



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

March 24, 2022

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

RE: Tower Share Application
399 Chestnut Land Road, New Milford, CT 06776
Latitude: 41.631944
Longitude: -73.367500
Site #: 876397_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 399 Chestnut Land Road, New Milford, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 122-foot level of the existing 160-foot monopole, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the existing fenced compound. Included are plans by Infinigy, dated March 1, 2022, Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated October 7, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was originally approved by the Connecticut Siting Council, Docket No. 233 on May 20, 2003. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Mayor Pete Bass, and Laura Regan, Town Planner for the Town of New Milford, as well as the tower owner (Crown Castle) and property owner (John Kimberly).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 160-feet and the Dish Wireless LLC antennas will be located at a centerline height of 122-feet.
2. The proposed modifications will not result in an increase of the site boundary as depicted on the attached site plan.



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

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 19.74% 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 in New Milford. 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 122-foot level of the existing 160-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

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



Attachments

Cc: Mayor Pete Bass
Town Hall
10 Main Street
New Milford, CT 06776

Laura Regan, Town Planner
Town Hall
10 Main Street
New Milford, CT 06776

John Kimberly - Property Owner
415 Chestnut Land Road
New Milford, CT 06776

Crown Castle – Tower Owner

Exhibit A

Original Facility Approval

DOCKET NO. 233 - Sprint Spectrum, L.P. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 399 Chestnut Land Road, New Milford, Connecticut. } Connecticut
} Siting
} Council
} May 20, 2003

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Sprint Spectrum, L.P. for the construction, maintenance and operation of a wireless telecommunications facility at 399 Chestnut Land Road, New Milford, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Sprint Spectrum, L.P. and AT&T Wireless PCS, LLC and other entities, both public and private, but such tower shall not exceed a height of 160 feet above ground level.
 2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a. a final site plan of site development to include drawings depicting the location of the access road, compound, tower, landscaping and wetland features, if applicable.
 - b. specifications for the tower, tower foundation, antennas, equipment building, security fence, access road, utility line, and landscaping; and
 - c. construction plans for site clearing, tree removal, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, and

provisions for the prevention and containment of spills and/or other discharge into surface water and groundwater bodies.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
6. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
7. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.
8. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant, Danbury News-Times, The New Milford Spectrum, and The Voices.

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

The parties and intervenors to this proceeding are:

Applicant

Sprint Spectrum L.P., d/b/a Sprint PCS

Its Representative

Thomas J. Regan, Esquire
Brown Rudnick Berlack Israels LLP
CityPlace I, 38th Floor
185 Asylum Street
Hartford, CT 06103-3402
Phone: (860)-509-6522

Intervenor

AT&T Wireless PCS, LLC
d/b/a AT&T Wireless

Its Representative

Christopher B. Fisher, Esq.
Cuddy & Feder LLP
90 Maple Avenue
White Plains, New York 10601
(914) 761-1300

Party

Town of Washington

Its Representative

Aimee L. Hoben, Esq.
Murtha Cullina LLP
CityPlace I, 29th Floor
185 Asylum Street
Hartford, CT 06103
(860) 240-6000

Intervenor

Fred Rickerich
50 Washington Ridge Road
New Milford, CT 06776
(860)-350-6166

Party

Northville Residents' Association Inc.

Its Representative

John Kane
7 Crossmon Rd.
New Milford, CT 06776
(860) 354-7651

Exhibit B

Property Card

CHESTNUT LAND RD

Location CHESTNUT LAND RD **Mblk** 65 / 76 / /

Acct# 005130 **Owner** KIMBERLY JOHN

Assessment \$131,210 **Appraisal** \$254,340

PID 10522 **Building Count** 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$0	\$254,340	\$254,340
Assessment			
Valuation Year	Improvements	Land	Total
2020	\$0	\$131,210	\$131,210

Parcel Addresses

Additional Addresses
No Additional Addresses available for this parcel

Owner of Record

Owner	KIMBERLY JOHN	Sale Price	\$0
Co-Owner		Certificate	
Address	415 CHESTNUT LAND RD NEW MILFORD, CT 06776	Book & Page	1107/0938
		Sale Date	03/06/2015
		Instrument	004

Ownership History

Ownership History						
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date	
KIMBERLY JOHN	\$0		1107/0938	004	03/06/2015	
KIMBERLY HOWARD G EST OF	\$0		1107/0937	003	03/06/2015	
KIMBERLY HOWARD G EST OF	\$0		1080/0728	003	07/29/2013	
KIMBERLY HOWARD G	\$0		0202/0528	01	12/03/1970	

Building Information

Building 1 : Section 1

Year Built:

Living Area: 0

Replacement Cost: \$0

Building Percent Good:

Replacement Cost

Less Depreciation: \$0

Building Attributes	
Field	Description
Style	Vacant Land
Model	
Grade	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type	
AC Type	
Total Bedrooms	
Full Bathrooms	
Half Bathrooms	
Total Xtra Fixtrs	
Total Rooms	
Bath Style	
Kitchen Style	
Num Kitchens	
Whirlpool Tub	
Fireplaces	
Fin Bsmt Area	
Bsmt Garages	
Fireplaces_1	
Solar	
Insp. Letter	

Building Photo



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

Building Layout

(ParcelSketch.ashx?pid=10522&bid=10780)

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	<u>Legend</u>
No Data for Extra Features	

Parcel Information

Use Code 713
Description Tillable D
Deeded Acres 15.00

Land**Land Use**

Use Code 713
Description Tillable D
Zone R60
Neighborhood
Alt Land Appr No
Category

Land Line Valuation

Size (Acres) 15.00
Frontage 0
Depth 0
Assessed Value \$131,210
Appraised Value \$254,340

Outbuildings

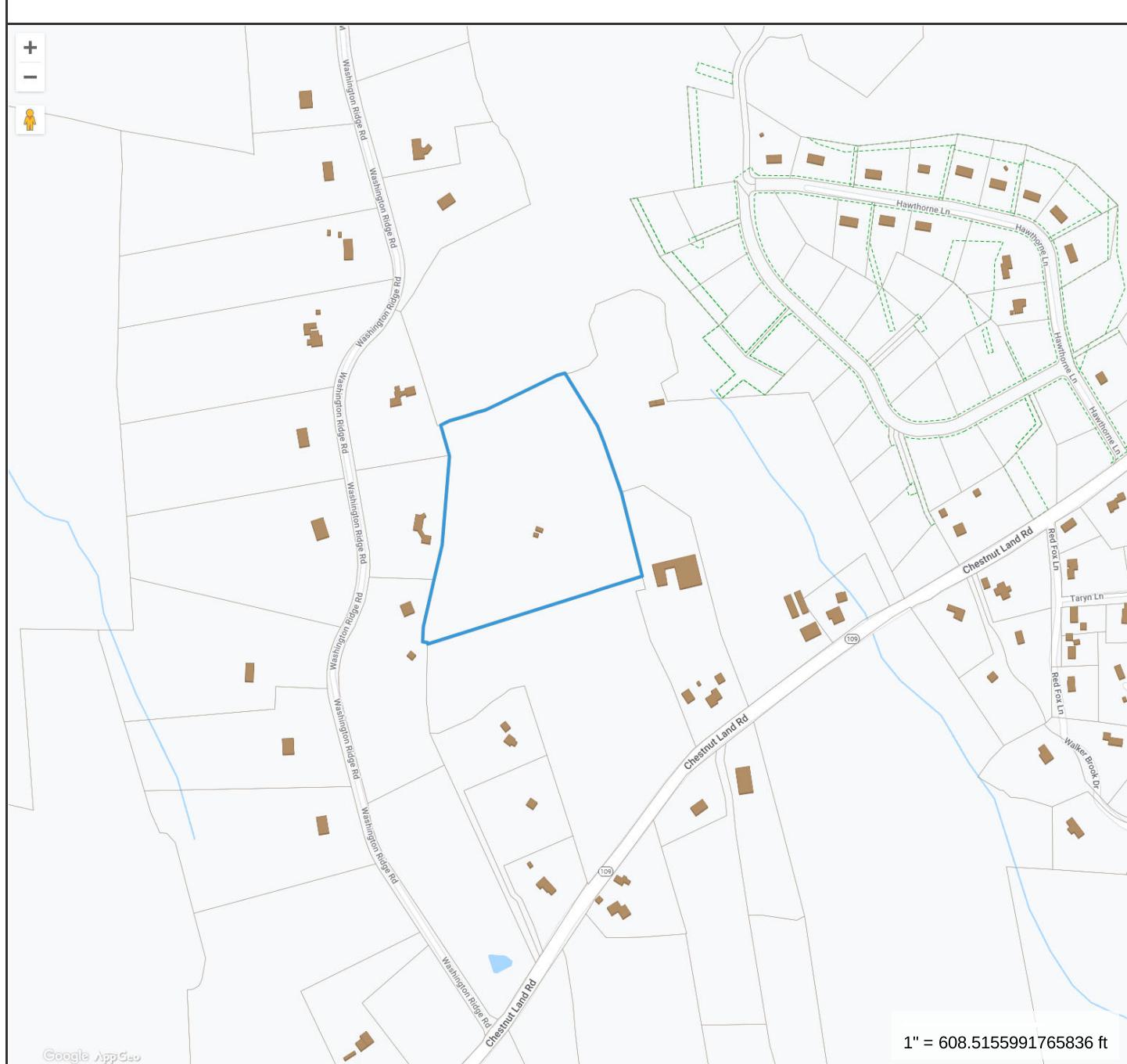
Outbuildings	<u>Legend</u>
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$0	\$262,600	\$262,600

Assessment			
Valuation Year	Improvements	Land	Total
2019	\$0	\$128,900	\$128,900

399 CHESTNUT LAND RD



Property Information

Property ID 65/76
Location CHESTNUT LAND RD
Owner KIMBERLY JOHN



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town of New Milford, 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 12/22/2021
Data updated daily

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:

BOHVN00171A

DISH Wireless L.L.C. SITE ADDRESS:

**399 CHESTNUT LAND RD
NEW MILFORD, CT 06776**

CONNECTICUT CODE OF COMPLIANCE

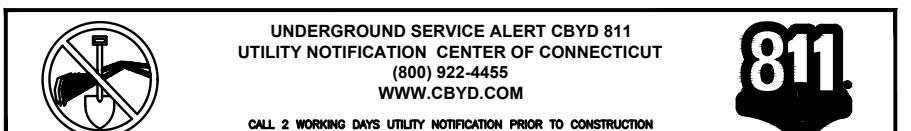
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES

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

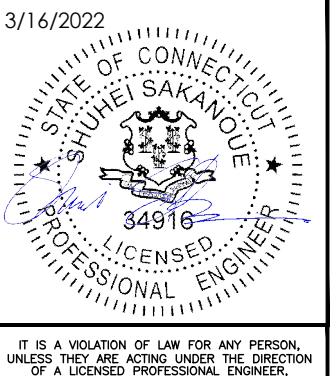
SCOPE OF WORK	
THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:	
TOWER SCOPE OF WORK:	
<ul style="list-style-type: none"> • INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR) • INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT • INSTALL PROPOSED JUMPERS • INSTALL (6) PROPOSED RRUs (2 PER SECTOR) • INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP) • INSTALL (1) PROPOSED HYBRID CABLE 	
GROUND SCOPE OF WORK:	
<ul style="list-style-type: none"> • INSTALL (1) PROPOSED METAL PLATFORM • INSTALL (1) PROPOSED ICE BRIDGE • INSTALL (1) PROPOSED PPC CABINET • INSTALL (1) PROPOSED EQUIPMENT CABINET • INSTALL (1) PROPOSED POWER CONDUIT • INSTALL (1) PROPOSED TELCO CONDUIT • INSTALL (1) PROPOSED TELCO-FIBER BOX • INSTALL (1) PROPOSED GPS UNIT • INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED) • INSTALL (1) PROPOSED FIBER NID (IF REQUIRED) • EXISTING EMPTY METER SOCKET AVAILABLE 	



GENERAL NOTES	
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE, NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.	
11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED	

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

SITE INFORMATION		PROJECT DIRECTORY	
PROPERTY OWNER:	CROWN CASTLE USA	APPLICANT:	DISH Wireless L.L.C.
ADDRESS:	2000 CORPORATE DRIVE		5701 SOUTH SANTA FE DRIVE
	CANONSBURG, PA		LITTLETON, CO 80120
TOWER TYPE:	MONOPOLE	TOWER OWNER:	CROWN CASTLE
TOWER CO SITE ID:	876397		2000 CORPORATE DRIVE
TOWER APP NUMBER:	TBD		CANONSBURG, PA 15317
			(877) 486-9377
COUNTY:	LITCHFIELD	SITE DESIGNER:	INFINIGY ENGINEERING PLLC
LATITUDE (NAD 83):	41° 37' 54.9" N 41.631925 N		2500 W. HIGGINS RD. SUITE 500
LONGITUDE (NAD 83):	73° 22' 02.8" W 73.36745 W		HOFFMAN ESTATES, IL 60169
ZONING JURISDICTION:	TBD		(847) 648-4068
ZONING DISTRICT:	R60	SITE ACQUISITION:	NICHOLAS CURRY (980) 430-8582
PARCEL NUMBER:	66/1/CELL	CONSTRUCTION MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM
OCCUPANCY GROUP:	U	RF ENGINEER:	SYED ZAIDI SYED.ZAIDI@DISH.COM
CONSTRUCTION TYPE:	II-B		
POWER COMPANY:	CONNECTICUT LIGHT AND POWER		
TELEPHONE COMPANY:	AT&T		



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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

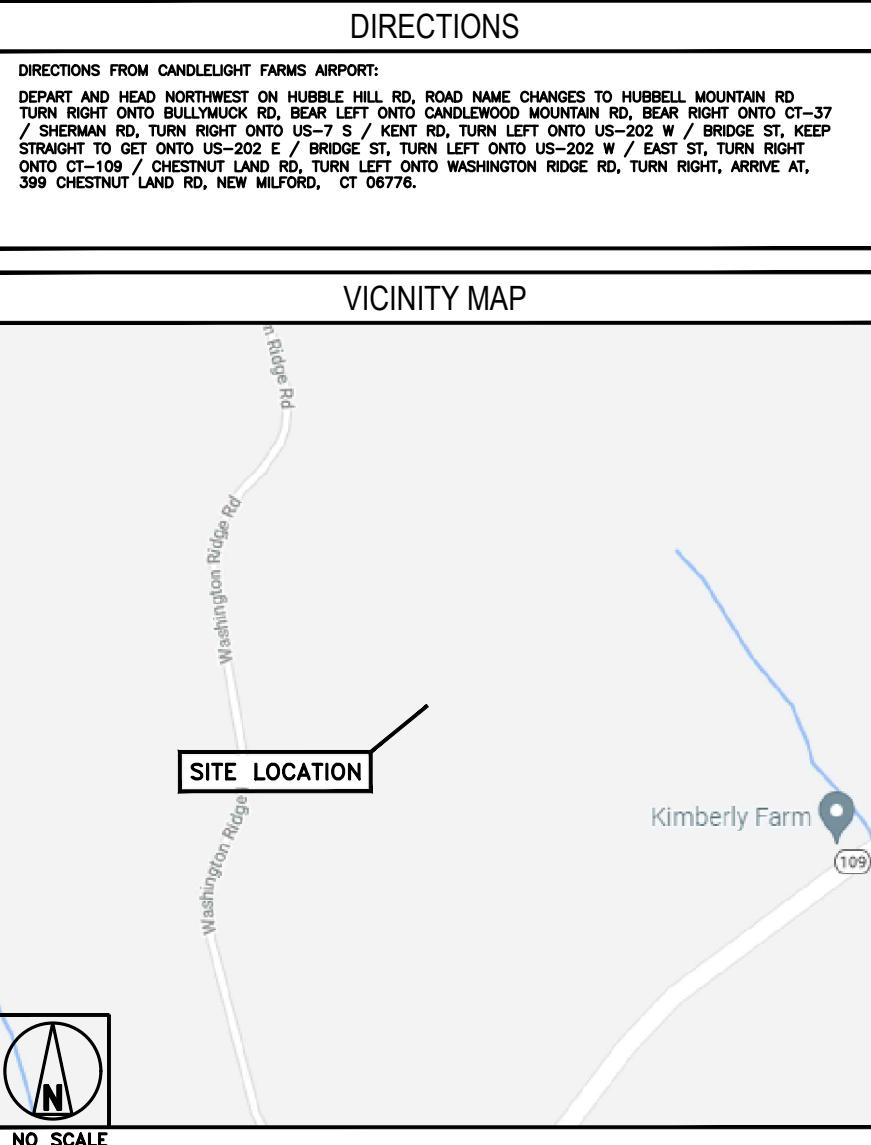
SUBMITTALS		
REV	DATE	DESCRIPTION
A	09/13/2020	ISSUED FOR REVIEW
O	03/01/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
6039-Z0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00171A
399 CHESTNUT LAND RD
NEW MILFORD, CT 06776

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

CROWN CASTLE

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



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:
RCD SS CJW

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

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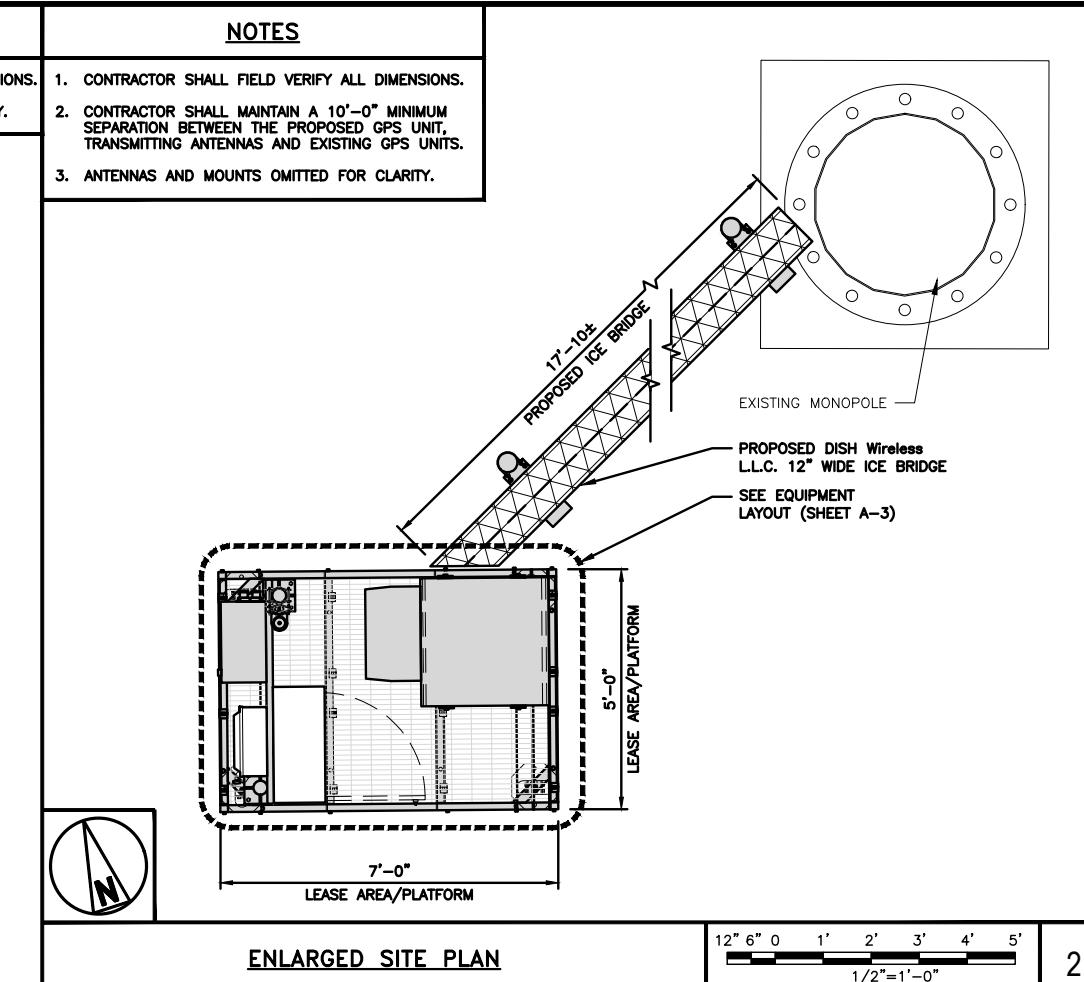
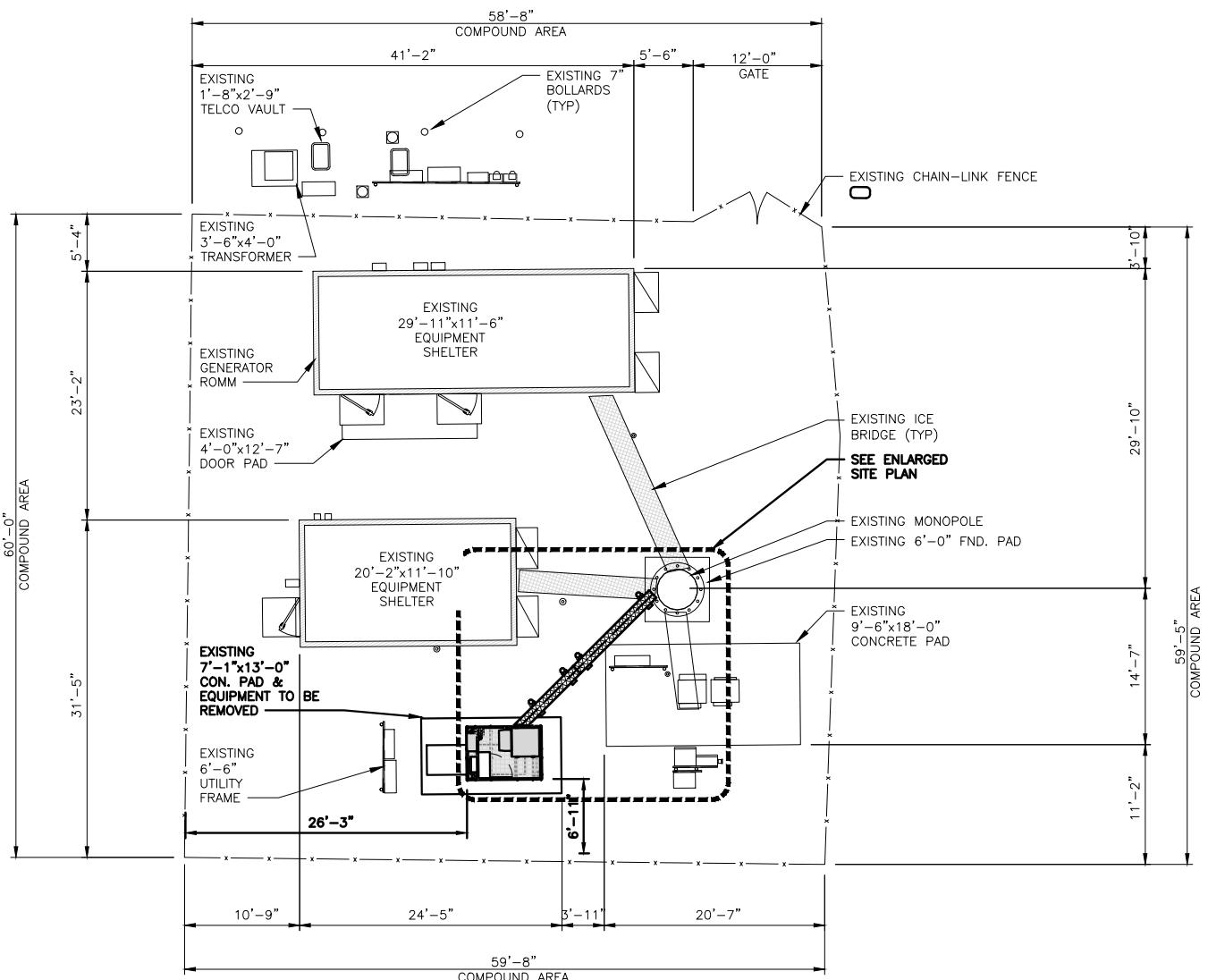
DISH Wireless LLC.
PROJECT INFORMATION

BOHVNO0171A
399 CHESTNUT LAND RD
NEW MILFORD, CT 06776

SHEET TITLE
OVERALL AND ENLARGED
SITE PLAN

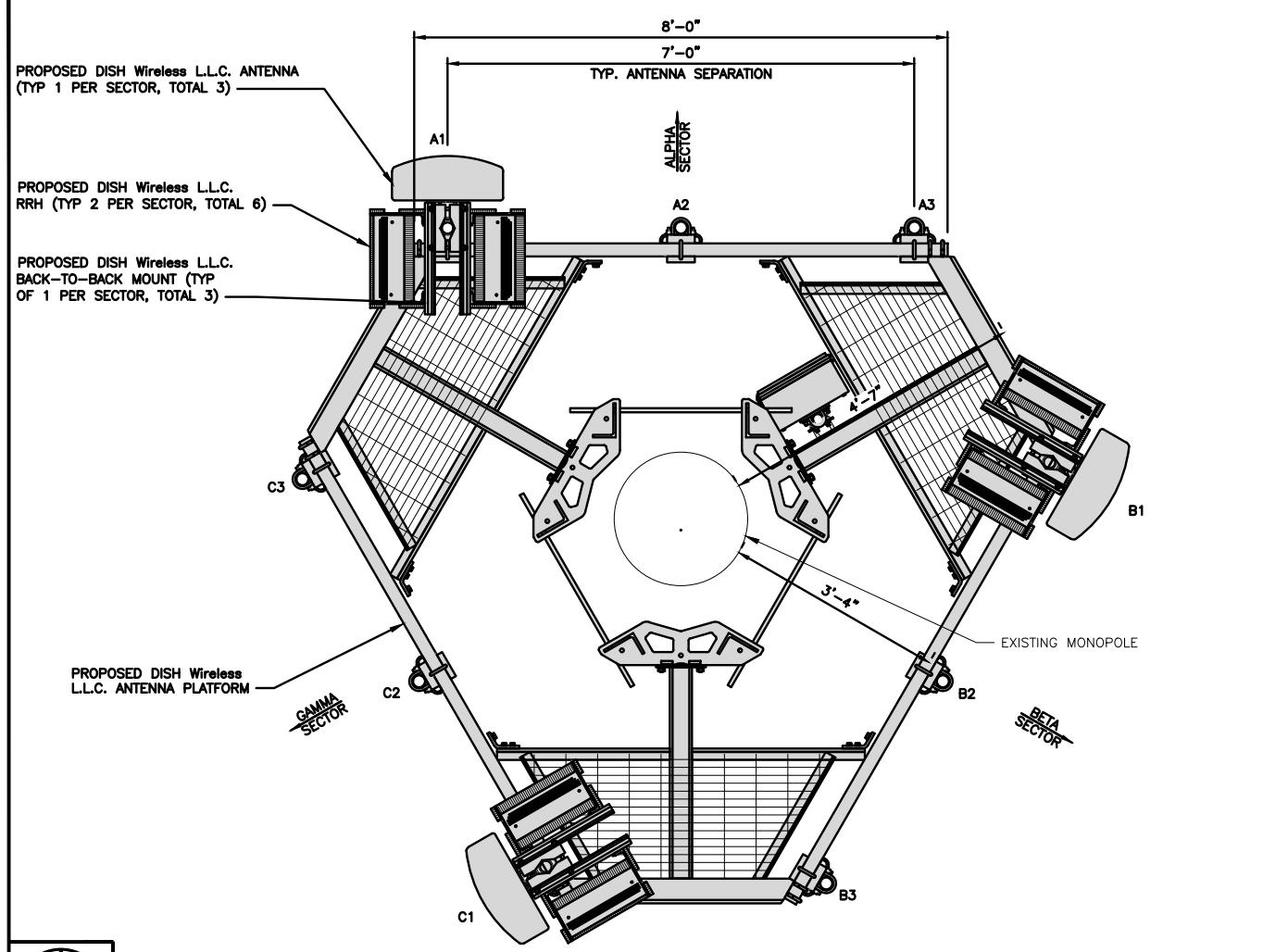
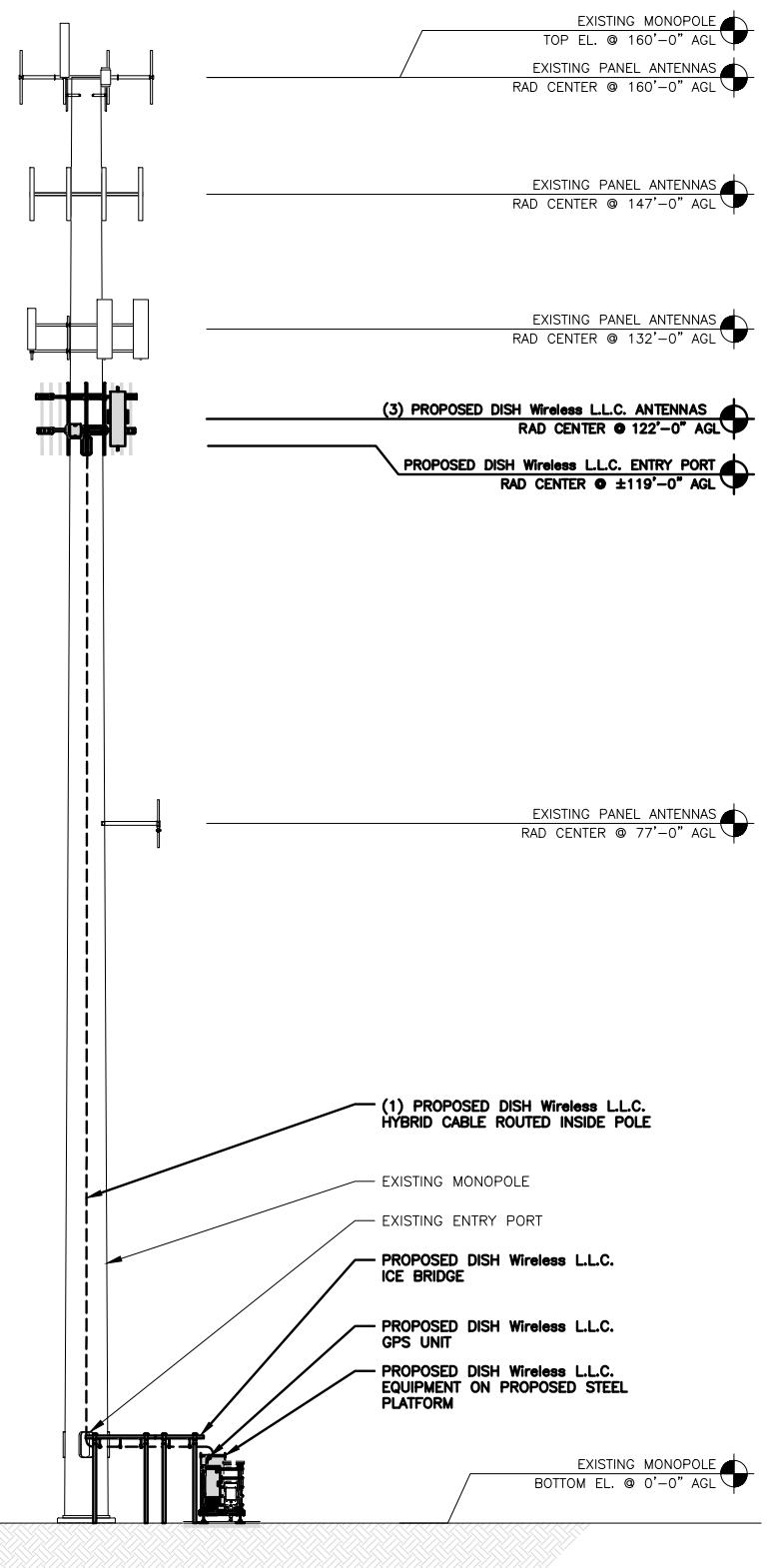
SHEET NUMBER

A-1



NOTES

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



ANTENNA LAYOUT

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

2

SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECH	AZIMUTH	RAD CENTER		MANUFACTURER - MODEL NUMBER	TECH	POS.	
A1	PROPOSED	JMAWIRELESS - MX08FRO665-21	5G	0°	122'-0"	(1) HIGH-CAPACITY HYBRID CABLE (145' LONG)	FUJITSU - TA08025-B604	5G	A2	RAYCAP RDIDC-9181-PF-48
A2	--	--	--	--	--		FUJITSU - TA08025-B605	5G	A2	
A3	--	--	--	--	--		--	--	--	
B1	PROPOSED	JMAWIRELESS - MX08FRO665-21	5G	120°	122'-0"	SHARED W/ALPHA	FUJITSU - TA08025-B604	5G	B2	SHARED W/ALPHA
B2	--	--	--	--	--		FUJITSU - TA08025-B605	5G	B2	
B3	--	--	--	--	--		--	--	--	
C1	PROPOSED	JMAWIRELESS - MX08FRO665-21	5G	240°	122'-0"	SHARED W/ALPHA	FUJITSU - TA08025-B604	5G	C2	SHARED W/ALPHA
C2	--	--	--	--	--		FUJITSU - TA08025-B605	5G	C2	
C3	--	--	--	--	--		--	--	--	

NOTES

- CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
- 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.

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

CC CROWN CASTLE

INFINIGY®
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the solutions are endless
2500 W. HIGGINS RD. SUITE 500 |
HOFFMAN ESTATES, IL 60164
PHONE: 847-648-4068 | FAX: 518-690-0793
WWW.INFINIGY.COM

3/16/2022



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OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

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

RFDS REV #: N/A

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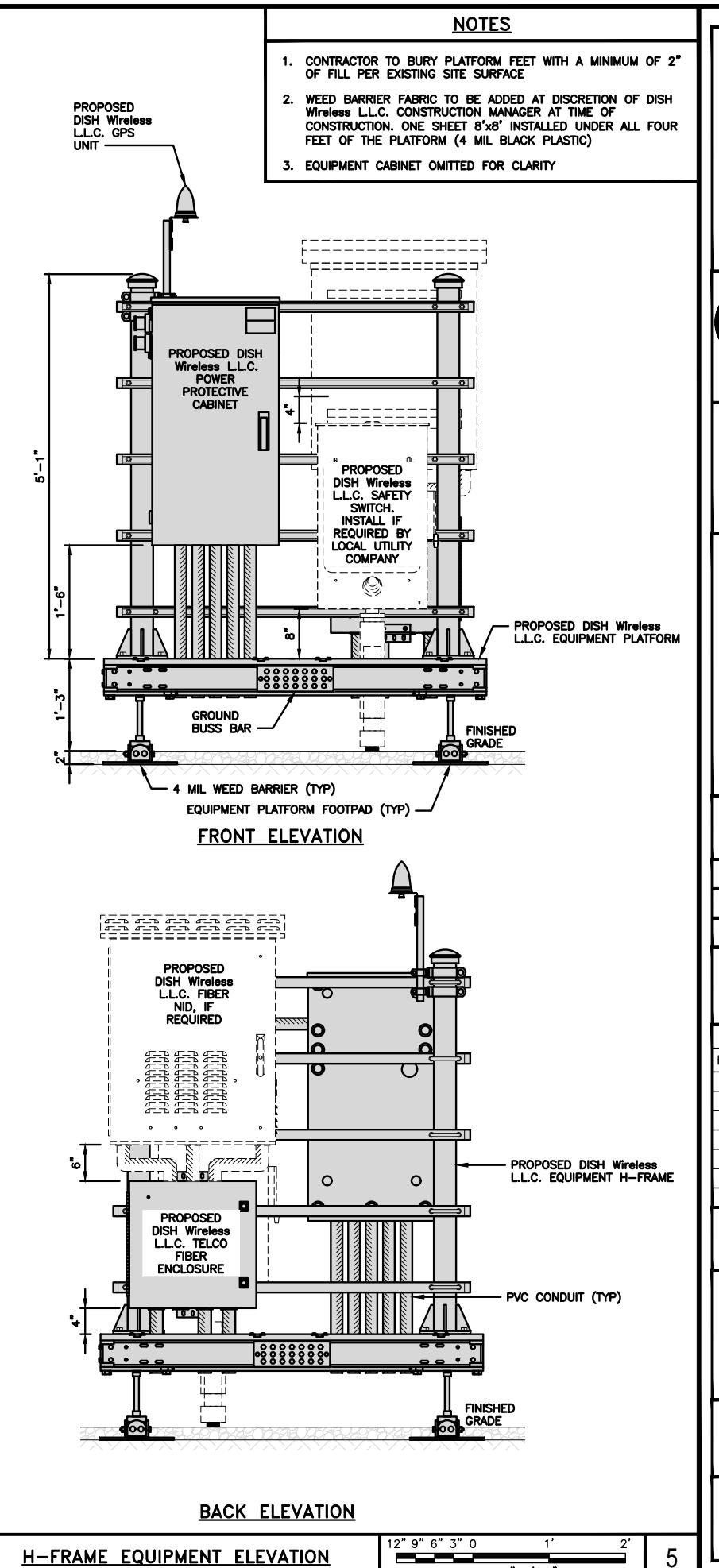
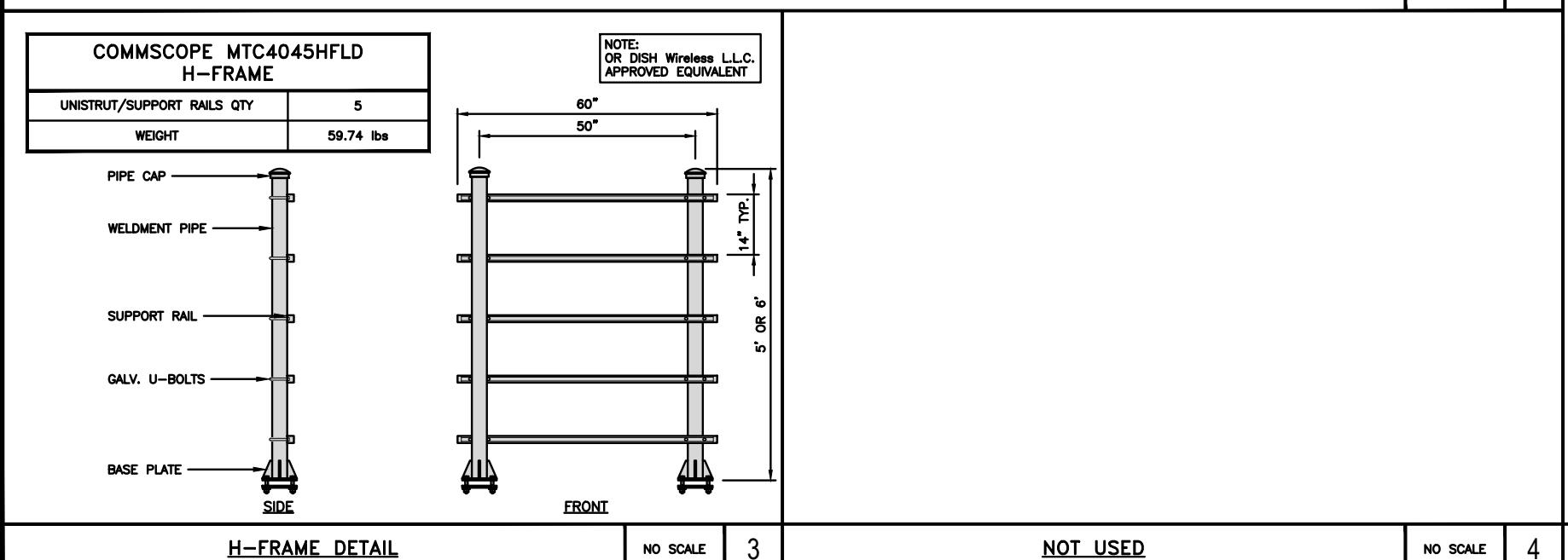
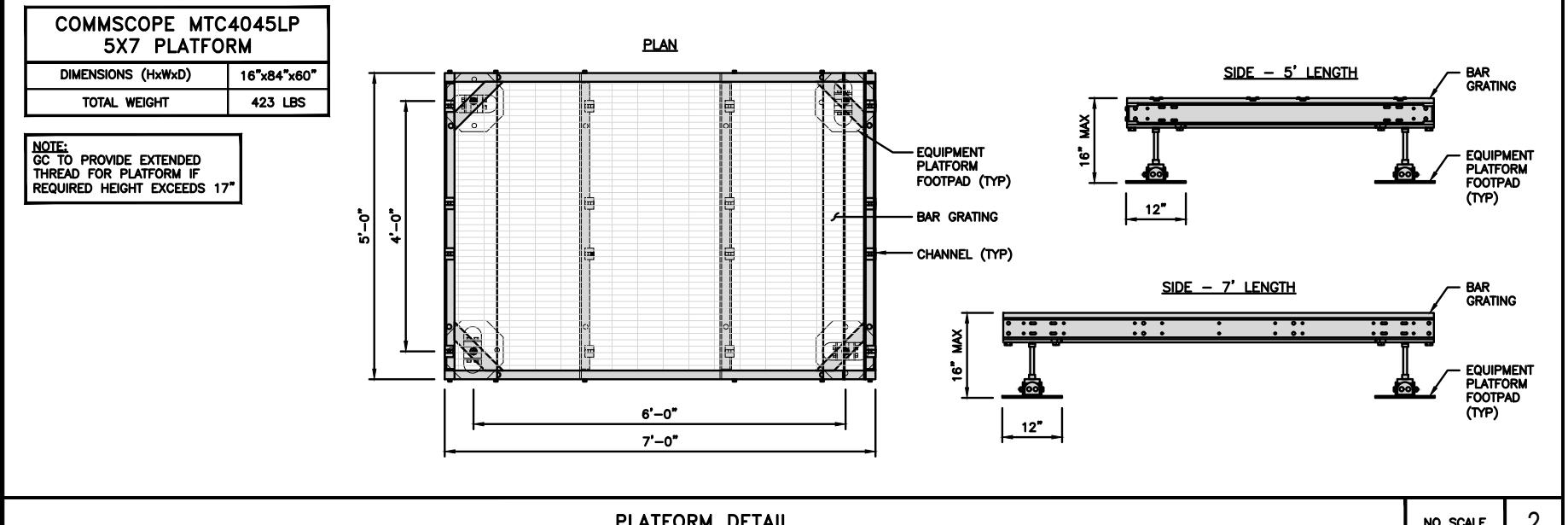
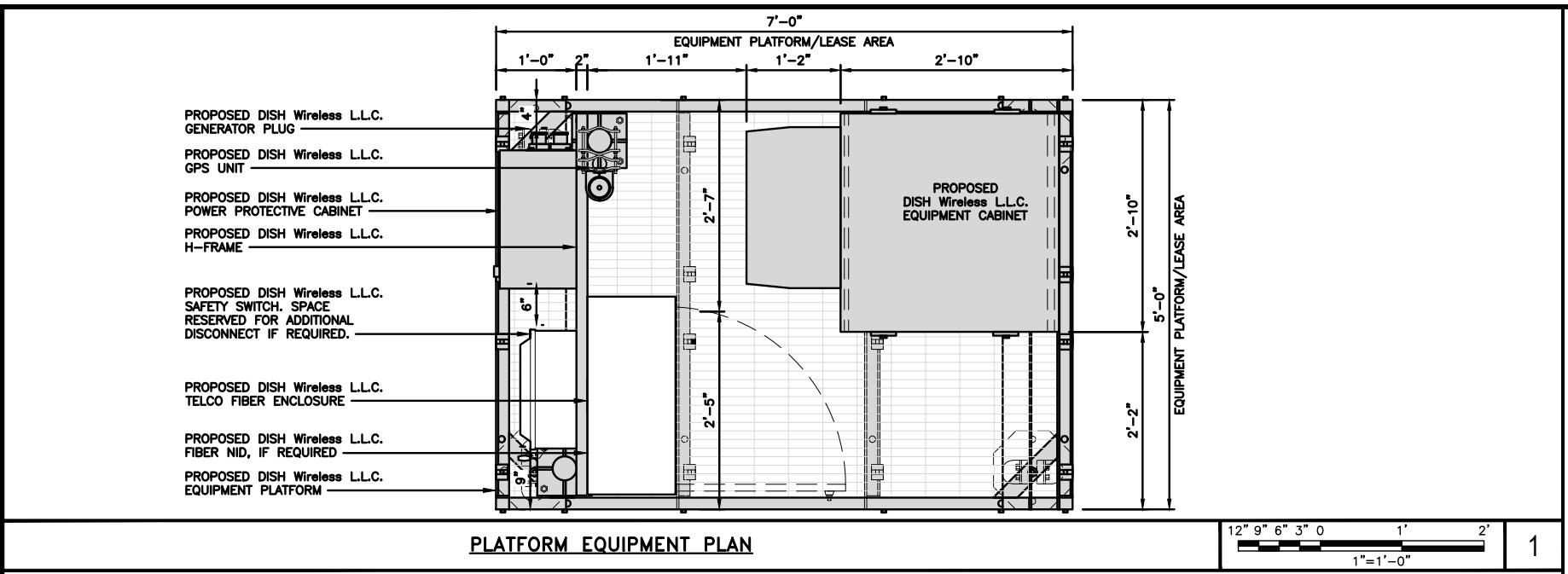
A&E PROJECT NUMBER
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DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVNO0171A
399 CHESTNUT LAND RD
NEW MILFORD, CT 06776

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



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

CROWN CASTLE

INFINIGY®
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3/16/2022
STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
PROFESSIONAL ENGINEER
LICENSED

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TO ALTER THIS DOCUMENT.

