000-70.5800	0.0000	0.0000	0.0000	0.0000
L23	70.5800-70.3300	0.0000	0.0000	0.0000	0.0000
L24	70.3300-67.0800	0.0000	0.0000	0.0000	0.0000
L25	67.0800-66.8300	0.0000	0.0000	0.0000	0.0000
L26	66.8300-61.8300	0.0000	0.0000	0.0000	0.0000
L27	61.8300-57.5000	0.0000	0.0000	0.0000	0.0000
L28	57.5000-56.7500	0.0000	0.0000	0.0000	0.0000
L29	56.7500-51.7500	0.0000	0.0000	0.0000	0.0000
L30	51.7500-46.7500	0.0000	0.0000	0.0000	0.0000
L31	46.7500-41.7500	0.0000	0.0000	0.0000	0.0000
L32	41.7500-39.8000	0.0000	0.0000	0.0000	0.0000
L33	39.8000-39.3300	0.0000	0.0000	0.0000	0.0000
L34	39.3300-39.0800	0.0000	0.0000	0.0000	0.0000
L35	39.0800-38.3300	0.0000	0.0000	0.0000	0.0000
L36	38.3300-38.0800	0.0000	0.0000	0.0000	0.0000
L37	38.0800-33.0800	-0.2554	0.1474	-0.2170	0.1253
L38	33.0800-30.7500	-0.5035	0.2907	-0.4276	0.2469
L39	30.7500-30.5000	-0.5058	0.2920	-0.4296	0.2481
L40	30.5000-25.5000	-0.5103	0.2946	-0.4337	0.2504
L41	25.5000-20.5000	-0.5188	0.2995	-0.4414	0.2548
L42	20.5000-15.5000	-0.5271	0.3043	-0.4492	0.2594
L43	15.5000-9.8000	-0.5360	0.3094	-0.4578	0.2643
L44	9.8000-8.8000	-0.5349	0.3088	-0.4571	0.2639
L45	8.8000-8.2500	-0.5362	0.3096	-0.4594	0.2652
L46	8.2500-8.0000	-0.5369	0.3100	-0.4601	0.2657
L47	8.0000-4.2500	-1.1647	0.6724	-1.0683	0.6168
L48	4.2500-4.0000	-2.5478	1.4710	-2.4003	1.3858
L49	4.0000-3.0000	-2.5523	1.4736	-2.4035	1.3877
L50	3.0000-2.7500	-2.5570	1.4763	-2.4068	1.3895
L51	2.7500-2.1600	-2.5599	1.4780	-2.4086	1.3906
L52	2.1600-1.9100	-2.5639	1.4803	-2.4114	1.3922
L53	1.9100-0.0000	-2.2992	1.3275	-2.1313	1.2305

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 <sub>a</sub> No Ice	K <sub>a</sub> Ice
L7	32	CCI-060100 Reinforcement	129.00 - 130.75	1.0000	1.0000
L7	34	CCI-060100 Reinforcement	129.00 - 130.75	1.0000	1.0000
L7	36	CCI-060100 Reinforcement	129.00 - 130.75	1.0000	1.0000
L8	32	CCI-060100 Reinforcement	128.25 - 129.00	1.0000	1.0000
L8	34	CCI-060100 Reinforcement	128.25 - 129.00	1.0000	1.0000
L8	36	CCI-060100 Reinforcement	128.25 - 129.00	1.0000	1.0000
L9	32	CCI-060100 Reinforcement	128.00 - 128.25	1.0000	1.0000
L9	34	CCI-060100 Reinforcement	128.00 - 128.25	1.0000	1.0000
L9	36	CCI-060100 Reinforcement	128.00 - 128.25	1.0000	1.0000
L10	32	CCI-060100 Reinforcement	123.00 - 128.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L10	34	CCI-060100	123.00 -	1.0000	1.0000
		Reinforcement	128.00		
L10	36	CCI-060100	123.00 -	1.0000	1.0000
		Reinforcement	128.00		
L11	32	CCI-060100	118.00 -	1.0000	1.0000
		Reinforcement	123.00		
L11	34	CCI-060100	118.00 -	1.0000	1.0000
		Reinforcement	123.00		
L11	36	CCI-060100	118.00 -	1.0000	1.0000
		Reinforcement	123.00		
L12	32	CCI-060100	113.00 -	1.0000	1.0000
		Reinforcement	118.00		
L12	34	CCI-060100	113.00 -	1.0000	1.0000
		Reinforcement	118.00		
L12	36	CCI-060100	113.00 -	1.0000	1.0000
		Reinforcement	118.00		
L13	32	CCI-060100	108.00 -	1.0000	1.0000
		Reinforcement	113.00		
L13	34	CCI-060100	108.00 -	1.0000	1.0000
		Reinforcement	113.00		
L13	36	CCI-060100	108.00 -	1.0000	1.0000
		Reinforcement	113.00		
L14	31	CCI-060100	103.00 -	1.0000	1.0000
		Reinforcement	107.48		
L14	32	CCI-060100	107.48 -	1.0000	1.0000
		Reinforcement	108.00		
L14	33	CCI-060100	103.00 -	1.0000	1.0000
		Reinforcement	107.48		
L14	34	CCI-060100	107.48 -	1.0000	1.0000
		Reinforcement	108.00		
L14	35	CCI-060100	103.00 -	1.0000	1.0000
		Reinforcement	107.48		
L14	36	CCI-060100	107.48 -	1.0000	1.0000
		Reinforcement	108.00		
L15	28	CCI-085125	98.00 -	1.0000	1.0000
		Reinforcement	100.66		
L15	29	CCI-085125	98.00 -	1.0000	1.0000
		Reinforcement	100.66		
L15	30	CCI-085125	98.00 -	1.0000	1.0000
		Reinforcement	100.66		
L15	31	CCI-060100	100.66 -	1.0000	1.0000
		Reinforcement	103.00		
L15	33	CCI-060100	100.66 -	1.0000	1.0000
		Reinforcement	103.00		
L15	35	CCI-060100	100.66 -	1.0000	1.0000
		Reinforcement	103.00		
L16	28	CCI-085125	93.00 -	1.0000	1.0000
		Reinforcement	98.00		
L16	29	CCI-085125	93.00 -	1.0000	1.0000
		Reinforcement	98.00		
L16	30	CCI-085125	93.00 -	1.0000	1.0000
		Reinforcement	98.00		
L17	28	CCI-085125	92.00 -	1.0000	1.0000
		Reinforcement	93.00		
L17	29	CCI-085125	92.00 -	1.0000	1.0000
		Reinforcement	93.00		
L17	30	CCI-085125	92.00 -	1.0000	1.0000
		Reinforcement	93.00		
L18	28	CCI-085125	87.00 -	1.0000	1.0000
		Reinforcement	92.00		
L18	29	CCI-085125	87.00 -	1.0000	1.0000
		Reinforcement	92.00		
L18	30	CCI-085125	87.00 -	1.0000	1.0000
		Reinforcement	92.00		
L19	28	CCI-085125	82.00 -	1.0000	1.0000
		Reinforcement	87.00		
L19	29	CCI-085125	82.00 -	1.0000	1.0000
		Reinforcement	87.00		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L19	30	CCI-085125	82.00 -	1.0000	1.0000
		Reinforcement	87.00		
L20	28	CCI-085125	77.50 -	1.0000	1.0000
		Reinforcement	82.00		
L20	29	CCI-085125	77.50 -	1.0000	1.0000
		Reinforcement	82.00		
L20	30	CCI-085125	77.50 -	1.0000	1.0000
		Reinforcement	82.00		
L21	28	CCI-085125	72.50 -	1.0000	1.0000
		Reinforcement	77.50		
L21	29	CCI-085125	72.50 -	1.0000	1.0000
		Reinforcement	77.50		
L21	30	CCI-085125	72.50 -	1.0000	1.0000
		Reinforcement	77.50		
L22	28	CCI-085125	70.58 -	1.0000	1.0000
		Reinforcement	72.50		
L22	29	CCI-085125	70.58 -	1.0000	1.0000
		Reinforcement	72.50		
L22	30	CCI-085125	70.58 -	1.0000	1.0000
		Reinforcement	72.50		
L23	19	CCI-065125	70.33 -	1.0000	1.0000
		Reinforcement	70.58		
L23	20	CCI-065125	70.33 -	1.0000	1.0000
		Reinforcement	70.58		
L23	21	CCI-065125	70.33 -	1.0000	1.0000
		Reinforcement	70.58		
L23	23	CCI-085125	70.33 -	1.0000	1.0000
		Reinforcement	70.58		
L23	25	CCI-085125	70.33 -	1.0000	1.0000
		Reinforcement	70.58		
L23	27	CCI-085125	70.33 -	1.0000	1.0000
		Reinforcement	70.58		
L24	19	CCI-065125	67.08 -	1.0000	1.0000
		Reinforcement	70.33		
L24	20	CCI-065125	67.08 -	1.0000	1.0000
		Reinforcement	70.33		
L24	21	CCI-065125	67.08 -	1.0000	1.0000
		Reinforcement	70.33		
L24	23	CCI-085125	67.08 -	1.0000	1.0000
		Reinforcement	70.33		
L24	25	CCI-085125	67.08 -	1.0000	1.0000
		Reinforcement	70.33		
L24	27	CCI-085125	67.08 -	1.0000	1.0000
		Reinforcement	70.33		
L25	19	CCI-065125	66.83 -	1.0000	1.0000
		Reinforcement	67.08		
L25	20	CCI-065125	66.83 -	1.0000	1.0000
		Reinforcement	67.08		
L25	21	CCI-065125	66.83 -	1.0000	1.0000
		Reinforcement	67.08		
L25	23	CCI-085125	66.83 -	1.0000	1.0000
		Reinforcement	67.08		
L25	25	CCI-085125	66.83 -	1.0000	1.0000
		Reinforcement	67.08		
L25	27	CCI-085125	66.83 -	1.0000	1.0000
		Reinforcement	67.08		
L26	19	CCI-065125	61.83 -	1.0000	1.0000
		Reinforcement	66.83		
L26	20	CCI-065125	61.83 -	1.0000	1.0000
		Reinforcement	66.83		
L26	21	CCI-065125	61.83 -	1.0000	1.0000
		Reinforcement	66.83		
L26	23	CCI-085125	61.83 -	1.0000	1.0000
		Reinforcement	66.83		
L26	25	CCI-085125	61.83 -	1.0000	1.0000
		Reinforcement	66.83		
L26	27	CCI-085125	61.83 -	1.0000	1.0000
		Reinforcement	66.83		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L27	19	CCI-065125	57.50 -	1.0000	1.0000
		Reinforcement	61.83		
L27	20	CCI-065125	57.50 -	1.0000	1.0000
		Reinforcement	61.83		
L27	21	CCI-065125	57.50 -	1.0000	1.0000
		Reinforcement	61.83		
L27	23	CCI-085125	57.50 -	1.0000	1.0000
		Reinforcement	61.83		
L27	25	CCI-085125	57.50 -	1.0000	1.0000
		Reinforcement	61.83		
L27	27	CCI-085125	57.50 -	1.0000	1.0000
		Reinforcement	61.83		
L28	19	CCI-065125	56.75 -	1.0000	1.0000
		Reinforcement	57.50		
L28	20	CCI-065125	56.75 -	1.0000	1.0000
		Reinforcement	57.50		
L28	21	CCI-065125	56.75 -	1.0000	1.0000
		Reinforcement	57.50		
L28	23	CCI-085125	56.75 -	1.0000	1.0000
		Reinforcement	57.50		
L28	25	CCI-085125	56.75 -	1.0000	1.0000
		Reinforcement	57.50		
L28	27	CCI-085125	56.75 -	1.0000	1.0000
		Reinforcement	57.50		
L29	19	CCI-065125	51.75 -	1.0000	1.0000
		Reinforcement	56.75		
L29	20	CCI-065125	51.75 -	1.0000	1.0000
		Reinforcement	56.75		
L29	21	CCI-065125	51.75 -	1.0000	1.0000
		Reinforcement	56.75		
L29	23	CCI-085125	51.75 -	1.0000	1.0000
		Reinforcement	56.75		
L29	25	CCI-085125	51.75 -	1.0000	1.0000
		Reinforcement	56.75		
L29	27	CCI-085125	51.75 -	1.0000	1.0000
		Reinforcement	56.75		
L30	19	CCI-065125	46.75 -	1.0000	1.0000
		Reinforcement	51.75		
L30	20	CCI-065125	46.75 -	1.0000	1.0000
		Reinforcement	51.75		
L30	21	CCI-065125	46.75 -	1.0000	1.0000
		Reinforcement	51.75		
L30	22	CCI-085125	46.75 -	1.0000	1.0000
		Reinforcement	48.76		
L30	23	CCI-085125	48.76 -	1.0000	1.0000
		Reinforcement	51.75		
L30	24	CCI-085125	46.75 -	1.0000	1.0000
		Reinforcement	48.76		
L30	25	CCI-085125	48.76 -	1.0000	1.0000
		Reinforcement	51.75		
L30	26	CCI-085125	46.75 -	1.0000	1.0000
		Reinforcement	48.76		
L30	27	CCI-085125	48.76 -	1.0000	1.0000
		Reinforcement	51.75		
L31	19	CCI-065125	41.75 -	1.0000	1.0000
		Reinforcement	46.75		
L31	20	CCI-065125	41.75 -	1.0000	1.0000
		Reinforcement	46.75		
L31	21	CCI-065125	41.75 -	1.0000	1.0000
		Reinforcement	46.75		
L31	22	CCI-085125	41.75 -	1.0000	1.0000
		Reinforcement	46.75		
L31	24	CCI-085125	41.75 -	1.0000	1.0000
		Reinforcement	46.75		
L31	26	CCI-085125	41.75 -	1.0000	1.0000
		Reinforcement	46.75		
L32	19	CCI-065125	39.80 -	1.0000	1.0000
		Reinforcement	41.75		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L32	20	CCI-065125 Reinforcement	39.80 - 41.75	1.0000	1.0000
L32	21	CCI-065125 Reinforcement	39.80 - 41.75	1.0000	1.0000
L32	22	CCI-085125 Reinforcement	39.80 - 41.75	1.0000	1.0000
L32	24	CCI-085125 Reinforcement	39.80 - 41.75	1.0000	1.0000
L32	26	CCI-085125 Reinforcement	39.80 - 41.75	1.0000	1.0000
L33	19	CCI-065125 Reinforcement	39.33 - 39.80	1.0000	1.0000
L33	20	CCI-065125 Reinforcement	39.33 - 39.80	1.0000	1.0000
L33	21	CCI-065125 Reinforcement	39.33 - 39.80	1.0000	1.0000
L33	22	CCI-085125 Reinforcement	39.33 - 39.80	1.0000	1.0000
L33	24	CCI-085125 Reinforcement	39.33 - 39.80	1.0000	1.0000
L33	26	CCI-085125 Reinforcement	39.33 - 39.80	1.0000	1.0000
L34	19	CCI-065125 Reinforcement	39.08 - 39.33	1.0000	1.0000
L34	20	CCI-065125 Reinforcement	39.08 - 39.33	1.0000	1.0000
L34	21	CCI-065125 Reinforcement	39.08 - 39.33	1.0000	1.0000
L34	22	CCI-085125 Reinforcement	39.08 - 39.33	1.0000	1.0000
L34	24	CCI-085125 Reinforcement	39.08 - 39.33	1.0000	1.0000
L34	26	CCI-085125 Reinforcement	39.08 - 39.33	1.0000	1.0000
L35	19	CCI-065125 Reinforcement	38.33 - 39.08	1.0000	1.0000
L35	20	CCI-065125 Reinforcement	38.33 - 39.08	1.0000	1.0000
L35	21	CCI-065125 Reinforcement	38.33 - 39.08	1.0000	1.0000
L35	22	CCI-085125 Reinforcement	38.33 - 39.08	1.0000	1.0000
L35	24	CCI-085125 Reinforcement	38.33 - 39.08	1.0000	1.0000
L35	26	CCI-085125 Reinforcement	38.33 - 39.08	1.0000	1.0000
L36	19	CCI-065125 Reinforcement	38.08 - 38.33	1.0000	1.0000
L36	20	CCI-065125 Reinforcement	38.08 - 38.33	1.0000	1.0000
L36	21	CCI-065125 Reinforcement	38.08 - 38.33	1.0000	1.0000
L36	22	CCI-085125 Reinforcement	38.08 - 38.33	1.0000	1.0000
L36	24	CCI-085125 Reinforcement	38.08 - 38.33	1.0000	1.0000
L36	26	CCI-085125 Reinforcement	38.08 - 38.33	1.0000	1.0000
L37	13	CCI-085125 Reinforcement	33.08 - 35.50	1.0000	1.0000
L37	14	CCI-085125 Reinforcement	33.08 - 35.50	1.0000	1.0000
L37	15	CCI-085125 Reinforcement	33.08 - 35.50	1.0000	1.0000
L37	16	CCI-085125 Reinforcement	33.08 - 35.50	1.0000	1.0000
L37	17	CCI-085125 Reinforcement	33.08 - 35.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
L37	18	CCI-065125	33.08 -	1.0000	1.0000
		Reinforcement	35.50		
L37	19	CCI-065125	35.50 -	1.0000	1.0000
		Reinforcement	38.08		
L37	20	CCI-065125	35.50 -	1.0000	1.0000
		Reinforcement	38.08		
L37	21	CCI-065125	35.50 -	1.0000	1.0000
		Reinforcement	38.08		
L37	22	CCI-085125	35.50 -	1.0000	1.0000
		Reinforcement	38.08		
L37	24	CCI-085125	35.50 -	1.0000	1.0000
		Reinforcement	38.08		
L37	26	CCI-085125	35.50 -	1.0000	1.0000
		Reinforcement	38.08		
L38	13	CCI-085125	30.75 -	1.0000	1.0000
		Reinforcement	33.08		
L38	14	CCI-085125	30.75 -	1.0000	1.0000
		Reinforcement	33.08		
L38	15	CCI-085125	30.75 -	1.0000	1.0000
		Reinforcement	33.08		
L38	16	CCI-085125	30.75 -	1.0000	1.0000
		Reinforcement	33.08		
L38	17	CCI-085125	30.75 -	1.0000	1.0000
		Reinforcement	33.08		
L38	18	CCI-065125	30.75 -	1.0000	1.0000
		Reinforcement	33.08		
L39	13	CCI-085125	30.50 -	1.0000	1.0000
		Reinforcement	30.75		
L39	14	CCI-085125	30.50 -	1.0000	1.0000
		Reinforcement	30.75		
L39	15	CCI-085125	30.50 -	1.0000	1.0000
		Reinforcement	30.75		
L39	16	CCI-085125	30.50 -	1.0000	1.0000
		Reinforcement	30.75		
L39	17	CCI-085125	30.50 -	1.0000	1.0000
		Reinforcement	30.75		
L39	18	CCI-065125	30.50 -	1.0000	1.0000
		Reinforcement	30.75		
L40	13	CCI-085125	25.50 -	1.0000	1.0000
		Reinforcement	30.50		
L40	14	CCI-085125	25.50 -	1.0000	1.0000
		Reinforcement	30.50		
L40	15	CCI-085125	25.50 -	1.0000	1.0000
		Reinforcement	30.50		
L40	16	CCI-085125	25.50 -	1.0000	1.0000
		Reinforcement	30.50		
L40	17	CCI-085125	25.50 -	1.0000	1.0000
		Reinforcement	30.50		
L40	18	CCI-065125	25.50 -	1.0000	1.0000
		Reinforcement	30.50		
L41	13	CCI-085125	20.50 -	1.0000	1.0000
		Reinforcement	25.50		
L41	14	CCI-085125	20.50 -	1.0000	1.0000
		Reinforcement	25.50		
L41	15	CCI-085125	20.50 -	1.0000	1.0000
		Reinforcement	25.50		
L41	16	CCI-085125	20.50 -	1.0000	1.0000
		Reinforcement	25.50		
L41	17	CCI-085125	20.50 -	1.0000	1.0000
		Reinforcement	25.50		
L41	18	CCI-065125	20.50 -	1.0000	1.0000
		Reinforcement	25.50		
L42	13	CCI-085125	15.50 -	1.0000	1.0000
		Reinforcement	20.50		
L42	14	CCI-085125	15.50 -	1.0000	1.0000
		Reinforcement	20.50		
L42	15	CCI-085125	15.50 -	1.0000	1.0000
		Reinforcement	20.50		

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
L42	16	CCI-085125 Reinforcement	15.50 - 20.50	1.0000	1.0000
L42	17	CCI-085125 Reinforcement	15.50 - 20.50	1.0000	1.0000
L42	18	CCI-065125 Reinforcement	15.50 - 20.50	1.0000	1.0000
L43	13	CCI-085125 Reinforcement	9.80 - 15.50	1.0000	1.0000
L43	14	CCI-085125 Reinforcement	9.80 - 15.50	1.0000	1.0000
L43	15	CCI-085125 Reinforcement	9.80 - 15.50	1.0000	1.0000
L43	16	CCI-085125 Reinforcement	9.80 - 15.50	1.0000	1.0000
L43	17	CCI-085125 Reinforcement	9.80 - 15.50	1.0000	1.0000
L43	18	CCI-065125 Reinforcement	9.80 - 15.50	1.0000	1.0000
L44	13	CCI-085125 Reinforcement	8.80 - 9.80	1.0000	1.0000
L44	14	CCI-085125 Reinforcement	8.80 - 9.80	1.0000	1.0000
L44	15	CCI-085125 Reinforcement	8.80 - 9.80	1.0000	1.0000
L44	16	CCI-085125 Reinforcement	8.80 - 9.80	1.0000	1.0000
L44	17	CCI-085125 Reinforcement	8.80 - 9.80	1.0000	1.0000
L44	18	CCI-065125 Reinforcement	8.80 - 9.80	1.0000	1.0000
L45	13	CCI-085125 Reinforcement	8.25 - 8.80	1.0000	1.0000
L45	14	CCI-085125 Reinforcement	8.25 - 8.80	1.0000	1.0000
L45	15	CCI-085125 Reinforcement	8.25 - 8.80	1.0000	1.0000
L45	16	CCI-085125 Reinforcement	8.25 - 8.80	1.0000	1.0000
L45	17	CCI-085125 Reinforcement	8.25 - 8.80	1.0000	1.0000
L45	18	CCI-065125 Reinforcement	8.25 - 8.80	1.0000	1.0000
L46	13	CCI-085125 Reinforcement	8.00 - 8.25	1.0000	1.0000
L46	14	CCI-085125 Reinforcement	8.00 - 8.25	1.0000	1.0000
L46	15	CCI-085125 Reinforcement	8.00 - 8.25	1.0000	1.0000
L46	16	CCI-085125 Reinforcement	8.00 - 8.25	1.0000	1.0000
L46	17	CCI-085125 Reinforcement	8.00 - 8.25	1.0000	1.0000
L46	18	CCI-065125 Reinforcement	8.00 - 8.25	1.0000	1.0000
L47	13	CCI-085125 Reinforcement	4.25 - 8.00	1.0000	1.0000
L47	14	CCI-085125 Reinforcement	4.25 - 8.00	1.0000	1.0000
L47	15	CCI-085125 Reinforcement	4.25 - 8.00	1.0000	1.0000
L47	16	CCI-085125 Reinforcement	4.25 - 8.00	1.0000	1.0000
L47	17	CCI-085125 Reinforcement	4.25 - 8.00	1.0000	1.0000
L47	18	CCI-065125 Reinforcement	5.50 - 8.00	1.0000	1.0000
L48	13	CCI-085125 Reinforcement	4.00 - 4.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
L48	14	CCI-085125	4.00 - 4.25	1.0000	1.0000
		Reinforcement			
L48	15	CCI-085125	4.00 - 4.25	1.0000	1.0000
		Reinforcement			
L48	16	CCI-085125	4.00 - 4.25	1.0000	1.0000
		Reinforcement			
L48	17	CCI-085125	4.00 - 4.25	1.0000	1.0000
		Reinforcement			
L49	13	CCI-085125	3.00 - 4.00	1.0000	1.0000
		Reinforcement			
L49	14	CCI-085125	3.00 - 4.00	1.0000	1.0000
		Reinforcement			
L49	15	CCI-085125	3.00 - 4.00	1.0000	1.0000
		Reinforcement			
L49	16	CCI-085125	3.00 - 4.00	1.0000	1.0000
		Reinforcement			
L49	17	CCI-085125	3.00 - 4.00	1.0000	1.0000
		Reinforcement			
L50	13	CCI-085125	2.75 - 3.00	1.0000	1.0000
		Reinforcement			
L50	14	CCI-085125	2.75 - 3.00	1.0000	1.0000
		Reinforcement			
L50	15	CCI-085125	2.75 - 3.00	1.0000	1.0000
		Reinforcement			
L50	16	CCI-085125	2.75 - 3.00	1.0000	1.0000
		Reinforcement			
L50	17	CCI-085125	2.75 - 3.00	1.0000	1.0000
		Reinforcement			
L51	13	CCI-085125	2.16 - 2.75	1.0000	1.0000
		Reinforcement			
L51	14	CCI-085125	2.16 - 2.75	1.0000	1.0000
		Reinforcement			
L51	15	CCI-085125	2.16 - 2.75	1.0000	1.0000
		Reinforcement			
L51	16	CCI-085125	2.16 - 2.75	1.0000	1.0000
		Reinforcement			
L51	17	CCI-085125	2.16 - 2.75	1.0000	1.0000
		Reinforcement			
L52	13	CCI-085125	1.91 - 2.16	1.0000	1.0000
		Reinforcement			
L52	14	CCI-085125	1.91 - 2.16	1.0000	1.0000
		Reinforcement			
L52	15	CCI-085125	1.91 - 2.16	1.0000	1.0000
		Reinforcement			
L52	16	CCI-085125	1.91 - 2.16	1.0000	1.0000
		Reinforcement			
L52	17	CCI-085125	1.91 - 2.16	1.0000	1.0000
		Reinforcement			
L53	13	CCI-085125	0.50 - 1.91	1.0000	1.0000
		Reinforcement			
L53	14	CCI-085125	0.50 - 1.91	1.0000	1.0000
		Reinforcement			
L53	15	CCI-085125	0.50 - 1.91	1.0000	1.0000
		Reinforcement			
L53	16	CCI-085125	0.50 - 1.91	1.0000	1.0000
		Reinforcement			
L53	17	CCI-085125	0.50 - 1.91	1.0000	1.0000
		Reinforcement			

**Effective Width of Flat Linear Attachments / Feed Lines**



Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L7	32	CCI-060100	129.00 -	Auto	0.1886
		Reinforcement	130.75		
L7	34	CCI-060100	129.00 -	Auto	0.1886
		Reinforcement	130.75		
L7	36	CCI-060100	129.00 -	Auto	0.1886
		Reinforcement	130.75		
L8	32	CCI-060100	128.25 -	Auto	0.1781
		Reinforcement	129.00		
L8	34	CCI-060100	128.25 -	Auto	0.1781
		Reinforcement	129.00		
L8	36	CCI-060100	128.25 -	Auto	0.1781
		Reinforcement	129.00		
L9	32	CCI-060100	128.00 -	Auto	0.3190
		Reinforcement	128.25		
L9	34	CCI-060100	128.00 -	Auto	0.3190
		Reinforcement	128.25		
L9	36	CCI-060100	128.00 -	Auto	0.3190
		Reinforcement	128.25		
L10	32	CCI-060100	123.00 -	Auto	0.2913
		Reinforcement	128.00		
L10	34	CCI-060100	123.00 -	Auto	0.2913
		Reinforcement	128.00		
L10	36	CCI-060100	123.00 -	Auto	0.2913
		Reinforcement	128.00		
L11	32	CCI-060100	118.00 -	Auto	0.2436
		Reinforcement	123.00		
L11	34	CCI-060100	118.00 -	Auto	0.2436
		Reinforcement	123.00		
L11	36	CCI-060100	118.00 -	Auto	0.2436
		Reinforcement	123.00		
L12	32	CCI-060100	113.00 -	Auto	0.1903
		Reinforcement	118.00		
L12	34	CCI-060100	113.00 -	Auto	0.1903
		Reinforcement	118.00		
L12	36	CCI-060100	113.00 -	Auto	0.1903
		Reinforcement	118.00		
L13	32	CCI-060100	108.00 -	Auto	0.1425
		Reinforcement	113.00		
L13	34	CCI-060100	108.00 -	Auto	0.1425
		Reinforcement	113.00		
L13	36	CCI-060100	108.00 -	Auto	0.1425
		Reinforcement	113.00		
L14	31	CCI-060100	103.00 -	Auto	0.0926
		Reinforcement	107.48		
L14	32	CCI-060100	107.48 -	Auto	0.1137
		Reinforcement	108.00		
L14	33	CCI-060100	103.00 -	Auto	0.0926
		Reinforcement	107.48		
L14	34	CCI-060100	107.48 -	Auto	0.1137
		Reinforcement	108.00		
L14	35	CCI-060100	103.00 -	Auto	0.0926
		Reinforcement	107.48		
L14	36	CCI-060100	107.48 -	Auto	0.1137
		Reinforcement	108.00		
L15	28	CCI-085125	98.00 -	Auto	0.3224
		Reinforcement	100.66		
L15	29	CCI-085125	98.00 -	Auto	0.3224
		Reinforcement	100.66		
L15	30	CCI-085125	98.00 -	Auto	0.3224
		Reinforcement	100.66		
L15	31	CCI-060100	100.66 -	Auto	0.0611
		Reinforcement	103.00		
L15	33	CCI-060100	100.66 -	Auto	0.0611
		Reinforcement	103.00		
L15	35	CCI-060100	100.66 -	Auto	0.0611
		Reinforcement	103.00		
L16	28	CCI-085125	93.00 -	Auto	0.2976
		Reinforcement	98.00		

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L16	29	CCI-085125 Reinforcement	93.00 - 98.00	Auto	0.2976
L16	30	CCI-085125 Reinforcement	93.00 - 98.00	Auto	0.2976
L17	28	CCI-085125 Reinforcement	92.00 - 93.00	Auto	0.3625
L17	29	CCI-085125 Reinforcement	92.00 - 93.00	Auto	0.3625
L17	30	CCI-085125 Reinforcement	92.00 - 93.00	Auto	0.3625
L18	28	CCI-085125 Reinforcement	87.00 - 92.00	Auto	0.3368
L18	29	CCI-085125 Reinforcement	87.00 - 92.00	Auto	0.3368
L18	30	CCI-085125 Reinforcement	87.00 - 92.00	Auto	0.3368
L19	28	CCI-085125 Reinforcement	82.00 - 87.00	Auto	0.2991
L19	29	CCI-085125 Reinforcement	82.00 - 87.00	Auto	0.2991
L19	30	CCI-085125 Reinforcement	82.00 - 87.00	Auto	0.2991
L20	28	CCI-085125 Reinforcement	77.50 - 82.00	Auto	0.2669
L20	29	CCI-085125 Reinforcement	77.50 - 82.00	Auto	0.2669
L20	30	CCI-085125 Reinforcement	77.50 - 82.00	Auto	0.2669
L21	28	CCI-085125 Reinforcement	72.50 - 77.50	Auto	0.2544
L21	29	CCI-085125 Reinforcement	72.50 - 77.50	Auto	0.2544
L21	30	CCI-085125 Reinforcement	72.50 - 77.50	Auto	0.2544
L22	28	CCI-085125 Reinforcement	70.58 - 72.50	Auto	0.2338
L22	29	CCI-085125 Reinforcement	70.58 - 72.50	Auto	0.2338
L22	30	CCI-085125 Reinforcement	70.58 - 72.50	Auto	0.2338
L23	19	CCI-065125 Reinforcement	70.33 - 70.58	Auto	0.0000
L23	20	CCI-065125 Reinforcement	70.33 - 70.58	Auto	0.0000
L23	21	CCI-065125 Reinforcement	70.33 - 70.58	Auto	0.0000
L23	23	CCI-085125 Reinforcement	70.33 - 70.58	Auto	0.2274
L23	25	CCI-085125 Reinforcement	70.33 - 70.58	Auto	0.2274
L23	27	CCI-085125 Reinforcement	70.33 - 70.58	Auto	0.2274
L24	19	CCI-065125 Reinforcement	67.08 - 70.33	Auto	0.0000
L24	20	CCI-065125 Reinforcement	67.08 - 70.33	Auto	0.0000
L24	21	CCI-065125 Reinforcement	67.08 - 70.33	Auto	0.0000
L24	23	CCI-085125 Reinforcement	67.08 - 70.33	Auto	0.2130
L24	25	CCI-085125 Reinforcement	67.08 - 70.33	Auto	0.2130
L24	27	CCI-085125 Reinforcement	67.08 - 70.33	Auto	0.2130
L25	19	CCI-065125 Reinforcement	66.83 - 67.08	Auto	0.0810
L25	20	CCI-065125 Reinforcement	66.83 - 67.08	Auto	0.0810

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L25	21	CCI-065125 Reinforcement	66.83 - 67.08	Auto	0.0810
L25	23	CCI-085125 Reinforcement	66.83 - 67.08	Auto	0.2972
L25	25	CCI-085125 Reinforcement	66.83 - 67.08	Auto	0.2972
L25	27	CCI-085125 Reinforcement	66.83 - 67.08	Auto	0.2972
L26	19	CCI-065125 Reinforcement	61.83 - 66.83	Auto	0.0502
L26	20	CCI-065125 Reinforcement	61.83 - 66.83	Auto	0.0502
L26	21	CCI-065125 Reinforcement	61.83 - 66.83	Auto	0.0502
L26	23	CCI-085125 Reinforcement	61.83 - 66.83	Auto	0.2737
L26	25	CCI-085125 Reinforcement	61.83 - 66.83	Auto	0.2737
L26	27	CCI-085125 Reinforcement	61.83 - 66.83	Auto	0.2737
L27	19	CCI-065125 Reinforcement	57.50 - 61.83	Auto	0.0141
L27	20	CCI-065125 Reinforcement	57.50 - 61.83	Auto	0.0141
L27	21	CCI-065125 Reinforcement	57.50 - 61.83	Auto	0.0141
L27	23	CCI-085125 Reinforcement	57.50 - 61.83	Auto	0.2460
L27	25	CCI-085125 Reinforcement	57.50 - 61.83	Auto	0.2460
L27	27	CCI-085125 Reinforcement	57.50 - 61.83	Auto	0.2460
L28	19	CCI-065125 Reinforcement	56.75 - 57.50	Auto	0.0148
L28	20	CCI-065125 Reinforcement	56.75 - 57.50	Auto	0.0148
L28	21	CCI-065125 Reinforcement	56.75 - 57.50	Auto	0.0148
L28	23	CCI-085125 Reinforcement	56.75 - 57.50	Auto	0.2466
L28	25	CCI-085125 Reinforcement	56.75 - 57.50	Auto	0.2466
L28	27	CCI-085125 Reinforcement	56.75 - 57.50	Auto	0.2466
L29	19	CCI-065125 Reinforcement	51.75 - 56.75	Auto	0.0000
L29	20	CCI-065125 Reinforcement	51.75 - 56.75	Auto	0.0000
L29	21	CCI-065125 Reinforcement	51.75 - 56.75	Auto	0.0000
L29	23	CCI-085125 Reinforcement	51.75 - 56.75	Auto	0.2216
L29	25	CCI-085125 Reinforcement	51.75 - 56.75	Auto	0.2216
L29	27	CCI-085125 Reinforcement	51.75 - 56.75	Auto	0.2216
L30	19	CCI-065125 Reinforcement	46.75 - 51.75	Auto	0.0000
L30	20	CCI-065125 Reinforcement	46.75 - 51.75	Auto	0.0000
L30	21	CCI-065125 Reinforcement	46.75 - 51.75	Auto	0.0000
L30	22	CCI-085125 Reinforcement	46.75 - 48.76	Auto	0.1791
L30	23	CCI-085125 Reinforcement	48.76 - 51.75	Auto	0.1939
L30	24	CCI-085125 Reinforcement	46.75 - 48.76	Auto	0.1791

