PROJECT NARRATIVE

October 26, 2021

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

Re: Request of DISH Wireless LLC for an Order to Approve the Shared Use of an Existing Tower
577 Bell Street Glastonbury, CT 06033
Latitude: 41'44'1.0386" / Longitude: -72'31'46.8408"

Dear Ms. Bachman:

Pursuant to Connecticut General Statutes ("C.G.S.") §16-50aa, as amended, DISH Wireless LLC ("DISH") hereby requests an order from the Connecticut Siting Council ("Council") to approve the shared use by DISH of an existing telecommunication tower at 577 Bell Street in Glastonbury (the "Property"). The existing 104-foot self-support tower is owned by American Tower Corporation ("ATC"). The underlying property is owned by 577 Bell Street LLC. DISH requests that the Council find that the proposed shared use of the ATC tower satisfies the criteria of C.G.S. §16-50aa and issue an order approving the proposed shared use. A copy of this filing is being sent to Thomas P. Gullotta, Chairman of the Glastonbury Town Council, Peter R. Carey, Town of Glastonbury Building Official and the 577 Bell Street LLC as the property owner.

Background

The existing ATC facility consists of a 104-foot self-support tower located within an existing leased area. Verizon Wireless currently maintains antennas at the 102-foot level. The Town of Glastonbury currently maintains antennas at the 95-foot level and the 80-foot level. AT&T Mobility currently maintains antennas at the 90-foot level. Metro PCS currently maintains antennas at the 65-foot level. Equipment associated with these antennas are located at various positions within the tower and compound.

DISH is licensed by the Federal Communications Commission ("FCC") to provide wireless services throughout the State of Connecticut. DISH and Crown Castle have agreed to the proposed shared use of the 577 Bell Street tower pursuant to mutually acceptable terms and conditions. Likewise, DISH and ATC have agreed to the proposed installation of equipment cabinets on the ground on the south side of the tower within the existing compound. ATC has authorized DISH to apply for all necessary permits and approvals that may be required to share the existing tower.
(See attached Letter of Authorization)

DISH proposes to install three (3) antennas, (1) Tower platform mount, (6) Remote radio units at the 55-foot level along with, (1) over voltage protection device (OVP) and (1) Hybrid cable. DISH will install an equipment cabinet on a 5'x7' equipment platform. DISH's Construction Drawings provide project specifications for all proposed site improvement locations.
The construction drawings also include specifications for DISH's proposed antenna and groundwork.

C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, "if the Council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such a shared use." DISH respectfully submits that the shared use of the tower satisfies these criteria.

A. Technical Feasibility. The existing ATC tower is structurally capable of supporting DISH's proposed improvements. The proposed shared use of this tower is, therefore, technically feasible. A Feasibility Structural Analysis Report ("Structural Report") prepared for this project confirms that this tower can support DISH's proposed loading. A copy of the Structural Report has been included in this application.

B. Legal Feasibility. Under C.G.S. § 16-50aa, the Council has been authorized to issue order approving the shared use of an existing tower such as the ATC tower. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. In addition, § 16-50x(a) directs the Council to "give such consideration to the other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility. The proposed shared use of the ATC tower would have a minimal environmental effect for the following reasons:

1. The proposed installation will have no visual impact on the area of the tower. DISH's equipment cabinet would be installed within the existing facility compound. DISH's shared use of this tower therefore will not cause any significant change or alteration in the physical or environmental characteristics of the existing site.

2. Operation of DISH's antennas at this site would not exceed the RF emissions standard adopted by the Federal Communications Commission ("FCC"). Included in the EME report of this filing are the approximation tables that demonstrate that DISH's proposed facility will operate well within the FCC RF emissions safety standards.

3. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or sanitary facilities. After construction is complete the proposed installations would not generate any increased traffic to the ATC facility other than periodic maintenance. The proposed shared use of the ATC tower, would, therefore, have a minimal environmental effect, and is environmentally feasible.

D. **Economic Feasibility**. As previously mentioned, DISH has entered into an agreement with ATC for the shared use of the existing facility subject to mutually agreeable terms. The proposed tower sharing is, therefore, economically feasible.

E. **Public Safety Concerns**. As discussed above, the tower is structurally capable of supporting DISH's full array of three (3) antennas, (1) Tower platform mount, (6) Remote radio units, (1) over voltage protection device (OVP) and (1) Hybrid cable and all related equipment. DISH is not aware of any public safety concerns relative to the proposed sharing of the existing ATC tower.

Conclusion

For the reasons discussed above, the proposed shared use of the existing ATC tower at 577 Bell Street satisfies the criteria stated in C.G.S. §16-50aa and advances the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant, therefore, respectfully requests that the Council issue an order approving the prosed shared use.

Sincerely,

David Hoogasian

David Hoogasian
Project Manager

LETTER OF AUTHORIZATION

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION
LICENSEE: DISH WIRELESS L.L.C.

I, Margaret Robinson, Senior Counsel for American Tower*, owner/operator of the tower facility located at the address identified above (the "Tower Facility"), do hereby authorize DISH WIRELESS L.L.C., its successors and assigns, and/or its agent, (collectively, the "Licensee") to act as American Tower's non-exclusive agent for the sole purpose of filing and consummating any land-use or building permit application(s) as may be required by the applicable permitting authorities for Licensee's telecommunications' installation.

We understand that this application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by Licensee only of conditions related to Licensee's installation and any such conditions of approval or modifications will be Licensee's sole responsibility.

*American Tower includes all affiliates and subsidiaries of American Tower Corporation.

Project #	ATC Site #	ATC Site Name	ATC Site Address
13688133	208450	Enfield	1A Ecology Drive, Enfield CT
13700322	209115	Ridgefield 2	320 Old Stagecoach Road, Ridgefield, CT
13688136	209185	Burlington 2	87 Monce Road, Burlington CT
13700320	209271	Brookfield 2	100 Pocono Road, Brookfield CT
13693702	243036	WEST HAVEN & RT 162 CT	668 Jones Hill Road, West Haven CT
13693677	280501	ROXBURY CT	377 Southbury Road, Roxbury CT
13685406	281416	WILLINGTON CT	196 Tolland Turnpike, Willington CT
13709418	281862	BRIDGEWATER CT	111 SECOND HILL RD, Bridgewater CT
13693659	283418	NORTH HAVEN CT	50 Devine Street, North Haven CT
13694329	283419	PINE ORCHARD BRANFORD CT	123 Pine Orchard Road, Branford CT
13694332	283422	SHORT BEACH BRANFORD CT	171 Short Beach Road, Branford CT
13698427	283423	NAUGATUCK CT	880 Andrew Mountain Road, Naugatuck CT
13685464	283563	MANSFIELD CT	343 Daleville Road, Willington CT
13692735	284983	OLD LYME CT	61-1 Buttonball Road, Old Lyme CT
13693120	284984	PAWCATUCK CT	166 Pawcatuck Ave, Pawcatuck CT
13693144	284988	GUILFORD CT	Moose Hill Road, Guilford CT
13694582	302465	Colchester CT 6	355 Route 85, Colchester CT
13683501	302468	Petro Lock	99 Meadow St, Hartford CT
13685427	302469	Bridgeport CT 2	1069 Connecticut Avenue, Bridgeport CT
13683503	302472	Andover-bunker Hill Road	104 Bunker Hill Road, Andover CT
13683507	302473	E H F R - Prestige Park	310 Prestige Park Road, East Hartford CT

AMERICAN TOWER®
CORPORATION

Project #	ATC Site #	ATC Site Name	ATC Site Address
13683510	302474	South Windsor	391 Niederwerfer Road, South Windsor CT
13683513	302483	Brln - Berlin	286 Beckley Road, Berlin CT
13692185	302488	Cntn - Canton	4 Hoffmann Road, Canton CT
13692173	302495	Tolland CT	56 Ruops Road, Tolland CT
13694579	302496	Clch - Colchester	Chestnut Hill Road, Colchester CT
13701212	302501	Plymouth CT 3	297 North Street, Plymouth CT
13685414	302515	SMFR - North	5 High Ridge Park Road, Stamford CT
13702496	302516	Mlfd - Milford	438 Bridgeport Ave, Milford CT
13688395	302518	Newtown CT 3	25 Meridian Ridge Drive, Newton CT
13692174	302529	Vernon CT 6	777 Talcotville Road, Vernon Rockville CT
13693124	311014	NORWICH CT	202 N Wawecus Hill Rd, Norwich CT
13702522	311305	GLFD-GUILFORD REBUILD CT	10 Tanner Marsh Road, Guilford CT
13693127	370623	MONTVILLE CT	139 Sharp Hill Road, Uncasville CT
13681964	370625	Old Saybrook	77 Springbrook Road, Old Saybrook CT
13702535	383660	North Madison Volunteer FD	864 Opening Hill Road, Madison CT
13702538	411180	Good Hill CT	481 GOOD HILL ROAD, Woodbury CT
13693709	411182	Nepaug CT	20 Antolini Road, New Hartford CT
13693131	411183	WATERFORD CT	53 Dayton Rd., Waterford CT
13693135	411184	SALEM CT SQA	399 West Road, Salem CT
13692177	411186	West Granby, CT CT	207 West Granby Road, Granby CT
13692178	411187	Hartford North 2 CT	811 Blue Hills Avenue, Bloomfield CT
13693705	411188	Southbury CT	111 Upper Fishrock Road, Southbury CT
13692179	411256	CANTON CT	14 CANTON SPRINGS ROAD, Canton CT
13681988	411257	Middle Haddam Road-CROWN CT	191 Middle Haddam Rd, Portland CT
13692180	411258	Farmington North 2 CT	199 Town Farm Road, Farmington CT
13692182	411259	CT Collinsville CAC 802816 CT	650 Albany Turnpike, Collinsville CT
13692184	416862	SUFFIELD SW CT CT	106 South Grand St., West Suffield CT
13694578	6260	NORTH STONINGTON CT	118C Wintechog Hill Rd., off of Rt. 2, North Stonington CT
13681397	88013	Killingworth	131 Little City Road, Killingworth CT

Signature:

Print Name: Margaret Robinson
Senior Counsel
American Tower*

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION
LICENSEE: DISH WIRELESS L.L.C.

NOTARY BLOCK

Commonwealth of MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel for American Tower*, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same.

WITNESS my hand and official seal, this 10th day of September 2021.

NOTARY SEAL

MELISSA ANN METZLER
Notary Public
Commonwealth of Massachusetts
My Commission Expires March 14, 2025

Notary Public _____
My Commission Expires: March 14, 2025

ENGINEERING DRAWINGS

DISH Wireless L.L.C. SITE ID:

BOBDL00149B

DISH Wireless L.L.C. SITE ADDRESS:

577 BELL STREET
GLASTONBURY, CT 06033

THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION REMOVAL AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR 1.61000 (B)(7).

SCOPE OF WORK

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

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

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

SITE INFORMATION

PROPERTY OWNER:	577 BELL STREET LLC
ADDRESS:	499 BELL ST GLASTONBURY, CT 06033
TOWER TYPE:	SELF-SUPPORT TOWER
TOWER CO SITE ID:	207747
TOWER APP NUMBER:	13694576
COUNTY:	HARTFORD
LATITUDE (NAD 83):	41° 44' 1.0386" N 41.733622 N
LONGITUDE (NAD 83):	-72° 31' 46.8408" W -72.549678 W
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	RR
PARCEL NUMBER:	09003054-03200577
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	EVERSOURCE CT ELECTRIC
TELEPHONE COMPANY:	CROWN CASTLE

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 (781) 926-4500
SITE DESIGNER:	B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
SITE ACQUISITION:	APRIL PARROTT APRIL.PARROTT@DISH.COM
CONSTRUCTION MANAGER:	JAVIER SOTO JAVIERSOTO@DISH.COM
RF ENGINEER:	BOSSENER CHARLES BOSSENERCHARLES@DISH.COM

CONNECTICUT CODE COMPLIANCE

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

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

SITE PHOTO

SHEET INDEX

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

811

GENERAL NOTES

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

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

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

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:

CONTINUE TO BRADLEY INTERNATIONAL AIRPORT CON HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT SLIGHT LEFT TAKE CT-20 E, I-91 S AND I-291 E TO WETHERELL ST IN MANCHESTER. TAKE EXIT 2 FROM I-384 CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON USE THE RIGHT 2 LANES TO MERGE WITH I-91 S TOWARD HARTFORD TAKE EXIT 35A FOR I-291 TOWARD MANCHESTER CONTINUE ONTO I-291 E TAKE THE I-384 E EXIT CONTINUE ONTO I-384 TAKE EXIT 2 TOWARD KEENEY ST TAKE KEENEY ST TO BELL ST IN GLASTONBURY TURN LEFT ONTO WETHERELL ST TURN RIGHT ONTO KEENEY ST TURN RIGHT ONTO BUSH HILL RD TURN LEFT ONTO BELL ST, ARRIVE AT BOBDL00149B.