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/13/2020	ISSUED FOR REVIEW
O	03/01/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
6039-Z0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVNO0171A
399 CHESTNUT LAND RD
NEW MILFORD, CT 06776

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

A-3

<p>CHARLES INDUSTRY HEX CUBE-PM639155N4</p> <table border="1"> <tr><td>DIMENSIONS (HxWxD)</td><td>74"x32"x32"</td></tr> <tr><td>POWER PLANT</td><td>-48VDC ABB/600W</td></tr> <tr><td>TOTAL WEIGHT (EMPTY)</td><td>408 lbs</td></tr> </table>	DIMENSIONS (HxWxD)	74"x32"x32"	POWER PLANT	-48VDC ABB/600W	TOTAL WEIGHT (EMPTY)	408 lbs	<p>RAYCAP PPC RDIAC-2465-P-240-MTS</p> <table border="1"> <tr><td>ENCLOSURE DIMENSIONS (HxWxD)</td><td>39"x22.855"x12.593</td></tr> <tr><td>WEIGHT:</td><td>80 lbs</td></tr> <tr><td>OPERATING AC VOLTAGE</td><td>240/120 1 PHASE 3W+G</td></tr> </table>	ENCLOSURE DIMENSIONS (HxWxD)	39"x22.855"x12.593	WEIGHT:	80 lbs	OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G	<p>SQUARE D SAFETY SWITCHES D224NRB</p> <table border="1"> <tr><td>ENCLOSURE DIM (HxWxD)</td><td>29.25"x19.00"x8.50"</td></tr> <tr><td>ENCLOSURE TYPE</td><td>NEMA 3R RAINPROOF</td></tr> <tr><td>UL LISTED</td><td>FILE E-2875</td></tr> </table>	ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"	ENCLOSURE TYPE	NEMA 3R RAINPROOF	UL LISTED	FILE E-2875
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<p>NOT USED</p> <table border="1"> <tr><td>NO SCALE</td><td>4</td></tr> </table>	NO SCALE	4	<p>FIBER NID ENCLOSURE DETAIL</p> <table border="1"> <tr><td>NO SCALE</td><td>5</td></tr> </table>	NO SCALE	5	<p>FIBER TELCO ENCLOSURE DETAIL</p> <table border="1"> <tr><td>NO SCALE</td><td>6</td></tr> </table>	NO SCALE	6												
NO SCALE	4																			
NO SCALE	5																			
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<p>COMMSCOPE WB-K110-B WAVEGUIDE BRIDGE KIT</p> <table border="1"> <tr><td>DIMENSIONS (HxL)</td><td>160"x10'</td></tr> <tr><td>WEIGHT/ VOLUME</td><td>325.0 LBS</td></tr> <tr><td>CABLE RUN (QTY)</td><td>12</td></tr> </table> <p>INCLUDED PRODUCTS:</p> <ul style="list-style-type: none"> WB-T12-3 TRAPEZE KIT, 3 RUNGS WB-LB12-3 SUPPORT BRACKET MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4" 	DIMENSIONS (HxL)	160"x10'	WEIGHT/ VOLUME	325.0 LBS	CABLE RUN (QTY)	12														
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<p>ICE BRIDGE DETAIL</p> <table border="1"> <tr><td>NO SCALE</td><td>7</td></tr> </table>	NO SCALE	7	<p>TYPICAL ICE BRIDGE CONCRETE PIER DETAIL</p> <table border="1"> <tr><td>NO SCALE</td><td>8</td></tr> </table>	NO SCALE	8	<p>HYBRID CABLE RUN</p> <table border="1"> <tr><td>NO SCALE</td><td>9</td></tr> </table>	NO SCALE	9												
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NO SCALE	9																			

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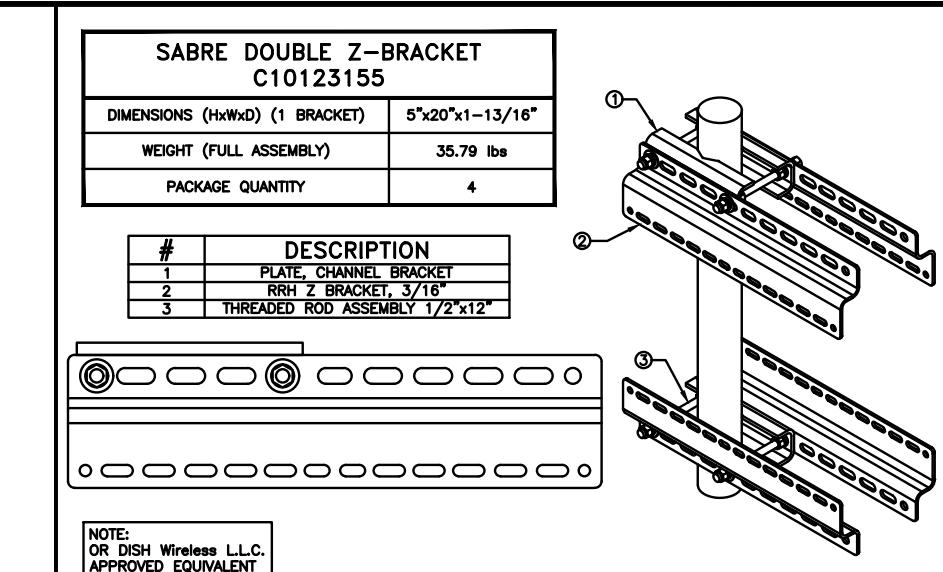
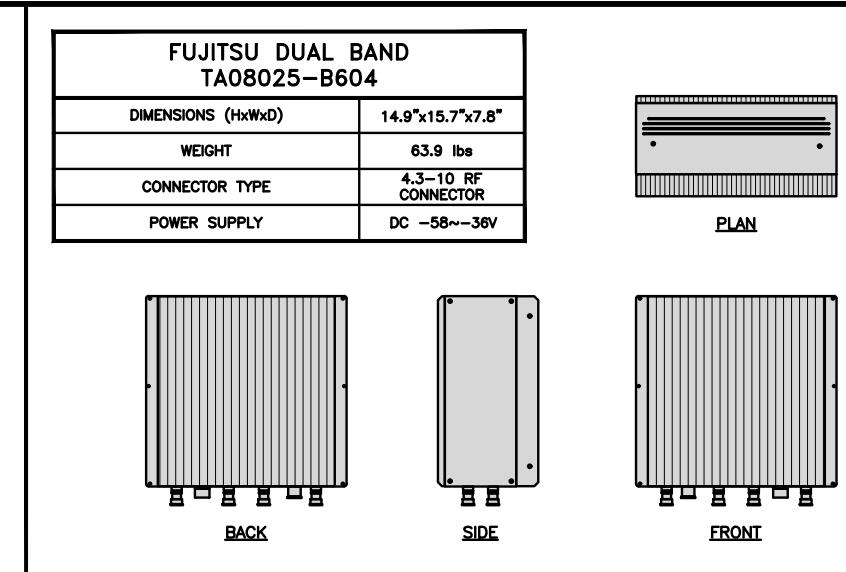
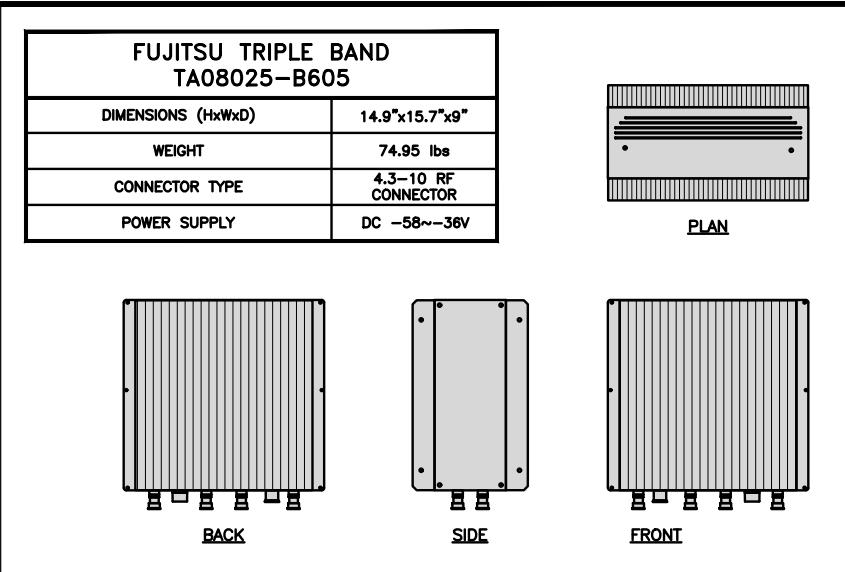
A&E PROJECT NUMBER
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DISH Wireless LLC.
PROJECT INFORMATION
BOHVNO0171A
399 CHESTNUT LAND RD
NEW MILFORD, CT 06776

SHEET TITLE
EQUIPMENT DETAILS
SHEET NUMBER

A-4

<p>PCTEL GPSGL-TMG-SPI-40NCB</p> <p>DIMENSIONS (DIAxH) MM/INCH 81x184mm 3.2"x7.25"</p> <p>WEIGHT W/ACCESSORIES 075 lbs</p> <p>CONNECTOR N-FEMALE</p> <p>FREQUENCY RANGE 1590 ± 30MHz</p>																																															
<u>GPS DETAIL</u> NO SCALE 1			<u>GPS MINIMUM SKY VIEW REQUIREMENTS</u> NO SCALE 2			<u>CABLES UNLIMITED HYBRID CABLE</u> MINIMUM BEND RADIUSES NO SCALE 3																																									
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<small>DISH Wireless L.L.C. TEMPLATE VERSION 48 - 2/21/2022</small>																																															



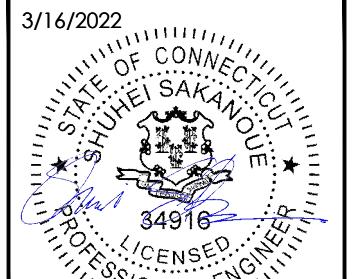
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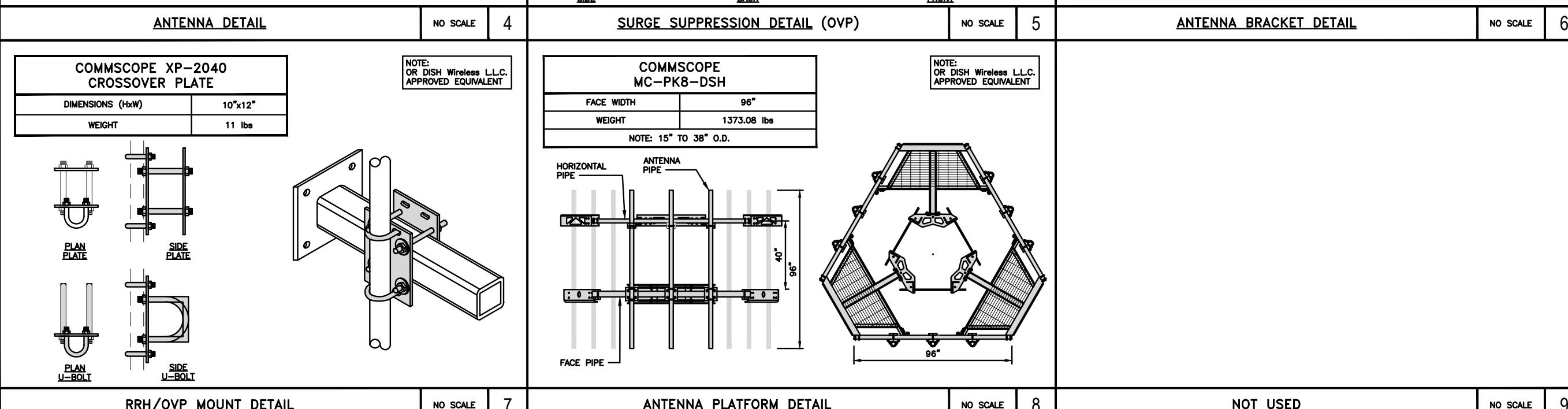
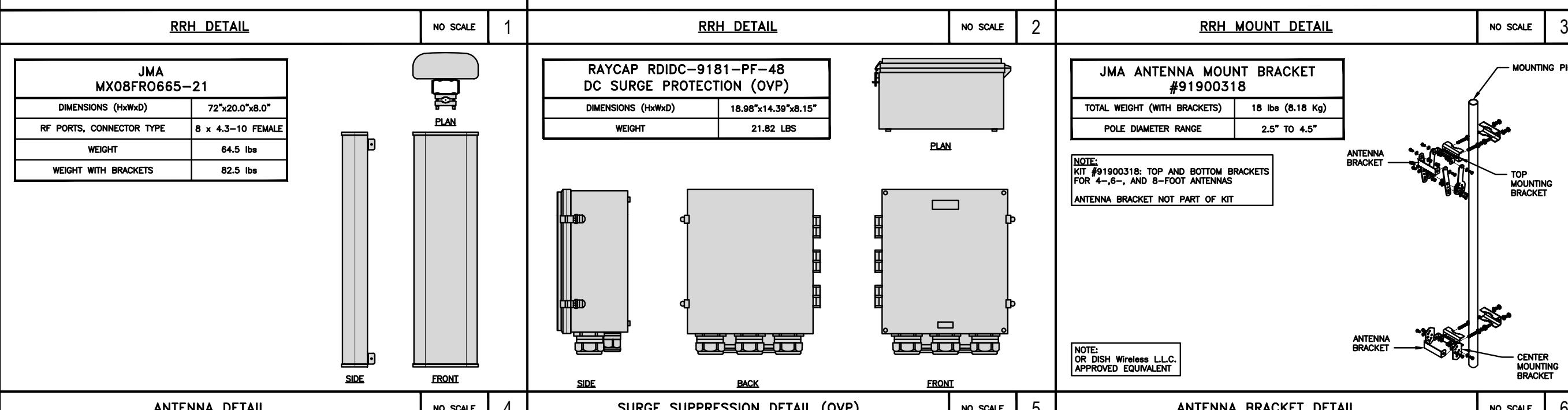
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PROJECT INFORMATION
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EQUIPMENT DETAILS

SHEET NUMBER

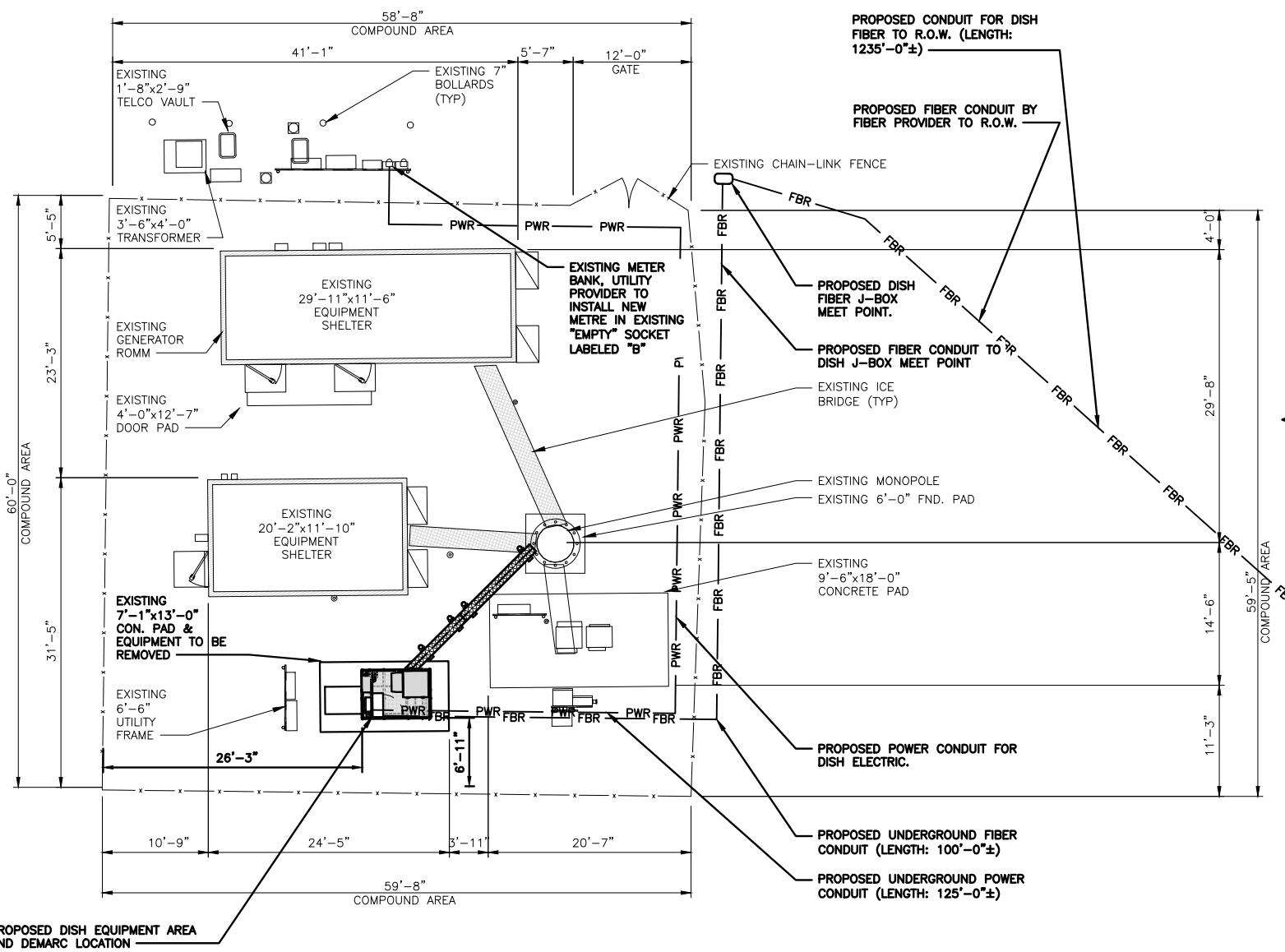
A-6



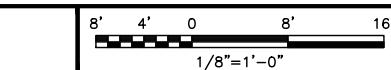
NOTES

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

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.

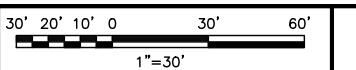


UTILITY ROUTE PLAN



1

ELECTRICAL NOTES



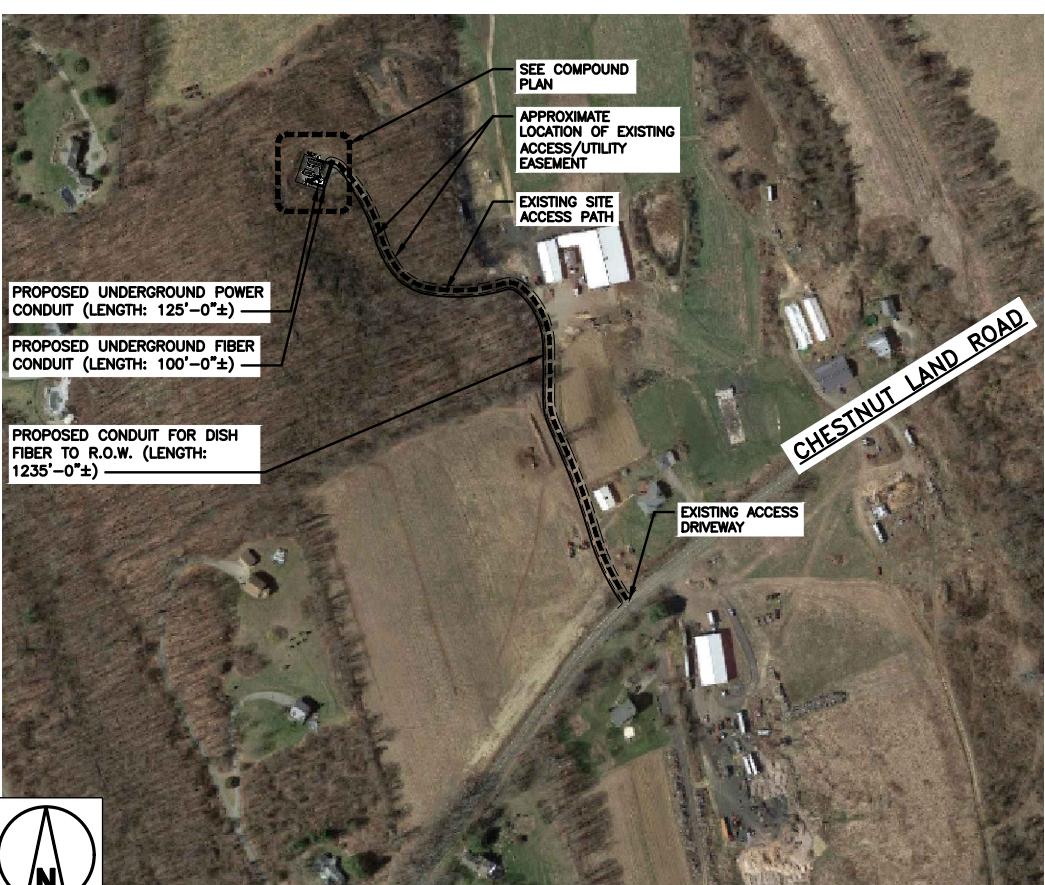
3

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



1

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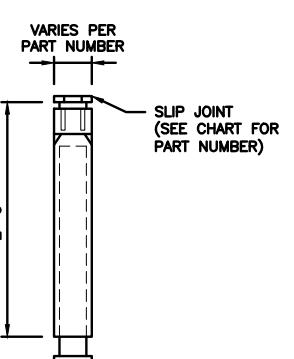
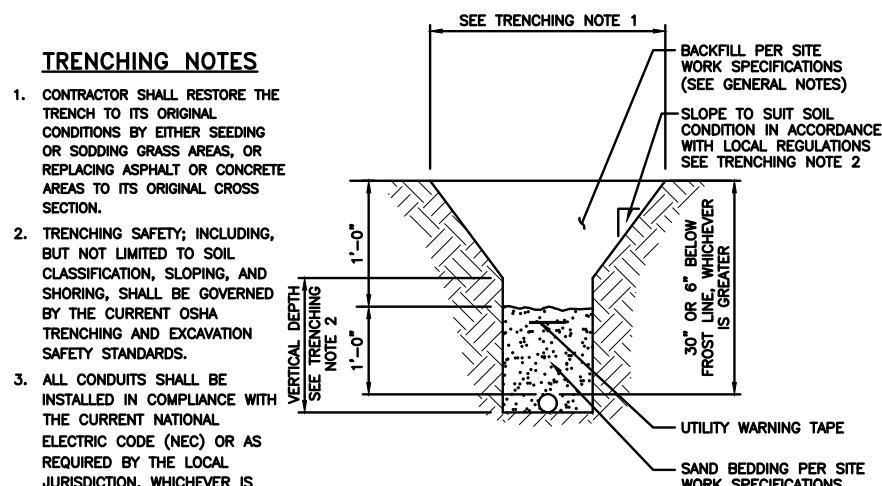
DISH Wireless LLC.
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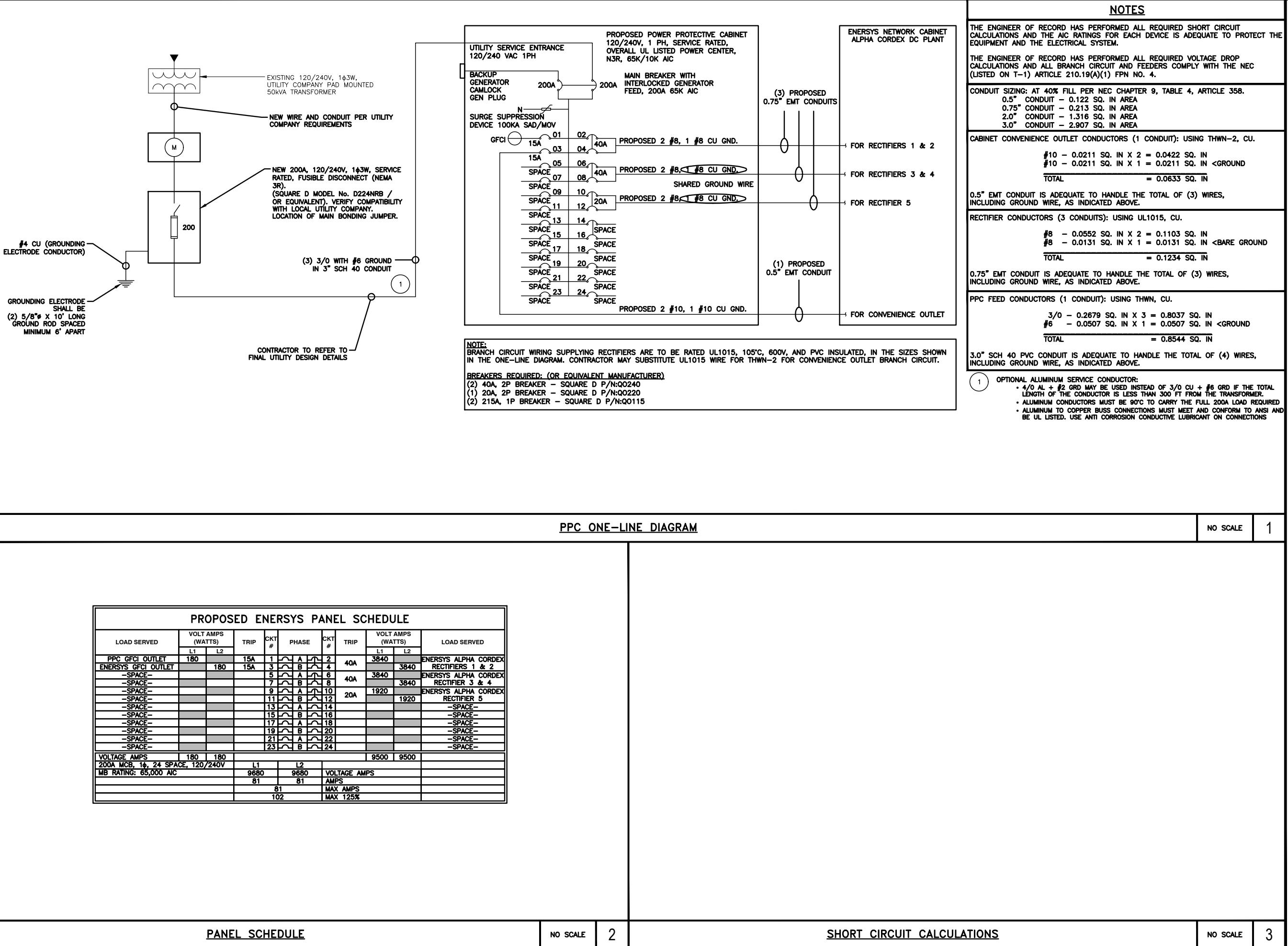
BOHVN00171A
399 CHESTNUT LAND RD
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SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER

E-1

CARLON EXPANSION FITTINGS											
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH							
E945D	E945DX	1/2"	20	4"							
E945E	E945EX	3/4"	15	4"							
E945F	E945FX	1"	10	4"							
E945G	E945GX	1 1/4"	5	4"							
E945H	E945HX	1 1/2"	5	4"							
E945J	E945JX	2"	15	8"							
E945K	E945KX	2 1/2"	10	8"							
E945L	E945LX	3"	10	8"							
E945M	E945MX	3 1/2"	5	8"							
E945N	E945NX	4"	5	8"							
E945P	E945PX	5"	1	8"							
E945R	E945RX	6"	1	8"							
NOTE: CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.											
EXPANSION JOINT DETAIL			NO SCALE	1	TYPICAL UNDERGROUND TRENCH DETAIL			NO SCALE	2		
											
TRENCHING NOTES					1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION. 2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS. 3. ALL CONDUITS SHALL BE INSTALLED IN COMPLIANCE WITH THE CURRENT NATIONAL ELECTRIC CODE (NEC) OR AS REQUIRED BY THE LOCAL JURISDICTION, WHICHEVER IS THE MOST STRINGENT.						

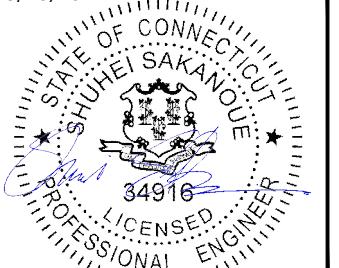


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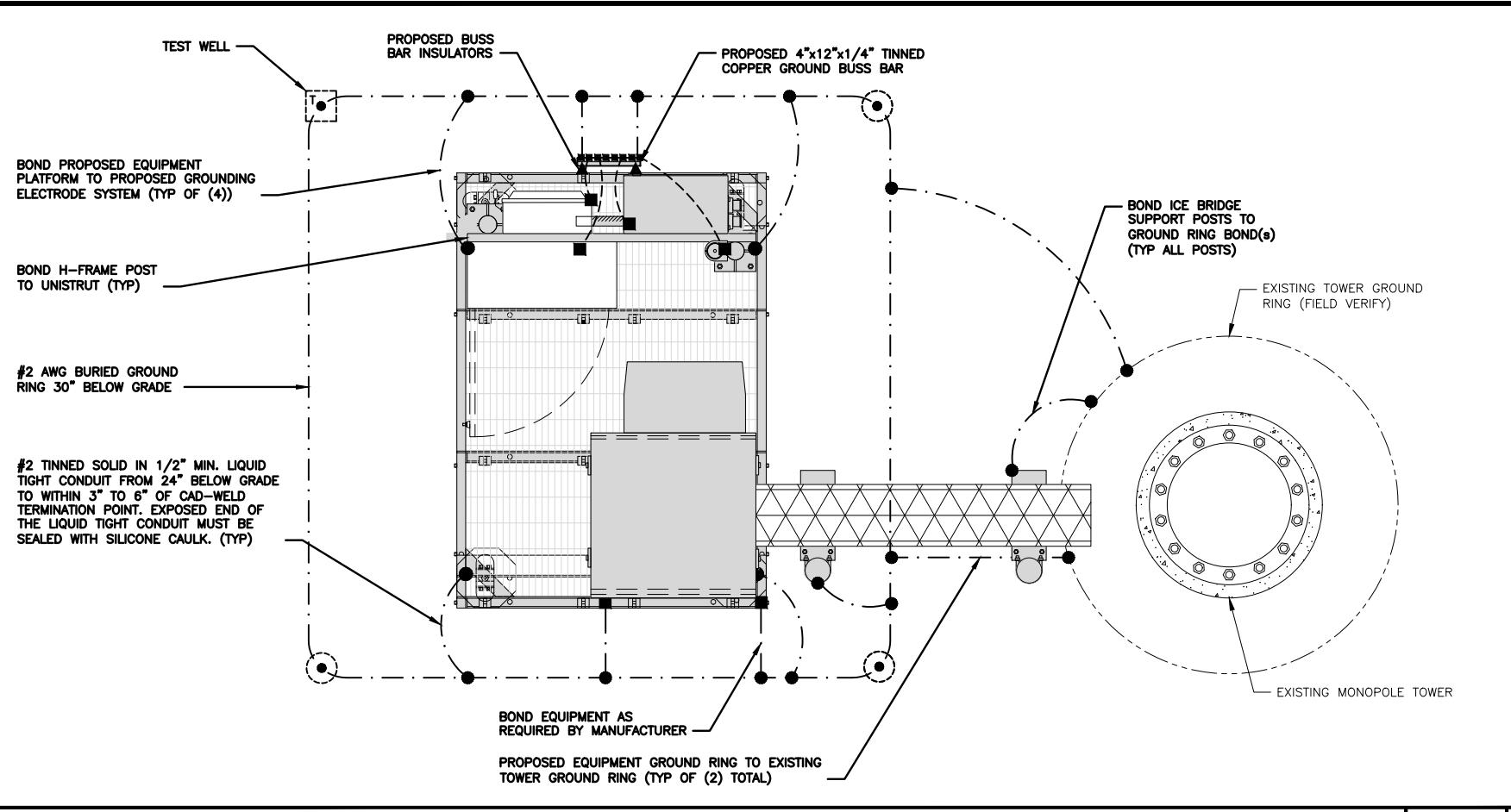
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SHEET TITLE
ELECTRICAL ONE-LINE, FAULT
CALCS & PANEL SCHEDULE

SHEET NUMBER

E-3

L-3

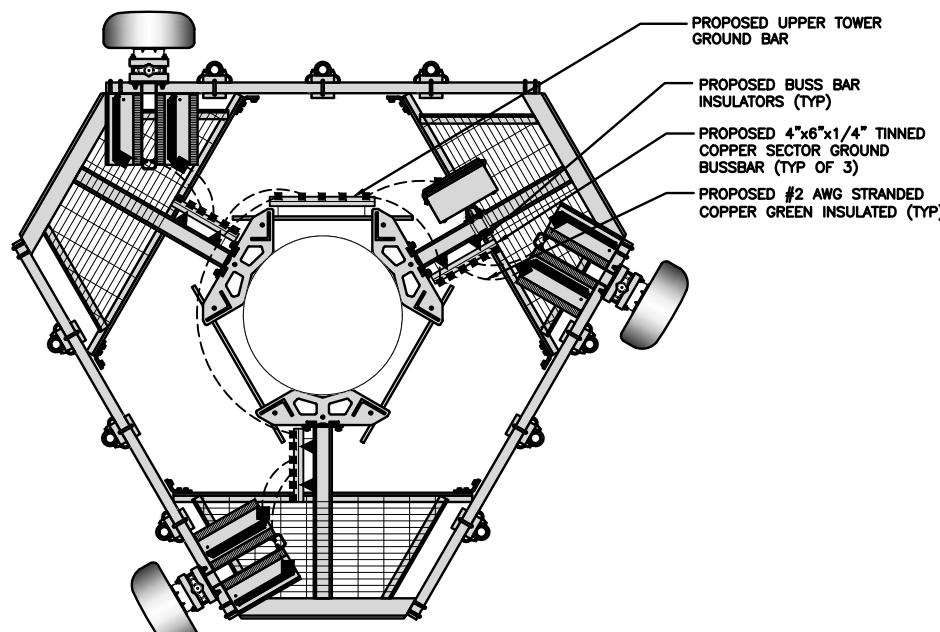


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2

GROUNDING KEY NOTES

● EXOTHERMIC CONNECTION	■ MECHANICAL CONNECTION
— #6 AWG STRANDED & INSULATED	- - - #2 AWG SOLID COPPER TINNED
— #2 AWG STRANDED & INSULATED	— #2 AWG STRANDED & INSULATED

GROUNDING LEGEND

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

GROUNDING KEY NOTES

- (A) EXTERIOR GROUND RING: #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- (B) TOWER GROUND RING: THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- (C) INTERIOR GROUND RING: #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- (D) BOND TO INTERIOR GROUND RING: #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.
- (E) GROUND ROD: UL LISTED COPPER CLAD STEEL MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- (F) CELL REFERENCE GROUND BAR: POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- (G) HATCH PLATE GROUND BAR: BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) EXTERIOR CABLE ENTRY PORT GROUND BARS: LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.
- (I) ITELCO 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 EQUIPMENT'S METAL FRAMEWORK.
- (K) INTERIOR UNIT BONDS: METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITHIN 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.

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STATE OF CONNECTICUT
SHUHEI SAKANOUE
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RFDS REV #: N/A

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A&E PROJECT NUMBER
6039-Z0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00171A
399 CHESTNUT LAND RD
NEW MILFORD, CT 06776

SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

G-1

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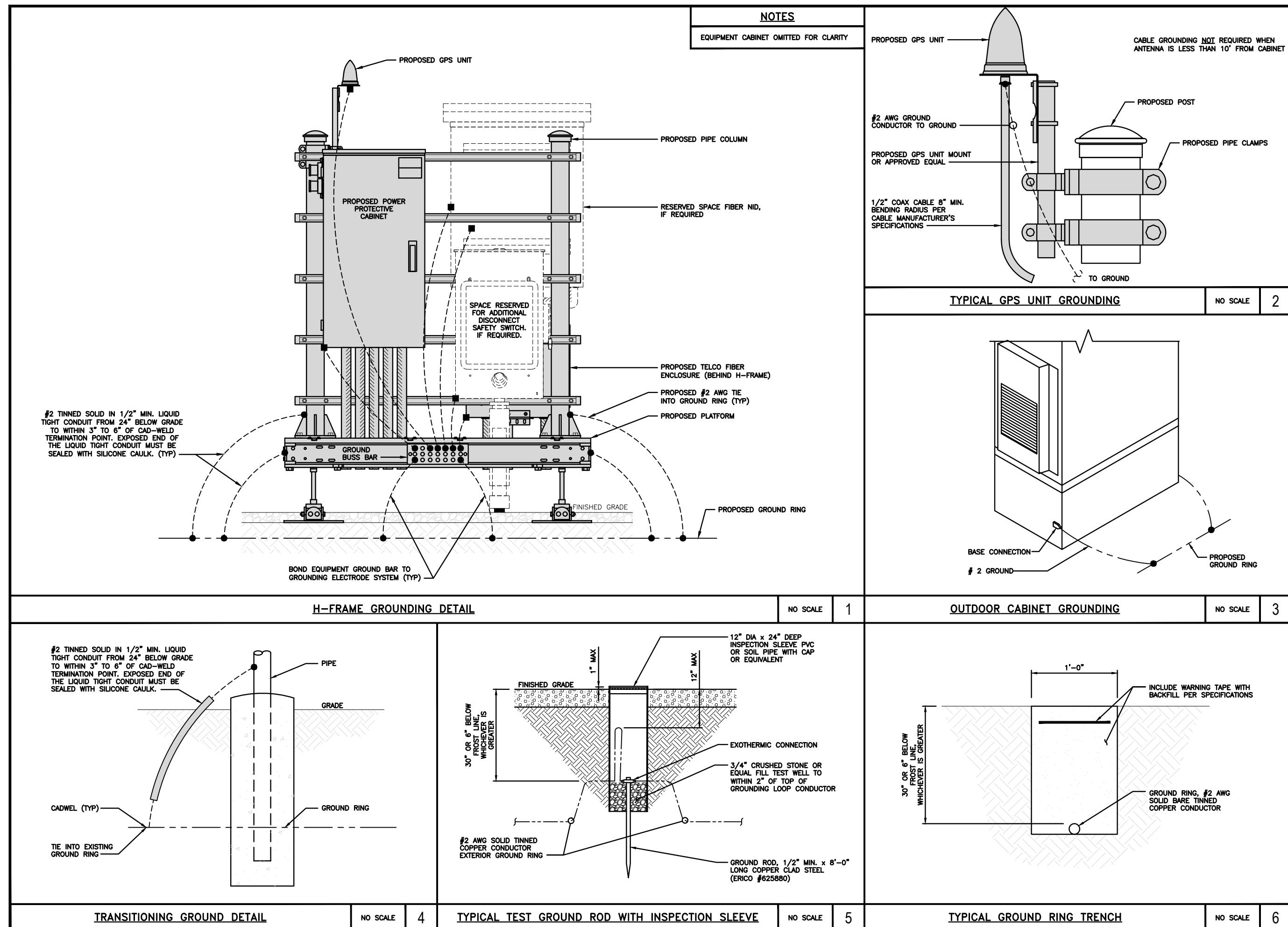
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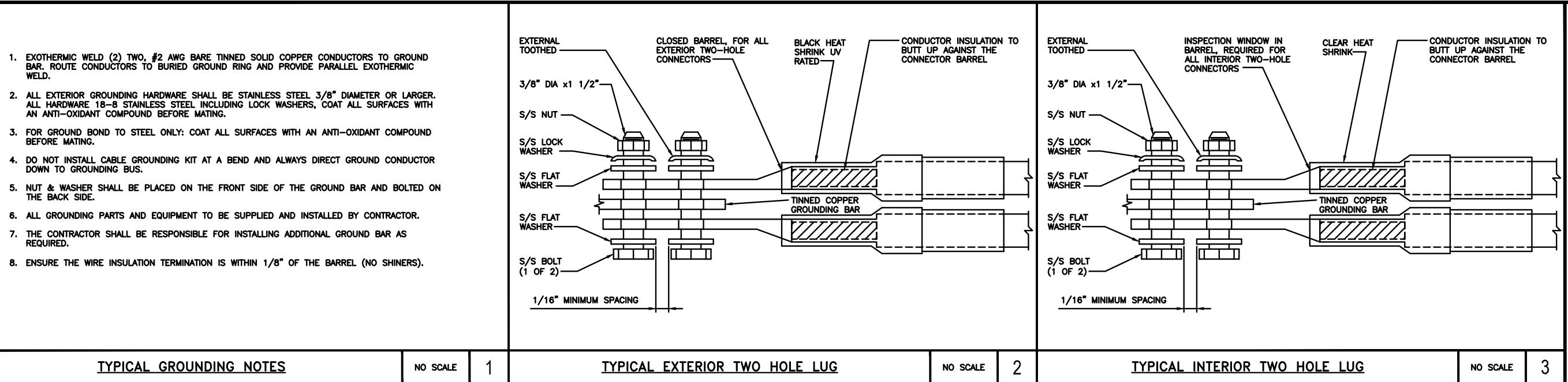
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PROJECT INFORMATION
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NEW MILFORD, CT 06776

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER

G-2





<u>TYPICAL GROUNDING NOTES</u>	NO SCALE	1	<u>TYPICAL EXTERIOR TWO HOLE LUG</u>	NO SCALE	2	<u>TYPICAL INTERIOR TWO HOLE LUG</u>	NO SCALE	3
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<u>LUG DETAIL</u>	NO SCALE	4	<u>NOT USED</u>	NO SCALE	5	<u>NOT USED</u>	NO SCALE	6
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<u>NOT USED</u>	NO SCALE	7	<u>NOT USED</u>	NO SCALE	8	<u>NOT USED</u>	NO SCALE	9
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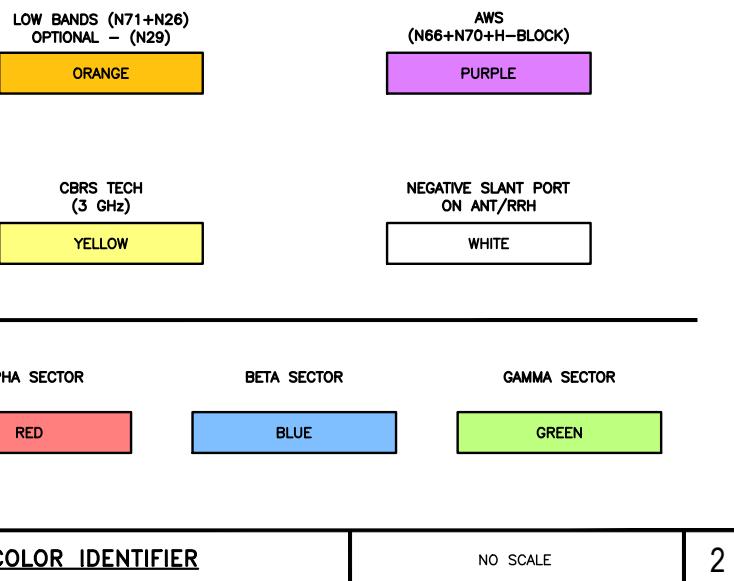
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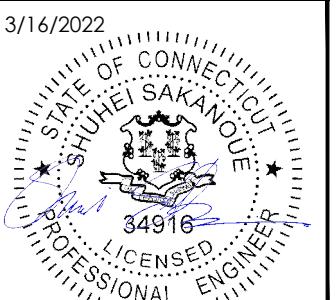
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G-3