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L30	25	CCI-085125 Reinforcement	48.76 - 51.75	Auto	0.1939
L30	26	CCI-085125 Reinforcement	46.75 - 48.76	Auto	0.1791
L30	27	CCI-085125 Reinforcement	48.76 - 51.75	Auto	0.1939
L31	19	CCI-065125 Reinforcement	41.75 - 46.75	Auto	0.0000
L31	20	CCI-065125 Reinforcement	41.75 - 46.75	Auto	0.0000
L31	21	CCI-065125 Reinforcement	41.75 - 46.75	Auto	0.0000
L31	22	CCI-085125 Reinforcement	41.75 - 46.75	Auto	0.1542
L31	24	CCI-085125 Reinforcement	41.75 - 46.75	Auto	0.1542
L31	26	CCI-085125 Reinforcement	41.75 - 46.75	Auto	0.1542
L32	19	CCI-065125 Reinforcement	39.80 - 41.75	Auto	0.0000
L32	20	CCI-065125 Reinforcement	39.80 - 41.75	Auto	0.0000
L32	21	CCI-065125 Reinforcement	39.80 - 41.75	Auto	0.0000
L32	22	CCI-085125 Reinforcement	39.80 - 41.75	Auto	0.1296
L32	24	CCI-085125 Reinforcement	39.80 - 41.75	Auto	0.1296
L32	26	CCI-085125 Reinforcement	39.80 - 41.75	Auto	0.1296
L33	19	CCI-065125 Reinforcement	39.33 - 39.80	Auto	0.0000
L33	20	CCI-065125 Reinforcement	39.33 - 39.80	Auto	0.0000
L33	21	CCI-065125 Reinforcement	39.33 - 39.80	Auto	0.0000
L33	22	CCI-085125 Reinforcement	39.33 - 39.80	Auto	0.1461
L33	24	CCI-085125 Reinforcement	39.33 - 39.80	Auto	0.1461
L33	26	CCI-085125 Reinforcement	39.33 - 39.80	Auto	0.1461
L34	19	CCI-065125 Reinforcement	39.08 - 39.33	Auto	0.0000
L34	20	CCI-065125 Reinforcement	39.08 - 39.33	Auto	0.0000
L34	21	CCI-065125 Reinforcement	39.08 - 39.33	Auto	0.0000
L34	22	CCI-085125 Reinforcement	39.08 - 39.33	Auto	0.1400
L34	24	CCI-085125 Reinforcement	39.08 - 39.33	Auto	0.1400
L34	26	CCI-085125 Reinforcement	39.08 - 39.33	Auto	0.1400
L35	19	CCI-065125 Reinforcement	38.33 - 39.08	Auto	0.0000
L35	20	CCI-065125 Reinforcement	38.33 - 39.08	Auto	0.0000
L35	21	CCI-065125 Reinforcement	38.33 - 39.08	Auto	0.0000
L35	22	CCI-085125 Reinforcement	38.33 - 39.08	Auto	0.1370
L35	24	CCI-085125 Reinforcement	38.33 - 39.08	Auto	0.1370
L35	26	CCI-085125 Reinforcement	38.33 - 39.08	Auto	0.1370
L36	19	CCI-065125 Reinforcement	38.08 - 38.33	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L36	20	CCI-065125	38.08 -	Auto	0.0000
		Reinforcement	38.33		
L36	21	CCI-065125	38.08 -	Auto	0.0000
		Reinforcement	38.33		
L36	22	CCI-085125	38.08 -	Auto	0.1183
		Reinforcement	38.33		
L36	24	CCI-085125	38.08 -	Auto	0.1183
		Reinforcement	38.33		
L36	26	CCI-085125	38.08 -	Auto	0.1183
		Reinforcement	38.33		
L37	13	CCI-085125	33.08 -	Auto	0.0910
		Reinforcement	35.50		
L37	14	CCI-085125	33.08 -	Auto	0.0910
		Reinforcement	35.50		
L37	15	CCI-085125	33.08 -	Auto	0.0910
		Reinforcement	35.50		
L37	16	CCI-085125	33.08 -	Auto	0.0910
		Reinforcement	35.50		
L37	17	CCI-085125	33.08 -	Auto	0.0910
		Reinforcement	35.50		
L37	18	CCI-065125	33.08 -	Auto	0.0000
		Reinforcement	35.50		
L37	19	CCI-065125	35.50 -	Auto	0.0000
		Reinforcement	38.08		
L37	20	CCI-065125	35.50 -	Auto	0.0000
		Reinforcement	38.08		
L37	21	CCI-065125	35.50 -	Auto	0.0000
		Reinforcement	38.08		
L37	22	CCI-085125	35.50 -	Auto	0.1059
		Reinforcement	38.08		
L37	24	CCI-085125	35.50 -	Auto	0.1059
		Reinforcement	38.08		
L37	26	CCI-085125	35.50 -	Auto	0.1059
		Reinforcement	38.08		
L38	13	CCI-085125	30.75 -	Auto	0.0730
		Reinforcement	33.08		
L38	14	CCI-085125	30.75 -	Auto	0.0730
		Reinforcement	33.08		
L38	15	CCI-085125	30.75 -	Auto	0.0730
		Reinforcement	33.08		
L38	16	CCI-085125	30.75 -	Auto	0.0730
		Reinforcement	33.08		
L38	17	CCI-085125	30.75 -	Auto	0.0730
		Reinforcement	33.08		
L38	18	CCI-065125	30.75 -	Auto	0.0000
		Reinforcement	33.08		
L39	13	CCI-085125	30.50 -	Auto	0.0889
		Reinforcement	30.75		
L39	14	CCI-085125	30.50 -	Auto	0.0889
		Reinforcement	30.75		
L39	15	CCI-085125	30.50 -	Auto	0.0889
		Reinforcement	30.75		
L39	16	CCI-085125	30.50 -	Auto	0.0889
		Reinforcement	30.75		
L39	17	CCI-085125	30.50 -	Auto	0.0889
		Reinforcement	30.75		
L39	18	CCI-065125	30.50 -	Auto	0.0000
		Reinforcement	30.75		
L40	13	CCI-085125	25.50 -	Auto	0.0694
		Reinforcement	30.50		
L40	14	CCI-085125	25.50 -	Auto	0.0694
		Reinforcement	30.50		
L40	15	CCI-085125	25.50 -	Auto	0.0694
		Reinforcement	30.50		
L40	16	CCI-085125	25.50 -	Auto	0.0694
		Reinforcement	30.50		
L40	17	CCI-085125	25.50 -	Auto	0.0694
		Reinforcement	30.50		

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L40	18	CCI-065125	25.50 - 30.50	Auto	0.0000
L41	13	CCI-085125	20.50 - 25.50	Auto	0.0317
L41	14	CCI-085125	20.50 - 25.50	Auto	0.0317
L41	15	CCI-085125	20.50 - 25.50	Auto	0.0317
L41	16	CCI-085125	20.50 - 25.50	Auto	0.0317
L41	17	CCI-085125	20.50 - 25.50	Auto	0.0317
L41	18	CCI-065125	20.50 - 25.50	Auto	0.0000
L42	13	CCI-085125	15.50 - 20.50	Auto	0.0028
L42	14	CCI-085125	15.50 - 20.50	Auto	0.0028
L42	15	CCI-085125	15.50 - 20.50	Auto	0.0028
L42	16	CCI-085125	15.50 - 20.50	Auto	0.0028
L42	17	CCI-085125	15.50 - 20.50	Auto	0.0028
L42	18	CCI-065125	15.50 - 20.50	Auto	0.0000
L43	13	CCI-085125	9.80 - 15.50	Auto	0.0000
L43	14	CCI-085125	9.80 - 15.50	Auto	0.0000
L43	15	CCI-085125	9.80 - 15.50	Auto	0.0000
L43	16	CCI-085125	9.80 - 15.50	Auto	0.0000
L43	17	CCI-085125	9.80 - 15.50	Auto	0.0000
L43	18	CCI-065125	9.80 - 15.50	Auto	0.0000
L44	13	CCI-085125	8.80 - 9.80	Auto	0.0000
L44	14	CCI-085125	8.80 - 9.80	Auto	0.0000
L44	15	CCI-085125	8.80 - 9.80	Auto	0.0000
L44	16	CCI-085125	8.80 - 9.80	Auto	0.0000
L44	17	CCI-085125	8.80 - 9.80	Auto	0.0000
L44	18	CCI-065125	8.80 - 9.80	Auto	0.0000
L45	13	CCI-085125	8.25 - 8.80	Auto	0.0000
L45	14	CCI-085125	8.25 - 8.80	Auto	0.0000
L45	15	CCI-085125	8.25 - 8.80	Auto	0.0000
L45	16	CCI-085125	8.25 - 8.80	Auto	0.0000
L45	17	CCI-085125	8.25 - 8.80	Auto	0.0000
L45	18	CCI-065125	8.25 - 8.80	Auto	0.0000
L46	13	CCI-085125	8.00 - 8.25	Auto	0.0000
L46	14	CCI-085125	8.00 - 8.25	Auto	0.0000
L46	15	CCI-085125	8.00 - 8.25	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L46	16	CCI-085125 Reinforcement	8.00 - 8.25	Auto	0.0000
L46	17	CCI-085125 Reinforcement	8.00 - 8.25	Auto	0.0000
L46	18	CCI-065125 Reinforcement	8.00 - 8.25	Auto	0.0000
L47	13	CCI-085125 Reinforcement	4.25 - 8.00	Auto	0.0000
L47	14	CCI-085125 Reinforcement	4.25 - 8.00	Auto	0.0000
L47	15	CCI-085125 Reinforcement	4.25 - 8.00	Auto	0.0000
L47	16	CCI-085125 Reinforcement	4.25 - 8.00	Auto	0.0000
L47	17	CCI-085125 Reinforcement	4.25 - 8.00	Auto	0.0000
L47	18	CCI-065125 Reinforcement	5.50 - 8.00	Auto	0.0000
L48	13	CCI-085125 Reinforcement	4.00 - 4.25	Auto	0.0000
L48	14	CCI-085125 Reinforcement	4.00 - 4.25	Auto	0.0000
L48	15	CCI-085125 Reinforcement	4.00 - 4.25	Auto	0.0000
L48	16	CCI-085125 Reinforcement	4.00 - 4.25	Auto	0.0000
L48	17	CCI-085125 Reinforcement	4.00 - 4.25	Auto	0.0000
L49	13	CCI-085125 Reinforcement	3.00 - 4.00	Auto	0.0000
L49	14	CCI-085125 Reinforcement	3.00 - 4.00	Auto	0.0000
L49	15	CCI-085125 Reinforcement	3.00 - 4.00	Auto	0.0000
L49	16	CCI-085125 Reinforcement	3.00 - 4.00	Auto	0.0000
L49	17	CCI-085125 Reinforcement	3.00 - 4.00	Auto	0.0000
L50	13	CCI-085125 Reinforcement	2.75 - 3.00	Auto	0.0000
L50	14	CCI-085125 Reinforcement	2.75 - 3.00	Auto	0.0000
L50	15	CCI-085125 Reinforcement	2.75 - 3.00	Auto	0.0000
L50	16	CCI-085125 Reinforcement	2.75 - 3.00	Auto	0.0000
L50	17	CCI-085125 Reinforcement	2.75 - 3.00	Auto	0.0000
L51	13	CCI-085125 Reinforcement	2.16 - 2.75	Auto	0.0000
L51	14	CCI-085125 Reinforcement	2.16 - 2.75	Auto	0.0000
L51	15	CCI-085125 Reinforcement	2.16 - 2.75	Auto	0.0000
L51	16	CCI-085125 Reinforcement	2.16 - 2.75	Auto	0.0000
L51	17	CCI-085125 Reinforcement	2.16 - 2.75	Auto	0.0000
L52	13	CCI-085125 Reinforcement	1.91 - 2.16	Auto	0.0252
L52	14	CCI-085125 Reinforcement	1.91 - 2.16	Auto	0.0252
L52	15	CCI-085125 Reinforcement	1.91 - 2.16	Auto	0.0252
L52	16	CCI-085125 Reinforcement	1.91 - 2.16	Auto	0.0252
L52	17	CCI-085125 Reinforcement	1.91 - 2.16	Auto	0.0252

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L53	13	CCI-085125 Reinforcement	0.50 - 1.91	Auto	0.0203
L53	14	CCI-085125 Reinforcement	0.50 - 1.91	Auto	0.0203
L53	15	CCI-085125 Reinforcement	0.50 - 1.91	Auto	0.0203
L53	16	CCI-085125 Reinforcement	0.50 - 1.91	Auto	0.0203
L53	17	CCI-085125 Reinforcement	0.50 - 1.91	Auto	0.0203

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	CA <sub>AA</sub> Front ft <sup>2</sup>	CA <sub>AA</sub> Side ft <sup>2</sup>	Weight K	
NNVV-65B-R4	A	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice	7.6200	3.0100	0.08
						1/2" Ice	8.1200	3.4500	0.15
						1" Ice	8.6300	3.9000	0.23
NNVV-65B-R4	B	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice	7.6200	3.0100	0.08
						1/2" Ice	8.1200	3.4500	0.15
						1" Ice	8.6300	3.9000	0.23
NNVV-65B-R4	C	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice	7.6200	3.0100	0.08
						1/2" Ice	8.1200	3.4500	0.15
						1" Ice	8.6300	3.9000	0.23
APXVTM14-ALU-I20	A	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice	4.1200	2.0600	0.06
						1/2" Ice	4.5200	2.4200	0.10
						1" Ice	4.9300	2.8000	0.14
APXVTM14-ALU-I20	B	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice	4.1200	2.0600	0.06
						1/2" Ice	4.5200	2.4200	0.10
						1" Ice	4.9300	2.8000	0.14
APXVTM14-ALU-I20	C	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice	4.1200	2.0600	0.06
						1/2" Ice	4.5200	2.4200	0.10
						1" Ice	4.9300	2.8000	0.14
(2) TD-RRH8X20-25	A	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice	4.0455	1.5345	0.07
						1/2" Ice	4.2975	1.7142	0.10
						1" Ice	4.5570	1.9008	0.13
TD-RRH8X20-25	B	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice	4.0455	1.5345	0.07
						1/2" Ice	4.2975	1.7142	0.10
						1" Ice	4.5570	1.9008	0.13
(2) PCS 1900MHZ 4X45W-65MHZ	A	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice	2.3218	2.2381	0.06
						1/2" Ice	2.5266	2.4407	0.08
						1" Ice	2.7388	2.6507	0.11
PCS 1900MHZ 4X45W-65MHZ	B	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice	2.3218	2.2381	0.06
						1/2" Ice	2.5266	2.4407	0.08
						1" Ice	2.7388	2.6507	0.11
(4) RRH2X50-800	A	From Leg	4.0000 0.00	0.00	150.0000	No Ice	1.7008	1.2822	0.05
						1" Ice	1.8640	1.4275	0.07



Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K	
			0.00			1/2"	2.0345	1.5803	0.09
						Ice			
(2) RRH2X50-800	B	From Leg	4.0000	0.00	150.0000	1" Ice	1.7008	1.2822	0.05
			0.00			No Ice	1.8640	1.4275	0.07
			0.00			1/2"	2.0345	1.5803	0.09
						Ice			
T-Arm Mount [TA 702-3]	A	None		0.00	150.0000	1" Ice	4.7500	4.7500	0.34
						No Ice	5.8200	5.8200	0.43
						1/2"	6.9800	6.9800	0.55
						Ice			
						1" Ice			
***									
APXVAA24_43-U-A20 w/ Mount Pipe	A	From Leg	4.0000	-30.00	143.0000	No Ice	14.6900	6.8700	0.16
			0.00			1/2"	15.4600	7.5500	0.28
			0.00			Ice	16.2300	8.2500	0.43
						1" Ice			
APXVAA24_43-U-A20 w/ Mount Pipe	B	From Leg	4.0000	-30.00	143.0000	No Ice	14.6900	6.8700	0.16
			0.00			1/2"	15.4600	7.5500	0.28
			0.00			Ice	16.2300	8.2500	0.43
						1" Ice			
APXVAA24_43-U-A20 w/ Mount Pipe	C	From Leg	4.0000	-30.00	143.0000	No Ice	14.6900	6.8700	0.16
			0.00			1/2"	15.4600	7.5500	0.28
			0.00			Ice	16.2300	8.2500	0.43
						1" Ice			
APX16DWV-16DWV-S-E- A20 w/ Mount Pipe	A	From Leg	4.0000	-30.00	143.0000	No Ice	6.2900	2.7600	0.06
			0.00			1/2"	6.8600	3.2700	0.11
			0.00			Ice	7.4500	3.7900	0.16
						1" Ice			
APX16DWV-16DWV-S-E- A20 w/ Mount Pipe	B	From Leg	4.0000	-30.00	143.0000	No Ice	6.2900	2.7600	0.06
			0.00			1/2"	6.8600	3.2700	0.11
			0.00			Ice	7.4500	3.7900	0.16
						1" Ice			
APX16DWV-16DWV-S-E- A20 w/ Mount Pipe	C	From Leg	4.0000	-30.00	143.0000	No Ice	6.2900	2.7600	0.06
			0.00			1/2"	6.8600	3.2700	0.11
			0.00			Ice	7.4500	3.7900	0.16
						1" Ice			
RADIO 4449 B71/B85A	A	From Leg	4.0000	-30.00	143.0000	No Ice	1.6444	1.3102	0.07
			0.00			1/2"	1.8044	1.4555	0.09
			0.00			Ice	1.9719	1.6081	0.11
						1" Ice			
RADIO 4449 B71/B85A	B	From Leg	4.0000	-30.00	143.0000	No Ice	1.6444	1.3102	0.07
			0.00			1/2"	1.8044	1.4555	0.09
			0.00			Ice	1.9719	1.6081	0.11
						1" Ice			
RADIO 4449 B71/B85A	C	From Leg	4.0000	-30.00	143.0000	No Ice	1.6444	1.3102	0.07
			0.00			1/2"	1.8044	1.4555	0.09
			0.00			Ice	1.9719	1.6081	0.11
						1" Ice			
(2) TMAT1921B68-21-43	A	From Leg	4.0000	-30.00	143.0000	No Ice	0.6597	0.3185	0.02
			0.00			1/2"	0.7623	0.3961	0.02
			0.00			Ice	0.8723	0.4811	0.03
						1" Ice			
(2) TMAT1921B68-21-43	B	From Leg	4.0000	-30.00	143.0000	No Ice	0.6597	0.3185	0.02
			0.00			1/2"	0.7623	0.3961	0.02
			0.00			Ice	0.8723	0.4811	0.03
						1" Ice			
(2) TMAT1921B68-21-43	C	From Leg	4.0000	-30.00	143.0000	No Ice	0.6597	0.3185	0.02
			0.00			1/2"	0.7623	0.3961	0.02
			0.00			Ice	0.8723	0.4811	0.03
						1" Ice			
Platform Mount [LP 701- 1_HR-1]	B	None		0.00	143.0000	No Ice	55.5800	55.5800	3.08
						1/2"	62.4400	62.4400	4.29
						Ice	69.1400	69.1400	5.68
						1" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>A</sub> A <sub>A</sub> Front ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Side ft <sup>2</sup>	Weight K	
(2) 2.375" OD x 8' Mount Pipe	C	From Leg	4.0000 0.00 0.00	90.00	143.0000	No Ice	1.9000	1.9000	0.03
						1/2" Ice	2.7281	2.7281	0.04
						Ice	3.4009	3.4009	0.06
						1" Ice			
*****									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	8.0100	4.2300	0.11
						1/2" Ice	8.5200	4.6900	0.19
						Ice	9.0400	5.1600	0.29
						1" Ice			
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	8.0100	4.2300	0.11
						1/2" Ice	8.5200	4.6900	0.19
						Ice	9.0400	5.1600	0.29
						1" Ice			
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	8.0100	4.2300	0.11
						1/2" Ice	8.5200	4.6900	0.19
						Ice	9.0400	5.1600	0.29
						1" Ice			
TA08025-B604	A	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	1.9635	0.9811	0.06
						1/2" Ice	2.1378	1.1117	0.08
						Ice	2.3195	1.2496	0.10
						1" Ice			
TA08025-B604	B	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	1.9635	0.9811	0.06
						1/2" Ice	2.1378	1.1117	0.08
						Ice	2.3195	1.2496	0.10
						1" Ice			
TA08025-B604	C	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	1.9635	0.9811	0.06
						1/2" Ice	2.1378	1.1117	0.08
						Ice	2.3195	1.2496	0.10
						1" Ice			
TA08025-B605	A	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	1.9635	1.1295	0.08
						1/2" Ice	2.1378	1.2666	0.09
						Ice	2.3195	1.4112	0.11
						1" Ice			
TA08025-B605	B	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	1.9635	1.1295	0.08
						1/2" Ice	2.1378	1.2666	0.09
						Ice	2.3195	1.4112	0.11
						1" Ice			
TA08025-B605	C	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	1.9635	1.1295	0.08
						1/2" Ice	2.1378	1.2666	0.09
						Ice	2.3195	1.4112	0.11
						1" Ice			
RDIDC-9181-PF-48	A	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	2.0119	1.1682	0.02
						1/2" Ice	2.1886	1.3109	0.04
						Ice	2.3727	1.4611	0.06
						1" Ice			
(2) 2.375" OD x 8' Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	1.9000	1.9000	0.03
						1/2" Ice	2.7281	2.7281	0.04
						Ice	3.4009	3.4009	0.06
						1" Ice			
(2) 2.375" OD x 8' Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	1.9000	1.9000	0.03
						1/2" Ice	2.7281	2.7281	0.04
						Ice	3.4009	3.4009	0.06
						1" Ice			
(2) 2.375" OD x 8' Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	131.0000	No Ice	1.9000	1.9000	0.03
						1/2" Ice	2.7281	2.7281	0.04
						Ice	3.4009	3.4009	0.06
						1" Ice			
Commscope Mount MC-PK8-DSH	C	None		0.00	131.0000	No Ice	34.2400	34.2400	1.75
						1/2" Ice	62.9500	62.9500	2.10
						Ice	87.5900	87.5900	4.55
						1" Ice			
*****									
(2) 980H120T4E-M w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	120.0000	No Ice	3.4100	2.9400	0.03
						1/2" Ice	3.9700	3.5000	0.06
						Ice	4.5500	4.0700	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C <sub>A</sub> A <sub>A</sub> Front ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Side ft <sup>2</sup>	Weight K	
Platform Mount [LP 1201-1]	B	None		0.00	120.0000	1" Ice			
						No Ice	18.3800	18.3800	2.10
						1/2" Ice	22.1100	22.1100	2.65
6' x 2.375" Pipe Mount	B	From Leg	4.0000 0.00 0.00	0.00	120.0000	1" Ice			
						No Ice	1.4250	1.4250	0.02
						1/2" Ice	1.9250	1.9250	0.03
(3) 6' x 2.375" Pipe Mount	A	From Leg	4.0000 0.00 0.00	0.00	120.0000	1" Ice			
						No Ice	1.4250	1.4250	0.02
						1/2" Ice	1.9250	1.9250	0.03
(3) 6' x 2.375" Pipe Mount	C	From Leg	4.0000 0.00 0.00	0.00	120.0000	1" Ice			
						No Ice	1.4250	1.4250	0.02
						1/2" Ice	1.9250	1.9250	0.03
						Ice	2.2939	2.2939	0.05
						1" Ice			

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### Tower Pressures - No Ice

$G_H = 1.100$

Section Elevation ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	A <sub>G</sub> ft <sup>2</sup>	F a c e	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
L1 156.0000-151.0000	153.5000	1.385	45.05	4.479	A	0.000	4.479	4.479	100.00	0.000	0.000
					B	0.000	4.479	100.00	0.000	0.000	
					C	0.000	4.479	100.00	0.000	0.000	
L2 151.0000-146.0000	148.5000	1.375	44.74	4.479	A	0.000	4.479	4.479	100.00	0.000	0.000
					B	0.000	4.479	100.00	0.000	0.000	
					C	0.000	4.479	100.00	0.000	0.000	
L3 146.0000-144.5000	145.2500	1.369	44.53	1.344	A	0.000	1.344	1.344	100.00	0.000	0.000
					B	0.000	1.344	100.00	0.000	0.000	
					C	0.000	1.344	100.00	0.000	0.000	
L4 144.5000-144.0000	144.2290	1.367	44.47	0.599	A	0.000	0.599	0.599	100.00	0.000	0.000
					B	0.000	0.599	100.00	0.000	0.000	
					C	0.000	0.599	100.00	0.000	0.000	
L5 144.0000-139.0000	141.4787	1.362	44.29	7.931	A	0.000	7.931	7.931	100.00	0.000	0.000
					B	0.000	7.931	100.00	0.000	0.000	
					C	0.000	7.931	100.00	0.000	0.000	
L6 139.0000-134.0000	136.4798	1.351	43.95	8.338	A	0.000	8.338	8.338	100.00	0.000	0.000
					B	0.000	8.338	100.00	0.000	0.000	
					C	0.000	8.338	100.00	0.000	0.000	
L7 134.0000-129.0000	131.4807	1.341	43.61	8.745	A	0.000	8.745	8.745	100.00	1.750	0.000
					B	0.000	8.745	100.00	1.750	0.000	
					C	0.000	8.745	100.00	1.750	0.000	
L8 129.0000-128.2500	128.6246	1.334	43.41	1.347	A	0.000	1.347	1.347	100.00	0.750	0.000
					B	0.000	1.347	100.00	0.750	0.000	
					C	0.000	1.347	100.00	0.750	0.000	
L9 128.2500-128.0000	128.1250	1.333	43.37	0.449	A	0.000	0.449	0.449	100.00	0.250	0.000
					B	0.000	0.449	100.00	0.250	0.000	
					C	0.000	0.449	100.00	0.250	0.000	
L10 128.0000-123.0000	125.4817	1.328	43.18	9.188	A	0.000	9.188	9.188	100.00	5.000	0.000
					B	0.000	9.188	100.00	5.000	0.000	
					C	0.000	9.188	100.00	5.000	0.000	

Section Elevation	z	K <sub>Z</sub>	q <sub>z</sub>	A <sub>G</sub>	F a c e	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
ft	ft		psf	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>
L11	120.4825	1.316	42.81	9.597	A	0.000	9.597	9.597	100.00	5.000	0.000
123.0000-					B	0.000	9.597		100.00	5.000	0.000
118.0000					C	0.000	9.597		100.00	5.000	0.000
L12	115.4832	1.305	42.43	10.007	A	0.000	10.007	10.007	100.00	5.000	0.000
118.0000-					B	0.000	10.007		100.00	5.000	0.000
113.0000					C	0.000	10.007		100.00	5.000	0.000
L13	110.4838	1.292	42.04	10.416	A	0.000	10.416	10.416	100.00	5.000	0.000
113.0000-					B	0.000	10.416		100.00	5.000	0.000
108.0000					C	0.000	10.416		100.00	5.000	0.000
L14	105.4844	1.28	41.63	10.825	A	0.000	10.825	10.825	100.00	4.138	0.000
108.0000-					B	0.000	10.825		100.00	4.138	0.000
103.0000					C	0.000	10.825		100.00	4.138	0.000
L15	100.4850	1.267	41.21	11.233	A	0.000	11.233	11.233	100.00	5.658	0.000
103.0000-					B	0.000	11.233		100.00	5.658	0.000
98.0000					C	0.000	11.233		100.00	5.658	0.000
L16	98.0000-	1.253	40.77	11.641	A	0.000	11.641	11.641	100.00	7.083	0.000
93.0000					B	0.000	11.641		100.00	7.083	0.000
					C	0.000	11.641		100.00	7.083	0.000
L17	93.0000-	1.245	40.50	2.328	A	0.000	2.328	2.328	100.00	1.417	0.000
92.0000					B	0.000	2.328		100.00	1.417	0.000
					C	0.000	2.328		100.00	1.417	0.000
L18	92.0000-	1.236	40.22	11.886	A	0.000	11.886	11.886	100.00	7.083	0.000
87.0000					B	0.000	11.886		100.00	7.083	0.000
					C	0.000	11.886		100.00	7.083	0.000
L19	87.0000-	1.221	39.73	12.297	A	0.000	12.297	12.297	100.00	7.083	0.000
82.0000					B	0.000	12.297		100.00	7.083	0.000
					C	0.000	12.297		100.00	7.083	0.000
L20	82.0000-	1.207	39.25	11.417	A	0.000	11.417	11.417	100.00	6.375	0.000
77.5000					B	0.000	11.417		100.00	6.375	0.000
					C	0.000	11.417		100.00	6.375	0.000
L21	77.5000-	1.191	38.75	13.065	A	0.000	13.065	13.065	100.00	7.083	0.000
72.5000					B	0.000	13.065		100.00	7.083	0.000
					C	0.000	13.065		100.00	7.083	0.000
L22	72.5000-	1.179	38.36	5.125	A	0.000	5.125	5.125	100.00	2.720	0.000
70.5800					B	0.000	5.125		100.00	2.720	0.000
					C	0.000	5.125		100.00	2.720	0.000
L23	70.5800-	1.176	38.24	0.672	A	0.000	0.672	0.672	100.00	0.625	0.000
70.3300					B	0.000	0.672		100.00	0.625	0.000
					C	0.000	0.672		100.00	0.625	0.000
L24	70.3300-	1.169	38.04	8.826	A	0.000	8.826	8.826	100.00	8.125	0.000
67.0800					B	0.000	8.826		100.00	8.125	0.000
					C	0.000	8.826		100.00	8.125	0.000
L25	67.0800-	1.163	37.83	0.684	A	0.000	0.684	0.684	100.00	0.625	0.000
66.8300					B	0.000	0.684		100.00	0.625	0.000
					C	0.000	0.684		100.00	0.625	0.000
L26	66.8300-	1.153	37.51	13.895	A	0.000	13.895	13.895	100.00	12.500	0.000
61.8300					B	0.000	13.895		100.00	12.500	0.000
					C	0.000	13.895		100.00	12.500	0.000
L27	61.8300-	1.135	36.92	12.362	A	0.000	12.362	12.362	100.00	10.825	0.000
57.5000					B	0.000	12.362		100.00	10.825	0.000
					C	0.000	12.362		100.00	10.825	0.000
L28	57.5000-	1.125	36.59	2.132	A	0.000	2.132	2.132	100.00	1.875	0.000
56.7500					B	0.000	2.132		100.00	1.875	0.000
					C	0.000	2.132		100.00	1.875	0.000
L29	56.7500-	1.113	36.19	14.451	A	0.000	14.451	14.451	100.00	12.500	0.000
51.7500					B	0.000	14.451		100.00	12.500	0.000
					C	0.000	14.451		100.00	12.500	0.000
L30	51.7500-	1.09	35.46	14.860	A	0.000	14.860	14.860	100.00	12.192	0.000
46.7500					B	0.000	14.860		100.00	12.192	0.000
					C	0.000	14.860		100.00	12.192	0.000
L31	46.7500-	1.066	34.67	15.269	A	0.000	15.269	15.269	100.00	11.736	0.000
41.7500					B	0.000	15.269		100.00	11.736	0.000
					C	0.000	15.269		100.00	11.736	0.000
L32	41.7500-	1.048	34.08	6.066	A	0.000	6.066	6.066	100.00	4.577	0.000
39.8000					B	0.000	6.066		100.00	4.577	0.000
					C	0.000	6.066		100.00	4.577	0.000
L33	39.8000-	1.041	33.87	1.470	A	0.000	1.470	1.470	100.00	1.103	0.000
39.3300					B	0.000	1.470		100.00	1.103	0.000

Section Elevation	z	K <sub>Z</sub>	q <sub>z</sub>	A <sub>G</sub>	F a c e	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
ft	ft		psf	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>			
L34 39.3300- 39.0800	39.2050	1.039	33.80	0.784	C	0.000	1.470	0.784	100.00	1.103	0.000
					A	0.000	0.784		100.00	0.587	0.000
					B	0.000	0.784		100.00	0.587	0.000
L35 39.0800- 38.3300	38.7048	1.036	33.71	2.357	C	0.000	0.784	2.357	100.00	0.587	0.000
					A	0.000	2.357		100.00	1.760	0.000
					B	0.000	2.357		100.00	1.760	0.000
L36 38.3300- 38.0800	38.2050	1.034	33.62	0.788	C	0.000	0.788	0.788	100.00	0.587	0.000
					A	0.000	0.788		100.00	0.587	0.000
					B	0.000	0.788		100.00	0.587	0.000
L37 38.0800- 33.0800	35.5695	1.018	33.12	15.977	C	0.000	0.788	15.977	100.00	0.587	0.000
					A	0.000	15.977		100.00	12.912	0.000
					B	0.000	15.977		100.00	12.106	0.000
L38 33.0800- 30.7500	31.9128	0.995	32.37	7.585	C	0.000	15.977	7.585	100.00	12.912	0.000
					A	0.000	7.585		100.00	6.602	0.000
					B	0.000	7.585		100.00	5.825	0.000
L39 30.7500- 30.5000	30.6250	0.987	32.09	0.819	C	0.000	7.585	0.819	100.00	6.602	0.000
					A	0.000	0.819		100.00	0.708	0.000
					B	0.000	0.819		100.00	0.625	0.000
L40 30.5000- 25.5000	27.9899	0.968	31.49	16.586	C	0.000	0.819	16.586	100.00	0.708	0.000
					A	0.000	16.586		100.00	14.167	0.000
					B	0.000	16.586		100.00	12.500	0.000
L41 25.5000- 20.5000	22.9901	0.929	30.21	16.997	C	0.000	16.586	16.997	100.00	14.167	0.000
					A	0.000	16.997		100.00	14.167	0.000
					B	0.000	16.997		100.00	12.500	0.000
L42 20.5000- 15.5000	17.9903	0.882	28.69	17.406	C	0.000	16.997	17.406	100.00	14.167	0.000
					A	0.000	17.406		100.00	14.167	0.000
					B	0.000	17.406		100.00	12.500	0.000
L43 15.5000- 9.8000	12.6377	0.85	27.65	20.339	C	0.000	17.406	20.339	100.00	14.167	0.000
					A	0.000	20.339		100.00	16.150	0.000
					B	0.000	20.339		100.00	14.250	0.000
L44 9.8000- 8.8000	9.2996	0.85	27.65	3.559	C	0.000	20.339	3.559	100.00	16.150	0.000
					A	0.000	3.559		100.00	2.833	0.000
					B	0.000	3.559		100.00	2.500	0.000
L45 8.8000- 8.2500	8.5249	0.85	27.65	1.964	C	0.000	3.559	1.964	100.00	2.833	0.000
					A	0.000	1.964		100.00	1.558	0.000
					B	0.000	1.964		100.00	1.375	0.000
L46 8.2500- 8.0000	8.1250	0.85	27.65	0.894	C	0.000	1.964	0.894	100.00	1.558	0.000
					A	0.000	0.894		100.00	0.708	0.000
					B	0.000	0.894		100.00	0.625	0.000
L47 8.0000- 4.2500	6.1198	0.85	27.65	13.538	C	0.000	0.894	13.538	100.00	0.708	0.000
					A	0.000	13.538		100.00	10.625	0.000
					B	0.000	13.538		100.00	8.021	0.000
L48 4.2500- 4.0000	4.1250	0.85	27.65	0.909	C	0.000	13.538	0.909	100.00	10.625	0.000
					A	0.000	0.909		100.00	0.708	0.000
					B	0.000	0.909		100.00	0.354	0.000
L49 4.0000- 3.0000	3.4996	0.85	27.65	3.648	C	0.000	0.909	3.648	100.00	0.708	0.000
					A	0.000	3.648		100.00	2.833	0.000
					B	0.000	3.648		100.00	1.417	0.000
L50 3.0000- 2.7500	2.8750	0.85	27.65	0.914	C	0.000	3.648	0.914	100.00	2.833	0.000
					A	0.000	0.914		100.00	0.708	0.000
					B	0.000	0.914		100.00	0.354	0.000
L51 2.7500- 2.1600	2.4549	0.85	27.65	2.162	C	0.000	0.914	2.162	100.00	0.708	0.000
					A	0.000	2.162		100.00	1.672	0.000
					B	0.000	2.162		100.00	0.836	0.000
L52 2.1600- 1.9100	2.0350	0.85	27.65	0.917	C	0.000	2.162	0.917	100.00	1.672	0.000
					A	0.000	0.917		100.00	0.708	0.000
					B	0.000	0.917		100.00	0.354	0.000
L53 1.9100- 0.0000	0.9537	0.85	27.65	7.038	C	0.000	0.917	7.038	100.00	0.708	0.000
					A	0.000	7.038		100.00	3.995	0.000
					B	0.000	7.038		100.00	1.998	0.000
					C	0.000	7.038		100.00	3.995	0.000

**Tower Pressure - With Ice**

**G<sub>H</sub> = 1.100**

Section Elevation	z	K <sub>z</sub>	q <sub>z</sub>	t <sub>z</sub>	A <sub>G</sub>	F a c e	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
ft	ft		psf	in	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>
L1 156.0000- 151.0000	153.5000	1.385	7.82	0.9912	5.305	A	0.000	5.305	5.305	100.00	0.000	0.000
						B	0.000	5.305		100.00	0.000	0.000
						C	0.000	5.305		100.00	0.000	0.000
L2 151.0000- 146.0000	148.5000	1.375	7.77	0.9880	5.302	A	0.000	5.302	5.302	100.00	0.000	0.000
						B	0.000	5.302		100.00	0.000	0.000
						C	0.000	5.302		100.00	0.000	0.000
L3 146.0000- 144.5000	145.2500	1.369	7.73	0.9858	1.590	A	0.000	1.590	1.590	100.00	0.000	0.000
						B	0.000	1.590		100.00	0.000	0.000
						C	0.000	1.590		100.00	0.000	0.000
L4 144.5000- 144.0000	144.2290	1.367	7.72	0.9851	0.681	A	0.000	0.681	0.681	100.00	0.000	0.000
						B	0.000	0.681		100.00	0.000	0.000
						C	0.000	0.681		100.00	0.000	0.000
L5 144.0000- 139.0000	141.4787	1.362	7.69	0.9832	8.751	A	0.000	8.751	8.751	100.00	0.000	0.000
						B	0.000	8.751		100.00	0.000	0.000
						C	0.000	8.751		100.00	0.000	0.000
L6 139.0000- 134.0000	136.4798	1.351	7.63	0.9797	9.155	A	0.000	9.155	9.155	100.00	0.000	0.000
						B	0.000	9.155		100.00	0.000	0.000
						C	0.000	9.155		100.00	0.000	0.000
L7 134.0000- 129.0000	131.4807	1.341	7.57	0.9760	9.559	A	0.000	9.559	9.559	100.00	2.092	0.000
						B	0.000	9.559		100.00	2.092	0.000
						C	0.000	9.559		100.00	2.092	0.000
L8 129.0000- 128.2500	128.6246	1.334	7.54	0.9739	1.469	A	0.000	1.469	1.469	100.00	0.896	0.000
						B	0.000	1.469		100.00	0.896	0.000
						C	0.000	1.469		100.00	0.896	0.000
L9 128.2500- 128.0000	128.1250	1.333	7.53	0.9735	0.489	A	0.000	0.489	0.489	100.00	0.299	0.000
						B	0.000	0.489		100.00	0.299	0.000
						C	0.000	0.489		100.00	0.299	0.000
L10 128.0000- 123.0000	125.4817	1.328	7.50	0.9715	9.997	A	0.000	9.997	9.997	100.00	5.971	0.000
						B	0.000	9.997		100.00	5.971	0.000
						C	0.000	9.997		100.00	5.971	0.000
L11 123.0000- 118.0000	120.4825	1.316	7.43	0.9675	10.403	A	0.000	10.403	10.403	100.00	5.968	0.000
						B	0.000	10.403		100.00	5.968	0.000
						C	0.000	10.403		100.00	5.968	0.000
L12 118.0000- 113.0000	115.4832	1.305	7.37	0.9634	10.810	A	0.000	10.810	10.810	100.00	5.963	0.000
						B	0.000	10.810		100.00	5.963	0.000
						C	0.000	10.810		100.00	5.963	0.000
L13 113.0000- 108.0000	110.4838	1.292	7.30	0.9592	11.215	A	0.000	11.215	11.215	100.00	5.959	0.000
						B	0.000	11.215		100.00	5.959	0.000
						C	0.000	11.215		100.00	5.959	0.000
L14 108.0000- 103.0000	105.4844	1.28	7.23	0.9547	11.621	A	0.000	11.621	11.621	100.00	4.702	0.000
						B	0.000	11.621		100.00	4.702	0.000
						C	0.000	11.621		100.00	4.702	0.000
L15 103.0000- 98.0000	100.4850	1.267	7.15	0.9501	12.025	A	0.000	12.025	12.025	100.00	6.405	0.000
						B	0.000	12.025		100.00	6.405	0.000
						C	0.000	12.025		100.00	6.405	0.000
L16 98.0000- 93.0000	95.4855	1.253	7.08	0.9453	12.429	A	0.000	12.429	12.429	100.00	8.029	0.000
						B	0.000	12.429		100.00	8.029	0.000
						C	0.000	12.429		100.00	8.029	0.000
L17 93.0000- 92.0000	92.4994	1.245	7.03	0.9423	2.485	A	0.000	2.485	2.485	100.00	1.606	0.000
						B	0.000	2.485		100.00	1.606	0.000
						C	0.000	2.485		100.00	1.606	0.000
L18 92.0000- 87.0000	89.4858	1.236	6.98	0.9392	12.669	A	0.000	12.669	12.669	100.00	8.023	0.000
						B	0.000	12.669		100.00	8.023	0.000
						C	0.000	12.669		100.00	8.023	0.000
L19 87.0000- 82.0000	84.4863	1.221	6.90	0.9338	13.075	A	0.000	13.075	13.075	100.00	8.017	0.000
						B	0.000	13.075		100.00	8.017	0.000
						C	0.000	13.075		100.00	8.017	0.000
L20 82.0000- 77.5000	79.7392	1.207	6.81	0.9284	12.113	A	0.000	12.113	12.113	100.00	7.211	0.000
						B	0.000	12.113		100.00	7.211	0.000
						C	0.000	12.113		100.00	7.211	0.000
L21 77.5000- 72.5000	74.9871	1.191	6.73	0.9227	13.834	A	0.000	13.834	13.834	100.00	8.006	0.000
						B	0.000	13.834		100.00	8.006	0.000
						C	0.000	13.834		100.00	8.006	0.000
L22 72.5000- 70.5800	71.5381	1.179	6.66	0.9184	5.419	A	0.000	5.419	5.419	100.00	3.073	0.000
						B	0.000	5.419		100.00	3.073	0.000
						C	0.000	5.419		100.00	3.073	0.000