VICINITY MAP

NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

AMERICAN TOWER®
10 PRESIDENTIAL WAY
WOBURN, MA 01801

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

STATE OF CONNECTICUT · No. 23924 · LICENSED PROFESSIONAL ENGINEER · 9/15/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
SM	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	8/17/21	ISSUED FOR REVIEW
A	9/15/21	CONSTRUCTION

A&E PROJECT NUMBER

154046.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00149B
577 BELL STREET
GLASTONBURY, CT 06033

SHEET TITLE

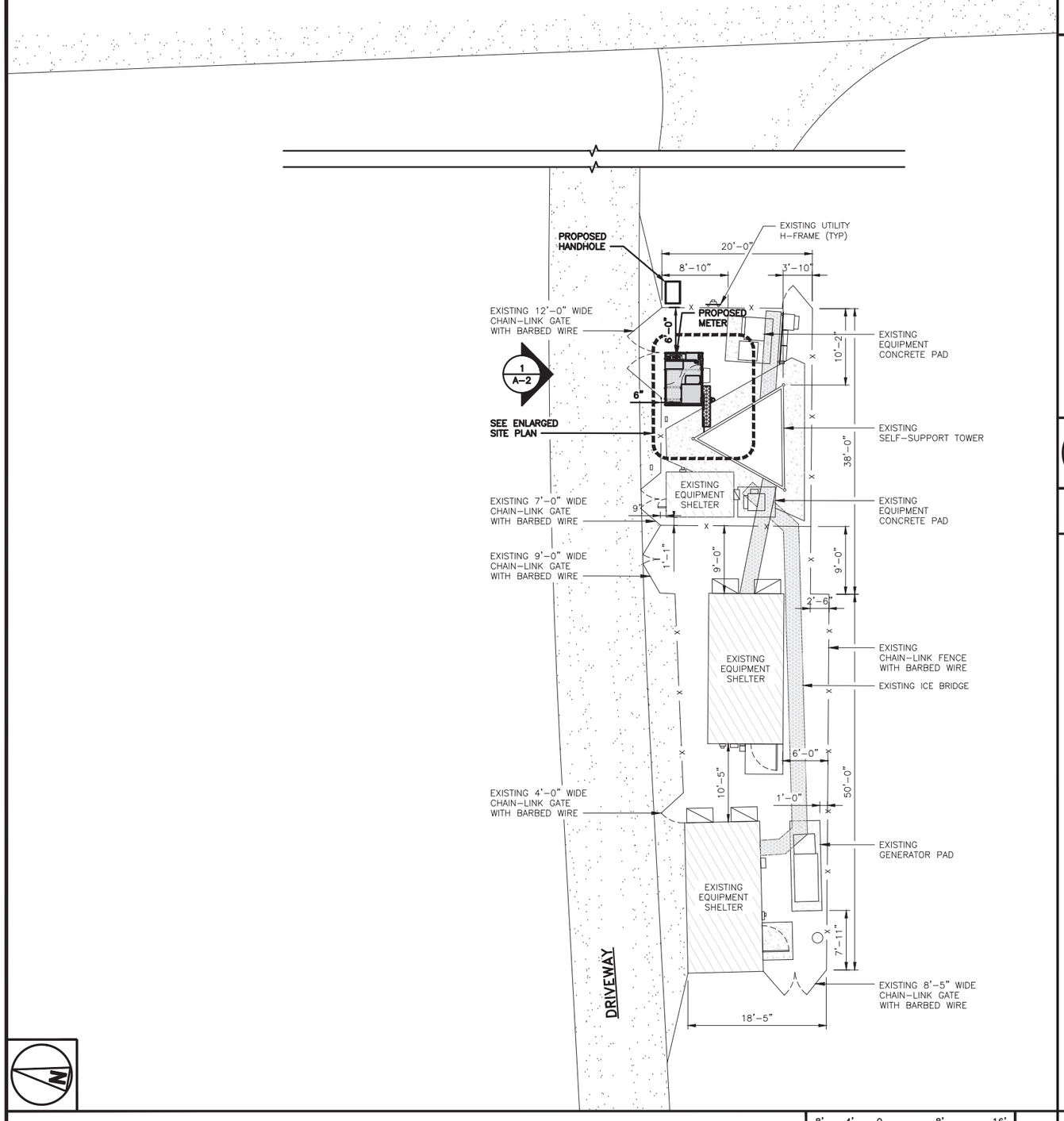
TITLE SHEET

SHEET NUMBER

T-1

NOTES

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



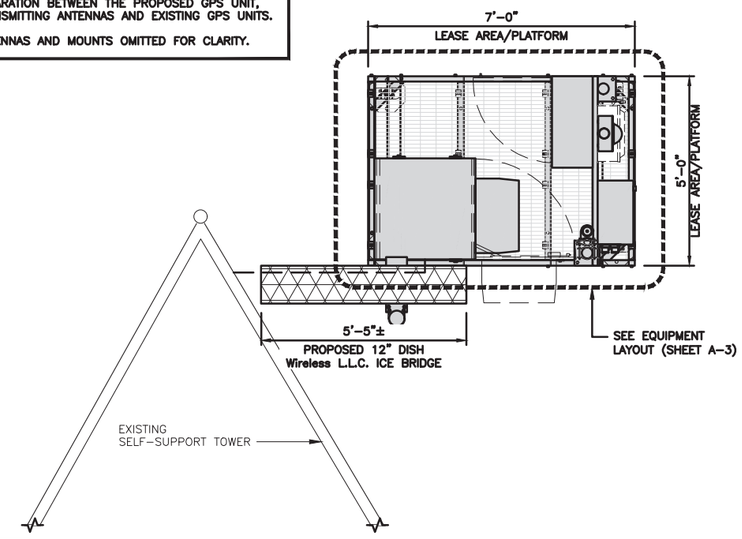
OVERALL SITE PLAN

8' 4' 0 8' 16'
1/8"=1'-0"

1

NOTES

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



ENLARGED SITE PLAN

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

2

AN EXISTING CONDITIONS SURVEY WAS NOT AVAILABLE AT THE TIME OF THIS DRAWINGS CREATION

OVERALL AERIAL PLAN

NO SCALE

3

dish wireless.

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LITTLETON, CO 80120

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00149B
577 BELL STREET
GLASTONBURY, CT 06033

SHEET TITLE

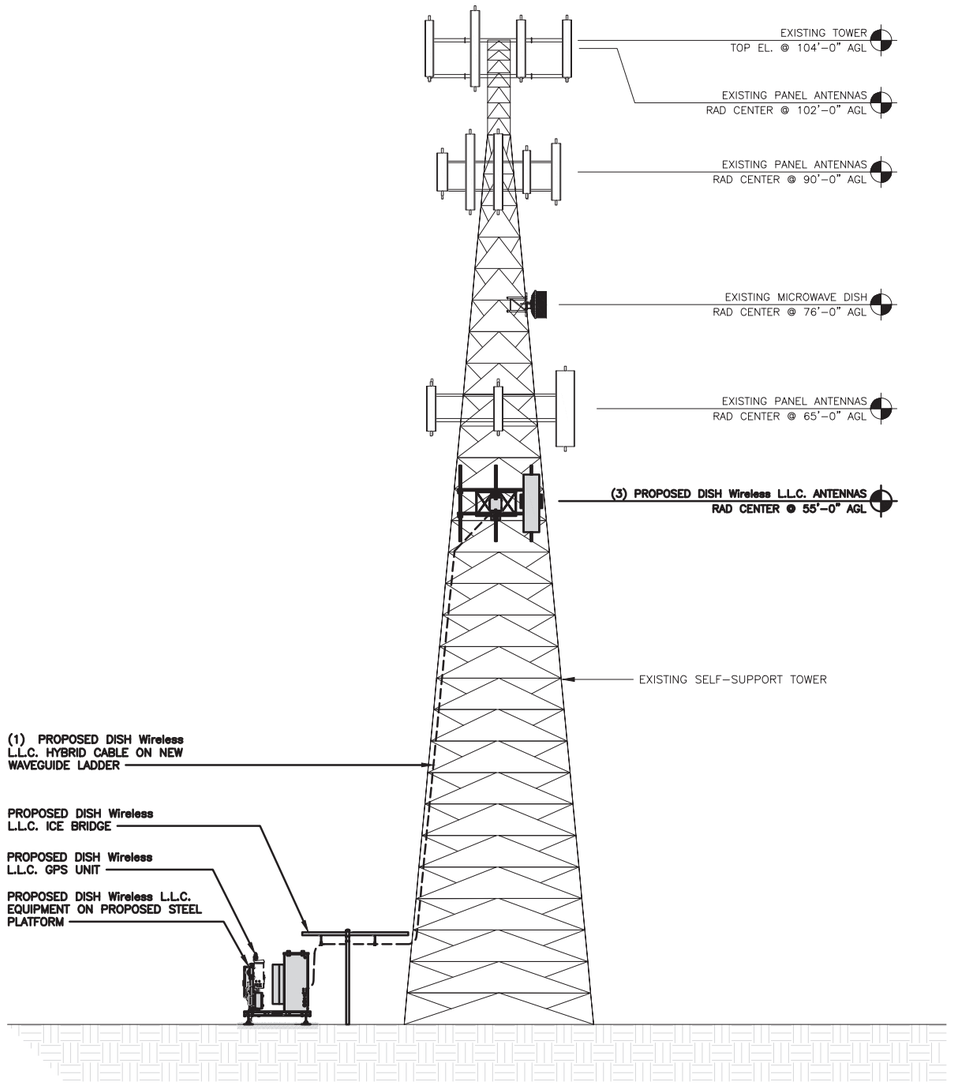
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