HYBRID/DISCREET CABLES																																																																																			
3/4" TAPE WIDTHS WITH 3/4" SPACING																																																																																			
<p>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)</p> <table border="1"> <thead> <tr> <th colspan="4">ALPHA RRH</th> <th colspan="4">BETA RRH</th> <th colspan="4">GAMMA RRH</th> </tr> <tr> <th>PORT 1 + SLANT</th><th>PORT 2 - SLANT</th><th>PORT 3 + SLANT</th><th>PORT 4 - SLANT</th> <th>PORT 1 + SLANT</th><th>PORT 2 - SLANT</th><th>PORT 3 + SLANT</th><th>PORT 4 - SLANT</th> <th>PORT 1 + SLANT</th><th>PORT 2 - SLANT</th><th>PORT 3 + SLANT</th><th>PORT 4 - SLANT</th> </tr> </thead> <tbody> <tr> <td>RED</td><td>RED</td><td>RED</td><td>RED</td> <td>BLUE</td><td>BLUE</td><td>BLUE</td><td>BLUE</td> <td>GREEN</td><td>GREEN</td><td>GREEN</td><td>GREEN</td> </tr> <tr> <td>ORANGE</td><td>ORANGE</td><td>RED</td><td>RED</td> <td>ORANGE</td><td>ORANGE</td><td>BLUE</td><td>BLUE</td> <td>ORANGE</td><td>ORANGE</td><td>GREEN</td><td>GREEN</td> </tr> <tr> <td>WHITE (-) PORT</td><td>ORANGE</td><td>ORANGE</td><td>WHITE (-) PORT</td> <td>WHITE (-) PORT</td><td>ORANGE</td><td>ORANGE</td><td>WHITE (-) PORT</td> <td>WHITE (-) PORT</td><td>ORANGE</td><td>ORANGE</td><td>WHITE (-) PORT</td> </tr> <tr> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td> </tr> </tbody> </table>												ALPHA RRH				BETA RRH				GAMMA RRH				PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN	ORANGE	ORANGE	RED	RED	ORANGE	ORANGE	BLUE	BLUE	ORANGE	ORANGE	GREEN	GREEN	WHITE (-) PORT	ORANGE	ORANGE	WHITE (-) PORT	WHITE (-) PORT	ORANGE	ORANGE	WHITE (-) PORT	WHITE (-) PORT	ORANGE	ORANGE	WHITE (-) PORT												
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<p>MICROWAVE RADIO LINKS</p> <p>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.</p> <p>MICROWAVE CABLES WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.</p> <table border="1"> <thead> <tr> <th colspan="2">FORWARD AZIMUTH OF 0–120 DEGREES</th><th colspan="2">FORWARD AZIMUTH OF 120–240 DEGREES</th><th colspan="2">FORWARD AZIMUTH OF 240–359 DEGREES</th> </tr> <tr> <th>PRIMARY</th><th>SECONDARY</th><th>PRIMARY</th><th>SECONDARY</th><th>PRIMARY</th><th>SECONDARY</th> </tr> </thead> <tbody> <tr> <td>WHITE RED WHITE</td><td>WHITE RED WHITE</td><td>WHITE BLUE WHITE</td><td>WHITE WHITE BLUE</td><td>WHITE GREEN WHITE</td><td>WHITE GREEN WHITE</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td> </tr> </tbody> </table>													FORWARD AZIMUTH OF 0–120 DEGREES		FORWARD AZIMUTH OF 120–240 DEGREES		FORWARD AZIMUTH OF 240–359 DEGREES		PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY	WHITE RED WHITE	WHITE RED WHITE	WHITE BLUE WHITE	WHITE WHITE BLUE	WHITE GREEN WHITE	WHITE GREEN WHITE																																																					
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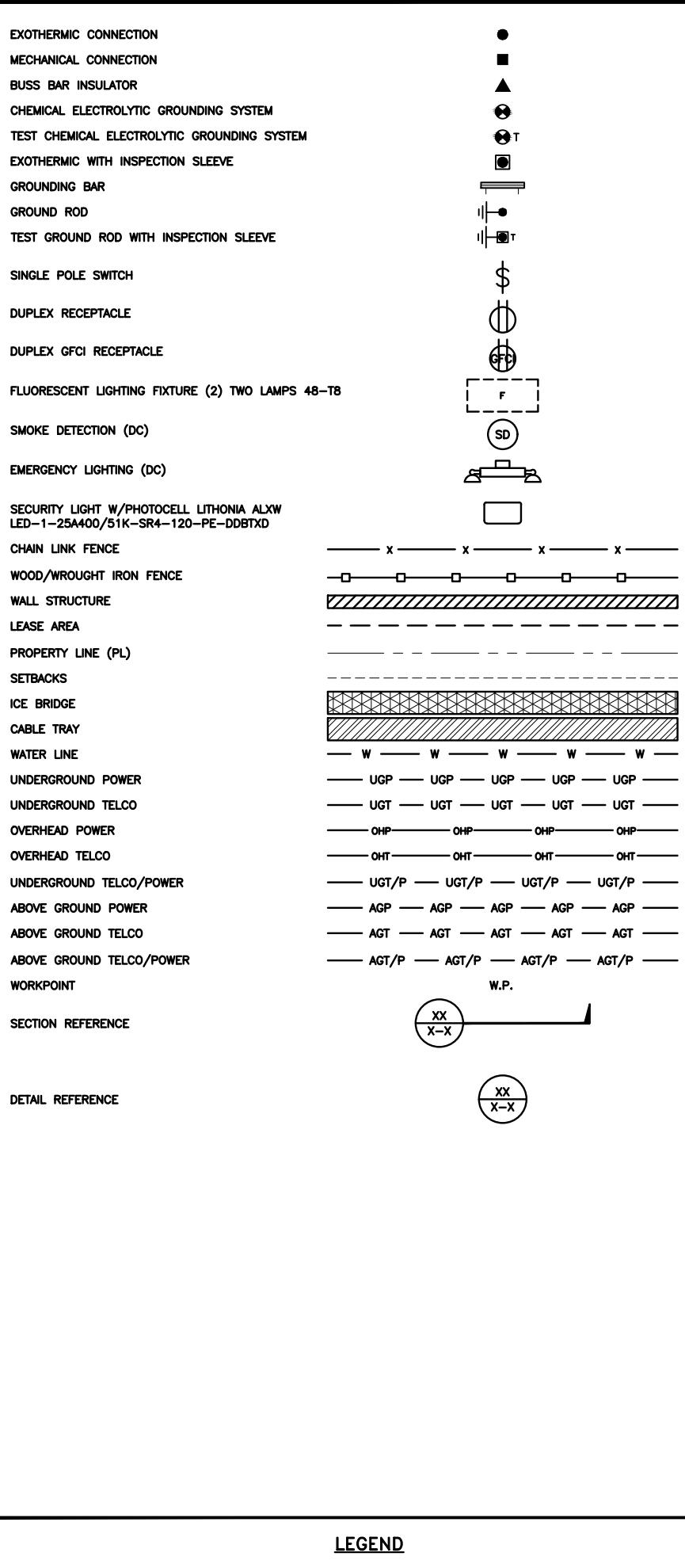
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SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

RF CABLE COLOR CODES	NO SCALE	1	NOT USED	NO SCALE	4
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AB	ANCHOR BOLT	IN	INCH
ABV	ABOVE	INT	INTERIOR
AC	ALTERNATING CURRENT	LB(S)	POUND(S)
ADDL	ADDITIONAL	LF	LINEAR FEET
AFF	ABOVE FINISHED FLOOR	LTE	LONG TERM EVOLUTION
AFG	ABOVE FINISHED GRADE	MAS	MASONRY
AGL	ABOVE GROUND LEVEL	MAX	MAXIMUM
AIC	AMPERAGE INTERRUPTION CAPACITY	MB	MACHINE BOLT
ALUM	ALUMINUM	MECH	MECHANICAL
ALT	ALTERNATE	MFR	MANUFACTURER
ANT	ANTENNA	MGB	MASTER GROUND BAR
APPROX	APPROXIMATE	MIN	MINIMUM
ARCH	ARCHITECTURAL	MISC	MISCELLANEOUS
ATS	AUTOMATIC TRANSFER SWITCH	MTL	METAL
AWG	AMERICAN WIRE GAUGE	MTS	MANUAL TRANSFER SWITCH
BATT	BATTERY	MW	MICROWAVE
BLDG	BUILDING	NEC	NATIONAL ELECTRIC CODE
BLK	BLOCK	NM	NEWTON METERS
BLKG	BLOCKING	NO.	NUMBER
BM	BEAM	#	NUMBER
BTC	BARE TINNED COPPER CONDUCTOR	NTS	NOT TO SCALE
BOF	BOTTOM OF FOOTING	OC	ON-CENTER
CAB	CABINET	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
CANT	CANTILEVERED	OPNG	OPENING
CHG	CHARGING	P/C	PRECAST CONCRETE
CLG	CEILING	PCS	PERSONAL COMMUNICATION SERVICES
CLR	CLEAR	PCU	PRIMARY CONTROL UNIT
COL	COLUMN	PRC	PRIMARY RADIO CABINET
COMM	COMMON	PP	POLARIZING PRESERVING
CONC	CONCRETE	PSF	POUNDS PER SQUARE FOOT
CONSTR	CONSTRUCTION	PSI	POUNDS PER SQUARE INCH
DBL	DOUBLE	PT	PRESSURE TREATED
DC	DIRECT CURRENT	PWR	POWER CABINET
DEPT	DEPARTMENT	QTY	QUANTITY
DF	DOUGLAS FIR	RAD	RADIUS
DIA	DIAMETER	RECT	RECTIFIER
DIAG	DIAGONAL	REF	REFERENCE
DIM	DIMENSION	REINF	REINFORCEMENT
DWG	DRAWING	REQ'D	REQUIRED
DWL	DOWEL	RET	REMOTE ELECTRIC TILT
EA	EACH	RF	RADIO FREQUENCY
EC	ELECTRICAL CONDUCTOR	RMC	RIGID METALLIC CONDUIT
EL	ELEVATION	RRH	REMOTE RADIO HEAD
ELEC	ELECTRICAL	RRU	REMOTE RADIO UNIT
EMT	ELECTRICAL METALLIC TUBING	RWY	RACEWAY
ENG	ENGINEER	SCH	SCHEDULE
EQ	EQUAL	SHT	SHEET
EXP	EXPANSION	SIAD	SMART INTEGRATED ACCESS DEVICE
EXT	EXTERIOR	SIM	SIMILAR
EW	EACH WAY	SPEC	SPECIFICATION
FAB	FABRICATION	SQ	SQUARE
FF	FINISH FLOOR	SS	STAINLESS STEEL
FG	FINISH GRADE	STD	STANDARD
FIF	FACILITY INTERFACE FRAME	STL	STEEL
FIN	FINISH(ED)	TEMP	TEMPORARY
FLR	FLOOR	THK	THICKNESS
FDN	FOUNDATION	TMA	TOWER MOUNTED AMPLIFIER
FOC	FACE OF CONCRETE	TN	TOE NAIL
FOM	FACE OF MASONRY	TOA	TOP OF ANTENNA
FOS	FACE OF STUD	TOC	TOP OF CURB
FOW	FACE OF WALL	TOF	TOP OF FOUNDATION
FS	FINISH SURFACE	TOP	TOP OF PLATE (PARAPET)
FT	FOOT	TOS	TOP OF STEEL
FTG	FOOTING	TOW	TOP OF WALL
GA	GAUGE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
GEN	GENERATOR	TYP	TYPICAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UG	UNDERGROUND
GLB	GLUE LAMINATED BEAM	UL	UNDERWRITERS LABORATORY
GLV	GALVANIZED	UNO	UNLESS NOTED OTHERWISE
GPS	GLOBAL POSITIONING SYSTEM	UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
GND	GROUND	UPS	UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
GSM	GLOBAL SYSTEM FOR MOBILE	VIF	VERIFIED IN FIELD
HDG	HOT DIPPED GALVANIZED	W	WIDE
HDR	HEADER	W/	WITH
HGR	HANGER	WD	WOOD
HVAC	HEAT/VENTILATION/AIR CONDITIONING	WP	WEATHERPROOF
HT	HEIGHT	WT	WEIGHT
IGR	INTERIOR GROUND RING		

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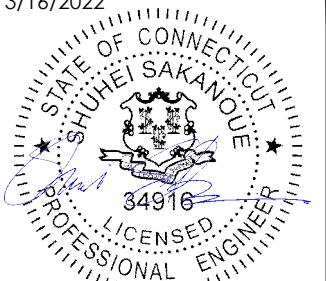
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3/16/2022



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

RFDS REV #:

N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09/13/2020	ISSUED FOR REVIEW
O	03/01/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
6039-Z0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVNO0171A
399 CHESTNUT LAND RD
NEW MILFORD, CT 06776

SHEET TITLE
LEGEND AND
ABBREVIATIONS

SHEET NUMBER

GN-1

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

SIGN PLACEMENT:

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

NOTES:

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

INFORMATION

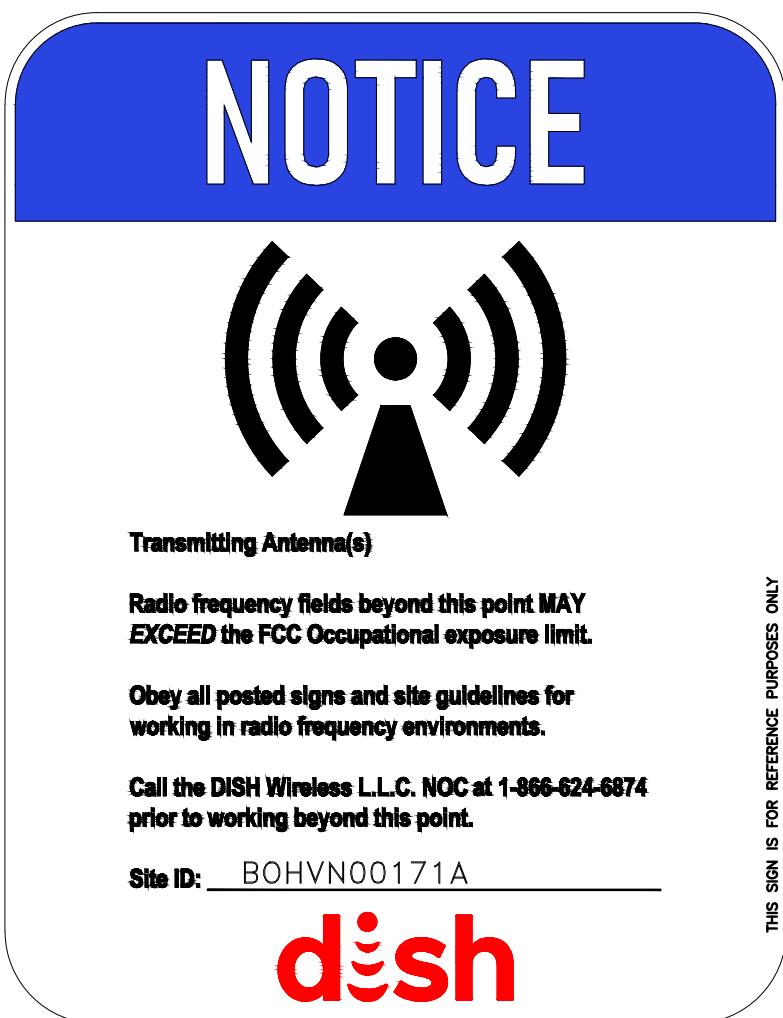
This is an access point to an area with transmitting antennas.

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

Site ID: BOHVN00171A



THIS SIGN IS FOR REFERENCE PURPOSES ONLY



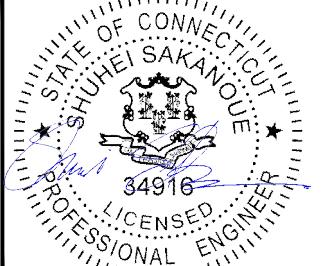
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RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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O	03/01/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
6039-Z0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00171A
399 CHESTNUT LAND RD
NEW MILFORD, CT 06776

SHEET TITLE
RF
SIGNAGE

SHEET NUMBER

GN-2

SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.
2. "LOOK UP" – DISH Wireless L.L.C. AND TOWER OWNER SAFETY CLIMB REQUIREMENT:
THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

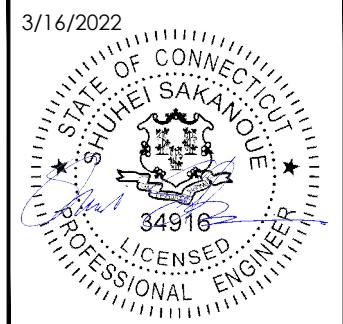
1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER:DISH Wireless L.L.C.
TOWER OWNER:TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

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RFDS REV #: N/A

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00171A
399 CHESTNUT LAND RD
NEW MILFORD, CT 06776

SHEET TITLE
GENERAL NOTES

SHEET NUMBER

GN-3

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'_c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°F AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE–THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (F_y) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
 #4 BARS AND SMALLER 40 ksi
 #5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
 - CONCRETE EXPOSED TO EARTH OR WEATHER:
 - #6 BARS AND LARGER 2"
 - #5 BARS AND SMALLER 1-1/2"
 - CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - SLAB AND WALLS 3/4"
 - BEAMS AND COLUMNS 1-1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
 - 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
 - 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. TIE WRAPS ARE NOT ALLOWED.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75°C (90°C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

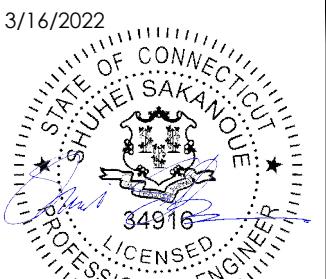
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNTOWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIDGELY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

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DRAWN BY: CHECKED BY: APPROVED BY:

RCD	SS	CJW
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RFDS REV #: N/A

CONSTRUCTION DOCUMENTS
SUBMITTALS

REV	DATE	DESCRIPTION
A	09/13/2020	ISSUED FOR REVIEW
O	03/01/2022	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
6039-Z0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVNO0171A
399 CHESTNUT LAND RD
NEW MILFORD, CT 06776

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.

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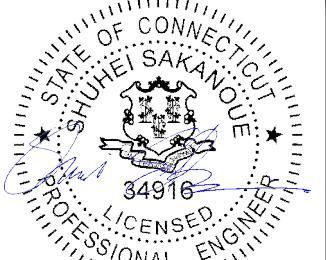
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DRAWN BY: CHECKED BY: APPROVED BY:
RCD SS CJW

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	09/13/2020	ISSUED FOR REVIEW
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A&E PROJECT NUMBER
6039-Z0001-C

DISH Wireless LLC.
PROJECT INFORMATION
BOHVNO0171A
399 CHESTNUT LAND RD
NEW MILFORD, CT 06776

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-5

Exhibit D

Structural Analysis Report



Date: October 07, 2021

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

Subject:	Structural Analysis Report	
Carrier Designation:	DISH Network Co-Locate	
	Site Number:	BOHVN00171A
	Site Name:	CT-CCI-T-876397
Crown Castle Designation:	BU Number:	876397
	Site Name:	NEW MILFORD/ KIMBERLY
	JDE Job Number:	645202
	Work Order Number:	2028133
	Order Number:	553388 Rev. 2
Engineering Firm Designation:	Crown Castle Project Number:	2028133
Site Data:	399 Chestnut Land Rd., NEW MILFORD, LITCHFIELD County, CT Latitude 41° 37' 54.93", Longitude -73° 22' 2.82" 160 Foot - Monopole Tower	

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

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

LC7: Proposed Equipment Configuration

Sufficient Capacity-99.5%

This analysis utilizes an ultimate 3-second gust wind speed of 115 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Matthew Schmitt

Respectfully submitted by:

Maham Barimani, P.E.
Senior Project Engineer

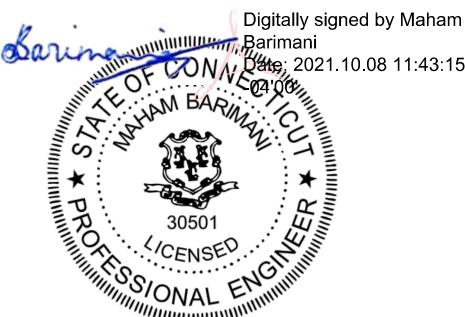


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1) INTRODUCTION

This tower is a 160 ft Monopole tower designed by Engineered Endeavors, Inc. The tower has been modified multiple times to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	115 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	40 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
122.0	122.0	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 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)
160.0	163.0	3	ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe	3	1-5/8
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	ericsson	Radio 4480_TMOV2		
		3	rfs celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 303-1_KCKR-HR-1]		
147.0	149.0	6	antel	LPA-80080/6CF w/ Mount Pipe	7	1-5/8
		6	jma wireless	MX06FIT665-02 w/ Mount Pipe		
		1	rfs celwave	DB-C1-12C-24AB-0Z		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
		3	vzw	Sub6 Antenna - VZS01 w/ Mount Pipe		
	147.0	1	tower mounts	Platform Mount [LP 303-1_HR-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
132.0	133.0	3	ericsson	RRUS 4449 B5/B12	6	1-5/8
		3	ericsson	RRUS 4478 B14		
		3	ericsson	RRUS 8843 B2/B66A		
		2	kathrein	80010964 w/ Mount Pipe		
		4	kathrein	80010965 w/ Mount Pipe		
		3	powerwave technologies	7770.00 w/ Mount Pipe		
		6	powerwave technologies	LGP21401		
		2	raycap	DC6-48-60-18-8C-EV		
		1	raycap	DC6-48-60-18-8F		
		132.0	1	tower mounts		
77.0	77.0	1	tower mounts	Platform Mount [LP 303-1_HR-1]	1	1/2
	76.0	1	gps	GPS_A		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	2158227	CCISITES
4-POST-MODIFICATION INSPECTION	3839077	CCISITES
4-POST-MODIFICATION INSPECTION	2331636	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1614622	CCISITES
4-TOWER MANUFACTURER DRAWINGS	1613541	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3375822	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	2055769	CCISITES

3.1) Analysis Method

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

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L1	160 - 155	Pole	TP18.902x18x0.1875	Pole	10.8%	Pass
L2	155 - 150	Pole	TP19.804x18.902x0.1875	Pole	17.7%	Pass
L3	150 - 145	Pole	TP20.706x19.804x0.1875	Pole	28.7%	Pass
L4	145 - 140	Pole	TP21.608x20.706x0.1875	Pole	39.5%	Pass
L5	140 - 138.66	Pole	TP22.45x21.608x0.1875	Pole	42.2%	Pass
L6	138.66 - 133.66	Pole	TP22.363x21.474x0.25	Pole	38.0%	Pass
L7	133.66 - 128.66	Pole	TP23.253x22.363x0.25	Pole	46.8%	Pass
L8	128.66 - 123.66	Pole	TP24.142x23.253x0.25	Pole	54.8%	Pass
L9	123.66 - 118.66	Pole	TP25.032x24.142x0.25	Pole	64.1%	Pass
L10	118.66 - 113.66	Pole	TP25.921x25.032x0.25	Pole	72.8%	Pass
L11	113.66 - 108.66	Pole	TP26.81x25.921x0.25	Pole	80.5%	Pass
L12	108.66 - 103.66	Pole	TP27.7x26.81x0.25	Pole	87.5%	Pass
L13	103.66 - 101	Pole	TP28.174x27.7x0.25	Pole	91.0%	Pass
L14	101 - 100.75	Pole	TP28.218x28.174x0.25	Pole	91.3%	Pass
L15	100.75 - 95.75	Pole	TP29.107x28.218x0.25	Pole	97.2%	Pass
L16	95.75 - 94.17	Pole	TP30.16x29.107x0.25	Pole	99.0%	Pass
L17	94.17 - 88.83	Pole	TP29.837x28.889x0.3125	Pole	81.6%	Pass
L18	88.83 - 83.83	Pole	TP30.726x29.837x0.3125	Pole	85.0%	Pass
L19	83.83 - 78.83	Pole	TP31.615x30.726x0.3125	Pole	88.2%	Pass
L20	78.83 - 73.83	Pole	TP32.504x31.615x0.3125	Pole	91.1%	Pass
L21	73.83 - 70	Pole	TP33.185x32.504x0.3125	Pole	93.2%	Pass
L22	70 - 69.75	Pole + Reinf.	TP33.229x33.185x0.5125	Reinf. 1 Tension Rupture	89.9%	Pass
L23	69.75 - 64.75	Pole + Reinf.	TP34.118x33.229x0.5	Reinf. 1 Tension Rupture	92.6%	Pass
L24	64.75 - 59.75	Pole + Reinf.	TP35.007x34.118x0.5	Reinf. 1 Tension Rupture	95.0%	Pass
L25	59.75 - 54.75	Pole + Reinf.	TP35.896x35.007x0.4875	Reinf. 1 Tension Rupture	97.3%	Pass
L26	54.75 - 49.75	Pole + Reinf.	TP36.785x35.896x0.4875	Reinf. 1 Tension Rupture	99.4%	Pass
L27	49.75 - 49.63	Pole + Reinf.	TP37.74x36.785x0.4875	Reinf. 1 Tension Rupture	99.5%	Pass
L28	49.63 - 43.38	Pole	TP37.292x36.182x0.375	Pole	85.8%	Pass
L29	43.38 - 38.38	Pole	TP38.181x37.292x0.375	Pole	87.0%	Pass
L30	38.38 - 33.38	Pole	TP39.069x38.181x0.375	Pole	88.1%	Pass
L31	33.38 - 28.38	Pole	TP39.958x39.069x0.375	Pole	89.2%	Pass
L32	28.38 - 23.38	Pole	TP40.846x39.958x0.375	Pole	90.1%	Pass
L33	23.38 - 18.38	Pole	TP41.735x40.846x0.375	Pole	91.0%	Pass
L34	18.38 - 13.38	Pole	TP42.623x41.735x0.375	Pole	91.8%	Pass
L35	13.38 - 8.38	Pole	TP43.512x42.623x0.375	Pole	92.5%	Pass
L36	8.38 - 3.38	Pole	TP44.4x43.512x0.375	Pole	93.2%	Pass
L37	3.38 - 0	Pole	TP45x44.4x0.375	Pole	93.6%	Pass
				Summary		
				Pole	99.0%	Pass
				Reinforcement	99.5%	Pass
				Overall	99.5%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	97.9	Pass
1	Base Plate	0	84.9	Pass
1	Base Foundation (Structure)	0	90.8	Pass
1	Base Foundation (Soil Interaction)	0	79.6	Pass

Structure Rating (max from all components) =	99.5%
---	--------------

Notes:

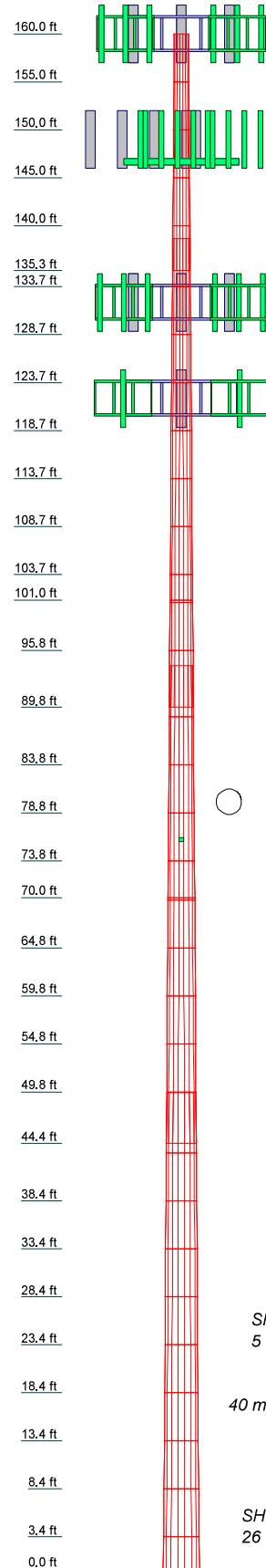
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity.
Rating per TIA-222-H Section 15.5.

4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT



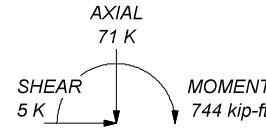
MATERIAL STRENGTH

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

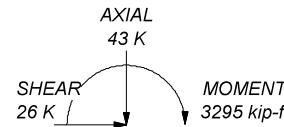
TOWER DESIGN NOTES

1. Tower is located in Litchfield County, Connecticut.
 2. Tower designed for Exposure C to the TIA-222-H Standard.
 3. Tower designed for a 115 mph basic wind in accordance with the TIA-222-H Standard.
 4. Tower is also designed for a 40 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
 5. Deflections are based upon a 60 mph wind.
 6. Tower Risk Category II.
 7. Topographic Category 1 with Crest Height of 0.00 ft
 8. TOWER RATING: 99.5%

ALL REACTIONS ARE FACTORED



*TORQUE 0 kip-ft
40 mph WIND - 1.5000 in ICE*



*TORQUE 2 kip-ft
REACTIONS - 115 mph WIND*



The Foundation for a Wireless World

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15316

Phone: (724) 416-2000
FAX:

Job: **BU 876397**
Project:
Client: Crown Castle Drawn by: Matthew Schmitt App'd:
Code: TIA-222-H Date: 10/07/21 Scale: NTS
Path: C:\Work Area\876397\WO_2028133 - SAI\Prod876397_R.erl Dwg No. E-1

Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

- Tower is located in Litchfield County, Connecticut.
- Tower base elevation above sea level: 980.00 ft.
- Basic wind speed of 115 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.5000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 40 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- TOWER RATING: 99.5%.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	Calculate Redundant Bracing Forces
Consider Moments - Diagonals	✓ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	✓ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
✓ Use Code Stress Ratios	Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
✓ Use Code Safety Factors - Guys	Retention Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	✓ Bypass Mast Stability Checks	✓ Consider Feed Line Torque
Always Use Max Kz	✓ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	✓ Project Wind Area of Appurt.	Use TIA-222-H Bracing Resist.
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Use TIA-222-H Tension Splice
Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Exemption
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Poles
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	✓ Include Shear-Torsion Interaction
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	160.00-155.00	5.00	0.00	18	18.0000	18.9019	0.1875	0.7500	A572-65 (65 ksi)
L2	155.00-150.00	5.00	0.00	18	18.9019	19.8038	0.1875	0.7500	A572-65 (65 ksi)
L3	150.00-145.00	5.00	0.00	18	19.8038	20.7057	0.1875	0.7500	A572-65 (65 ksi)
L4	145.00-140.00	5.00	0.00	18	20.7057	21.6076	0.1875	0.7500	A572-65 (65 ksi)
L5	140.00-135.33	4.67	3.33	18	21.6076	22.4500	0.1875	0.7500	A572-65 (65 ksi)
L6	135.33-133.66	5.00	0.00	18	21.4738	22.3632	0.2500	1.0000	A572-65 (65 ksi)
L7	133.66-128.66	5.00	0.00	18	22.3632	23.2527	0.2500	1.0000	A572-65 (65 ksi)
L8	128.66-123.66	5.00	0.00	18	23.2527	24.1421	0.2500	1.0000	A572-65 (65 ksi)
L9	123.66-118.66	5.00	0.00	18	24.1421	25.0315	0.2500	1.0000	A572-65 (65 ksi)
L10	118.66-113.66	5.00	0.00	18	25.0315	25.9210	0.2500	1.0000	A572-65 (65 ksi)
L11	113.66-108.66	5.00	0.00	18	25.9210	26.8104	0.2500	1.0000	A572-65 (65 ksi)
L12	108.66-103.66	5.00	0.00	18	26.8104	27.6998	0.2500	1.0000	A572-65 (65 ksi)
L13	103.66-101.00	2.66	0.00	18	27.6998	28.1735	0.2500	1.0000	A572-65 (65 ksi)
L14	101.00-100.75	0.25	0.00	18	28.1735	28.2180	0.2500	1.0000	A572-65 (65 ksi)
L15	100.75-95.75	5.00	0.00	18	28.2180	29.1074	0.2500	1.0000	A572-65 (65 ksi)
L16	95.75-89.83	5.92	4.33	18	29.1074	30.1600	0.2500	1.0000	A572-65 (65 ksi)
L17	89.83-88.83	5.33	0.00	18	28.8892	29.8372	0.3125	1.2500	A572-65 (65 ksi)
L18	88.83-83.83	5.00	0.00	18	29.8372	30.7260	0.3125	1.2500	A572-65 (65 ksi)
L19	83.83-78.83	5.00	0.00	18	30.7260	31.6148	0.3125	1.2500	A572-65 (65 ksi)
L20	78.83-73.83	5.00	0.00	18	31.6148	32.5037	0.3125	1.2500	A572-65 (65 ksi)
L21	73.83-70.00	3.83	0.00	18	32.5037	33.1850	0.3125	1.2500	A572-65 (65 ksi)
L22	70.00-69.75	0.25	0.00	18	33.1850	33.2295	0.5125	2.0500	A572-65 (65 ksi)
L23	69.75-64.75	5.00	0.00	18	33.2295	34.1183	0.5000	2.0000	A572-65 (65 ksi)
L24	64.75-59.75	5.00	0.00	18	34.1183	35.0071	0.5000	2.0000	A572-65 (65 ksi)
L25	59.75-54.75	5.00	0.00	18	35.0071	35.8959	0.4875	1.9500	A572-65 (65 ksi)
L26	54.75-49.75	5.00	0.00	18	35.8959	36.7847	0.4875	1.9500	A572-65 (65 ksi)
L27	49.75-44.38	5.37	5.25	18	36.7847	37.7400	0.4875	1.9500	A572-65 (65 ksi)
L28	44.38-43.38	6.25	0.00	18	36.1817	37.2923	0.3750	1.5000	A572-65 (65 ksi)
L29	43.38-38.38	5.00	0.00	18	37.2923	38.1808	0.3750	1.5000	A572-65 (65 ksi)
L30	38.38-33.38	5.00	0.00	18	38.1808	39.0693	0.3750	1.5000	A572-65 (65 ksi)
L31	33.38-28.38	5.00	0.00	18	39.0693	39.9577	0.3750	1.5000	A572-65 (65 ksi)
L32	28.38-23.38	5.00	0.00	18	39.9577	40.8462	0.3750	1.5000	A572-65 (65 ksi)
L33	23.38-18.38	5.00	0.00	18	40.8462	41.7347	0.3750	1.5000	A572-65 (65 ksi)
L34	18.38-13.38	5.00	0.00	18	41.7347	42.6232	0.3750	1.5000	A572-65 (65 ksi)
L35	13.38-8.38	5.00	0.00	18	42.6232	43.5116	0.3750	1.5000	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L36	8.38-3.38	5.00	0.00	18	43.5116	44.4001	0.3750	1.5000	(65 ksi) A572-65
L37	3.38-0.00	3.38		18	44.4001	45.0000	0.3750	1.5000	(65 ksi) A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
L1	18.2488	10.6007	424.9328	6.3234	9.1440	46.4712	850.4248	5.3013	2.8380	15.136
	19.1646	11.1374	492.8034	6.6436	9.6022	51.3221	986.2553	5.5698	2.9967	15.983
L2	19.1646	11.1374	492.8034	6.6436	9.6022	51.3221	986.2553	5.5698	2.9967	15.983
	20.0804	11.6742	567.5415	6.9638	10.0603	56.4138	1135.8298	5.8382	3.1555	16.829
L3	20.0804	11.6742	567.5415	6.9638	10.0603	56.4138	1135.8298	5.8382	3.1555	16.829
	20.9962	12.2109	649.4779	7.2840	10.5185	61.7462	1299.8105	6.1066	3.3142	17.676
L4	20.9962	12.2109	649.4779	7.2840	10.5185	61.7462	1299.8105	6.1066	3.3142	17.676
	21.9120	12.7476	738.9437	7.6041	10.9767	67.3195	1478.8598	6.3750	3.4729	18.522
L5	21.9120	12.7476	738.9437	7.6041	10.9767	67.3195	1478.8598	6.3750	3.4729	18.522
	22.7674	13.2490	829.5975	7.9032	11.4046	72.7424	1660.2866	6.6257	3.6212	19.313
L6	22.3685	16.8411	958.4141	7.5344	10.9087	87.8579	1918.0893	8.4221	3.3394	13.358
	22.6696	17.5468	1084.0282	7.8502	11.3605	95.4207	2169.4827	8.7751	3.4959	13.984
L7	22.6696	17.5468	1084.0282	7.8502	11.3605	95.4207	2169.4827	8.7751	3.4959	13.984
	23.5728	18.2526	1220.1646	8.1659	11.8124	103.2957	2441.9347	9.1280	3.6525	14.61
L8	23.5728	18.2526	1220.1646	8.1659	11.8124	103.2957	2441.9347	9.1280	3.6525	14.61
	24.4760	18.9584	1367.2467	8.4817	12.2642	111.4829	2736.2924	9.4810	3.8090	15.236
L9	24.4760	18.9584	1367.2467	8.4817	12.2642	111.4829	2736.2924	9.4810	3.8090	15.236
	25.3791	19.6641	1525.6976	8.7974	12.7160	119.9824	3053.4028	9.8339	3.9655	15.862
L10	25.3791	19.6641	1525.6976	8.7974	12.7160	119.9824	3053.4028	9.8339	3.9655	15.862
	26.2823	20.3699	1695.9406	9.1132	13.1678	128.7941	3394.1129	10.1869	4.1221	16.488
L11	26.2823	20.3699	1695.9406	9.1132	13.1678	128.7941	3394.1129	10.1869	4.1221	16.488
	27.1854	21.0757	1878.3990	9.4289	13.6197	137.9180	3759.2696	10.5398	4.2786	17.115
L12	27.1854	21.0757	1878.3990	9.4289	13.6197	137.9180	3759.2696	10.5398	4.2786	17.115
	28.0886	21.7814	2073.4959	9.7447	14.0715	147.3542	4149.7202	10.8928	4.4352	17.741
L13	28.0886	21.7814	2073.4959	9.7447	14.0715	147.3542	4149.7202	10.8928	4.4352	17.741
	28.5696	22.1573	2182.7085	9.9129	14.3122	152.5073	4368.2891	11.0808	4.5185	18.074
L14	28.5696	22.1573	2182.7085	9.9129	14.3122	152.5073	4368.2891	11.0808	4.5185	18.074
	28.6148	22.1926	2193.1538	9.9286	14.3347	152.9956	4389.1935	11.0984	4.5264	18.105
L15	28.6148	22.1926	2193.1538	9.9286	14.3347	152.9956	4389.1935	11.0984	4.5264	18.105
	29.5179	22.8984	2409.1174	10.2444	14.7866	162.9259	4821.4048	11.4514	4.6829	18.732
L16	29.5179	22.8984	2409.1174	10.2444	14.7866	162.9259	4821.4048	11.4514	4.6829	18.732
	30.5867	23.7336	2682.4623	10.6181	15.3213	175.0808	5368.4542	11.8690	4.8682	19.473
L17	30.0688	28.3445	2924.3637	10.1447	14.6757	199.2654	5852.5753	14.1750	4.5345	14.51
	30.2493	29.2848	3225.1646	10.4813	15.1573	212.7795	6454.5730	14.6452	4.7014	15.044
L18	30.2493	29.2848	3225.1646	10.4813	15.1573	212.7795	6454.5730	14.6452	4.7014	15.044
	31.1518	30.1664	3525.2918	10.7968	15.6088	225.8525	7055.2222	15.0861	4.8578	15.545
L19	31.1518	30.1664	3525.2918	10.7968	15.6088	225.8525	7055.2222	15.0861	4.8578	15.545
	32.0543	31.0480	3843.4837	11.1123	16.0603	239.3152	7692.0247	15.5270	5.0142	16.045
L20	32.0543	31.0480	3843.4837	11.1123	16.0603	239.3152	7692.0247	15.5270	5.0142	16.045
	32.9569	31.9296	4180.2682	11.4279	16.5119	253.1677	8366.0369	15.9678	5.1706	16.546
L21	32.9569	31.9296	4180.2682	11.4279	16.5119	253.1677	8366.0369	15.9678	5.1706	16.546
	33.6487	32.6054	4451.3667	11.6697	16.8580	264.0509	8908.5907	16.3058	5.2906	16.93
L22	33.6179	53.1476	7167.8041	11.5987	16.8580	425.1873	14345.039	26.5788	4.9386	9.636
	33.6630	53.2199	7197.0924	11.6145	16.8806	426.3537	14403.655	26.6150	4.9464	9.651
L23	33.6649	51.9417	7029.6047	11.6190	16.8806	416.4318	14068.459	25.9758	4.9684	9.937
	34.5675	53.3522	7617.9921	11.9345	17.3321	439.5313	15246.008	26.6812	5.1248	10.25
L24	34.5675	53.3522	7617.9921	11.9345	17.3321	439.5313	15246.008	26.6812	5.1248	10.25
	35.4700	54.7627	8238.3288	12.2500	17.7836	463.2543	16487.497	27.3866	5.2812	10.562
L25	35.4719	53.4130	8041.1027	12.2545	17.7836	452.1640	16092.786	26.7116	5.3032	10.878

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	It/Q in ²	w in	w/t
	36.3744	54.7883	8678.3605	12.5700	18.2351	475.9148	17368.140	27.3994	5.4597	11.199
L26	36.3744	54.7883	8678.3605	12.5700	18.2351	475.9148	17368.140	27.3994	5.4597	11.199
	37.2770	56.1636	9348.4275	12.8855	18.6866	500.2736	18709.156	28.0871	5.6161	11.52
L27	37.2770	56.1636	9348.4275	12.8855	18.6866	500.2736	18709.156	28.0871	5.6161	11.52
	38.2470	57.6417	10106.138	13.2246	19.1719	527.1323	20225.575	28.8263	5.7842	11.865
L28	37.6293	42.6190	6903.5152	12.7114	18.3803	375.5926	13816.114	21.3135	5.7080	15.221
	37.8098	43.9409	7566.0069	13.1057	18.9445	399.3773	15141.969	21.9746	5.9035	15.743
L29	37.8098	43.9409	7566.0069	13.1057	18.9445	399.3773	15141.969	21.9746	5.9035	15.743
	38.7120	44.9984	8125.5208	13.4211	19.3959	418.9309	16261.733	22.5035	6.0598	16.16
L30	38.7120	44.9984	8125.5208	13.4211	19.3959	418.9309	16261.733	22.5035	6.0598	16.16
	39.6141	46.0559	8711.9607	13.7365	19.8472	438.9518	17435.384	23.0323	6.2162	16.577
L31	39.6141	46.0559	8711.9607	13.7365	19.8472	438.9518	17435.384	23.0323	6.2162	16.577
	40.5163	47.1134	9325.9594	14.0519	20.2985	459.4400	18664.190	23.5612	6.3726	16.994
L32	40.5163	47.1134	9325.9594	14.0519	20.2985	459.4400	18664.190	23.5612	6.3726	16.994
	41.4185	48.1709	9968.1496	14.3673	20.7499	480.3955	19949.415	24.0900	6.5289	17.41
L33	41.4185	48.1709	9968.1496	14.3673	20.7499	480.3955	19949.415	24.0900	6.5289	17.41
	42.3207	49.2284	10639.164	14.6827	21.2012	501.8184	21292.327	24.6189	6.6853	17.827
L34	42.3207	49.2284	10639.164	14.6827	21.2012	501.8184	21292.327	24.6189	6.6853	17.827
	43.2228	50.2859	11339.636	14.9981	21.6526	523.7086	22694.193	25.1477	6.8417	18.244
L35	43.2228	50.2859	11339.636	14.9981	21.6526	523.7086	22694.193	25.1477	6.8417	18.244
	44.1250	51.3434	12070.197	15.3135	22.1039	546.0662	24156.277	25.6766	6.9980	18.661
L36	44.1250	51.3434	12070.197	15.3135	22.1039	546.0662	24156.277	25.6766	6.9980	18.661
	45.0272	52.4009	12831.482	15.6289	22.5553	568.8911	25679.848	26.2054	7.1544	19.078
L37	45.0272	52.4009	12831.482	15.6289	22.5553	568.8911	25679.848	26.2054	7.1544	19.078
	45.6363	53.1149	13363.195	15.8419	22.8600	584.5667	26743.975	26.5625	7.2600	19.36

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolts	Double Angle Diagonals	Double Angle Stitch Bolts	Double Angle Horizontals	Double Angle Redundants
ft	ft ²	in					in	in	in	in	in
L1 160.00-				1	1	1					
155.00											
L2 155.00-				1	1	1					
150.00											
L3 150.00-				1	1	1					
145.00											
L4 145.00-				1	1	1					
140.00											
L5 140.00-				1	1	1					
135.33											
L6 135.33-				1	1	1					
133.66											