Section Elevation ft	z ft	$K_z$	$q_z$ psf	$t_z$ in	$A_G$ ft <sup>2</sup>	F a c e	$A_F$ ft <sup>2</sup>	$A_R$ ft <sup>2</sup>	$A_{leg}$ ft <sup>2</sup>	Leg %	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>
L46 8.2500- 8.0000	8.1250	0.85	4.80	0.7388	0.925	C	0.000	2.032	0.925	100.00	1.722	0.000
						A	0.000	0.925		100.00	0.782	0.000
						B	0.000	0.925		100.00	0.699	0.000
L47 8.0000- 4.2500	6.1198	0.85	4.80	0.7182	13.987	C	0.000	0.925	13.987	100.00	0.782	0.000
						A	0.000	13.987		100.00	11.702	0.000
						B	0.000	13.987		100.00	8.919	0.000
L48 4.2500- 4.0000	4.1250	0.85	4.80	0.6904	0.938	C	0.000	13.987	0.938	100.00	11.702	0.000
						A	0.000	0.938		100.00	0.777	0.000
						B	0.000	0.938		100.00	0.389	0.000
L49 4.0000- 3.0000	3.4996	0.85	4.80	0.6792	3.761	C	0.000	0.938	3.761	100.00	0.777	0.000
						A	0.000	3.761		100.00	3.105	0.000
						B	0.000	3.761		100.00	1.552	0.000
L50 3.0000- 2.7500	2.8750	0.85	4.80	0.6659	0.942	C	0.000	3.761	0.942	100.00	3.105	0.000
						A	0.000	0.942		100.00	0.775	0.000
						B	0.000	0.942		100.00	0.387	0.000
L51 2.7500- 2.1600	2.4549	0.85	4.80	0.6555	2.226	C	0.000	0.942	2.226	100.00	0.775	0.000
						A	0.000	2.226		100.00	1.826	0.000
						B	0.000	2.226		100.00	0.913	0.000
L52 2.1600- 1.9100	2.0350	0.85	4.80	0.6433	0.944	C	0.000	2.226	0.944	100.00	1.826	0.000
						A	0.000	0.944		100.00	0.773	0.000
						B	0.000	0.944		100.00	0.386	0.000
L53 1.9100- 0.0000	0.9537	0.85	4.80	0.5964	7.228	C	0.000	0.944	7.228	100.00	0.773	0.000
						A	0.000	7.228		100.00	4.331	0.000
						B	0.000	7.228		100.00	2.166	0.000
						C	0.000	7.228		100.00	4.331	0.000

### Tower Pressure - Service

$G_H = 1.100$

Section Elevation ft	z ft	$K_z$	$q_z$ psf	$A_G$ ft <sup>2</sup>	F a c e	$A_F$ ft <sup>2</sup>	$A_R$ ft <sup>2</sup>	$A_{leg}$ ft <sup>2</sup>	Leg %	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>
L1 156.0000- 151.0000	153.5000	1.385	10.61	4.479	A	0.000	4.479	4.479	100.00	0.000	0.000
					B	0.000	4.479		100.00	0.000	0.000
					C	0.000	4.479		100.00	0.000	0.000
L2 151.0000- 146.0000	148.5000	1.375	10.53	4.479	A	0.000	4.479	4.479	100.00	0.000	0.000
					B	0.000	4.479		100.00	0.000	0.000
					C	0.000	4.479		100.00	0.000	0.000
L3 146.0000- 144.5000	145.2500	1.369	10.49	1.344	A	0.000	1.344	1.344	100.00	0.000	0.000
					B	0.000	1.344		100.00	0.000	0.000
					C	0.000	1.344		100.00	0.000	0.000
L4 144.5000- 144.0000	144.2290	1.367	10.47	0.599	A	0.000	0.599	0.599	100.00	0.000	0.000
					B	0.000	0.599		100.00	0.000	0.000
					C	0.000	0.599		100.00	0.000	0.000
L5 144.0000- 139.0000	141.4787	1.362	10.43	7.931	A	0.000	7.931	7.931	100.00	0.000	0.000
					B	0.000	7.931		100.00	0.000	0.000
					C	0.000	7.931		100.00	0.000	0.000
L6 139.0000- 134.0000	136.4798	1.351	10.35	8.338	A	0.000	8.338	8.338	100.00	0.000	0.000
					B	0.000	8.338		100.00	0.000	0.000
					C	0.000	8.338		100.00	0.000	0.000
L7 134.0000- 129.0000	131.4807	1.341	10.27	8.745	A	0.000	8.745	8.745	100.00	1.750	0.000
					B	0.000	8.745		100.00	1.750	0.000
					C	0.000	8.745		100.00	1.750	0.000
L8 129.0000- 128.2500	128.6246	1.334	10.22	1.347	A	0.000	1.347	1.347	100.00	0.750	0.000
					B	0.000	1.347		100.00	0.750	0.000
					C	0.000	1.347		100.00	0.750	0.000
L9 128.2500- 128.0000	128.1250	1.333	10.21	0.449	A	0.000	0.449	0.449	100.00	0.250	0.000
					B	0.000	0.449		100.00	0.250	0.000
					C	0.000	0.449		100.00	0.250	0.000
L10 128.0000- 123.0000	125.4817	1.328	10.17	9.188	A	0.000	9.188	9.188	100.00	5.000	0.000
					B	0.000	9.188		100.00	5.000	0.000
					C	0.000	9.188		100.00	5.000	0.000



Section Elevation	z	K <sub>Z</sub>	q <sub>z</sub>	A <sub>G</sub>	F a c e	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face	C <sub>A</sub> A <sub>A</sub> Out Face
ft	ft		psf	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>
L11	120.4825	1.316	10.08	9.597	A	0.000	9.597	9.597	100.00	5.000	0.000
123.0000-					B	0.000	9.597		100.00	5.000	0.000
118.0000					C	0.000	9.597		100.00	5.000	0.000
L12	115.4832	1.305	9.99	10.007	A	0.000	10.007	10.007	100.00	5.000	0.000
118.0000-					B	0.000	10.007		100.00	5.000	0.000
113.0000					C	0.000	10.007		100.00	5.000	0.000
L13	110.4838	1.292	9.90	10.416	A	0.000	10.416	10.416	100.00	5.000	0.000
113.0000-					B	0.000	10.416		100.00	5.000	0.000
108.0000					C	0.000	10.416		100.00	5.000	0.000
L14	105.4844	1.28	9.80	10.825	A	0.000	10.825	10.825	100.00	4.138	0.000
108.0000-					B	0.000	10.825		100.00	4.138	0.000
103.0000					C	0.000	10.825		100.00	4.138	0.000
L15	100.4850	1.267	9.70	11.233	A	0.000	11.233	11.233	100.00	5.658	0.000
103.0000-					B	0.000	11.233		100.00	5.658	0.000
98.0000					C	0.000	11.233		100.00	5.658	0.000
L16	98.0000-	1.253	9.60	11.641	A	0.000	11.641	11.641	100.00	7.083	0.000
93.0000					B	0.000	11.641		100.00	7.083	0.000
					C	0.000	11.641		100.00	7.083	0.000
L17	93.0000-	1.245	9.54	2.328	A	0.000	2.328	2.328	100.00	1.417	0.000
92.0000					B	0.000	2.328		100.00	1.417	0.000
					C	0.000	2.328		100.00	1.417	0.000
L18	92.0000-	1.236	9.47	11.886	A	0.000	11.886	11.886	100.00	7.083	0.000
87.0000					B	0.000	11.886		100.00	7.083	0.000
					C	0.000	11.886		100.00	7.083	0.000
L19	87.0000-	1.221	9.36	12.297	A	0.000	12.297	12.297	100.00	7.083	0.000
82.0000					B	0.000	12.297		100.00	7.083	0.000
					C	0.000	12.297		100.00	7.083	0.000
L20	82.0000-	1.207	9.24	11.417	A	0.000	11.417	11.417	100.00	6.375	0.000
77.5000					B	0.000	11.417		100.00	6.375	0.000
					C	0.000	11.417		100.00	6.375	0.000
L21	77.5000-	1.191	9.12	13.065	A	0.000	13.065	13.065	100.00	7.083	0.000
72.5000					B	0.000	13.065		100.00	7.083	0.000
					C	0.000	13.065		100.00	7.083	0.000
L22	72.5000-	1.179	9.03	5.125	A	0.000	5.125	5.125	100.00	2.720	0.000
70.5800					B	0.000	5.125		100.00	2.720	0.000
					C	0.000	5.125		100.00	2.720	0.000
L23	70.5800-	1.176	9.00	0.672	A	0.000	0.672	0.672	100.00	0.625	0.000
70.3300					B	0.000	0.672		100.00	0.625	0.000
					C	0.000	0.672		100.00	0.625	0.000
L24	70.3300-	1.169	8.96	8.826	A	0.000	8.826	8.826	100.00	8.125	0.000
67.0800					B	0.000	8.826		100.00	8.125	0.000
					C	0.000	8.826		100.00	8.125	0.000
L25	67.0800-	1.163	8.91	0.684	A	0.000	0.684	0.684	100.00	0.625	0.000
66.8300					B	0.000	0.684		100.00	0.625	0.000
					C	0.000	0.684		100.00	0.625	0.000
L26	66.8300-	1.153	8.83	13.895	A	0.000	13.895	13.895	100.00	12.500	0.000
61.8300					B	0.000	13.895		100.00	12.500	0.000
					C	0.000	13.895		100.00	12.500	0.000
L27	61.8300-	1.135	8.69	12.362	A	0.000	12.362	12.362	100.00	10.825	0.000
57.5000					B	0.000	12.362		100.00	10.825	0.000
					C	0.000	12.362		100.00	10.825	0.000
L28	57.5000-	1.125	8.62	2.132	A	0.000	2.132	2.132	100.00	1.875	0.000
56.7500					B	0.000	2.132		100.00	1.875	0.000
					C	0.000	2.132		100.00	1.875	0.000
L29	56.7500-	1.113	8.52	14.451	A	0.000	14.451	14.451	100.00	12.500	0.000
51.7500					B	0.000	14.451		100.00	12.500	0.000
					C	0.000	14.451		100.00	12.500	0.000
L30	51.7500-	1.09	8.35	14.860	A	0.000	14.860	14.860	100.00	12.192	0.000
46.7500					B	0.000	14.860		100.00	12.192	0.000
					C	0.000	14.860		100.00	12.192	0.000
L31	46.7500-	1.066	8.16	15.269	A	0.000	15.269	15.269	100.00	11.736	0.000
41.7500					B	0.000	15.269		100.00	11.736	0.000
					C	0.000	15.269		100.00	11.736	0.000
L32	41.7500-	1.048	8.02	6.066	A	0.000	6.066	6.066	100.00	4.577	0.000
39.8000					B	0.000	6.066		100.00	4.577	0.000
					C	0.000	6.066		100.00	4.577	0.000
L33	39.8000-	1.041	7.97	1.470	A	0.000	1.470	1.470	100.00	1.103	0.000
39.3300					B	0.000	1.470		100.00	1.103	0.000

Section Elevation	z	K <sub>Z</sub>	q <sub>z</sub>	A <sub>G</sub>	F a c e	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
ft	ft		psf	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>
L34 39.3300- 39.0800	39.2050	1.039	7.96	0.784	C	0.000	1.470	0.784	100.00	1.103	0.000
					A	0.000	0.784		100.00	0.587	0.000
					B	0.000	0.784		100.00	0.587	0.000
L35 39.0800- 38.3300	38.7048	1.036	7.94	2.357	C	0.000	0.784	2.357	100.00	0.587	0.000
					A	0.000	2.357		100.00	1.760	0.000
					B	0.000	2.357		100.00	1.760	0.000
L36 38.3300- 38.0800	38.2050	1.034	7.92	0.788	C	0.000	0.788	0.788	100.00	0.587	0.000
					A	0.000	0.788		100.00	0.587	0.000
					B	0.000	0.788		100.00	0.587	0.000
L37 38.0800- 33.0800	35.5695	1.018	7.80	15.977	C	0.000	0.788	15.977	100.00	0.587	0.000
					A	0.000	15.977		100.00	12.912	0.000
					B	0.000	15.977		100.00	12.106	0.000
L38 33.0800- 30.7500	31.9128	0.995	7.62	7.585	C	0.000	15.977	7.585	100.00	12.912	0.000
					A	0.000	7.585		100.00	6.602	0.000
					B	0.000	7.585		100.00	5.825	0.000
L39 30.7500- 30.5000	30.6250	0.987	7.56	0.819	C	0.000	7.585	0.819	100.00	6.602	0.000
					A	0.000	0.819		100.00	0.708	0.000
					B	0.000	0.819		100.00	0.625	0.000
L40 30.5000- 25.5000	27.9899	0.968	7.41	16.586	C	0.000	0.819	16.586	100.00	0.708	0.000
					A	0.000	16.586		100.00	14.167	0.000
					B	0.000	16.586		100.00	12.500	0.000
L41 25.5000- 20.5000	22.9901	0.929	7.11	16.997	C	0.000	16.586	16.997	100.00	14.167	0.000
					A	0.000	16.997		100.00	14.167	0.000
					B	0.000	16.997		100.00	12.500	0.000
L42 20.5000- 15.5000	17.9903	0.882	6.75	17.406	C	0.000	16.997	17.406	100.00	14.167	0.000
					A	0.000	17.406		100.00	14.167	0.000
					B	0.000	17.406		100.00	12.500	0.000
L43 15.5000- 9.8000	12.6377	0.85	6.51	20.339	C	0.000	17.406	20.339	100.00	14.167	0.000
					A	0.000	20.339		100.00	16.150	0.000
					B	0.000	20.339		100.00	14.250	0.000
L44 9.8000- 8.8000	9.2996	0.85	6.51	3.559	C	0.000	20.339	3.559	100.00	16.150	0.000
					A	0.000	3.559		100.00	2.833	0.000
					B	0.000	3.559		100.00	2.500	0.000
L45 8.8000- 8.2500	8.5249	0.85	6.51	1.964	C	0.000	3.559	1.964	100.00	2.833	0.000
					A	0.000	1.964		100.00	1.558	0.000
					B	0.000	1.964		100.00	1.375	0.000
L46 8.2500- 8.0000	8.1250	0.85	6.51	0.894	C	0.000	1.964	0.894	100.00	1.558	0.000
					A	0.000	0.894		100.00	0.708	0.000
					B	0.000	0.894		100.00	0.625	0.000
L47 8.0000- 4.2500	6.1198	0.85	6.51	13.538	C	0.000	0.894	13.538	100.00	0.708	0.000
					A	0.000	13.538		100.00	10.625	0.000
					B	0.000	13.538		100.00	8.021	0.000
L48 4.2500- 4.0000	4.1250	0.85	6.51	0.909	C	0.000	13.538	0.909	100.00	10.625	0.000
					A	0.000	0.909		100.00	0.708	0.000
					B	0.000	0.909		100.00	0.354	0.000
L49 4.0000- 3.0000	3.4996	0.85	6.51	3.648	C	0.000	0.909	3.648	100.00	0.708	0.000
					A	0.000	3.648		100.00	2.833	0.000
					B	0.000	3.648		100.00	1.417	0.000
L50 3.0000- 2.7500	2.8750	0.85	6.51	0.914	C	0.000	3.648	0.914	100.00	2.833	0.000
					A	0.000	0.914		100.00	0.708	0.000
					B	0.000	0.914		100.00	0.354	0.000
L51 2.7500- 2.1600	2.4549	0.85	6.51	2.162	C	0.000	0.914	2.162	100.00	0.708	0.000
					A	0.000	2.162		100.00	1.672	0.000
					B	0.000	2.162		100.00	0.836	0.000
L52 2.1600- 1.9100	2.0350	0.85	6.51	0.917	C	0.000	2.162	0.917	100.00	1.672	0.000
					A	0.000	0.917		100.00	0.708	0.000
					B	0.000	0.917		100.00	0.354	0.000
L53 1.9100- 0.0000	0.9537	0.85	6.51	7.038	C	0.000	0.917	7.038	100.00	0.708	0.000
					A	0.000	7.038		100.00	3.995	0.000
					B	0.000	7.038		100.00	1.998	0.000
					C	0.000	7.038		100.00	3.995	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	156 - 151	Pole	Max Tension	39	0.00	0.00	-0.00
			Max. Compression	26	-0.31	-0.00	0.00
			Max. Mx	8	-0.23	-0.38	0.00
			Max. My	2	-0.23	-0.00	0.38
			Max. Vy	8	0.15	-0.38	0.00
			Max. Vx	2	-0.15	-0.00	0.38
L2	151 - 146	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-3.82	-1.78	3.09
			Max. Mx	8	-2.03	-11.44	1.47
			Max. My	2	-2.01	-0.75	13.05
			Max. Vy	8	2.52	-11.44	1.47

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L3	146 - 144.5	Pole	Max. Vx	2	-2.72	-0.75	13.05
			Max. Torque	22			-2.09
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-3.93	-1.78	3.09
			Max. Mx	8	-2.11	-15.25	1.39
			Max. My	2	-2.08	-0.66	17.17
			Max. Vy	8	2.56	-15.25	1.39
			Max. Vx	2	-2.77	-0.66	17.17
L4	144.5 - 144	Pole	Max. Torque	22			-2.09
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-3.97	-1.78	3.09
			Max. Mx	8	-2.14	-16.54	1.36
			Max. My	2	-2.12	-0.63	18.56
			Max. Vy	8	2.58	-16.54	1.36
			Max. Vx	2	-2.79	-0.63	18.56
			L5	144 - 139	Pole	Max. Torque	22
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-13.27				-1.24	2.80
Max. Mx	8	-7.01				-51.41	0.93
Max. My	2	-6.98				-0.08	54.61
Max. Vy	8	8.29				-51.41	0.93
Max. Vx	2	-8.51				-0.08	54.61
L6	139 - 134	Pole				Max. Torque	22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-13.79	-1.25	2.83
			Max. Mx	8	-7.40	-93.85	0.64
			Max. My	2	-7.37	0.22	98.13
			Max. Vy	8	8.69	-93.85	0.64
			Max. Vx	2	-8.90	0.22	98.13
			L7	134 - 129	Pole	Max. Torque	22
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-21.28				-1.27	3.16
Max. Mx	8	-10.81				-145.09	0.44
Max. My	2	-10.78				0.52	150.63
Max. Vy	8	12.49				-145.09	0.44
Max. Vx	2	-12.74				0.52	150.63
L8	129 - 128.25	Pole				Max. Torque	20
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-21.38	-1.27	3.17
			Max. Mx	8	-10.88	-154.48	0.40
			Max. My	2	-10.85	0.56	160.20
			Max. Vy	8	12.55	-154.48	0.40
			Max. Vx	2	-12.80	0.56	160.20
			L9	128.25 - 128	Pole	Max. Torque	20
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-21.43				-1.27	3.17
Max. Mx	8	-10.92				-157.63	0.38
Max. My	2	-10.89				0.58	163.40
Max. Vy	8	12.57				-157.63	0.38
Max. Vx	2	-12.82				0.58	163.40
L10	128 - 123	Pole				Max. Torque	20
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-22.47	-1.29	3.20
			Max. Mx	8	-11.73	-221.59	0.08
			Max. My	2	-11.69	0.88	228.62
			Max. Vy	8	13.02	-221.59	0.08
			Max. Vx	2	-13.27	0.88	228.62
			L11	123 - 118	Pole	Max. Torque	20
Max Tension	1	0.00				0.00	0.00
Max. Compression	26	-27.75				-1.78	2.96
Max. Mx	8	-15.20				-291.57	-0.29
Max. My	2	-15.17				1.17	299.64
Max. Vy	8	15.30				-291.57	-0.29
Max. Vx	2	-15.53				1.17	299.64
L12	118 - 113	Pole				Max. Torque	20
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.85	-1.79	2.99
			Max. Mx	8	-16.07	-369.17	-0.69
			Max. My	2	-16.04	1.57	378.40

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L13	113 - 108	Pole	Max. Vy	8	15.75	-369.17	-0.69
			Max. Vx	2	-15.98	1.57	378.40
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-29.96	-1.81	3.02
			Max. Mx	8	-16.96	-449.02	-1.09
			Max. My	2	-16.93	1.98	459.40
			Max. Vy	8	16.20	-449.02	-1.09
L14	108 - 103	Pole	Max. Vx	2	-16.43	1.98	459.40
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.10	-1.82	3.04
			Max. Mx	8	-17.88	-531.14	-1.49
			Max. My	2	-17.85	2.39	542.67
			Max. Vy	8	16.66	-531.14	-1.49
			Max. Vx	2	-16.89	2.39	542.67
L15	103 - 98	Pole	Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.27	-1.83	3.07
			Max. Mx	8	-18.81	-615.53	-1.90
			Max. My	2	-18.79	2.80	628.21
			Max. Vy	8	17.12	-615.53	-1.90
			Max. Vx	2	-17.34	2.80	628.21
			Max. Torque	22			-1.65
L16	98 - 93	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.63	-1.84	3.07
			Max. Mx	8	-19.10	-641.30	-2.02
			Max. My	2	-19.07	2.92	654.31
			Max. Vy	8	17.26	-641.30	-2.02
			Max. Vx	2	-17.49	2.92	654.31
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
L17	93 - 92	Pole	Max. Compression	26	-34.66	-1.85	3.09
			Max. Mx	8	-20.75	-720.03	-2.38
			Max. My	2	-20.73	3.29	734.07
			Max. Vy	8	17.74	-720.03	-2.38
			Max. Vx	2	-17.97	3.29	734.07
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.15	-1.86	3.11
L18	92 - 87	Pole	Max. Mx	8	-21.99	-809.90	-2.78
			Max. My	2	-21.97	3.70	825.09
			Max. Vy	8	18.22	-809.90	-2.78
			Max. Vx	2	-18.45	3.70	825.09
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.67	-1.87	3.13
			Max. Mx	8	-23.25	-902.19	-3.19
L19	87 - 82	Pole	Max. My	2	-23.23	4.10	918.52
			Max. Vy	8	18.71	-902.19	-3.19
			Max. Vx	2	-18.94	4.10	918.52
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.05	-1.87	3.13
			Max. Mx	8	-24.40	-987.31	-3.55
			Max. My	2	-24.38	4.47	1004.67
L20	82 - 77.5	Pole	Max. Vy	8	19.14	-987.31	-3.55
			Max. Vx	2	-19.37	4.47	1004.67
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.73	-1.87	3.13
			Max. Mx	8	-25.82	-1084.21	-3.96
			Max. My	2	-25.80	4.88	1102.71
			Max. Vy	8	19.64	-1084.21	-3.96
L21	77.5 - 72.5	Pole	Max. Vx	2	-19.86	4.88	1102.71
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.38	-1.87	3.13
			Max. Mx	8	-26.37	-1122.08	-4.11
			Max. My	2			
			Max. Vy	8			
			Max. Vx	2			
L22	72.5 - 70.58	Pole	Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.38	-1.87	3.13
			Max. Mx	8	-26.37	-1122.08	-4.11

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L23	70.58 - 70.33	Pole	Max. My	2	-26.35	5.04	1141.01
			Max. Vy	8	19.84	-1122.08	-4.11
			Max. Vx	2	-20.06	5.04	1141.01
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.47	-1.87	3.13
			Max. Mx	8	-26.45	-1127.04	-4.13
			Max. My	2	-26.43	5.06	1146.03
			Max. Vy	8	19.85	-1127.04	-4.13
			Max. Vx	2	-20.07	5.06	1146.03
L24	70.33 - 67.08	Pole	Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.65	-1.87	3.13
			Max. Mx	8	-27.39	-1192.05	-4.39
			Max. My	2	-27.37	5.32	1211.77
			Max. Vy	8	20.17	-1192.05	-4.39
			Max. Vx	2	-20.40	5.32	1211.77
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.76	-1.87	3.13
L25	67.08 - 66.83	Pole	Max. Mx	8	-27.49	-1197.09	-4.41
			Max. My	2	-27.48	5.34	1216.87
			Max. Vy	8	20.19	-1197.09	-4.41
			Max. Vx	2	-20.42	5.34	1216.87
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.08	-1.87	3.13
			Max. Mx	8	-29.43	-1299.36	-4.82
			Max. My	2	-29.41	5.75	1320.27
			Max. Vy	8	20.73	-1299.36	-4.82
L26	66.83 - 61.83	Pole	Max. Vx	2	-20.95	5.75	1320.27
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.12	-1.87	3.13
			Max. Mx	8	-29.46	-1301.02	-4.82
			Max. My	2	-29.45	5.75	1321.94
			Max. Vy	8	20.76	-1301.02	-4.82
			Max. Vx	2	-20.98	5.75	1321.94
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
L27	61.83 - 57.5	Pole	Max. Compression	26	-49.17	-1.87	3.13
			Max. Mx	8	-32.95	-1406.20	-5.22
			Max. My	2	-32.94	6.16	1428.25
			Max. Vy	8	21.34	-1406.20	-5.22
			Max. Vx	2	-21.56	6.16	1428.25
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.52	-1.87	3.13
			Max. Mx	8	-34.93	-1514.11	-5.63
			Max. My	2	-34.91	6.57	1537.30
L28	57.5 - 56.75	Pole	Max. Vy	8	21.84	-1514.11	-5.63
			Max. Vx	2	-22.07	6.57	1537.30
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.88	-1.86	3.13
			Max. Mx	8	-36.92	-1624.53	-6.03
			Max. My	2	-36.91	6.98	1648.84
			Max. Vy	8	22.34	-1624.53	-6.03
			Max. Vx	2	-22.57	6.98	1648.84
			Max. Torque	22			-1.65
L29	56.75 - 51.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.26	-1.86	3.13
			Max. Mx	8	-36.92	-1624.53	-6.03
			Max. My	2	-36.91	6.98	1648.84
			Max. Vy	8	22.34	-1624.53	-6.03
			Max. Vx	2	-22.57	6.98	1648.84
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.26	-1.86	3.13
			Max. Mx	8	-36.92	-1624.53	-6.03
L30	51.75 - 46.75	Pole	Max. My	2	-36.91	6.98	1648.84
			Max. Vy	8	22.34	-1624.53	-6.03
			Max. Vx	2	-22.57	6.98	1648.84
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.26	-1.86	3.13
			Max. Mx	8	-36.92	-1624.53	-6.03
			Max. My	2	-36.91	6.98	1648.84
			Max. Vy	8	22.34	-1624.53	-6.03
			Max. Vx	2	-22.57	6.98	1648.84
L31	46.75 - 41.75	Pole	Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.26	-1.86	3.13

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L32	41.75 - 39.8	Pole	Max. Mx	8	-38.94	-1737.43	-6.43
			Max. My	2	-38.93	7.38	1762.86
			Max. Vy	8	22.84	-1737.43	-6.43
			Max. Vx	2	-23.06	7.38	1762.86
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.20	-1.86	3.13
			Max. Mx	8	-39.73	-1782.12	-6.59
			Max. My	2	-39.72	7.54	1808.00
			Max. Vy	20	-23.04	1780.28	10.35
L33	39.8 - 39.33	Pole	Max. Vx	2	-23.26	7.54	1808.00
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.44	-1.86	3.13
			Max. Mx	8	-39.95	-1792.95	-6.63
			Max. My	2	-39.94	7.58	1818.93
			Max. Vy	8	23.07	-1792.95	-6.63
			Max. Vx	2	-23.29	7.58	1818.93
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
L34	39.33 - 39.08	Pole	Max. Compression	26	-57.57	-1.87	3.13
			Max. Mx	8	-40.06	-1798.72	-6.65
			Max. My	2	-40.05	7.60	1824.75
			Max. Vy	8	23.09	-1798.72	-6.65
			Max. Vx	2	-23.32	7.60	1824.75
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.96	-1.86	3.13
			Max. Mx	8	-40.39	-1816.06	-6.71
			Max. My	2	-40.38	7.66	1842.26
L35	39.08 - 38.33	Pole	Max. Vy	8	23.17	-1816.06	-6.71
			Max. Vx	2	-23.39	7.66	1842.26
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.08	-1.87	3.13
			Max. Mx	8	-40.50	-1821.86	-6.73
			Max. My	2	-40.49	7.68	1848.11
			Max. Vy	8	23.19	-1821.86	-6.73
			Max. Vx	2	-23.41	7.68	1848.11
			Max. Torque	22			-1.65
L36	38.33 - 38.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.71	-1.72	3.20
			Max. Mx	8	-42.75	-1938.83	-7.05
			Max. My	2	-42.74	8.22	1966.42
			Max. Vy	20	-23.67	1937.26	10.98
			Max. Vx	2	-23.90	8.22	1966.42
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.99	-1.58	3.28
			Max. Mx	8	-43.86	-1994.08	-7.16
L37	38.08 - 33.08	Pole	Max. My	2	-43.86	8.55	2022.40
			Max. Vy	20	-23.89	1992.78	11.25
			Max. Vx	2	-24.12	8.55	2022.40
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.14	-1.57	3.29
			Max. Mx	8	-44.00	-2000.04	-7.17
			Max. My	2	-43.99	8.58	2028.43
			Max. Vy	8	23.91	-2000.04	-7.17
			Max. Vx	2	-24.13	8.58	2028.43
L38	33.08 - 30.75	Pole	Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.05	-1.26	3.45
			Max. Mx	8	-46.54	-2120.42	-7.39
			Max. My	2	-43.86	8.55	2022.40
			Max. Vy	20	-23.89	1992.78	11.25
			Max. Vx	2	-24.12	8.55	2022.40
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.99	-1.58	3.28
L39	30.75 - 30.5	Pole	Max. Mx	8	-43.86	-1994.08	-7.16
			Max. My	2	-43.86	8.55	2022.40
			Max. Vy	20	-23.89	1992.78	11.25
			Max. Vx	2	-24.12	8.55	2022.40
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.14	-1.57	3.29
			Max. Mx	8	-44.00	-2000.04	-7.17
			Max. My	2	-43.99	8.58	2028.43
			Max. Vy	8	23.91	-2000.04	-7.17
L40	30.5 - 25.5	Pole	Max. Vx	2	-24.13	8.58	2028.43
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.05	-1.26	3.45
			Max. Mx	8	-46.54	-2120.42	-7.39

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L41	25.5 - 20.5	Pole	Max. My	2	-46.54	9.28	2150.38
			Max. Vy	20	-24.38	2119.74	11.85
			Max. Vx	2	-24.60	9.28	2150.38
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67.99	-0.95	3.62
			Max. Mx	8	-49.12	-2243.05	-7.62
			Max. My	2	-49.11	9.98	2274.60
			Max. Vy	20	-24.82	2242.98	12.43
			Max. Vx	2	-25.04	9.98	2274.60
L42	20.5 - 15.5	Pole	Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.95	-0.63	3.79
			Max. Mx	20	-51.72	2368.37	13.01
			Max. My	2	-51.72	10.68	2400.95
			Max. Vy	20	-25.24	2368.37	13.01
			Max. Vx	2	-25.45	10.68	2400.95
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.22	-0.60	3.81
L43	15.5 - 9.8	Pole	Max. Mx	20	-51.96	2379.76	13.06
			Max. My	2	-51.96	10.75	2412.42
			Max. Vy	20	-25.27	2379.76	13.06
			Max. Vx	2	-25.48	10.75	2412.42
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.22	-0.60	3.81
			Max. Mx	20	-51.96	2379.76	13.06
			Max. My	2	-51.96	10.75	2412.42
			Max. Vy	20	-25.27	2379.76	13.06
L44	9.8 - 8.8	Pole	Max. Vx	2	-25.48	10.75	2412.42
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.51	-0.20	4.03
			Max. Mx	20	-57.59	2539.86	13.78
			Max. My	2	-57.59	11.64	2573.71
			Max. Vy	20	-25.85	2539.86	13.78
			Max. Vx	2	-26.06	11.64	2573.71
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
L45	8.8 - 8.25	Pole	Max. Compression	26	-77.84	-0.16	4.05
			Max. Mx	20	-57.88	2554.11	13.84
			Max. My	2	-57.88	11.72	2588.07
			Max. Vy	20	-25.88	2554.11	13.84
			Max. Vx	2	-26.10	11.72	2588.07
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.84	-0.16	4.05
			Max. Mx	20	-57.88	2554.11	13.84
			Max. My	2	-57.88	11.72	2588.07
L46	8.25 - 8	Pole	Max. Vy	20	-25.88	2554.11	13.84
			Max. Vx	2	-26.10	11.72	2588.07
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.00	-0.15	4.06
			Max. Mx	20	-58.03	2560.60	13.87
			Max. My	2	-58.02	11.75	2594.60
			Max. Vy	8	25.90	-2559.10	-8.15
			Max. Vx	2	-26.11	11.75	2594.60
			Max. Torque	22			-1.65
L47	8 - 4.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.33	0.11	4.19
			Max. Mx	20	-60.13	2658.46	14.31
			Max. My	2	-60.13	12.29	2693.17
			Max. Vy	20	-26.19	2658.46	14.31
			Max. Vx	2	-26.41	12.29	2693.17
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.50	0.13	4.20
			Max. Mx	20	-60.29	2665.02	14.33
L48	4.25 - 4	Pole	Max. My	2	-60.29	12.32	2699.78
			Max. Vy	20	-26.20	2665.02	14.33
			Max. Vx	2	-26.41	12.32	2699.78
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.16	0.20	4.23
			Max. Mx	20	-60.90	2691.32	14.45
			Max. My	2	-60.90	12.47	2726.26
			Max. Vy	20	-26.29	2691.32	14.45
			Max. Vx	2	-26.50	12.47	2726.26
L49	4 - 3	Pole	Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.16	0.20	4.23
			Max. Mx	20	-60.90	2691.32	14.45
L50	3 - 2.75	Pole	Max. My	2	-60.90	12.47	2726.26
			Max. Vy	20	-26.29	2691.32	14.45
			Max. Vx	2	-26.50	12.47	2726.26
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.33	0.22	4.24



Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L51	2.75 - 2.16	Pole	Max. Mx	20	-61.05	2697.91	14.48
			Max. My	2	-61.05	12.50	2732.90
			Max. Vy	20	-26.30	2697.91	14.48
			Max. Vx	2	-26.51	12.50	2732.90
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.72	0.27	4.25
			Max. Mx	20	-61.41	2713.47	14.55
			Max. My	2	-61.41	12.59	2748.57
			Max. Vy	20	-26.35	2713.47	14.55
L52	2.16 - 1.91	Pole	Max. Vx	2	-26.56	12.59	2748.57
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.90	0.28	4.26
			Max. Mx	20	-61.58	2720.08	14.58
			Max. My	2	-61.57	12.62	2755.22
			Max. Vy	20	-26.37	2720.08	14.58
			Max. Vx	2	-26.58	12.62	2755.22
			Max. Torque	22			-1.65
			Max Tension	1	0.00	0.00	0.00
L53	1.91 - 0	Pole	Max. Compression	26	-83.22	0.39	4.31
			Max. Mx	20	-62.82	2770.68	14.78
			Max. My	2	-62.82	12.86	2806.19
			Max. Vy	20	-26.54	2770.68	14.78
			Max. Vx	2	-26.76	12.86	2806.19
			Max. Torque	22			-1.65

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	83.22	0.00	-0.00
	Max. H <sub>x</sub>	20	62.83	26.52	0.08
	Max. H <sub>z</sub>	3	47.12	0.08	26.74
	Max. M <sub>x</sub>	2	2806.19	0.08	26.74
	Max. M <sub>z</sub>	8	2768.21	-26.52	-0.08
	Max. Torsion	10	1.65	-23.01	-13.44
	Min. Vert	3	47.12	0.08	26.74
	Min. H <sub>x</sub>	9	47.12	-26.52	-0.08
	Min. H <sub>z</sub>	15	47.12	-0.08	-26.74
	Min. M <sub>x</sub>	14	-2799.91	-0.08	-26.74
	Min. M <sub>z</sub>	20	-2770.68	26.52	0.08
	Min. Torsion	22	-1.65	23.01	13.44

### Tower Mast Reaction Summary

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overtuning Moment, M <sub>x</sub> kip-ft	Overtuning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	52.35	-0.00	0.00	-2.45	1.08	-0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	62.83	-0.08	-26.74	-2806.19	12.86	1.03
0.9 Dead+1.0 Wind 0 deg - No Ice	47.12	-0.08	-26.74	-2775.68	12.42	1.01
1.2 Dead+1.0 Wind 30 deg - No Ice	62.83	13.19	-23.12	-2424.91	-1373.42	0.23
0.9 Dead+1.0 Wind 30 deg - No Ice	47.12	13.19	-23.12	-2398.44	-1359.21	0.24
1.2 Dead+1.0 Wind 60 deg - No Ice	62.83	22.93	-13.30	-1394.65	-2391.40	-0.62