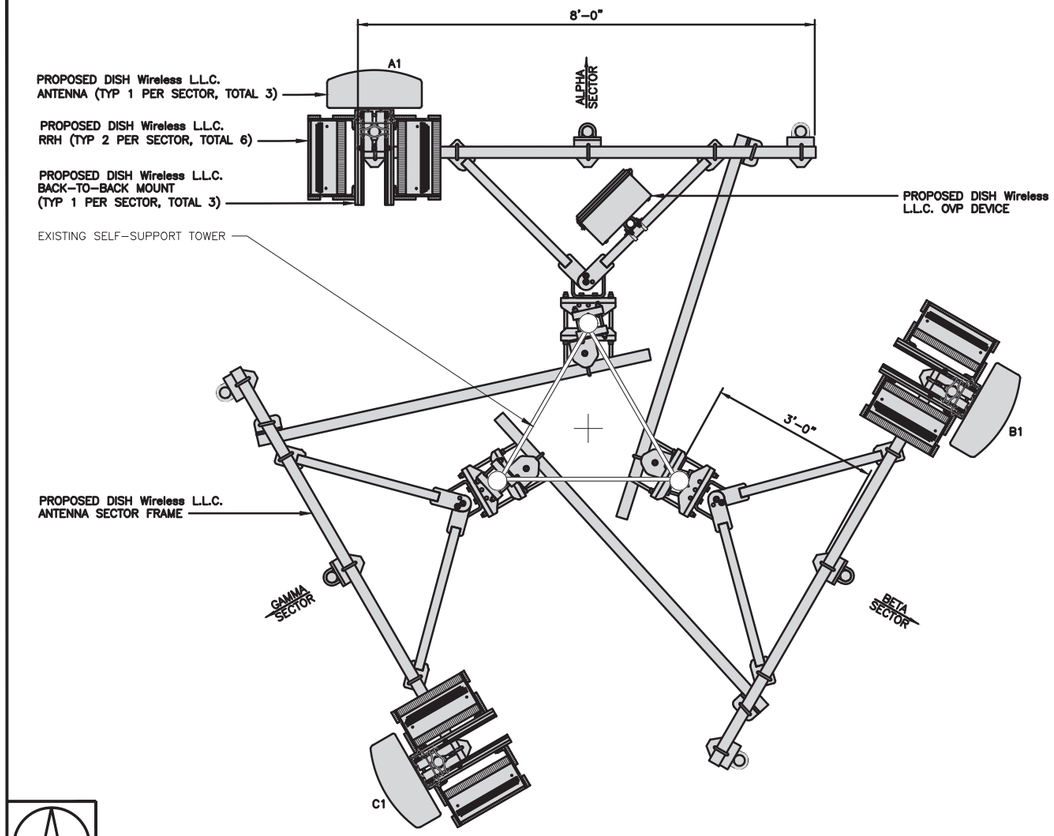
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED NORTH ELEVATION

8' 4' 0 8' 16'
1/8"=1'-0"

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS–MX08FRO665–21	5G	72.0" x 20.0"	0°	55'–0"	(1) HIGH–CAPACITY HYBRID CABLE (85' LONG)
BETA	B1	PROPOSED	JMA WIRELESS–MX08FRO665–21	5G	72.0" x 20.0"	120°	55'–0"	
GAMMA	C1	PROPOSED	JMA WIRELESS–MX08FRO665–21	5G	72.0" x 20.0"	240°	55'–0"	

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

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

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

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DRAWN BY:	CHECKED BY:	APPROVED BY:
SM	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

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154046.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

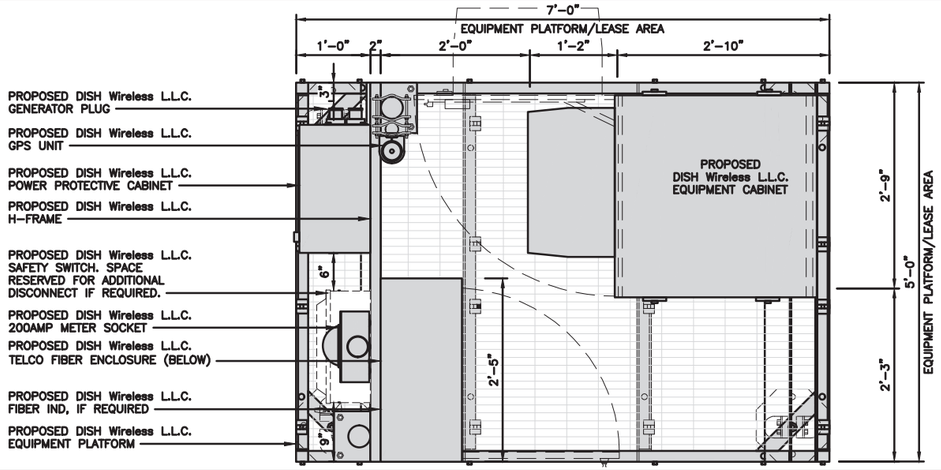
BOBDL00149B
577 BELL STREET
GLASTONBURY, CT 06033

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



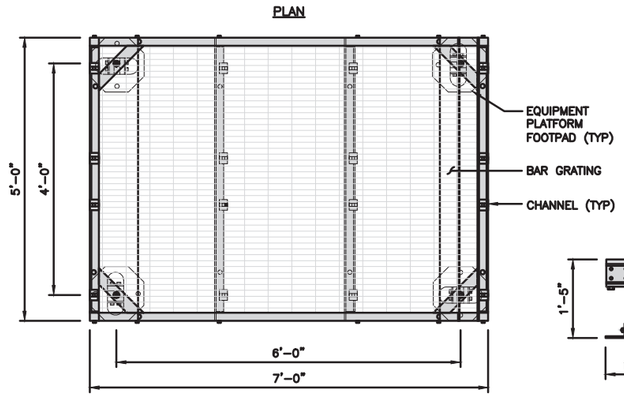
PLATFORM EQUIPMENT PLAN

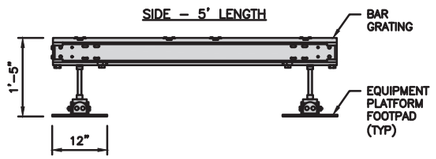
12" 9" 6" 3" 0 1' 2'
1"=1'-0"

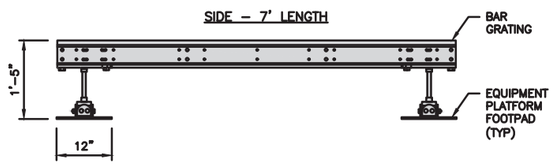
1

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

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

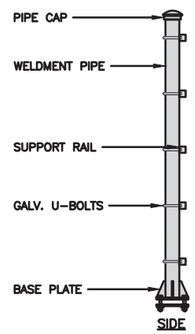






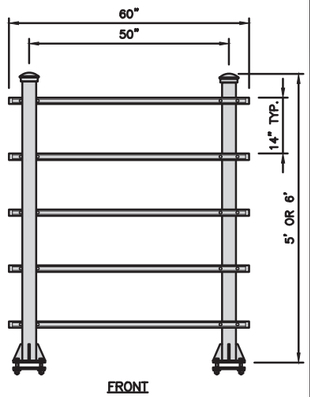
PLATFORM DETAIL | NO SCALE | 2

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



SIDE

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



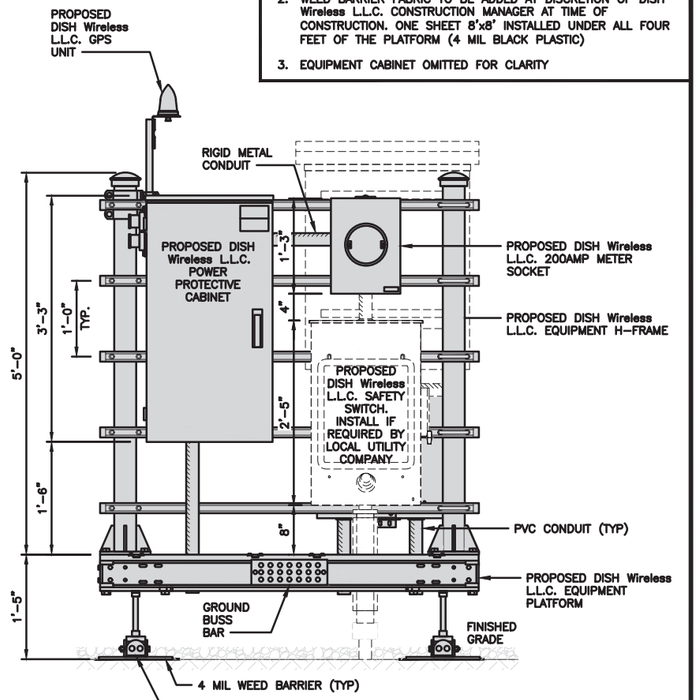
FRONT

H-FRAME DETAIL | NO SCALE | 3

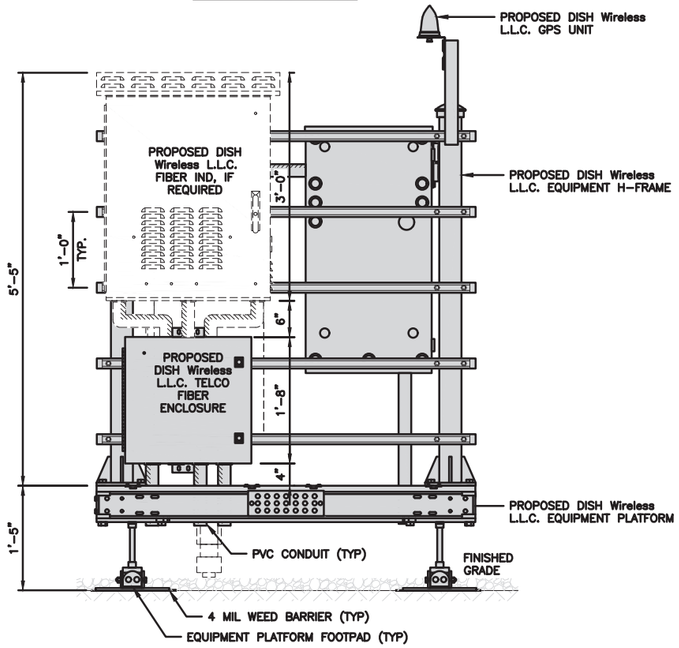
NOT USED | NO SCALE | 4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

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

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SM	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	8/17/21	ISSUED FOR REVIEW
A	9/15/21	CONSTRUCTION

A&E PROJECT NUMBER

154046.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00149B
577 BELL STREET
GLASTONBURY, CT 06033

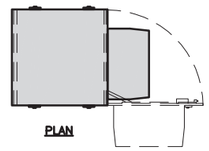
SHEET TITLE

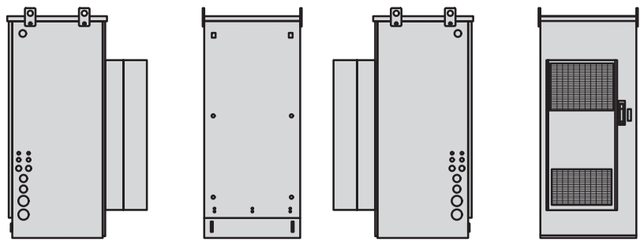
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER

A-3

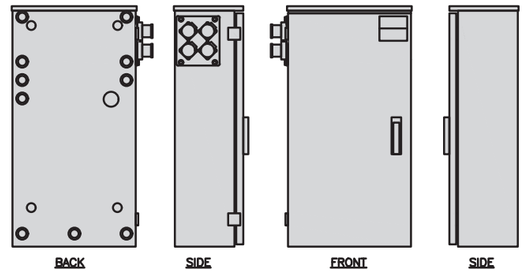
CHARLES INDUSTRY HEX CUBE–PM639155N4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS





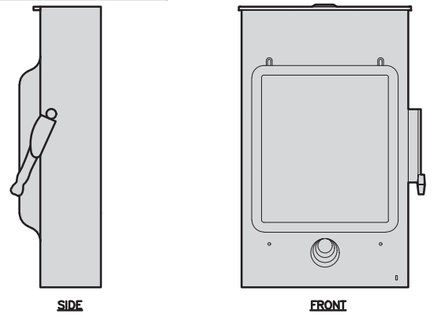
CABINET DETAIL | NO SCALE | 1

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



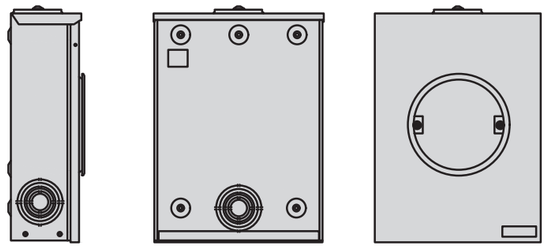
POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

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



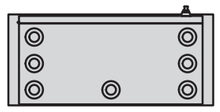
SAFETY SWITCH DETAIL | NO SCALE | 3

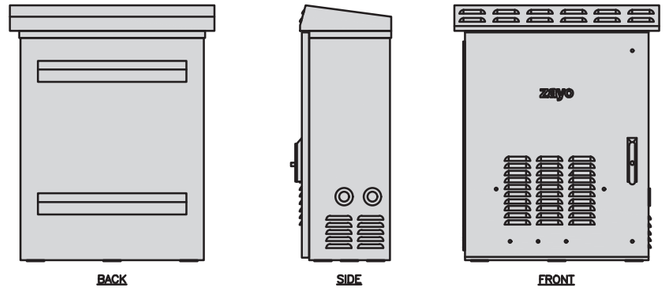
EATON METER SOCKET UNRRS213BEUSE	
METER SOCKET TYPE	RING
ENCLOSURE DIM (HxWxD)	16"x12"x6"
MAIN AMPERE RATING	200A
WEIGHT	18 LBS