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
L7 133.66-128.66				1	1	1			
L8 128.66-123.66				1	1	1			
L9 123.66-118.66				1	1	1			
L10 118.66-113.66				1	1	1			
L11 113.66-108.66				1	1	1			
L12 108.66-103.66				1	1	1			
L13 103.66-101.00				1	1	1			
L14 101.00-100.75				1	1	1			
L15 100.75-95.75				1	1	1			
L16 95.75-89.83				1	1	1			
L17 89.83-88.83				1	1	1			
L18 88.83-83.83				1	1	1			
L19 83.83-78.83				1	1	1			
L20 78.83-73.83				1	1	1			
L21 73.83-70.00				1	1	1			
L22 70.00-69.75				1	1	0.951715			
L23 69.75-64.75				1	1	0.965879			
L24 64.75-59.75				1	1	0.957099			
L25 59.75-54.75				1	1	0.972743			
L26 54.75-49.75				1	1	0.96462			
L27 49.75-44.38				1	1	0.964424			
L28 44.38-43.38				1	1	1			
L29 43.38-38.38				1	1	1			
L30 38.38-33.38				1	1	1			
L31 33.38-28.38				1	1	1			
L32 28.38-23.38				1	1	1			
L33 23.38-18.38				1	1	1			
L34 18.38-13.38				1	1	1			
L35 13.38-8.38				1	1	1			
L36 8.38-3.38				1	1	1			
L37 3.38-0.00				1	1	1			

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 Diamete r in	Perimeter in	Weight plf

(Area) Sabre MS600 (1.00x6.00)	A	No	Surface Af (CaAa)	72.00 - 47.00	1	1	0.500	6.0000	14.0000	0.00
(Area) Sabre MS600 (1.00x6.00)	B	No	Surface Af (CaAa)	72.00 - 47.00	1	1	0.500	6.0000	14.0000	0.00
(Area) Sabre MS600 (1.00x6.00)	C	No	Surface Af (CaAa)	72.00 - 47.00	1	1	0.500	6.0000	14.0000	0.00
*										
(Area) Sabre MS450 (1.00x4.50)	A	No	Surface Af (CaAa)	102.50 - 92.50	1	1	0.500	4.5000	11.0000	0.00
(Area) Sabre MS450 (1.00x4.50)	B	No	Surface Af (CaAa)	102.50 - 92.50	1	1	0.500	4.5000	11.0000	0.00
(Area) Sabre MS450 (1.00x4.50)	C	No	Surface Af (CaAa)	102.50 - 92.50	1	1	0.500	4.5000	11.0000	0.00

CU12PSM9P6XXX(1-1/2)	A	No	Surface Ar (CaAa)	122.00 - 0.00	1	1	-0.300	1.6000		2.35

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	CAAA	Weight
							ft ² /ft	plf
HB158-21U6S24-xxM_TMO(1-5/8)	C	No	No	Inside Pole	160.00 - 0.00	3	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
*								
LDF7-50A(1-5/8)	B	No	No	Inside Pole	147.00 - 0.00	7	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
*								
LDF7-50A(1-5/8)	A	No	No	Inside Pole	132.00 - 0.00	6	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
*								
FB-L98B-002-75000(3/8)	A	No	No	Inside Pole	132.00 - 0.00	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
*								
WR-VG122ST-BRDA(7/16)	A	No	No	Inside Pole	132.00 - 0.00	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
*								
WR-VG86ST-BRD(3/4)	A	No	No	Inside Pole	132.00 - 0.00	4	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
*								
2" Flexible Conduit	A	No	No	Inside Pole	132.00 - 0.00	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
*								
LDF4-50A(1/2)	A	No	No	Inside Pole	77.00 - 0.00	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
**								
3/8" Ground	B	No	No	Inside Pole	147.00 - 0.00	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
**								

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C _{AA}	Weight
							ft ² /ft	plf

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight
							K
L1	160.00-155.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.04
L2	155.00-150.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.04
L3	150.00-145.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.04
L4	145.00-140.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.04
L5	140.00-135.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.04
L6	135.33-133.66	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L7	133.66-128.66	A	0.000	0.000	0.000	0.000	0.03
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.04
L8	128.66-123.66	A	0.000	0.000	0.000	0.000	0.04
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.04
L9	123.66-118.66	A	0.000	0.000	0.534	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.04
L10	118.66-113.66	A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.04
L11	113.66-108.66	A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.04
L12	108.66-103.66	A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.04
L13	103.66-101.00	A	0.000	0.000	1.551	0.000	0.03
		B	0.000	0.000	1.125	0.000	0.02
		C	0.000	0.000	1.125	0.000	0.02
L14	101.00-100.75	A	0.000	0.000	0.228	0.000	0.00
		B	0.000	0.000	0.188	0.000	0.00
		C	0.000	0.000	0.188	0.000	0.00
L15	100.75-95.75	A	0.000	0.000	4.550	0.000	0.05
		B	0.000	0.000	3.750	0.000	0.03
		C	0.000	0.000	3.750	0.000	0.04
L16	95.75-89.83	A	0.000	0.000	3.384	0.000	0.06
		B	0.000	0.000	2.438	0.000	0.04
		C	0.000	0.000	2.438	0.000	0.04
L17	89.83-88.83	A	0.000	0.000	0.160	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L18	88.83-83.83	A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.04
L19	83.83-78.83	A	0.000	0.000	0.800	0.000	0.05

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	$C_A A_A$ In Face ft^2	$C_A A_A$ Out Face ft^2	Weight
							K
L20	78.83-73.83	B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.04
		A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
L21	73.83-70.00	C	0.000	0.000	0.000	0.000	0.04
		A	0.000	0.000	2.613	0.000	0.04
		B	0.000	0.000	2.000	0.000	0.02
L22	70.00-69.75	C	0.000	0.000	2.000	0.000	0.03
		A	0.000	0.000	0.290	0.000	0.00
		B	0.000	0.000	0.250	0.000	0.00
L23	69.75-64.75	C	0.000	0.000	0.250	0.000	0.00
		A	0.000	0.000	5.800	0.000	0.05
		B	0.000	0.000	5.000	0.000	0.03
L24	64.75-59.75	C	0.000	0.000	5.000	0.000	0.04
		A	0.000	0.000	5.800	0.000	0.05
		B	0.000	0.000	5.000	0.000	0.03
L25	59.75-54.75	C	0.000	0.000	5.000	0.000	0.04
		A	0.000	0.000	5.800	0.000	0.05
		B	0.000	0.000	5.000	0.000	0.03
L26	54.75-49.75	C	0.000	0.000	5.000	0.000	0.04
		A	0.000	0.000	5.800	0.000	0.05
		B	0.000	0.000	5.000	0.000	0.03
L27	49.75-44.38	C	0.000	0.000	5.000	0.000	0.04
		A	0.000	0.000	3.610	0.000	0.06
		B	0.000	0.000	2.750	0.000	0.03
L28	44.38-43.38	C	0.000	0.000	2.750	0.000	0.04
		A	0.000	0.000	0.160	0.000	0.01
		B	0.000	0.000	0.000	0.000	0.01
L29	43.38-38.38	C	0.000	0.000	0.000	0.000	0.01
		A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
L30	38.38-33.38	C	0.000	0.000	0.000	0.000	0.04
		A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
L31	33.38-28.38	C	0.000	0.000	0.000	0.000	0.04
		A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
L32	28.38-23.38	C	0.000	0.000	0.000	0.000	0.04
		A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
L33	23.38-18.38	C	0.000	0.000	0.000	0.000	0.04
		A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
L34	18.38-13.38	C	0.000	0.000	0.000	0.000	0.04
		A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
L35	13.38-8.38	C	0.000	0.000	0.000	0.000	0.04
		A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
L36	8.38-3.38	C	0.000	0.000	0.000	0.000	0.04
		A	0.000	0.000	0.800	0.000	0.05
		B	0.000	0.000	0.000	0.000	0.03
L37	3.38-0.00	C	0.000	0.000	0.000	0.000	0.04
		A	0.000	0.000	0.540	0.000	0.02
		B	0.000	0.000	0.000	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.03

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	$C_A A_A$ In Face ft^2	$C_A A_A$ Out Face ft^2	Weight
								K
L1	160.00-155.00	A	1.491	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
L2	155.00-150.00	A	1.486	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	$C_A A_A$ In Face ft^2	$C_A A_A$ Out Face ft^2	Weight K
L3	150.00-145.00	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.04
		A	1.481	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.04
		A	1.476	0.000	0.000	0.000	0.000	0.00
L4	145.00-140.00	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.471	0.000	0.000	0.000	0.000	0.00
L5	140.00-135.33	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.471	0.000	0.000	0.000	0.000	0.00
L6	135.33-133.66	B		0.000	0.000	0.000	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.01
		A	1.467	0.000	0.000	0.000	0.000	0.00
L7	133.66-128.66	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.464	0.000	0.000	0.000	0.000	0.03
L8	128.66-123.66	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.458	0.000	0.000	0.000	0.000	0.04
L9	123.66-118.66	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.452	0.000	0.000	1.503	0.000	0.07
L10	118.66-113.66	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.446	0.000	0.000	2.246	0.000	0.08
L11	113.66-108.66	B		0.000	0.000	2.240	0.000	0.08
		C		0.000	0.000	0.000	0.000	0.03
		A	1.440	0.000	0.000	0.000	0.000	0.04
L12	108.66-103.66	B		0.000	0.000	2.233	0.000	0.08
		C		0.000	0.000	0.000	0.000	0.04
		A	1.433	0.000	0.000	0.000	0.000	0.04
L13	103.66-101.00	B		0.000	0.000	2.554	0.000	0.06
		C		0.000	0.000	1.368	0.000	0.03
		A	1.428	0.000	0.000	1.368	0.000	0.03
L14	101.00-100.75	B		0.000	0.000	0.339	0.000	0.01
		C		0.000	0.000	0.228	0.000	0.00
		A	1.426	0.000	0.000	0.228	0.000	0.00
L15	100.75-95.75	B		0.000	0.000	6.778	0.000	0.12
		C		0.000	0.000	4.556	0.000	0.08
		A	1.422	0.000	0.000	4.556	0.000	0.08
L16	95.75-89.83	B		0.000	0.000	5.579	0.000	0.12
		C		0.000	0.000	2.959	0.000	0.06
		A	1.414	0.000	0.000	2.959	0.000	0.07
L17	89.83-88.83	B		0.000	0.000	0.443	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.01
		A	1.409	0.000	0.000	0.000	0.000	0.01
L18	88.83-83.83	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.404	0.000	0.000	2.204	0.000	0.08
L19	83.83-78.83	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.395	0.000	0.000	2.195	0.000	0.08
L20	78.83-73.83	B		0.000	0.000	2.187	0.000	0.08
		C		0.000	0.000	0.000	0.000	0.03
		A	1.387	0.000	0.000	0.000	0.000	0.04
L21	73.83-70.00	B		0.000	0.000	4.221	0.000	0.08
		C		0.000	0.000	2.551	0.000	0.04
		A	1.378	0.000	0.000	2.551	0.000	0.05
L22	70.00-69.75	B		0.000	0.000	0.427	0.000	0.01
		C		0.000	0.000	0.319	0.000	0.00
		A	1.374	0.000	0.000	0.319	0.000	0.00
L23	69.75-64.75	B		0.000	0.000	8.538	0.000	0.13
		C		0.000	0.000	6.369	0.000	0.08
		A	1.369	0.000	0.000	6.369	0.000	0.09
L24	64.75-59.75	B		0.000	0.000	8.517	0.000	0.13
		C		0.000	0.000	6.359	0.000	0.08
		A	1.359	0.000	0.000	6.359	0.000	0.09
L25	59.75-54.75	A	1.347	0.000	0.000	8.494	0.000	0.13

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L26	54.75-49.75	B		0.000	0.000	6.347	0.000	0.08
		C		0.000	0.000	6.347	0.000	0.09
		A	1.335	0.000	0.000	8.470	0.000	0.13
		B		0.000	0.000	6.335	0.000	0.08
		C		0.000	0.000	6.335	0.000	0.09
		A	1.321	0.000	0.000	5.756	0.000	0.11
L27	49.75-44.38	B		0.000	0.000	3.477	0.000	0.06
		C		0.000	0.000	3.477	0.000	0.07
		A	1.312	0.000	0.000	0.424	0.000	0.02
L28	44.38-43.38	B		0.000	0.000	0.000	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.01
		A	1.303	0.000	0.000	2.103	0.000	0.08
L29	43.38-38.38	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.286	0.000	0.000	2.086	0.000	0.08
L30	38.38-33.38	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.267	0.000	0.000	2.067	0.000	0.08
L31	33.38-28.38	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.244	0.000	0.000	2.044	0.000	0.08
L32	28.38-23.38	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.218	0.000	0.000	2.018	0.000	0.08
L33	23.38-18.38	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.185	0.000	0.000	1.985	0.000	0.07
L34	18.38-13.38	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.141	0.000	0.000	1.941	0.000	0.07
L35	13.38-8.38	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.114	0.000	0.000	1.873	0.000	0.07
L36	8.38-3.38	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.04
		A	1.073	0.000	0.000	1.179	0.000	0.05
L37	3.38-0.00	B		0.000	0.000	0.000	0.000	0.02
		C		0.000	0.000	0.000	0.000	0.03

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
L1	160.00-155.00	0.0000	0.0000	0.0000	0.0000
L2	155.00-150.00	0.0000	0.0000	0.0000	0.0000
L3	150.00-145.00	0.0000	0.0000	0.0000	0.0000
L4	145.00-140.00	0.0000	0.0000	0.0000	0.0000
L5	140.00-135.33	0.0000	0.0000	0.0000	0.0000
L6	135.33-133.66	0.0000	0.0000	0.0000	0.0000
L7	133.66-128.66	0.0000	0.0000	0.0000	0.0000
L8	128.66-123.66	0.0000	0.0000	0.0000	0.0000
L9	123.66-118.66	-0.8615	0.0905	-1.2765	0.1342
L10	118.66-113.66	-1.2442	0.1308	-1.8209	0.1914
L11	113.66-108.66	-1.2456	0.1309	-1.8271	0.1920
L12	108.66-103.66	-1.2468	0.1310	-1.8325	0.1926
L13	103.66-101.00	-0.7459	0.0784	-1.2819	0.1347
L14	101.00-100.75	-0.5713	0.0600	-1.0429	0.1096
L15	100.75-95.75	-0.5763	0.0606	-1.0500	0.1104
L16	95.75-89.83	-0.7708	0.0810	-1.3146	0.1382
L17	89.83-88.83	-1.2504	0.1314	-1.8453	0.1939
L18	88.83-83.83	-1.2510	0.1315	-1.8429	0.1937
L19	83.83-78.83	-1.2520	0.1316	-1.8448	0.1939
L20	78.83-73.83	-1.2529	0.1317	-1.8459	0.1940
L21	73.83-70.00	-0.7305	0.0768	-1.2357	0.1299

Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	ft	in	in	in	in
L22	70.00-69.75	-0.5319	0.0559	-0.9530	0.1002
L23	69.75-64.75	-0.5361	0.0563	-0.9583	0.1007
L24	64.75-59.75	-0.5439	0.0572	-0.9679	0.1017
L25	59.75-54.75	-0.5515	0.0580	-0.9769	0.1027
L26	54.75-49.75	-0.5590	0.0588	-0.9851	0.1035
L27	49.75-44.38	-0.7745	0.0814	-1.2798	0.1345
L28	44.38-43.38	-1.2577	0.1322	-1.8359	0.1930
L29	43.38-38.38	-1.2581	0.1322	-1.8250	0.1918
L30	38.38-33.38	-1.2588	0.1323	-1.8176	0.1910
L31	33.38-28.38	-1.2594	0.1324	-1.8081	0.1900
L32	28.38-23.38	-1.2600	0.1324	-1.7961	0.1888
L33	23.38-18.38	-1.2606	0.1325	-1.7805	0.1871
L34	18.38-13.38	-1.2611	0.1325	-1.7597	0.1850
L35	13.38-8.38	-1.2616	0.1326	-1.7301	0.1818
L36	8.38-3.38	-1.2621	0.1327	-1.6813	0.1767
L37	3.38-0.00	-1.2625	0.1327	-1.5859	0.1667

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L9	23	CU12PSM9P6XXX(1-1/2)	118.66 - 122.00	1.0000	1.0000
L10	23	CU12PSM9P6XXX(1-1/2)	113.66 - 118.66	1.0000	1.0000
L11	23	CU12PSM9P6XXX(1-1/2)	108.66 - 113.66	1.0000	1.0000
L12	23	CU12PSM9P6XXX(1-1/2)	103.66 - 108.66	1.0000	1.0000
L13	19	(Area) Sabre MS450 (1.00x4.50)	101.00 - 102.50	1.0000	1.0000
L13	20	(Area) Sabre MS450 (1.00x4.50)	101.00 - 102.50	1.0000	1.0000
L13	21	(Area) Sabre MS450 (1.00x4.50)	101.00 - 102.50	1.0000	1.0000
L13	23	CU12PSM9P6XXX(1-1/2)	101.00 - 103.66	1.0000	1.0000
L14	19	(Area) Sabre MS450 (1.00x4.50)	100.75 - 101.00	1.0000	1.0000
L14	20	(Area) Sabre MS450 (1.00x4.50)	100.75 - 101.00	1.0000	1.0000
L14	21	(Area) Sabre MS450 (1.00x4.50)	100.75 - 101.00	1.0000	1.0000
L14	23	CU12PSM9P6XXX(1-1/2)	100.75 - 101.00	1.0000	1.0000
L15	19	(Area) Sabre MS450 (1.00x4.50)	95.75 - 100.75	1.0000	1.0000
L15	20	(Area) Sabre MS450 (1.00x4.50)	95.75 - 100.75	1.0000	1.0000
L15	21	(Area) Sabre MS450 (1.00x4.50)	95.75 - 100.75	1.0000	1.0000
L15	23	CU12PSM9P6XXX(1-1/2)	95.75 - 100.75	1.0000	1.0000
L16	19	(Area) Sabre MS450 (1.00x4.50)	92.50 - 95.75	1.0000	1.0000
L16	20	(Area) Sabre MS450 (1.00x4.50)	92.50 - 95.75	1.0000	1.0000
L16	21	(Area) Sabre MS450 (1.00x4.50)	92.50 - 95.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L16	23	CU12PSM9P6XXX(1-1/2)	89.83 - 95.75	1.0000	1.0000
L17	23	CU12PSM9P6XXX(1-1/2)	88.83 - 89.83	1.0000	1.0000
L18	23	CU12PSM9P6XXX(1-1/2)	83.83 - 88.83	1.0000	1.0000
L19	23	CU12PSM9P6XXX(1-1/2)	78.83 - 83.83	1.0000	1.0000
L20	23	CU12PSM9P6XXX(1-1/2)	73.83 - 78.83	1.0000	1.0000
L21	15	(Area) Sabre MS600 (1.00x6.00)	70.00 - 72.00	1.0000	1.0000
L21	16	(Area) Sabre MS600 (1.00x6.00)	70.00 - 72.00	1.0000	1.0000
L21	17	(Area) Sabre MS600 (1.00x6.00)	70.00 - 72.00	1.0000	1.0000
L21	23	CU12PSM9P6XXX(1-1/2)	70.00 - 73.83	1.0000	1.0000
L22	15	(Area) Sabre MS600 (1.00x6.00)	69.75 - 70.00	1.0000	1.0000
L22	16	(Area) Sabre MS600 (1.00x6.00)	69.75 - 70.00	1.0000	1.0000
L22	17	(Area) Sabre MS600 (1.00x6.00)	69.75 - 70.00	1.0000	1.0000
L22	23	CU12PSM9P6XXX(1-1/2)	69.75 - 70.00	1.0000	1.0000
L23	15	(Area) Sabre MS600 (1.00x6.00)	64.75 - 69.75	1.0000	1.0000
L23	16	(Area) Sabre MS600 (1.00x6.00)	64.75 - 69.75	1.0000	1.0000
L23	17	(Area) Sabre MS600 (1.00x6.00)	64.75 - 69.75	1.0000	1.0000
L23	23	CU12PSM9P6XXX(1-1/2)	64.75 - 69.75	1.0000	1.0000
L24	15	(Area) Sabre MS600 (1.00x6.00)	59.75 - 64.75	1.0000	1.0000
L24	16	(Area) Sabre MS600 (1.00x6.00)	59.75 - 64.75	1.0000	1.0000
L24	17	(Area) Sabre MS600 (1.00x6.00)	59.75 - 64.75	1.0000	1.0000
L24	23	CU12PSM9P6XXX(1-1/2)	59.75 - 64.75	1.0000	1.0000
L25	15	(Area) Sabre MS600 (1.00x6.00)	54.75 - 59.75	1.0000	1.0000
L25	16	(Area) Sabre MS600 (1.00x6.00)	54.75 - 59.75	1.0000	1.0000
L25	17	(Area) Sabre MS600 (1.00x6.00)	54.75 - 59.75	1.0000	1.0000
L25	23	CU12PSM9P6XXX(1-1/2)	54.75 - 59.75	1.0000	1.0000
L26	15	(Area) Sabre MS600 (1.00x6.00)	49.75 - 54.75	1.0000	1.0000
L26	16	(Area) Sabre MS600 (1.00x6.00)	49.75 - 54.75	1.0000	1.0000
L26	17	(Area) Sabre MS600 (1.00x6.00)	49.75 - 54.75	1.0000	1.0000
L26	23	CU12PSM9P6XXX(1-1/2)	49.75 - 54.75	1.0000	1.0000
L27	15	(Area) Sabre MS600 (1.00x6.00)	47.00 - 49.75	1.0000	1.0000
L27	16	(Area) Sabre MS600 (1.00x6.00)	47.00 - 49.75	1.0000	1.0000
L27	17	(Area) Sabre MS600 (1.00x6.00)	47.00 - 49.75	1.0000	1.0000
L27	23	CU12PSM9P6XXX(1-1/2)	44.38 - 49.75	1.0000	1.0000
L28	23	CU12PSM9P6XXX(1-1/2)	43.38 - 44.38	1.0000	1.0000
L29	23	CU12PSM9P6XXX(1-1/2)	38.38 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L30	23	CU12PSM9P6XXX(1-1/2)	43.38	1.0000	1.0000
L31	23	CU12PSM9P6XXX(1-1/2)	33.38 - 38.38	1.0000	1.0000
L32	23	CU12PSM9P6XXX(1-1/2)	28.38 - 33.38	1.0000	1.0000
L33	23	CU12PSM9P6XXX(1-1/2)	23.38 - 28.38	1.0000	1.0000
L34	23	CU12PSM9P6XXX(1-1/2)	18.38 - 23.38	1.0000	1.0000
L35	23	CU12PSM9P6XXX(1-1/2)	13.38 - 18.38	1.0000	1.0000
L36	23	CU12PSM9P6XXX(1-1/2)	8.38 - 13.38	1.0000	1.0000
L37	23	CU12PSM9P6XXX(1-1/2)	3.38 - 8.38	1.0000	1.0000
			0.00 - 3.38	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L13	19	(Area) Sabre MS450 (1.00x4.50)	101.00 - 102.50	Auto	0.0019
L13	20	(Area) Sabre MS450 (1.00x4.50)	101.00 - 102.50	Auto	0.0019
L13	21	(Area) Sabre MS450 (1.00x4.50)	101.00 - 102.50	Auto	0.0019
L14	19	(Area) Sabre MS450 (1.00x4.50)	100.75 - 101.00	Auto	0.0000
L14	20	(Area) Sabre MS450 (1.00x4.50)	100.75 - 101.00	Auto	0.0000
L14	21	(Area) Sabre MS450 (1.00x4.50)	100.75 - 101.00	Auto	0.0000
L15	19	(Area) Sabre MS450 (1.00x4.50)	95.75 - 100.75	Auto	0.0000
L15	20	(Area) Sabre MS450 (1.00x4.50)	95.75 - 100.75	Auto	0.0000
L15	21	(Area) Sabre MS450 (1.00x4.50)	95.75 - 100.75	Auto	0.0000
L16	19	(Area) Sabre MS450 (1.00x4.50)	92.50 - 95.75	Auto	0.0000
L16	20	(Area) Sabre MS450 (1.00x4.50)	92.50 - 95.75	Auto	0.0000
L16	21	(Area) Sabre MS450 (1.00x4.50)	92.50 - 95.75	Auto	0.0000
L21	15	(Area) Sabre MS600 (1.00x6.00)	70.00 - 72.00	Auto	0.1235
L21	16	(Area) Sabre MS600 (1.00x6.00)	70.00 - 72.00	Auto	0.1235
L21	17	(Area) Sabre MS600 (1.00x6.00)	70.00 - 72.00	Auto	0.1235
L22	15	(Area) Sabre MS600 (1.00x6.00)	69.75 - 70.00	Auto	0.1763
L22	16	(Area) Sabre MS600 (1.00x6.00)	69.75 - 70.00	Auto	0.1763
L22	17	(Area) Sabre MS600 (1.00x6.00)	69.75 - 70.00	Auto	0.1763
L23	15	(Area) Sabre MS600 (1.00x6.00)	64.75 - 69.75	Auto	0.1589
L23	16	(Area) Sabre MS600 (1.00x6.00)	64.75 - 69.75	Auto	0.1589

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L23	17	(Area) Sabre MS600 (1.00x6.00)	64.75 - 69.75	Auto	0.1589
L24	15	(Area) Sabre MS600 (1.00x6.00)	59.75 - 64.75	Auto	0.1328
L24	16	(Area) Sabre MS600 (1.00x6.00)	59.75 - 64.75	Auto	0.1328
L24	17	(Area) Sabre MS600 (1.00x6.00)	59.75 - 64.75	Auto	0.1328
L25	15	(Area) Sabre MS600 (1.00x6.00)	54.75 - 59.75	Auto	0.1031
L25	16	(Area) Sabre MS600 (1.00x6.00)	54.75 - 59.75	Auto	0.1031
L25	17	(Area) Sabre MS600 (1.00x6.00)	54.75 - 59.75	Auto	0.1031
L26	15	(Area) Sabre MS600 (1.00x6.00)	49.75 - 54.75	Auto	0.0770
L26	16	(Area) Sabre MS600 (1.00x6.00)	49.75 - 54.75	Auto	0.0770
L26	17	(Area) Sabre MS600 (1.00x6.00)	49.75 - 54.75	Auto	0.0770
L27	15	(Area) Sabre MS600 (1.00x6.00)	47.00 - 49.75	Auto	0.0568
L27	16	(Area) Sabre MS600 (1.00x6.00)	47.00 - 49.75	Auto	0.0568
L27	17	(Area) Sabre MS600 (1.00x6.00)	47.00 - 49.75	Auto	0.0568

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _{Front}	C _A A _{Side}	Weight K	
						ft ²	ft ²		
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Centroid-Leg	4.00	0.0000	160.00	No Ice	14.69	6.87	0.18
			-2.00			1/2"	15.46	7.55	0.31
			3.00			Ice	16.23	8.25	0.45
						1" Ice	17.82	9.67	0.78
						2" Ice			
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Centroid-Leg	4.00	0.0000	160.00	No Ice	14.69	6.87	0.18
			-2.00			1/2"	15.46	7.55	0.31
			3.00			Ice	16.23	8.25	0.45
						1" Ice	17.82	9.67	0.78
						2" Ice			
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Centroid-Leg	4.00	0.0000	160.00	No Ice	14.69	6.87	0.18
			-2.00			1/2"	15.46	7.55	0.31
			3.00			Ice	16.23	8.25	0.45
						1" Ice	17.82	9.67	0.78
						2" Ice			
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Centroid-Leg	4.00	0.0000	160.00	No Ice	5.19	2.71	0.13
			6.00			1/2"	5.59	3.04	0.17
			3.00			Ice	6.02	3.38	0.23
						1" Ice	6.90	4.12	0.35
						2" Ice			
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Centroid-Leg	4.00	0.0000	160.00	No Ice	5.19	2.71	0.13
			6.00			1/2"	5.59	3.04	0.17
			3.00			Ice	6.02	3.38	0.23
						1" Ice	6.90	4.12	0.35
						2" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C _{AA} Front	C _{AA} Side	Weight	
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Centroid-Leg	4.00 6.00 3.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.19 5.59 6.02 6.90	2.71 3.04 3.38 4.12	0.13 0.17 0.23 0.35
Radio 4480_TMOV2	A	From Centroid-Leg	4.00 -6.00 3.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
Radio 4480_TMOV2	B	From Centroid-Leg	4.00 -6.00 3.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
Radio 4480_TMOV2	C	From Centroid-Leg	4.00 -6.00 3.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.88 3.09 3.31 3.78	1.40 1.56 1.73 2.09	0.08 0.10 0.13 0.19
RADIO 4460 B2/B25 B66_TMO	A	From Centroid-Leg	4.00 -2.00 3.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
RADIO 4460 B2/B25 B66_TMO	B	From Centroid-Leg	4.00 -2.00 3.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
RADIO 4460 B2/B25 B66_TMO	C	From Centroid-Leg	4.00 -2.00 3.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.14 2.32 2.51 2.91	1.69 1.85 2.02 2.39	0.11 0.13 0.16 0.22
Platform Mount [LP 303-1_KCKR-HR-1]	C	None		0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	28.31 35.69 43.11 58.21	28.31 35.69 43.11 58.21	1.77 2.30 2.94 4.60
(2) 2.4" Dia x 8-ft Mount Pipe	A	From Centroid-Leg	4.00 2.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
(2) 2.4" Dia x 8-ft Mount Pipe	B	From Centroid-Leg	4.00 2.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
(2) 2.4" Dia x 8-ft Mount Pipe	C	From Centroid-Leg	4.00 2.00 0.00	0.0000	160.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
* *									
(2) LPA-80080/6CF w/ Mount Pipe	A	From Centroid-Leg	4.00 -4.50 2.00	0.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.56 5.11 5.61 6.65	10.26 11.43 12.31 14.13	0.05 0.11 0.19 0.36
(2) LPA-80080/6CF w/ Mount Pipe	B	From Centroid-Leg	4.00 -4.50 2.00	0.0000	147.00	No Ice 1/2" Ice	4.56 5.11 5.61	10.26 11.43 12.31	0.05 0.11 0.19

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C _A A _{Front}	C _A A _{Side}	Weight
(2) LPA-80080/6CF w/ Mount Pipe	C	From Centroid- Leg	4.00 -4.50 2.00	0.0000	147.00	1" Ice 2" Ice No Ice 1/2" Ice 1" Ice 2" Ice	6.65 4.56 5.11 5.61 6.65 14.13	14.13 10.26 11.43 12.31 14.13 0.36
(2) MX06FIT665-02 w/ Mount Pipe	A	From Centroid- Leg	4.00 1.50 2.00	30.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.21 3.51 3.82 4.46	3.33 3.63 3.94 4.59
(2) MX06FIT665-02 w/ Mount Pipe	B	From Centroid- Leg	4.00 1.50 2.00	30.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.21 3.51 3.82 4.46	3.33 3.63 3.94 4.59
(2) MX06FIT665-02 w/ Mount Pipe	C	From Centroid- Leg	4.00 1.50 2.00	30.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.21 3.51 3.82 4.46	3.33 3.63 3.94 4.59
Sub6 Antenna - VZS01 w/ Mount Pipe	A	From Centroid- Leg	4.00 6.00 2.00	30.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.92 5.26 5.62 6.37	2.69 3.15 3.63 4.64
Sub6 Antenna - VZS01 w/ Mount Pipe	B	From Centroid- Leg	4.00 6.00 2.00	30.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.92 5.26 5.62 6.37	2.69 3.15 3.63 4.64
Sub6 Antenna - VZS01 w/ Mount Pipe	C	From Centroid- Leg	4.00 6.00 2.00	30.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.92 5.26 5.62 6.37	2.69 3.15 3.63 4.64
DB-C1-12C-24AB-0Z	A	From Centroid- Leg	4.00 0.00 2.00	30.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.06 4.32 4.58 5.14	3.10 3.34 3.58 4.09
RFV01U-D2A	A	From Centroid- Leg	4.00 3.00 2.00	30.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.01 1.14 1.28 1.59
RFV01U-D2A	B	From Centroid- Leg	4.00 3.00 2.00	30.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.01 1.14 1.28 1.59
RFV01U-D2A	C	From Centroid- Leg	4.00 3.00 2.00	30.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.01 1.14 1.28 1.59
RFV01U-D1A	B	From Centroid- Leg	4.00 0.00 2.00	30.0000	147.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.25 1.39 1.54 1.86
(2) RFV01U-D1A	C	From Centroid- Leg	4.00 3.00 2.00	30.0000	147.00	No Ice 1/2" Ice	1.88 2.05 2.22	0.08 0.10 0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C _A A _{Front}	C _A A _{Side}	Weight
Platform Mount [LP 303-1_HR-1]	C	None		0.0000	147.00	1" Ice 2" Ice No Ice 1/2" Ice 1" Ice 2" Ice	2.60 17.09 21.47 25.72 33.96 33.96	1.86 1.50 1.88 2.35 3.52
(2) 80010965 w/ Mount Pipe	A	From Centroid-Leg	4.00 -4.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.26 13.03 13.80 15.41 8.60	5.79 6.47 7.17 8.60 0.57
(2) 80010965 w/ Mount Pipe	B	From Centroid-Leg	4.00 -4.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.26 13.03 13.80 15.41 8.60	5.79 6.47 7.17 8.60 0.57
(2) 80010964 w/ Mount Pipe	C	From Centroid-Leg	4.00 -4.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.61 9.18 9.77 10.98 8.60	4.10 4.59 5.10 6.16 0.45
7770.00 w/ Mount Pipe	A	From Centroid-Leg	4.00 6.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49 7.16	4.25 5.01 5.71 7.16 0.29
7770.00 w/ Mount Pipe	B	From Centroid-Leg	4.00 6.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49 7.16	4.25 5.01 5.71 7.16 0.29
7770.00 w/ Mount Pipe	C	From Centroid-Leg	4.00 6.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	5.75 6.18 6.61 7.49 7.16	4.25 5.01 5.71 7.16 0.29
RRUS 4449 B5/B12	A	From Centroid-Leg	4.00 -6.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.14 2.33 2.72 2.07	1.41 1.56 1.73 2.07 0.16
RRUS 4449 B5/B12	B	From Centroid-Leg	4.00 -6.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.14 2.33 2.72 2.07	1.41 1.56 1.73 2.07 0.16
RRUS 4449 B5/B12	C	From Centroid-Leg	4.00 -6.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.14 2.33 2.72 2.07	1.41 1.56 1.73 2.07 0.16
RRUS 8843 B2/B66A	A	From Centroid-Leg	4.00 -6.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32 1.99	1.35 1.50 1.65 1.99 0.16
RRUS 8843 B2/B66A	B	From Centroid-Leg	4.00 -6.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32 1.99	1.35 1.50 1.65 1.99 0.16
RRUS 8843 B2/B66A	C	From Centroid-	4.00 -6.00	30.0000	132.00	No Ice 1/2"	1.64 1.80	1.35 1.50

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C _A A _{Front}	C _A A _{Side}	Weight K
		Leg	1.00			Ice 1" Ice 2" Ice	1.97 2.32 1.99	0.11 0.16
RRUS 4478 B14	A	From Centroid-Leg	4.00 -2.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66
						No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66
						No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66
						No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66
RRUS 4478 B14	B	From Centroid-Leg	4.00 -2.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66
						No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66
						No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66
						No Ice 1/2" Ice 1" Ice 2" Ice	1.84 2.01 2.19 2.57	1.06 1.20 1.34 1.66
DC6-48-60-18-8C-EV	A	From Centroid-Leg	4.00 -2.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.14 1.79 2.00 2.45	1.14 1.79 2.00 2.45
						No Ice 1/2" Ice 1" Ice 2" Ice	1.14 1.79 2.00 2.45	1.14 1.79 2.00 2.45
						No Ice 1/2" Ice 1" Ice 2" Ice	1.14 1.79 2.00 2.45	1.14 1.79 2.00 2.45
						No Ice 1/2" Ice 1" Ice 2" Ice	1.14 1.79 2.00 2.45	1.14 1.79 2.00 2.45
(2) LGP21401	A	From Centroid-Leg	4.00 6.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52
						No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52
						No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52
						No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52
(2) LGP21401	B	From Centroid-Leg	4.00 6.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52
						No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52
						No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52
						No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52
DC6-48-60-18-8F	C	From Centroid-Leg	4.00 -2.00 1.00	30.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.21 1.89 2.11 2.57	1.21 1.89 2.11 2.57
						No Ice 1/2" Ice 1" Ice 2" Ice	1.21 1.89 2.11 2.57	1.21 1.89 2.11 2.57
						No Ice 1/2" Ice 1" Ice 2" Ice	1.21 1.89 2.11 2.57	1.21 1.89 2.11 2.57
						No Ice 1/2" Ice 1" Ice 2" Ice	1.21 1.89 2.11 2.57	1.21 1.89 2.11 2.57
Platform Mount [LP 303-1_HR-1]	C	None		0.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	17.09 21.47 25.72 33.96	17.09 21.47 25.72 33.96
						No Ice 1/2" Ice 1" Ice 2" Ice	17.09 21.47 25.72 33.96	17.09 21.47 25.72 33.96
						No Ice 1/2" Ice 1" Ice 2" Ice	17.09 21.47 25.72 33.96	17.09 21.47 25.72 33.96
						No Ice 1/2" Ice 1" Ice 2" Ice	17.09 21.47 25.72 33.96	17.09 21.47 25.72 33.96
2.4" Dia x 6-ft Pipe	A	From Centroid-Leg	4.00 2.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.93 2.30 3.06	1.43 1.93 2.30 3.06
						No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.93 2.30 3.06	1.43 1.93 2.30 3.06
						No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.93 2.30 3.06	1.43 1.93 2.30 3.06
						No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.93 2.30 3.06	1.43 1.93 2.30 3.06
2.4" Dia x 6-ft Pipe	B	From Centroid-Leg	4.00 2.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.93 2.30 3.06	1.43 1.93 2.30 3.06
						No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.93 2.30 3.06	1.43 1.93 2.30 3.06
						No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.93 2.30 3.06	1.43 1.93 2.30 3.06
						No Ice 1/2" Ice 1" Ice 2" Ice	1.43 1.93 2.30 3.06	1.43 1.93 2.30 3.06
2.4" Dia x 6-ft Pipe	C	From Centroid-	4.00 2.00	0.0000	132.00	No Ice 1/2"	1.43 1.93	1.43 1.93
						No Ice 1/2"	1.43 1.93	1.43 1.93
						No Ice 1/2"	1.43 1.93	1.43 1.93
						No Ice 1/2"	1.43 1.93	1.43 1.93

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C _{AA} Front	C _{AA} Side	Weight
		Leg	0.00			Ice 1" Ice 2" Ice	2.30 3.06 3.06	0.05 0.09
*	GPS_A	C From Face	3.00 0.00 -1.00	20.0000	77.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.26 0.32 0.39 0.56 0.56	0.00 0.00 0.01 0.02
Side Arm Mount [SO 701-1]	C From Face	1.50 0.00 0.00	20.0000	77.00		No Ice 1/2" Ice 1" Ice 2" Ice	0.85 1.14 1.43 2.01 4.35	0.07 0.08 0.09 0.12
*	MX08FRO665-21 w/ Mount Pipe	A From Leg	4.00 0.00 0.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11 6.12	0.11 0.19 0.29 0.52
MX08FRO665-21 w/ Mount Pipe	B From Leg	4.00 0.00 0.00	0.0000	122.00		No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11 6.12	0.11 0.19 0.29 0.52
MX08FRO665-21 w/ Mount Pipe	C From Leg	4.00 0.00 0.00	0.0000	122.00		No Ice 1/2" Ice 1" Ice 2" Ice	8.01 8.52 9.04 10.11 6.12	0.11 0.19 0.29 0.52
TA08025-B604	A From Leg	4.00 0.00 0.00	0.0000	122.00		No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71 1.55	0.06 0.08 0.10 0.15
TA08025-B604	B From Leg	4.00 0.00 0.00	0.0000	122.00		No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71 1.55	0.06 0.08 0.10 0.15
TA08025-B604	C From Leg	4.00 0.00 0.00	0.0000	122.00		No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71 1.55	0.06 0.08 0.10 0.15
TA08025-B605	A From Leg	4.00 0.00 0.00	0.0000	122.00		No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71 1.72	0.08 0.09 0.11 0.16
TA08025-B605	B From Leg	4.00 0.00 0.00	0.0000	122.00		No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71 1.72	0.08 0.09 0.11 0.16
TA08025-B605	C From Leg	4.00 0.00 0.00	0.0000	122.00		No Ice 1/2" Ice 1" Ice 2" Ice	1.96 2.14 2.32 2.71 1.72	0.08 0.09 0.11 0.16
RDIDC-9181-PF-48	A From Leg	4.00 0.00 0.00	0.0000	122.00		No Ice 1/2" Ice 1" Ice 2" Ice	2.31 2.50 2.70 3.12 1.96	0.02 0.04 0.06 0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C _A A _{Front}	C _A A _{Side}	Weight	
Commscope MC-PK8-DSH	C	None		0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	34.24 62.95 91.66 149.08	34.24 62.95 91.66 149.08	1.75 2.10 2.45 3.15
(2) 8' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
(2) 8' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12
(2) 8' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.90 2.73 3.40 4.40	1.90 2.73 3.40 4.40	0.03 0.04 0.06 0.12

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

Comb. No.	Description
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

Sectio n No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft		
L1	160 - 155	Pole	Max Tension	26	0.00	-0.00	-0.00		
			Max. Compression	26	-9.19	0.02	0.02		
			Max. Mx	20	-3.41	33.73	0.01		
			Max. My	2	-3.40	0.01	33.74		
			Max. Vy	20	-5.36	33.73	0.01		
			Max. Vx	2	-5.36	0.01	33.74		
			Max. Torque	12		0.00			
			Max Tension	1	0.00	0.00	0.00		
			Max. Compression	26	-9.66	0.03	0.05		
			Max. Mx	20	-3.64	61.29	0.03		
L2	155 - 150	Pole	Max. My	2	-3.63	0.01	61.32		
			Max. Vy	20	-5.67	61.29	0.03		
			Max. Vx	2	-5.67	0.01	61.32		
			Max. Torque	12		0.00			
			Max Tension	1	0.00	0.00	0.00		
			Max. Compression	26	-19.04	1.12	0.59		
			Max. Mx	20	-6.76	106.48	-0.00		
			Max. My	2	-6.75	0.54	105.92		
			Max. Vy	20	-10.55	106.48	-0.00		
			Max. Vx	2	-10.54	0.54	105.92		
L3	150 - 145	Pole	Max. Torque	12		-0.65			
			Max Tension	1	0.00	0.00	0.00		
			Max. Compression	26	-19.04	1.12	0.59		
			Max. Mx	20	-6.76	106.48	-0.00		
			Max. My	2	-6.75	0.54	105.92		
			Max. Vy	20	-10.55	106.48	-0.00		
			Max. Vx	2	-10.54	0.54	105.92		
			Max. Torque	18		-0.65			
			Max Tension	1	0.00	0.00	0.00		
			Max. Compression	26	-19.58	1.15	0.63		
L4	145 - 140	Pole	Max. Mx	20	-7.08	160.00	-0.01		
			Max. My	2	-7.07	0.53	159.40		
			Max. Vy	20	-10.87	160.00	-0.01		
			Max. Vx	2	-10.86	0.53	159.40		
			Max. Torque	18		-0.65			
			Max Tension	1	0.00	0.00	0.00		
			Max. Compression	26	-19.58	1.15	0.63		
			Max. Mx	20	-7.08	160.00	-0.01		
			Max. My	2	-7.07	0.53	159.40		
			Max. Vy	20	-10.87	160.00	-0.01		
L5	140 - 135.33	Pole	Max. Vx	2	-10.86	0.53	159.40		
			Max. Torque	18		-0.65			
			Max Tension	1	0.00	0.00	0.00		
			Max. Compression	26	-19.73	1.16	0.65		
			Max. Mx	20	-7.17	174.58	-0.01		
			Max. My	2	-7.16	0.52	173.96		
			Max. Vy	20	-10.95	174.58	-0.01		
			Max. Vx	2	-10.94	0.52	173.96		
			Max. Torque	18		-0.65			
			Max Tension	1	0.00	0.00	0.00		
L6	135.33 - 133.663	Pole	Max. Compression	26	-20.70	1.18	0.69		
			Max. Mx	20	-7.75	230.31	-0.01		
			Max. My	2	-7.74	0.50	229.65		
			Max. Vy	20	-11.34	230.31	-0.01		
			Max. Vx	2	-11.33	0.50	229.65		
			Max. Torque	18		-0.65			
			Max Tension	1	0.00	0.00	0.00		
			Max. Compression	26	-20.70	1.18	0.69		
			Max. Mx	20	-7.75	230.31	-0.01		
			Max. My	2	-7.74	0.50	229.65		
L7	133.663 -	Pole	Max. Vy	20	-11.34	230.31	-0.01		
			Max. Vx	2	-11.33	0.50	229.65		
L7			Max. Torque	18		-0.65			
			Max Tension	1	0.00	0.00	0.00		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L8	128.663 - 123.663	Pole	Max. Compression	26	-29.94	0.94	1.77
			Max. Mx	20	-11.39	305.36	0.04
			Max. My	2	-11.35	0.42	305.65
			Max. Vy	20	-16.11	305.36	0.04
			Max. Vx	2	-16.24	0.42	305.65
			Max. Torque	9			1.84
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.68	0.97	1.83
			Max. Mx	20	-11.94	386.69	0.04
			Max. My	2	-11.90	0.40	387.62
L9	123.663 - 118.663	Pole	Max. Vy	20	-16.43	386.69	0.04
			Max. Vx	2	-16.57	0.40	387.62
			Max. Torque	9			1.84
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.36	1.03	2.37
L10	118.663 - 113.663	Pole	Max. Mx	20	-15.25	480.79	0.13
			Max. My	2	-15.20	0.39	482.61
			Max. Vy	20	-20.09	480.79	0.13
			Max. Vx	2	-20.26	0.39	482.61
			Max. Torque	9			2.05
			Max Tension	1	0.00	0.00	0.00
L11	113.663 - 108.663	Pole	Max. Compression	26	-38.18	1.11	2.45
			Max. Mx	20	-15.91	581.93	0.13
			Max. My	2	-15.86	0.38	584.59
			Max. Vy	20	-20.38	581.93	0.13
			Max. Vx	2	-20.55	0.38	584.59
			Max. Torque	9			2.04
L12	108.663 - 103.663	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.02	1.19	2.53
			Max. Mx	20	-16.59	684.51	0.13
			Max. My	2	-16.55	0.38	688.01
			Max. Vy	20	-20.67	684.51	0.13
L13	103.663 - 101	Pole	Max. Vx	2	-20.84	0.38	688.01
			Max. Torque	9			2.04
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.88	1.26	2.61
			Max. Mx	20	-17.31	788.47	0.13
L14	101 - 100.75	Pole	Max. My	2	-17.27	0.38	792.80
			Max. Vy	20	-20.94	788.47	0.13
			Max. Vx	2	-21.11	0.38	792.80
			Max. Torque	9			2.04
			Max Tension	1	0.00	0.00	0.00
L15	100.75 - 95.75	Pole	Max. Compression	26	-40.44	1.30	2.65
			Max. Mx	20	-17.76	849.66	0.13
			Max. My	2	-17.72	0.37	854.48
			Max. Vy	20	-21.09	849.66	0.13
			Max. Vx	2	-21.26	0.37	854.48
			Max. Torque	9			2.03
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.47	1.37	2.72
			Max. Mx	20	-18.50	955.73	0.12
			Max. My	2	-18.47	0.37	961.38
			Max. Vy	20	-21.36	955.73	0.12
			Max. Vx	2	-21.53	0.37	961.38