Load Combination	Vertical	Shear <sub>x</sub>	Shear <sub>z</sub>	Overturning Moment, M <sub>x</sub>	Overturning Moment, M <sub>z</sub>	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
0.9 Dead+1.0 Wind 60 deg - No Ice	47.12	22.93	-13.30	-1379.10	-2366.42	-0.60
1.2 Dead+1.0 Wind 90 deg - No Ice	62.83	26.52	0.08	8.50	-2768.21	-1.31
0.9 Dead+1.0 Wind 90 deg - No Ice	47.12	26.52	0.08	9.17	-2739.25	-1.27
1.2 Dead+1.0 Wind 120 deg - No Ice	62.83	23.01	13.44	1408.51	-2403.00	-1.65
0.9 Dead+1.0 Wind 120 deg - No Ice	47.12	23.01	13.44	1394.35	-2377.88	-1.61
1.2 Dead+1.0 Wind 150 deg - No Ice	62.83	13.33	23.19	2430.23	-1393.56	-1.54
0.9 Dead+1.0 Wind 150 deg - No Ice	47.12	13.33	23.19	2405.25	-1379.09	-1.51
1.2 Dead+1.0 Wind 180 deg - No Ice	62.83	0.08	26.74	2799.91	-10.41	-1.03
0.9 Dead+1.0 Wind 180 deg - No Ice	47.12	0.08	26.74	2771.04	-10.56	-1.01
1.2 Dead+1.0 Wind 210 deg - No Ice	62.83	-13.19	23.12	2418.62	1375.87	-0.23
0.9 Dead+1.0 Wind 210 deg - No Ice	47.12	-13.19	23.12	2393.79	1361.06	-0.24
1.2 Dead+1.0 Wind 240 deg - No Ice	62.83	-22.93	13.30	1388.36	2393.84	0.62
0.9 Dead+1.0 Wind 240 deg - No Ice	47.12	-22.93	13.30	1374.46	2368.27	0.60
1.2 Dead+1.0 Wind 270 deg - No Ice	62.83	-26.52	-0.08	-14.78	2770.68	1.31
0.9 Dead+1.0 Wind 270 deg - No Ice	47.12	-26.52	-0.08	-13.81	2741.11	1.27
1.2 Dead+1.0 Wind 300 deg - No Ice	62.83	-23.01	-13.44	-1414.78	2405.45	1.65
0.9 Dead+1.0 Wind 300 deg - No Ice	47.12	-23.01	-13.44	-1398.98	2379.73	1.61
1.2 Dead+1.0 Wind 330 deg - No Ice	62.83	-13.33	-23.19	-2436.51	1396.01	1.54
0.9 Dead+1.0 Wind 330 deg - No Ice	47.12	-13.33	-23.19	-2409.89	1380.95	1.51
1.2 Dead+1.0 Ice+1.0 Temp	83.22	-0.00	0.00	-4.31	0.39	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	83.22	-0.01	-6.49	-714.19	2.53	0.17
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	83.22	3.22	-5.62	-618.01	-349.40	0.01
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	83.22	5.58	-3.23	-357.42	-607.62	-0.15
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	83.22	6.45	0.01	-2.26	-702.94	-0.28
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	83.22	5.60	3.26	352.31	-609.81	-0.33
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	83.22	3.24	5.63	611.29	-353.20	-0.29
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	83.22	0.01	6.49	705.27	-1.87	-0.17
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	83.22	-3.22	5.62	609.09	350.06	-0.01
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	83.22	-5.58	3.23	348.50	608.28	0.15
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	83.22	-6.45	-0.01	-6.66	703.60	0.28
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	83.22	-5.60	-3.26	-361.23	610.48	0.33
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	83.22	-3.24	-5.63	-620.20	353.87	0.29
Dead+Wind 0 deg - Service	52.35	-0.02	-6.31	-661.15	3.74	0.24
Dead+Wind 30 deg - Service	52.35	3.12	-5.46	-571.61	-321.99	0.06
Dead+Wind 60 deg - Service	52.35	5.41	-3.14	-329.55	-561.17	-0.14
Dead+Wind 90 deg - Service	52.35	6.26	0.02	0.12	-649.66	-0.31
Dead+Wind 120 deg - Service	52.35	5.43	3.17	329.05	-563.88	-0.38

Load Combination	Vertical	Shear <sub>x</sub>	Shear <sub>z</sub>	Overturning Moment, M <sub>x</sub>	Overturning Moment, M <sub>z</sub>	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 150 deg - Service	52.35	3.15	5.48	569.13	-326.70	-0.36
Dead+Wind 180 deg - Service	52.35	0.02	6.31	655.96	-1.70	-0.24
Dead+Wind 210 deg - Service	52.35	-3.12	5.46	566.40	324.03	-0.06
Dead+Wind 240 deg - Service	52.35	-5.41	3.14	324.34	563.20	0.14
Dead+Wind 270 deg - Service	52.35	-6.26	-0.02	-5.32	651.71	0.31
Dead+Wind 300 deg - Service	52.35	-5.43	-3.17	-334.26	565.94	0.38
Dead+Wind 330 deg - Service	52.35	-3.15	-5.48	-574.31	328.74	0.36

## Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-52.35	0.00	0.00	52.35	-0.00	0.001%
2	-0.08	-62.83	-26.74	0.08	62.83	26.74	0.001%
3	-0.08	-47.12	-26.74	0.08	47.12	26.74	0.000%
4	13.19	-62.83	-23.12	-13.19	62.83	23.12	0.000%
5	13.19	-47.12	-23.12	-13.19	47.12	23.12	0.000%
6	22.93	-62.83	-13.30	-22.93	62.83	13.30	0.000%
7	22.93	-47.12	-13.30	-22.93	47.12	13.30	0.000%
8	26.52	-62.83	0.08	-26.52	62.83	-0.08	0.001%
9	26.52	-47.12	0.08	-26.52	47.12	-0.08	0.000%
10	23.01	-62.83	13.44	-23.01	62.83	-13.44	0.000%
11	23.01	-47.12	13.44	-23.01	47.12	-13.44	0.000%
12	13.33	-62.83	23.19	-13.33	62.83	-23.19	0.000%
13	13.33	-47.12	23.19	-13.33	47.12	-23.19	0.000%
14	0.08	-62.83	26.74	-0.08	62.83	-26.74	0.001%
15	0.08	-47.12	26.74	-0.08	47.12	-26.74	0.000%
16	-13.19	-62.83	23.12	13.19	62.83	-23.12	0.000%
17	-13.19	-47.12	23.12	13.19	47.12	-23.12	0.000%
18	-22.93	-62.83	13.30	22.93	62.83	-13.30	0.000%
19	-22.93	-47.12	13.30	22.93	47.12	-13.30	0.000%
20	-26.52	-62.83	-0.08	26.52	62.83	0.08	0.000%
21	-26.52	-47.12	-0.08	26.52	47.12	0.08	0.000%
22	-23.01	-62.83	-13.44	23.01	62.83	13.44	0.000%
23	-23.01	-47.12	-13.44	23.01	47.12	13.44	0.000%
24	-13.33	-62.83	-23.19	13.33	62.83	23.19	0.000%
25	-13.33	-47.12	-23.19	13.33	47.12	23.19	0.000%
26	0.00	-83.22	0.00	0.00	83.22	-0.00	0.000%
27	-0.01	-83.22	-6.49	0.01	83.22	6.49	0.000%
28	3.22	-83.22	-5.62	-3.22	83.22	5.62	0.000%
29	5.58	-83.22	-3.24	-5.58	83.22	3.23	0.000%
30	6.46	-83.22	0.01	-6.45	83.22	-0.01	0.000%
31	5.60	-83.22	3.26	-5.60	83.22	-3.26	0.000%
32	3.24	-83.22	5.63	-3.24	83.22	-5.63	0.000%
33	0.01	-83.22	6.49	-0.01	83.22	-6.49	0.000%
34	-3.22	-83.22	5.62	3.22	83.22	-5.62	0.000%
35	-5.58	-83.22	3.24	5.58	83.22	-3.23	0.000%
36	-6.46	-83.22	-0.01	6.45	83.22	0.01	0.000%
37	-5.60	-83.22	-3.26	5.60	83.22	3.26	0.000%
38	-3.24	-83.22	-5.63	3.24	83.22	5.63	0.000%
39	-0.02	-52.35	-6.31	0.02	52.35	6.31	0.001%
40	3.12	-52.35	-5.46	-3.12	52.35	5.46	0.000%
41	5.41	-52.35	-3.14	-5.41	52.35	3.14	0.000%
42	6.26	-52.35	0.02	-6.26	52.35	-0.02	0.001%
43	5.43	-52.35	3.17	-5.43	52.35	-3.17	0.001%
44	3.15	-52.35	5.48	-3.15	52.35	-5.48	0.000%
45	0.02	-52.35	6.31	-0.02	52.35	-6.31	0.001%
46	-3.12	-52.35	5.46	3.12	52.35	-5.46	0.001%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
47	-5.41	-52.35	3.14	5.41	52.35	-3.14	0.001%
48	-6.26	-52.35	-0.02	6.26	52.35	0.02	0.001%
49	-5.43	-52.35	-3.17	5.43	52.35	3.17	0.000%
50	-3.15	-52.35	-5.48	3.15	52.35	5.48	0.001%

### Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00002000
2	Yes	20	0.00000001	0.00010986
3	Yes	20	0.00000001	0.00008269
4	Yes	25	0.00000001	0.00007625
5	Yes	24	0.00000001	0.00011222
6	Yes	25	0.00000001	0.00007656
7	Yes	24	0.00000001	0.00011285
8	Yes	20	0.00000001	0.00014277
9	Yes	20	0.00000001	0.00010856
10	Yes	24	0.00000001	0.00014630
11	Yes	24	0.00000001	0.00010896
12	Yes	25	0.00000001	0.00008062
13	Yes	24	0.00000001	0.00011892
14	Yes	20	0.00000001	0.00014964
15	Yes	20	0.00000001	0.00011577
16	Yes	24	0.00000001	0.00014789
17	Yes	24	0.00000001	0.00011028
18	Yes	24	0.00000001	0.00014539
19	Yes	24	0.00000001	0.00010853
20	Yes	21	0.00000001	0.00009567
21	Yes	20	0.00000001	0.00014196
22	Yes	25	0.00000001	0.00008062
23	Yes	24	0.00000001	0.00011877
24	Yes	24	0.00000001	0.00014789
25	Yes	24	0.00000001	0.00010997
26	Yes	16	0.00000001	0.00010598
27	Yes	23	0.00000001	0.00013184
28	Yes	23	0.00000001	0.00013943
29	Yes	23	0.00000001	0.00013854
30	Yes	23	0.00000001	0.00012953
31	Yes	23	0.00000001	0.00013730
32	Yes	23	0.00000001	0.00013748
33	Yes	23	0.00000001	0.00012851
34	Yes	23	0.00000001	0.00013525
35	Yes	23	0.00000001	0.00013472
36	Yes	23	0.00000001	0.00012786
37	Yes	23	0.00000001	0.00013813
38	Yes	23	0.00000001	0.00013935
39	Yes	17	0.00000001	0.00009535
40	Yes	19	0.00000001	0.00008035
41	Yes	19	0.00000001	0.00008216
42	Yes	17	0.00000001	0.00010130
43	Yes	18	0.00000001	0.00013956
44	Yes	19	0.00000001	0.00008907
45	Yes	17	0.00000001	0.00009613
46	Yes	18	0.00000001	0.00014352
47	Yes	18	0.00000001	0.00013972
48	Yes	17	0.00000001	0.00010326
49	Yes	19	0.00000001	0.00009006
50	Yes	18	0.00000001	0.00014171

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	156 - 151	18.70	39	1.15	0.01
L2	151 - 146	17.49	39	1.15	0.01
L3	146 - 144.5	16.30	39	1.13	0.01
L4	144.5 - 144	15.95	39	1.12	0.01
L5	144 - 139	15.83	39	1.11	0.01
L6	139 - 134	14.67	39	1.09	0.00
L7	134 - 129	13.54	39	1.06	0.00
L8	129 - 128.25	12.46	39	1.01	0.00
L9	128.25 - 128	12.31	39	1.00	0.00
L10	128 - 123	12.25	39	1.00	0.00
L11	123 - 118	11.23	39	0.96	0.00
L12	118 - 113	10.24	39	0.93	0.00
L13	113 - 108	9.29	39	0.88	0.00
L14	108 - 103	8.39	39	0.83	0.00
L15	103 - 98	7.55	39	0.78	0.00
L16	98 - 93	6.77	39	0.72	0.00
L17	96.5 - 92	6.54	39	0.70	0.00
L18	92 - 87	5.89	39	0.68	0.00
L19	87 - 82	5.21	39	0.63	0.00
L20	82 - 77.5	4.57	39	0.58	0.00
L21	77.5 - 72.5	4.05	39	0.53	0.00
L22	72.5 - 70.58	3.51	39	0.49	0.00
L23	70.58 - 70.33	3.32	39	0.47	0.00
L24	70.33 - 67.08	3.30	39	0.47	0.00
L25	67.08 - 66.83	2.99	39	0.44	0.00
L26	66.83 - 61.83	2.97	39	0.43	0.00
L27	61.83 - 57.5	2.53	50	0.40	0.00
L28	61.75 - 56.75	2.52	50	0.40	0.00
L29	56.75 - 51.75	2.12	50	0.38	0.00
L30	51.75 - 46.75	1.74	50	0.34	0.00
L31	46.75 - 41.75	1.40	50	0.30	0.00
L32	41.75 - 39.8	1.10	50	0.27	0.00
L33	39.8 - 39.33	1.00	50	0.25	0.00
L34	39.33 - 39.08	0.97	50	0.25	0.00
L35	39.08 - 38.33	0.96	50	0.25	0.00
L36	38.33 - 38.08	0.92	50	0.24	0.00
L37	38.08 - 33.08	0.91	50	0.24	0.00
L38	33.08 - 30.75	0.67	50	0.20	0.00
L39	30.75 - 30.5	0.58	50	0.19	0.00
L40	30.5 - 25.5	0.57	50	0.19	0.00
L41	25.5 - 20.5	0.39	50	0.15	0.00
L42	20.5 - 15.5	0.25	50	0.12	0.00
L43	15.5 - 9.8	0.15	50	0.08	0.00
L44	15.05 - 8.8	0.14	50	0.08	0.00
L45	8.8 - 8.25	0.05	50	0.06	0.00
L46	8.25 - 8	0.04	50	0.05	0.00
L47	8 - 4.25	0.04	50	0.05	0.00
L48	4.25 - 4	0.01	50	0.02	0.00
L49	4 - 3	0.01	50	0.02	0.00
L50	3 - 2.75	0.00	50	0.02	0.00
L51	2.75 - 2.16	0.00	50	0.01	0.00
L52	2.16 - 1.91	0.00	50	0.01	0.00
L53	1.91 - 0	0.00	50	0.01	0.00

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.0000	NNVV-65B-R4	39	17.25	1.15	0.01	21791
143.0000	APXVAA24_43-U-A20 w/ Mount Pipe	39	15.60	1.11	0.01	12013
131.0000	MX08FRO665-21 w/ Mount Pipe	39	12.89	1.03	0.00	5856

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
120.0000	(2) 980H120T4E-M w/ Mount Pipe	39	10.63	0.94	0.00	7420

**Maximum Tower Deflections - Design Wind**

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	156 - 151	79.03	2	4.79	0.05
L2	151 - 146	74.02	2	4.79	0.05
L3	146 - 144.5	69.03	2	4.73	0.03
L4	144.5 - 144	67.55	2	4.69	0.02
L5	144 - 139	67.06	2	4.69	0.02
L6	139 - 134	62.19	2	4.61	0.02
L7	134 - 129	57.44	2	4.46	0.01
L8	129 - 128.25	52.87	2	4.26	0.01
L9	128.25 - 128	52.21	2	4.22	0.01
L10	128 - 123	51.99	2	4.21	0.01
L11	123 - 118	47.64	2	4.08	0.01
L12	118 - 113	43.45	2	3.93	0.01
L13	113 - 108	39.44	2	3.74	0.01
L14	108 - 103	35.64	24	3.53	0.01
L15	103 - 98	32.06	24	3.30	0.01
L16	98 - 93	28.73	24	3.06	0.00
L17	96.5 - 92	27.78	24	2.99	0.00
L18	92 - 87	25.02	24	2.87	0.00
L19	87 - 82	22.12	24	2.67	0.00
L20	82 - 77.5	19.43	24	2.46	0.00
L21	77.5 - 72.5	17.20	24	2.27	0.00
L22	72.5 - 70.58	14.93	24	2.07	0.00
L23	70.58 - 70.33	14.12	24	1.99	0.00
L24	70.33 - 67.08	14.01	24	1.98	0.00
L25	67.08 - 66.83	12.71	24	1.85	0.00
L26	66.83 - 61.83	12.61	24	1.85	0.00
L27	61.83 - 57.5	10.76	24	1.70	0.00
L28	61.75 - 56.75	10.73	24	1.70	0.00
L29	56.75 - 51.75	8.99	24	1.61	0.00
L30	51.75 - 46.75	7.39	24	1.45	0.00
L31	46.75 - 41.75	5.95	24	1.29	0.00
L32	41.75 - 39.8	4.68	24	1.14	0.00
L33	39.8 - 39.33	4.23	24	1.08	0.00
L34	39.33 - 39.08	4.12	24	1.06	0.00
L35	39.08 - 38.33	4.07	24	1.05	0.00
L36	38.33 - 38.08	3.90	24	1.03	0.00
L37	38.08 - 33.08	3.85	24	1.02	0.00
L38	33.08 - 30.75	2.86	24	0.87	0.00
L39	30.75 - 30.5	2.45	24	0.80	0.00
L40	30.5 - 25.5	2.41	24	0.79	0.00
L41	25.5 - 20.5	1.66	24	0.64	0.00
L42	20.5 - 15.5	1.06	24	0.50	0.00
L43	15.5 - 9.8	0.62	24	0.35	0.00
L44	15.05 - 8.8	0.58	24	0.34	0.00
L45	8.8 - 8.25	0.20	24	0.23	0.00
L46	8.25 - 8	0.17	24	0.22	0.00
L47	8 - 4.25	0.16	24	0.21	0.00
L48	4.25 - 4	0.04	24	0.10	0.00
L49	4 - 3	0.04	24	0.09	0.00
L50	3 - 2.75	0.02	24	0.07	0.00
L51	2.75 - 2.16	0.02	24	0.06	0.00
L52	2.16 - 1.91	0.01	24	0.05	0.00
L53	1.91 - 0	0.01	24	0.04	0.00

### Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.0000	NNVV-65B-R4	2	73.02	4.79	0.05	8919
143.0000	APXVAA24_43-U-A20 w/ Mount Pipe	2	66.08	4.68	0.02	3607
131.0000	MX08FRO665-21 w/ Mount Pipe	2	54.67	4.35	0.01	1447
120.0000	(2) 980H120T4E-M w/ Mount Pipe	2	45.11	3.99	0.01	1792

### Compression Checks

### Pole Design Data

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K
L1	156 - 151 (1)	TP10.75x10.75x0.365	5.0000	0.0000	0.0	11.9083	-0.23
L2	151 - 146 (2)	TP10.75x10.75x0.365	5.0000	0.0000	0.0	11.9083	-2.01
L3	146 - 144.5 (3)	TP10.75x10.75x0.365	1.5000	0.0000	0.0	11.9083	-2.08
L4	144.5 - 144 (4)	TP18x10.75x0.365	0.5000	0.0000	0.0	11.9083	-2.10
L5	144 - 139 (5)	TP18.9435x18x0.25	5.0000	0.0000	0.0	15.0483	-6.98
L6	139 - 134 (6)	TP19.8871x18.9435x0.25	5.0000	0.0000	0.0	15.8078	-7.37
L7	134 - 129 (7)	TP20.8306x19.8871x0.25	5.0000	0.0000	0.0	16.5674	-10.78
L8	129 - 128.25 (8)	TP20.9721x20.8306x0.25	0.7500	0.0000	0.0	16.6813	-10.85
L9	128.25 - 128 (9)	TP21.0193x20.9721x0.575	0.2500	0.0000	0.0	37.8526	-10.89
L10	128 - 123 (10)	TP21.9628x21.0193x0.5625	5.0000	0.0000	0.0	38.7613	-11.69
L11	123 - 118 (11)	TP22.9064x21.9628x0.55	5.0000	0.0000	0.0	39.5931	-15.17
L12	118 - 113 (12)	TP23.8499x22.9064x0.525	5.0000	0.0000	0.0	39.4307	-16.04
L13	113 - 108 (13)	TP24.7934x23.8499x0.5125	5.0000	0.0000	0.0	40.0696	-16.93
L14	108 - 103 (14)	TP25.7369x24.7934x0.5	5.0000	0.0000	0.0	40.6315	-17.85
L15	103 - 98 (15)	TP26.6805x25.7369x0.4938	5.0000	0.0000	0.0	41.6336	-18.79
L16	98 - 93 (16)	TP27.624x26.6805x0.4875	5.0000	0.0000	0.0	41.5607	-19.07
L17	93 - 92 (17)	TP27.313x26.4635x0.7	4.5000	0.0000	0.0	59.9856	-20.73
L18	92 - 87 (18)	TP28.2568x27.313x0.675	5.0000	0.0000	0.0	59.9490	-21.97
L19	87 - 82 (19)	TP29.2006x28.2568x0.65	5.0000	0.0000	0.0	59.7563	-23.23
L20	82 - 77.5 (20)	TP30.05x29.2006x0.6375	4.5000	0.0000	0.0	60.3765	-24.38
L21	77.5 - 72.5 (21)	TP30.9935x30.05x0.6875	5.0000	0.0000	0.0	67.0899	-25.80
L22	72.5 - 70.58 (22)	TP31.3558x30.9935x0.6875	1.9200	0.0000	0.0	67.8920	-26.35
L23	70.58 - 70.33 (23)	TP31.403x31.3558x0.6875	0.2500	0.0000	0.0	67.9964	-26.43
L24	70.33 - 67.08 (24)	TP32.0163x31.403x0.675	3.2500	0.0000	0.0	68.1202	-27.37
L25	67.08 - 66.83 (25)	TP32.0634x32.0163x0.975	0.2500	0.0000	0.0	97.6021	-27.48
L26	66.83 - 61.83 (26)	TP33.0069x32.0634x0.95	5.0000	0.0000	0.0	98.0621	-29.41
L27	61.83 - 57.5 (27)	TP33.824x33.0069x0.95	4.3300	0.0000	0.0	98.1083	-29.45
L28	57.5 - 56.75 (28)	TP33.3405x32.397x0.9375	5.0000	0.0000	0.0	97.8166	-32.94
L29	56.75 - 51.75 (29)	TP34.284x33.3405x0.9125	5.0000	0.0000	0.0	98.0539	-34.91
L30	51.75 - 46.75 (30)	TP35.2275x34.284x0.9	5.0000	0.0000	0.0	99.4812	-36.91
L31	46.75 - 41.75 (31)	TP36.171x35.2275x0.8875	5.0000	0.0000	0.0	100.8320	-38.93
L32	41.75 - 39.8 (32)	TP36.539x36.171x0.875	1.9500	0.0000	0.0	100.4830	-39.72
L33	39.8 - 39.33 (33)	TP36.6277x36.539x0.95	0.4700	0.0000	0.0	109.1380	-39.94
L34	39.33 - 39.08 (34)	TP36.6749x36.6277x0.9375	0.2500	0.0000	0.0	107.8820	-40.05
L35	39.08 - 38.33 (35)	TP36.8164x36.6749x0.9375	0.7500	0.0000	0.0	108.3100	-40.38
L36	38.33 - 38.08 (36)	TP36.8636x36.8164x0.8875	0.2500	0.0000	0.0	102.8110	-40.49
L37	38.08 - 33.08 (37)	TP37.8073x36.8636x0.875	5.0000	0.0000	0.0	104.0570	-42.74
L38	33.08 - 30.75 (38)	TP38.247x37.8073x0.8625	2.3300	0.0000	0.0	103.8260	-43.86
L39	30.75 - 30.5 (39)	TP38.2942x38.247x0.9375	0.2500	0.0000	0.0	112.7710	-43.99
L40	30.5 - 25.5 (40)	TP39.2379x38.2942x0.925	5.0000	0.0000	0.0	114.1150	-46.54
L41	25.5 - 20.5 (41)	TP40.1816x39.2379x0.9	5.0000	0.0000	0.0	113.8380	-49.11
L42	20.5 - 15.5 (42)	TP41.1252x40.1816x0.8875	5.0000	0.0000	0.0	114.9890	-51.72
L43	15.5 - 9.8 (43)	TP42.201x41.1252x0.8875	5.7000	0.0000	0.0	115.2320	-51.96
L44	9.8 - 8.8 (44)	TP41.6395x40.4602x0.875	6.2500	0.0000	0.0	114.8540	-57.59
L45	8.8 - 8.25 (45)	TP41.7433x41.6395x0.875	0.5500	0.0000	0.0	115.1460	-57.88

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K
L46	8.25 - 8 (46)	TP41.7904x41.7433x0.875	0.2500	0.0000	0.0	115.2790	-58.02
L47	8 - 4.25 (47)	TP42.498x41.7904x0.875	3.7500	0.0000	0.0	117.2730	-60.13
L48	4.25 - 4 (48)	TP42.5452x42.498x1.05	0.2500	0.0000	0.0	140.2950	-60.29
L49	4 - 3 (49)	TP42.7339x42.5452x1.05	1.0000	0.0000	0.0	140.9330	-60.90
L50	3 - 2.75 (50)	TP42.7811x42.7339x1.075	0.2500	0.0000	0.0	144.3660	-61.05
L51	2.75 - 2.16 (51)	TP42.8924x42.7811x1.0625	0.5900	0.0000	0.0	143.1110	-61.41
L52	2.16 - 1.91 (52)	TP42.9396x42.8924x1.2	0.2500	0.0000	0.0	161.2820	-61.57
L53	1.91 - 0 (53)	TP43.3x42.9396x1.2	1.9100	0.0000	0.0	162.6740	-62.82

### Pole Bending Design Data

Section No.	Elevation ft	Size	M <sub>ux</sub> kip-ft	M <sub>uy</sub> kip-ft
L1	156 - 151 (1)	TP10.75x10.75x0.365	0.38	0.00
L2	151 - 146 (2)	TP10.75x10.75x0.365	13.07	0.00
L3	146 - 144.5 (3)	TP10.75x10.75x0.365	17.18	0.00
L4	144.5 - 144 (4)	TP18x10.75x0.365	17.18	0.00
L5	144 - 139 (5)	TP18.9435x18x0.25	54.61	0.00
L6	139 - 134 (6)	TP19.8871x18.9435x0.25	98.13	0.00
L7	134 - 129 (7)	TP20.8306x19.8871x0.25	150.63	0.00
L8	129 - 128.25 (8)	TP20.9721x20.8306x0.25	160.20	0.00
L9	128.25 - 128 (9)	TP21.0193x20.9721x0.575	163.41	0.00
L10	128 - 123 (10)	TP21.9628x21.0193x0.5625	228.62	0.00
L11	123 - 118 (11)	TP22.9064x21.9628x0.55	299.64	0.00
L12	118 - 113 (12)	TP23.8499x22.9064x0.525	378.40	0.00
L13	113 - 108 (13)	TP24.7934x23.8499x0.5125	459.40	0.00
L14	108 - 103 (14)	TP25.7369x24.7934x0.5	542.67	0.00
L15	103 - 98 (15)	TP26.6805x25.7369x0.4938	628.21	0.00
L16	98 - 93 (16)	TP27.624x26.6805x0.4875	654.32	0.00
L17	93 - 92 (17)	TP27.313x26.4635x0.7	734.08	0.00
L18	92 - 87 (18)	TP28.2568x27.313x0.675	825.10	0.00
L19	87 - 82 (19)	TP29.2006x28.2568x0.65	918.53	0.00
L20	82 - 77.5 (20)	TP30.05x29.2006x0.6375	1004.68	0.00
L21	77.5 - 72.5 (21)	TP30.9935x30.05x0.6875	1102.72	0.00
L22	72.5 - 70.58 (22)	TP31.3558x30.9935x0.6875	1141.03	0.00
L23	70.58 - 70.33 (23)	TP31.403x31.3558x0.6875	1146.03	0.00
L24	70.33 - 67.08 (24)	TP32.0163x31.403x0.675	1211.78	0.00
L25	67.08 - 66.83 (25)	TP32.0634x32.0163x0.975	1216.89	0.00
L26	66.83 - 61.83 (26)	TP33.0069x32.0634x0.95	1320.37	0.00
L27	61.83 - 57.5 (27)	TP33.824x33.0069x0.95	1322.04	0.00
L28	57.5 - 56.75 (28)	TP33.3405x32.397x0.9375	1428.43	0.00
L29	56.75 - 51.75 (29)	TP34.284x33.3405x0.9125	1537.54	0.00
L30	51.75 - 46.75 (30)	TP35.2275x34.284x0.9	1649.16	0.00
L31	46.75 - 41.75 (31)	TP36.171x35.2275x0.8875	1763.26	0.00
L32	41.75 - 39.8 (32)	TP36.539x36.171x0.875	1808.42	0.00
L33	39.8 - 39.33 (33)	TP36.6277x36.539x0.95	1819.36	0.00
L34	39.33 - 39.08 (34)	TP36.6749x36.6277x0.9375	1825.18	0.00
L35	39.08 - 38.33 (35)	TP36.8164x36.6749x0.9375	1842.71	0.00
L36	38.33 - 38.08 (36)	TP36.8636x36.8164x0.8875	1848.56	0.00
L37	38.08 - 33.08 (37)	TP37.8073x36.8636x0.875	1966.99	0.00
L38	33.08 - 30.75 (38)	TP38.247x37.8073x0.8625	2023.07	0.00
L39	30.75 - 30.5 (39)	TP38.2942x38.247x0.9375	2029.11	0.00
L40	30.5 - 25.5 (40)	TP39.2379x38.2942x0.925	2151.26	0.00
L41	25.5 - 20.5 (41)	TP40.1816x39.2379x0.9	2275.68	0.00
L42	20.5 - 15.5 (42)	TP41.1252x40.1816x0.8875	2402.22	0.00
L43	15.5 - 9.8 (43)	TP42.201x41.1252x0.8875	2413.72	0.00
L44	9.8 - 8.8 (44)	TP41.6395x40.4602x0.875	2575.27	0.00
L45	8.8 - 8.25 (45)	TP41.7433x41.6395x0.875	2589.64	0.00
L46	8.25 - 8 (46)	TP41.7904x41.7433x0.875	2596.19	0.00
L47	8 - 4.25 (47)	TP42.498x41.7904x0.875	2694.91	0.00
L48	4.25 - 4 (48)	TP42.5452x42.498x1.05	2701.53	0.00
L49	4 - 3 (49)	TP42.7339x42.5452x1.05	2728.06	0.00
L50	3 - 2.75 (50)	TP42.7811x42.7339x1.075	2734.70	0.00
L51	2.75 - 2.16 (51)	TP42.8924x42.7811x1.0625	2750.40	0.00

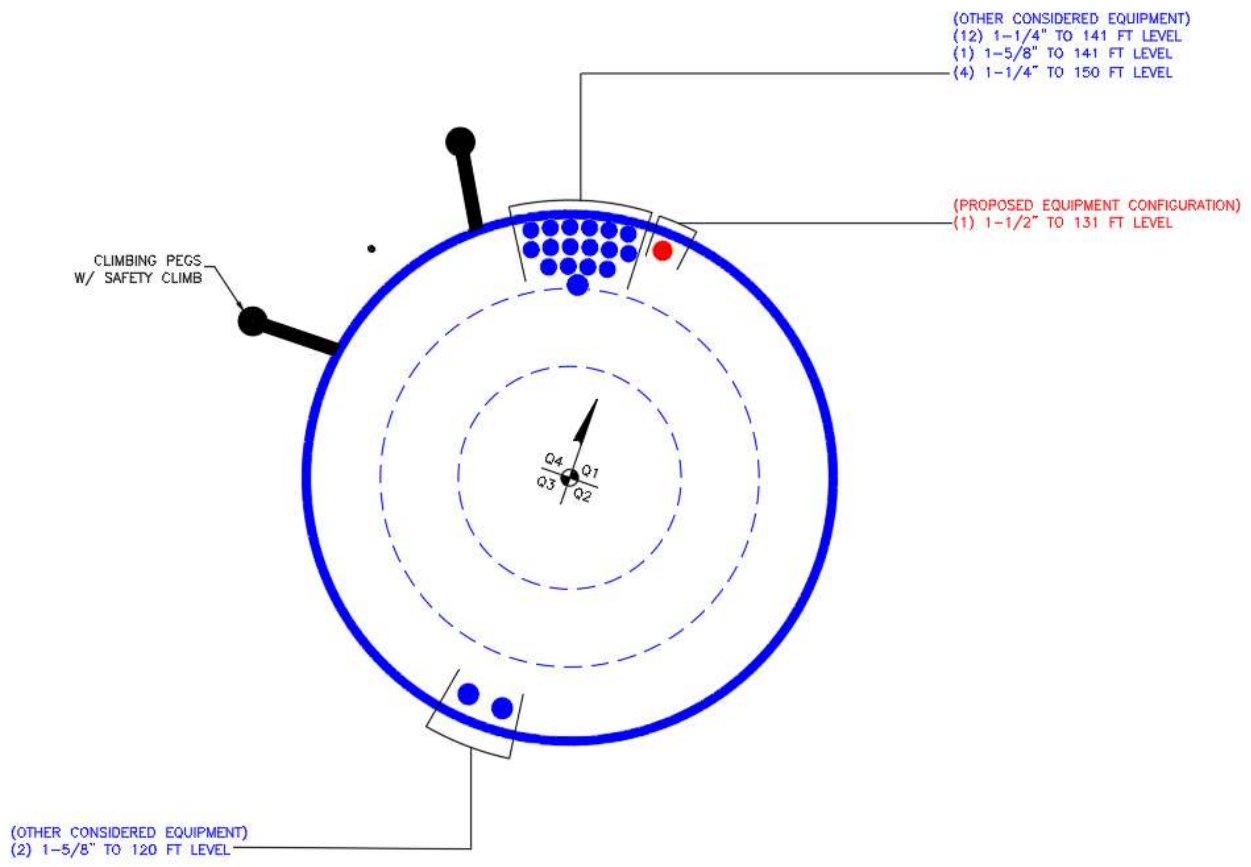


Section No.	Elevation ft	Size	M <sub>ux</sub> kip-ft	M <sub>uy</sub> kip-ft
L52	2.16 - 1.91 (52)	TP42.9396x42.8924x1.2	2757.07	0.00
L53	1.91 - 0 (53)	TP43.3x42.9396x1.2	2808.10	0.00

### Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V <sub>u</sub> K	Actual T <sub>u</sub> kip-ft
L1	156 - 151 (1)	TP10.75x10.75x0.365	0.15	0.00
L2	151 - 146 (2)	TP10.75x10.75x0.365	2.73	1.05
L3	146 - 144.5 (3)	TP10.75x10.75x0.365	2.77	1.05
L4	144.5 - 144 (4)	TP18x10.75x0.365	2.79	1.05
L5	144 - 139 (5)	TP18.9435x18x0.25	8.51	0.41
L6	139 - 134 (6)	TP19.8871x18.9435x0.25	8.90	0.41
L7	134 - 129 (7)	TP20.8306x19.8871x0.25	12.74	0.41
L8	129 - 128.25 (8)	TP20.9721x20.8306x0.25	12.80	0.41
L9	128.25 - 128 (9)	TP21.0193x20.9721x0.575	12.82	0.41
L10	128 - 123 (10)	TP21.9628x21.0193x0.5625	13.27	0.41
L11	123 - 118 (11)	TP22.9064x21.9628x0.55	15.53	1.03
L12	118 - 113 (12)	TP23.8499x22.9064x0.525	15.98	1.03
L13	113 - 108 (13)	TP24.7934x23.8499x0.5125	16.43	1.03
L14	108 - 103 (14)	TP25.7369x24.7934x0.5	16.89	1.03
L15	103 - 98 (15)	TP26.6805x25.7369x0.4938	17.34	1.03
L16	98 - 93 (16)	TP27.624x26.6805x0.4875	17.49	1.03
L17	93 - 92 (17)	TP27.313x26.4635x0.7	17.97	1.03
L18	92 - 87 (18)	TP28.2568x27.313x0.675	18.45	1.03
L19	87 - 82 (19)	TP29.2006x28.2568x0.65	18.94	1.03
L20	82 - 77.5 (20)	TP30.05x29.2006x0.6375	19.37	1.03
L21	77.5 - 72.5 (21)	TP30.9935x30.05x0.6875	19.86	1.03
L22	72.5 - 70.58 (22)	TP31.3558x30.9935x0.6875	20.06	1.03
L23	70.58 - 70.33 (23)	TP31.403x31.3558x0.6875	20.07	1.03
L24	70.33 - 67.08 (24)	TP32.0163x31.403x0.675	20.41	1.55
L25	67.08 - 66.83 (25)	TP32.0634x32.0163x0.975	20.44	1.55
L26	66.83 - 61.83 (26)	TP33.0069x32.0634x0.95	20.97	1.55
L27	61.83 - 57.5 (27)	TP33.824x33.0069x0.95	21.03	1.55
L28	57.5 - 56.75 (28)	TP33.3405x32.397x0.9375	21.58	1.55
L29	56.75 - 51.75 (29)	TP34.284x33.3405x0.9125	22.09	1.54
L30	51.75 - 46.75 (30)	TP35.2275x34.284x0.9	22.58	1.54
L31	46.75 - 41.75 (31)	TP36.171x35.2275x0.8875	23.08	1.54
L32	41.75 - 39.8 (32)	TP36.539x36.171x0.875	23.27	1.54
L33	39.8 - 39.33 (33)	TP36.6277x36.539x0.95	23.31	1.54
L34	39.33 - 39.08 (34)	TP36.6749x36.6277x0.9375	23.33	1.54
L35	39.08 - 38.33 (35)	TP36.8164x36.6749x0.9375	23.41	1.54
L36	38.33 - 38.08 (36)	TP36.8636x36.8164x0.8875	23.43	1.54
L37	38.08 - 33.08 (37)	TP37.8073x36.8636x0.875	23.91	1.54
L38	33.08 - 30.75 (38)	TP38.247x37.8073x0.8625	24.13	1.54
L39	30.75 - 30.5 (39)	TP38.2942x38.247x0.9375	24.14	1.54
L40	30.5 - 25.5 (40)	TP39.2379x38.2942x0.925	24.61	1.54
L41	25.5 - 20.5 (41)	TP40.1816x39.2379x0.9	25.05	1.54
L42	20.5 - 15.5 (42)	TP41.1252x40.1816x0.8875	25.47	1.54
L43	15.5 - 9.8 (43)	TP42.201x41.1252x0.8875	25.50	1.54
L44	9.8 - 8.8 (44)	TP41.6395x40.4602x0.875	26.08	1.54
L45	8.8 - 8.25 (45)	TP41.7433x41.6395x0.875	26.11	1.54
L46	8.25 - 8 (46)	TP41.7904x41.7433x0.875	26.13	1.54
L47	8 - 4.25 (47)	TP42.498x41.7904x0.875	26.42	1.54
L48	4.25 - 4 (48)	TP42.5452x42.498x1.05	26.43	1.54
L49	4 - 3 (49)	TP42.7339x42.5452x1.05	26.52	1.54
L50	3 - 2.75 (50)	TP42.7811x42.7339x1.075	26.53	1.54
L51	2.75 - 2.16 (51)	TP42.8924x42.7811x1.0625	26.58	1.54
L52	2.16 - 1.91 (52)	TP42.9396x42.8924x1.2	26.59	1.54
L53	1.91 - 0 (53)	TP43.3x42.9396x1.2	26.77	1.54