METER SOCKET DETAIL | NO SCALE | 4

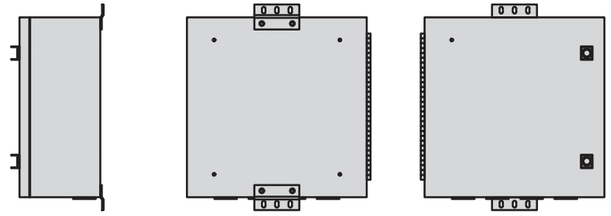
ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs





FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

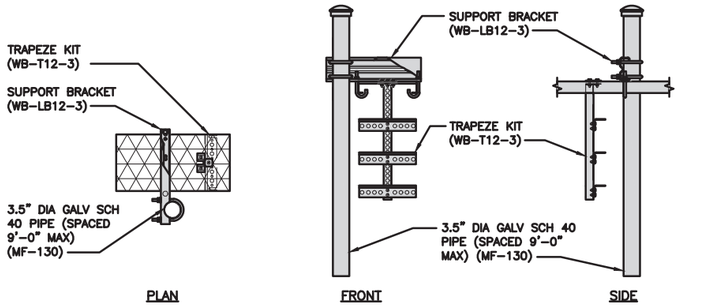
CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



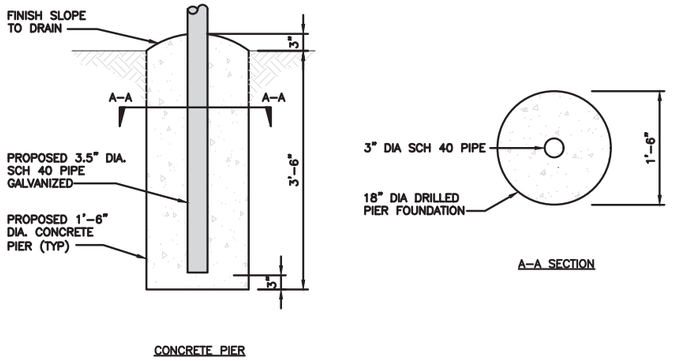
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

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

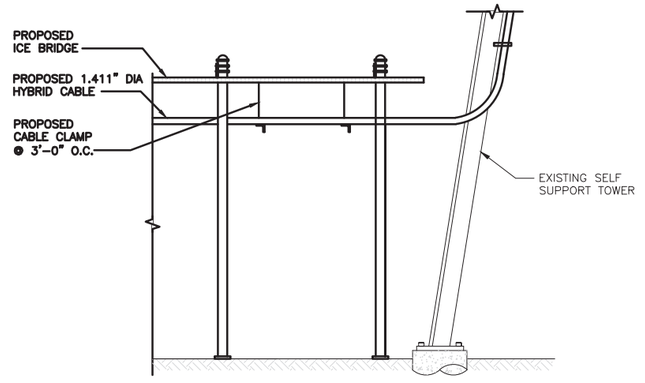
INCLUDED PRODUCTS:	WB–T12–3 TRAPEZE KIT, 3 RUNGS
	WB–LB12–3 SUPPORT BRACKET
	MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00149B
577 BELL STREET
GLASTONBURY, CT 06033

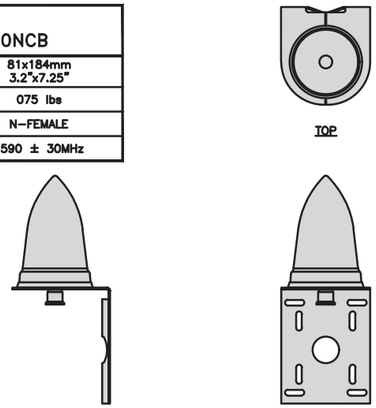
SHEET TITLE

EQUIPMENT DETAILS

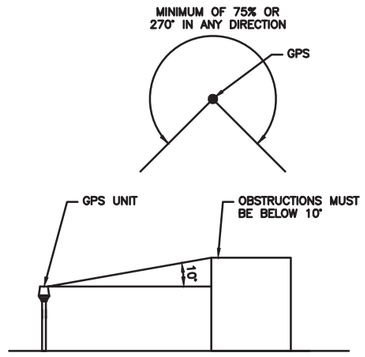
SHEET NUMBER

A-4

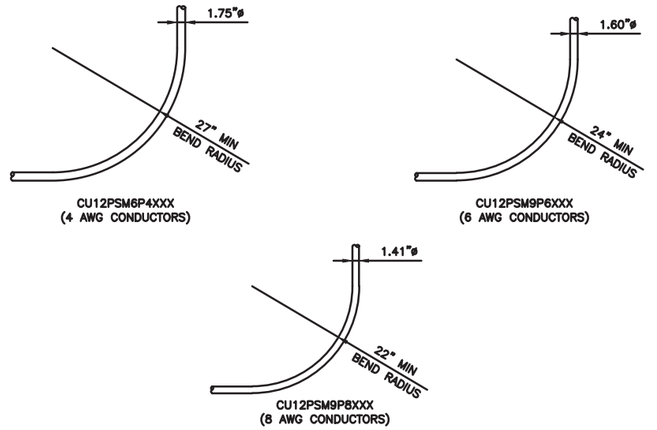
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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577 BELL STREET
GLASTONBURY, CT 06033

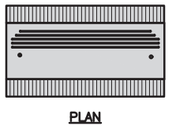
SHEET TITLE

EQUIPMENT DETAILS

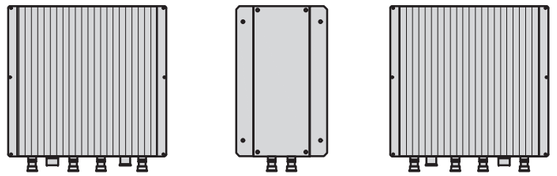
SHEET NUMBER

A-5

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



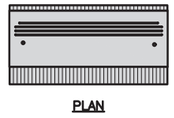
PLAN



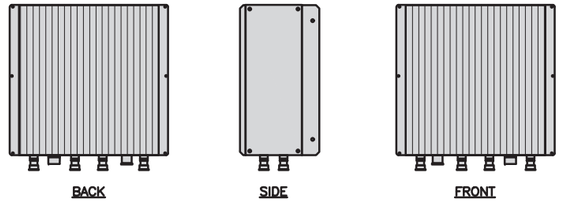
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 1

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



PLAN

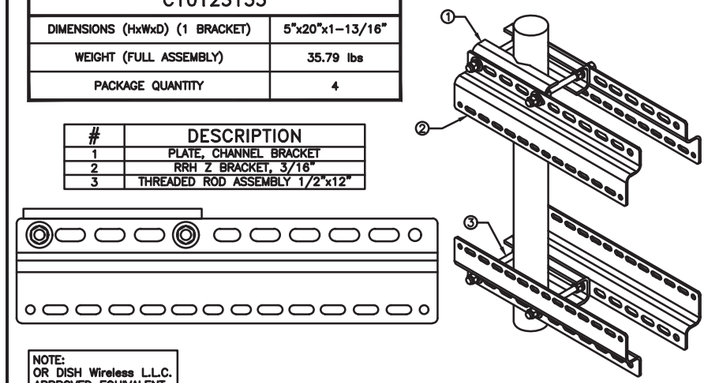


BACK SIDE FRONT

RRH DETAIL | NO SCALE | 2

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

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



NOTE:
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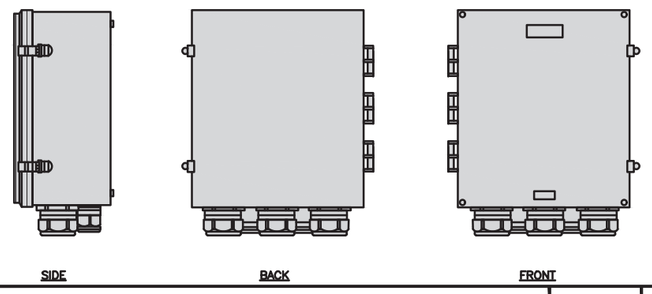
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

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

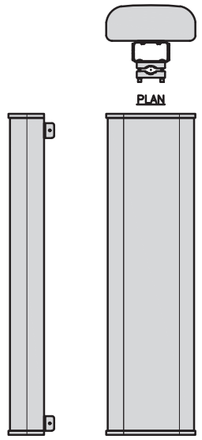
PLAN



SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 4

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



PLAN

SIDE FRONT

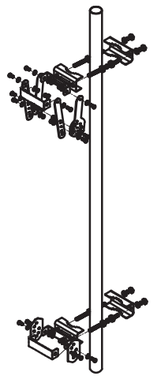
ANTENNA DETAIL | NO SCALE | 5

NOT USED | NO SCALE | 6

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

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

ANTENNA BRACKET NOT PART OF KIT

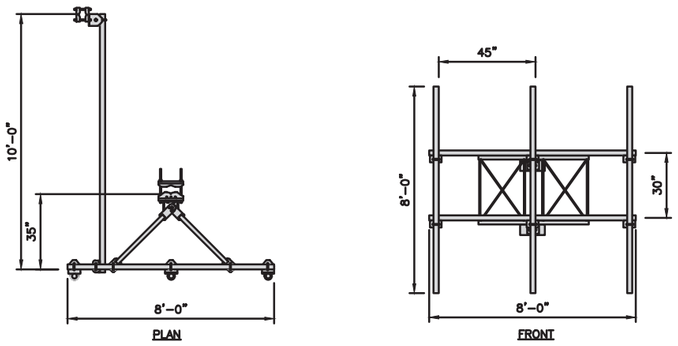


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

ANTENNA BRACKET DETAIL | NO SCALE | 7

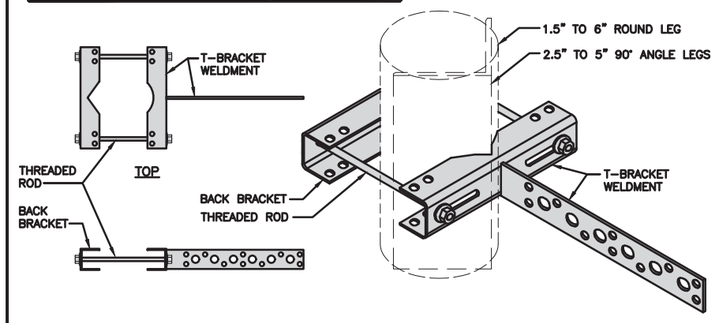
COMMSCOPE V-FRAME MTC3975083	
FACE SIZE	8'-0"
WEIGHT	352.136 lbs

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



ANTENNA FRAME DETAIL | NO SCALE | 8

SITEPRO1 T600 UNIVERSAL T-BRACKET	
DIMENSIONS (HxWxL)	2.25"x10.0"x15.25"
WEIGHT/ VOLUME	5.60 LBS



VERTICAL CABLE SUPPORT DETAIL | NO SCALE | 9

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9/15/21

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PROJECT INFORMATION

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577 BELL STREET
GLASTONBURY, CT 06033