Sectio n No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L16	95.75 - 89.833	Pole	Max. Torque	9		2.03	
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.79	1.40	2.74
			Max. Mx	20	-18.73	989.60	0.12
			Max. My	2	-18.70	0.37	995.52
			Max. Vy	20	-21.45	989.60	0.12
			Max. Vx	2	-21.62	0.37	995.52
			Max. Torque	9		2.03	
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.60	1.47	2.81
L17	89.833 - 88.833	Pole	Max. Mx	20	-20.01	1105.05	0.12
			Max. My	2	-19.98	0.36	1111.86
			Max. Vy	20	-21.86	1105.05	0.12
			Max. Vx	2	-22.03	0.36	1111.86
			Max. Torque	9		2.03	
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.65	1.54	2.87
			Max. Mx	20	-20.91	1214.99	0.11
			Max. My	2	-20.87	0.36	1222.63
			Max. Vy	20	-22.14	1214.99	0.11
L18	88.833 - 83.833	Pole	Max. Vx	2	-22.31	0.36	1222.63
			Max. Torque	9		2.03	
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.73	1.61	2.93
			Max. Mx	20	-21.82	1326.30	0.10
			Max. My	2	-21.79	0.35	1334.78
			Max. Vy	20	-22.41	1326.30	0.10
			Max. Vx	2	-22.58	0.35	1334.78
			Max. Torque	9		2.02	
			Max Tension	1	0.00	0.00	0.00
L19	83.833 - 78.833	Pole	Max. Compression	26	-46.96	1.68	2.59
			Max. Mx	20	-22.84	1439.20	-0.08
			Max. My	2	-22.81	0.38	1448.20
			Max. Vy	20	-22.76	1439.20	-0.08
			Max. Vx	2	-22.90	0.38	1448.20
			Max. Torque	9		2.02	
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.88	1.73	2.63
			Max. Mx	20	-23.57	1526.75	-0.05
			Max. My	2	-23.55	0.41	1536.29
L20	78.833 - 73.833	Pole	Max. Vy	20	-22.96	1526.75	-0.05
			Max. Vx	2	-23.10	0.41	1536.29
			Max. Torque	9		2.02	
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.96	1.68	2.59
			Max. Mx	20	-22.84	1439.20	-0.08
			Max. My	2	-22.81	0.38	1448.20
			Max. Vy	20	-22.76	1439.20	-0.08
			Max. Vx	2	-22.90	0.38	1448.20
			Max. Torque	9		2.02	
L21	73.833 - 70	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.88	1.73	2.63
			Max. Mx	20	-23.57	1526.75	-0.05
			Max. My	2	-23.55	0.41	1536.29
			Max. Vy	20	-22.96	1526.75	-0.05
			Max. Vx	2	-23.10	0.41	1536.29
			Max. Torque	9		2.02	
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.96	1.74	2.64
			Max. Mx	20	-23.65	1532.49	-0.05
L22	70 - 69.75	Pole	Max. My	2	-23.63	0.42	1542.07
			Max. Vy	20	-22.96	1532.49	-0.05
			Max. Vx	2	-23.10	0.42	1542.07
			Max. Torque	9		1.80	
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.96	1.74	2.64
			Max. Mx	20	-23.65	1532.49	-0.05
			Max. My	2	-23.63	0.42	1542.07
			Max. Vy	20	-22.96	1532.49	-0.05
			Max. Vx	2	-23.10	0.42	1542.07
L23	69.75 - 64.75	Pole	Max. Torque	9		1.80	
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.62	1.80	2.69
			Max. Mx	20	-24.92	1648.17	-0.01
			Max. My	2	-24.90	0.46	1658.45
			Max. Vy	20	-23.32	1648.17	-0.01
			Max. Vx	2	-23.47	0.46	1658.45
			Max. Torque	9		1.80	
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.30	1.87	2.74
L24	64.75 - 59.75	Pole	Max. Mx	20	-26.21	1765.61	0.04
			Max. My	2	-26.19	0.51	1776.59
			Max. Vy	20	-23.67	1765.61	0.04
			Max. Torque	9		1.80	

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft																																																																																																										
L25	59.75 - 54.75	Pole	Max. Vx	2	-23.81	0.51	1776.59																																																																																																										
			Max. Torque	9		1.80																																																																																																											
			Max Tension	1	0.00	0.00	0.00																																																																																																										
			Max. Compression	26	-53.00	1.93	2.79																																																																																																										
			Max. Mx	20	-27.53	1884.76	0.08																																																																																																										
			Max. My	2	-27.51	0.56	1896.45																																																																																																										
			Max. Vy	20	-24.01	1884.76	0.08																																																																																																										
			Max. Vx	2	-24.15	0.56	1896.45																																																																																																										
			Max. Torque	9		1.79																																																																																																											
			Max Tension	1	0.00	0.00	0.00																																																																																																										
L26	54.75 - 49.75	Pole	Max. Compression	26	-54.72	1.99	2.82																																																																																																										
			Max. Mx	20	-28.87	2005.58	0.12																																																																																																										
			Max. My	2	-28.85	0.61	2017.97																																																																																																										
			Max. Vy	20	-24.34	2005.58	0.12																																																																																																										
			Max. Vx	2	-24.48	0.61	2017.97																																																																																																										
			Max. Torque	9		1.79																																																																																																											
			Max Tension	1	0.00	0.00	0.00																																																																																																										
			Max. Compression	26	-54.76	1.99	2.82																																																																																																										
			Max. Mx	20	-28.91	2008.60	0.12																																																																																																										
			Max. My	2	-28.90	0.61	2021.01																																																																																																										
L27	49.75 - 44.376	Pole	Max. Vy	20	-24.34	2008.60	0.12																																																																																																										
			Max. Vx	2	-24.49	0.61	2021.01																																																																																																										
			Max. Torque	9		1.79																																																																																																											
			Max Tension	1	0.00	0.00	0.00																																																																																																										
			Max. Compression	26	-58.05	2.05	2.85																																																																																																										
			Max. Mx	20	-31.44	2162.41	0.17																																																																																																										
			Max. My	2	-31.43	0.67	2175.69																																																																																																										
			Max. Vy	20	-24.86	2162.41	0.17																																																																																																										
			Max. Vx	2	-25.01	0.67	2175.69																																																																																																										
			Max. Torque	9		1.79																																																																																																											
L28	44.376 - 43.376	Pole	Max Tension	1	0.00	0.00	0.00																																																																																																										
			Max. Compression	26	-59.44	2.11	2.88																																																																																																										
			Max. Mx	20	-32.65	2287.20	0.21																																																																																																										
			Max. My	2	-32.63	0.72	2301.17																																																																																																										
			Max. Vy	20	-25.09	2287.20	0.21																																																																																																										
			Max. Vx	2	-25.23	0.72	2301.17																																																																																																										
			Max. Torque	9		1.79																																																																																																											
			Max Tension	1	0.00	0.00	0.00																																																																																																										
			Max. Compression	26	-60.86	2.16	2.92																																																																																																										
			Max. Mx	20	-33.88	2413.09	0.25																																																																																																										
L29	43.376 - 38.376	Pole	Max. My	2	-33.87	0.77	2427.76																																																																																																										
			Max. Vy	20	-25.30	2413.09	0.25																																																																																																										
			Max. Vx	2	-25.44	0.77	2427.76																																																																																																										
			Max. Torque	9		1.79																																																																																																											
			Max Tension	1	0.00	0.00	0.00																																																																																																										
			Max. Compression	26	-62.30	2.21	2.95																																																																																																										
			Max. Mx	20	-35.13	2540.01	0.29																																																																																																										
			Max. My	2	-35.12	0.82	2555.36																																																																																																										
			Max. Vy	20	-25.50	2540.01	0.29																																																																																																										
			Max. Vx	2	-25.64	0.82	2555.36																																																																																																										
L30	38.376 - 33.376	Pole	Max. Torque	9		1.79																																																																																																											
			Max Tension	1	0.00	0.00	0.00																																																																																																										
			Max. Compression	26	-60.86	2.16	2.92																																																																																																										
			Max. Mx	20	-33.88	2413.09	0.25																																																																																																										
			Max. My	2	-33.87	0.77	2427.76																																																																																																										
			Max. Vy	20	-25.30	2413.09	0.25																																																																																																										
			Max. Vx	2	-25.44	0.77	2427.76																																																																																																										
			Max. Torque	9		1.79																																																																																																											
			Max Tension	1	0.00	0.00	0.00																																																																																																										
			Max. Compression	26	-62.30	2.21	2.95																																																																																																										
L31	33.376 - 28.376	Pole	Max. Mx	20	-35.13	2540.01	0.29	Max. My	2	-35.12	0.82	2555.36	Max. Vy	20	-25.50	2540.01	0.29	Max. Vx	2	-25.64	0.82	2555.36	Max. Torque	9		1.79		Max Tension	1	0.00	0.00	0.00	Max. Compression	26	-62.30	2.21	2.95	Max. Mx	20	-35.13	2540.01	0.29	Max. My	2	-35.12	0.82	2555.36	Max. Vy	20	-25.50	2540.01	0.29	L32	28.376 - 23.376	Pole	Max. Vx	2	-25.64	0.82	2555.36	Max. Torque	9		1.79		Max Tension	1	0.00	0.00	0.00	Max. Compression	26	-63.76	2.27	2.98	Max. Mx	20	-36.41	2667.88	0.33	Max. My	2	-36.40	0.86	2683.92	Max. Vy	20	-25.69	2667.88	0.33	Max. Vx	2	-25.82	0.86	2683.92	Max. Torque	9		1.79		Max Tension	1	0.00	0.00	0.00	L33	23.376 - 18.376	Pole	Max. Compression	26	-65.24	2.32	3.01
			Max. Mx	20	-35.13	2540.01	0.29																																																																																																										
			Max. My	2	-35.12	0.82	2555.36																																																																																																										
			Max. Vy	20	-25.50	2540.01	0.29																																																																																																										
			Max. Vx	2	-25.64	0.82	2555.36																																																																																																										
			Max. Torque	9		1.79																																																																																																											
			Max Tension	1	0.00	0.00	0.00																																																																																																										
			Max. Compression	26	-62.30	2.21	2.95																																																																																																										
			Max. Mx	20	-35.13	2540.01	0.29																																																																																																										
			Max. My	2	-35.12	0.82	2555.36																																																																																																										
			Max. Vy	20	-25.50	2540.01	0.29																																																																																																										
L32	28.376 - 23.376	Pole	Max. Vx	2	-25.64	0.82	2555.36	Max. Torque	9		1.79		Max Tension	1	0.00	0.00	0.00	Max. Compression	26	-63.76	2.27	2.98	Max. Mx	20	-36.41	2667.88	0.33	Max. My	2	-36.40	0.86	2683.92	Max. Vy	20	-25.69	2667.88	0.33	Max. Vx	2	-25.82	0.86	2683.92	Max. Torque	9		1.79		Max Tension	1	0.00	0.00	0.00	L33	23.376 - 18.376	Pole	Max. Compression	26	-65.24	2.32	3.01																																																					
			Max. Vx	2	-25.64	0.82	2555.36																																																																																																										
			Max. Torque	9		1.79																																																																																																											
			Max Tension	1	0.00	0.00	0.00																																																																																																										
			Max. Compression	26	-63.76	2.27	2.98																																																																																																										
			Max. Mx	20	-36.41	2667.88	0.33																																																																																																										
			Max. My	2	-36.40	0.86	2683.92																																																																																																										
			Max. Vy	20	-25.69	2667.88	0.33																																																																																																										
			Max. Vx	2	-25.82	0.86	2683.92																																																																																																										
			Max. Torque	9		1.79																																																																																																											
			Max Tension	1	0.00	0.00	0.00																																																																																																										
L33	23.376 - 18.376	Pole	Max. Compression	26	-65.24	2.32	3.01																																																																																																										

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L34	18,376 - 13,376	Pole	Max. Mx	20	-37.71	2796.62	0.36
			Max. My	2	-37.70	0.91	2813.32
			Max. Vy	20	-25.85	2796.62	0.36
			Max. Vx	2	-25.98	0.91	2813.32
			Max. Torque	9			1.79
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.74	2.38	3.04
			Max. Mx	20	-39.03	2926.10	0.40
			Max. My	2	-39.03	0.96	2943.47
			Max. Vy	20	-25.99	2926.10	0.40
L35	13,376 - 8,376	Pole	Max. Vx	2	-26.12	0.96	2943.47
			Max. Torque	9			1.79
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.25	2.43	3.07
			Max. Mx	20	-40.37	3056.25	0.44
			Max. My	2	-40.37	1.01	3074.28
			Max. Vy	20	-26.12	3056.25	0.44
			Max. Vx	2	-26.25	1.01	3074.28
			Max. Torque	9			1.78
			Max Tension	1	0.00	0.00	0.00
L36	8,376 - 3,376	Pole	Max. Compression	26	-69.77	2.48	3.10
			Max. Mx	20	-41.74	3187.04	0.47
			Max. My	2	-41.74	1.06	3205.72
			Max. Vy	20	-26.24	3187.04	0.47
			Max. Vx	2	-26.37	1.06	3205.72
			Max. Torque	9			1.78
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.79	2.51	3.12
			Max. Mx	20	-42.67	3275.71	0.50
			Max. My	2	-42.67	1.09	3294.83
L37	3,376 - 0	Pole	Max. Vy	20	-26.33	3275.71	0.50
			Max. Vx	2	-26.46	1.09	3294.83
			Max. Torque	9			1.78
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.79	2.51	3.12

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	70.79	0.00	5.43
	Max. H _x	21	32.02	26.30	0.01
	Max. H _z	2	42.69	0.01	26.43
	Max. M _x	2	3294.83	0.01	26.43
	Max. M _z	8	3273.50	-26.30	-0.01
	Max. Torsion	9	1.78	-26.30	-0.01
	Min. Vert	19	32.02	22.77	-13.21
	Min. H _x	9	32.02	-26.30	-0.01
	Min. H _z	14	42.69	-0.01	-26.43
	Min. M _x	14	-3293.63	-0.01	-26.43
	Min. M _z	20	-3275.71	26.30	0.01
	Min. Torsion	21	-1.78	26.30	0.01

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overshoring Moment, M _x kip-ft	Overshoring Moment, M _z kip-ft	Torque kip-ft
Dead Only	35.57	-0.00	-0.00	-0.46	0.84	-0.00

Load Combination	Vertical	Shear _x	Shear _z	Overshooting Moment, M _x kip-ft	Overshooting Moment, M _z kip-ft	Torque
	K	K	K			kip-ft
1.2 Dead+1.0 Wind 0 deg - No Ice	42.69	-0.01	-26.43	-3294.83	1.09	-0.28
0.9 Dead+1.0 Wind 0 deg - No Ice	32.02	-0.01	-26.43	-3213.76	0.80	-0.25
1.2 Dead+1.0 Wind 30 deg - No Ice	42.69	13.15	-22.89	-2853.53	-1636.15	-1.12
0.9 Dead+1.0 Wind 30 deg - No Ice	32.02	13.15	-22.89	-2783.29	-1596.23	-1.10
1.2 Dead+1.0 Wind 60 deg - No Ice	42.69	22.77	-13.21	-1647.76	-2834.78	-1.67
0.9 Dead+1.0 Wind 60 deg - No Ice	32.02	22.77	-13.21	-1607.14	-2765.41	-1.66
1.2 Dead+1.0 Wind 90 deg - No Ice	42.69	26.30	0.01	-0.53	-3273.50	-1.77
0.9 Dead+1.0 Wind 90 deg - No Ice	32.02	26.30	0.01	-0.38	-3193.37	-1.78
1.2 Dead+1.0 Wind 120 deg - No Ice	42.69	22.78	13.22	1646.66	-2834.70	-1.40
0.9 Dead+1.0 Wind 120 deg - No Ice	32.02	22.78	13.22	1606.35	-2765.37	-1.43
1.2 Dead+1.0 Wind 150 deg - No Ice	42.69	13.15	22.89	2852.37	-1636.06	-0.65
0.9 Dead+1.0 Wind 150 deg - No Ice	32.02	13.15	22.89	2782.46	-1596.18	-0.68
1.2 Dead+1.0 Wind 180 deg - No Ice	42.69	0.01	26.43	3293.63	1.13	0.29
0.9 Dead+1.0 Wind 180 deg - No Ice	32.02	0.01	26.43	3212.90	0.81	0.25
1.2 Dead+1.0 Wind 210 deg - No Ice	42.69	-13.15	22.89	2852.36	1638.30	1.15
0.9 Dead+1.0 Wind 210 deg - No Ice	32.02	-13.15	22.89	2782.45	1597.79	1.12
1.2 Dead+1.0 Wind 240 deg - No Ice	42.69	-22.77	13.21	1646.68	2836.91	1.69
0.9 Dead+1.0 Wind 240 deg - No Ice	32.02	-22.77	13.21	1606.36	2766.96	1.68
1.2 Dead+1.0 Wind 270 deg - No Ice	42.69	-26.30	-0.01	-0.50	3275.71	1.77
0.9 Dead+1.0 Wind 270 deg - No Ice	32.02	-26.30	-0.01	-0.37	3194.97	1.78
1.2 Dead+1.0 Wind 300 deg - No Ice	42.69	-22.78	-13.22	-1647.73	2836.98	1.38
0.9 Dead+1.0 Wind 300 deg - No Ice	32.02	-22.78	-13.22	-1607.12	2767.01	1.40
1.2 Dead+1.0 Wind 330 deg - No Ice	42.69	-13.15	-22.89	-2853.51	1638.35	0.63
0.9 Dead+1.0 Wind 330 deg - No Ice	32.02	-13.15	-22.89	-2783.28	1597.83	0.66
1.2 Dead+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	70.79	-0.00	-0.00	-3.12	2.51	-0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	70.79	-0.00	-5.43	-743.34	2.76	-0.08
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	70.79	2.71	-4.70	-644.12	-366.11	-0.20
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	70.79	4.69	-2.71	-373.18	-636.18	-0.26
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	70.79	5.42	0.00	-3.12	-735.08	-0.25
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	70.79	4.70	2.72	366.90	-636.31	-0.17
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	70.79	0.00	5.43	736.82	2.49	0.08
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	70.79	-2.71	4.70	637.60	371.36	0.20
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	70.79	-4.69	2.71	366.67	641.42	0.25
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	70.79	-5.42	-0.00	-3.39	740.33	0.25

Load Combination	Vertical	Shear _x	Shear _z	Overshooting Moment, M _x kip-ft	Overshooting Moment, M _z kip-ft	Torque
	K	K	K			kip-ft
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	70.79	-4.70	-2.72	-373.41	641.56	0.17
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	70.79	-2.71	-4.71	-644.25	371.59	0.05
Dead+Wind 0 deg - Service	35.57	-0.00	-6.78	-836.13	0.91	-0.07
Dead+Wind 30 deg - Service	35.57	3.37	-5.87	-724.18	-414.39	-0.30
Dead+Wind 60 deg - Service	35.57	5.84	-3.39	-418.32	-718.41	-0.45
Dead+Wind 90 deg - Service	35.57	6.75	0.00	-0.50	-829.68	-0.48
Dead+Wind 120 deg - Service	35.57	5.84	3.39	417.31	-718.40	-0.38
Dead+Wind 150 deg - Service	35.57	3.37	5.87	723.17	-414.38	-0.18
Dead+Wind 180 deg - Service	35.57	0.00	6.78	835.12	0.92	0.07
Dead+Wind 210 deg - Service	35.57	-3.37	5.87	723.17	416.21	0.30
Dead+Wind 240 deg - Service	35.57	-5.84	3.39	417.32	720.23	0.45
Dead+Wind 270 deg - Service	35.57	-6.75	-0.00	-0.49	831.51	0.48
Dead+Wind 300 deg - Service	35.57	-5.84	-3.39	-418.31	720.23	0.38
Dead+Wind 330 deg - Service	35.57	-3.37	-5.87	-724.17	416.21	0.18

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	-35.57	0.00	0.00	35.57	0.00	0.000%
2	-0.01	-42.69	-26.43	0.01	42.69	26.43	0.000%
3	-0.01	-32.02	-26.43	0.01	32.02	26.43	0.000%
4	13.15	-42.69	-22.89	-13.15	42.69	22.89	0.000%
5	13.15	-32.02	-22.89	-13.15	32.02	22.89	0.000%
6	22.77	-42.69	-13.21	-22.77	42.69	13.21	0.000%
7	22.77	-32.02	-13.21	-22.77	32.02	13.21	0.000%
8	26.30	-42.69	0.01	-26.30	42.69	-0.01	0.000%
9	26.30	-32.02	0.01	-26.30	32.02	-0.01	0.000%
10	22.78	-42.69	13.22	-22.78	42.69	-13.22	0.000%
11	22.78	-32.02	13.22	-22.78	32.02	-13.22	0.000%
12	13.15	-42.69	22.89	-13.15	42.69	-22.89	0.000%
13	13.15	-32.02	22.89	-13.15	32.02	-22.89	0.000%
14	0.01	-42.69	26.43	-0.01	42.69	-26.43	0.000%
15	0.01	-32.02	26.43	-0.01	32.02	-26.43	0.000%
16	-13.15	-42.69	22.89	13.15	42.69	-22.89	0.000%
17	-13.15	-32.02	22.89	13.15	32.02	-22.89	0.000%
18	-22.77	-42.69	13.21	22.77	42.69	-13.21	0.000%
19	-22.77	-32.02	13.21	22.77	32.02	-13.21	0.000%
20	-26.30	-42.69	-0.01	26.30	42.69	0.01	0.000%
21	-26.30	-32.02	-0.01	26.30	32.02	0.01	0.000%
22	-22.78	-42.69	-13.22	22.78	42.69	13.22	0.000%
23	-22.78	-32.02	-13.22	22.78	32.02	13.22	0.000%
24	-13.15	-42.69	-22.89	13.15	42.69	22.89	0.000%
25	-13.15	-32.02	-22.89	13.15	32.02	22.89	0.000%
26	0.00	-70.79	0.00	0.00	70.79	0.00	0.000%
27	-0.00	-70.79	-5.43	0.00	70.79	5.43	0.000%
28	2.71	-70.79	-4.70	-2.71	70.79	4.70	0.000%
29	4.69	-70.79	2.71	-4.69	70.79	2.71	0.000%
30	5.42	-70.79	0.00	-5.42	70.79	-0.00	0.000%
31	4.70	-70.79	2.72	-4.70	70.79	-2.72	0.000%
32	2.71	-70.79	4.71	-2.71	70.79	-4.71	0.000%
33	0.00	-70.79	5.43	-0.00	70.79	-5.43	0.000%
34	-2.71	-70.79	4.70	2.71	70.79	-4.70	0.000%
35	-4.69	-70.79	2.71	4.69	70.79	-2.71	0.000%
36	-5.42	-70.79	-0.00	5.42	70.79	0.00	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
37	-4.70	-70.79	-2.72	4.70	70.79	2.72	0.000%
38	-2.71	-70.79	-4.71	2.71	70.79	4.71	0.000%
39	-0.00	-35.57	-6.78	0.00	35.57	6.78	0.000%
40	3.37	-35.57	-5.87	-3.37	35.57	5.87	0.000%
41	5.84	-35.57	-3.39	-5.84	35.57	3.39	0.000%
42	6.75	-35.57	0.00	-6.75	35.57	-0.00	0.000%
43	5.84	-35.57	3.39	-5.84	35.57	-3.39	0.000%
44	3.37	-35.57	5.87	-3.37	35.57	-5.87	0.000%
45	0.00	-35.57	6.78	-0.00	35.57	-6.78	0.000%
46	-3.37	-35.57	5.87	3.37	35.57	-5.87	0.000%
47	-5.84	-35.57	3.39	5.84	35.57	-3.39	0.000%
48	-6.75	-35.57	-0.00	6.75	35.57	0.00	0.000%
49	-5.84	-35.57	-3.39	5.84	35.57	3.39	0.000%
50	-3.37	-35.57	-5.87	3.37	35.57	5.87	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000841
2	Yes	6	0.00000001	0.00048768
3	Yes	6	0.00000001	0.00012645
4	Yes	8	0.00000001	0.00041139
5	Yes	7	0.00000001	0.00087306
6	Yes	8	0.00000001	0.00042944
7	Yes	7	0.00000001	0.00091553
8	Yes	7	0.00000001	0.00016313
9	Yes	6	0.00000001	0.00051417
10	Yes	8	0.00000001	0.00040991
11	Yes	7	0.00000001	0.00086929
12	Yes	8	0.00000001	0.00042321
13	Yes	7	0.00000001	0.00090092
14	Yes	6	0.00000001	0.00049710
15	Yes	6	0.00000001	0.00012957
16	Yes	8	0.00000001	0.00042656
17	Yes	7	0.00000001	0.00090768
18	Yes	8	0.00000001	0.00040855
19	Yes	7	0.00000001	0.00086623
20	Yes	7	0.00000001	0.00016152
21	Yes	6	0.00000001	0.00050949
22	Yes	8	0.00000001	0.00042820
23	Yes	7	0.00000001	0.00091279
24	Yes	8	0.00000001	0.00041486
25	Yes	7	0.00000001	0.00088010
26	Yes	6	0.00000001	0.00034122
27	Yes	9	0.00000001	0.00037100
28	Yes	9	0.00000001	0.00046179
29	Yes	9	0.00000001	0.00046341
30	Yes	9	0.00000001	0.00036512
31	Yes	9	0.00000001	0.00045451
32	Yes	9	0.00000001	0.00045601
33	Yes	9	0.00000001	0.00036516
34	Yes	9	0.00000001	0.00046131
35	Yes	9	0.00000001	0.00045872
36	Yes	9	0.00000001	0.00036892
37	Yes	9	0.00000001	0.00046772
38	Yes	9	0.00000001	0.00046716
39	Yes	6	0.00000001	0.00010227
40	Yes	6	0.00000001	0.00094110
41	Yes	7	0.00000001	0.00010355
42	Yes	6	0.00000001	0.00015086
43	Yes	6	0.00000001	0.00092844
44	Yes	6	0.00000001	0.00098793
45	Yes	6	0.00000001	0.00010209
46	Yes	7	0.00000001	0.00010224

47	Yes	6	0.00000001	0.00092857
48	Yes	6	0.00000001	0.00015118
49	Yes	7	0.00000001	0.00010325
50	Yes	6	0.00000001	0.00095886

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	51.799	39	2.9526	0.0075
L2	155 - 150	48.716	39	2.9365	0.0075
L3	150 - 145	45.658	39	2.9044	0.0075
L4	145 - 140	42.640	39	2.8570	0.0074
L5	140 - 135.33	39.684	39	2.7882	0.0070
L6	138.663 - 133.663	38.907	39	2.7668	0.0069
L7	133.663 - 128.663	36.032	39	2.7161	0.0068
L8	128.663 - 123.663	33.231	39	2.6329	0.0062
L9	123.663 - 118.663	30.525	39	2.5362	0.0055
L10	118.663 - 113.663	27.925	39	2.4281	0.0049
L11	113.663 - 108.663	25.445	39	2.3086	0.0043
L12	108.663 - 103.663	23.095	39	2.1801	0.0037
L13	103.663 - 101	20.882	39	2.0450	0.0032
L14	101 - 100.75	19.763	39	1.9710	0.0030
L15	100.75 - 95.75	19.660	39	1.9640	0.0030
L16	95.75 - 89.833	17.677	39	1.8218	0.0026
L17	94.166 - 88.833	17.081	39	1.7761	0.0024
L18	88.833 - 83.833	15.138	39	1.6934	0.0022
L19	83.833 - 78.833	13.430	39	1.5688	0.0019
L20	78.833 - 73.833	11.853	39	1.4438	0.0017
L21	73.833 - 70	10.406	39	1.3189	0.0014
L22	70 - 69.75	9.386	39	1.2235	0.0013
L23	69.75 - 64.75	9.322	39	1.2196	0.0013
L24	64.75 - 59.75	8.086	39	1.1409	0.0012
L25	59.75 - 54.75	6.932	39	1.0629	0.0010
L26	54.75 - 49.75	5.861	39	0.9838	0.0009
L27	49.75 - 44.376	4.872	39	0.9056	0.0008
L28	49.626 - 43.376	4.848	39	0.9037	0.0008
L29	43.376 - 38.376	3.703	39	0.8363	0.0008
L30	38.376 - 33.376	2.881	39	0.7335	0.0006
L31	33.376 - 28.376	2.166	39	0.6323	0.0005
L32	28.376 - 23.376	1.556	39	0.5328	0.0004
L33	23.376 - 18.376	1.049	39	0.4349	0.0004
L34	18.376 - 13.376	0.644	39	0.3387	0.0003
L35	13.376 - 8.376	0.339	39	0.2442	0.0002
L36	8.376 - 3.376	0.132	39	0.1515	0.0001
L37	3.376 - 0	0.021	39	0.0605	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
160.00	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	39	51.799	2.9526	0.0075	11794
147.00	(2) LPA-80080/6CF w/ Mount Pipe	39	43.841	2.8780	0.0074	5735

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
132.00	(2) 80010965 w/ Mount Pipe	39	35.091	2.6930	0.0066	3666
122.00	MX08FRO665-21 w/ Mount Pipe	39	29.648	2.5017	0.0053	2707
77.00	GPS_A	39	11.307	1.4001	0.0016	2299

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	203.704	2	11.6510	0.0285
L2	155 - 150	191.614	2	11.5879	0.0285
L3	150 - 145	179.622	2	11.4612	0.0285
L4	145 - 140	167.788	2	11.2746	0.0279
L5	140 - 135.33	156.191	2	11.0036	0.0266
L6	138.663 - 133.663	153.140	2	10.9192	0.0263
L7	133.663 - 128.663	141.859	2	10.7194	0.0257
L8	128.663 - 123.663	130.863	2	10.3919	0.0235
L9	123.663 - 118.663	120.233	2	10.0110	0.0210
L10	118.663 - 113.663	110.018	2	9.5852	0.0185
L11	113.663 - 108.663	100.267	2	9.1141	0.0162
L12	108.663 - 103.663	91.022	2	8.6077	0.0141
L13	103.663 - 101	82.316	2	8.0747	0.0122
L14	101 - 100.75	77.908	2	7.7824	0.0113
L15	100.75 - 95.75	77.503	2	7.7548	0.0112
L16	95.75 - 89.833	69.697	2	7.1934	0.0096
L17	94.166 - 88.833	67.346	2	7.0131	0.0091
L18	88.833 - 83.833	59.692	2	6.6867	0.0083
L19	83.833 - 78.833	52.961	2	6.1946	0.0073
L20	78.833 - 73.833	46.744	2	5.7007	0.0062
L21	73.833 - 70	41.041	2	5.2072	0.0054
L22	70 - 69.75	37.017	2	4.8301	0.0048
L23	69.75 - 64.75	36.765	2	4.8149	0.0048
L24	64.75 - 59.75	31.891	2	4.5040	0.0043
L25	59.75 - 54.75	27.341	2	4.1957	0.0039
L26	54.75 - 49.75	23.115	2	3.8831	0.0035
L27	49.75 - 44.376	19.213	2	3.5741	0.0031
L28	49.626 - 43.376	19.121	2	3.5665	0.0031
L29	43.376 - 38.376	14.602	2	3.3004	0.0028
L30	38.376 - 33.376	11.361	2	2.8944	0.0024
L31	33.376 - 28.376	8.540	2	2.4948	0.0020
L32	28.376 - 23.376	6.135	2	2.1017	0.0017
L33	23.376 - 18.376	4.137	2	1.7153	0.0013
L34	18.376 - 13.376	2.540	2	1.3357	0.0010
L35	13.376 - 8.376	1.337	2	0.9630	0.0007
L36	8.376 - 3.376	0.521	2	0.5972	0.0004
L37	3.376 - 0	0.084	2	0.2384	0.0002

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
160.00	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	2	203.704	11.6510	0.0285	3227

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
147.00	(2) LPA-80080/6CF w/ Mount Pipe	2	172.498	11.3574	0.0282	1575
132.00	(2) 80010965 w/ Mount Pipe	2	138.166	10.6282	0.0252	994
122.00	MX08FRO665-21 w/ Mount Pipe	2	116.787	9.8752	0.0201	726
77.00	GPS_A	2	44.594	5.5279	0.0059	592

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	ϕP _n K	Ratio P _u ϕP _n
L1	160 - 155 (1)	TP18.9019x18x0.1875	5.00	0.00	0.0	11.137 4	-3.40	651.54	0.005
L2	155 - 150 (2)	TP19.8038x18.9019x0.18 75	5.00	0.00	0.0	11.674 2	-3.63	682.94	0.005
L3	150 - 145 (3)	TP20.7057x19.8038x0.18 75	5.00	0.00	0.0	12.210 9	-6.76	714.34	0.009
L4	145 - 140 (4)	TP21.6076x20.7057x0.18 75	5.00	0.00	0.0	12.747 6	-7.08	745.74	0.009
L5	140 - 135.33 (5)	TP22.45x21.6076x0.1875	4.67	0.00	0.0	12.891 2	-7.17	754.13	0.010
L6	135.33 - 133.663 (6)	TP22.3632x21.4738x0.25	5.00	0.00	0.0	17.546 8	-7.75	1026.49	0.008
L7	133.663 - 128.663 (7)	TP23.2527x22.3632x0.25	5.00	0.00	0.0	18.252 6	-11.36	1067.78	0.011
L8	128.663 - 123.663 (8)	TP24.1421x23.2527x0.25	5.00	0.00	0.0	18.958 4	-11.90	1109.06	0.011
L9	123.663 - 118.663 (9)	TP25.0315x24.1421x0.25	5.00	0.00	0.0	19.664 1	-15.20	1150.35	0.013
L10	118.663 - 113.663 (10)	TP25.921x25.0315x0.25	5.00	0.00	0.0	20.369 9	-15.86	1191.64	0.013
L11	113.663 - 108.663 (11)	TP26.8104x25.921x0.25	5.00	0.00	0.0	21.075 7	-16.55	1232.93	0.013
L12	108.663 - 103.663 (12)	TP27.6998x26.8104x0.25	5.00	0.00	0.0	21.781 4	-17.27	1274.21	0.014
L13	103.663 - 101 (13)	TP28.1735x27.6998x0.25	2.66	0.00	0.0	22.157 3	-17.66	1296.20	0.014
L14	101 - 100.75 (14)	TP28.218x28.1735x0.25	0.25	0.00	0.0	22.192 6	-17.72	1298.27	0.014
L15	100.75 - 95.75 (15)	TP29.1074x28.218x0.25	5.00	0.00	0.0	22.898 4	-18.47	1339.56	0.014
L16	95.75 - 89.833 (16)	TP30.16x29.1074x0.25	5.92	0.00	0.0	23.122 0	-18.70	1352.64	0.014
L17	89.833 - 88.833 (17)	TP29.8372x28.8892x0.31	5.33	0.00	0.0	29.284 8	-19.98	1713.16	0.012
L18	88.833 - 83.833 (18)	TP30.726x29.8372x0.312	5.00	0.00	0.0	30.166 4	-20.87	1764.74	0.012
L19	83.833 - 78.833 (19)	TP31.6148x30.726x0.312	5.00	0.00	0.0	31.048 0	-21.79	1816.31	0.012
L20	78.833 - 73.833 (20)	TP32.5037x31.6148x0.31	5.00	0.00	0.0	31.929 6	-22.81	1867.88	0.012
L21	73.833 - 70 (21)	TP33.185x32.5037x0.312	3.83	0.00	0.0	32.605 4	-23.55	1907.42	0.012
L22	70 - 69.75 (22)	TP33.2295x33.185x0.512	0.25	0.00	0.0	53.219 9	-23.63	3113.36	0.008
L23	69.75 - 64.75 (23)	TP34.1183x33.2295x0.5	5.00	0.00	0.0	53.352 2	-24.90	3121.10	0.008
L24	64.75 - 59.75 (24)	TP35.0071x34.1183x0.5	5.00	0.00	0.0	54.762 7	-26.19	3203.62	0.008
L25	59.75 - 54.75	TP35.8959x35.0071x0.48	5.00	0.00	0.0	54.788	-27.51	3205.12	0.009

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	ϕP _n	Ratio			
									ft	in ²	K	K
	(25)	75				3						
L26	54.75 - 49.75	TP36.7847x35.8959x0.48	5.00	0.00	0.0	56.163	-28.85	3285.57	0.009			
	(26)	75				6						
L27	49.75 -	TP37.74x36.7847x0.4875	5.37	0.00	0.0	56.197	-28.90	3287.56	0.009			
	44.376 (27)					7						
L28	44.376 -	TP37.2923x36.1817x0.37	6.25	0.00	0.0	43.940	-31.43	2570.54	0.012			
	43.376 (28)	5				9						
L29	43.376 -	TP38.1808x37.2923x0.37	5.00	0.00	0.0	44.998	-32.63	2632.40	0.012			
	38.376 (29)	5				4						
L30	38.376 -	TP39.0693x38.1808x0.37	5.00	0.00	0.0	46.055	-33.87	2694.27	0.013			
	33.376 (30)	5				9						
L31	33.376 -	TP39.9577x39.0693x0.37	5.00	0.00	0.0	47.113	-35.12	2756.13	0.013			
	28.376 (31)	5				4						
L32	28.376 -	TP40.8462x39.9577x0.37	5.00	0.00	0.0	48.170	-36.40	2818.00	0.013			
	23.376 (32)	5				9						
L33	23.376 -	TP41.7347x40.8462x0.37	5.00	0.00	0.0	49.228	-37.70	2879.86	0.013			
	18.376 (33)	5				4						
L34	18.376 -	TP42.6232x41.7347x0.37	5.00	0.00	0.0	50.285	-39.03	2941.72	0.013			
	13.376 (34)	5				9						
L35	13.376 -	TP43.5116x42.6232x0.37	5.00	0.00	0.0	51.343	-40.37	3003.59	0.013			
	8.376 (35)	5				4						
L36	8.376 - 3.376	TP44.4001x43.5116x0.37	5.00	0.00	0.0	52.400	-41.74	3065.45	0.014			
	(36)	5				9						
L37	3.376 - 0 (37)	TP45x44.4001x0.375	3.38	0.00	0.0	53.114	-42.67	3107.22	0.014			
						9						

Pole Bending Design Data

Section No.	Elevation	Size	M _{ux}	ϕM _{nx}	Ratio		M _{uy}	ϕM _{ny}	Ratio		
					kip-ft	ϕM _{nx}	kip-ft		kip-ft	ϕM _{ny}	kip-ft
L1	160 - 155 (1)	TP18.9019x18x0.1875	33.74	313.96	0.107	0.00	313.96	0.000			
L2	155 - 150 (2)	TP19.8038x18.9019x0.18	61.32	340.90	0.180	0.00	340.90	0.000			
		75									
L3	150 - 145 (3)	TP20.7057x19.8038x0.18	106.48	368.51	0.289	0.00	368.51	0.000			
		75									
L4	145 - 140 (4)	TP21.6076x20.7057x0.18	160.00	396.75	0.403	0.00	396.75	0.000			
		75									
L5	140 - 135.33	TP22.45x21.6076x0.1875	174.58	404.40	0.432	0.00	404.40	0.000			
	(5)										
L6	135.33 -	TP22.3632x21.4738x0.25	230.31	590.77	0.390	0.00	590.77	0.000			
	133.663 (6)										
L7	133.663 -	TP23.2527x22.3632x0.25	305.66	639.53	0.478	0.00	639.53	0.000			
	128.663 (7)										
L8	128.663 -	TP24.1421x23.2527x0.25	387.63	689.34	0.562	0.00	689.34	0.000			
	123.663 (8)										
L9	123.663 -	TP25.0315x24.1421x0.25	482.61	735.27	0.656	0.00	735.27	0.000			
	118.663 (9)										
L10	118.663 -	TP25.921x25.0315x0.25	584.60	782.16	0.747	0.00	782.16	0.000			
	113.663 (10)										
L11	113.663 -	TP26.8104x25.921x0.25	688.01	829.95	0.829	0.00	829.95	0.000			
	108.663 (11)										
L12	108.663 -	TP27.6998x26.8104x0.25	792.80	878.59	0.902	0.00	878.59	0.000			
	103.663 (12)										
L13	103.663 - 101	TP28.1735x27.6998x0.25	849.17	904.83	0.938	0.00	904.83	0.000			
	(13)										
L14	101 - 100.75	TP28.218x28.1735x0.25	854.48	907.31	0.942	0.00	907.31	0.000			
	(14)										
L15	100.75 -	TP29.1074x28.218x0.25	961.38	957.19	1.004	0.00	957.19	0.000			
	95.75 (15)										
L16	95.75 -	TP30.16x29.1074x0.25	995.52	973.15	1.023	0.00	973.15	0.000			
	89.833 (16)										
L17	89.833 -	TP29.8372x28.8892x0.31	1111.86	1317.38	0.844	0.00	1317.38	0.000			
	88.833 - 25										
L18	88.833 -	TP30.726x29.8372x0.312	1222.63	1390.38	0.879	0.00	1390.38	0.000			