**APPENDIX B**  
**BASE LEVEL DRAWING**



**APPENDIX C**  
**ADDITIONAL CALCULATIONS**

Site BU: 828402  
Work Order: 1966336



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**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	156	11.5	0	0	10.75	10.75	0.365		A53-B-35
2	144.5	0.5	0	0	10.75	18	0.365		A53-B-35
3	144	51	3.5	12	18.00	27.624	0.25	Auto	A36
4	96.5	19	0	12	26.46	30.05	0.25	Auto	A36
5	77.5	20	4.25	12	30.05	33.824	0.3125	Auto	A36
6	61.75	21.95	0	12	32.40	36.539	0.3125	Auto	A36
7	39.8	30	5.25	12	36.54	42.201	0.375	Auto	A36
8	15.05	15.05	0	12	40.46	43.3	0.375	Auto	A36

**Reinforcement Configuration**

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	4.25	39.33	plate	I-085125; (1) (1.1875)	2	o				o							
2	8.25	38.33	plate	CCI-SFP-065125	1									o			
3	39.33	70.58	plate	CCI-AFP-085125	2	o				o							
4	38.33	70.58	plate	CCI-AFP-085125	1									o			
5	70.58	94.67	plate	I-085125; (1) (1.1875)	3	o				o				o			
6	94.67	128.25	plate	CCI-AFP-060100	3	o				o				o			
7	3	30.75	plate	I-085125; (1) (1.1875)	3								o				o
8	30.75	67.08	plate	CCI-AFP-065125	3					o			o				o
9	0	4.25	plate	FP 1.25 x 6.5_1	4	o			c	o							c
10	0	8.25	plate	FP 1.25 x 6.5_1	2							c	c				
11	0	2.16	plate	FP 1.25 x 4_1	3					o			o				o
12	0	3	plate	FP 1.25 x 4_1	6		o	o			o	o			o	o	
13																	

**Reinforcement Details**

	B (in)	H (in)	Gross Area (in <sup>2</sup> )	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in <sup>2</sup> )	Bolt Hole Size (in)	Reinforcement Material
1	8.5	1.25	10.625	0.625	Capacity Input	n/a	Capacity Input	n/a	17.000	9.063	1.1875	A572-65
2	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
3	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	51	PC 8.8 - M20 (100)	51.000	17.000	9.063	1.1875	A572-65
4	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	51	PC 8.8 - M20 (100)	51.000	17.000	9.063	1.1875	A572-65
5	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	60	PC 8.8 - M20 (100)	60.000	17.000	9.063	1.1875	A572-65
6	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
7	8.5	1.25	10.625	0.625	Capacity Input	n/a	Capacity Input	n/a	17.000	9.063	1.1875	A572-65
8	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
9	1.25	6.5	8.125	3.25	Capacity Input	n/a	Capacity Input	n/a	0.000	8.125	0.0000	A572-65
10	1.25	6.5	8.125	3.25	Capacity Input	n/a	Capacity Input	n/a	0.000	8.125	0.0000	A572-65
11	1.25	4	5	2	None	n/a	None	n/a	0.000	5.000	0.0000	A572-65
12	1.25	4	5	2	None	n/a	None	n/a	0.000	5.000	0.0000	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)
CCI-085125; (1) (1.1875)_1	Top	-	-	-	-	-	-	-	-	-	-	-	-	522
	Bottom	-	-	-	-	-	-	-	-	-	-	-	-	522
CCI-085125; (1) (1.1875)_2	Top	20	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	20	N	3	3	-	-	-	-	-	-	-	-	-
FP 1.25 x 6.5_1	Top	-	-	-	-	-	-	-	-	-	-	-	-	420.47
	Bottom	-	-	-	-	-	-	-	-	-	-	-	-	420.47
FP 1.25 x 4_1	Top	-	-	-	-	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	-	-	-	-	-	-	-	-	-

# TNX Geometry Input

Increment (ft):  [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	156 - 151	5		0	10.750	10.750	0.365	A53-B-35	1.000
2	151 - 146	5		0	10.750	10.750	0.365	A53-B-35	1.000
3	146 - 144.5	1.5	0	0	10.750	10.750	0.365	A53-B-35	1.000
4	144.5 - 144	0.5	0	0	10.750	18.000	0.365	A53-B-35	1.000
5	144 - 139	5		12	18.000	18.944	0.25	A36	1.000
6	139 - 134	5		12	18.944	19.887	0.25	A36	1.000
7	134 - 129	5		12	19.887	20.831	0.25	A36	1.000
8	129 - 128.25	0.75		12	20.831	20.972	0.25	A36	1.000
9	128.25 - 128	0.25		12	20.972	21.019	0.575	A36	0.918
10	128 - 123	5		12	21.019	21.963	0.5625	A36	0.916
11	123 - 118	5		12	21.963	22.906	0.55	A36	0.916
12	118 - 113	5		12	22.906	23.850	0.525	A36	0.939
13	113 - 108	5		12	23.850	24.793	0.5125	A36	0.943
14	108 - 103	5		12	24.793	25.737	0.5	A36	0.949
15	103 - 98	5		12	25.737	26.680	0.49375	A36	0.944
16	98 - 96.5	5	3.5	12	26.680	27.624	0.4875	A36	0.951
17	96.5 - 92	4.5		12	26.464	27.313	0.7	A36	0.895
18	92 - 87	5		12	27.313	28.257	0.675	A36	0.909
19	87 - 82	5		12	28.257	29.201	0.65	A36	0.924
20	82 - 77.5	4.5	0	12	29.201	30.050	0.6375	A36	0.926
21	77.5 - 72.5	5		12	30.050	30.994	0.6875	A36	0.936
22	72.5 - 70.58	1.92		12	30.994	31.356	0.6875	A36	0.930
23	70.58 - 70.33	0.25		12	31.356	31.403	0.6875	A36	0.930
24	70.33 - 67.08	3.25		12	31.403	32.016	0.675	A36	0.937
25	67.08 - 66.83	0.25		12	32.016	32.063	0.975	A36	0.904
26	66.83 - 61.83	5		12	32.063	33.007	0.95	A36	0.910
27	61.83 - 61.75	4.33	4.25	12	33.007	33.824	0.95	A36	0.910
28	61.75 - 56.75	5		12	32.397	33.341	0.9375	A36	0.916
29	56.75 - 51.75	5		12	33.341	34.284	0.9125	A36	0.923
30	51.75 - 46.75	5		12	34.284	35.228	0.9	A36	0.919
31	46.75 - 41.75	5		12	35.228	36.171	0.8875	A36	0.917
32	41.75 - 39.8	1.95	0	12	36.171	36.539	0.875	A36	0.923
33	39.8 - 39.33	0.47		12	36.539	36.628	0.95	A36	0.917
34	39.33 - 39.08	0.25		12	36.628	36.675	0.9375	A36	0.928
35	39.08 - 38.33	0.75		12	36.675	36.816	0.9375	A36	0.926
36	38.33 - 38.08	0.25		12	36.816	36.864	0.8875	A36	0.952
37	38.08 - 33.08	5		12	36.864	37.807	0.875	A36	0.952
38	33.08 - 30.75	2.33		12	37.807	38.247	0.8625	A36	0.959
39	30.75 - 30.5	0.25		12	38.247	38.294	0.9375	A36	0.950
40	30.5 - 25.5	5		12	38.294	39.238	0.925	A36	0.949
41	25.5 - 20.5	5		12	39.238	40.182	0.9	A36	0.961
42	20.5 - 15.5	5		12	40.182	41.125	0.8875	A36	0.961
43	15.5 - 15.05	5.7	5.25	12	41.125	42.201	0.8875	A36	0.960
44	15.05 - 8.8	6.25		12	40.460	41.639	0.875	A36	0.968
45	8.8 - 8.25	0.55		12	41.639	41.743	0.875	A36	0.967
46	8.25 - 8	0.25		12	41.743	41.790	0.875	A36	1.036
47	8 - 4.25	3.75		12	41.790	42.498	0.875	A36	1.026
48	4.25 - 4	0.25		12	42.498	42.545	1.05	A36	0.938
49	4 - 3	1		12	42.545	42.734	1.05	A36	0.936
50	3 - 2.75	0.25		12	42.734	42.781	1.075	A36	0.901
51	2.75 - 2.16	0.59		12	42.781	42.892	1.0625	A36	0.910
52	2.16 - 1.91	0.25		12	42.892	42.940	1.2	A36	0.901
53	1.91 - 0	1.91		12	42.940	43.300	1.2	A36	0.896

## TNX Section Forces

Increment (ft):		TNX Output			
	5	Section Height (ft)	P <sub>u</sub> (K)	M <sub>ux</sub> (kip-ft)	V <sub>u</sub> (K)
1	156 - 151		0.23	0.38	0.15
2	151 - 146		2.01	13.07	2.73
3	146 - 144.5		2.08	17.18	2.77
4	144.5 - 144		2.12	18.57	2.79
5	144 - 139		6.98	54.61	8.51
6	139 - 134		7.37	98.13	8.90
7	134 - 129		10.78	150.63	12.74
8	129 - 128.25		10.85	160.20	12.80
9	128.25 - 128		10.89	163.41	12.82
10	128 - 123		11.69	228.62	13.27
11	123 - 118		15.17	299.64	15.53
12	118 - 113		16.04	378.40	15.98
13	113 - 108		16.93	459.40	16.43
14	108 - 103		17.85	542.67	16.89
15	103 - 98		18.79	628.21	17.34
16	98 - 96.5		19.07	654.32	17.49
17	96.5 - 92		20.73	734.08	17.97
18	92 - 87		21.97	825.10	18.45
19	87 - 82		23.23	918.53	18.94
20	82 - 77.5		24.38	1004.68	19.37
21	77.5 - 72.5		25.80	1102.72	19.86
22	72.5 - 70.58		26.35	1141.02	20.06
23	70.58 - 70.33		26.43	1146.04	20.07
24	70.33 - 67.08		27.37	1211.79	20.41
25	67.08 - 66.83		27.48	1216.89	20.44
26	66.83 - 61.83		29.41	1320.36	20.97
27	61.83 - 61.75		29.45	1322.04	21.03
28	61.75 - 56.75		32.94	1428.42	21.58
29	56.75 - 51.75		34.91	1537.54	22.09
30	51.75 - 46.75		36.91	1649.16	22.58
31	46.75 - 41.75		38.93	1763.25	23.08
32	41.75 - 39.8		39.72	1808.42	23.28
33	39.8 - 39.33		39.94	1819.36	23.31
34	39.33 - 39.08		40.05	1825.18	23.33
35	39.08 - 38.33		40.38	1842.70	23.41
36	38.33 - 38.08		40.49	1848.56	23.43
37	38.08 - 33.08		42.74	1966.99	23.91
38	33.08 - 30.75		43.86	2023.07	24.13
39	30.75 - 30.5		43.99	2029.11	24.14
40	30.5 - 25.5		46.54	2151.26	24.61
41	25.5 - 20.5		49.11	2275.67	25.05
42	20.5 - 15.5		51.72	2402.22	25.47
43	15.5 - 15.05		51.96	2413.72	25.50
44	15.05 - 8.8		57.59	2575.27	26.08
45	8.8 - 8.25		57.88	2589.65	26.11
46	8.25 - 8		58.02	2596.19	26.13
47	8 - 4.25		60.13	2694.91	26.42
48	4.25 - 4		60.29	2701.53	26.43
49	4 - 3		60.90	2728.06	26.52
50	3 - 2.75		61.05	2734.70	26.53
51	2.75 - 2.16		61.41	2750.40	26.58
52	2.16 - 1.91		61.57	2757.06	26.59
53	1.91 - 0		62.82	2808.10	26.77

# Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
156 - 151	Pole	TP10.75x10.75x0.365	Pole	0.4%	Pass
151 - 146	Pole	TP10.75x10.75x0.365	Pole	12.6%	Pass
146 - 144.5	Pole	TP10.75x10.75x0.365	Pole	16.4%	Pass
144.5 - 144	Pole	TP18x10.75x0.365	Pole	6.3%	Pass
144 - 139	Pole	TP18.944x18x0.25	Pole	24.0%	Pass
139 - 134	Pole	TP19.887x18.944x0.25	Pole	38.0%	Pass
134 - 129	Pole	TP20.831x19.887x0.25	Pole	53.2%	Pass
129 - 128.25	Pole	TP20.972x20.831x0.25	Pole	55.6%	Pass
128.25 - 128	Pole + Reinf.	TP21.019x20.972x0.575	Pole	25.1%	Pass
128 - 123	Pole + Reinf.	TP21.963x21.019x0.5625	Pole	32.9%	Pass
123 - 118	Pole + Reinf.	TP22.906x21.963x0.55	Pole	40.6%	Pass
118 - 113	Pole + Reinf.	TP23.85x22.906x0.525	Pole	48.3%	Pass
113 - 108	Pole + Reinf.	TP24.793x23.85x0.5125	Pole	55.3%	Pass
108 - 103	Pole + Reinf.	TP25.737x24.793x0.5	Pole	61.7%	Pass
103 - 98	Pole + Reinf.	TP26.68x25.737x0.4938	Pole	67.7%	Pass
98 - 96.5	Pole + Reinf.	TP27.624x26.68x0.4875	Pole	69.4%	Pass
96.5 - 92	Pole + Reinf.	TP27.313x26.464x0.7	Pole	54.8%	Pass
92 - 87	Pole + Reinf.	TP28.257x27.313x0.675	Pole	59.3%	Pass
87 - 82	Pole + Reinf.	TP29.201x28.257x0.65	Pole	63.9%	Pass
82 - 77.5	Pole + Reinf.	TP30.05x29.201x0.6375	Pole	67.8%	Pass
77.5 - 72.5	Pole + Reinf.	TP30.994x30.05x0.6875	Pole	63.2%	Pass
72.5 - 70.58	Pole + Reinf.	TP31.356x30.994x0.6875	Pole	64.3%	Pass
70.58 - 70.33	Pole + Reinf.	TP31.403x31.356x0.6875	Pole	64.4%	Pass
70.33 - 67.08	Pole + Reinf.	TP32.016x31.403x0.675	Pole	66.3%	Pass
67.08 - 66.83	Pole + Reinf.	TP32.063x32.016x0.975	Pole	47.5%	Pass
66.83 - 61.83	Pole + Reinf.	TP33.007x32.063x0.95	Pole	49.7%	Pass
61.83 - 61.75	Pole + Reinf.	TP33.824x33.007x0.95	Pole	49.7%	Pass
61.75 - 56.75	Pole + Reinf.	TP33.341x32.397x0.9375	Pole	53.1%	Pass
56.75 - 51.75	Pole + Reinf.	TP34.284x33.341x0.9125	Pole	55.1%	Pass
51.75 - 46.75	Pole + Reinf.	TP35.228x34.284x0.9	Pole	57.5%	Pass
46.75 - 41.75	Pole + Reinf.	TP36.171x35.228x0.8875	Pole	59.9%	Pass
41.75 - 39.8	Pole + Reinf.	TP36.539x36.171x0.875	Pole	60.8%	Pass
39.8 - 39.33	Pole + Reinf.	TP36.628x36.539x0.95	Pole	55.8%	Pass
39.33 - 39.08	Pole + Reinf.	TP36.675x36.628x0.9375	Pole	55.9%	Pass
39.08 - 38.33	Pole + Reinf.	TP36.816x36.675x0.9375	Pole	56.1%	Pass
38.33 - 38.08	Pole + Reinf.	TP36.864x36.816x0.8875	Pole	60.5%	Pass
38.08 - 33.08	Pole + Reinf.	TP37.807x36.864x0.875	Pole	62.1%	Pass
33.08 - 30.75	Pole + Reinf.	TP38.247x37.807x0.8625	Pole	62.9%	Pass
30.75 - 30.5	Pole + Reinf.	TP38.294x38.247x0.9375	Pole	58.1%	Pass
30.5 - 25.5	Pole + Reinf.	TP39.238x38.294x0.925	Pole	59.6%	Pass
25.5 - 20.5	Pole + Reinf.	TP40.182x39.238x0.9	Pole	61.0%	Pass
20.5 - 15.5	Pole + Reinf.	TP41.125x40.182x0.8875	Pole	62.3%	Pass
15.5 - 15.05	Pole + Reinf.	TP42.201x41.125x0.8875	Pole	62.4%	Pass
15.05 - 8.8	Pole + Reinf.	TP41.639x40.46x0.875	Pole	65.9%	Pass
8.8 - 8.25	Pole + Reinf.	TP41.743x41.639x0.875	Pole	66.1%	Pass
8.25 - 8	Pole + Reinf.	TP41.79x41.743x0.875	Pole	66.6%	Pass
8 - 4.25	Pole + Reinf.	TP42.498x41.79x0.875	Pole	67.9%	Pass
4.25 - 4	Pole + Reinf.	TP42.545x42.498x1.05	Pole	56.8%	Pass
4 - 3	Pole + Reinf.	TP42.734x42.545x1.05	Pole	57.2%	Pass
3 - 2.75	Pole + Reinf.	TP42.781x42.734x1.075	Pole	56.9%	Pass
2.75 - 2.16	Pole + Reinf.	TP42.892x42.781x1.0625	Pole	57.1%	Pass
2.16 - 1.91	Pole + Reinf.	TP42.94x42.892x1.2	Pole	50.6%	Pass
1.91 - 0	Pole + Reinf.	TP43.3x42.94x1.2	Pole	51.2%	Pass
				Summary	
			Pole	69.4%	Pass
			Reinforcement	59.9%	Pass
			Overall	69.4%	Pass



# Additional Calculations

Section Elevation (ft)	Moment of Inertia (in <sup>4</sup> )			Area (in <sup>2</sup> )			% Capacity*												
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12
156 - 151	161	n/a	161	11.91	n/a	11.91	0.4%												
151 - 146	161	n/a	161	11.91	n/a	11.91	12.6%												
146 - 144.5	161	n/a	161	11.91	n/a	11.91	16.4%												
144.5 - 144	786	n/a	786	20.22	n/a	20.22	6.3%												
144 - 139	672	n/a	672	15.03	n/a	15.03	24.0%												
139 - 134	779	n/a	779	15.79	n/a	15.79	38.0%												
134 - 129	897	n/a	897	16.54	n/a	16.54	53.2%												
129 - 128.25	916	n/a	916	16.66	n/a	16.66	55.8%												
128.25 - 128	922	1119	2040	16.70	18.00	34.70	25.1%					22.0%							
128 - 123	1053	1214	2267	17.45	18.00	35.45	32.9%					28.7%							
123 - 118	1197	1314	2510	18.21	18.00	36.21	40.6%					35.4%							
118 - 113	1352	1417	2770	18.97	18.00	36.97	48.3%					41.9%							
113 - 108	1521	1525	3046	19.73	18.00	37.73	55.3%					47.9%							
108 - 103	1703	1636	3340	20.49	18.00	38.49	61.7%					53.4%							
103 - 98	1900	1752	3651	21.25	18.00	39.25	67.7%					58.5%							
98 - 96.5	1961	1787	3749	21.47	18.00	39.47	69.4%					59.9%							
96.5 - 92	2039	3349	5388	21.75	31.88	53.63	54.8%					44.4%							
92 - 87	2260	3567	5827	22.51	31.88	54.39	59.3%					47.6%							
87 - 82	2497	3792	6289	23.27	31.88	55.15	63.9%					50.7%							
82 - 77.5	2723	4001	6724	23.95	31.88	55.83	67.8%					53.3%							
77.5 - 72.5	3714	4240	7955	30.83	31.88	62.70	63.2%					50.9%							
72.5 - 70.58	3848	4334	8182	31.19	31.88	63.07	64.3%					51.8%							
70.58 - 70.33	3865	4346	8211	31.24	31.88	63.12	64.4%			51.9%	51.9%								
70.33 - 67.08	4098	4507	8606	31.86	31.88	63.73	66.3%			53.4%	53.4%								
67.08 - 66.83	4117	7946	12062	31.90	56.25	88.15	47.5%			38.3%	38.3%				40.3%				
66.83 - 61.83	4495	8394	12889	32.85	56.25	89.10	49.7%			40.0%	40.0%				42.1%				
61.83 - 61.75	4501	8401	12902	32.87	56.25	89.12	49.7%			40.0%	40.0%				42.1%				
61.75 - 56.75	4634	8555	13189	33.19	56.25	89.44	53.1%			42.7%	42.7%				45.0%				
56.75 - 51.75	5042	9021	14063	34.13	56.25	90.38	55.1%			44.3%	44.3%				46.7%				
51.75 - 46.75	5474	9498	14972	35.08	56.25	91.33	57.5%			45.8%	45.8%				48.3%				
46.75 - 41.75	5930	9989	15919	36.03	56.25	92.28	59.9%			47.3%	47.3%				49.8%				
41.75 - 39.8	6114	10183	16298	36.40	56.25	92.65	60.8%			47.8%	47.8%				50.4%				
39.8 - 39.33	7353	10230	17584	43.71	56.25	99.96	55.8%			44.7%	44.7%				47.1%				
39.33 - 39.08	7382	10256	17638	43.77	56.25	100.02	55.9%	46.6%							47.2%				
39.08 - 38.33	7469	10331	17800	43.94	56.25	100.19	56.1%	46.8%			45.0%				47.4%				
38.33 - 38.08	7508	9475	16983	44.00	53.75	97.75	60.5%	46.9%	51.3%						50.5%				
38.08 - 33.08	8105	9944	18048	45.13	53.75	98.88	62.1%	48.2%	52.6%						51.9%				
33.08 - 30.75	8394	10166	18559	45.67	53.75	99.42	62.9%	48.8%	53.2%						52.5%				
30.75 - 30.5	8424	11712	20136	45.72	61.25	106.97	58.1%	45.3%	49.2%					47.8%					
30.5 - 25.5	9068	12269	21337	46.86	61.25	108.11	59.6%	46.4%	50.4%					49.0%					
25.5 - 20.5	9745	12838	22583	48.00	61.25	109.25	61.0%	47.5%	51.6%					50.2%					
20.5 - 15.5	10454	13421	23875	49.14	61.25	110.39	62.3%	48.6%	52.7%					51.2%					
15.5 - 15.05	10520	13474	23994	49.24	61.25	110.49	62.4%	48.7%	52.8%					51.3%					
15.05 - 8.8	10855	13744	24599	49.76	61.25	111.01	65.9%	51.3%	55.5%					54.0%					
8.8 - 8.25	10937	13810	24747	49.88	61.25	111.13	66.1%	51.4%	55.6%					54.1%					
8.25 - 8	10985	13756	24742	49.94	69.38	119.31	66.6%	51.2%						52.9%			48.2%		
8 - 4.25	11558	14204	25761	50.79	69.38	120.17	67.9%	51.9%						53.6%			48.9%		
4.25 - 4	11603	19429	31033	50.85	80.63	131.47	56.8%							43.5%		46.7%	47.0%		
4 - 3	11760	19585	31345	51.08	80.63	131.70	57.2%							43.7%		46.9%	47.2%		
3 - 2.75	11800	20028	31828	51.13	78.75	129.88	56.9%							46.7%		47.1%			42.2%
2.75 - 2.16	11893	20121	32014	51.27	78.75	130.02	57.1%							46.8%		47.2%			42.3%
2.16 - 1.91	11927	24316	36243	51.32	93.75	145.07	50.6%							41.9%		42.2%	35.0%		37.5%
1.91 - 0	12232	24681	36913	51.76	93.75	145.51	51.2%							42.2%		42.5%	35.3%		37.8%

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

Date: 9/20/2021  
 PJF Project: 37521-1143.001.7805  
 Site Number: 828402  
 Site Name: Thompson/ I-395 X99\_1  
 WO No.: 1966336  
 Order No.: 553315 Rev 1  
 Engineer: JAB

### Asymmetric Bolt Analysis

Moment = 19 k-ft  
 Axial = 2.1 kips (+Comp, -Tension)  
 Shear = 2.8 kips  
 Anchor Qty = 10

TIA Ref. H-1  
 ASIF = N/A  
 Max Ratio = 100.0%  
 Location = Flange Plate

$\eta = 0.50$  for Base Plates, Rev. G Sect. 4.9.9  
 Threads = N-Included for Flange Plates, Rev. G & H  
 Grout = 0.00 psi, for Base Plates, Rev. H Sect 4.9.9 (Note)

Use An? Yes for Anchors or Bolts  
 Cap Normalization: Yes Apply 1.05 per Rev H, 15.5\*

\* For elements with an Area Override, the capacity normalization will not be applied. Make adjustments to the Tension/Comp Overrides to account for it, if needed.

**\*\* For Flange Plates: Prying action is not considered in the bolt loads. \*\***

Item	Nominal Bolt Dia, in	Spec	Fy, ksi	Fu, ksi	Location, degrees	Bolt Circle, in	Type	Area Override, in <sup>2</sup>	Iar, in	Area, in <sup>2</sup>	Max Net Comp, kips	Max Net Tension, kips	Tension Override, kips	Comp Override, kips	Tension Cap, kips	Comp Cap, kips	Capacity Ratio
1	0.750	A325	92	120	0.0	19.875	Original	0.00	0.00	0.33	0.58	0.43	29.80	0.00	29.80		1.4%
2	0.750	A325	92	120	60.0	19.875	Original	0.00	0.00	0.33	0.58	0.43	29.80	0.00	29.80		1.4%
3	0.750	A325	92	120	120.0	19.875	Original	0.00	0.00	0.33	0.58	0.43	29.80	0.00	29.80		1.4%
4	0.750	A325	92	120	180.0	19.875	Original	0.00	0.00	0.33	0.58	0.43	29.80	0.00	29.80		1.4%
5	0.750	A325	92	120	240.0	19.875	Original	0.00	0.00	0.33	0.58	0.43	29.80	0.00	29.80		1.4%
6	0.750	A325	92	120	300.0	19.875	Original	0.00	0.00	0.33	0.58	0.43	29.80	0.00	29.80		1.4%
7	1.750	A193 Gr B7	105	125	15.0	38.00	Original	0.00	0.00	1.90	5.89	5.06	100.00	0.00	100.00		4.8%
8	1.750	A193 Gr B7	105	125	105.0	38.00	Original	0.00	0.00	1.90	5.89	5.06	100.00	0.00	100.00		4.8%
9	1.750	A193 Gr B7	105	125	195.0	38.00	Original	0.00	0.00	1.90	5.89	5.06	100.00	0.00	100.00		4.8%
10	1.750	A193 Gr B7	105	125	285.0	38.00	Original	0.00	0.00	1.90	5.89	5.06	100.00	0.00	100.00		4.8%
									9.60								

# Monopole Flange Plate Connection

Elevation = 144 ft.

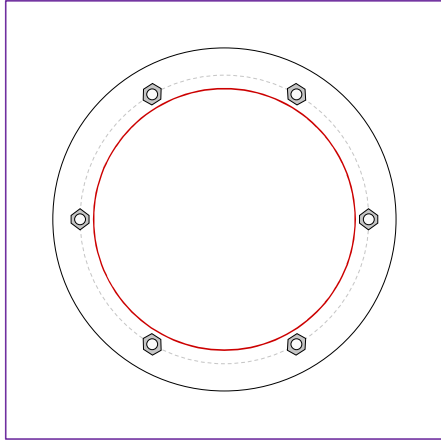


BU #	828402
Site Name	hompson/ I-395 X99
Order #	553315 REV 1
TIA-222 Revision	H

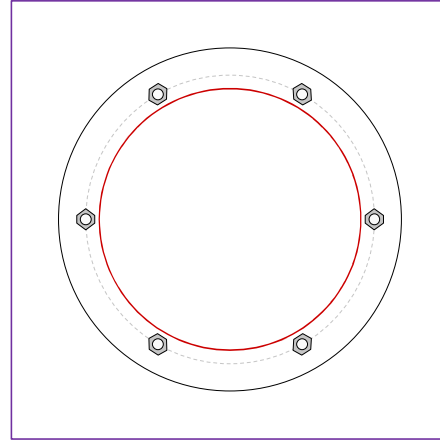
Applied Loads	
Moment (kip-ft)	1.30
Axial Force (kips)	0.40
Shear Force (kips)	0.60

\*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



### Connection Properties

#### Bolt Data

(6) 3/4"  $\phi$  bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 19.875" BC

#### Top Plate Data

23.625" OD x 1.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

#### Top Stiffener Data

N/A

#### Top Pole Data

18" x 0.365" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

#### Bottom Plate Data

23.625" OD x 0.5" Plate (A36; Fy=36 ksi, Fu=58 ksi)

#### Bottom Stiffener Data

N/A

#### Bottom Pole Data

18" x 0.25" 12-sided pole (A36; Fy=36 ksi, Fu=58 ksi)

### Analysis Results

#### Bolt Capacity

Max Load (kips)	0.46
Allowable (kips)	30.06
Stress Rating:	<b>1.4%</b> <span style="color: green;">Pass</span>

#### Top Plate Capacity

Max Stress (ksi):	0.12	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	<b>0.3%</b>	<span style="color: green;">Pass</span>
Tension Side Stress Rating:	<b>0.1%</b>	<span style="color: green;">Pass</span>

#### Bottom Plate Capacity

Max Stress (ksi):	1.05	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	<b>3.1%</b>	<span style="color: green;">Pass</span>
Tension Side Stress Rating:	<b>0.9%</b>	<span style="color: green;">Pass</span>

# Monopole Base Plate Connection

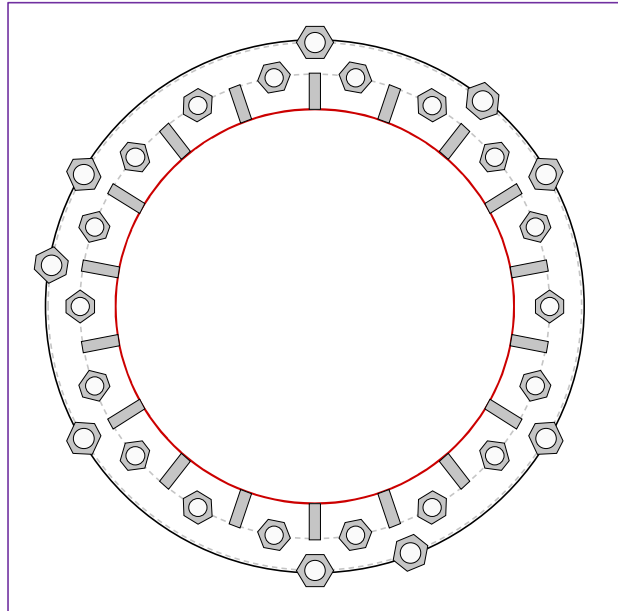


Site Info	
BU #	828402
Site Name	Thompson/ I-395 X99
Order #	553315 REV 1

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

Applied Loads	
Moment (kip-ft)	2808.10
Axial Force (kips)	62.82
Shear Force (kips)	26.77

\*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
GROUP 1: (18) 2" $\phi$ bolts (A36M-42 N; $F_y=42$ ksi, $F_u=60$ ksi) on 51" BC
GROUP 2: (9) 2-1/4" $\phi$ bolts (A193 Gr. B7 N; $F_y=105$ ksi, $F_u=125$ ksi) on 58" BC

Base Plate Data
58.5" OD x 1.5" Plate (A36; $F_y=36$ ksi, $F_u=58$ ksi)

Stiffener Data
(18) 18"H x 4"W x 1.25"T, Notch: 1"
plate: $F_y=36$ ksi ; weld: $F_y=70$ ksi
horiz. weld: 0.625" fillet
vert. weld: 0.375" fillet

Pole Data
43.3" x 0.375" 12-sided pole (A36; $F_y=36$ ksi, $F_u=58$ ksi)

Anchor Rod Summary			(units of kips, kip-in)
<b>GROUP 1:</b>			
$Pu_c = 83.21$	$\phi Pn_c = 118.75$	<b>Stress Rating</b>	
$Vu = 1.49$	$\phi Vn = 53.44$		<b>66.8%</b>
$Mu = n/a$	$\phi Mn = n/a$		<b>Pass</b>
<b>GROUP 2:</b>			
$Pu_t = 117.86$	$\phi Pn_t = 304.69$	<b>Stress Rating</b>	
$Vu = 0$	$\phi Vn = 186.38$		<b>36.8%</b>
$Mu = 0$	$\phi Mn = 179.4$		<b>Pass</b>
<b>Base Plate Summary</b>			
Max Stress (ksi):	25.71	(Roark's Flexural)	
Allowable Stress (ksi):	32.4		
Stress Rating:	<b>75.6%</b>	<b>Pass</b>	
<b>Stiffener Summary</b>			
Horizontal Weld:	<b>62.8%</b>	<b>Pass</b>	
Vertical Weld:	<b>19.4%</b>	<b>Pass</b>	
Plate Flexure+Shear:	<b>4.2%</b>	<b>Pass</b>	
Plate Tension+Shear:	<b>44.1%</b>	<b>Pass</b>	
Plate Compression:	<b>33.0%</b>	<b>Pass</b>	
<b>Pole Summary</b>			
Punching Shear:	<b>7.3%</b>	<b>Pass</b>	

# 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	

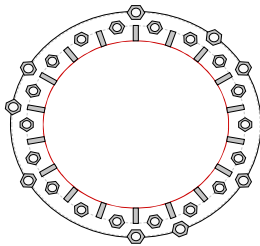
## Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η <sub>i</sub>	L <sub>n</sub> (in):	Thread Type	Area Override, in <sup>2</sup>	Tension Only
1	1	0	2	A36M-42	51	0.5	1.625	N-Included		No
2	1	20	2	A36M-42	51	0.5	1.625	N-Included		No
3	1	40	2	A36M-42	51	0.5	1.625	N-Included		No
4	1	60	2	A36M-42	51	0.5	1.625	N-Included		No
5	1	80	2	A36M-42	51	0.5	1.625	N-Included		No
6	1	100	2	A36M-42	51	0.5	1.625	N-Included		No
7	1	120	2	A36M-42	51	0.5	1.625	N-Included		No
8	1	140	2	A36M-42	51	0.5	1.625	N-Included		No
9	1	160	2	A36M-42	51	0.5	1.625	N-Included		No
10	1	180	2	A36M-42	51	0.5	1.625	N-Included		No
11	1	200	2	A36M-42	51	0.5	1.625	N-Included		No
12	1	220	2	A36M-42	51	0.5	1.625	N-Included		No
13	1	240	2	A36M-42	51	0.5	1.625	N-Included		No
14	1	260	2	A36M-42	51	0.5	1.625	N-Included		No
15	1	280	2	A36M-42	51	0.5	1.625	N-Included		No
16	1	300	2	A36M-42	51	0.5	1.625	N-Included		No
17	1	320	2	A36M-42	51	0.5	1.625	N-Included		No
18	1	340	2	A36M-42	51	0.5	1.625	N-Included		No
19	2	30	2.25	A193 Gr, B7	58	0.5	7.5	N-Included		No
20	2	51	2.25	A193 Gr, B7	58	0.5	7.5	N-Included		No
21	2	90	2.25	A193 Gr, B7	58	0.5	7.5	N-Included		No
22	2	150	2.25	A193 Gr, B7	58	0.5	7.5	N-Included		No
23	2	171	2.25	A193 Gr, B7	58	0.5	7.5	N-Included		No
24	2	210	2.25	A193 Gr, B7	58	0.5	7.5	N-Included		No
25	2	270	2.25	A193 Gr, B7	58	0.5	7.5	N-Included		No
26	2	291	2.25	A193 Gr, B7	58	0.5	7.5	N-Included		No
27	2	330	2.25	A193 Gr, B7	58	0.5	7.5	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	10	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
2	1	30	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
3	1	50	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
4	1	70	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
5	1	90	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
6	1	110	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
7	1	130	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
8	1	150	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
9	1	170	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
10	1	190	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
11	1	210	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
12	1	230	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
13	1	250	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
14	1	270	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
15	1	290	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
16	1	310	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
17	1	330	4	18	1.25	1	1	36	Fillet			0.625	0.375	70
18	1	350	4	18	1.25	1	1	36	Fillet			0.625	0.375	70

## Plot Graphic



# Drilled Pier Foundation

BU # :	828402
Site Name:	Thompson/I-395 X99_1
Order Number:	553315 REV 1
TIA-222 Revision:	H
Tower Type:	Monopole



<b>Check Limitation</b>	
Apply TIA-222-H Section 15.5:	<input checked="" type="checkbox"/>
	N/A
<b>Additional Longitudinal Rebar</b>	
Input Effective Depths (else Actual):	<input checked="" type="checkbox"/>
<b>Shear Design Options</b>	
Check Shear along Depth of Pier:	<input checked="" type="checkbox"/>
Utilize Shear-Friction Methodology:	<input type="checkbox"/>
Override Critical Depth:	<input type="checkbox"/>

## Analysis Results

Soil Lateral Check		Compression	Uplift
$D_{eq}$ (ft from TOC)		6.81	-
Soil Safety Factor		5.26	-
Max Moment (kip-ft)		2974.87	-
Rating*		24.1%	-
Soil Vertical Check		Compression	Uplift
Skin Friction (kips)		557.71	-
End Bearing (kips)		566.19	-
Weight of Concrete (kips)		129.78	-
Total Capacity (kips)		1123.90	-
Axial (kips)		192.61	-
Rating*		16.3%	-
Reinforced Concrete Flexure		Compression	Uplift
Critical Depth (ft from TOC)		6.62	-
Critical Moment (kip-ft)		2974.64	-
Critical Moment Capacity		3692.08	-
Rating*		76.7%	-
Reinforced Concrete Shear		Compression	Uplift
Critical Depth (ft from TOC)		18.78	-
Critical Shear (kip)		350.93	-
Critical Shear Capacity		396.66	-
Rating*		84.3%	-

<b>Structural Foundation Rating*</b>	84.3%
<b>Soil Interaction Rating*</b>	24.1%

\*Rating per TIA-222-H Section 15.5

Applied Loads		Comp.	Uplift
Moment (kip-ft)		2808.1	-
Axial Force (kips)		62.83	-
Shear Force (kips)		26.75	-

Material Properties		Rebar $F_y$ Override (ksi)
Concrete Strength, $f_c$ :	3	ksi
Rebar Strength, $F_y$ :	60	ksi
Tie Yield Strength, $F_y$ :	40	ksi

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Pier Design Data	
Depth	25.25 ft
Ext. Above Grade	0.25 ft
Pier Section 1	
<i>From 0.25' above grade to 25.25' below grade</i>	
Pier Diameter	6 ft
Rebar Quantity	34
Rebar Size	8
Clear Cover to Ties	3 in
Tie Size	4
Tie Spacing	in