SHEET TITLE

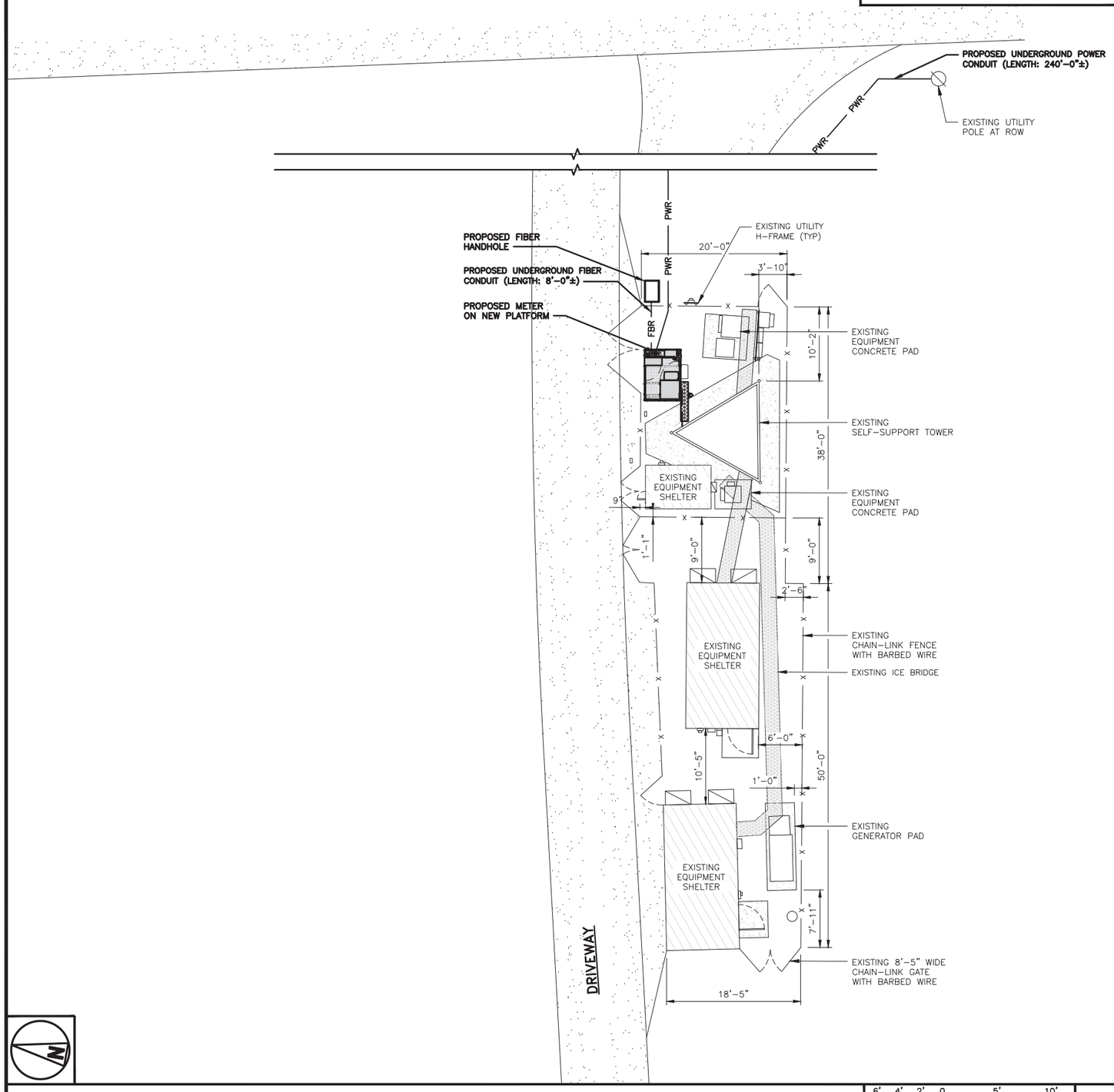
EQUIPMENT DETAILS

SHEET NUMBER

A-6

FINAL POWER OR FIBER DESIGN NOT AVAILABLE AT TIME OF ISSUE

BELL STRRET



NOTES

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

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

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

AN EXISTING CONDITIONS SURVEY WAS NOT AVAILABLE AT THE TIME THIS DRAWINGS CREATION

UTILITY ROUTE PLAN | 6' 4' 2' 0 5' 10' (3/16"=1'-0") | 1

ELECTRICAL NOTES | NO SCALE | 2

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Expires 2/10/22

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SM	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	8/17/21	ISSUED FOR REVIEW
A	9/15/21	CONSTRUCTION

A&E PROJECT NUMBER

154046.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00149B
577 BELL STREET
GLASTONBURY, CT 06033

SHEET TITLE

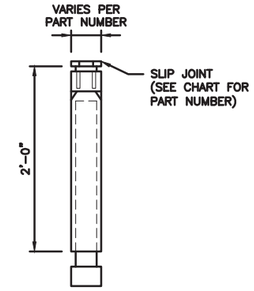
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER

E-1

CARLON EXPANSION FITTINGS

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

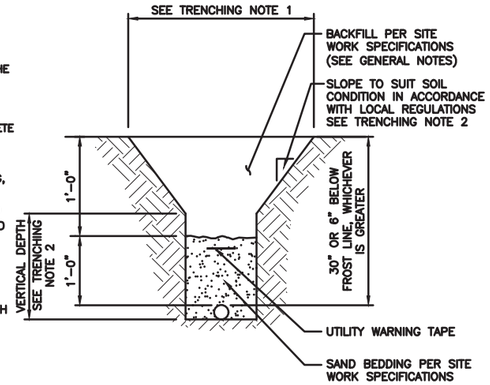


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

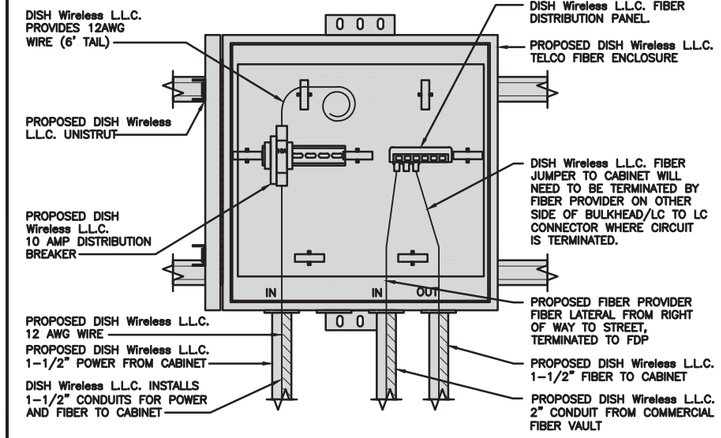
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

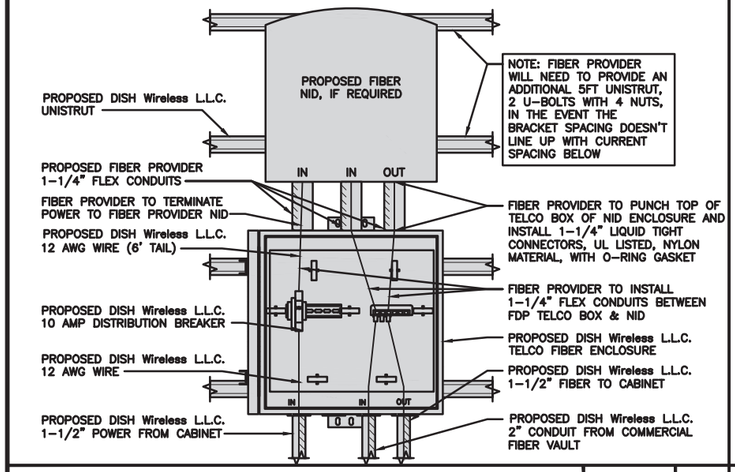
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



DARK TELCO BOX – INTERIOR WIRING LAYOUT | NO SCALE | 3



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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PROJECT INFORMATION

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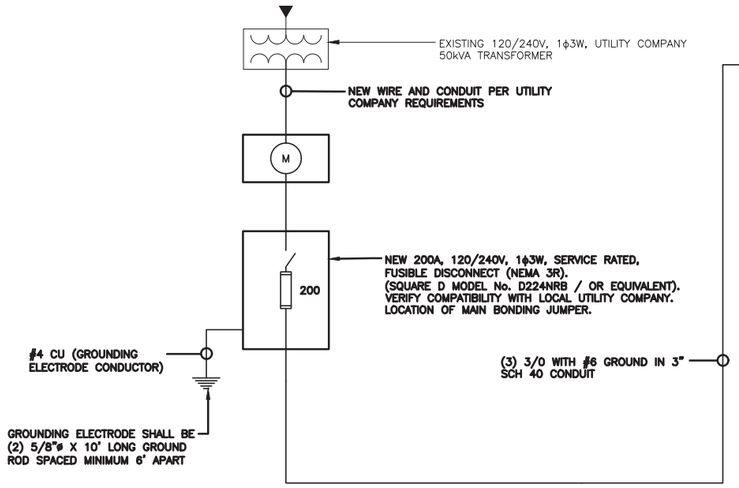
GLASTONBURY, CT 06033

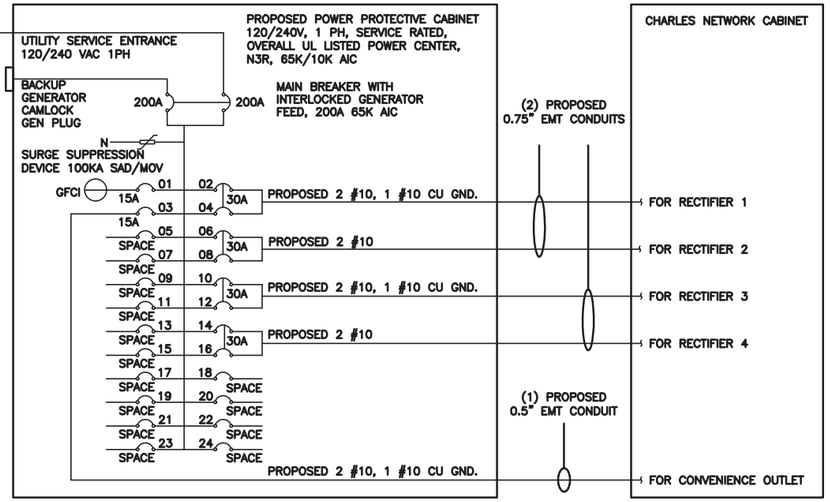
SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-2





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

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

NOTES

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

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

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

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

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

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

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

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

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

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

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

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

PPC ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE

NO SCALE | 2

NOT USED

NO SCALE | 3

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STATE OF CONNECTICUT — No. 23824 — LICENSED PROFESSIONAL ENGINEER — 9/15/21

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DISH Wireless L.L.C.
PROJECT INFORMATION
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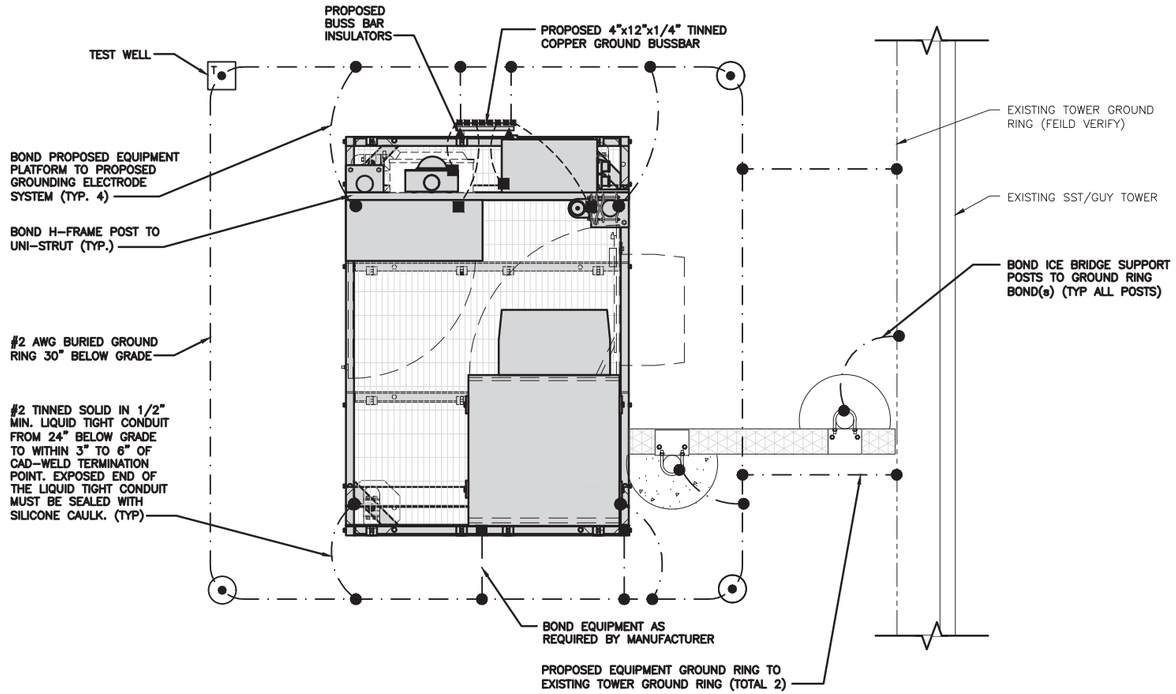
577 BELL STREET
GLASTONBURY, CT 06033