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
L19	83.833 (18) 83.833 - 78.833 (19)	TP31.6148x30.726x0.312 5	1334.78	1462.69	0.913	0.00	1462.69	0.000
L20	78.833 - 73.833 (20)	TP32.5037x31.6148x0.31 25	1448.20	1536.18	0.943	0.00	1536.18	0.000
L21	73.833 - 70 (21)	TP33.185x32.5037x0.312 5	1536.29	1593.28	0.964	0.00	1593.28	0.000
L22	70 - 69.75 (22)	TP33.2295x33.185x0.512 5	1542.07	2639.67	0.584	0.00	2639.67	0.000
L23	69.75 - 64.75 (23)	TP34.1183x33.2295x0.5	1658.45	2721.25	0.609	0.00	2721.25	0.000
L24	64.75 - 59.75 (24)	TP35.0071x34.1183x0.5	1776.59	2868.13	0.619	0.00	2868.13	0.000
L25	59.75 - 54.75 (25)	TP35.8959x35.0071x0.48	1896.45	2946.51	0.644	0.00	2946.51	0.000
L26	54.75 - 49.75 (26)	TP36.7847x35.8959x0.48 75	2017.97	3097.32	0.652	0.00	3097.32	0.000
L27	49.75 - 44.376 (27)	TP37.74x36.7847x0.4875	2021.01	3101.11	0.652	0.00	3101.11	0.000
L28	44.376 - 43.376 (28)	TP37.2923x36.1817x0.37 5	2175.68	2451.66	0.887	0.00	2451.66	0.000
L29	43.376 - 38.376 (29)	TP38.1808x37.2923x0.37 5	2301.18	2556.28	0.900	0.00	2556.28	0.000
L30	38.376 - 33.376 (30)	TP39.0693x38.1808x0.37 5	2427.76	2662.31	0.912	0.00	2662.31	0.000
L31	33.376 - 28.376 (31)	TP39.9577x39.0693x0.37 5	2555.37	2769.67	0.923	0.00	2769.67	0.000
L32	28.376 - 23.376 (32)	TP40.8462x39.9577x0.37 5	2683.92	2878.32	0.932	0.00	2878.32	0.000
L33	23.376 - 18.376 (33)	TP41.7347x40.8462x0.37 5	2813.32	2988.22	0.941	0.00	2988.22	0.000
L34	18.376 - 13.376 (34)	TP42.6232x41.7347x0.37 5	2943.47	3099.32	0.950	0.00	3099.32	0.000
L35	13.376 - 8.376 (35)	TP43.5116x42.6232x0.37 5	3074.28	3211.54	0.957	0.00	3211.54	0.000
L36	8.376 - 3.376 (36)	TP44.4001x43.5116x0.37 5	3205.72	3324.85	0.964	0.00	3324.85	0.000
L37	3.376 - 0 (37)	TP45x44.4001x0.375	3294.82	3401.95	0.969	0.00	3401.95	0.000

Pole Shear Design Data

Section No.	Elevation	Size	Actual V_u	ϕV_n	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u	ϕT_n	Ratio $\frac{T_u}{\phi T_n}$
	ft		K	K		kip-ft	kip-ft	
L1	160 - 155 (1)	TP18.9019x18x0.1875	5.36	195.46	0.027	0.00	320.35	0.000
L2	155 - 150 (2)	TP19.8038x18.9019x0.18 75	5.67	204.88	0.028	0.00	351.97	0.000
L3	150 - 145 (3)	TP20.7057x19.8038x0.18 75	10.55	214.30	0.049	0.49	385.07	0.001
L4	145 - 140 (4)	TP21.6076x20.7057x0.18 75	10.87	223.72	0.049	0.49	419.67	0.001
L5	140 - 135.33 (5)	TP22.45x21.6076x0.1875	10.95	226.24	0.048	0.49	429.17	0.001
L6	135.33 - 133.663 (6)	TP22.3632x21.4738x0.25	11.34	307.95	0.037	0.49	596.36	0.001
L7	133.663 - 128.663 (7)	TP23.2527x22.3632x0.25	16.20	320.33	0.051	0.67	645.30	0.001
L8	128.663 - 123.663 (8)	TP24.1421x23.2527x0.25	16.57	330.24	0.050	0.26	696.16	0.000
L9	123.663 - 118.663 (9)	TP25.0315x24.1421x0.25	20.26	342.63	0.059	0.26	748.96	0.000
L10	118.663 - 113.663 (10)	TP25.921x25.0315x0.25	20.55	355.01	0.058	0.26	803.69	0.000
L11	113.663 - 108.663 (11)	TP26.8104x25.921x0.25	20.84	367.40	0.057	0.26	860.35	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio V_u / ϕV_n	Actual T_u kip-ft	ϕT_n kip-ft	Ratio T_u / ϕT_n
L12	108.663 - 103.663 (12)	TP27.6998x26.8104x0.25	21.11	379.79	0.056	0.26	918.93	0.000
L13	103.663 - 101 (13)	TP28.1735x27.6998x0.25	21.26	385.56	0.055	0.26	950.92	0.000
L14	101 - 100.75 (14)	TP28.218x28.1735x0.25	21.26	389.48	0.055	0.26	953.95	0.000
L15	100.75 - 95.75 (15)	TP29.1074x28.218x0.25	21.53	399.39	0.054	0.26	1015.59	0.000
L16	95.75 - 89.833 (16)	TP30.16x29.1074x0.25	21.62	401.87	0.054	0.26	1035.53	0.000
L17	89.833 - 88.833 (17) 25	TP29.8372x28.8892x0.31	22.03	510.85	0.043	0.26	1328.88	0.000
L18	88.833 - 83.833 (18) 5	TP30.726x29.8372x0.312	22.31	526.33	0.042	0.26	1410.09	0.000
L19	83.833 - 78.833 (19) 5	TP31.6148x30.726x0.312	22.58	541.80	0.042	0.26	1493.72	0.000
L20	78.833 - 73.833 (20) 25	TP32.5037x31.6148x0.31	22.90	560.37	0.041	0.29	1579.75	0.000
L21	73.833 - 70 (21) 5	TP33.185x32.5037x0.312	23.10	572.23	0.040	0.29	1647.33	0.000
L22	70 - 69.75 (22) 5	TP33.2295x33.185x0.512	23.10	934.01	0.025	0.29	2676.11	0.000
L23	69.75 - 64.75 (23)	TP34.1183x33.2295x0.5	23.47	936.33	0.025	0.29	2756.67	0.000
L24	64.75 - 59.75 (24)	TP35.0071x34.1183x0.5	23.81	961.09	0.025	0.29	2904.36	0.000
L25	59.75 - 54.75 (25) 75	TP35.8959x35.0071x0.48	24.15	961.53	0.025	0.29	2981.61	0.000
L26	54.75 - 49.75 (26) 75	TP36.7847x35.8959x0.48	24.48	985.67	0.025	0.29	3133.18	0.000
L27	49.75 - 44.376 (27) 75	TP37.74x36.7847x0.4875	24.49	986.27	0.025	0.29	3136.98	0.000
L28	44.376 - 43.376 (28) 5	TP37.2923x36.1817x0.37	25.01	771.16	0.032	0.29	2493.19	0.000
L29	43.376 - 38.376 (29) 5	TP38.1808x37.2923x0.37	25.23	789.72	0.032	0.29	2614.64	0.000
L30	38.376 - 33.376 (30) 5	TP39.0693x38.1808x0.37	25.44	808.28	0.031	0.29	2738.98	0.000
L31	33.376 - 28.376 (31) 5	TP39.9577x39.0693x0.37	25.64	826.84	0.031	0.29	2866.21	0.000
L32	28.376 - 23.376 (32) 5	TP40.8462x39.9577x0.37	25.82	845.40	0.031	0.29	2996.32	0.000
L33	23.376 - 18.376 (33) 5	TP41.7347x40.8462x0.37	25.98	863.96	0.030	0.28	3129.32	0.000
L34	18.376 - 13.376 (34) 5	TP42.6232x41.7347x0.37	26.12	882.52	0.030	0.28	3265.21	0.000
L35	13.376 - 8.376 (35) 5	TP43.5116x42.6232x0.37	26.25	901.08	0.029	0.28	3403.98	0.000
L36	8.376 - 3.376 (36) 5	TP44.4001x43.5116x0.37	26.37	919.63	0.029	0.28	3545.65	0.000
L37	3.376 - 0 (37)	TP45x44.4001x0.375	26.46	932.17	0.028	0.28	3642.94	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		Ratio P_u	Ratio M_{nx}	Ratio M_{ny}	Ratio V_u	Ratio T_u	Ratio T_n	Ratio T_n	
L1	160 - 155 (1)	0.005	0.107	0.000	0.027	0.000	0.113	1.050	4.8.2
L2	155 - 150 (2)	0.005	0.180	0.000	0.028	0.000	0.186	1.050	4.8.2
L3	150 - 145 (3)	0.009	0.289	0.000	0.049	0.001	0.301	1.050	4.8.2
L4	145 - 140 (4)	0.009	0.403	0.000	0.049	0.001	0.415	1.050	4.8.2
L5	140 - 135.33 (5)	0.010	0.432	0.000	0.048	0.001	0.444	1.050	4.8.2

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L6	135.33 - 133.663 (6)	0.008	0.390	0.000	0.037	0.001	0.399	1.050	4.8.2
L7	133.663 - 128.663 (7)	0.011	0.478	0.000	0.051	0.001	0.491	1.050	4.8.2
L8	128.663 - 123.663 (8)	0.011	0.562	0.000	0.050	0.000	0.576	1.050	4.8.2
L9	123.663 - 118.663 (9)	0.013	0.656	0.000	0.059	0.000	0.673	1.050	4.8.2
L10	118.663 - 113.663 (10)	0.013	0.747	0.000	0.058	0.000	0.764	1.050	4.8.2
L11	113.663 - 108.663 (11)	0.013	0.829	0.000	0.057	0.000	0.846	1.050	4.8.2
L12	108.663 - 103.663 (12)	0.014	0.902	0.000	0.056	0.000	0.919	1.050	4.8.2
L13	103.663 - 101 (13)	0.014	0.938	0.000	0.055	0.000	0.955	1.050	4.8.2
L14	101 - 100.75 (14)	0.014	0.942	0.000	0.055	0.000	0.958	1.050	4.8.2
L15	100.75 - 95.75 (15)	0.014	1.004	0.000	0.054	0.000	1.021	1.050	4.8.2
L16	95.75 - 89.833 (16)	0.014	1.023	0.000	0.054	0.000	1.040	1.050	4.8.2
L17	89.833 - 88.833 (17)	0.012	0.844	0.000	0.043	0.000	0.858	1.050	4.8.2
L18	88.833 - 83.833 (18)	0.012	0.879	0.000	0.042	0.000	0.893	1.050	4.8.2
L19	83.833 - 78.833 (19)	0.012	0.913	0.000	0.042	0.000	0.926	1.050	4.8.2
L20	78.833 - 73.833 (20)	0.012	0.943	0.000	0.041	0.000	0.957	1.050	4.8.2
L21	73.833 - 70 (21)	0.012	0.964	0.000	0.040	0.000	0.978	1.050	4.8.2
L22	70 - 69.75 (22)	0.008	0.584	0.000	0.025	0.000	0.592	1.050	4.8.2
L23	69.75 - 64.75 (23)	0.008	0.609	0.000	0.025	0.000	0.618	1.050	4.8.2
L24	64.75 - 59.75 (24)	0.008	0.619	0.000	0.025	0.000	0.628	1.050	4.8.2
L25	59.75 - 54.75 (25)	0.009	0.644	0.000	0.025	0.000	0.653	1.050	4.8.2
L26	54.75 - 49.75 (26)	0.009	0.652	0.000	0.025	0.000	0.661	1.050	4.8.2
L27	49.75 - 44.376 (27)	0.009	0.652	0.000	0.025	0.000	0.661	1.050	4.8.2
L28	44.376 - 43.376 (28)	0.012	0.887	0.000	0.032	0.000	0.901	1.050	4.8.2
L29	43.376 - 38.376 (29)	0.012	0.900	0.000	0.032	0.000	0.914	1.050	4.8.2
L30	38.376 - 33.376 (30)	0.013	0.912	0.000	0.031	0.000	0.925	1.050	4.8.2
L31	33.376 - 28.376 (31)	0.013	0.923	0.000	0.031	0.000	0.936	1.050	4.8.2
L32	28.376 - 23.376 (32)	0.013	0.932	0.000	0.031	0.000	0.946	1.050	4.8.2
L33	23.376 - 18.376 (33)	0.013	0.941	0.000	0.030	0.000	0.955	1.050	4.8.2
L34	18.376 - 13.376 (34)	0.013	0.950	0.000	0.030	0.000	0.964	1.050	4.8.2
L35	13.376 - 8.376 (35)	0.013	0.957	0.000	0.029	0.000	0.972	1.050	4.8.2
L36	8.376 - 3.376 (36)	0.014	0.964	0.000	0.029	0.000	0.979	1.050	4.8.2
L37	3.376 - 0 (37)	0.014	0.969	0.000	0.028	0.000	0.983	1.050	4.8.2

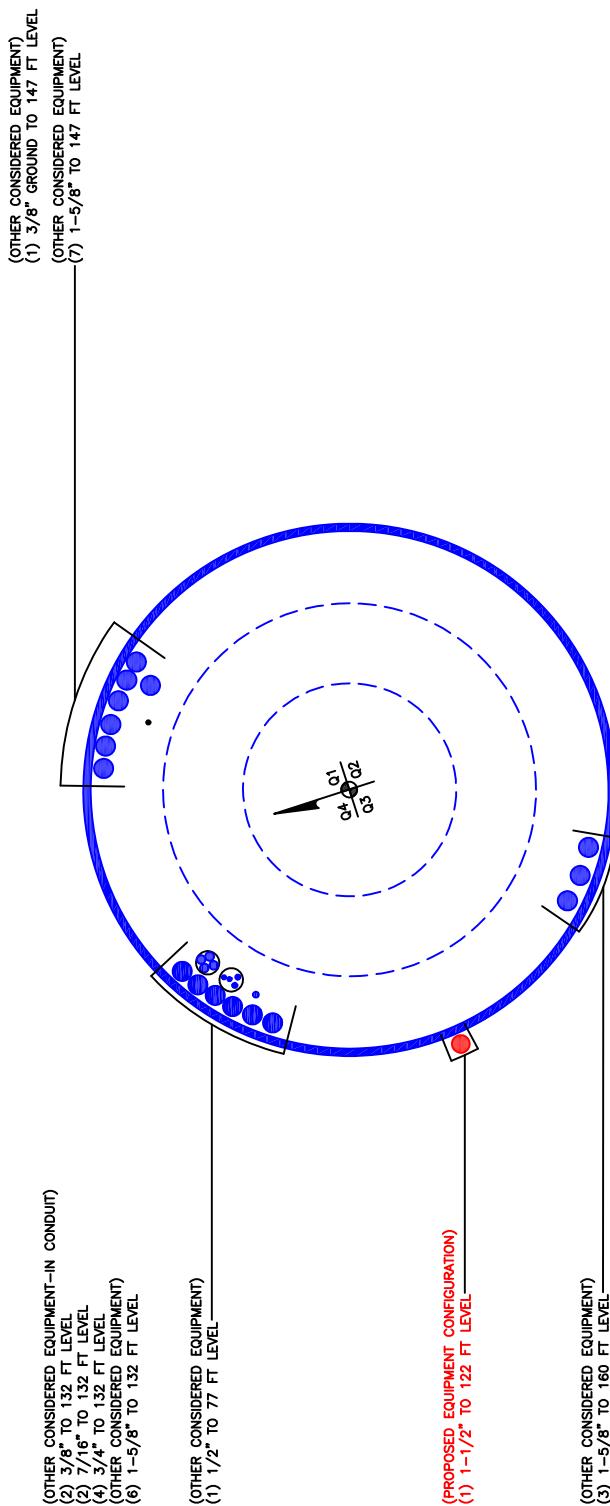
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	160 - 155	Pole	TP18.9019x18x0.1875	1	-3.40	684.12	10.8	Pass
L2	155 - 150	Pole	TP19.8038x18.9019x0.1875	2	-3.63	717.08	17.7	Pass
L3	150 - 145	Pole	TP20.7057x19.8038x0.1875	3	-6.76	750.05	28.7	Pass
L4	145 - 140	Pole	TP21.6076x20.7057x0.1875	4	-7.08	783.02	39.5	Pass
L5	140 - 135.33	Pole	TP22.45x21.6076x0.1875	5	-7.17	791.84	42.3	Pass
L6	135.33 - 133.663	Pole	TP22.3632x21.4738x0.25	6	-7.75	1077.81	38.0	Pass
L7	133.663 - 128.663	Pole	TP23.2527x22.3632x0.25	7	-11.36	1121.17	46.8	Pass
L8	128.663 - 123.663	Pole	TP24.1421x23.2527x0.25	8	-11.90	1164.51	54.8	Pass
L9	123.663 - 118.663	Pole	TP25.0315x24.1421x0.25	9	-15.20	1207.87	64.1	Pass
L10	118.663 - 113.663	Pole	TP25.921x25.0315x0.25	10	-15.86	1251.22	72.8	Pass
L11	113.663 - 108.663	Pole	TP26.8104x25.921x0.25	11	-16.55	1294.58	80.5	Pass
L12	108.663 - 103.663	Pole	TP27.6998x26.8104x0.25	12	-17.27	1337.92	87.5	Pass
L13	103.663 - 101	Pole	TP28.1735x27.6998x0.25	13	-17.66	1361.01	91.0	Pass
L14	101 - 100.75	Pole	TP28.218x28.1735x0.25	14	-17.72	1363.18	91.3	Pass
L15	100.75 - 95.75	Pole	TP29.1074x28.218x0.25	15	-18.47	1406.54	97.2	Pass
L16	95.75 - 89.833	Pole	TP30.16x29.1074x0.25	16	-18.70	1420.27	99.0	Pass
L17	89.833 - 88.833	Pole	TP29.8372x28.8892x0.3125	17	-19.98	1798.82	81.7	Pass
L18	88.833 - 83.833	Pole	TP30.726x29.8372x0.3125	18	-20.87	1852.98	85.0	Pass
L19	83.833 - 78.833	Pole	TP31.6148x30.726x0.3125	19	-21.79	1907.13	88.2	Pass
L20	78.833 - 73.833	Pole	TP32.5037x31.6148x0.3125	20	-22.81	1961.27	91.1	Pass
L21	73.833 - 70	Pole	TP33.185x32.5037x0.3125	21	-23.55	2002.79	93.2	Pass
L22	70 - 69.75	Pole	TP33.2295x33.185x0.5125	22	-23.63	3269.03	56.4	Pass
L23	69.75 - 64.75	Pole	TP34.1183x33.2295x0.5	23	-24.90	3277.15	58.9	Pass
L24	64.75 - 59.75	Pole	TP35.0071x34.1183x0.5	24	-26.19	3363.80	59.8	Pass
L25	59.75 - 54.75	Pole	TP35.8959x35.0071x0.4875	25	-27.51	3365.38	62.2	Pass
L26	54.75 - 49.75	Pole	TP36.7847x35.8959x0.4875	26	-28.85	3449.85	62.9	Pass
L27	49.75 - 44.376	Pole	TP37.74x36.7847x0.4875	27	-28.90	3451.94	63.0	Pass
L28	44.376 - 43.376	Pole	TP37.2923x36.1817x0.375	28	-31.43	2699.07	85.8	Pass
L29	43.376 - 38.376	Pole	TP38.1808x37.2923x0.375	29	-32.63	2764.02	87.0	Pass
L30	38.376 - 33.376	Pole	TP39.0693x38.1808x0.375	30	-33.87	2828.98	88.1	Pass
L31	33.376 - 28.376	Pole	TP39.9577x39.0693x0.375	31	-35.12	2893.94	89.2	Pass
L32	28.376 - 23.376	Pole	TP40.8462x39.9577x0.375	32	-36.40	2958.90	90.1	Pass
L33	23.376 - 18.376	Pole	TP41.7347x40.8462x0.375	33	-37.70	3023.85	91.0	Pass
L34	18.376 - 13.376	Pole	TP42.6232x41.7347x0.375	34	-39.03	3088.81	91.8	Pass
L35	13.376 - 8.376	Pole	TP43.5116x42.6232x0.375	35	-40.37	3153.77	92.5	Pass
L36	8.376 - 3.376	Pole	TP44.4001x43.5116x0.375	36	-41.74	3218.72	93.2	Pass
L37	3.376 - 0	Pole	TP45x44.4001x0.375	37	-42.67	3262.58	93.6	Pass
Summary								
Pole (L16)								Pass
RATING =								Pass

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

APPENDIX B

BASE LEVEL DRAWING



APPENDIX C
ADDITIONAL CALCULATIONS

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	160	24.67	3.333	18	18	22.45	0.1875	Auto	A572-65
2	138.663	48.83	4.333	18	21.47	30.16	0.25	Auto	A572-65
3	94.166	49.79	5.25	18	28.89	37.74	0.3125	Auto	A572-65
4	49.626	49.626	0	18	36.18	45	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	49	70	plate	MS-600 (1.1875")	3			x							x						x		
2	94	101	plate	MS-450 (1.1875")	3			x						x							x		
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in ²)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	4.750	1.1875	A572-65
2	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.625	3.250	1.1875	A572-65

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	160 - 155	5		18	18.000	18.902	0.1875	A572-65	1.000
2	155 - 150	5		18	18.902	19.804	0.1875	A572-65	1.000
3	150 - 145	5		18	19.804	20.706	0.1875	A572-65	1.000
4	145 - 140	5		18	20.706	21.608	0.1875	A572-65	1.000
5	140 - 138.663	4.67	3.333	18	21.608	22.450	0.1875	A572-65	1.000
6	138.663 - 133.663	5		18	21.474	22.363	0.25	A572-65	1.000
7	133.663 - 128.663	5		18	22.363	23.253	0.25	A572-65	1.000
8	128.663 - 123.663	5		18	23.253	24.142	0.25	A572-65	1.000
9	123.663 - 118.663	5		18	24.142	25.032	0.25	A572-65	1.000
10	118.663 - 113.663	5		18	25.032	25.921	0.25	A572-65	1.000
11	113.663 - 108.663	5		18	25.921	26.810	0.25	A572-65	1.000
12	108.663 - 103.663	5		18	26.810	27.700	0.25	A572-65	1.000
13	103.663 - 101	2.663		18	27.700	28.174	0.25	A572-65	1.000
14	101 - 100.75	0.25		18	28.174	28.218	0.25	A572-65	1.000
15	100.75 - 95.75	5		18	28.218	29.107	0.25	A572-65	1.000
16	95.75 - 94.166	5.917	4.333	18	29.107	30.160	0.25	A572-65	1.000
17	94.166 - 88.833	5.333		18	28.889	29.837	0.3125	A572-65	1.000
18	88.833 - 83.833	5		18	29.837	30.726	0.3125	A572-65	1.000
19	83.833 - 78.833	5		18	30.726	31.615	0.3125	A572-65	1.000
20	78.833 - 73.833	5		18	31.615	32.504	0.3125	A572-65	1.000
21	73.833 - 70	3.833		18	32.504	33.185	0.3125	A572-65	1.000
22	70 - 69.75	0.25		18	33.185	33.229	0.5125	A572-65	0.952
23	69.75 - 64.75	5		18	33.229	34.118	0.5	A572-65	0.966
24	64.75 - 59.75	5		18	34.118	35.007	0.5	A572-65	0.957
25	59.75 - 54.75	5		18	35.007	35.896	0.4875	A572-65	0.973
26	54.75 - 49.75	5		18	35.896	36.785	0.4875	A572-65	0.965
27	49.75 - 49.626	5.374	5.25	18	36.785	37.740	0.4875	A572-65	0.964
28	49.626 - 43.376	6.25		18	36.182	37.292	0.375	A572-65	1.000
29	43.376 - 38.376	5		18	37.292	38.181	0.375	A572-65	1.000
30	38.376 - 33.376	5		18	38.181	39.069	0.375	A572-65	1.000
31	33.376 - 28.376	5		18	39.069	39.958	0.375	A572-65	1.000
32	28.376 - 23.376	5		18	39.958	40.846	0.375	A572-65	1.000
33	23.376 - 18.376	5		18	40.846	41.735	0.375	A572-65	1.000
34	18.376 - 13.376	5		18	41.735	42.623	0.375	A572-65	1.000
35	13.376 - 8.376	5		18	42.623	43.512	0.375	A572-65	1.000
36	8.376 - 3.376	5		18	43.512	44.400	0.375	A572-65	1.000
37	3.376 - 0	3.376		18	44.400	45.000	0.375	A572-65	1.000

TNX Section Forces

Increment (ft):		5	TNX Output		
	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)	
1	160 - 155	3.40	33.74	5.36	
2	155 - 150	3.63	61.32	5.67	
3	150 - 145	6.76	106.48	10.55	
4	145 - 140	7.08	160.00	10.87	
5	140 - 138.663	7.17	174.58	10.95	
6	138.663 - 133.663	7.75	230.31	11.34	
7	133.663 - 128.663	11.36	305.66	16.20	
8	128.663 - 123.663	11.90	387.62	16.57	
9	123.663 - 118.663	15.20	482.61	20.26	
10	118.663 - 113.663	15.86	584.59	20.55	
11	113.663 - 108.663	16.55	688.01	20.84	
12	108.663 - 103.663	17.27	792.80	21.11	
13	103.663 - 101	17.66	849.17	21.26	
14	101 - 100.75	17.72	854.48	21.26	
15	100.75 - 95.75	18.47	961.38	21.53	
16	95.75 - 94.166	18.70	995.52	21.62	
17	94.166 - 88.833	19.98	1111.86	22.03	
18	88.833 - 83.833	20.87	1222.63	22.31	
19	83.833 - 78.833	21.79	1334.78	22.58	
20	78.833 - 73.833	22.81	1448.20	22.90	
21	73.833 - 70	23.55	1536.29	23.10	
22	70 - 69.75	23.63	1542.07	23.10	
23	69.75 - 64.75	24.90	1658.45	23.47	
24	64.75 - 59.75	26.19	1776.59	23.81	
25	59.75 - 54.75	27.51	1896.45	24.15	
26	54.75 - 49.75	28.85	2017.97	24.48	
27	49.75 - 49.626	28.90	2021.01	24.49	
28	49.626 - 43.376	31.43	2175.69	25.01	
29	43.376 - 38.376	32.63	2301.18	25.23	
30	38.376 - 33.376	33.87	2427.76	25.44	
31	33.376 - 28.376	35.12	2555.36	25.64	
32	28.376 - 23.376	36.40	2683.92	25.82	
33	23.376 - 18.376	37.70	2813.32	25.98	
34	18.376 - 13.376	39.03	2943.47	26.12	
35	13.376 - 8.376	40.37	3074.28	26.25	
36	8.376 - 3.376	41.74	3205.72	26.37	
37	3.376 - 0	42.67	3294.83	26.46	

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
160 - 155	Pole	TP18.902x18x0.1875	Pole	10.8%	Pass
155 - 150	Pole	TP19.804x18.902x0.1875	Pole	17.7%	Pass
150 - 145	Pole	TP20.706x19.804x0.1875	Pole	28.7%	Pass
145 - 140	Pole	TP21.608x20.706x0.1875	Pole	39.5%	Pass
140 - 138.66	Pole	TP22.45x21.608x0.1875	Pole	42.2%	Pass
138.66 - 133.66	Pole	TP22.363x21.474x0.25	Pole	38.0%	Pass
133.66 - 128.66	Pole	TP23.253x22.363x0.25	Pole	46.8%	Pass
128.66 - 123.66	Pole	TP24.142x23.253x0.25	Pole	54.8%	Pass
123.66 - 118.66	Pole	TP25.032x24.142x0.25	Pole	64.1%	Pass
118.66 - 113.66	Pole	TP25.921x25.032x0.25	Pole	72.8%	Pass
113.66 - 108.66	Pole	TP26.81x25.921x0.25	Pole	80.5%	Pass
108.66 - 103.66	Pole	TP27.7x26.81x0.25	Pole	87.5%	Pass
103.66 - 101	Pole	TP28.174x27.7x0.25	Pole	91.0%	Pass
101 - 100.75	Pole	TP28.218x28.174x0.25	Pole	91.3%	Pass
100.75 - 95.75	Pole	TP29.107x28.218x0.25	Pole	97.2%	Pass
95.75 - 94.17	Pole	TP30.16x29.107x0.25	Pole	99.0%	Pass
94.17 - 88.83	Pole	TP29.837x28.889x0.3125	Pole	81.6%	Pass
88.83 - 83.83	Pole	TP30.726x29.837x0.3125	Pole	85.0%	Pass
83.83 - 78.83	Pole	TP31.615x30.726x0.3125	Pole	88.2%	Pass
78.83 - 73.83	Pole	TP32.504x31.615x0.3125	Pole	91.1%	Pass
73.83 - 70	Pole	TP33.185x32.504x0.3125	Pole	93.2%	Pass
70 - 69.75	Pole + Reinf.	TP33.229x33.185x0.5125	Reinf. 1 Tension Rupture	89.9%	Pass
69.75 - 64.75	Pole + Reinf.	TP34.118x33.229x0.5	Reinf. 1 Tension Rupture	92.6%	Pass
64.75 - 59.75	Pole + Reinf.	TP35.007x34.118x0.5	Reinf. 1 Tension Rupture	95.0%	Pass
59.75 - 54.75	Pole + Reinf.	TP35.896x35.007x0.4875	Reinf. 1 Tension Rupture	97.3%	Pass
54.75 - 49.75	Pole + Reinf.	TP36.785x35.896x0.4875	Reinf. 1 Tension Rupture	99.4%	Pass
49.75 - 49.63	Pole + Reinf.	TP37.74x36.785x0.4875	Reinf. 1 Tension Rupture	99.5%	Pass
49.63 - 43.38	Pole	TP37.292x36.182x0.375	Pole	85.8%	Pass
43.38 - 38.38	Pole	TP38.181x37.292x0.375	Pole	87.0%	Pass
38.38 - 33.38	Pole	TP39.069x38.181x0.375	Pole	88.1%	Pass
33.38 - 28.38	Pole	TP39.958x39.069x0.375	Pole	89.2%	Pass
28.38 - 23.38	Pole	TP40.846x39.958x0.375	Pole	90.1%	Pass
23.38 - 18.38	Pole	TP41.735x40.846x0.375	Pole	91.0%	Pass
18.38 - 13.38	Pole	TP42.623x41.735x0.375	Pole	91.8%	Pass
13.38 - 8.38	Pole	TP43.512x42.623x0.375	Pole	92.5%	Pass
8.38 - 3.38	Pole	TP44.4x43.512x0.375	Pole	93.2%	Pass
3.38 - 0	Pole	TP45x44.4x0.375	Pole	93.6%	Pass
			Summary		
			Pole	99.0%	Pass
			Reinforcement	99.5%	Pass
			Overall	99.5%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity*		
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2
160 - 155	493	n/a	493	11.14	n/a	11.14	10.8%		
155 - 150	567	n/a	567	11.67	n/a	11.67	17.7%		
150 - 145	649	n/a	649	12.21	n/a	12.21	28.7%		
145 - 140	739	n/a	739	12.75	n/a	12.75	39.5%		
140 - 138.66	764	n/a	764	12.89	n/a	12.89	42.2%		
138.66 - 133.66	1084	n/a	1084	17.55	n/a	17.55	38.0%		
133.66 - 128.66	1220	n/a	1220	18.25	n/a	18.25	46.8%		
128.66 - 123.66	1367	n/a	1367	18.96	n/a	18.96	54.8%		
123.66 - 118.66	1525	n/a	1525	19.66	n/a	19.66	64.1%		
118.66 - 113.66	1695	n/a	1695	20.37	n/a	20.37	72.8%		
113.66 - 108.66	1878	n/a	1878	21.07	n/a	21.07	80.5%		
108.66 - 103.66	2073	n/a	2073	21.78	n/a	21.78	87.5%		
103.66 - 101	2182	n/a	2182	22.16	n/a	22.16	91.0%		
101 - 100.75	2192	n/a	2192	22.19	n/a	22.19	91.3%		
100.75 - 95.75	2408	n/a	2408	22.90	n/a	22.90	97.2%		
95.75 - 94.17	2479	n/a	2479	23.12	n/a	23.12	99.0%		
94.17 - 88.83	3224	n/a	3224	29.28	n/a	29.28	81.6%		
88.83 - 83.83	3524	n/a	3524	30.17	n/a	30.17	85.0%		
83.83 - 78.83	3842	n/a	3842	31.05	n/a	31.05	88.2%		
78.83 - 73.83	4179	n/a	4179	31.93	n/a	31.93	91.1%		
73.83 - 70	4450	n/a	4450	32.60	n/a	32.60	93.2%		
70 - 69.75	4468	2664	7132	32.65	18.00	50.65	57.6%	89.9%	
69.75 - 64.75	4840	2803	7642	33.53	18.00	51.53	59.8%	92.6%	
64.75 - 59.75	5231	2945	8176	34.41	18.00	52.41	61.9%	95.0%	
59.75 - 54.75	5644	3091	8735	35.29	18.00	53.29	63.9%	97.3%	
54.75 - 49.75	6078	3240	9318	36.17	18.00	54.17	65.8%	99.4%	
49.75 - 49.63	6089	3244	9332	36.20	18.00	54.20	65.8%	99.5%	
49.63 - 43.38	7563	n/a	7563	43.94	n/a	43.94	85.8%		
43.38 - 38.38	8123	n/a	8123	45.00	n/a	45.00	87.0%		
38.38 - 33.38	8709	n/a	8709	46.05	n/a	46.05	88.1%		
33.38 - 28.38	9323	n/a	9323	47.11	n/a	47.11	89.2%		
28.38 - 23.38	9965	n/a	9965	48.17	n/a	48.17	90.1%		
23.38 - 18.38	10635	n/a	10635	49.23	n/a	49.23	91.0%		
18.38 - 13.38	11336	n/a	11336	50.28	n/a	50.28	91.8%		
13.38 - 8.38	12066	n/a	12066	51.34	n/a	51.34	92.5%		
8.38 - 3.38	12827	n/a	12827	52.40	n/a	52.40	93.2%		
3.38 - 0	13358	n/a	13358	53.11	n/a	53.11	93.6%		

Note: Section capacity checked using 5 degree increments.

Rating per TIA-222-H Section 15.5.

Monopole Base Plate Connection

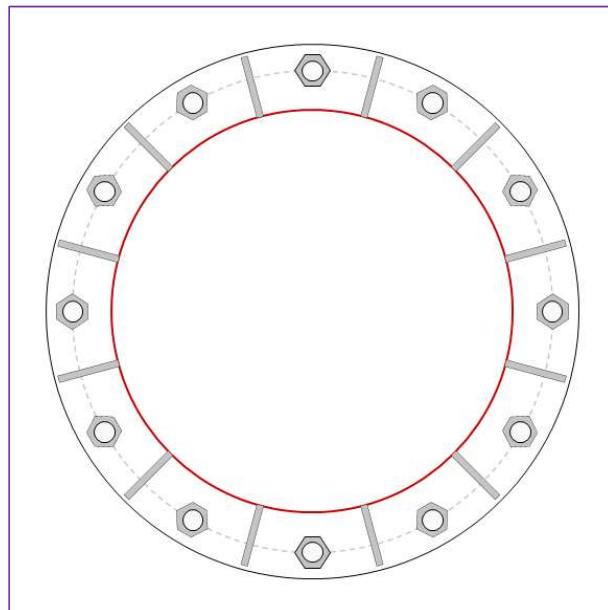


Site Info	
BU #	876397
Site Name	New Milford/ Kimberly
Order #	553388 Rev 2

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2.5

Applied Loads	
Moment (kip-ft)	3294.83
Axial Force (kips)	42.67
Shear Force (kips)	26.46

*TIA-222-H Section 15.5 Applied



Connection Properties

Anchor Rod Data

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

Base Plate Data

60" OD x 2" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

(12) 18"H x 7"W x 0.75"T, Notch: 0.75"

plate: Fy= 50 ksi ; weld: Fy= 70 ksi

horiz. weld: 0.375" groove, 45° dbl bevel, 0" fillet

vert. weld: 0.3125" fillet

Pole Data

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

Analysis Results

Anchor Rod Summary

(units of kips, kip-in)

$P_u-t = 240.33$	$\phi P_n-t = 243.75$	Stress Rating
$V_u = 2.21$	$\phi V_n = 149.1$	97.9%
$M_u = 3.58$	$\phi M_n = 128.14$	Pass

Base Plate Summary

Max Stress (ksi):	38.5	(Roark's Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	67.9%	Pass

Stiffener Summary

Horizontal Weld:	77.9%	Pass
Vertical Weld:	69.9%	Pass
Plate Flexure+Shear:	29.4%	Pass
Plate Tension+Shear:	78.9%	Pass
Plate Compression:	84.9%	Pass

Pole Summary

Punching Shear:	17.5%	Pass
-----------------	-------	------

Pier and Pad Foundation

BU # :	876397
Site Name:	New Milford/ Kimbe
App. Number:	553388 Rev 2



TIA-222 Revision:	H
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	<input type="checkbox"/>
Block Foundation?:	<input type="checkbox"/>
Rectangular Pad?:	<input type="checkbox"/>

Superstructure Analysis Reactions		
Compression, P_{comp} :	42.69	kips
Base Shear, V_u _comp:	26.43	kips
Moment, M_u :	3294.83	ft-kips
Tower Height, H :	160	ft
BP Dist. Above Fdn, bp_{dist} :	4.75	in

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
Lateral (Sliding) (kips)	257.00	26.43	10.3%	Pass
Bearing Pressure (ksf)	9.00	4.16	46.2%	Pass
Overspinning (kip*ft)	4351.80	3463.87	79.6%	Pass
Pier Flexure (Comp.) (kip*ft)	3714.52	3374.12	90.8%	Pass
Pier Compression (kip)	22913.28	62.13	0.3%	Pass
Pad Flexure (kip*ft)	3495.33	1671.39	47.8%	Pass
Pad Shear - 1-way (kips)	860.65	253.21	29.4%	Pass
Pad Shear - 2-way (Comp) (ksi)	0.190	0.039	20.5%	Pass
Flexural 2-way (Comp) (kip*ft)	4338.85	2024.47	46.7%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, d_{pier} :	6	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, Sc :	8	
Pier Rebar Quantity, mc :	34	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	6	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Structural Rating:	90.8%
Soil Rating:	79.6%

Pad Properties		
Depth, D :	5	ft
Pad Width, W_1 :	24	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	32	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	4	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	120	pcf
Ultimate Gross Bearing, Q_{ult} :	12.000	ksf
Cohesion, C_u :		ksf
Friction Angle, φ :	32	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.7	
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, gw :	N/A	ft

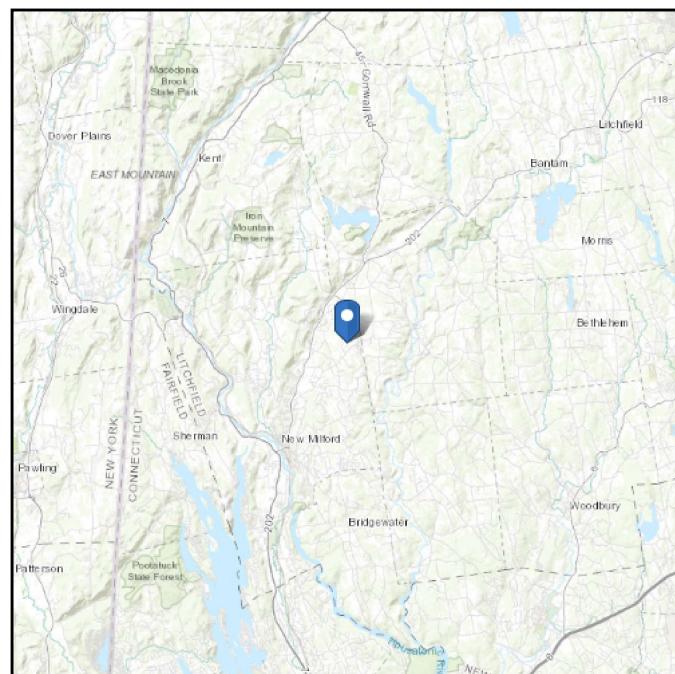
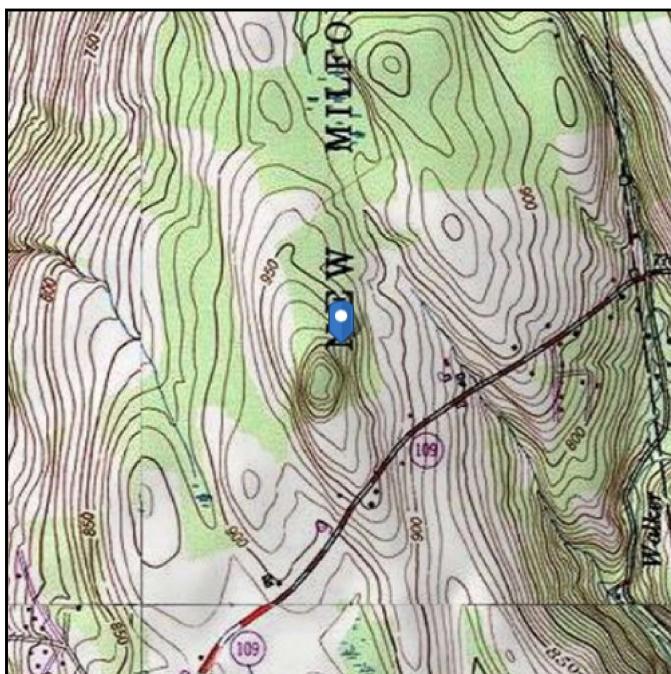
--Toggle between Gross and Net

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 980.16 ft (NAVD 88)
Latitude: 41.631925
Longitude: -73.36745



Wind

Results:

Wind Speed:	115 Vmph
10-year MRI	76 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph

Data Assessed:

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

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

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2.

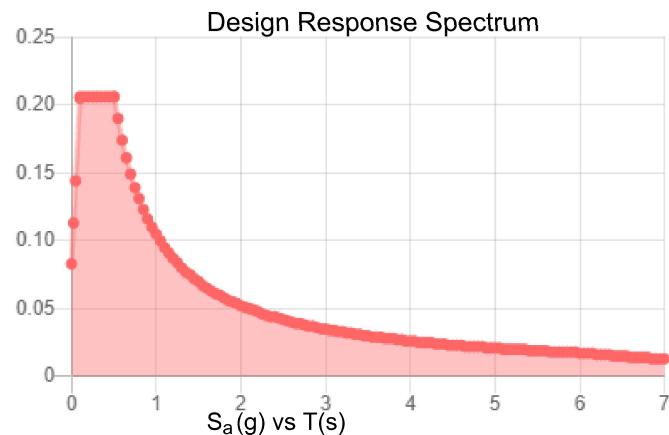
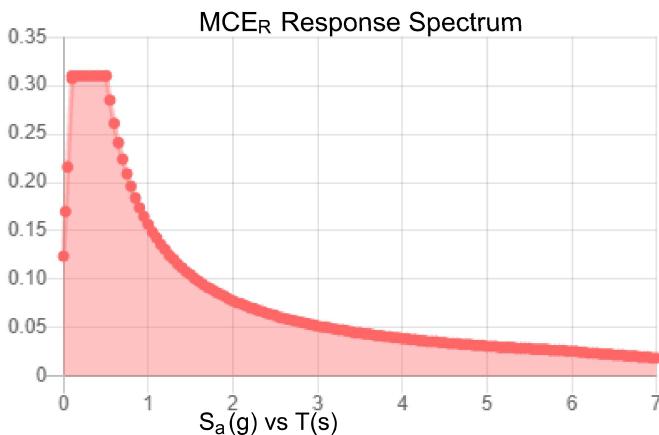
Seismic

Site Soil Class: D - Stiff Soil

Results:

S_s :	0.194	S_{DS} :	0.206
S_1 :	0.065	S_{D1} :	0.105
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.101
S_{MS} :	0.31	PGA_M :	0.161
S_{M1} :	0.157	F_{PGA} :	1.599
		I_e :	1

Seismic Design Category B



Data Accessed:

Thu Mar 11 2021

Date Source:

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

Ice

Results:

Ice Thickness: 0.75 in.

Concurrent Temperature: 5 F

Gust Speed: 40 mph

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

Date Accessed: Thu Mar 11 2021

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

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

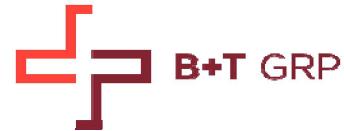
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Exhibit E

Mount Analysis



Date: September 10, 2021

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

Subject:	Mount Analysis Report	
Carrier Designation:	Dish Network Co-Locate	
	Carrier Site Number:	BOHVN00171A
	Carrier Site Name:	CT-CCI-T-876397
Crown Castle Designation:	BU Number:	876397
	Site Name:	New Milford/ Kimberly
	JDE Job Number:	645202
	Order Number:	553388, Rev. 1
Engineering Firm Designation:	B+T Group Report Designation:	155998.001.01
Site Data:	399 Chestnut Land Rd., New Milford, CT, Litchfield County, 06776 Latitude 41° 37' 54.93" Longitude -73° 22' 2.82"	
Structure Information:	Tower Height & Type:	160 ft. Monopole
	Mount Elevation:	122 ft.
	Mount Type:	8 ft. Platform Mount

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

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

Platform Mount

Sufficient

This analysis utilizes an ultimate 3-second gust wind speed of 115 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Rose Denny

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

Chad E. Tuttle, P.E.