## Soil Profile

# of Layers	5
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Groundwater Depth	n/a
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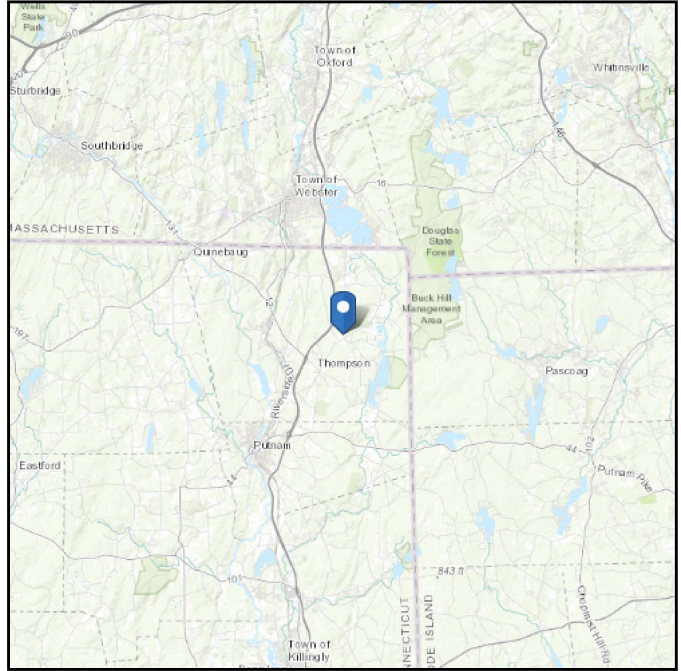
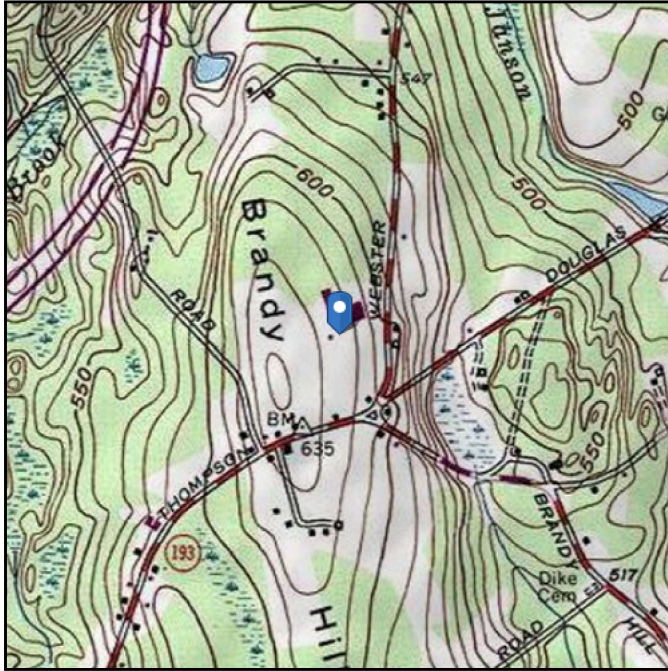
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	$\gamma_{soil}$ (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	4	4	140	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	4	8	4	130	150		38	0.000	0.000	0.90	0.90			Cohesionless
3	8	15	7	140	150		42	0.000	0.000	1.60	1.60			Cohesionless
4	15	20	5	140	150		42	0.000	0.000	2.20	2.20			Cohesionless
5	20	25.25	5.25	140	150		42	0.000	0.000	2.60	2.60	26.7		Cohesionless

# ASCE 7 Hazards Report

**Address:**  
No Address at This Location

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

**Elevation:** 623.8 ft (NAVD 88)  
**Latitude:** 41.977706  
**Longitude:** -71.846542



## Wind

### Results:

Wind Speed:	120 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	93 Vmph
100-year MRI	99 Vmph

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

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

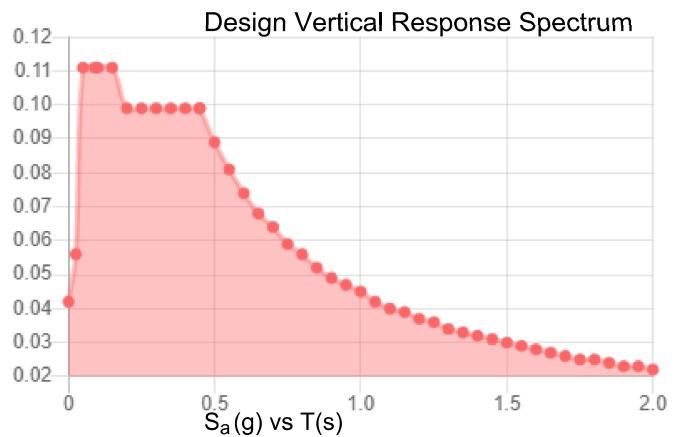
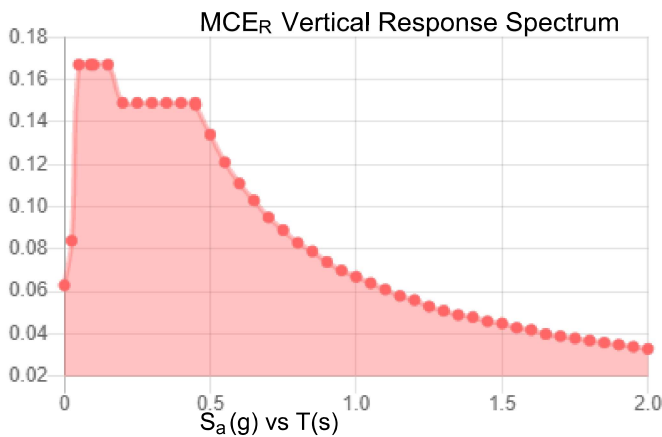
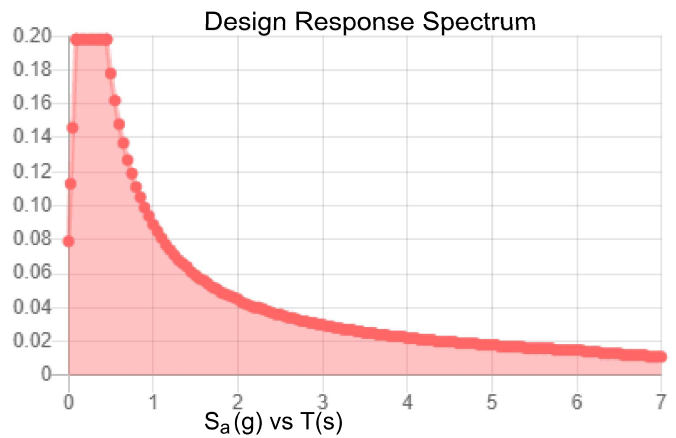
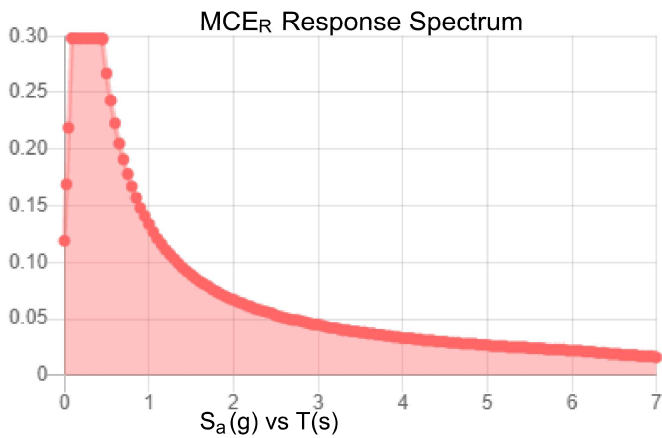
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

**Results:**

$S_s$ :	0.186	$S_{D1}$ :	0.089
$S_1$ :	0.056	$T_L$ :	6
$F_a$ :	1.6	PGA :	0.1
$F_v$ :	2.4	PGA <sub>M</sub> :	0.16
$S_{MS}$ :	0.298	$F_{PGA}$ :	1.599
$S_{M1}$ :	0.134	$I_e$ :	1
$S_{DS}$ :	0.198	$C_v$ :	0.7

**Seismic Design Category** B



**Data Accessed:** Thu Sep 16 2021  
**Date Source:** USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.



## Ice

---

**Results:**

Ice Thickness: 1.00 in.  
Concurrent Temperature: 15 F  
Gust Speed: 50 mph

**Data Source:** Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

**Date Accessed:** Thu Sep 16 2021

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

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

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# Exhibit E

## **Mount Analysis**

Date: April 5, 2022



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

**Subject:** Mount Analysis - Conditional Passing Report

**Carrier Designation:** DISH Network Co-Locate  
**Carrier Site Number:** BOBOS00035A  
**Carrier Site Name:** CT-CCI-T-828402

**Crown Castle Designation:** BU Number: 828402  
Site Name: Thompson/ I-395 X99\_1  
JDE Job Number: 645138  
Order Number: 553315, Rev.3

**Engineering Firm Designation:** B+T Group Report Designation: 162895.001.01

**Site Data:** 720 Thompson Rd, Thompson, CT, Windham County, 06277  
Latitude 41° 58' 39.74" Longitude -71° 50' 47.55"

**Structure Information:** Tower Height & Type: 156 ft. Monopole  
Mount Elevation: 131 ft.  
Mount Type: 8 ft. Platform Mount

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

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

**Platform Mount**

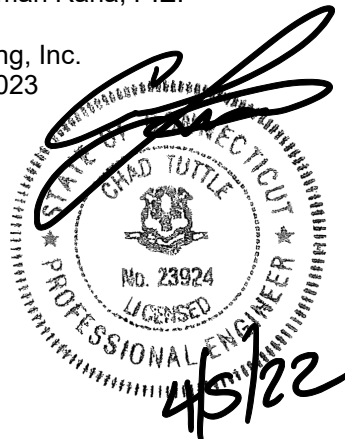
**Sufficient**

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

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

Mount structural analysis prepared by: Suman Rana, P.E.

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



Chad E. Tuttle, P.E.

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### 2) ANALYSIS CRITERIA

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Software Input Calculations

### 7) APPENDIX C

Software Analysis Output

### 8) APPENDIX D

Additional Calculations

## 1) INTRODUCTION

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

## 2) ANALYSIS CRITERIA

<b>Building Code:</b>	2018 Connecticut State Building Code
<b>TIA-222 Revision:</b>	TIA-222-H
<b>Risk Category:</b>	II
<b>Ultimate Wind Speed:</b>	120 mph
<b>Exposure Category:</b>	C
<b>Topographic Factor at Base:</b>	1
<b>Topographic Factor at Mount:</b>	1
<b>Ice Thickness:</b>	1.0 in
<b>Wind Speed with Ice:</b>	50 mph
<b>Seismic <math>S_s</math>:</b>	0.186
<b>Seismic <math>S_1</math>:</b>	0.056
<b>Live Loading Wind Speed:</b>	30 mph
<b>Man Live Load at Mid/End-Points:</b>	250 lb.
<b>Man Live Load at Mount Pipes:</b>	500 lb.

**Table 1 - Proposed Equipment Configuration**

Mount Centerline (ft.)	Antenna Centerline (ft.)	Number of Antennas	Manufacturer	Model / Type	Mount / Modification Details
131	131	3	JMA Wireless	MX08FRO665-21	8 ft. Platform Mount
		3	Fujitsu	TA08025-B604	
		3	Fujitsu	TA08025-B605	
		1	Raycap	RDIDC-9181-PF-48	

**Table 2 - Documents Provided**

Document	Remarks	Reference	Source
CCI Order	Existing Loading Proposed Loading	Date: 04/28/2021	Crown Castle
CDs by NB+C		Date: 01/05/2022	
Mount Manufacturer Drawing	CommScope (Part# MC-PK8-DSH)	Date: 03/08/2021	CommScope

## 3) ANALYSIS PROCEDURE

### 3.1) Analysis Method

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

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

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

Manufacturers drawing were used to create the model.

**3.2) Assumptions**

1. The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2. The configuration of antennas, mounts, and other appurtenances are as specified in Table-1.
3. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected members unless otherwise specified in this report.
4. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
5. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
6. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
7. The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
8. The following material grades were assumed (Unless Noted Otherwise):
  - (a) Connection Bolts : ASTM A325
  - (b) Steel Pipe : ASTM A53 (GR. 35)
  - (c) HSS (Round) : ASTM 500 (GR. B-42)
  - (d) HSS (Rectangular) : ASTM 500 (GR. B-46)
  - (e) Channel : ASTM A36 (GR. 36)
  - (f) Steel Solid Rod : ASTM A36 (GR. 36)
  - (g) Steel Plate : ASTM A36 (GR. 36)
  - (h) Steel Angle : ASTM A36 (GR. 36)
  - (i) UNISTRUT : ASTM A570 (GR. 33)

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

**4) ANALYSIS RESULTS**

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

Notes	Component	Centerline (ft.)	Critical Member	% Capacity	Pass / Fail
1,2	Main Horizontals	131	69	7.9	Pass
	Support Rails		22	13.2	Pass
	Support Tubes		1	55.9	Pass
	Support Channels		32	36.4	Pass
	Support Angles		11	31.8	Pass
	Mount Pipes		73	15.4	Pass
	Connection Plates		37	20.0	Pass
	Connection Angles		68	24.0	Pass
3	Mount to Tower Connection		-	29.03	Pass

<b>Structure Rating with Recommendations (max from all components) =</b>	<b>55.9%</b>
--	--------------

Notes:

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

#### **4.1) Recommendations**

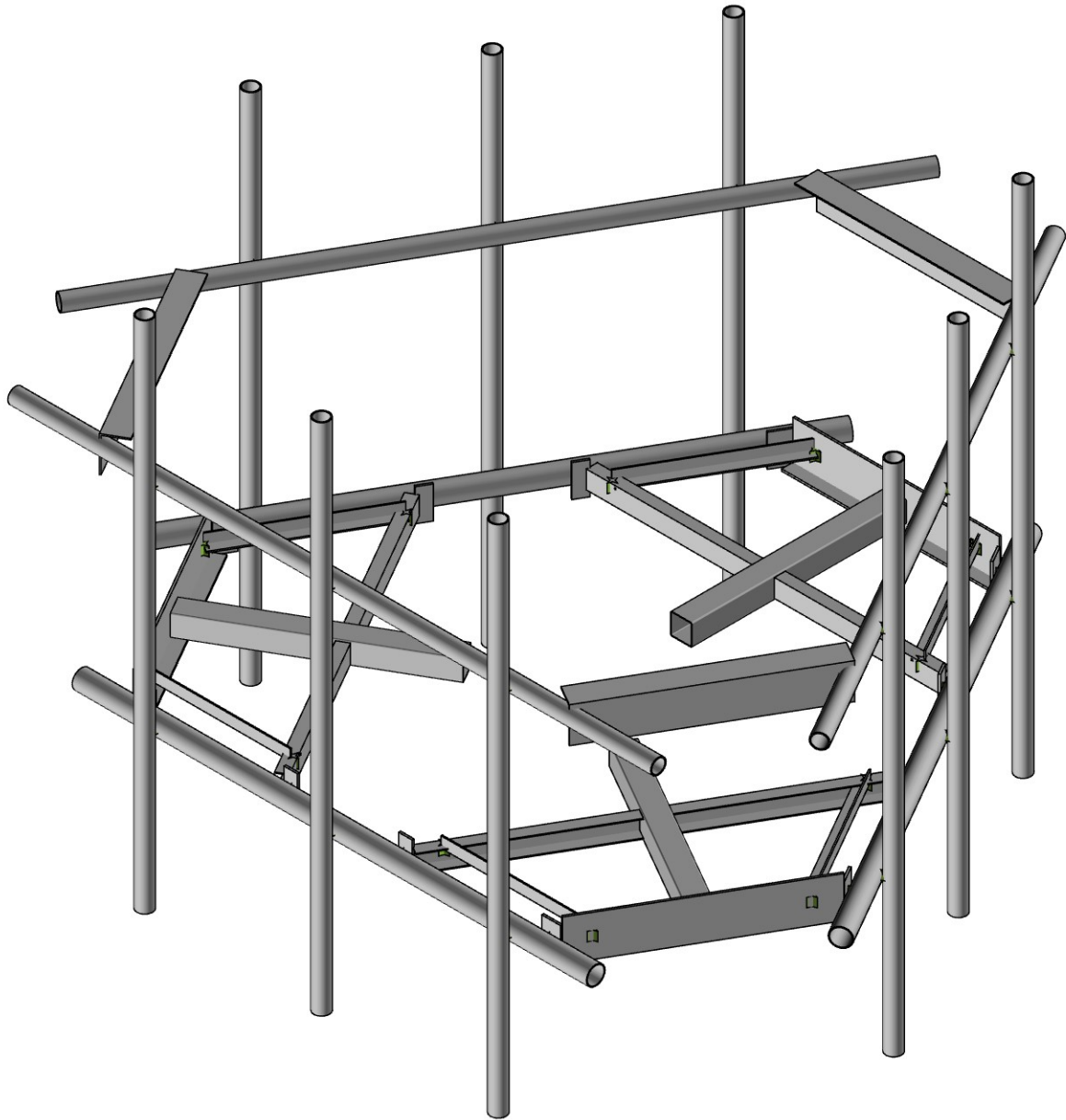
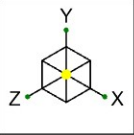
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the mount listed below must be installed.

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

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

**APPENDIX A**  
**WIRE FRAME AND RENDERED MODELS**





Envelope Only Solution

B+T Group

SP

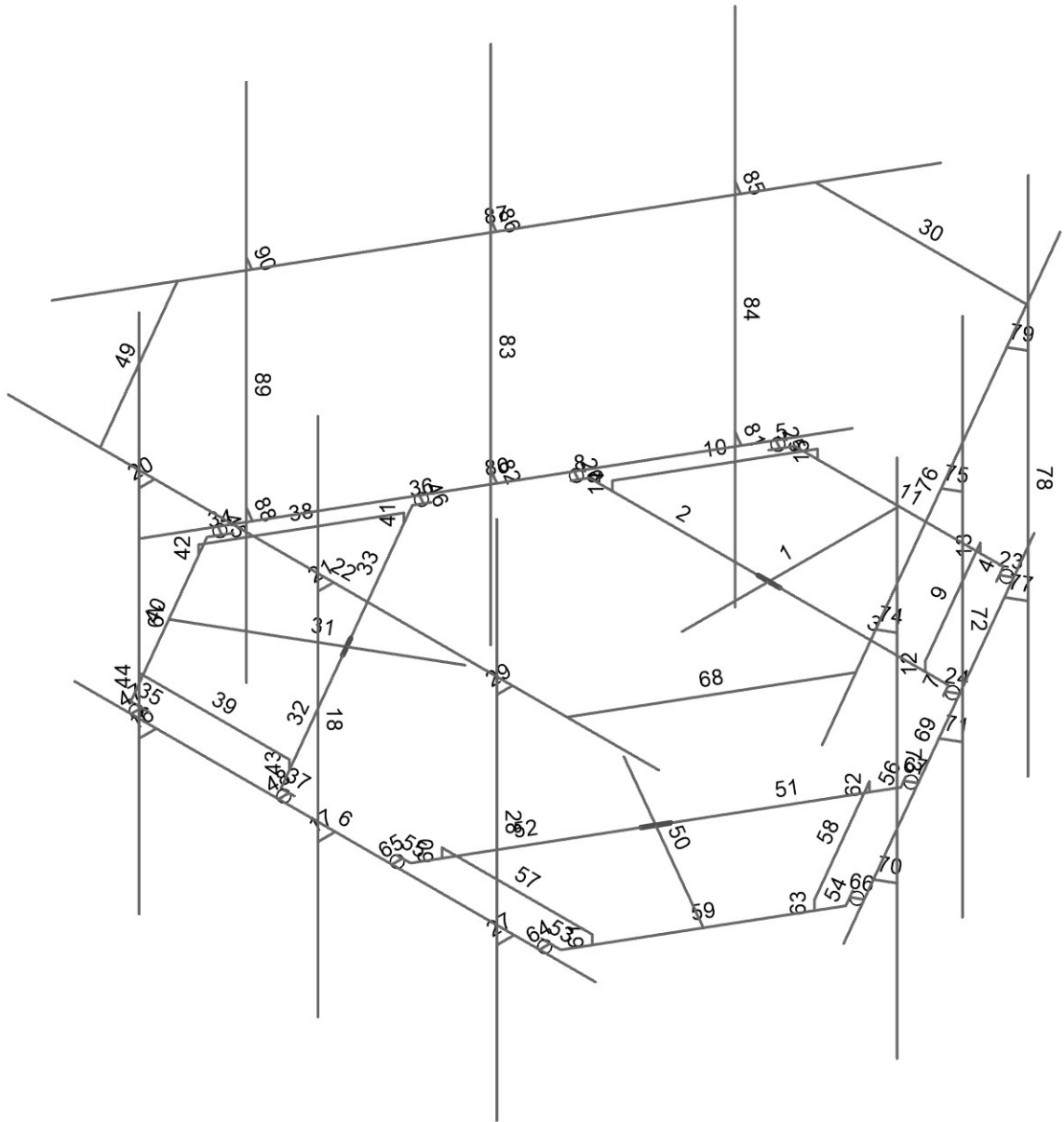
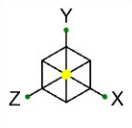
162895.001.01

828402 - Thompson/ I-395 X99\_1

SP-1

Apr 05, 2022

162895\_001\_01\_Thompson I-395 ...

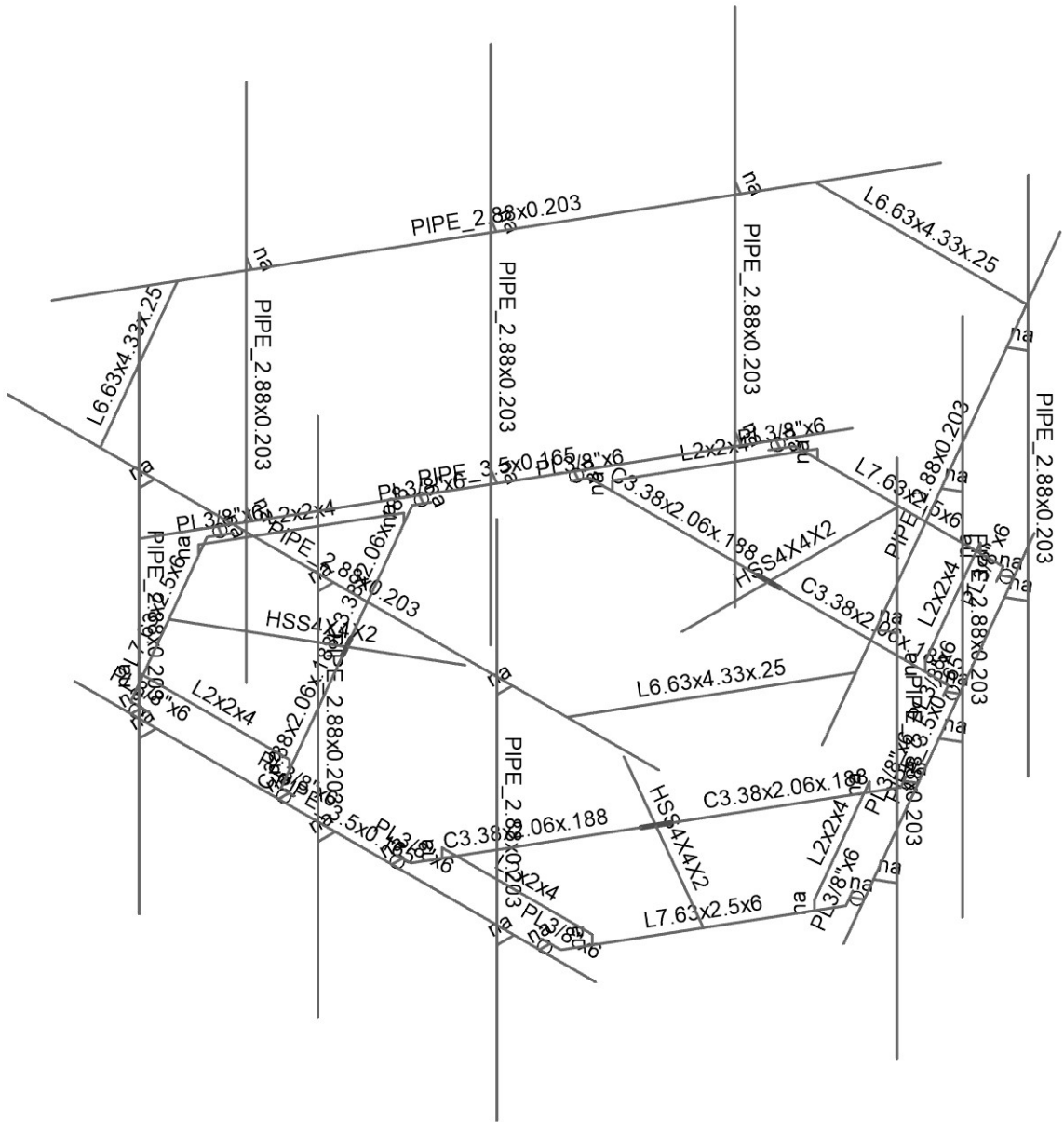
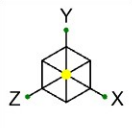


Envelope Only Solution

B+T Group  
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828402 - Thompson/ I-395 X99\_1

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Envelope Only Solution

B+T Group  
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828402 - Thompson/ I-395 X99\_1

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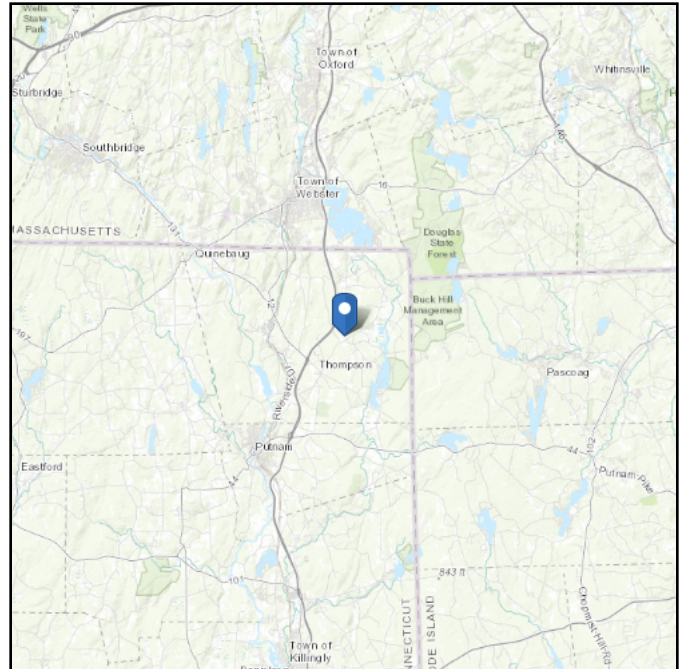
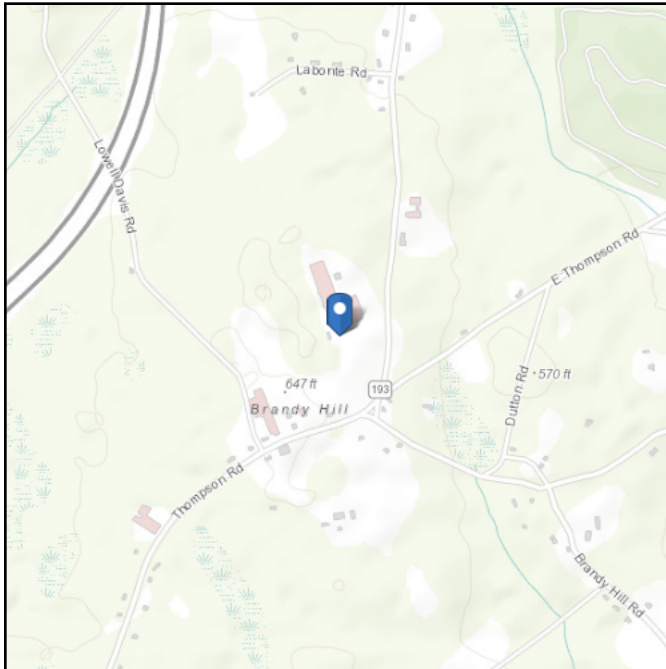
**APPENDIX B**  
**SOFTWARE INPUT CALCULATIONS**

# ASCE 7 Hazards Report

**Address:**  
No Address at This Location

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

**Elevation:** 623.8 ft (NAVD 88)  
**Latitude:** 41.977706  
**Longitude:** -71.846542



## Wind

### Results:

Wind Speed	120 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	93 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2  
Date Accessed: Tue Mar 29 2022

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

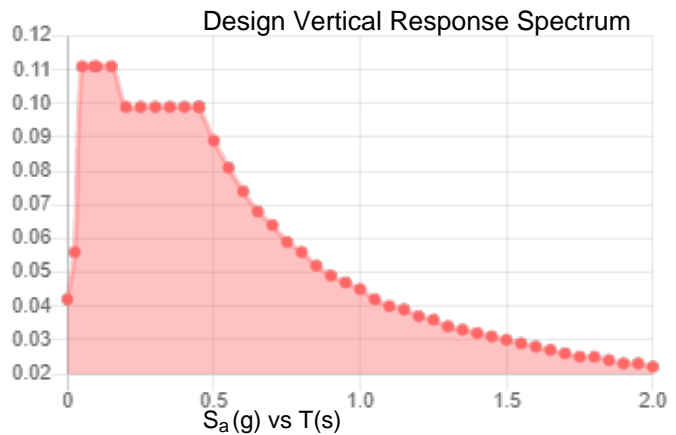
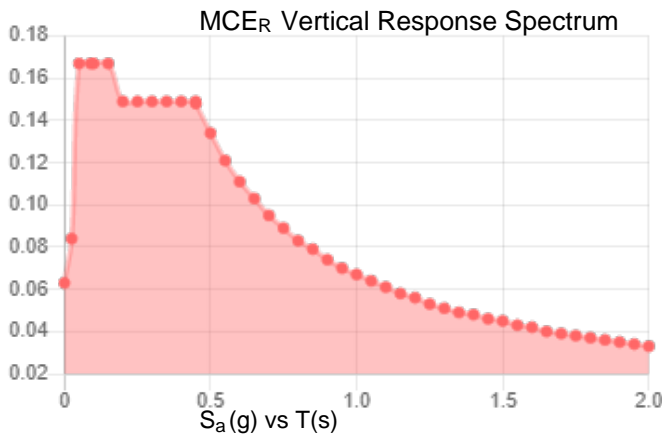
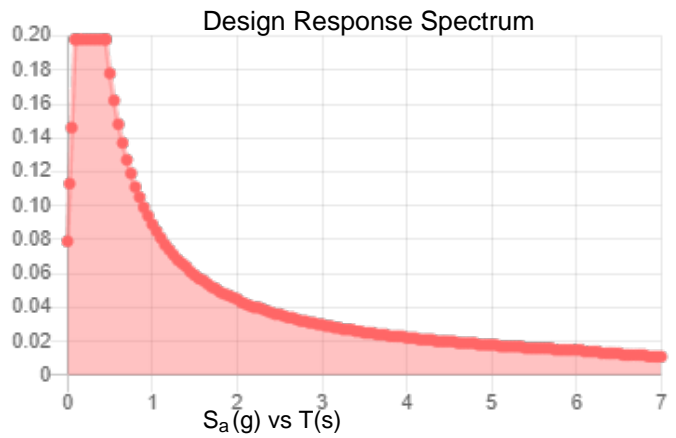
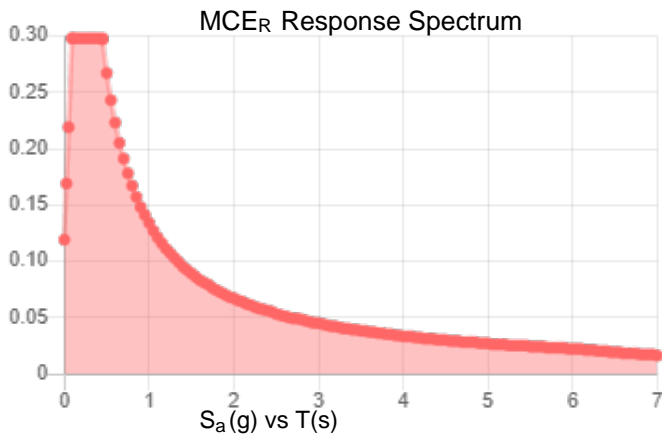
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

**Results:**

$S_s$ :	0.186	$S_{D1}$ :	0.089
$S_1$ :	0.056	$T_L$ :	6
$F_a$ :	1.6	PGA :	0.1
$F_v$ :	2.4	PGA <sub>M</sub> :	0.16
$S_{MS}$ :	0.298	$F_{PGA}$ :	1.599
$S_{M1}$ :	0.134	$I_e$ :	1
$S_{DS}$ :	0.198	$C_v$ :	0.7

**Seismic Design Category** B



**Data Accessed:** Tue Mar 29 2022

**Date Source:**

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

## Ice

---

**Results:**

Ice Thickness: 1.00 in.  
Concurrent Temperature: 15 F  
Gust Speed 50 mph

**Data Source:** Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

**Date Accessed:** Tue Mar 29 2022

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

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

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PROJECT	<b>162895.001.01 - Thompson/</b>	<b>KSC</b>
SUBJECT	<b>Platform Mount Analysis</b>	
DATE	<b>04-05-22</b>	PAGE OF



Tower Type	:	Monopole	
Ground Elevation	$Z_s$ :	624 ft	[ASCE7 Hazard Tool]
Tower Height	:	156.00 ft	
Mount Elevation	:	131.00 ft	
Antenna Elevation	:	131.00 ft	
Crest Height	:	0 ft	
Risk Category	:	II	[Table 2-1 ]
Exposure Category	:	C	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	$V$ :	120 mph	[ASCE7 Hazard Tool]
Ice wind Velocity	$V_i$ :	50 mph	[ASCE7 Hazard Tool]
Service Velocity	$V_s$ :	30 mph	[ASCE7 Hazard Tool]
Base Ice thickness	$t_i$ :	1.00 in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	$S_S$ :	0.19	
	$S_1$ :	0.06	
	$S_{DS}$ :	0.20	
	$S_{D1}$ :	0.09	
Gust Factor	$G_h$ :	1.00	[Sec. 16.6]
Pressure Coefficient	$K_z$ :	1.34	[Sec. 2.6.5.2]
Topography Factor	$K_{zt}$ :	1.00	[Sec. 2.6.6]
Elevation Factor	$K_e$ :	0.98	[Sec. 2.6.8]
Directionality Factor	$K_d$ :	0.95	[Sec. 16.6]
Shielding Factor	$K_a$ :	0.90	[Sec. 16.6]
Design Ice Thickness	$t_{iz}$ :	1.15 in	[Sec. 2.6.10]
Importance Factor	$I_e$ :	1	[Table 2-3 ]
Response Coefficient	$C_s$ :	0.099	[Sec. 2.7.7.1]
Amplification	$A_s$ :	2.358974	[Sec. 16.7]
	$q_z$ :	45.87 psf	

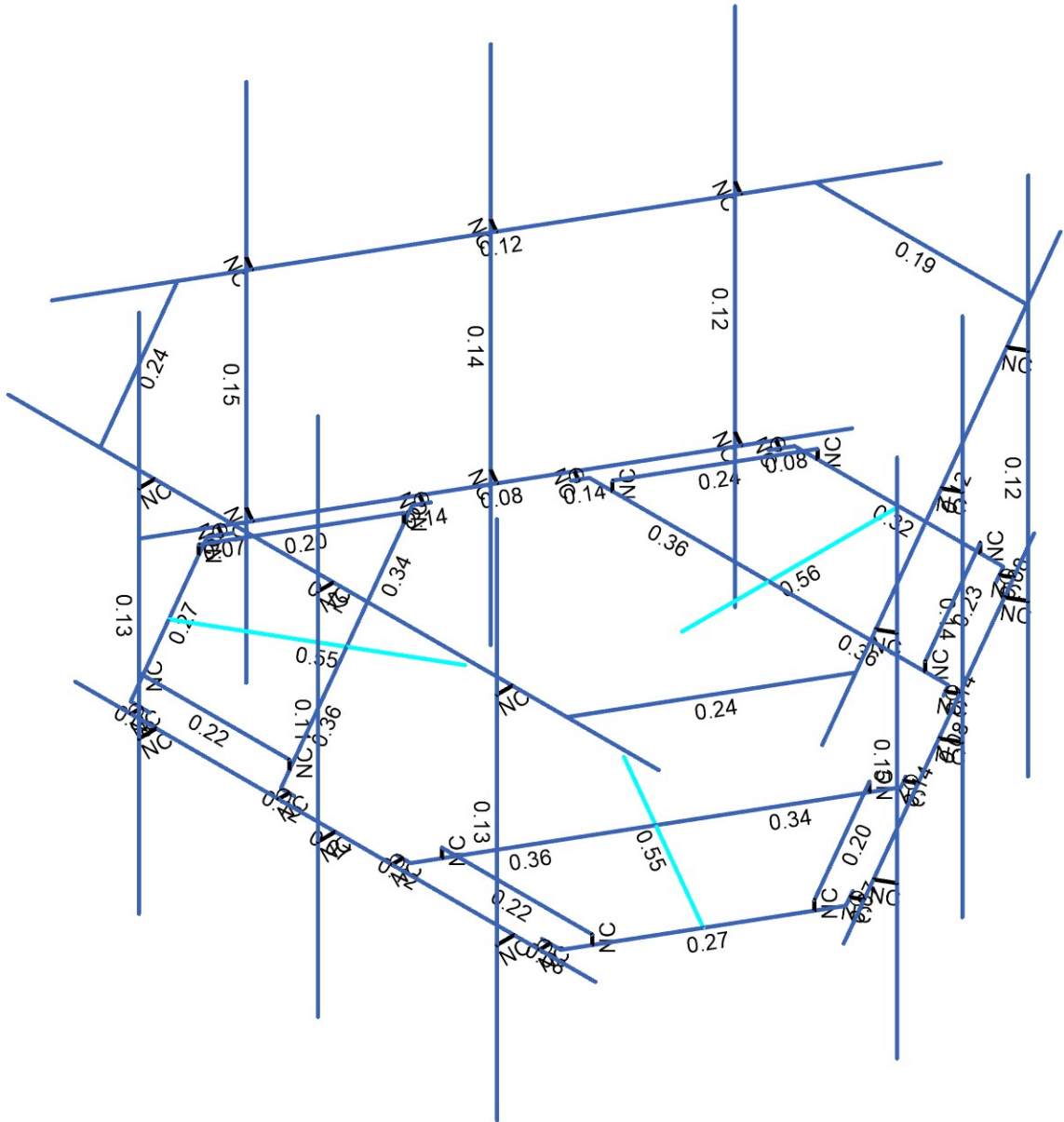
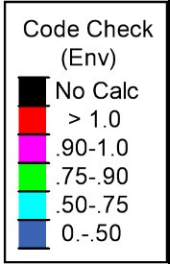
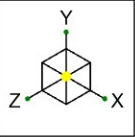


PROJECT	<b>162895.001.01 - Thompson/</b>	<b>KSC</b>
SUBJECT	<b>Platform Mount Analysis</b>	
DATE	<b>04-05-22</b>	PAGE OF



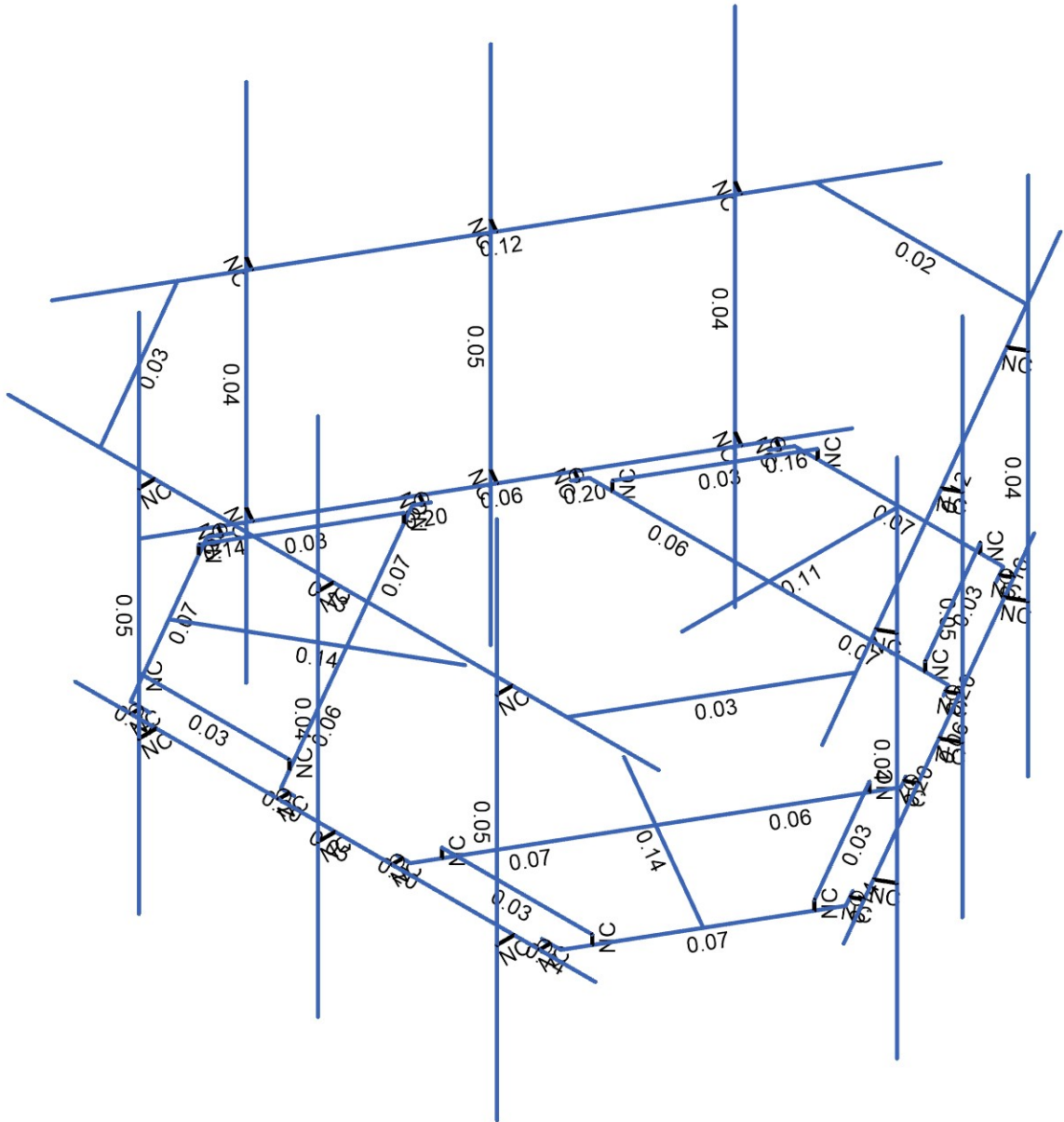
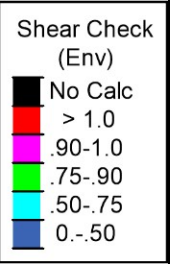
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				flat/round								
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.18	0.07	0.04	0.02
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.18	0.07	0.04	0.02
Fujitsu	TA08025-B604	1	0.95	1.20	1.64	0.82	2.16	1.22	0.08	0.04	0.01	0.01
Fujitsu	TA08025-B605	1	0.95	1.20	1.64	0.94	2.16	1.36	0.08	0.05	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.18	0.07	0.04	0.02
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.18	0.07	0.04	0.02
Fujitsu	TA08025-B604	1	0.95	1.20	1.64	0.82	2.16	1.22	0.08	0.04	0.01	0.01
Fujitsu	TA08025-B605	1	0.95	1.20	1.64	0.94	2.16	1.36	0.08	0.05	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.18	0.07	0.04	0.02
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.18	0.07	0.04	0.02
Fujitsu	TA08025-B604	1	0.95	1.20	1.64	0.82	2.16	1.22	0.08	0.04	0.01	0.01
Fujitsu	TA08025-B605	1	0.95	1.20	1.64	0.94	2.16	1.36	0.08	0.05	0.01	0.01
RAYCAP	RDIDC-9181-PF-48	1	1.14	1.20	1.68	0.97	2.21	1.41	0.08	0.05	0.01	0.01

**APPENDIX C**  
**SOFTWARE ANALYSIS OUTPUT**



Member Code Checks Displayed (Enveloped)  
Envelope Only Solution

B+T Group	828402 - Thompson/ I-395 X99_1	SP-4
SP		Apr 05, 2022
162895.001.01		162895_001_01_Thompson I-395 ...