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

SHEET NUMBER
E-3

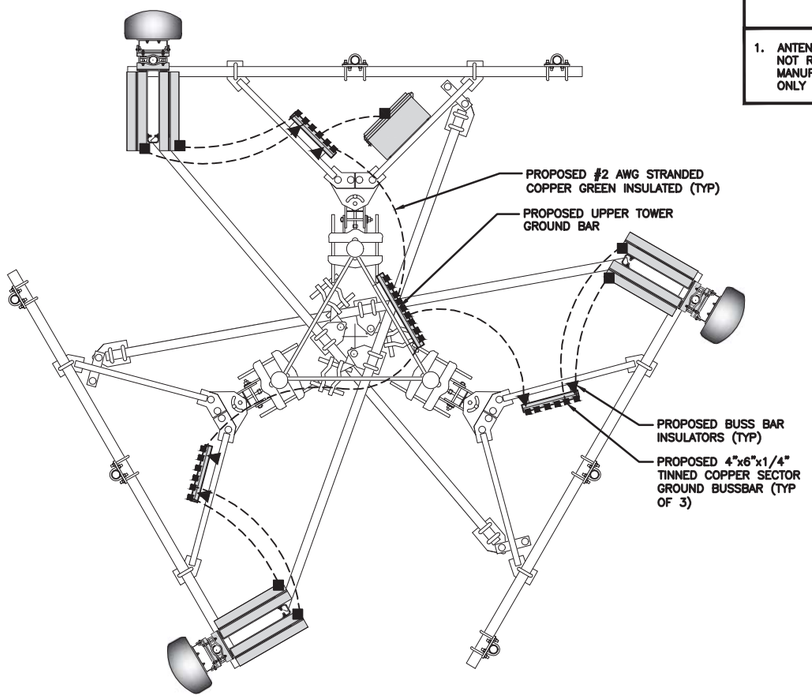


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO TOWER STEEL.

(Q) REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE | 3

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577 BELL STREET
GLASTONBURY, CT 06033

SHEET TITLE

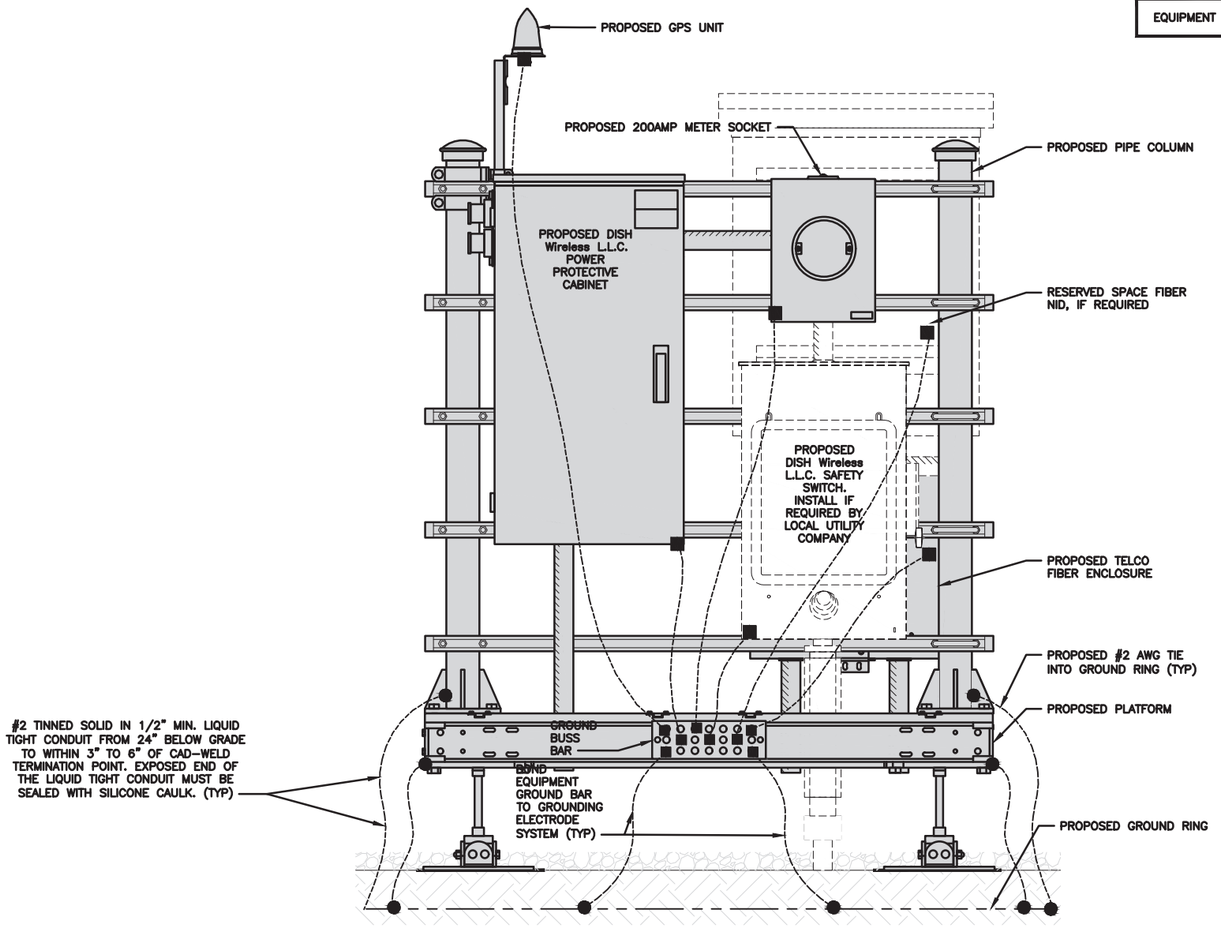
GROUNDING PLANS AND NOTES

SHEET NUMBER

G-1

NOTES

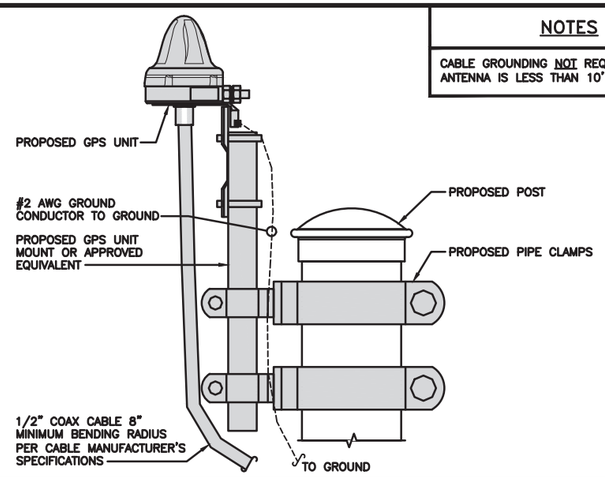
EQUIPMENT CABINET OMITTED FOR CLARITY



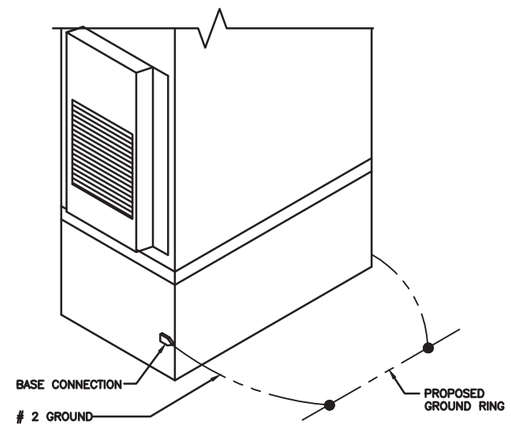
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

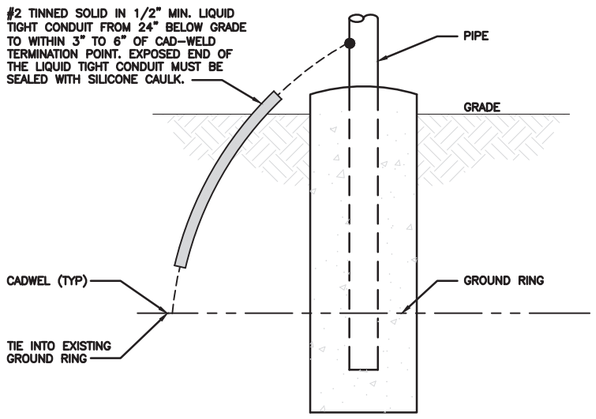
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



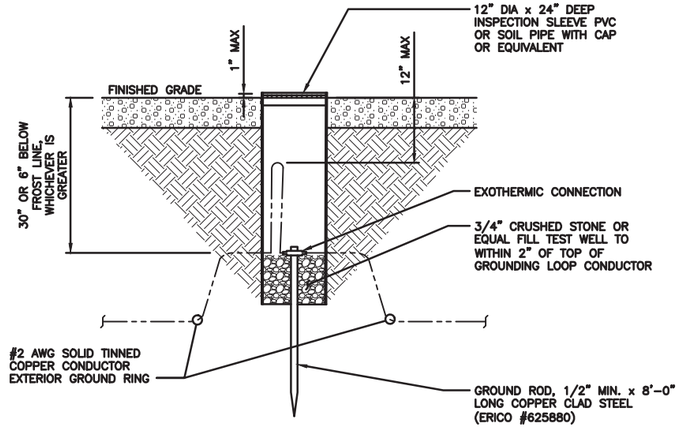
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



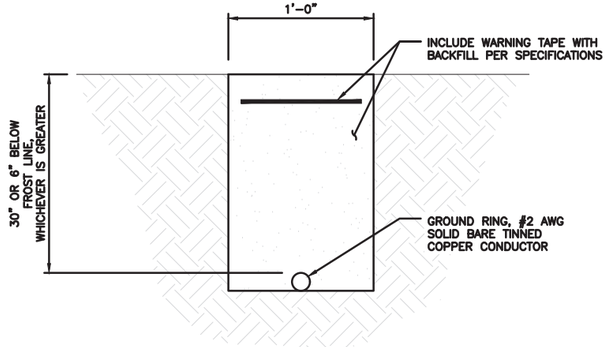
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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SHEET TITLE