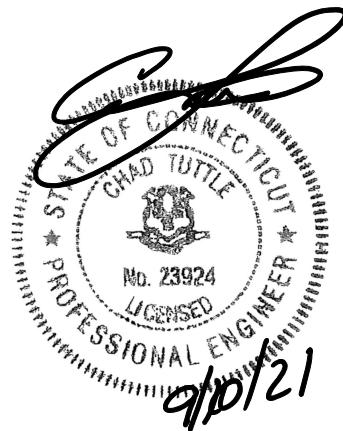


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7) APPENDIX C

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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

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	115 mph
Exposure Category:	C
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Seismic S _s :	0.191
Seismic S ₁ :	0.054
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb.
Man Live Load at Mount Pipes:	500 lb.

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft.)	Antenna Centerline (ft.)	Qty.	Manufacturer	Model/Type	Mount / Modification Details
122	122	3	JMA Wireless	MX08FRO665-21	8' 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	Proposed Loading	Date: 04/28/2021	Crown Castle

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 "Software Input Calculations".

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Tower Mount Analysis* (Revision D). In addition, this analysis is in accordance with OTHER SOW.

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	Main Face Horizontals	122	80	6.9	Pass
	Support Rails	122	22	11.2	Pass
	Support Tubes	122	31	50.9	Pass
	Support Channels	122	52	34.2	Pass
	Support Angles	122	11	29.7	Pass
	Mount Pipes	122	89	13.6	Pass
	Connection Plates	122	8	20.1	Pass
	Connection Angles	122	49	21.1	Pass
2	Connection Bolts	122	-	26.7	Pass

Structure Rating (max from all components) =	50.9%
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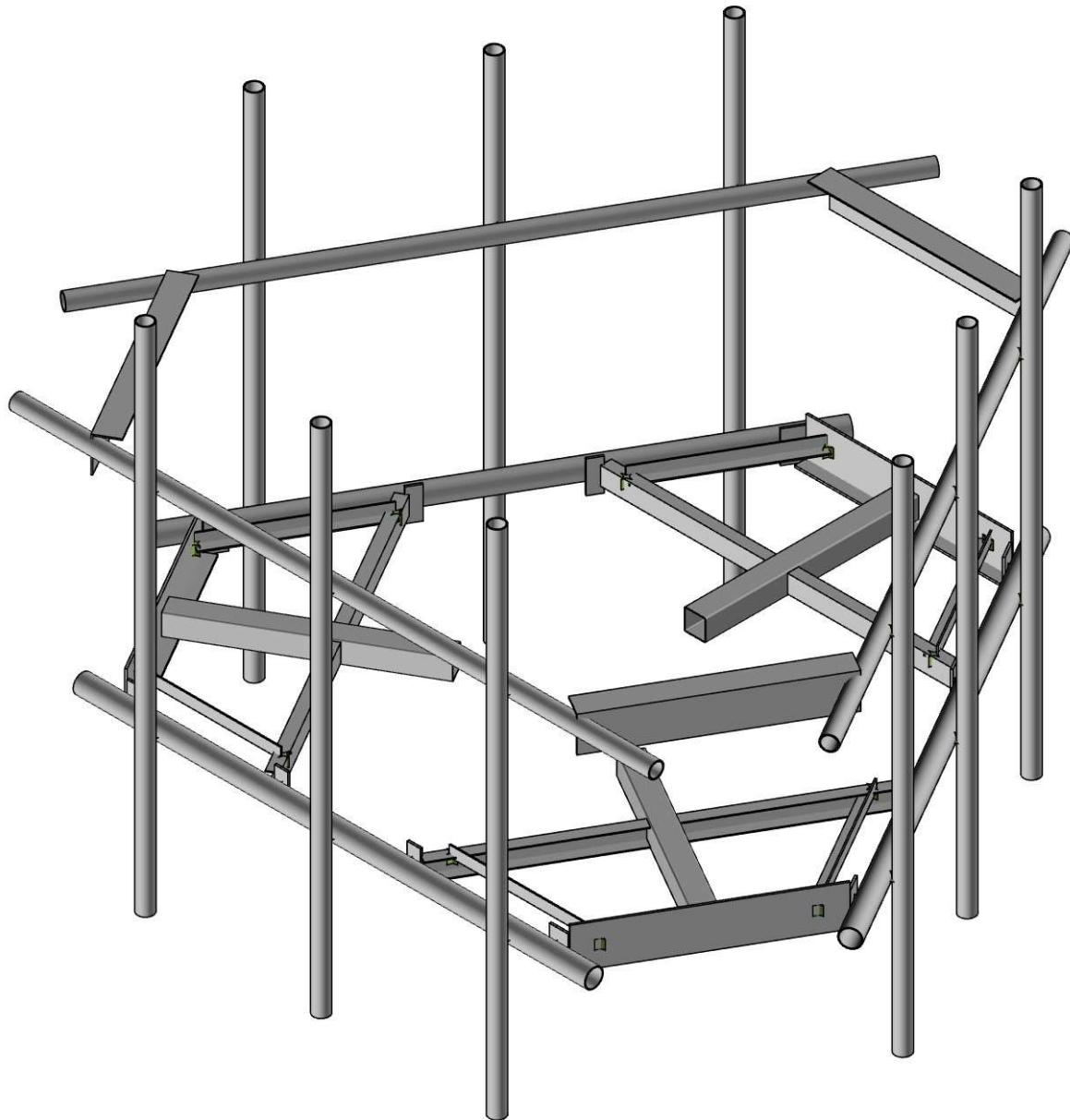
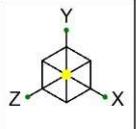
Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 2) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity reported.

4.1) Recommendations

The Commscope platform mount, Part #MC-PK8-DSH has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

APPENDIX A
WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

B+T Group

KR

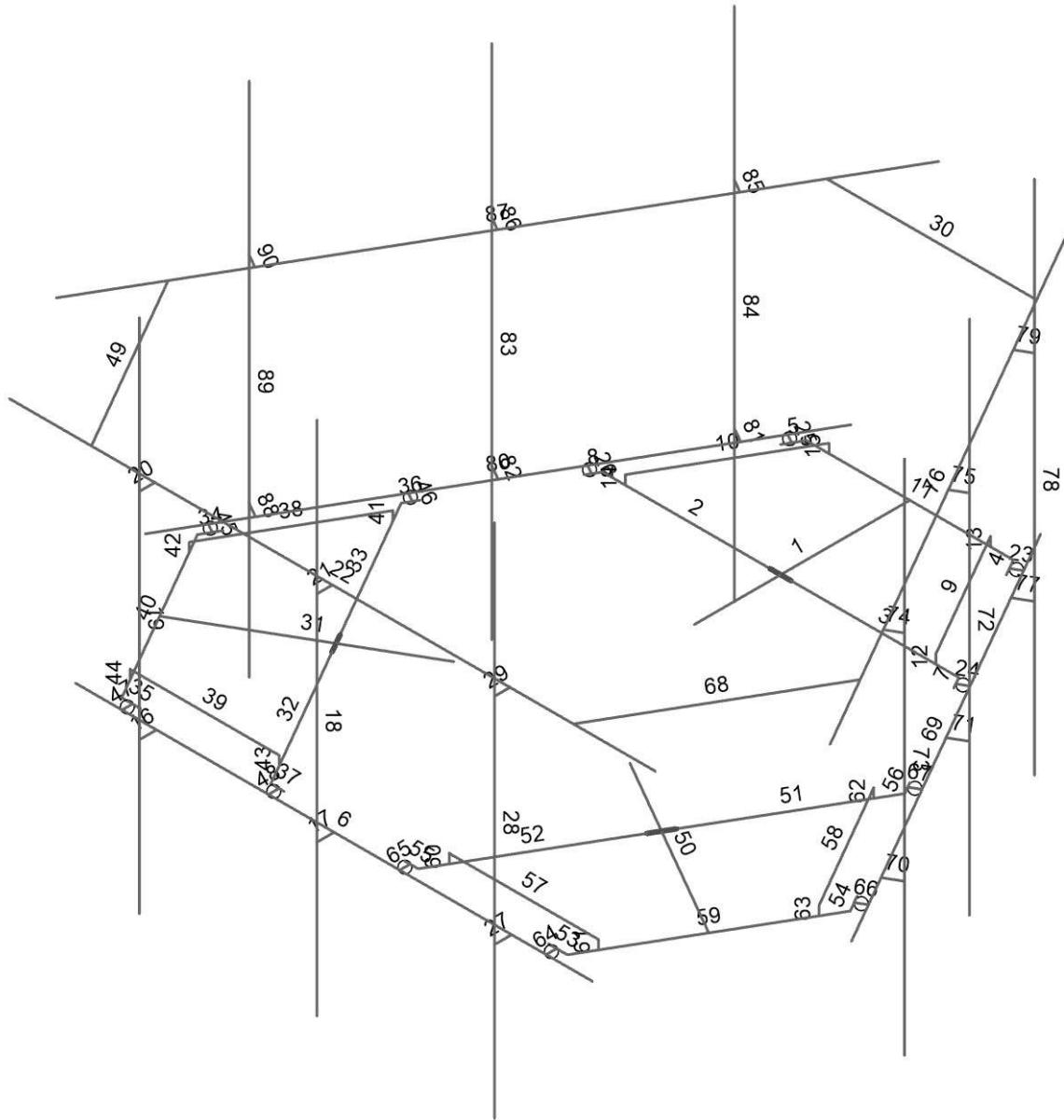
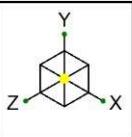
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876397 - New Milford/ Kimberly

SK-1

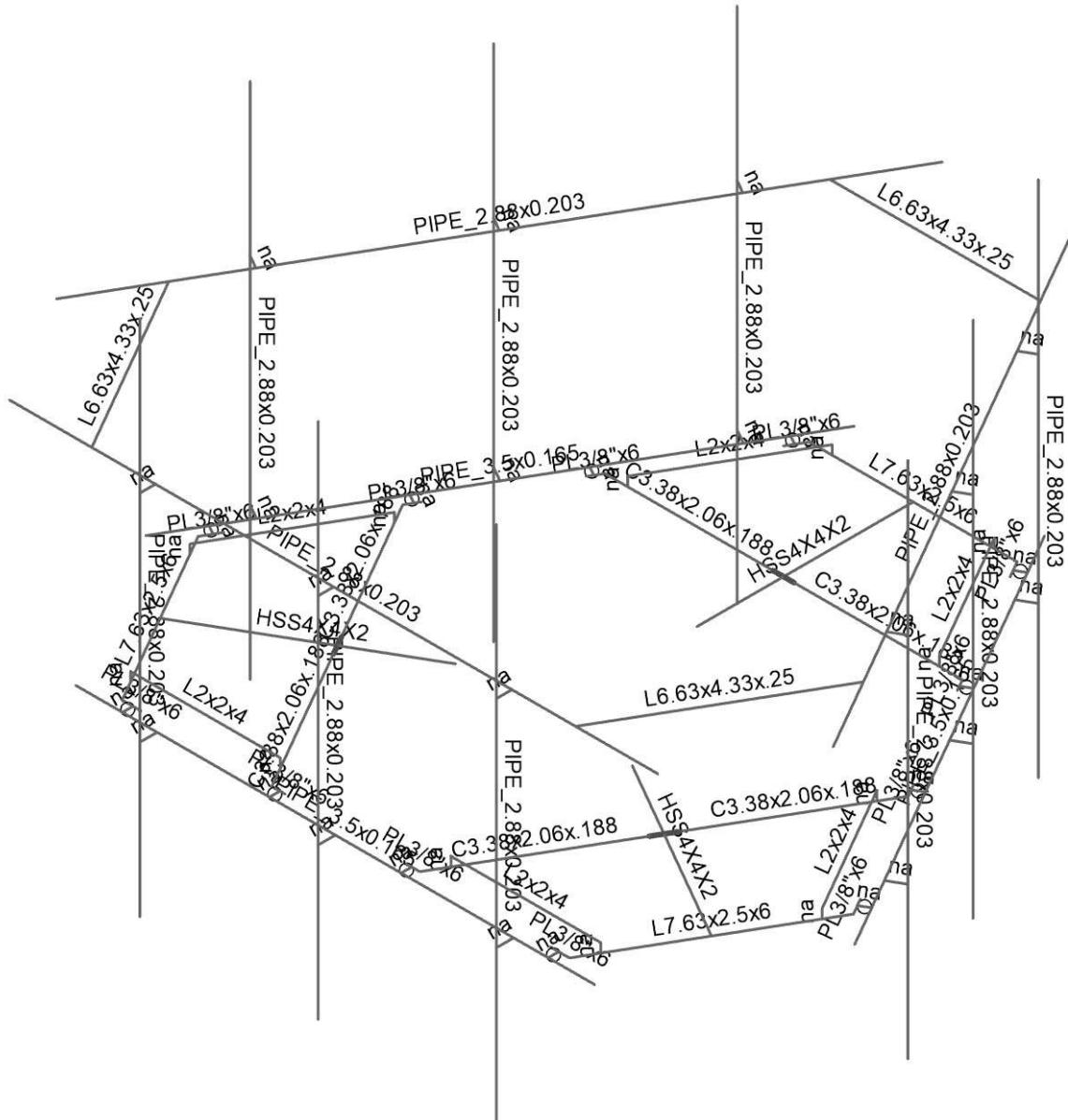
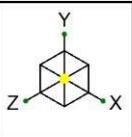
Sep 08, 2021

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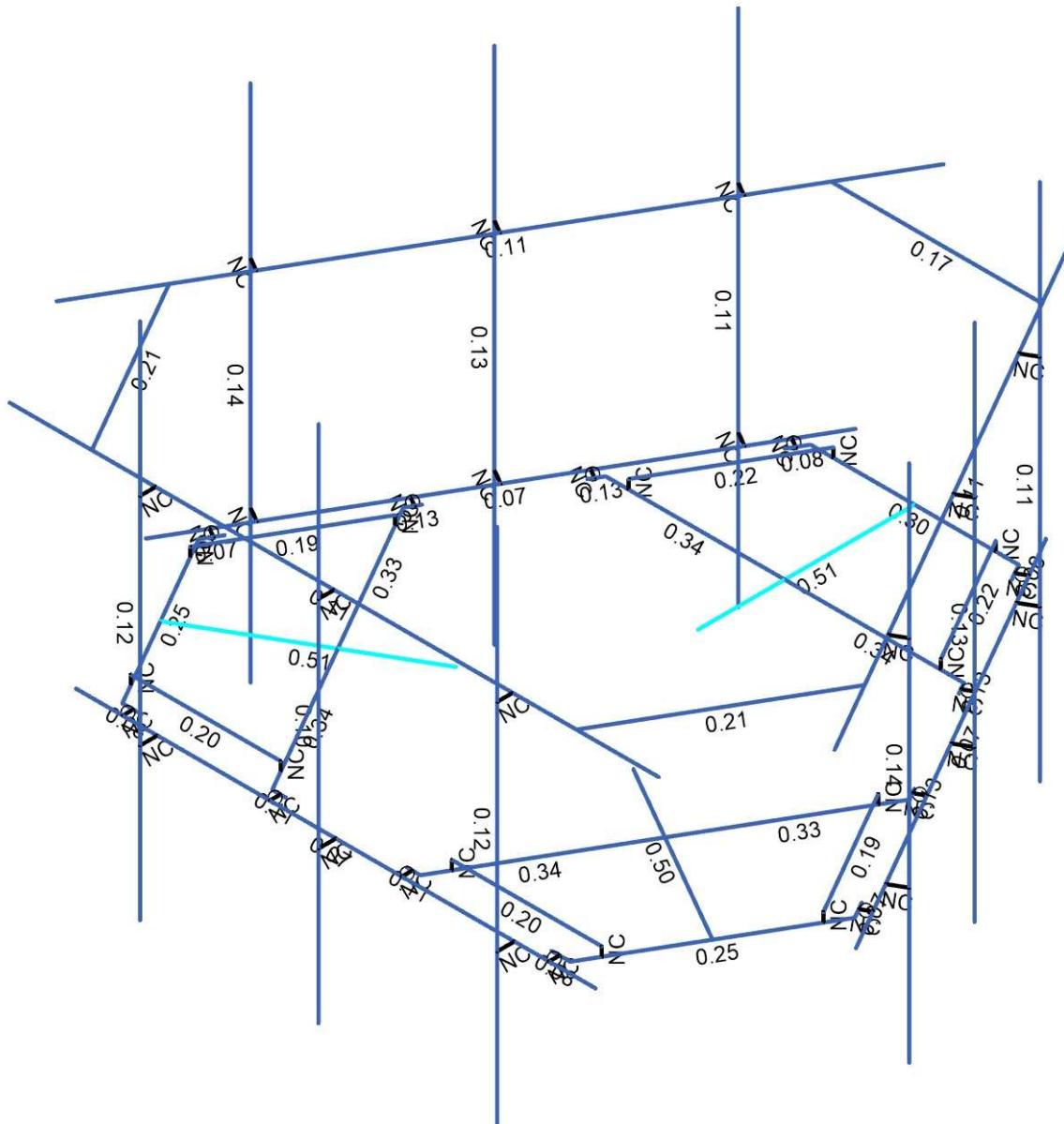
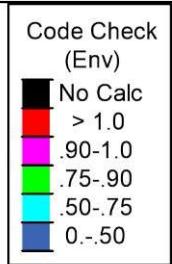
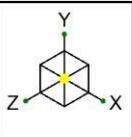
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KR		Sep 08, 2021
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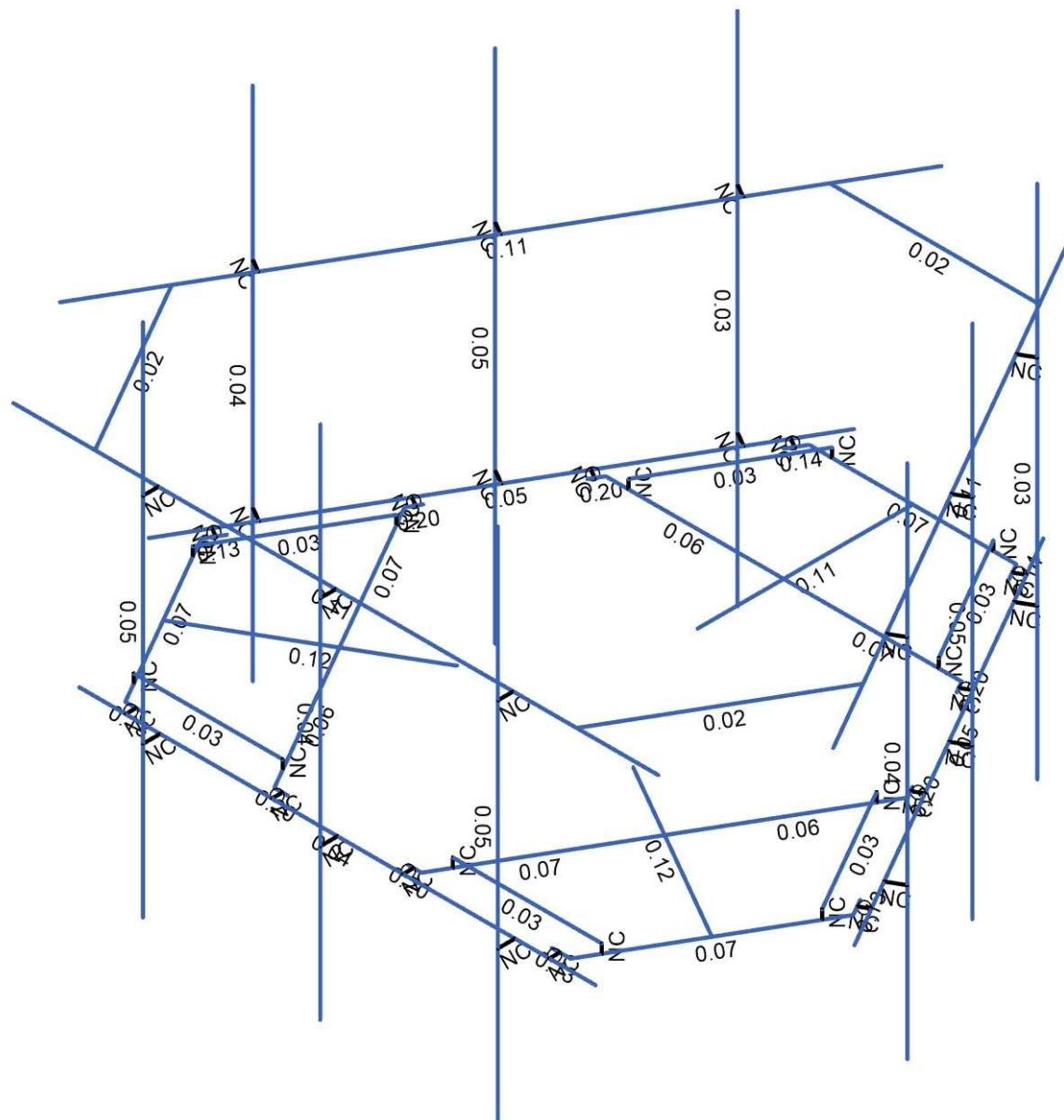
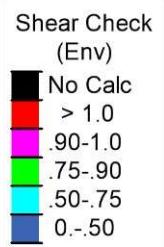
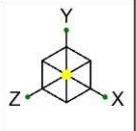
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KR		Sep 08, 2021
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Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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KR		Sep 08, 2021
155998.001.01		155998_001_01_New Milford Kim...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group
KR
155998.001.01

876397 - New Milford/ Kimberly

SK-5

Sep 08, 2021

155998_001_01_New Milford Kim...

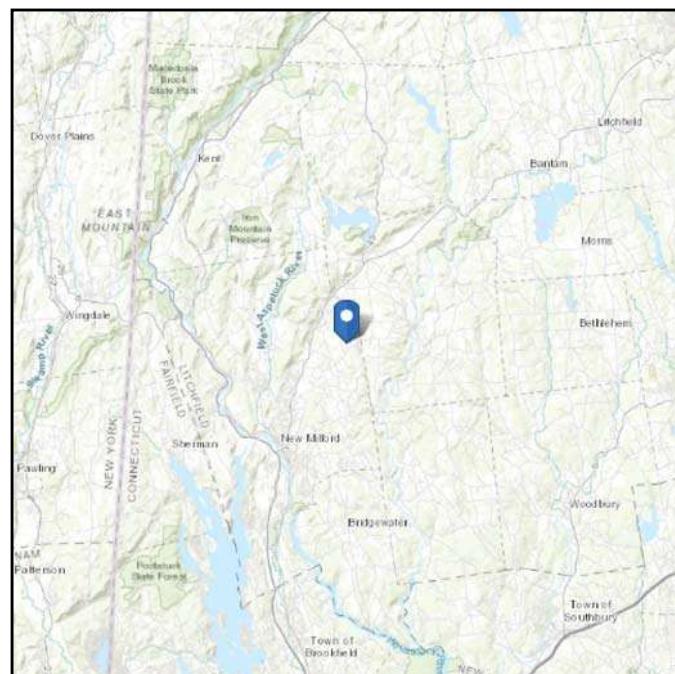
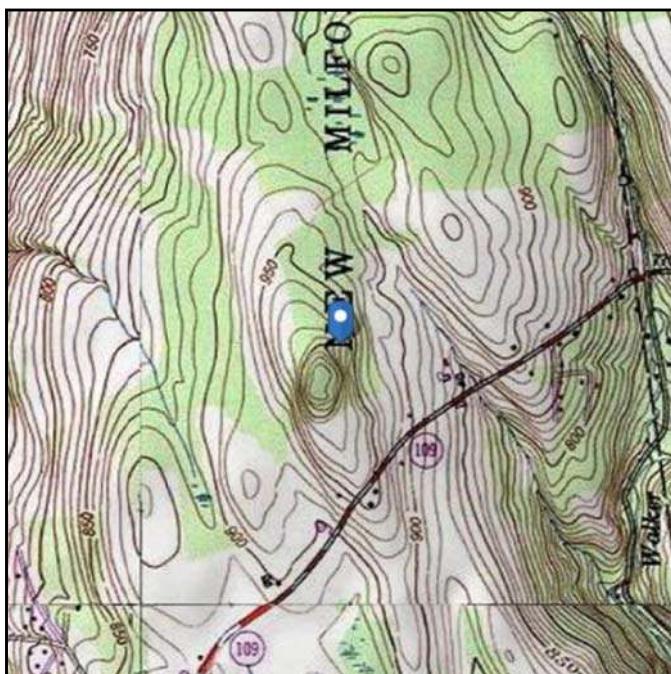
APPENDIX B
SOFTWARE INPUT CALCULATIONS

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: 980.16 ft (NAVD 88)
Latitude: 41.631925
Longitude: -73.36745



Wind

Results:

Wind Speed:	115 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	89 Vmph
100-year MRI	95 Vmph

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

Date Accessed: Wed Sep 08 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 not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

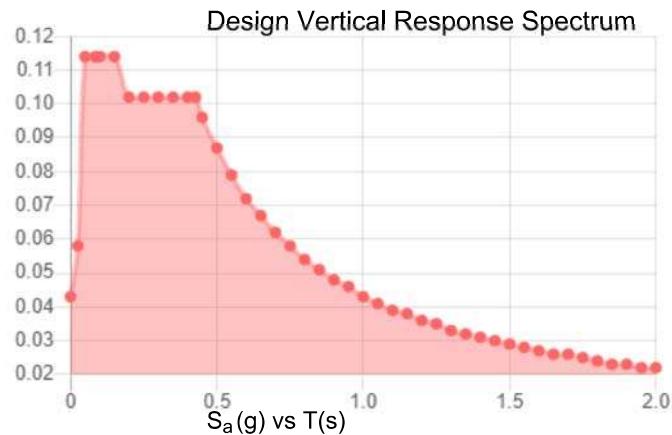
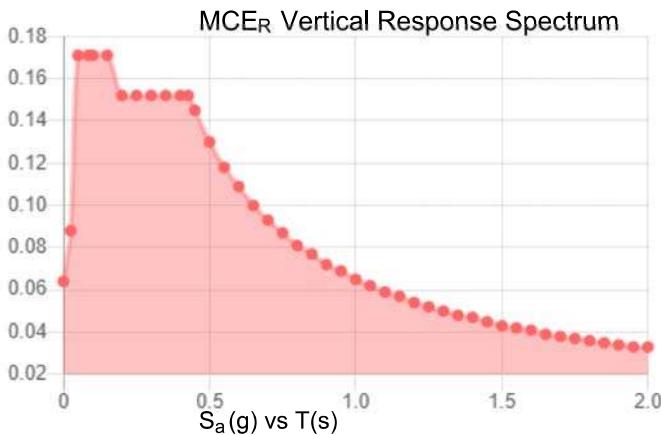
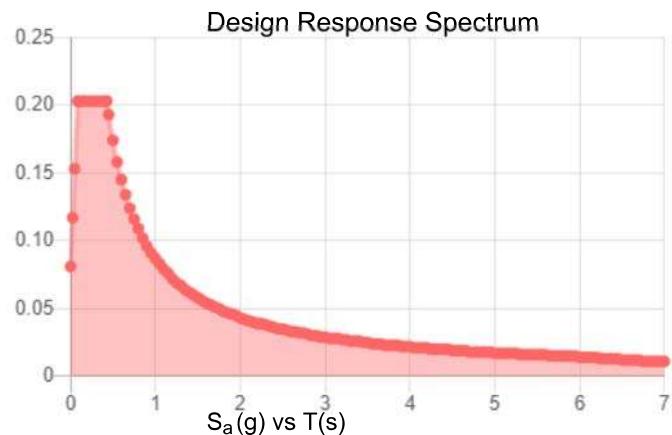
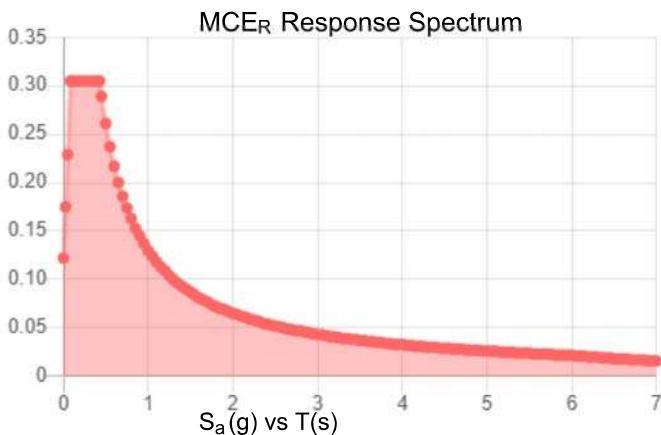
Seismic

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

Results:

S_s :	0.191	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.105
F_v :	2.4	PGA_M :	0.166
S_{MS} :	0.305	F_{PGA} :	1.591
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.203	C_v :	0.7

Seismic Design Category B



Data Accessed:

Wed Sep 08 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: Wed Sep 08 2021

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 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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ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

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PROJECT	155998.001.01 - New Milford	KSCC
SUBJECT	Platform Mount Analysis	
DATE	09/08/21	PAGE OF



Tower Type	:	Monopole	
Ground Elevation	z_s	980	ft
Tower Height		160.00	ft
Mount Elevation		122.00	ft
Antenna Elevation		122.00	ft
Crest Height		0	ft
Risk Category		II	
Exposure Category	:	C	[Sec. 2.6.5.1.2]
Topography Category		1.00	[Sec. 2.6.6.2]
Wind Velocity	v	115	mph
Ice wind Velocity	v_i	50	mph
Service Velocity	v_s	30	mph
Base Ice thickness	t_i	1.00	in
Seismic Design Cat.		B	[ASCE7 Hazard Tool]
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	s_1	0.05	
	s_{ds}	0.20	
	s_{di}	0.09	
Gust Factor	G_h	1.00	[Sec. 16.6]
Pressure Coefficient	K_z	1.32	[Sec. 2.6.5.2]
Topography Factor	K_{xt}	1.00	[Sec. 2.6.6]
Elevation Factor	K_e	0.97	[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}	1.14	in [Sec. 2.6.10]
Importance Factor	I_e	1	[Table 2-3]
Response Coefficient	C_s	0.102	[Sec. 2.7.7.1]
Amplification	A_s	2.05	[Sec. 16.7]
	q_z	40.97	psf

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Manufacturer	Model	Qty	Aspect Ratio	C _a flat/round	EPA _N (ft ²)	EPA _T (ft ²)	EPA _{N+ice} (ft ²)	EPA _{T+ice} (ft ²)	F _A No ice (N)	F _A No ice (T)	F _A Ice (N)	F _A Ice (T)
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.16	0.07	0.04	0.02
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.16	0.07	0.04	0.02
FUJITSU	TA08025-B605	1	0.95	1.20	1.64	0.94	2.16	1.36	0.07	0.04	0.01	0.01
FUJITSU	TA08025-B604	1	0.95	1.20	1.64	0.82	2.16	1.22	0.07	0.04	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.16	0.07	0.04	0.02
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.16	0.07	0.04	0.02
FUJITSU	TA08025-B605	1	0.95	1.20	1.64	0.94	2.16	1.36	0.07	0.04	0.01	0.01
FUJITSU	TA08025-B604	1	0.95	1.20	1.64	0.82	2.16	1.22	0.07	0.04	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.16	0.07	0.04	0.02
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	4.01	1.61	4.53	2.06	0.16	0.07	0.04	0.02
FUJITSU	TA08025-B605	1	0.95	1.20	1.64	0.94	2.16	1.36	0.07	0.04	0.01	0.01
FUJITSU	TA08025-B604	1	0.95	1.20	1.64	0.82	2.16	1.22	0.07	0.04	0.01	0.01
RAYCAP	RDIDC-9181-PF-48	1	1.14	1.20	1.68	0.97	2.21	1.41	0.07	0.04	0.01	0.01

APPENDIX C
SOFTWARE ANALYSIS OUTPUT

Node Coordinates

Label		X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	-1.576475	
2	2	0	0	-4.909809	
3	3	0	0	-2.909809	
4	4	2.758333	0	-2.909809	
5	5	-2.758333	0	-2.909809	
6	6	-1.603633	0	-4.909809	
7	7	1.603633	0	-4.909809	
8	8	1.749466	0	-4.657218	
9	9	-1.749466	0	-4.657218	
10	10	1.686966	0	-4.765471	
11	11	1.826812	0	-4.846211	
12	12	-1.686966	0	-4.765471	
13	13	-1.826812	0	-4.846211	
14	14	-3.999998	0	4.005172	
15	15	3.999998	0	4.005172	
16	16	2.8625	0	-2.729387	
17	17	2.820833	0	-2.801557	
18	18	2.960679	0	-2.882297	
19	19	-2.8625	0	-2.729387	
20	20	-2.820833	0	-2.801557	
21	21	-2.960679	0	-2.882297	
22	22	-1.25	0.140833	-4.909809	
23	23	-2.404701	0.140833	-2.909809	
24	24	2.404701	0.140833	-2.909809	
25	25	1.25	0.140833	-4.909809	
26	26	-1.25	0	-4.909809	
27	27	-2.404701	0	-2.909809	
28	28	2.404701	0	-2.909809	
29	29	1.25	0	-4.909809	
30	30	-2.749998	0	4.005172	
31	31	0.000002	0	4.005172	
32	32	-2.749998	0	4.270797	
33	33	0.000002	0	4.270797	
34	34	-2.749998	-2.333667	4.270797	
35	35	0.000002	-2.333667	4.270797	
36	36	-2.749998	5.666635	4.270797	
37	37	0.000002	5.666635	4.270797	
38	38	-2.749998	3.333337	4.270797	
39	39	0.000002	3.333337	4.270797	
40	40	-2.749998	3.333337	4.031213	
41	41	0.000002	3.333337	4.031213	
42	42	-5	3.333337	4.031213	
43	43	5	3.333337	4.031213	
44	44	2.749998	0	4.005172	
45	45	2.749998	0	4.270797	
46	46	2.749998	-2.333667	4.270797	
47	47	2.749998	5.666635	4.270797	
48	48	2.749998	3.333337	4.270797	
49	49	2.749998	3.333337	4.031213	
50	50	0	0	0	
51	51	1.625027	3.333337	-5.247798	
52	52	-1.625027	3.333337	-5.247798	
53	53	-1.365268	0	0.788238	
54	54	-4.252019	0	2.454904	
55	55	-2.519968	0	1.454904	

Node Coordinates (Continued)

Label		X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
56	56	-3.899135	0	-0.933882	
57	57	-1.140802	0	3.843691	
58	58	-3.450203	0	3.843691	
59	59	-5.053835	0	1.066118	
60	60	-4.908002	0	0.813527	
61	61	-3.158536	0	3.843691	
62	62	-4.970502	0	0.92178	
63	63	-5.110348	0	0.84104	
64	64	-3.283536	0	3.843691	
65	65	-3.283536	0	4.005172	
66	66	-3.794968	0	-1.114304	
67	67	-3.836635	0	-1.042135	
68	68	-3.976482	0	-1.122875	
69	69	-0.932468	0	3.843691	
70	70	-1.015803	0	3.843691	
71	71	-1.015803	0	4.005172	
72	72	-3.627019	0.140833	3.537436	
73	73	-1.317618	0.140833	3.537436	
74	74	-3.722319	0.140833	-0.627627	
75	75	-4.877019	0.140833	1.372373	
76	76	-3.627019	0	3.537436	
77	77	-1.317618	0	3.537436	
78	78	-3.722319	0	-0.627627	
79	79	-4.877019	0	1.372373	
80	80	-5.35724	3.333337	1.216585	
81	81	-3.732213	3.333337	4.031213	
82	82	1.365268	0	0.788238	
83	83	4.252019	0	2.454904	
84	84	2.519968	0	1.454904	
85	85	1.140802	0	3.843691	
86	86	3.899135	0	-0.933882	
87	87	5.053835	0	1.066118	
88	88	3.450203	0	3.843691	
89	89	3.158536	0	3.843691	
90	90	4.908002	0	0.813527	
91	91	3.283536	0	3.843691	
92	92	3.283536	0	4.005172	
93	93	4.970502	0	0.92178	
94	94	5.110348	0	0.84104	
95	95	0.932468	0	3.843691	
96	96	1.015803	0	3.843691	
97	97	1.015803	0	4.005172	
98	98	3.794968	0	-1.114304	
99	99	3.836635	0	-1.042135	
100	100	3.976482	0	-1.122875	
101	101	4.877019	0.140833	1.372373	
102	102	3.722319	0.140833	-0.627627	
103	103	1.317618	0.140833	3.537436	
104	104	3.627019	0.140833	3.537436	
105	105	4.877019	0	1.372373	
106	106	3.722319	0	-0.627627	
107	107	1.317618	0	3.537436	
108	108	3.627019	0	3.537436	
109	109	3.732213	3.333337	4.031213	
110	110	5.35724	3.333337	1.216585	

Node Coordinates (Continued)

Label		X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
111	111	5.468579	0	1.461514	
112	112	1.468581	0	-5.466686	
113	113	4.843579	0	0.378982	
114	114	3.468579	0	-2.002588	
115	115	5.073617	0	0.24617	
116	116	3.698617	0	-2.1354	
117	117	5.073617	-2.333667	0.24617	
118	118	3.698617	-2.333667	-2.1354	
119	119	5.073617	5.666635	0.24617	
120	120	3.698617	5.666635	-2.1354	
121	121	5.073617	3.333337	0.24617	
122	122	3.698617	3.333337	-2.1354	
123	123	4.866132	3.333337	0.365961	
124	124	3.491132	3.333337	-2.015608	
125	125	5.991133	3.333337	2.31452	
126	126	0.991133	3.333337	-6.345734	
127	127	2.093581	0	-4.384154	
128	128	2.323619	0	-4.516967	
129	129	2.323619	-2.333667	-4.516967	
130	130	2.323619	5.666635	-4.516967	
131	131	2.323619	3.333337	-4.516967	
132	132	2.116134	3.333337	-4.397175	
133	133	-1.468581	0	-5.466686	
134	134	-5.468579	0	1.461514	
135	135	-2.093581	0	-4.384154	
136	136	-3.468581	0	-2.002584	
137	137	-2.323619	0	-4.516967	
138	138	-3.698619	0	-2.135397	
139	139	-2.323619	-2.333667	-4.516967	
140	140	-3.698619	-2.333667	-2.135397	
141	141	-2.323619	5.666635	-4.516967	
142	142	-3.698619	5.666635	-2.135397	
143	143	-2.323619	3.333337	-4.516967	
144	144	-3.698619	3.333337	-2.135397	
145	145	-2.116134	3.333337	-4.397175	
146	146	-3.491134	3.333337	-2.015605	
147	147	-0.991133	3.333337	-6.345734	
148	148	-5.991133	3.333337	2.31452	
149	149	-4.843579	0	0.378982	
150	150	-5.073617	0	0.24617	
151	151	-5.073617	-2.333667	0.24617	
152	152	-5.073617	5.666635	0.24617	
153	153	-5.073617	3.333337	0.24617	
154	154	-4.866132	3.333337	0.365961	

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
2	2					
3	3					
4	4					
5	5					
6	16					
7	17					
8	19					

Node Boundary Conditions (Continued)

Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
9	20					
10	22					
11	25					
12	26					
13	29					
14	53	Reaction	Reaction	Reaction	Reaction	Reaction
15	54					
16	55					
17	56					
18	57					
19	66					
20	67					
21	69					
22	70					
23	72					
24	75					
25	76					
26	79					
27	82	Reaction	Reaction	Reaction	Reaction	Reaction
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 ⁵ °F ⁻¹]	Density [k/ft ³]	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 ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]	
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	1.707	1.538	1.538	3.076
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	1.707	1.538	1.538	3.076
8	MF-CP1	PL3/8"x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101

Hot Rolled Steel Section Sets (Continued)

Label	Shape	Type	Design List	Material	Design Rule	Area [in ²]	Iyy [in ⁴]	Izz [in ⁴]	J [in ⁴]
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	
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	51	52	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	A36 Gr.36	Typical	
33	33	55	56	180	SF-H2	Beam	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

Member Primary Data (Continued)

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

Member Advanced Data

Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	1			Yes	N/A	None
2	2		2	Yes	N/A	None
3	3		2	Yes	N/A	None
4	4			Yes	N/A	None
5	5			Yes	N/A	None
6	6			Yes	N/A	None
7	7			Yes	N/A	None
8	8			Yes	N/A	None
9	9			Yes	N/A	None
10	10			Yes	N/A	None
11	11			Yes	N/A	None
12	12			Yes	** NA **	None
13	13			Yes	** NA **	None

Member Advanced Data (Continued)

Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
14	14			Yes	** NA **	None
15	15			Yes	** NA **	None
16	16			Yes	** NA **	None
17	17			Yes	** NA **	None
18	18			Yes	** NA **	None
19	19			Yes	** NA **	None
20	20			Yes	** NA **	None
21	21			Yes	** NA **	None
22	22			Yes	N/A	None
23	23	OOOOOX		Yes	** NA **	None
24	24	OOOOOX		Yes	** NA **	None
25	25	OOOOOX		Yes	** NA **	None
26	26	OOOOOX		Yes	** NA **	None
27	27			Yes	** NA **	None
28	28			Yes	** NA **	None
29	29			Yes	** NA **	None
30	30			Yes	N/A	None
31	31			Yes	N/A	None
32	32		2	Yes	N/A	None
33	33		2	Yes	N/A	None
34	34			Yes	N/A	None
35	35			Yes	N/A	None
36	36			Yes	N/A	None
37	37			Yes	N/A	None
38	38			Yes	N/A	None
39	39			Yes	N/A	None
40	40			Yes	N/A	None
41	41			Yes	** NA **	None
42	42			Yes	** NA **	None
43	43			Yes	** NA **	None
44	44			Yes	** NA **	None
45	45	OOOOOX		Yes	** NA **	None
46	46	OOOOOX		Yes	** NA **	None
47	47	OOOOOX		Yes	** NA **	None
48	48	OOOOOX		Yes	** NA **	None
49	49			Yes	N/A	None
50	50			Yes	N/A	None
51	51		2	Yes	N/A	None
52	52		2	Yes	N/A	None
53	53			Yes	N/A	None
54	54			Yes	N/A	None
55	55			Yes	N/A	None
56	56			Yes	N/A	None
57	57			Yes	N/A	None
58	58			Yes	N/A	None
59	59			Yes	N/A	None
60	60			Yes	** NA **	None
61	61			Yes	** NA **	None
62	62			Yes	** NA **	None
63	63			Yes	** NA **	None
64	64	OOOOOX		Yes	** NA **	None
65	65	OOOOOX		Yes	** NA **	None
66	66	OOOOOX		Yes	** NA **	None
67	67	OOOOOX		Yes	** NA **	None
68	68			Yes	N/A	None

Member Advanced Data (Continued)

Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
69	69			Yes	N/A	None
70	70			Yes	** NA **	None
71	71			Yes	** NA **	None
72	72			Yes	** NA **	None
73	73			Yes	** NA **	None
74	74			Yes	** NA **	None
75	75			Yes	** NA **	None
76	76			Yes	N/A	None
77	77			Yes	** NA **	None
78	78			Yes	** NA **	None
79	79			Yes	** NA **	None
80	80			Yes	N/A	None
81	81			Yes	** NA **	None
82	82			Yes	** NA **	None
83	83			Yes	** NA **	None
84	84			Yes	** NA **	None
85	85			Yes	** NA **	None
86	86			Yes	** NA **	None
87	87			Yes	N/A	None
88	88			Yes	** NA **	None
89	89			Yes	** NA **	None
90	90			Yes	** NA **	None