Member Shear Checks Displayed (Enveloped)  
Envelope Only Solution

B+T Group	828402 - Thompson/ I-395 X99_1	SP-5
SP		Apr 05, 2022
162895.001.01		162895_001_01_Thompson I-395 ...



**Node Coordinates**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	-1.40967	
2	2	0	0	-4.743003	
3	3	0	0	-2.743003	
4	4	2.758333	0	-2.743003	
5	5	-2.758333	0	-2.743003	
6	6	-1.603633	0	-4.743003	
7	7	1.603633	0	-4.743003	
8	8	1.749466	0	-4.490412	
9	9	-1.749466	0	-4.490412	
10	10	1.686966	0	-4.598666	
11	11	1.826822	0	-4.679411	
12	12	-1.686966	0	-4.598666	
13	13	-1.826822	0	-4.679411	
14	14	-3.999998	0	3.92178	
15	15	3.999998	0	3.92178	
16	16	2.8625	0	-2.562581	
17	17	2.820833	0	-2.634751	
18	18	2.960688	0	-2.715497	
19	19	-2.8625	0	-2.562581	
20	20	-2.820833	0	-2.634751	
21	21	-2.960688	0	-2.715497	
22	22	-1.25	0.140833	-4.743003	
23	23	-2.404701	0.140833	-2.743003	
24	24	2.404701	0.140833	-2.743003	
25	25	1.25	0.140833	-4.743003	
26	26	-1.25	0	-4.743003	
27	27	-2.404701	0	-2.743003	
28	28	2.404701	0	-2.743003	
29	29	1.25	0	-4.743003	
30	30	-2.749998	0	3.92178	
31	31	0.000002	0	3.92178	
32	32	-2.749998	0	4.187405	
33	33	0.000002	0	4.187405	
34	34	-2.749998	-2.333667	4.187405	
35	35	0.000002	-2.333667	4.187405	
36	36	-2.749998	5.666335	4.187405	
37	37	0.000002	5.666335	4.187405	
38	38	-2.749998	3.333337	4.187405	
39	39	0.000002	3.333337	4.187405	
40	40	-2.749998	3.333337	3.947821	
41	41	0.000002	3.333337	3.947821	
42	42	-5	3.333337	3.947821	
43	43	5	3.333337	3.947821	
44	44	2.749998	0	3.92178	
45	45	2.749998	0	4.187405	
46	46	2.749998	-2.333667	4.187405	
47	47	2.749998	5.666335	4.187405	
48	48	2.749998	3.333337	4.187405	
49	49	2.749998	3.333337	3.947821	
50	50	1.625039	3.333337	-5.080993	
51	51	-1.625039	3.333337	-5.080993	
52	52	0	0	0.000876	
53	53	-1.22081	0	0.704835	
54	54	-4.107561	0	2.371502	
55	55	-2.37551	0	1.371502	
56	56	-3.754677	0	-1.017285	
57	57	-0.996344	0	3.760288	
58	58	-3.305745	0	3.760288	



**Node Coordinates (Continued)**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
59	59	-4.909378	0	0.982715	
60	60	-4.763544	0	0.730124	
61	61	-3.014078	0	3.760288	
62	62	-4.826044	0	0.838377	
63	63	-4.9659	0	0.757632	
64	64	-3.139078	0	3.760288	
65	65	-3.139078	0	3.92178	
66	66	-3.65051	0	-1.197707	
67	67	-3.692178	0	-1.125537	
68	68	-3.832033	0	-1.206283	
69	69	-0.78801	0	3.760288	
70	70	-0.871345	0	3.760288	
71	71	-0.871345	0	3.92178	
72	72	-3.482561	0.140833	3.454033	
73	73	-1.17316	0.140833	3.454033	
74	74	-3.577861	0.140833	-0.71103	
75	75	-4.732561	0.140833	1.28897	
76	76	-3.482561	0	3.454033	
77	77	-1.17316	0	3.454033	
78	78	-3.577861	0	-0.71103	
79	79	-4.732561	0	1.28897	
80	80	-5.212788	3.333337	1.133171	
81	81	-3.587749	3.333337	3.947821	
82	82	1.22081	0	0.704835	
83	83	4.107561	0	2.371502	
84	84	2.37551	0	1.371502	
85	85	0.996344	0	3.760288	
86	86	3.754677	0	-1.017285	
87	87	4.909378	0	0.982715	
88	88	3.305745	0	3.760288	
89	89	3.014078	0	3.760288	
90	90	4.763544	0	0.730124	
91	91	3.139078	0	3.760288	
92	92	3.139078	0	3.92178	
93	93	4.826044	0	0.838377	
94	94	4.9659	0	0.757632	
95	95	0.78801	0	3.760288	
96	96	0.871345	0	3.760288	
97	97	0.871345	0	3.92178	
98	98	3.65051	0	-1.197707	
99	99	3.692178	0	-1.125537	
100	100	3.832033	0	-1.206283	
101	101	4.732561	0.140833	1.28897	
102	102	3.577861	0.140833	-0.71103	
103	103	1.17316	0.140833	3.454033	
104	104	3.482561	0.140833	3.454033	
105	105	4.732561	0	1.28897	
106	106	3.577861	0	-0.71103	
107	107	1.17316	0	3.454033	
108	108	3.482561	0	3.454033	
109	109	3.587749	3.333337	3.947821	
110	110	5.212788	3.333337	1.133171	
111	111	5.39636	0	1.50321	
112	112	1.396362	0	-5.42499	
113	113	4.77136	0	0.420678	
114	114	3.39636	0	-1.960892	
115	115	5.001398	0	0.287866	
116	116	3.626398	0	-2.093704	

**Node Coordinates (Continued)**

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
117	117	5.001398	-2.333667	0.287866	
118	118	3.626398	-2.333667	-2.093704	
119	119	5.001398	5.666335	0.287866	
120	120	3.626398	5.666335	-2.093704	
121	121	5.001398	3.333337	0.287866	
122	122	3.626398	3.333337	-2.093704	
123	123	4.793913	3.333337	0.407657	
124	124	3.418913	3.333337	-1.973912	
125	125	5.918914	3.333337	2.356216	
126	126	0.918914	3.333337	-6.304038	
127	127	2.021362	0	-4.342458	
128	128	2.2514	0	-4.475271	
129	129	2.2514	-2.333667	-4.475271	
130	130	2.2514	5.666335	-4.475271	
131	131	2.2514	3.333337	-4.475271	
132	132	2.043915	3.333337	-4.355479	
133	133	-1.396362	0	-5.42499	
134	134	-5.39636	0	1.50321	
135	135	-2.021362	0	-4.342458	
136	136	-3.396362	0	-1.960888	
137	137	-2.2514	0	-4.475271	
138	138	-3.6264	0	-2.093701	
139	139	-2.2514	-2.333667	-4.475271	
140	140	-3.6264	-2.333667	-2.093701	
141	141	-2.2514	5.666335	-4.475271	
142	142	-3.6264	5.666335	-2.093701	
143	143	-2.2514	3.333337	-4.475271	
144	144	-3.6264	3.333337	-2.093701	
145	145	-2.043915	3.333337	-4.355479	
146	146	-3.418915	3.333337	-1.973909	
147	147	-0.918914	3.333337	-6.304038	
148	148	-5.918914	3.333337	2.356216	
149	149	-4.77136	0	0.420678	
150	150	-5.001398	0	0.287866	
151	151	-5.001398	-2.333667	0.287866	
152	152	-5.001398	5.666335	0.287866	
153	153	-5.001398	3.333337	0.287866	
154	154	-4.793913	3.333337	0.407657	

**Node Boundary Conditions**

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	2						
3	3						
4	4						
5	5						
6	16						
7	17						
8	19						
9	20						
10	22						
11	25						
12	26						
13	29						
14	53	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	54						
16	55						
17	56						

**Node Boundary Conditions (Continued)**

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

**Hot Rolled Steel Properties**

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

**Hot Rolled Steel Section Sets**

Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]	
1	MF-H1	PIPE 3.5x0.165	Beam	Pipe	A500 Gr.C	Typical	1.729	2.409	2.409	4.819
2	MF-H2	PIPE 2.88x0.203	Beam	Pipe	A500 Gr.C	Typical	1.704	1.53	1.53	3.059
3	SF-H1	HSS4X4X2	Beam	Tube	A500 Gr.B Rect	Typical	1.77	4.4	4.4	6.91
4	SF-H2	C3.38x2.06x.188	Beam	Channel	A36 Gr.36	Typical	1.339	0.562	2.4	0.015
5	SF-H3	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
6	SF-H4	L7.63x2.5x6	Beam	Single Angle	A36 Gr.36	Typical	3.658	1.307	22.092	0.163
7	MF-P1	PIPE 2.88x0.203	Column	Pipe	A500 Gr.C	Typical	1.704	1.53	1.53	3.059
8	MF-CP1	PL3/8"x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
9	MF-H3	L6.63x4.33x.25	Beam	Single Angle	A36 Gr.36	Typical	2.678	4.383	12.502	0.054

**Member Primary Data**

Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2	SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	5	3	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	3	3	4	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	4	7	8	MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	5	6	9	MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	6	14	15	MF-H1	Beam	Pipe	A500 Gr.C	Typical
7	7	16	4	MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	8	5	19	MF-CP1	Beam	RECT	A36 Gr.36	Typical
9	9	25	24	SF-H3	Beam	Single Angle	A36 Gr.36	Typical



**Member Primary Data (Continued)**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
10	10	23	22		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
11	11	6	7		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
12	12	28	24		RIGID	None	None	RIGID	Typical
13	13	29	25		RIGID	None	None	RIGID	Typical
14	14	27	23		RIGID	None	None	RIGID	Typical
15	15	26	22		RIGID	None	None	RIGID	Typical
16	16	32	30		RIGID	None	None	RIGID	Typical
17	17	33	31		RIGID	None	None	RIGID	Typical
18	18	37	35		MF-P1	Column	Pipe	A500 Gr.C	Typical
19	19	36	34		MF-P1	Column	Pipe	A500 Gr.C	Typical
20	20	38	40		RIGID	None	None	RIGID	Typical
21	21	39	41		RIGID	None	None	RIGID	Typical
22	22	42	43		MF-H2	Beam	Pipe	A500 Gr.C	Typical
23	23	11	10		RIGID	None	None	RIGID	Typical
24	24	18	17		RIGID	None	None	RIGID	Typical
25	25	13	12		RIGID	None	None	RIGID	Typical
26	26	21	20		RIGID	None	None	RIGID	Typical
27	27	45	44		RIGID	None	None	RIGID	Typical
28	28	47	46		MF-P1	Column	Pipe	A500 Gr.C	Typical
29	29	48	49		RIGID	None	None	RIGID	Typical
30	30	50	51	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
31	31	53	54		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
32	32	57	55	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	55	56	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	59	60		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	58	61		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	66	56		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	57	69		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	75	74		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	39	73	72		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
40	40	58	59		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
41	41	78	74		RIGID	None	None	RIGID	Typical
42	42	79	75		RIGID	None	None	RIGID	Typical
43	43	77	73		RIGID	None	None	RIGID	Typical
44	44	76	72		RIGID	None	None	RIGID	Typical
45	45	63	62		RIGID	None	None	RIGID	Typical
46	46	68	67		RIGID	None	None	RIGID	Typical
47	47	65	64		RIGID	None	None	RIGID	Typical
48	48	71	70		RIGID	None	None	RIGID	Typical
49	49	80	81	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
50	50	82	83		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
51	51	86	84	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
52	52	84	85	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
53	53	88	89		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	54	87	90		MF-CP1	Beam	RECT	A36 Gr.36	Typical
55	55	95	85		MF-CP1	Beam	RECT	A36 Gr.36	Typical
56	56	86	98		MF-CP1	Beam	RECT	A36 Gr.36	Typical
57	57	104	103		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
58	58	102	101		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
59	59	87	88		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
60	60	107	103		RIGID	None	None	RIGID	Typical
61	61	108	104		RIGID	None	None	RIGID	Typical
62	62	106	102		RIGID	None	None	RIGID	Typical
63	63	105	101		RIGID	None	None	RIGID	Typical
64	64	92	91		RIGID	None	None	RIGID	Typical
65	65	97	96		RIGID	None	None	RIGID	Typical
66	66	94	93		RIGID	None	None	RIGID	Typical
67	67	100	99		RIGID	None	None	RIGID	Typical



Company : B+T Group  
 Designer : SP  
 Job Number : 162895.001.01  
 Model Name : 828402 - Thompson/ I-395 X99\_1

4/5/2022  
 5:59:54 PM  
 Checked By : \_\_\_\_\_

**Member Primary Data (Continued)**

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
68	68	109	110	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
69	69	111	112		MF-H1	Beam	Pipe	A500 Gr.C	Typical
70	70	115	113		RIGID	None	None	RIGID	Typical
71	71	116	114		RIGID	None	None	RIGID	Typical
72	72	120	118		MF-P1	Column	Pipe	A500 Gr.C	Typical
73	73	119	117		MF-P1	Column	Pipe	A500 Gr.C	Typical
74	74	121	123		RIGID	None	None	RIGID	Typical
75	75	122	124		RIGID	None	None	RIGID	Typical
76	76	125	126		MF-H2	Beam	Pipe	A500 Gr.C	Typical
77	77	128	127		RIGID	None	None	RIGID	Typical
78	78	130	129		MF-P1	Column	Pipe	A500 Gr.C	Typical
79	79	131	132		RIGID	None	None	RIGID	Typical
80	80	133	134		MF-H1	Beam	Pipe	A500 Gr.C	Typical
81	81	137	135		RIGID	None	None	RIGID	Typical
82	82	138	136		RIGID	None	None	RIGID	Typical
83	83	142	140		MF-P1	Column	Pipe	A500 Gr.C	Typical
84	84	141	139		MF-P1	Column	Pipe	A500 Gr.C	Typical
85	85	143	145		RIGID	None	None	RIGID	Typical
86	86	144	146		RIGID	None	None	RIGID	Typical
87	87	147	148		MF-H2	Beam	Pipe	A500 Gr.C	Typical
88	88	150	149		RIGID	None	None	RIGID	Typical
89	89	152	151		MF-P1	Column	Pipe	A500 Gr.C	Typical
90	90	153	154		RIGID	None	None	RIGID	Typical

**Member Advanced Data**

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	1				Yes		None
2	2			2	Yes		None
3	3		2		Yes		None
4	4				Yes		None
5	5				Yes		None
6	6				Yes	Default	None
7	7				Yes		None
8	8				Yes		None
9	9				Yes		None
10	10				Yes		None
11	11				Yes		None
12	12				Yes	** NA **	None
13	13				Yes	** NA **	None
14	14				Yes	** NA **	None
15	15				Yes	** NA **	None
16	16				Yes	** NA **	None
17	17				Yes	** NA **	None
18	18				Yes	** NA **	None
19	19				Yes	** NA **	None
20	20				Yes	** NA **	None
21	21				Yes	** NA **	None
22	22				Yes		None
23	23	OOOOOX			Yes	** NA **	None
24	24	OOOOOX			Yes	** NA **	None
25	25	OOOOOX			Yes	** NA **	None
26	26	OOOOOX			Yes	** NA **	None
27	27				Yes	** NA **	None
28	28				Yes	** NA **	None
29	29				Yes	** NA **	None
30	30				Yes		None
31	31				Yes		None
32	32			2	Yes		None



Company : B+T Group  
 Designer : SP  
 Job Number : 162895.001.01  
 Model Name : 828402 - Thompson/ I-395 X99\_1

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**Member Advanced Data (Continued)**

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
33	33		2		Yes		None
34	34				Yes		None
35	35				Yes		None
36	36				Yes		None
37	37				Yes		None
38	38				Yes		None
39	39				Yes		None
40	40				Yes		None
41	41				Yes	** NA **	None
42	42				Yes	** NA **	None
43	43				Yes	** NA **	None
44	44				Yes	** NA **	None
45	45	OOOOOX			Yes	** NA **	None
46	46	OOOOOX			Yes	** NA **	None
47	47	OOOOOX			Yes	** NA **	None
48	48	OOOOOX			Yes	** NA **	None
49	49				Yes		None
50	50				Yes		None
51	51			2	Yes		None
52	52		2		Yes		None
53	53				Yes		None
54	54				Yes		None
55	55				Yes		None
56	56				Yes		None
57	57				Yes		None
58	58				Yes		None
59	59				Yes		None
60	60				Yes	** NA **	None
61	61				Yes	** NA **	None
62	62				Yes	** NA **	None
63	63				Yes	** NA **	None
64	64	OOOOOX			Yes	** NA **	None
65	65	OOOOOX			Yes	** NA **	None
66	66	OOOOOX			Yes	** NA **	None
67	67	OOOOOX			Yes	** NA **	None
68	68				Yes		None
69	69				Yes	Default	None
70	70				Yes	** NA **	None
71	71				Yes	** NA **	None
72	72				Yes	** NA **	None
73	73				Yes	** NA **	None
74	74				Yes	** NA **	None
75	75				Yes	** NA **	None
76	76				Yes		None
77	77				Yes	** NA **	None
78	78				Yes	** NA **	None
79	79				Yes	** NA **	None
80	80				Yes	Default	None
81	81				Yes	** NA **	None
82	82				Yes	** NA **	None
83	83				Yes	** NA **	None
84	84				Yes	** NA **	None
85	85				Yes	** NA **	None
86	86				Yes	** NA **	None
87	87				Yes		None
88	88				Yes	** NA **	None
89	89				Yes	** NA **	None
90	90				Yes	** NA **	None



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**Member Advanced Data (Continued)**

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Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
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**Hot Rolled Steel Design Parameters**

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	SF-H1	3.333	Lbyy	Lateral
2	2	SF-H2	2.758	Lbyy	Lateral
3	3	SF-H2	2.758	Lbyy	Lateral
4	4	MF-CP1	0.292	Lbyy	Lateral
5	5	MF-CP1	0.292	Lbyy	Lateral
6	6	MF-H1	8	Lbyy	Lateral
7	7	MF-CP1	0.208	Lbyy	Lateral
8	8	MF-CP1	0.208	Lbyy	Lateral
9	9	SF-H3	2.309	Lbyy	Lateral
10	10	SF-H3	2.309	Lbyy	Lateral
11	11	SF-H4	3.207	Lbyy	Lateral
12	18	MF-P1	8	Lbyy	Lateral
13	19	MF-P1	8	Lbyy	Lateral
14	22	MF-H2	10	Lbyy	Lateral
15	28	MF-P1	8	Lbyy	Lateral
16	30	MF-H3	3.25	Lbyy	Lateral
17	31	SF-H1	3.333	Lbyy	Lateral
18	32	SF-H2	2.758	Lbyy	Lateral
19	33	SF-H2	2.758	Lbyy	Lateral
20	34	MF-CP1	0.292	Lbyy	Lateral
21	35	MF-CP1	0.292	Lbyy	Lateral
22	36	MF-CP1	0.208	Lbyy	Lateral
23	37	MF-CP1	0.208	Lbyy	Lateral
24	38	SF-H3	2.309	Lbyy	Lateral
25	39	SF-H3	2.309	Lbyy	Lateral
26	40	SF-H4	3.207	Lbyy	Lateral
27	49	MF-H3	3.25	Lbyy	Lateral
28	50	SF-H1	3.333	Lbyy	Lateral
29	51	SF-H2	2.758	Lbyy	Lateral
30	52	SF-H2	2.758	Lbyy	Lateral
31	53	MF-CP1	0.292	Lbyy	Lateral
32	54	MF-CP1	0.292	Lbyy	Lateral
33	55	MF-CP1	0.208	Lbyy	Lateral
34	56	MF-CP1	0.208	Lbyy	Lateral
35	57	SF-H3	2.309	Lbyy	Lateral
36	58	SF-H3	2.309	Lbyy	Lateral
37	59	SF-H4	3.207	Lbyy	Lateral
38	68	MF-H3	3.25	Lbyy	Lateral
39	69	MF-H1	8	Lbyy	Lateral
40	72	MF-P1	8	Lbyy	Lateral
41	73	MF-P1	8	Lbyy	Lateral
42	76	MF-H2	10	Lbyy	Lateral
43	78	MF-P1	8	Lbyy	Lateral
44	80	MF-H1	8	Lbyy	Lateral
45	83	MF-P1	8	Lbyy	Lateral
46	84	MF-P1	8	Lbyy	Lateral
47	87	MF-H2	10	Lbyy	Lateral
48	89	MF-P1	8	Lbyy	Lateral

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Y	-0.041	%15
2	18	Y	-0.041	%85
3	18	Y	-0.064	%20
4	18	Y	-0.075	%50
5	18	Y	0	0
6	83	Y	-0.041	%15
7	83	Y	-0.041	%85

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
8	83	Y	-0.064	%20
9	83	Y	-0.075	%50
10	83	Y	0	0
11	72	Y	-0.041	%15
12	72	Y	-0.041	%85
13	72	Y	-0.064	%20
14	72	Y	-0.075	%50
15	72	Y	0	0
16	1	Y	-0.022	%20
17	1	Y	0	0
18	1	Y	0	0
19	1	Y	0	0
20	1	Y	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Z	-0.184	%15
2	18	Z	-0.184	%85
3	18	Z	-0.081	%20
4	18	Z	-0.081	%50
5	18	Z	0	0
6	83	Z	-0.184	%15
7	83	Z	-0.184	%85
8	83	Z	-0.081	%20
9	83	Z	-0.081	%50
10	83	Z	0	0
11	72	Z	-0.184	%15
12	72	Z	-0.184	%85
13	72	Z	-0.081	%20
14	72	Z	-0.081	%50
15	72	Z	0	0
16	1	Z	-0.083	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	X	-0.074	%15
2	18	X	-0.074	%85
3	18	X	-0.041	%20
4	18	X	-0.047	%50
5	18	X	0	0
6	83	X	-0.074	%15
7	83	X	-0.074	%85
8	83	X	-0.041	%20
9	83	X	-0.047	%50
10	83	X	0	0
11	72	X	-0.074	%15
12	72	X	-0.074	%85
13	72	X	-0.041	%20
14	72	X	-0.047	%50
15	72	X	0	0
16	1	X	-0.048	%20
17	1	X	0	0
18	1	X	0	0

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

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

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Z	-0.036	%15
2	18	Z	-0.036	%85
3	18	Z	-0.014	%20
4	18	Z	-0.014	%50
5	18	Z	0	0
6	83	Z	-0.036	%15
7	83	Z	-0.036	%85
8	83	Z	-0.014	%20
9	83	Z	-0.014	%50
10	83	Z	0	0
11	72	Z	-0.036	%15
12	72	Z	-0.036	%85
13	72	Z	-0.014	%20
14	72	Z	-0.014	%50
15	72	Z	0	0
16	1	Z	-0.014	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	X	-0.016	%15
2	18	X	-0.016	%85
3	18	X	-0.007	%20
4	18	X	-0.008	%50
5	18	X	0	0
6	83	X	-0.016	%15
7	83	X	-0.016	%85
8	83	X	-0.007	%20
9	83	X	-0.008	%50
10	83	X	0	0
11	72	X	-0.016	%15
12	72	X	-0.016	%85
13	72	X	-0.007	%20
14	72	X	-0.008	%50
15	72	X	0	0
16	1	X	-0.008	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Z	-0.012	%15
2	18	Z	-0.012	%85
3	18	Z	-0.005	%20
4	18	Z	-0.005	%50
5	18	Z	0	0
6	83	Z	-0.012	%15

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

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

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	X	-0.005	%15
2	18	X	-0.005	%85
3	18	X	-0.003	%20
4	18	X	-0.003	%50
5	18	X	0	0
6	83	X	-0.005	%15
7	83	X	-0.005	%85
8	83	X	-0.003	%20
9	83	X	-0.003	%50
10	83	X	0	0
11	72	X	-0.005	%15
12	72	X	-0.005	%85
13	72	X	-0.003	%20
14	72	X	-0.003	%50
15	72	X	0	0
16	1	X	-0.003	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Y	-0.118	%15
2	18	Y	-0.118	%85
3	18	Y	-0.033	%20
4	18	Y	-0.034	%50
5	18	Y	0	0
6	83	Y	-0.118	%15
7	83	Y	-0.118	%85
8	83	Y	-0.033	%20
9	83	Y	-0.034	%50
10	83	Y	0	0
11	72	Y	-0.118	%15
12	72	Y	-0.118	%85
13	72	Y	-0.033	%20
14	72	Y	-0.034	%50
15	72	Y	0	0
16	1	Y	-0.035	%20
17	1	Y	0	0



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

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

**Member Point Loads (BLC 9 : 0 Seismic)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Z	-0.019	%15
2	18	Z	-0.019	%85
3	18	Z	-0.015	%20
4	18	Z	-0.018	%50
5	18	Z	0	0
6	83	Z	-0.019	%15
7	83	Z	-0.019	%85
8	83	Z	-0.015	%20
9	83	Z	-0.018	%50
10	83	Z	0	0
11	72	Z	-0.019	%15
12	72	Z	-0.019	%85
13	72	Z	-0.015	%20
14	72	Z	-0.018	%50
15	72	Z	0	0
16	1	Z	-0.005	%20
17	1	Z	0	0
18	1	Z	0	0
19	1	Z	0	0
20	1	Z	0	0

**Member Point Loads (BLC 10 : 90 Seismic)**

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	X	-0.019	%15
2	18	X	-0.019	%85
3	18	X	-0.015	%20
4	18	X	-0.018	%50
5	18	X	0	0
6	83	X	-0.019	%15
7	83	X	-0.019	%85
8	83	X	-0.015	%20
9	83	X	-0.018	%50
10	83	X	0	0
11	72	X	-0.019	%15
12	72	X	-0.019	%85
13	72	X	-0.015	%20
14	72	X	-0.018	%50
15	72	X	0	0
16	1	X	-0.005	%20
17	1	X	0	0
18	1	X	0	0
19	1	X	0	0
20	1	X	0	0

**Member Point Loads (BLC 15 : Maint LL 1)**

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

**Member Point Loads (BLC 16 : Maint LL 2)**

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

**Member Point Loads (BLC 17 : Maint LL 3)**

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

**Member Point Loads (BLC 18 : Maint LL 4)**

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

**Member Point Loads (BLC 19 : Maint LL 5)**

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

**Member Point Loads (BLC 20 : Maint LL 6)**

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

**Member Point Loads (BLC 21 : Maint LL 7)**

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

**Member Point Loads (BLC 22 : Maint LL 8)**

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

**Member Point Loads (BLC 23 : Maint LL 9)**

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

**Member Point Loads (BLC 24 : Maint LL 10)**

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

**Member Point Loads (BLC 25 : Maint LL 11)**

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

**Member Point Loads (BLC 26 : Maint LL 12)**

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

**Member Point Loads (BLC 27 : Maint LL 13)**

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

**Member Point Loads (BLC 28 : Maint LL 14)**

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



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**Member Point Loads (BLC 29 : Maint LL 15)**

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

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

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1 1	Z	-0.02	-0.02	0	%100
2 2	Z	-0.017	-0.017	0	%100
3 3	Z	-0.017	-0.017	0	%100
4 4	Z	-0.025	-0.025	0	%100
5 5	Z	-0.025	-0.025	0	%100
6 6	Z	-0.014	-0.014	0	%100
7 7	Z	-0.025	-0.025	0	%100
8 8	Z	-0.025	-0.025	0	%100
9 9	Z	-0.011	-0.011	0	%100
10 10	Z	-0.011	-0.011	0	%100
11 11	Z	-0.034	-0.034	0	%100
12 18	Z	-0.012	-0.012	0	%100
13 19	Z	-0.012	-0.012	0	%100
14 22	Z	-0.012	-0.012	0	%100
15 28	Z	-0.012	-0.012	0	%100
16 30	Z	-0.03	-0.03	0	%100
17 31	Z	-0.02	-0.02	0	%100
18 32	Z	-0.017	-0.017	0	%100
19 33	Z	-0.017	-0.017	0	%100
20 34	Z	-0.025	-0.025	0	%100
21 35	Z	-0.025	-0.025	0	%100
22 36	Z	-0.025	-0.025	0	%100
23 37	Z	-0.025	-0.025	0	%100
24 38	Z	-0.011	-0.011	0	%100
25 39	Z	-0.011	-0.011	0	%100
26 40	Z	-0.034	-0.034	0	%100
27 49	Z	-0.03	-0.03	0	%100
28 50	Z	-0.02	-0.02	0	%100
29 51	Z	-0.017	-0.017	0	%100
30 52	Z	-0.017	-0.017	0	%100
31 53	Z	-0.025	-0.025	0	%100
32 54	Z	-0.025	-0.025	0	%100
33 55	Z	-0.025	-0.025	0	%100
34 56	Z	-0.025	-0.025	0	%100
35 57	Z	-0.011	-0.011	0	%100
36 58	Z	-0.011	-0.011	0	%100
37 59	Z	-0.034	-0.034	0	%100
38 68	Z	-0.03	-0.03	0	%100
39 69	Z	-0.014	-0.014	0	%100
40 72	Z	-0.012	-0.012	0	%100
41 73	Z	-0.012	-0.012	0	%100
42 76	Z	-0.012	-0.012	0	%100
43 78	Z	-0.012	-0.012	0	%100
44 80	Z	-0.014	-0.014	0	%100
45 83	Z	-0.012	-0.012	0	%100
46 84	Z	-0.012	-0.012	0	%100
47 87	Z	-0.012	-0.012	0	%100
48 89	Z	-0.012	-0.012	0	%100

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

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1 1	X	-0.02	-0.02	0	%100
2 2	X	-0.017	-0.017	0	%100



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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
3	3	X	-0.017	-0.017	0	%100
4	4	X	-0.025	-0.025	0	%100
5	5	X	-0.025	-0.025	0	%100
6	6	X	-0.014	-0.014	0	%100
7	7	X	-0.025	-0.025	0	%100
8	8	X	-0.025	-0.025	0	%100
9	9	X	-0.011	-0.011	0	%100
10	10	X	-0.011	-0.011	0	%100
11	11	X	-0.034	-0.034	0	%100
12	18	X	-0.012	-0.012	0	%100
13	19	X	-0.012	-0.012	0	%100
14	22	X	-0.012	-0.012	0	%100
15	28	X	-0.012	-0.012	0	%100
16	30	X	-0.03	-0.03	0	%100
17	31	X	-0.02	-0.02	0	%100
18	32	X	-0.017	-0.017	0	%100
19	33	X	-0.017	-0.017	0	%100
20	34	X	-0.025	-0.025	0	%100
21	35	X	-0.025	-0.025	0	%100
22	36	X	-0.025	-0.025	0	%100
23	37	X	-0.025	-0.025	0	%100
24	38	X	-0.011	-0.011	0	%100
25	39	X	-0.011	-0.011	0	%100
26	40	X	-0.034	-0.034	0	%100
27	49	X	-0.03	-0.03	0	%100
28	50	X	-0.02	-0.02	0	%100
29	51	X	-0.017	-0.017	0	%100
30	52	X	-0.017	-0.017	0	%100
31	53	X	-0.025	-0.025	0	%100
32	54	X	-0.025	-0.025	0	%100
33	55	X	-0.025	-0.025	0	%100
34	56	X	-0.025	-0.025	0	%100
35	57	X	-0.011	-0.011	0	%100
36	58	X	-0.011	-0.011	0	%100
37	59	X	-0.034	-0.034	0	%100
38	68	X	-0.03	-0.03	0	%100
39	69	X	-0.014	-0.014	0	%100
40	72	X	-0.012	-0.012	0	%100
41	73	X	-0.012	-0.012	0	%100
42	76	X	-0.012	-0.012	0	%100
43	78	X	-0.012	-0.012	0	%100
44	80	X	-0.014	-0.014	0	%100
45	83	X	-0.012	-0.012	0	%100
46	84	X	-0.012	-0.012	0	%100
47	87	X	-0.012	-0.012	0	%100
48	89	X	-0.012	-0.012	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.006	-0.006	0	%100
2	2	Z	-0.005	-0.005	0	%100
3	3	Z	-0.005	-0.005	0	%100
4	4	Z	-0.01	-0.01	0	%100
5	5	Z	-0.01	-0.01	0	%100
6	6	Z	-0.002	-0.002	0	%100
7	7	Z	-0.011	-0.011	0	%100
8	8	Z	-0.011	-0.011	0	%100
9	9	Z	-0.005	-0.005	0	%100



Company : B+T Group  
 Designer : SP  
 Job Number : 162895.001.01  
 Model Name : 828402 - Thompson/ I-395 X99\_1