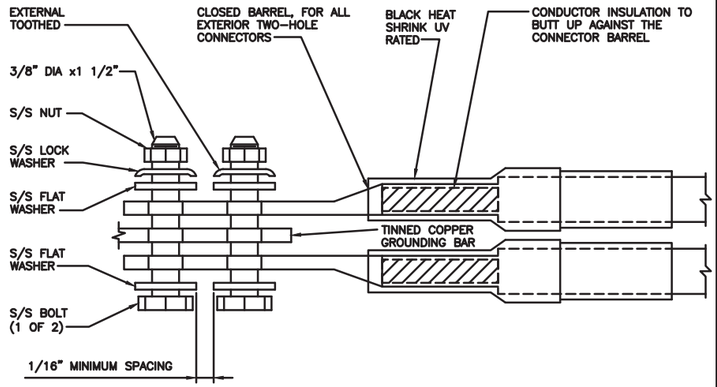
GROUNDING DETAILS

SHEET NUMBER

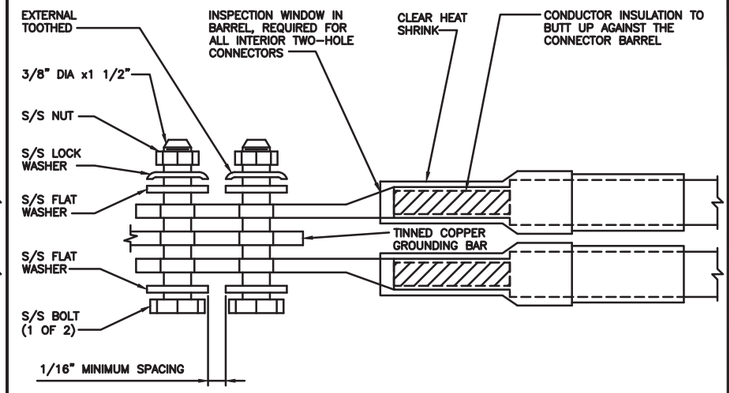
G-2

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

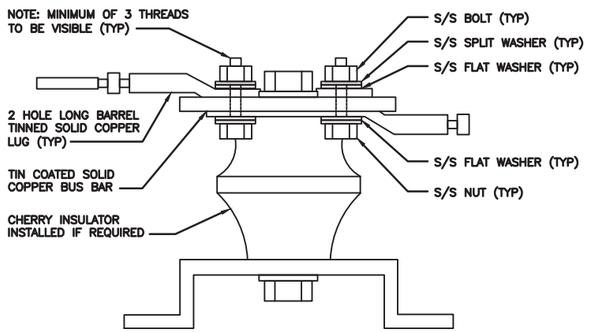
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
SM	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	8/17/21	ISSUED FOR REVIEW
A	9/15/21	CONSTRUCTION

A&E PROJECT NUMBER

154046.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00149B
577 BELL STREET
GLASTONBURY, CT 06033

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

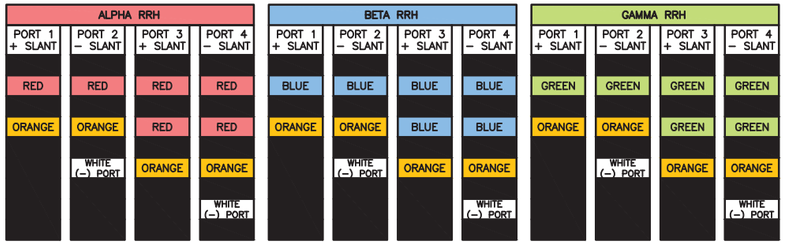
G-3

RF JUMPER COLOR CODING

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

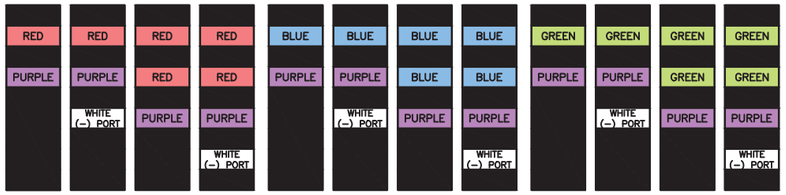
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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

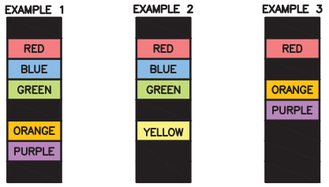


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

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

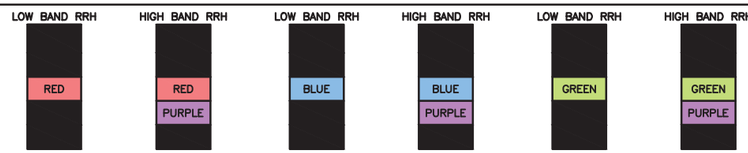
EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS
CBRS ONLY, ALL SECTORS



CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RD DETAILS. FINAL RFDS IS IN NEXSYSONE.

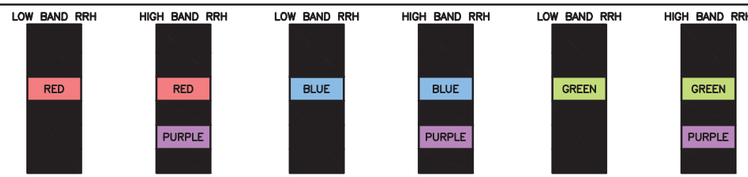
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR STRIPE ONLY

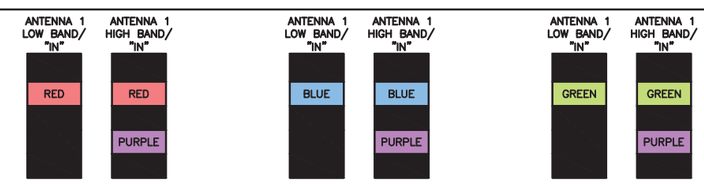


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



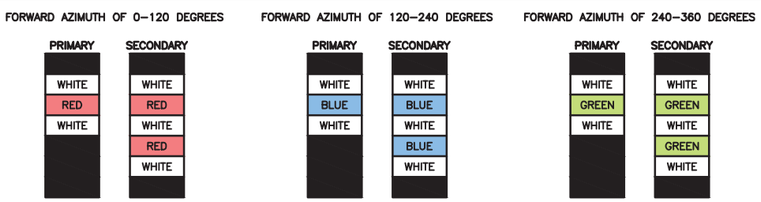
RET MOTORS AT ANTENNAS



MICROWAVE RADIO LINKS

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

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



RF CABLE COLOR CODES	NO SCALE	1

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

AWS
(N66+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH
WHITE

ALPHA SECTOR
RED

BETA SECTOR
BLUE

GAMMA SECTOR
GREEN

COLOR IDENTIFIER	NO SCALE	2

NOT USED	NO SCALE	3

NOT USED	NO SCALE	4

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

AMERICAN TOWER®
10 PRESIDENTIAL WAY
WOBURN, MA 01801

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STATE OF CONNECTICUT
No. 23824
LICENSED PROFESSIONAL ENGINEER
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577 BELL STREET
GLASTONBURY, CT 06033

SHEET TITLE
RF
CABLE COLOR CODE

SHEET NUMBER
RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8 — F

SMOKE DETECTION (DC) — SD

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE — X — X — X — X

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W — W — W — W — W

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

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

OVERHEAD POWER — OHP — OHP — OHP — OHP

OVERHEAD TELCO — OHT — OHT — OHT — OHT

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

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

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

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

WORKPOINT — W.P.

SECTION REFERENCE — XX / X–X

DETAIL REFERENCE — XX / X–X

ABBREVIATIONS

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
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STATE OF CONNECTICUT — No. 23824 — LICENSED PROFESSIONAL ENGINEER — 9/15/21

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00149B
577 BELL STREET
GLASTONBURY, CT 06033

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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STATE OF CONNECTICUT
No. 23824
LICENSED
PROFESSIONAL ENGINEER
9/15/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
SM	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	8/17/21	ISSUED FOR REVIEW
A	9/15/21	CONSTRUCTION

A&E PROJECT NUMBER

154046.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00149B
577 BELL STREET
GLASTONBURY, CT 06033

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Expires 2/10/22

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SM	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

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A	9/15/21	CONSTRUCTION

A&E PROJECT NUMBER

154046.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00149B
577 BELL STREET
GLASTONBURY, CT 06033

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00149B
577 BELL STREET
GLASTONBURY, CT 06033

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

ENGINEERING:

STRUCTURAL ANALYSIS

MOUNT ANALYSIS

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

CLS ENGINEERING PLLC

Structural Analysis Report

Structure	:	**104 ft Self Support Tower**
ATC Site Name	:	**Glastonbury,CT**
ATC Site Number	:	**207747**
Engineering Number	:	**13694576_C3_03**
Proposed Carrier	:	**DISH WIRELESS L.L.C.**
Carrier Site Name	:	**BOBDL00149B**
Carrier Site Number	:	**BOBDL00149B**
Site Location	:	**577 Bell Street** **Glastonbury, CT 06033-1419** **41.7336, -72.5497**
County	:	**Hartford**
Date	:	**August 10, 2021**
Max Usage	:	**93%**
Result	:	**Pass**

Prepared By:

Temitope Olaniyan
Structural Engineer

Reviewed By:

STATE OF CONNECTICUT
TYLER M BARKER
No. 32402
LICENSED PROFESSIONAL ENGINEER

Tyler M. Barker
CLS Engineering PLLC
PE # 32402 Exp. 1/31/2022
COA # PEC.001833 Exp. 8/14/2022
08/11/2021

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 104 ft Self Support tower to reflect the change in loading by DISH WIRELESS L.L.C..

Supporting Documents

Tower Drawings	Mapping by TEP Project #74779.491480, dated April 29, 2021
Foundation Drawing	Mapping by Delta Oaks Group Project #BGI21-08508-02, dated May 18, 2021
Geotechnical Report	Delta Oaks Group Project #GEO21-08508-02, dated April 14, 2021
Modifications	B&P Job #17004.002, dated January 20, 2017

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	118 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.5" radical ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Spectral Response:	Ss = 0.20, S_1 = 0.06
Site Class:	D - Stiff Soil - Default

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
102.0	3	Amphenol Antel BXA-70063-6CF-EDIN-X	Sector Frame	(12) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	RFS DB-T1-6Z-8AB-0Z			
	3	Alcatel-Lucent RRH4x45-1900			
	3	Alcatel-Lucent B13 RRH4x30-4R			
	3	Alcatel-Lucent RRH4x30W-B25			
	6	Andrew SBNHH-1D65B			
	3	Commscope LNX-8514DS-T4M			
95.0	1	Commscope VHLP3-11W	Pole Mount	(2) 0.24" (6mm) Cat 5	CITY OF GLASTONBURY, CT
90.0	3	Ericsson RRUS-11	Sector Frame	(2) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax (1) 1 5/8" Hybriflex (2) 3/8" (0.38"-9.5mm) RET Control Cable	AT&T MOBILITY
	3	Ericsson RRUS 32 B2			
	3	Raycap DC6-48-60-18-8F			
	3	CCI DTMABP7819VG12A			
	3	Powerwave Allgon TT19-08BP111-001			
	3	Kathrein Scala 800-10121			
	1	Powerwave Allgon P65-17-XLH-RR			
	1	Andrew SBNH-1D6565C (60.8 lbs)			
	3	CCI HPA-65R-BUU-H6			
	1	KMW AM-X-CD-16-65-00T-RET			
88.0	1	Decibel DB806-XT	Side Arm	(3) 1/2" Coax	CITY OF GLASTONBURY, CT
80.0	1	Commscope VHLP3-11W			
76.0	1	Commscope VHLP3-11W			
65.0	3	Ericsson Radio 4449 B12,B71	Sector Frame	(3) 1 5/8" Hybriflex (3) 1.25" (31.8mm) Hybrid	METRO PCS INC
	3	Ericsson AIR 21			
	3	Ericsson AIR 32 (57" Height)			
	3	Jaybeam SmartTilt AISG Modem			
	3	RFS APXVAARR24_43-U-NA20			

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
No loading was considered as removed as part of this analysis.					