Hot Rolled Steel Design Parameters

Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	SF-H1	3.333	Lbby
2	2	SF-H2	2.758	Lbby
3	3	SF-H2	2.758	Lbby
4	4	MF-CP1	0.292	Lbby
5	5	MF-CP1	0.292	Lbby
6	6	MF-H1	8	Lbby
7	7	MF-CP1	0.208	Lbby
8	8	MF-CP1	0.208	Lbby
9	9	SF-H3	2.309	Lbby
10	10	SF-H3	2.309	Lbby
11	11	SF-H4	3.207	Lbby
12	18	MF-P1	8	Lbby
13	19	MF-P1	8	Lbby
14	22	MF-H2	10	Lbby
15	28	MF-P1	8	Lbby
16	30	MF-H3	3.25	Lbby
17	31	SF-H1	3.333	Lbby
18	32	SF-H2	2.758	Lbby
19	33	SF-H2	2.758	Lbby
20	34	MF-CP1	0.292	Lbby
21	35	MF-CP1	0.292	Lbby
22	36	MF-CP1	0.208	Lbby
23	37	MF-CP1	0.208	Lbby
24	38	SF-H3	2.309	Lbby
25	39	SF-H3	2.309	Lbby
26	40	SF-H4	3.207	Lbby
27	49	MF-H3	3.25	Lbby
28	50	SF-H1	3.333	Lbby
29	51	SF-H2	2.758	Lbby
30	52	SF-H2	2.758	Lbby

Hot Rolled Steel Design Parameters (Continued)

Label	Shape	Length [ft]	Lcomp top [ft]	Function
31	53	MF-CP1	0.292	Lbyy
32	54	MF-CP1	0.292	Lbyy
33	55	MF-CP1	0.208	Lbyy
34	56	MF-CP1	0.208	Lbyy
35	57	SF-H3	2.309	Lbyy
36	58	SF-H3	2.309	Lbyy
37	59	SF-H4	3.207	Lbyy
38	68	MF-H3	3.25	Lbyy
39	69	MF-H1	8	Lbyy
40	72	MF-P1	8	Lbyy
41	73	MF-P1	8	Lbyy
42	76	MF-H2	10	Lbyy
43	78	MF-P1	8	Lbyy
44	80	MF-H1	8	Lbyy
45	83	MF-P1	8	Lbyy
46	84	MF-P1	8	Lbyy
47	87	MF-H2	10	Lbyy
48	89	MF-P1	8	Lbyy

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	-0.075 %20
4	18	Y	-0.064 %50
5	18	Y	0 0
6	83	Y	-0.041 %15
7	83	Y	-0.041 %85
8	83	Y	-0.075 %20
9	83	Y	-0.064 %50
10	83	Y	0 0
11	72	Y	-0.041 %15
12	72	Y	-0.041 %85
13	72	Y	-0.075 %20
14	72	Y	-0.064 %50
15	72	Y	0 0
16	31	Y	-0.022 %20
17	31	Y	0 0
18	31	Y	0 0
19	31	Y	0 0
20	31	Y	0 0

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

Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Z	-0.164 %15
2	18	Z	-0.164 %85
3	18	Z	-0.072 %20
4	18	Z	-0.072 %50
5	18	Z	0 0
6	83	Z	-0.164 %15
7	83	Z	-0.164 %85
8	83	Z	-0.072 %20
9	83	Z	-0.072 %50

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

Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
10 83	Z	0	0
11 72	Z	-0.164	%15
12 72	Z	-0.164	%85
13 72	Z	-0.072	%20
14 72	Z	-0.072	%50
15 72	Z	0	0
16 31	Z	-0.074	%20
17 31	Z	0	0
18 31	Z	0	0
19 31	Z	0	0
20 31	Z	0	0

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

Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1 18	X	-0.066	%15
2 18	X	-0.066	%85
3 18	X	-0.042	%20
4 18	X	-0.036	%50
5 18	X	0	0
6 83	X	-0.066	%15
7 83	X	-0.066	%85
8 83	X	-0.042	%20
9 83	X	-0.036	%50
10 83	X	0	0
11 72	X	-0.066	%15
12 72	X	-0.066	%85
13 72	X	-0.042	%20
14 72	X	-0.036	%50
15 72	X	0	0
16 31	X	-0.043	%20
17 31	X	0	0
18 31	X	0	0
19 31	X	0	0
20 31	X	0	0

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

Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1 18	Z	-0.035	%15
2 18	Z	-0.035	%85
3 18	Z	-0.014	%20
4 18	Z	-0.014	%50
5 18	Z	0	0
6 83	Z	-0.035	%15
7 83	Z	-0.035	%85
8 83	Z	-0.014	%20
9 83	Z	-0.014	%50
10 83	Z	0	0
11 72	Z	-0.035	%15
12 72	Z	-0.035	%85
13 72	Z	-0.014	%20
14 72	Z	-0.014	%50
15 72	Z	0	0
16 31	Z	-0.014	%20

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

Member Label		Direction	Magnitude [k, k-ft]	Location [(ft, %)]
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	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	-0.008	%20
4	18	X	-0.007	%50
5	18	X	0	0
6	83	X	-0.016	%15
7	83	X	-0.016	%85
8	83	X	-0.008	%20
9	83	X	-0.007	%50
10	83	X	0	0
11	72	X	-0.016	%15
12	72	X	-0.016	%85
13	72	X	-0.008	%20
14	72	X	-0.007	%50
15	72	X	0	0
16	31	X	-0.008	%20
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

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

Member Label		Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	Z	-0.011	%15
2	18	Z	-0.011	%85
3	18	Z	-0.005	%20
4	18	Z	-0.005	%50
5	18	Z	0	0
6	83	Z	-0.011	%15
7	83	Z	-0.011	%85
8	83	Z	-0.005	%20
9	83	Z	-0.005	%50
10	83	Z	0	0
11	72	Z	-0.011	%15
12	72	Z	-0.011	%85
13	72	Z	-0.005	%20
14	72	Z	-0.005	%50
15	72	Z	0	0
16	31	Z	-0.005	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	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 31	X	-0.003	%20
17 31	X	0	0
18 31	X	0	0
19 31	X	0	0
20 31	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	-0.034	%20
4 18	Y	-0.033	%50
5 18	Y	0	0
6 83	Y	-0.118	%15
7 83	Y	-0.118	%85
8 83	Y	-0.034	%20
9 83	Y	-0.033	%50
10 83	Y	0	0
11 72	Y	-0.118	%15
12 72	Y	-0.118	%85
13 72	Y	-0.034	%20
14 72	Y	-0.033	%50
15 72	Y	0	0
16 31	Y	-0.035	%20
17 31	Y	0	0
18 31	Y	0	0
19 31	Y	0	0
20 31	Y	0	0

Member Point Loads (BLC 9 : 0 Seismic)

Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1 18	Z	-0.017	%15
2 18	Z	-0.017	%85
3 18	Z	-0.016	%20
4 18	Z	-0.013	%50
5 18	Z	0	0
6 83	Z	-0.017	%15

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

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	83	Z	-0.017	%85
8	83	Z	-0.016	%20
9	83	Z	-0.013	%50
10	83	Z	0	0
11	72	Z	-0.017	%15
12	72	Z	-0.017	%85
13	72	Z	-0.016	%20
14	72	Z	-0.013	%50
15	72	Z	0	0
16	31	Z	-0.005	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

Member Point Loads (BLC 10 : 90 Seismic)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	18	X	-0.017	%15
2	18	X	-0.017	%85
3	18	X	-0.016	%20
4	18	X	-0.013	%50
5	18	X	0	0
6	83	X	-0.017	%15
7	83	X	-0.017	%85
8	83	X	-0.016	%20
9	83	X	-0.013	%50
10	83	X	0	0
11	72	X	-0.017	%15
12	72	X	-0.017	%85
13	72	X	-0.016	%20
14	72	X	-0.013	%50
15	72	X	0	0
16	31	X	-0.005	%20
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	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	76	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 4)

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

Member Point Loads (BLC 19 : Maint LL 5)

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

Member Point Loads (BLC 20 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	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	76	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 10)

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

Member Point Loads (BLC 25 : Maint LL 11)

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

Member Point Loads (BLC 26 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	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	50	Y	-0.25	%95

Member Point Loads (BLC 29 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	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	-0.018	-0.018	0	%100
2	2	Z	-0.015	-0.015	0	%100
3	3	Z	-0.015	-0.015	0	%100
4	4	Z	-0.022	-0.022	0	%100
5	5	Z	-0.022	-0.022	0	%100
6	6	Z	-0.013	-0.013	0	%100
7	7	Z	-0.022	-0.022	0	%100
8	8	Z	-0.022	-0.022	0	%100
9	9	Z	-0.01	-0.01	0	%100
10	10	Z	-0.01	-0.01	0	%100
11	11	Z	-0.03	-0.03	0	%100
12	18	Z	-0.011	-0.011	0	%100
13	19	Z	-0.011	-0.011	0	%100
14	22	Z	-0.011	-0.011	0	%100
15	28	Z	-0.011	-0.011	0	%100
16	30	Z	-0.027	-0.027	0	%100
17	31	Z	-0.018	-0.018	0	%100
18	32	Z	-0.015	-0.015	0	%100
19	33	Z	-0.015	-0.015	0	%100
20	34	Z	-0.022	-0.022	0	%100
21	35	Z	-0.022	-0.022	0	%100
22	36	Z	-0.022	-0.022	0	%100
23	37	Z	-0.022	-0.022	0	%100
24	38	Z	-0.01	-0.01	0	%100
25	39	Z	-0.01	-0.01	0	%100
26	40	Z	-0.03	-0.03	0	%100
27	49	Z	-0.027	-0.027	0	%100
28	50	Z	-0.018	-0.018	0	%100
29	51	Z	-0.015	-0.015	0	%100
30	52	Z	-0.015	-0.015	0	%100
31	53	Z	-0.022	-0.022	0	%100
32	54	Z	-0.022	-0.022	0	%100
33	55	Z	-0.022	-0.022	0	%100
34	56	Z	-0.022	-0.022	0	%100
35	57	Z	-0.01	-0.01	0	%100
36	58	Z	-0.01	-0.01	0	%100
37	59	Z	-0.03	-0.03	0	%100
38	68	Z	-0.027	-0.027	0	%100
39	69	Z	-0.013	-0.013	0	%100
40	72	Z	-0.011	-0.011	0	%100
41	73	Z	-0.011	-0.011	0	%100
42	76	Z	-0.011	-0.011	0	%100
43	78	Z	-0.011	-0.011	0	%100
44	80	Z	-0.013	-0.013	0	%100

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

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
45	83	Z	-0.011	-0.011	0 %100
46	84	Z	-0.011	-0.011	0 %100
47	87	Z	-0.011	-0.011	0 %100
48	89	Z	-0.011	-0.011	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	-0.018	-0.018	0 %100
2	2	X	-0.015	-0.015	0 %100
3	3	X	-0.015	-0.015	0 %100
4	4	X	-0.022	-0.022	0 %100
5	5	X	-0.022	-0.022	0 %100
6	6	X	-0.013	-0.013	0 %100
7	7	X	-0.022	-0.022	0 %100
8	8	X	-0.022	-0.022	0 %100
9	9	X	-0.01	-0.01	0 %100
10	10	X	-0.01	-0.01	0 %100
11	11	X	-0.03	-0.03	0 %100
12	18	X	-0.011	-0.011	0 %100
13	19	X	-0.011	-0.011	0 %100
14	22	X	-0.011	-0.011	0 %100
15	28	X	-0.011	-0.011	0 %100
16	30	X	-0.027	-0.027	0 %100
17	31	X	-0.018	-0.018	0 %100
18	32	X	-0.015	-0.015	0 %100
19	33	X	-0.015	-0.015	0 %100
20	34	X	-0.022	-0.022	0 %100
21	35	X	-0.022	-0.022	0 %100
22	36	X	-0.022	-0.022	0 %100
23	37	X	-0.022	-0.022	0 %100
24	38	X	-0.01	-0.01	0 %100
25	39	X	-0.01	-0.01	0 %100
26	40	X	-0.03	-0.03	0 %100
27	49	X	-0.027	-0.027	0 %100
28	50	X	-0.018	-0.018	0 %100
29	51	X	-0.015	-0.015	0 %100
30	52	X	-0.015	-0.015	0 %100
31	53	X	-0.022	-0.022	0 %100
32	54	X	-0.022	-0.022	0 %100
33	55	X	-0.022	-0.022	0 %100
34	56	X	-0.022	-0.022	0 %100
35	57	X	-0.01	-0.01	0 %100
36	58	X	-0.01	-0.01	0 %100
37	59	X	-0.03	-0.03	0 %100
38	68	X	-0.027	-0.027	0 %100
39	69	X	-0.013	-0.013	0 %100
40	72	X	-0.011	-0.011	0 %100
41	73	X	-0.011	-0.011	0 %100
42	76	X	-0.011	-0.011	0 %100
43	78	X	-0.011	-0.011	0 %100
44	80	X	-0.013	-0.013	0 %100
45	83	X	-0.011	-0.011	0 %100
46	84	X	-0.011	-0.011	0 %100
47	87	X	-0.011	-0.011	0 %100
48	89	X	-0.011	-0.011	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	-0.004	-0.004	0 %100
10	10	Z	-0.004	-0.004	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	-0.007	-0.007	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	-0.004	-0.004	0 %100
25	39	Z	-0.004	-0.004	0 %100
26	40	Z	-0.008	-0.008	0 %100
27	49	Z	-0.007	-0.007	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	-0.004	-0.004	0 %100
36	58	Z	-0.004	-0.004	0 %100
37	59	Z	-0.008	-0.008	0 %100
38	68	Z	-0.007	-0.007	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

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, %)]
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	-0.004	-0.004	0 %100
10	10	X	-0.004	-0.004	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	-0.007	-0.007	0 %100
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	-0.004	-0.004	0 %100
25	39	X	-0.004	-0.004	0 %100
26	40	X	-0.008	-0.008	0 %100
27	49	X	-0.007	-0.007	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	-0.004	-0.004	0 %100
36	58	X	-0.004	-0.004	0 %100
37	59	X	-0.008	-0.008	0 %100
38	68	X	-0.007	-0.007	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	-0.0004	-0.0004	0 %100
7	7	Z	-0.002	-0.002	0 %100

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

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
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
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	-0.0004	-0.0004	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	-0.0004	-0.0004	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	-0.0004	-0.0004	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

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, %)]
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
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	-0.0004	-0.0004	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	-0.0004	-0.0004	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	-0.009	-0.009	0 %100
2	2	Y	-0.007	-0.007	0 %100
3	3	Y	-0.007	-0.007	0 %100
4	4	Y	-0.01	-0.01	0 %100
5	5	Y	-0.01	-0.01	0 %100
6	6	Y	-0.006	-0.006	0 %100
7	7	Y	-0.01	-0.01	0 %100
8	8	Y	-0.01	-0.01	0 %100
9	9	Y	-0.006	-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

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, %)]
16	30	Y	-0.013	-0.013	0 %100
17	31	Y	-0.009	-0.009	0 %100
18	32	Y	-0.007	-0.007	0 %100
19	33	Y	-0.007	-0.007	0 %100
20	34	Y	-0.01	-0.01	0 %100
21	35	Y	-0.01	-0.01	0 %100
22	36	Y	-0.01	-0.01	0 %100
23	37	Y	-0.01	-0.01	0 %100
24	38	Y	-0.006	-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	-0.009	-0.009	0 %100
29	51	Y	-0.007	-0.007	0 %100
30	52	Y	-0.007	-0.007	0 %100
31	53	Y	-0.01	-0.01	0 %100
32	54	Y	-0.01	-0.01	0 %100
33	55	Y	-0.01	-0.01	0 %100
34	56	Y	-0.01	-0.01	0 %100
35	57	Y	-0.006	-0.006	0 %100
36	58	Y	-0.006	-0.006	0 %100
37	59	Y	-0.013	-0.013	0 %100
38	68	Y	-0.013	-0.013	0 %100
39	69	Y	-0.006	-0.006	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	-0.006	-0.006	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	-0.001	-0.001	0 %100
2	2	Z	-0.0009	-0.0009	0 %100
3	3	Z	-0.0009	-0.0009	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	-0.001	-0.001	0 %100
18	32	Z	-0.0009	-0.0009	0 %100
19	33	Z	-0.0009	-0.0009	0 %100

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

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
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	-0.001	-0.001	0 %100
29	51	Z	-0.0009	-0.0009	0 %100
30	52	Z	-0.0009	-0.0009	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
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	-0.001	-0.001	0 %100
2	2	X	-0.0009	-0.0009	0 %100
3	3	X	-0.0009	-0.0009	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	-0.001	-0.001	0 %100
18	32	X	-0.0009	-0.0009	0 %100
19	33	X	-0.0009	-0.0009	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

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

Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
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	-0.001	-0.001	0 %100
29	51	X	-0.0009	-0.0009	0 %100
30	52	X	-0.0009	-0.0009	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	10	Y	-0.01	-0.02	0.231 2.309
2	38	Y	-0.035	-0.016	0 1.155
3	38	Y	-0.016	0.0006164	1.155 2.309
4	39	Y	-0.018	-0.016	0.231 2.309
5	57	Y	-0.018	-0.016	0 2.078
6	58	Y	0.0006163	-0.016	0 1.155
7	58	Y	-0.016	-0.035	1.155 2.309
8	9	Y	-0.026	-0.02	0 1.039
9	9	Y	-0.02	-0.014	1.039 2.078

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	-0.014	-0.011	0 1.039
2	9	Y	-0.011	-0.008	1.039 2.078
3	10	Y	-0.005	-0.011	0.231 2.309
4	38	Y	-0.017	-0.008	0 1.155
5	38	Y	-0.008	0.0003082	1.155 2.309
6	39	Y	-0.009	-0.008	0.231 2.309
7	57	Y	-0.009	-0.008	0 2.078
8	58	Y	0.0003082	-0.008	0 1.155
9	58	Y	-0.008	-0.017	1.155 2.309

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	23	24	25	22	Y	Two Way	-0.01
2	73	74	75	72	Y	Two Way	-0.01
3	102	103	104	101	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	23	24	25	22	Y	Two Way	-0.005
2	73	74	75	72	Y	Two Way	-0.005
3	102	103	104	101	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^2/ft, k*s^2*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^2/ft, k*s^2*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^2/ft, k*s^2*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		

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	BLC 1 Transient Area Loads	None				9	
31	BLC 8 Transient Area Loads	None				9	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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
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

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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	1.158	5	1.769	14	1.11	2	3.858	2	1.141	11
2		min	-1.158	11	-0.069	8	-1.236	8	-0.759	8	-1.141	5
3	53	max	1.005	5	1.793	18	1.51	2	0.28	13	1.407	3
4		min	-1.114	11	0.12	12	-1.447	8	-1.85	7	-1.406	9
5	82	max	1.072	5	1.74	22	1.437	2	0.286	3	1.369	7
6		min	-0.964	11	0.099	4	-1.374	8	-1.844	9	-1.369	13
7	Totals:	max	3.236	5	4.837	14	4.058	2				
8		min	-3.236	11	2.461	8	-4.058	8				

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

Member	Shape	Code Check Loc[ft]	LC Shear Check Loc[ft]	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	8	PL3/8"x6	0.126	0	13	0.201	0	y 51	70.882	72.9	0.57
2	56	PL3/8"x6	0.129	0	9	0.2	0	y 59	70.882	72.9	0.57
3	55	PL3/8"x6	0.106	0.208	11	0.2	0.208	y 57	70.882	72.9	0.57
4	36	PL3/8"x6	0.129	0.208	7	0.199	0.208	y 53	70.882	72.9	0.57
5	7	PL3/8"x6	0.125	0.208	3	0.199	0.208	y 61	70.882	72.9	0.57
6	37	PL3/8"x6	0.106	0	5	0.199	0	y 55	70.882	72.9	0.57
7	5	PL3/8"x6	0.081	0	3	0.145	0	y 2	68.997	72.9	0.57
8	4	PL3/8"x6	0.081	0	13	0.144	0	y 2	68.997	72.9	0.57
9	53	PL3/8"x6	0.077	0	9	0.135	0	y 70	68.997	72.9	0.57
10	35	PL3/8"x6	0.077	0	7	0.135	0	y 42	68.997	72.9	0.57
11	54	PL3/8"x6	0.066	0	11	0.133	0	y 46	68.997	72.9	0.57
12	34	PL3/8"x6	0.065	0	5	0.133	0	y 66	68.997	72.9	0.57
13	31	HSS4X4X2	0.509	0	7	0.119	0	z 9	70.173	73.278	8.24
14	50	HSS4X4X2	0.504	0	9	0.116	0	z 13	70.173	73.278	8.24
15	22	PIPE_2.88x0.203	0.112	7.812	7	0.111	1.354	2	24.131	70.68	5.029
16	1	HSS4X4X2	0.507	0	13	0.106	0	y 73	70.173	73.278	8.24
17	87	PIPE_2.88x0.203	0.111	7.813	3	0.106	8.646	9	24.131	70.68	5.029
18	76	PIPE_2.88x0.203	0.111	2.188	13	0.106	1.354	7	24.131	70.68	5.029
19	11	L7.63x2.5x6	0.297	1.604	8	0.073	0.334	y 63	75.414	118.523	1.798
20	59	L7.63x2.5x6	0.248	1.604	4	0.073	2.873	y 45	75.414	118.523	1.798
21	40	L7.63x2.5x6	0.248	1.604	12	0.073	0.334	y 67	75.414	118.523	1.798
22	52	C3.38x2.06x.188	0.342	0	9	0.068	2.241	y 43	35.676	43.394	1.694
23	33	C3.38x2.06x.188	0.333	0	17	0.068	2.241	y 38	35.676	43.394	1.694
24	3	C3.38x2.06x.188	0.34	0	25	0.068	2.241	y 46	35.676	43.394	1.694
25	51	C3.38x2.06x.188	0.334	2.592	23	0.06	0.351	y 72	35.676	43.394	1.694
26	2	C3.38x2.06x.188	0.341	2.592	15	0.059	0.351	y 63	35.676	43.394	1.694
27	32	C3.38x2.06x.188	0.341	2.592	7	0.059	0.351	y 68	35.676	43.394	1.694
28	69	PIPE_3.5x0.165	0.069	1.25	2	0.053	3	9	45.872	71.57	6.336
29	80	PIPE_3.5x0.165	0.069	6.75	2	0.053	5	7	45.872	71.57	6.336
30	83	PIPE_2.88x0.203	0.126	5.584	7	0.047	5.584	13	35.517	70.68	5.029
31	72	PIPE_2.88x0.203	0.126	5.584	9	0.047	5.584	9	35.517	70.68	5.029
32	28	PIPE_2.88x0.203	0.116	2.333	7	0.045	5.584	8	35.517	70.68	5.029
33	19	PIPE_2.88x0.203	0.116	2.333	9	0.045	5.584	8	35.517	70.68	5.029

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

Member	Shape	Code CheckLoc[ft]	LC Shear CheckLoc[ft]	DirLc	phi*iPnc [k]	phi*iPnt [k]	phi*iMn y-y [k-ft]	phi*iMn z-z [k-ft]	Cb	Eqn
34 6	PIPE_3.5x0.165	0.067	4 60	0.043	5	12	45.872	71.57	6.336	6.336 1.738 H1-1b
35 89	PIPE_2.88x0.203	0.136	2.333 2	0.04	5.584	3	35.517	70.68	5.029	5.029 3 H1-1b
36 73	PIPE_2.88x0.203	0.136	2.333 2	0.04	5.584	13	35.517	70.68	5.029	5.029 3 H1-1b
37 18	PIPE_2.88x0.203	0.099	5.584 11	0.037	5.584	11	35.517	70.68	5.029	5.029 3 H1-1b
38 78	PIPE_2.88x0.203	0.107	2.333 10	0.034	5.584	12	35.517	70.68	5.029	5.029 3 H1-1b
39 84	PIPE_2.88x0.203	0.108	2.333 6	0.034	5.584	4	35.517	70.68	5.029	5.029 3 H1-1b
40 39	L2x2x4	0.204	2.309 13	0.033	0 y 68	23.349	30.586	0.691	1.577	1.5 H2-1
41 57	L2x2x4	0.205	0 3	0.033	2.309 y 44	23.349	30.586	0.691	1.577	1.5 H2-1
42 9	L2x2x4	0.223	0 8	0.033	2.309 y 48	23.349	30.586	0.691	1.577	1.5 H2-1
43 10	L2x2x4	0.221	2.309 8	0.033	0 y 64	23.349	30.586	0.691	1.577	1.5 H2-1
44 58	L2x2x4	0.19	2.309 4	0.032	0 y 73	23.349	30.586	0.691	1.577	1.5 H2-1
45 38	L2x2x4	0.19	0 12	0.032	2.309 y 39	23.349	30.586	0.691	1.577	1.5 H2-1
46 68	L6.63x4.33x.25	0.211	3.25 2	0.025	0 y 7	51.794	86.751	2.311	6.976	1.5 H2-1
47 49	L6.63x4.33x.25	0.211	0 2	0.025	3.25 y 9	51.794	86.751	2.311	6.976	1.5 H2-1
48 30	L6.63x4.33x.25	0.167	3.25 6	0.019	3.25 y 5	51.794	86.751	2.311	6.976	1.5 H2-1

APPENDIX D
ADDITIONAL CALCULATIONS

PROJECT	155998.001.01 - New Milford/ Kimbel KSC			
SUBJECT	Platform Mount Analysis			
DATE	09/08/21	PAGE	1	OF 1



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

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	1.182	k
Vertical Shear	:	1.825	k
Horizontal Shear	:	1.201	k
Torsion	:	0.271	k.ft
Moment from Horizontal Forces	:	1.165	k.ft
Moment from Vertical Forces	:	3.875	k.ft

Bolt Parameters

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

Summary of Forces

Shear Resultant Force	:	2.18	k
Force from Horz. Moment	:	2.11	k
Force from Vert. Moment	:	7.02	k
Shear Load / Bolt	:	0.55	k
Tension Load / Bolt	:	0.30	k
Resultant from Moments / Bolt	:	3.66	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	19.11%		OKAY
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	7.62%		OKAY
Unity Check, Combined	:	26.73%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	1.58%		OKAY

Exhibit F

Power Density/RF Emissions Report



EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: BOHVN00171A

876397
399 Chestnut Land Road
New Milford, Connecticut 06776

November 19, 2021

EBI Project Number: 6221007204

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	19.74%



November 19, 2021

Dish Wireless

Emissions Analysis for Site: BOHVN00171A - 876397

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **399 Chestnut Land Road in New Milford, 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 399 Chestnut Land Road in New Milford, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

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

- 1) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 4 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 3) 4 n66 channels (AWS Band - 2190 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.
- 4) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 5) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative



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

- 6) The antennas used in this modeling are the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the JMA MX08FRO665-20 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antenna mounting height centerline of the proposed antennas is 122 feet above ground level (AGL).
- 8) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 9) All calculations were done with respect to uncontrolled / general population threshold limits.



EBI Consulting

environmental | engineering | due diligence

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	JMA MX08FRO665-20	Make / Model:	JMA MX08FRO665-20	Make / Model:	JMA MX08FRO665-20
Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz	Frequency Bands:	600 MHz / 1900 MHz / 2190 MHz
Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd / 22.65 dBd
Height (AGL):	122 feet	Height (AGL):	122 feet	Height (AGL):	122 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	5,236.31	ERP (W):	5,236.31	ERP (W):	5,236.31
Antenna A1 MPE %:	I.76%	Antenna B1 MPE %:	I.76%	Antenna C1 MPE %:	I.76%



Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	1.76%
T-Mobile	5.23%
AT&T	11.1%
Verizon	1.65%
Site Total MPE % :	19.74%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	1.76%
Dish Wireless Sector B Total:	1.76%
Dish Wireless Sector C Total:	1.76%
Site Total MPE % :	19.74%

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	223.68	122.0	2.39	600 MHz n71	400	0.60%
Dish Wireless 1900 MHz n70	4	542.70	122.0	5.80	1900 MHz n70	1000	0.58%
Dish Wireless 2190 MHz n66	4	542.70	122.0	5.80	2190 MHz n66	1000	0.58%
Total:							1.76%

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



Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	1.76%
Sector B:	1.76%
Sector C:	1.76%
Dish Wireless Maximum MPE % (Sector A):	1.76%
Site Total:	19.74%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **19.74%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit G

Letter of Authorization



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

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

Crown Castle Letter of Authorization

CT - CONNECTICUT SITING COUNCIL

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

Re: Tower Share Application
Crown Castle telecommunications site at:
399 CHESTNUT LAND RD., NEW MILFORD, CT 06776

GLOBAL SIGNAL ACQUISITIONS III 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: **876397/NEW MILFORD/ KIMBERLY**
Customer Site ID: **BOHVN00171A/CT-CCI-T-876397**
Site Address: **399 Chestnut Land Rd., NEW MILFORD, CT 06776**

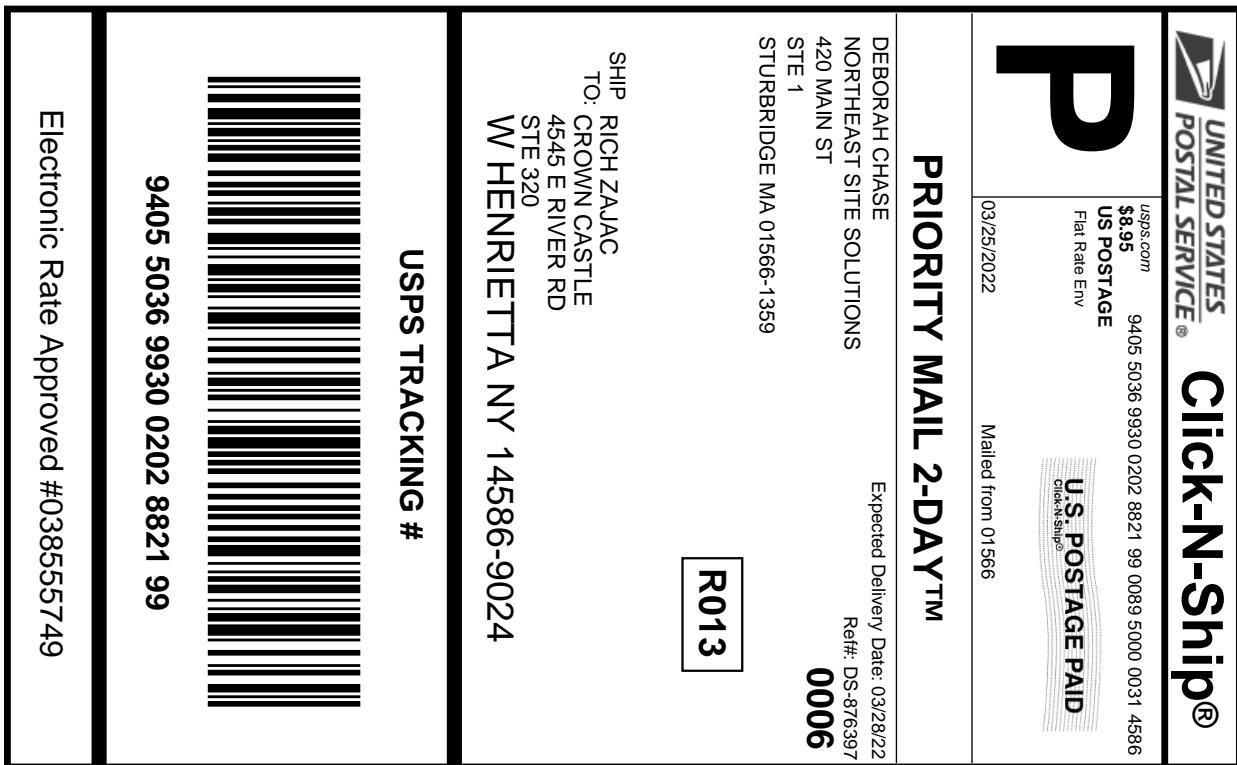
Crown Castle

By: 
Richard Zajac
Site Acquisition Specialist

Date: **3/21/2022**

Exhibit H

Recipient Mailings



X

Cut on dotted line.

Instructions

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USPS TRACKING #:
9405 5036 9930 0202 8821 99

Trans. #:	559660523	Priority Mail® Postage:	\$8.95
Print Date:	03/25/2022	Total:	\$8.95
Ship Date:	03/25/2022		
Expected			
Delivery Date:	03/28/2022		

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

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

Ref#: DS-876397

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

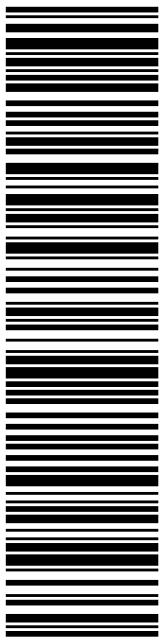


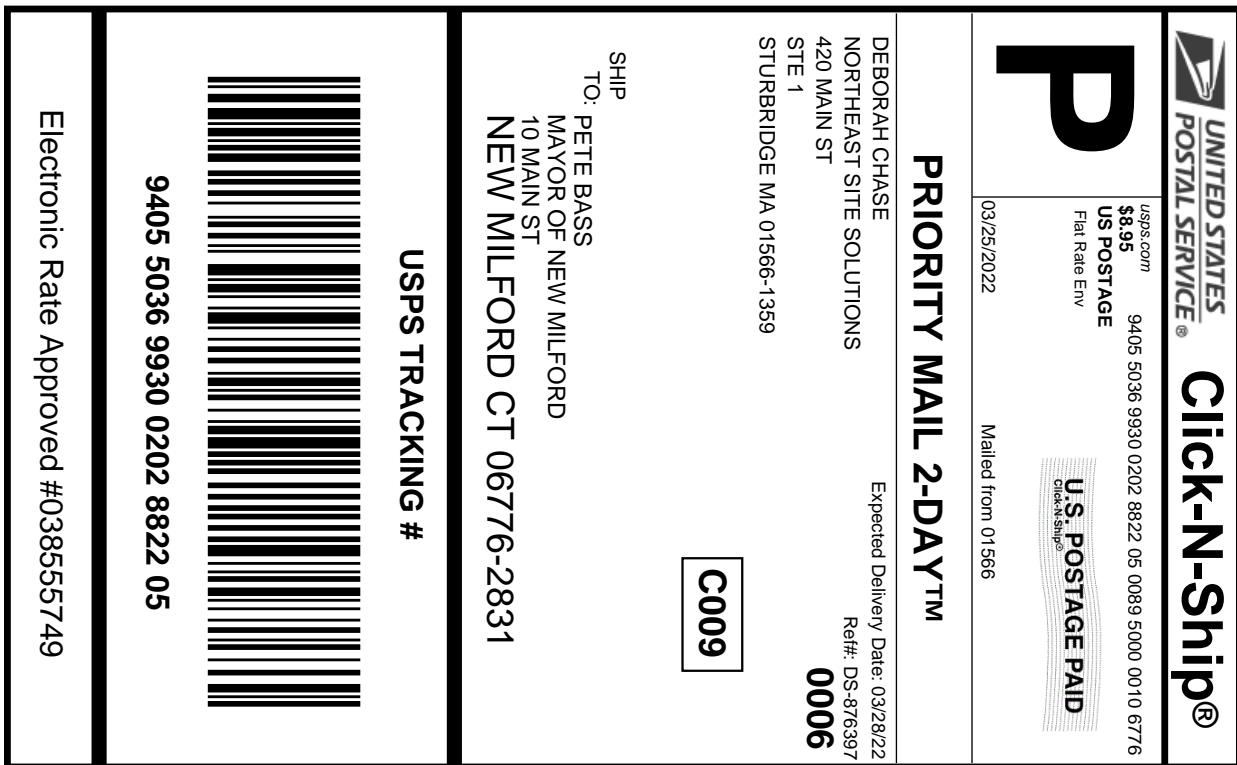
Thank you for shipping with the United States Postal Service!

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Electronic Rate Approved #0385555749

9405 5036 9930 0202 8821 99

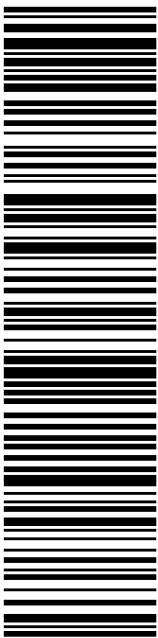




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9405 5036 9930 0202 8822 05

Electronic Rate Approved #0385555749

Click-N-Ship® Label Record

USPS TRACKING # :
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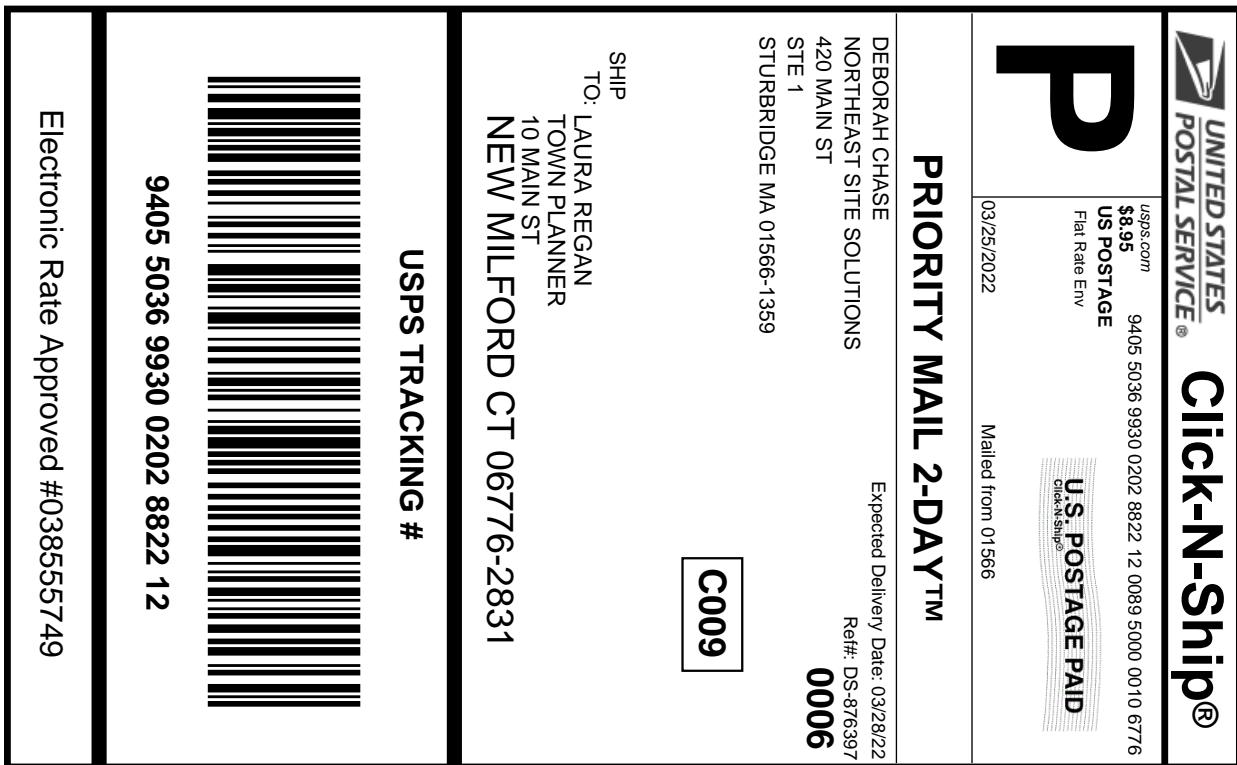
Trans. #:	559660523	Priority Mail® Postage:	\$8.95
Print Date:	03/25/2022	Total:	\$8.95
Ship Date:	03/25/2022		
Expected			
Delivery Date:	03/28/2022		

From:	DEBORAH CHASE NORTHEAST SITE SOLUTIONS 420 MAIN ST STE 1 STURBRIDGE MA 01566-1359	Ref#: DS-876397
To:	PETE BASS MAYOR OF NEW MILFORD 10 MAIN ST NEW MILFORD CT 06776-2831	

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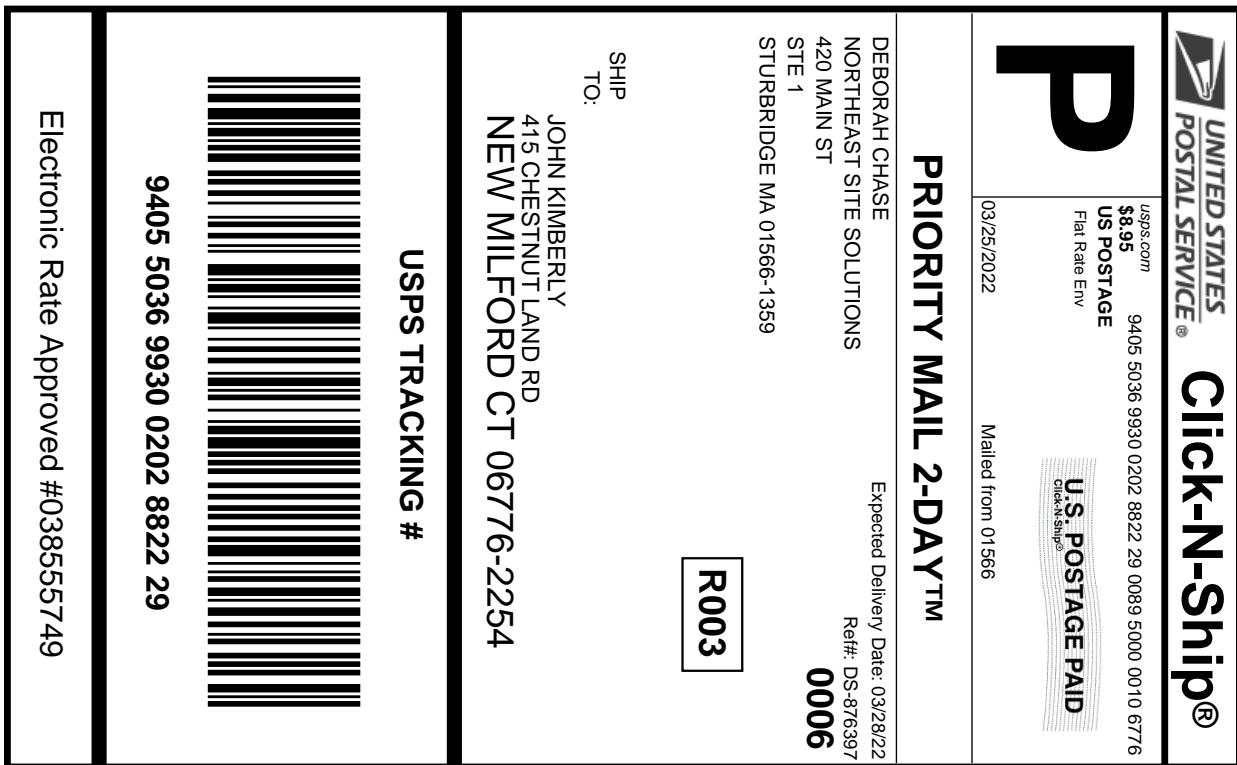
Click-N-Ship® Label Record

USPS TRACKING # :	
9405 5036 9930 0202 8822 12	
Trans. #:	559660523
Print Date:	03/25/2022
Ship Date:	03/25/2022
Expected Delivery Date:	03/28/2022
Priority Mail® Postage:	\$8.95
Total:	\$8.95
From:	DEBORAH CHASE NORTHEAST SITE SOLUTIONS 420 MAIN ST STE 1 STURBRIDGE MA 01566-1359
	Ref#: DS-876397
To:	LAURA REGAN TOWN PLANNER 10 MAIN ST NEW MILFORD CT 06776-2831

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0202 8822 29

Trans. #:	559660523	Priority Mail® Postage:	\$8.95
Print Date:	03/25/2022	Total:	\$8.95
Ship Date:	03/25/2022		
Expected			
Delivery Date:	03/28/2022		

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

To: JOHN KIMBERLY
415 CHESTNUT LAND RD
NEW MILFORD CT 06776-2254

Ref#: DS-876397

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876397 Crown
Bush



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

03/25/2022 01:58 PM

Product	Qty	Unit Price
Prepaid Mail	1	\$0.00
West Henrietta, NY 14586		
Weight: 0 lb 2.00 oz		
Acceptance Date:		
Fri 03/25/2022		
Tracking #:		
9405 5036 9930 0202 8821 99		
Prepaid Mail	1	\$0.00
New Milford, CT 06776		
Weight: 0 lb 8.00 oz		
Acceptance Date:		
Fri 03/25/2022		
Tracking #:		
9405 5036 9930 0202 8822 05		
Prepaid Mail	1	\$0.00
New Milford, CT 06776		
Weight: 0 lb 7.90 oz		
Acceptance Date:		
Fri 03/25/2022		
Tracking #:		
9405 5036 9930 0202 8822 12		
Prepaid Mail	1	\$0.00
New Milford, CT 06776		
Weight: 0 lb 8.00 oz		
Acceptance Date:		
Fri 03/25/2022		
Tracking #:		
9405 5036 9930 0202 8822 29		

Grand Total: \$0.00