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
10	10	Z	-0.005	-0.005	0	%100
11	11	Z	-0.008	-0.008	0	%100
12	18	Z	-0.002	-0.002	0	%100
13	19	Z	-0.002	-0.002	0	%100
14	22	Z	-0.002	-0.002	0	%100
15	28	Z	-0.002	-0.002	0	%100
16	30	Z	-0.008	-0.008	0	%100
17	31	Z	-0.006	-0.006	0	%100
18	32	Z	-0.005	-0.005	0	%100
19	33	Z	-0.005	-0.005	0	%100
20	34	Z	-0.01	-0.01	0	%100
21	35	Z	-0.01	-0.01	0	%100
22	36	Z	-0.011	-0.011	0	%100
23	37	Z	-0.011	-0.011	0	%100
24	38	Z	-0.005	-0.005	0	%100
25	39	Z	-0.005	-0.005	0	%100
26	40	Z	-0.008	-0.008	0	%100
27	49	Z	-0.008	-0.008	0	%100
28	50	Z	-0.006	-0.006	0	%100
29	51	Z	-0.005	-0.005	0	%100
30	52	Z	-0.005	-0.005	0	%100
31	53	Z	-0.01	-0.01	0	%100
32	54	Z	-0.01	-0.01	0	%100
33	55	Z	-0.011	-0.011	0	%100
34	56	Z	-0.011	-0.011	0	%100
35	57	Z	-0.005	-0.005	0	%100
36	58	Z	-0.005	-0.005	0	%100
37	59	Z	-0.008	-0.008	0	%100
38	68	Z	-0.008	-0.008	0	%100
39	69	Z	-0.002	-0.002	0	%100
40	72	Z	-0.002	-0.002	0	%100
41	73	Z	-0.002	-0.002	0	%100
42	76	Z	-0.002	-0.002	0	%100
43	78	Z	-0.002	-0.002	0	%100
44	80	Z	-0.002	-0.002	0	%100
45	83	Z	-0.002	-0.002	0	%100
46	84	Z	-0.002	-0.002	0	%100
47	87	Z	-0.002	-0.002	0	%100
48	89	Z	-0.002	-0.002	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.006	-0.006	0	%100
2	2	X	-0.005	-0.005	0	%100
3	3	X	-0.005	-0.005	0	%100
4	4	X	-0.01	-0.01	0	%100
5	5	X	-0.01	-0.01	0	%100
6	6	X	-0.002	-0.002	0	%100
7	7	X	-0.011	-0.011	0	%100
8	8	X	-0.011	-0.011	0	%100
9	9	X	-0.005	-0.005	0	%100
10	10	X	-0.005	-0.005	0	%100
11	11	X	-0.008	-0.008	0	%100
12	18	X	-0.002	-0.002	0	%100
13	19	X	-0.002	-0.002	0	%100
14	22	X	-0.002	-0.002	0	%100
15	28	X	-0.002	-0.002	0	%100
16	30	X	-0.008	-0.008	0	%100



Company : B+T Group  
 Designer : SP  
 Job Number : 162895.001.01  
 Model Name : 828402 - Thompson/ I-395 X99\_1

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
17	31	X	-0.006	-0.006	0	%100
18	32	X	-0.005	-0.005	0	%100
19	33	X	-0.005	-0.005	0	%100
20	34	X	-0.01	-0.01	0	%100
21	35	X	-0.01	-0.01	0	%100
22	36	X	-0.011	-0.011	0	%100
23	37	X	-0.011	-0.011	0	%100
24	38	X	-0.005	-0.005	0	%100
25	39	X	-0.005	-0.005	0	%100
26	40	X	-0.008	-0.008	0	%100
27	49	X	-0.008	-0.008	0	%100
28	50	X	-0.006	-0.006	0	%100
29	51	X	-0.005	-0.005	0	%100
30	52	X	-0.005	-0.005	0	%100
31	53	X	-0.01	-0.01	0	%100
32	54	X	-0.01	-0.01	0	%100
33	55	X	-0.011	-0.011	0	%100
34	56	X	-0.011	-0.011	0	%100
35	57	X	-0.005	-0.005	0	%100
36	58	X	-0.005	-0.005	0	%100
37	59	X	-0.008	-0.008	0	%100
38	68	X	-0.008	-0.008	0	%100
39	69	X	-0.002	-0.002	0	%100
40	72	X	-0.002	-0.002	0	%100
41	73	X	-0.002	-0.002	0	%100
42	76	X	-0.002	-0.002	0	%100
43	78	X	-0.002	-0.002	0	%100
44	80	X	-0.002	-0.002	0	%100
45	83	X	-0.002	-0.002	0	%100
46	84	X	-0.002	-0.002	0	%100
47	87	X	-0.002	-0.002	0	%100
48	89	X	-0.002	-0.002	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.0005	-0.0005	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	8	Z	-0.002	-0.002	0	%100
9	9	Z	-0.0007	-0.0007	0	%100
10	10	Z	-0.0007	-0.0007	0	%100
11	11	Z	-0.002	-0.002	0	%100
12	18	Z	-0.0004	-0.0004	0	%100
13	19	Z	-0.0004	-0.0004	0	%100
14	22	Z	-0.0004	-0.0004	0	%100
15	28	Z	-0.0004	-0.0004	0	%100
16	30	Z	-0.002	-0.002	0	%100
17	31	Z	-0.001	-0.001	0	%100
18	32	Z	-0.001	-0.001	0	%100
19	33	Z	-0.001	-0.001	0	%100
20	34	Z	-0.002	-0.002	0	%100
21	35	Z	-0.002	-0.002	0	%100
22	36	Z	-0.002	-0.002	0	%100
23	37	Z	-0.002	-0.002	0	%100



Company : B+T Group  
 Designer : SP  
 Job Number : 162895.001.01  
 Model Name : 828402 - Thompson/ I-395 X99\_1

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
24	38	Z	-0.0007	-0.0007	0	%100
25	39	Z	-0.0007	-0.0007	0	%100
26	40	Z	-0.002	-0.002	0	%100
27	49	Z	-0.002	-0.002	0	%100
28	50	Z	-0.001	-0.001	0	%100
29	51	Z	-0.001	-0.001	0	%100
30	52	Z	-0.001	-0.001	0	%100
31	53	Z	-0.002	-0.002	0	%100
32	54	Z	-0.002	-0.002	0	%100
33	55	Z	-0.002	-0.002	0	%100
34	56	Z	-0.002	-0.002	0	%100
35	57	Z	-0.0007	-0.0007	0	%100
36	58	Z	-0.0007	-0.0007	0	%100
37	59	Z	-0.002	-0.002	0	%100
38	68	Z	-0.002	-0.002	0	%100
39	69	Z	-0.0005	-0.0005	0	%100
40	72	Z	-0.0004	-0.0004	0	%100
41	73	Z	-0.0004	-0.0004	0	%100
42	76	Z	-0.0004	-0.0004	0	%100
43	78	Z	-0.0004	-0.0004	0	%100
44	80	Z	-0.0005	-0.0005	0	%100
45	83	Z	-0.0004	-0.0004	0	%100
46	84	Z	-0.0004	-0.0004	0	%100
47	87	Z	-0.0004	-0.0004	0	%100
48	89	Z	-0.0004	-0.0004	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.0005	-0.0005	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.0007	-0.0007	0	%100
10	10	X	-0.0007	-0.0007	0	%100
11	11	X	-0.002	-0.002	0	%100
12	18	X	-0.0004	-0.0004	0	%100
13	19	X	-0.0004	-0.0004	0	%100
14	22	X	-0.0004	-0.0004	0	%100
15	28	X	-0.0004	-0.0004	0	%100
16	30	X	-0.002	-0.002	0	%100
17	31	X	-0.001	-0.001	0	%100
18	32	X	-0.001	-0.001	0	%100
19	33	X	-0.001	-0.001	0	%100
20	34	X	-0.002	-0.002	0	%100
21	35	X	-0.002	-0.002	0	%100
22	36	X	-0.002	-0.002	0	%100
23	37	X	-0.002	-0.002	0	%100
24	38	X	-0.0007	-0.0007	0	%100
25	39	X	-0.0007	-0.0007	0	%100
26	40	X	-0.002	-0.002	0	%100
27	49	X	-0.002	-0.002	0	%100
28	50	X	-0.001	-0.001	0	%100
29	51	X	-0.001	-0.001	0	%100
30	52	X	-0.001	-0.001	0	%100



Company : B+T Group  
 Designer : SP  
 Job Number : 162895.001.01  
 Model Name : 828402 - Thompson/ I-395 X99\_1

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
31	53	X	-0.002	-0.002	0	%100
32	54	X	-0.002	-0.002	0	%100
33	55	X	-0.002	-0.002	0	%100
34	56	X	-0.002	-0.002	0	%100
35	57	X	-0.0007	-0.0007	0	%100
36	58	X	-0.0007	-0.0007	0	%100
37	59	X	-0.002	-0.002	0	%100
38	68	X	-0.002	-0.002	0	%100
39	69	X	-0.0005	-0.0005	0	%100
40	72	X	-0.0004	-0.0004	0	%100
41	73	X	-0.0004	-0.0004	0	%100
42	76	X	-0.0004	-0.0004	0	%100
43	78	X	-0.0004	-0.0004	0	%100
44	80	X	-0.0005	-0.0005	0	%100
45	83	X	-0.0004	-0.0004	0	%100
46	84	X	-0.0004	-0.0004	0	%100
47	87	X	-0.0004	-0.0004	0	%100
48	89	X	-0.0004	-0.0004	0	%100

**Member Distributed Loads (BLC 8 : Ice)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.01	-0.01	0	%100
2	2	Y	-0.007	-0.007	0	%100
3	3	Y	-0.007	-0.007	0	%100
4	4	Y	-0.01	-0.01	0	%100
5	5	Y	-0.01	-0.01	0	%100
6	6	Y	-0.007	-0.007	0	%100
7	7	Y	-0.01	-0.01	0	%100
8	8	Y	-0.01	-0.01	0	%100
9	9	Y	-0.006	-0.006	0	%100
10	10	Y	-0.006	-0.006	0	%100
11	11	Y	-0.013	-0.013	0	%100
12	18	Y	-0.006	-0.006	0	%100
13	19	Y	-0.006	-0.006	0	%100
14	22	Y	-0.006	-0.006	0	%100
15	28	Y	-0.006	-0.006	0	%100
16	30	Y	-0.013	-0.013	0	%100
17	31	Y	-0.01	-0.01	0	%100
18	32	Y	-0.007	-0.007	0	%100
19	33	Y	-0.007	-0.007	0	%100
20	34	Y	-0.01	-0.01	0	%100
21	35	Y	-0.01	-0.01	0	%100
22	36	Y	-0.01	-0.01	0	%100
23	37	Y	-0.01	-0.01	0	%100
24	38	Y	-0.006	-0.006	0	%100
25	39	Y	-0.006	-0.006	0	%100
26	40	Y	-0.013	-0.013	0	%100
27	49	Y	-0.013	-0.013	0	%100
28	50	Y	-0.01	-0.01	0	%100
29	51	Y	-0.007	-0.007	0	%100
30	52	Y	-0.007	-0.007	0	%100
31	53	Y	-0.01	-0.01	0	%100
32	54	Y	-0.01	-0.01	0	%100
33	55	Y	-0.01	-0.01	0	%100
34	56	Y	-0.01	-0.01	0	%100
35	57	Y	-0.006	-0.006	0	%100
36	58	Y	-0.006	-0.006	0	%100
37	59	Y	-0.013	-0.013	0	%100





Company : B+T Group  
 Designer : SP  
 Job Number : 162895.001.01  
 Model Name : 828402 - Thompson/ I-395 X99\_1

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**Member Distributed Loads (BLC 8 : Ice) (Continued)**

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
38	68	Y	-0.013	-0.013	0	%100
39	69	Y	-0.007	-0.007	0	%100
40	72	Y	-0.006	-0.006	0	%100
41	73	Y	-0.006	-0.006	0	%100
42	76	Y	-0.006	-0.006	0	%100
43	78	Y	-0.006	-0.006	0	%100
44	80	Y	-0.007	-0.007	0	%100
45	83	Y	-0.006	-0.006	0	%100
46	84	Y	-0.006	-0.006	0	%100
47	87	Y	-0.006	-0.006	0	%100
48	89	Y	-0.006	-0.006	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.002	-0.002	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.001	-0.001	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	8	Z	-0.002	-0.002	0	%100
9	9	Z	-0.0007	-0.0007	0	%100
10	10	Z	-0.0007	-0.0007	0	%100
11	11	Z	-0.003	-0.003	0	%100
12	18	Z	-0.001	-0.001	0	%100
13	19	Z	-0.001	-0.001	0	%100
14	22	Z	-0.001	-0.001	0	%100
15	28	Z	-0.001	-0.001	0	%100
16	30	Z	-0.002	-0.002	0	%100
17	31	Z	-0.002	-0.002	0	%100
18	32	Z	-0.001	-0.001	0	%100
19	33	Z	-0.001	-0.001	0	%100
20	34	Z	-0.002	-0.002	0	%100
21	35	Z	-0.002	-0.002	0	%100
22	36	Z	-0.002	-0.002	0	%100
23	37	Z	-0.002	-0.002	0	%100
24	38	Z	-0.0007	-0.0007	0	%100
25	39	Z	-0.0007	-0.0007	0	%100
26	40	Z	-0.003	-0.003	0	%100
27	49	Z	-0.002	-0.002	0	%100
28	50	Z	-0.002	-0.002	0	%100
29	51	Z	-0.001	-0.001	0	%100
30	52	Z	-0.001	-0.001	0	%100
31	53	Z	-0.002	-0.002	0	%100
32	54	Z	-0.002	-0.002	0	%100
33	55	Z	-0.002	-0.002	0	%100
34	56	Z	-0.002	-0.002	0	%100
35	57	Z	-0.0007	-0.0007	0	%100
36	58	Z	-0.0007	-0.0007	0	%100
37	59	Z	-0.003	-0.003	0	%100
38	68	Z	-0.002	-0.002	0	%100
39	69	Z	-0.001	-0.001	0	%100
40	72	Z	-0.001	-0.001	0	%100
41	73	Z	-0.001	-0.001	0	%100
42	76	Z	-0.001	-0.001	0	%100
43	78	Z	-0.001	-0.001	0	%100
44	80	Z	-0.001	-0.001	0	%100



Company : B+T Group  
 Designer : SP  
 Job Number : 162895.001.01  
 Model Name : 828402 - Thompson/ I-395 X99\_1

4/5/2022  
 5:59:54 PM  
 Checked By : \_\_\_\_\_

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
45	83	Z	-0.001	-0.001	0	%100
46	84	Z	-0.001	-0.001	0	%100
47	87	Z	-0.001	-0.001	0	%100
48	89	Z	-0.001	-0.001	0	%100

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

Member	Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.002	-0.002	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.001	-0.001	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.0007	-0.0007	0	%100
10	10	X	-0.0007	-0.0007	0	%100
11	11	X	-0.003	-0.003	0	%100
12	18	X	-0.001	-0.001	0	%100
13	19	X	-0.001	-0.001	0	%100
14	22	X	-0.001	-0.001	0	%100
15	28	X	-0.001	-0.001	0	%100
16	30	X	-0.002	-0.002	0	%100
17	31	X	-0.002	-0.002	0	%100
18	32	X	-0.001	-0.001	0	%100
19	33	X	-0.001	-0.001	0	%100
20	34	X	-0.002	-0.002	0	%100
21	35	X	-0.002	-0.002	0	%100
22	36	X	-0.002	-0.002	0	%100
23	37	X	-0.002	-0.002	0	%100
24	38	X	-0.0007	-0.0007	0	%100
25	39	X	-0.0007	-0.0007	0	%100
26	40	X	-0.003	-0.003	0	%100
27	49	X	-0.002	-0.002	0	%100
28	50	X	-0.002	-0.002	0	%100
29	51	X	-0.001	-0.001	0	%100
30	52	X	-0.001	-0.001	0	%100
31	53	X	-0.002	-0.002	0	%100
32	54	X	-0.002	-0.002	0	%100
33	55	X	-0.002	-0.002	0	%100
34	56	X	-0.002	-0.002	0	%100
35	57	X	-0.0007	-0.0007	0	%100
36	58	X	-0.0007	-0.0007	0	%100
37	59	X	-0.003	-0.003	0	%100
38	68	X	-0.002	-0.002	0	%100
39	69	X	-0.001	-0.001	0	%100
40	72	X	-0.001	-0.001	0	%100
41	73	X	-0.001	-0.001	0	%100
42	76	X	-0.001	-0.001	0	%100
43	78	X	-0.001	-0.001	0	%100
44	80	X	-0.001	-0.001	0	%100
45	83	X	-0.001	-0.001	0	%100
46	84	X	-0.001	-0.001	0	%100
47	87	X	-0.001	-0.001	0	%100
48	89	X	-0.001	-0.001	0	%100

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

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

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

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	9	Y	-0.008	-0.008	0 2.078
2	10	Y	-0.008	-0.011	0.231 1.27
3	10	Y	-0.011	-0.014	1.27 2.309
4	38	Y	-0.006	-0.011	0 2.078
5	39	Y	0.0003173	-0.008	0 1.155
6	39	Y	-0.008	-0.018	1.155 2.309
7	57	Y	-0.018	-0.008	0 1.155
8	57	Y	-0.008	0.0003173	1.155 2.309
9	58	Y	-0.009	-0.008	0.231 2.309

**Member Area Loads (BLC 1 : Dead)**

Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]	
1	24	23	22	25	Y	Two Way	-0.01
2	74	73	72	75	Y	Two Way	-0.01
3	103	102	101	104	Y	Two Way	-0.01

**Member Area Loads (BLC 8 : Ice)**

Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]	
1	24	23	22	25	Y	Two Way	-0.005
2	74	73	72	75	Y	Two Way	-0.005
3	103	102	101	104	Y	Two Way	-0.005

**Node Loads and Enforced Displacements (BLC 11 : Live Load a)**

Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]	
1	30	L	Y	-0.5
2	113	L	Y	-0.5
3	135	L	Y	-0.5

**Node Loads and Enforced Displacements (BLC 12 : Live Load b)**

Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]	
1	31	L	Y	-0.5
2	114	L	Y	-0.5
3	136	L	Y	-0.5

**Node Loads and Enforced Displacements (BLC 13 : Live Load c)**

Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s <sup>2</sup> /ft, k*s <sup>2</sup> *ft)]	
1	44	L	Y	-0.5
2	127	L	Y	-0.5
3	149	L	Y	-0.5

**Basic Load Cases**

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

**Load Combinations**

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1

**Load Combinations (Continued)**

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5

**Load Combinations (Continued)**

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5

**Envelope Node Reactions**

Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
1	1	max	1.39	5	1.854	14	1.264	2	4.232	2	1.345	11	0.343	11
2		min	-1.391	11	-0.168	8	-1.39	8	-1.091	8	-1.345	5	-0.354	5
3	53	max	1.056	5	1.759	18	1.634	2	0.47	13	1.584	3	0.483	12
4		min	-1.165	11	0	12	-1.571	8	-2.029	7	-1.584	9	-3.187	6
5	82	max	1.165	5	1.754	22	1.634	2	0.471	3	1.584	7	3.179	10
6		min	-1.056	11	-0.004	4	-1.571	8	-2.028	9	-1.584	13	-0.49	4
7	Totals:	max	3.611	5	4.874	23	4.532	2						
8		min	-3.611	11	2.46	5	-4.532	8						

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

Member	Shape	Code Check	Loc [ft]	LC	Shear	Check	Loc [ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X2	0.559	0	13	0.115	0	z	5	70.173	73.278	8.24	8.24	1.987	H1-1b
2	2	C3.38x2.06x.188	0.36	2.592	3	0.059	0.351	y	63	35.669	43.384	1.694	4.482	1.6	H1-1b
3	3	C3.38x2.06x.188	0.361	0	13	0.067	2.241	y	47	35.669	43.384	1.694	4.482	1.598	H1-1b
4	4	PL3/8"x6	0.084	0	13	0.164	0	y	2	68.997	72.9	0.57	9.113	2.355	H1-1b
5	5	PL3/8"x6	0.084	0	3	0.163	0	y	2	68.997	72.9	0.57	9.113	2.379	H1-1b
6	6	PIPE 3.5x0.165	0.065	6.75	6	0.048	3.167	4	45.872	71.57	6.336	6.336	1.84	H1-1b	
7	7	PL3/8"x6	0.141	0.208	3	0.199	0.208	y	61	70.882	72.9	0.57	9.113	2.959	H1-1b
8	8	PL3/8"x6	0.141	0	13	0.198	0	y	51	70.882	72.9	0.57	9.113	2.963	H1-1b
9	9	L2x2x4	0.235	0	7	0.032	2.309	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
10	10	L2x2x4	0.237	2.309	9	0.033	0	y	64	23.349	30.586	0.691	1.577	1.5	H2-1
11	11	L7.63x2.5x6	0.318	1.604	8	0.072	2.873	y	49	75.414	118.523	1.798	13.634	1.218	H2-1
12	18	PIPE 2.88x0.203	0.111	5.583	5	0.039	5.583	5	35.361	70.548	5.01	5.01	3	H1-1b	
13	19	PIPE 2.88x0.203	0.133	2.333	9	0.049	5.583	9	35.361	70.548	5.01	5.01	3	H1-1b	
14	22	PIPE 2.88x0.203	0.12	2.188	9	0.132	8.542	13	23.996	70.548	5.01	5.01	2.213	H1-1b	
15	28	PIPE 2.88x0.203	0.133	2.333	7	0.049	5.583	7	35.361	70.548	5.01	5.01	3	H1-1b	
16	30	L6.63x4.33x.25	0.189	0	10	0.02	0	y	11	51.794	86.751	2.311	6.976	1.5	H2-1
17	31	HSS4X4X2	0.552	0	7	0.14	0	z	3	70.173	73.278	8.24	8.24	1.995	H1-1b
18	32	C3.38x2.06x.188	0.364	2.592	7	0.059	0.351	y	68	35.669	43.384	1.694	4.482	1.599	H1-1b
19	33	C3.38x2.06x.188	0.337	0	17	0.068	2.241	y	38	35.669	43.384	1.694	4.482	1.63	H1-1b
20	34	PL3/8"x6	0.068	0	5	0.139	0	y	6	68.997	72.9	0.57	9.113	2.193	H1-1b
21	35	PL3/8"x6	0.081	0	7	0.137	0	y	6	68.997	72.9	0.57	9.113	2.222	H1-1b
22	36	PL3/8"x6	0.144	0.208	7	0.198	0.208	y	53	70.882	72.9	0.57	9.113	2.995	H1-1b
23	37	PL3/8"x6	0.118	0	5	0.2	0	y	55	70.882	72.9	0.57	9.113	3	H1-1b
24	38	L2x2x4	0.198	0	11	0.033	2.309	y	39	23.349	30.586	0.691	1.577	1.5	H2-1
25	39	L2x2x4	0.223	2.309	13	0.032	2.309	y	68	23.349	30.586	0.691	1.577	1.5	H2-1

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

Member	Shape	Code Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	phi*	Pnt [k]	phi*	Mn y-y [k-ft]	phi*	Mn z-z [k-ft]	Cb	Eqn
26	40	L7.63x2.5x6	0.271	1.604	13	0.072	2.873	y	41	75.414	118.523	1.798	13.659	1.223	H2-1		
27	49	L6.63x4.33x.25	0.24	0	2	0.026	3.25	y	9	51.794	86.751	2.311	6.976	1.5	H2-1		
28	50	HSS4X4X2	0.551	0	9	0.14	0	z	7	70.173	73.278	8.24	8.24	1.994	H1-1b		
29	51	C3.38x2.06x.188	0.335	2.592	23	0.059	0.351	y	72	35.669	43.384	1.694	4.482	1.63	H1-1b		
30	52	C3.38x2.06x.188	0.363	0	9	0.068	2.241	y	43	35.669	43.384	1.694	4.482	1.599	H1-1b		
31	53	PL3/8"x6	0.081	0	9	0.137	0	y	10	68.997	72.9	0.57	9.113	2.224	H1-1b		
32	54	PL3/8"x6	0.068	0	11	0.138	0	y	10	68.997	72.9	0.57	9.113	2.194	H1-1b		
33	55	PL3/8"x6	0.118	0.208	11	0.2	0.208	y	57	70.882	72.9	0.57	9.113	3	H1-1b		
34	56	PL3/8"x6	0.144	0	9	0.197	0	y	59	70.882	72.9	0.57	9.113	2.992	H1-1b		
35	57	L2x2x4	0.223	0	3	0.032	0	y	44	23.349	30.586	0.691	1.577	1.5	H2-1		
36	58	L2x2x4	0.198	2.309	5	0.033	0	y	73	23.349	30.586	0.691	1.577	1.5	H2-1		
37	59	L7.63x2.5x6	0.271	1.604	3	0.072	0.334	y	71	75.414	118.523	1.798	13.661	1.223	H2-1		
38	68	L6.63x4.33x.25	0.24	3.25	2	0.026	0	y	7	51.794	86.751	2.311	6.976	1.5	H2-1		
39	69	PIPE 3.5x0.165	0.079	1.25	2	0.06	3.167		9	45.872	71.57	6.336	6.336	1.772	H1-1b		
40	72	PIPE 2.88x0.203	0.141	5.583	9	0.051	5.583		9	35.361	70.548	5.01	5.01	3	H1-1b		
41	73	PIPE 2.88x0.203	0.154	2.333	2	0.044	5.583		13	35.361	70.548	5.01	5.01	3	H1-1b		
42	76	PIPE 2.88x0.203	0.119	2.188	13	0.125	1.458		7	23.996	70.548	5.01	5.01	1.982	H1-1b		
43	78	PIPE 2.88x0.203	0.121	2.333	10	0.036	5.583		12	35.361	70.548	5.01	5.01	3	H1-1b		
44	80	PIPE 3.5x0.165	0.079	6.75	2	0.06	4.833		7	45.872	71.57	6.336	6.336	1.774	H1-1b		
45	83	PIPE 2.88x0.203	0.141	5.583	7	0.051	5.583		7	35.361	70.548	5.01	5.01	3	H1-1b		
46	84	PIPE 2.88x0.203	0.12	2.333	6	0.036	5.583		4	35.361	70.548	5.01	5.01	3	H1-1b		
47	87	PIPE 2.88x0.203	0.119	7.813	3	0.125	8.542		9	23.996	70.548	5.01	5.01	1.991	H1-1b		
48	89	PIPE 2.88x0.203	0.154	2.333	2	0.044	5.583		3	35.361	70.548	5.01	5.01	3	H1-1b		

**APPENDIX D**  
**ADDITIONAL CALCULATIONS**



PROJECT	<b>162895.001.01 - Thompson/ I-395 X9 SR</b>			
SUBJECT	<b>Platform Mount Analysis</b>			
DATE	<b>04/05/22</b>	PAGE	1	OF 1



[REF: AISC 360-05]

### Reactions at Bolted Connection

Tension	:	1.264	k
Vertical Shear	:	1.854	k
Horizontal Shear	:	1.39	k
Torsion	:	0.343	k.ft
Moment from Horizontal Forces	:	1.345	k.ft
Moment from Vertical Forces	:	4.232	k.ft

### Bolt Parameters

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

### Summary of Forces

Shear Resultant Force	:	2.32	k
Force from Horz. Moment	:	2.44	k
Force from Vert. Moment	:	7.67	k
Shear Load / Bolt	:	0.58	k
Tension Load / Bolt	:	0.32	k
Resultant from Moments / Bolt	:	4.02	k

### Bolt Checks

Nominal Tensile Stress, $F_{nt}$	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, $\Phi R_{nt}$	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	<b>20.93%</b>		<b>OKAY</b>
Nominal Shear Stress, $F_{nv}$	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, $\Phi R_{nv}$	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	<b>8.10%</b>		<b>OKAY</b>
Unity Check, Combined	:	<b>29.03%</b>		<b>OKAY</b>
Available Bearing Strength, $\Phi R_n$	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	<b>1.67%</b>		<b>OKAY</b>

PROJECT	<b>162895.001.01 - Thompson/ I-395 X9 SR</b>			
SUBJECT	<b>Platform Mount Analysis</b>			
DATE	<b>04/05/22</b>	PAGE	1	OF 1



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

[REF: AISC 360-05]

**Connecting Member Parameters**

Plate Yield Strength, $F_y$	:	36.00	ksi	[AISC Table 2-5]
Plate Tensile Strength, $F_u$	:	58.00	ksi	[AISC Table 2-5]
Plate Height	:	9.00	in	
Plate Width	:	9.00	in	
Plate Thickness	:	0.50	in	
Edge Distance	:	1.06	in	
Gross Tension Area, $A_{gt}$	:	4.50	in <sup>2</sup>	
Gross Shear Area, $A_{gv}$	:	0.75	in <sup>2</sup>	
Net Area for tension, $A_{nt}$	:	4.16	in <sup>2</sup>	
Net Area for shear, $A_{nt}$	:	3.00	in <sup>2</sup>	

**Plate Check**

Available Tensile Yield	:	145.80	k	[Eq. J4-1]
Available Tensile Rupture	:	180.80	k	[Eq. J4-2]
Unity Check, Plate Tension	:	<b>2.98%</b>		<b>OKAY</b>
Available Shear Yield	:	16.20	k	[Eq. J4-3]
Available Shear Rupture	:	104.40	k	[Eq. J4-4]
Unity Check, Plate Shear	:	<b>14.30%</b>		<b>OKAY</b>
Available Block Shear, $\Phi R_n$	:	77.40	k	[Eq. J4-5]
Unity Check, Block Shear	:	<b>2.99%</b>		<b>OKAY</b>

# Exhibit F

## **Power Density/RF Emissions Report**

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

Dish Wireless Existing Facility

Site ID: 828402

BOBOS00035A  
720 Thompson Road  
Thompson, Connecticut 06277

**May 19, 2022**

**EBI Project Number: 6222003231**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>6.17%</b>

May 19, 2022

Attn: Dish Wireless

Emissions Analysis for Site: 828402 - BOBOS00035A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **720 Thompson Road in Thompson, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\mu\text{W}/\text{cm}^2$  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 ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately  $400 \mu\text{W}/\text{cm}^2$  and  $467 \mu\text{W}/\text{cm}^2$ , respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is  $1000 \mu\text{W}/\text{cm}^2$ . 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 720 Thompson Road in Thompson, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 4 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 4) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

- 5) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 6) The antenna mounting height centerline of the proposed antennas is 131 feet above ground level (AGL).
- 7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 8) All calculations were done with respect to uncontrolled / general population threshold limits.

## Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz
Gain:	11.35 dBd / 15.75 dBd	Gain:	11.35 dBd / 15.75 dBd	Gain:	11.35 dBd / 15.75 dBd
Height (AGL):	131 feet	Height (AGL):	131 feet	Height (AGL):	131 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	280.00 Watts	Total TX Power (W):	280.00 Watts	Total TX Power (W):	280.00 Watts
ERP (W):	1,424.17	ERP (W):	1,424.17	ERP (W):	1,424.17
Antenna AI MPE %:	<b>0.48%</b>	Antenna BI MPE %:	<b>0.48%</b>	Antenna CI MPE %:	<b>0.48%</b>



Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	0.48%
Nextel	0.38%
Omnipoint	0.06%
T-Mobile	2.59%
Sprint	2.66%
<b>Site Total MPE % :</b>	<b>6.17%</b>

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	0.48%
Dish Wireless Sector B Total:	0.48%
Dish Wireless Sector C Total:	0.48%
Site Total MPE % :	6.17%

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 ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
Dish Wireless 600 MHz n71	4	110.82	131.0	1.02	600 MHz n71	400	0.25%
Dish Wireless 1900 MHz n70	4	245.22	131.0	2.26	1900 MHz n70	1000	0.23%
						<b>Total:</b>	<b>0.48%</b>

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

## Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	0.48%
Sector B:	0.48%
Sector C:	0.48%
Dish Wireless Maximum MPE % (Sector A):	0.48%
Site Total:	6.17%
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **6.17%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

# Exhibit G

## **Letter of Authorization**



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

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

## **Crown Castle Letter of Authorization**

### **CT - CONNECTICUT SITING COUNCIL**

Melanie A. Bachman  
Executive Director  
Connecticut Siting Council  
10 Franklin Square  
New Britain, CT 0605

**Re: Tower Share Application**  
**Crown Castle telecommunications site at:**  
**720 THOMPSON RD, THOMPSON, CT 06277**

T-MOBILE USA TOWER 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: 828402/Thompson/ I-395 X99\_1**  
**Customer Site ID: BOBOS00035A/CT-CCI-T-828402**  
**Site Address: 720 Thompson Rd, Thompson, CT 06277**

Crown Castle

By:  Date: 5/24/2022  
Richard Zajac  
Site Acquisition Specialist

# Exhibit H

## Recipient Mailings



**UNITED STATES  
POSTAL SERVICE®**

**Click-N-Ship®**

**P**

USPS.com  
**US POSTAGE**  
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05/24/2022

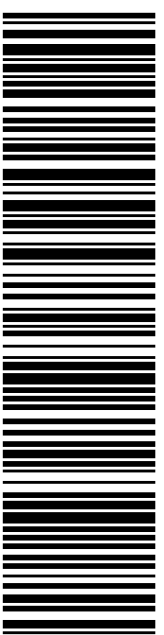
Mailed from 01566

**PRIORITY MAIL 2-DAY™**

Expected Delivery Date: 05/27/22  
 Ref#: DS-828402  
**0006**

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

**USPS TRACKING #**



**9405 5036 9930 0257 4491 01**

Electronic Rate Approved #038555749



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 0257 4491 01**

Trans. #: 564238461	Priority Mail® Postage: <b>\$8.95</b>
Print Date: 05/24/2022	Total: <b>\$8.95</b>
Ship Date: 05/24/2022	
Expected Delivery Date: 05/27/2022	

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


Ref#: DS-828402

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

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**U.S. POSTAGE PAID**  
Click-N-Ship®

05/24/2022 Mailed from 01566

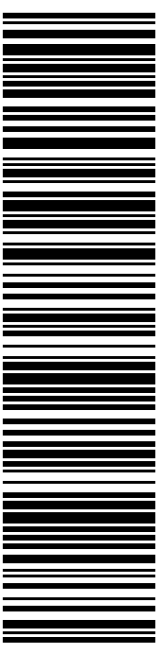
**PRIORITY MAIL 2-DAY™**

Expected Delivery Date: 05/27/22  
 Ref#: DS-828402  
**0006**

**B009**

SHIP TO: KEN BEAUSOLEIL  
 FIRST SELECTMAN  
 PO BOX 899  
 N GROSVENORDL CT 06255-0899

**USPS TRACKING #**



**9405 5036 9930 0257 4491 18**

Electronic Rate Approved #038555749



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

<b>USPS TRACKING # :</b>	
<b>9405 5036 9930 0257 4491 18</b>	
Trans. #: 564238461	Priority Mail® Postage: <b>\$8.95</b>
Print Date: 05/24/2022	Total: <b>\$8.95</b>
Ship Date: 05/24/2022	
Expected Delivery Date: 05/27/2022	
<b>From:</b> DEBORAH CHASE Ref#: DS-828402 NORTHEAST SITE SOLUTIONS 420 MAIN ST STE 1 STURBRIDGE MA 01566-1359	
<b>To:</b> KEN BEAUSOLEIL FIRST SELECTMAN PO BOX 899 N GROSVENORDL CT 06255-0899	
<p>* 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.</p>	



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



**UNITED STATES  
POSTAL SERVICE®**

**Click-N-Ship®**

**P**

USPS.com 9405 5036 9930 0257 4491 25 0089 5000 0010 6255  
**US POSTAGE**  
 Flat Rate Env  
**U.S. POSTAGE PAID**  
Click-N-Ship®

05/24/2022 Mailed from 01566


**PRIORITY MAIL 2-DAY™**

Expected Delivery Date: 05/27/22  
 Ref#: DS-828402  
**0006**

**B009**

SHIP TO: TYRA PENN-GESEK  
 DIRECTOR OF PLANNING & DEVELOPEMNT  
 PO BOX 899  
 N GROSVENORDL CT 06255-0899

**USPS TRACKING #**



**9405 5036 9930 0257 4491 25**

Electronic Rate Approved #038555749



Cut on dotted line.

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### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0257 4491 25**

Trans. #: 564238461	Priority Mail® Postage: <b>\$8.95</b>
Print Date: 05/24/2022	Total: <b>\$8.95</b>
Ship Date: 05/24/2022	
Expected Delivery Date: 05/27/2022	

**From:** DEBORAH CHASE      Ref#: DS-828402  
 NORTHEAST SITE SOLUTIONS  
 420 MAIN ST  
 STE 1  
 STURBRIDGE MA 01566-1359


**To:** TYRA PENN-GESEK  
 DIRECTOR OF PLANNING & DEVELOPEMNT  
 PO BOX 899  
 N GROSVENORDL CT 06255-0899

\* 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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**UNITED STATES  
POSTAL SERVICE®**

**Click-N-Ship®**

**P**

USPS.com 9405 5036 9930 0257 4491 32 0089 5000 0010 6473  
**US POSTAGE**  
 Flat Rate Env  
 U.S. POSTAGE PAID  
click-n-ship®

05/24/2022 Mailed from 01566

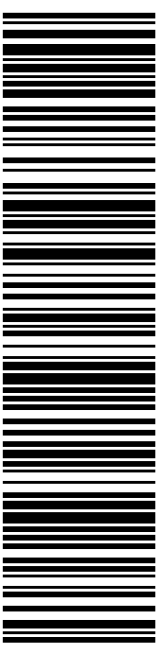
**PRIORITY MAIL 2-DAY™**

Expected Delivery Date: 05/27/22  
 Ref#: DS-828402  
**0006**

SHIP TO:

NUTMEG REALTY II LLC  
 455 SACKETT POINT RD  
 NORTH HAVEN CT 06473-3116

**USPS TRACKING #**



**9405 5036 9930 0257 4491 32**

Electronic Rate Approved #038555749



Cut on dotted line.

### Instructions

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### Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0257 4491 32**

Trans. #: 564238461	Priority Mail® Postage: <b>\$8.95</b>
Print Date: 05/24/2022	Total: <b>\$8.95</b>
Ship Date: 05/24/2022	
Expected Delivery Date: 05/27/2022	

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

Ref#: DS-828402

**To:** NUTMEG REALTY II LLC  
 455 SACKETT POINT RD  
 NORTH HAVEN CT 06473-3116

\* 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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828402 Crown DLK



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

05/25/2022 04:47 PM

Product	Qty	Unit Price	Price
Prepaid Mail West Henrietta, NY 14586 Weight: 0 lb 2.00 oz Acceptance Date: Wed 05/25/2022 Tracking #: 9405 5036 9930 0257 4491 01	1		\$0.00
Prepaid Mail North Grosvenordale, CT 06255 Weight: 1 lb 0.50 oz Acceptance Date: Wed 05/25/2022 Tracking #: 9405 5036 9930 0257 4491 18	1		\$0.00
Prepaid Mail North Grosvenordale, CT 06255 Weight: 1 lb 0.70 oz Acceptance Date: Wed 05/25/2022 Tracking #: 9405 5036 9930 0257 4491 25	1		\$0.00
Prepaid Mail North Haven, CT 06473 Weight: 1 lb 0.60 oz Acceptance Date: Wed 05/25/2022 Tracking #: 9405 5036 9930 0257 4491 32	1		\$0.00
Grand Total:			\$0.00

\*\*\*\*\*  
Every household in the U.S. is now  
eligible to receive a third set  
of 8 free test kits.  
Go to [www.covidtests.gov](http://www.covidtests.gov)  
\*\*\*\*\*

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Track your Packages  
Sign up for FREE @  
<https://informedelivery.usps.com>

All sales final on stamps and postage.  
Refunds for guaranteed services only.  
Thank you for your business.

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