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
55.0	1	Commscope RDIDC-9181-PF-48	Sector Frame	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B604			
	3	Fujitsu TA08025-B605			
	3	JMA Wireless MX08FRO665-21			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	79%	Pass
Diagonals	62%	Pass
Horizontals	37%	Pass
Anchor Bolts	37%	Pass
Leg Bolts	79%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	101.3	93%
Download (kips)	120.8	28%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection, Twist and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Twist (°)	Sway (Rotation) (°)
95.0	Commscope VHLP3-11W	CITY OF GLASTONBURY, CT	0.210	0.000	0.218
80.0	Commscope VHLP3-11W		0.147	0.002	0.286
76.0	Commscope VHLP3-11W		0.129	0.004	0.185
55.0	Commscope RDIDC-9181-PF-48	DISH WIRELESS L.L.C.	0.065	0.002	0.124
	Fujitsu TA08025-B604				
	Fujitsu TA08025-B605				
	JMA Wireless MX08FRO665-21				

***Deflection, Twist and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H**

Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

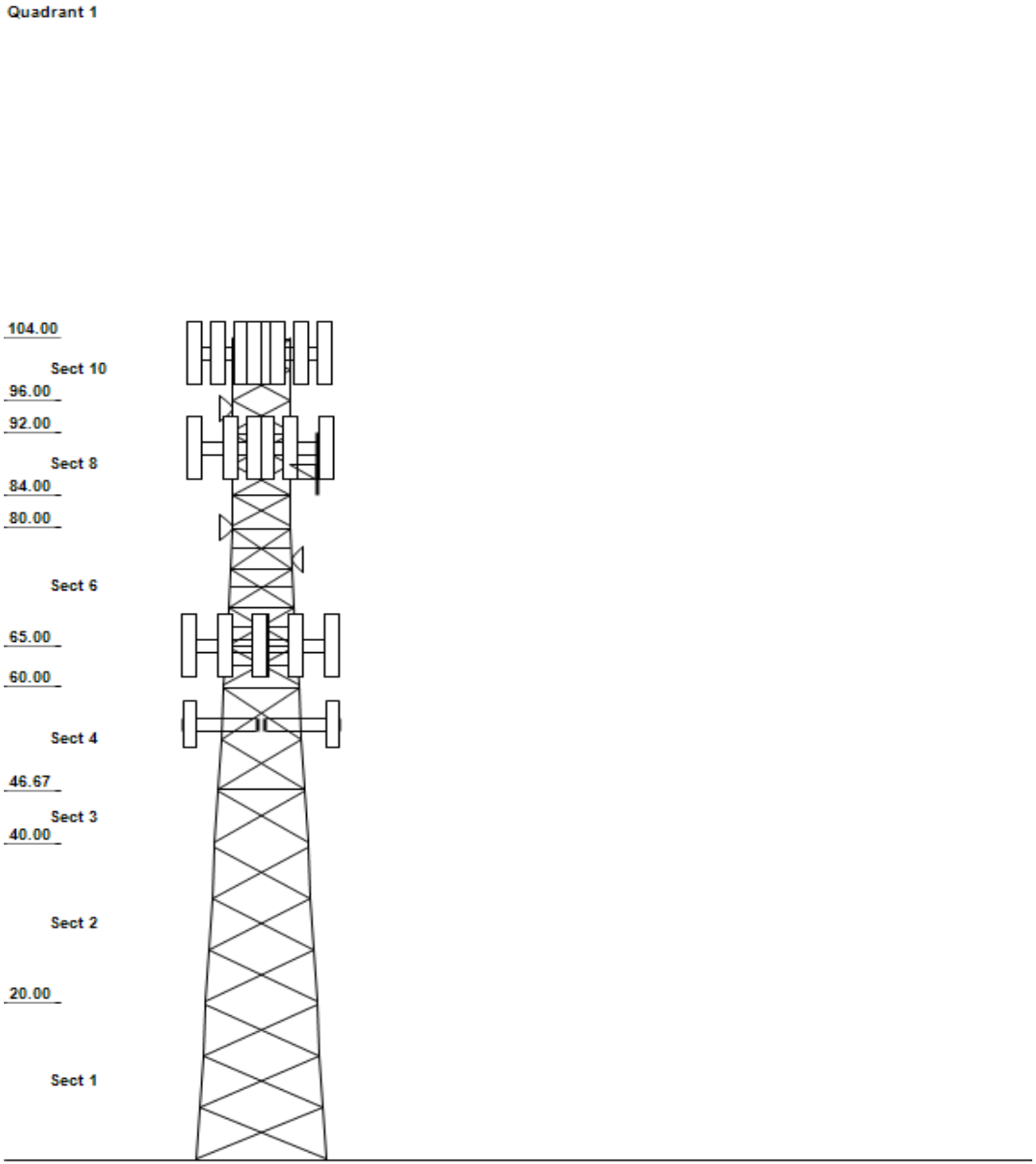
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

JOB INFORMATION

Asset:	207747, Glastonbury	Height :	104 ft
Client	DISH WIRELESS L.L.C.	Base Width :	14.67 ft
Code:	ANSI/TIA-222-H	Shape :	Triangle



SITE PARAMETERS

Nominal Wind : 118 mph wind with no ice	Exposure : B	Site Class : D
Ice Wind: 50 mph wind with 1.5" radi	Topo Method: Method 1	Risk Cat : II
Service Wind : 60 mph Serviceability	Topo Feature :	S_s : 0.195 S_1 : 0.055

SECTION PROPERTIES

Section	Leg Members	Diagonal Members	Horizontal Members
1	PX 50 ksi 3" DIA PIPE	SAE 36 ksi 2.5X2.5X0.375	
2	PX 50 ksi 2-1/2" DIA	SAE 36 ksi 2.5X2.5X0.375	
3	PST 50 ksi 2-1/2" DIA	SAE 36 ksi 2X2X0.375	
4	PST 50 ksi 2-1/2" DIA	SAE 36 ksi 2X2X0.375	SAE 36 ksi 2X2X0.1875
5 - 6	PST 50 ksi 2-1/2" DIA	SAE 36 ksi 2X2X0.1875	SAE 36 ksi 2X2X0.1875
7 - 10	PST 50 ksi 2" DIA PIP	SAE 36 ksi 1.5X1.5X0.1875	SAE 36 ksi 2X2X0.1875

REDUNDANT SECONDARY BRACING

Section	Sub Diag 1	Sub Horiz 1	Sub Diag 2	Sub Horiz 2	Sub Diag 3	Sub Horiz 3
1 - 4	-	-	-	-	-	-
5 - 6	-	S2X2X0.25	-	-	-	-
7 - 10	-	-	-	-	-	-

DISCRETE APPURTENANCE

Elev (ft)	Type	Qty	Description
102.00	BOB/SSB	3	RFS DB-T1-6Z-8AB-0Z
102.00	PANEL	3	Amphenol Antel BXA-70063-6CF-E
102.00	PANEL	3	Commscope LNX-8514DS-T4M
102.00	PANEL	6	Andrew SBNHH-1D65B
102.00	RRU/RRH	3	Alcatel-Lucent RRH4x30W-B25
102.00	RRU/RRH	3	Alcatel-Lucent RRH4x45-1900
102.00	RRU/RRH	3	Alcatel-Lucent B13 RRH4x30-4R
102.00	Sector Frame	3	Generic Round Sector Frame
95.00	DISH-HP	1	Commscope VHLP3-11W
90.00	BOB/SSB	3	Raycap DC6-48-60-18-8F
90.00	PANEL	1	Powerwave Allgon P65-17-XLH-RR
90.00	PANEL	1	Andrew SBNH-1D6565C (60.8 lbs)
90.00	PANEL	1	KMW AM-X-CD-16-65-00T-RET
90.00	PANEL	3	CCI HPA-65R-BUU-H6
90.00	PANEL	3	Kathrein Scala 800-10121
90.00	RRU/RRH	3	Ericsson RRUS 32 B2
90.00	RRU/RRH	3	Ericsson RRUS-11
90.00	Sector Frame	3	Generic Flat Light Sector Fram
90.00	TTA	3	Powerwave Allgon TT19-08BP111-
90.00	TTA	3	CCI DTMABP7819VG12A
88.00	OMNI	1	Decibel DB806-XT
88.00	Side Arm	1	Generic Round Side Arm
80.00	DISH-HP	1	Commscope VHLP3-11W
78.00	Side Arm	1	Generic Round Side Arm
76.00	DISH-HP	1	Commscope VHLP3-11W
65.00	PANEL	3	RFS APXVAARR24_43-U-NA20
65.00	PANEL	3	Ericsson AIR 21
65.00	PANEL	3	Ericsson AIR 32 (57" Height)
65.00	RET/RCU	3	Jaybeam SmartTilt AISG Modem
65.00	RRU/RRH	3	Ericsson Radio 4449 B12,B71

JOB INFORMATION

Asset:	207747, Glastonbury	Height :	104 ft
Client	DISH WIRELESS L.L.C.	Base Width :	14.67 ft
Code:	ANSI/TIA-222-H	Shape :	Triangle

DISCRETE APPURTENANCE

Elev (ft)	Type	Qty	Description
65.00	Sector Frame	3	Generic Round Sector Frame
55.00	BOB/SSB	1	Commscope RDIDC-9181-PF-48
55.00	PANEL	3	JMA Wireless MX08FRO665-21
55.00	RRU/RRH	3	Fujitsu TA08025-B605
55.00	RRU/RRH	3	Fujitsu TA08025-B604
55.00	Sector Frame	3	Generic Flat Light Sector Fram

LINEAR APPURTENANCE

Elev (ft) From	To	Qty	Description
0.00	102.00	2	Waveguide
0.00	102.00	2	1 5/8" Hybriflex
0.00	102.00	12	1 5/8" Coax
0.00	95.00	2	0.24" (6mm) Cat 5
0.00	90.00	2	3/8" (0.38"- 9.5mm) RET Control Cable
0.00	90.00	1	1 5/8" Hybriflex
0.00	90.00	12	1 5/8" Coax
0.00	90.00	2	0.78" (19.7mm) 8 AWG 6
0.00	79.00	1	1/2" Coax
0.00	76.00	2	1/2" Coax
0.00	65.00	3	1.25" (31.8mm) Hybrid
0.00	65.00	3	1 5/8" Hybriflex
0.00	55.00	1	1.60" (40.6mm) Hybrid

GLOBAL BASE FOUNDATION DESIGN LOADS

Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL+WL	1447.29	25.93	22.54
DL+WL+IL	405.09	70.4	6.34

INDIVIDUAL BASE FOUNDATION DESIGN LOADS

	Vertical (kip)	Uplift (kip)	Horizontal (kip)
	122.59	102.87	14.07

JOB INFORMATION

Asset:	207747, Glastonbury	Height :	104 ft
Client	DISH WIRELESS L.L.C.	Base Width :	14.67 ft
Code:	ANSI/TIA-222-H	Shape :	Triangle

ANALYSIS PARAMETERS			
Location:	Hartford County, CT	Height:	104 ft
Type and Shape:	Self Support, Triangle	Base Elevation:	0.00 ft
Manufacturer:	Undetermined	Bottom Face Width:	14.67 ft
Kd	0.85	Top Face Width:	6.52 ft
Ke:	0.99	Anchor Bolt Detail Type:	c

ICE & WIND PARAMETERS			
Exposure Category:	B	Design Wind Speed Without Ice:	118 mph
Risk Category:	II	Design Wind Speed with Ice:	50 mph
Topographic Factor Procedure:	Method 1	Operational Windspeed:	60 mph
Topographic Category:	Flat	Design Ice Thickness:	1.50 in
Crest Height:	0 ft	HMSL:	338 ft

SEISMIC PARAMETERS					
Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			Period Based on Rayleigh Method (sec):	0.81
T_L (sec):	6	P:	1.3	$C_{s:}$	0.036
$S_{s:}$	0.195	$S_{1:}$	0.055	$C_{s,}$ Max:	0.036
$F_{a:}$	1.600	$F_{v:}$	2.400	$C_{s,}$ Min:	0.030
$S_{ds:}$	0.208	S_{d1}:	0.088		

LOAD CASES	
1.2D + 1.0W Normal	118 mph wind with no ice
1.2D + 1.0W 60°	118 mph wind with no ice
1.2D + 1.0W 90°	118 mph wind with no ice
1.2D + 1.0W 120°	118 mph wind with no ice
1.2D + 1.0W 180°	118 mph wind with no ice
1.2D + 1.0W 210°	118 mph wind with no ice
1.2D + 1.0W 240°	118 mph wind with no ice
1.2D + 1.0W 300°	118 mph wind with no ice
1.2D + 1.0W 330°	118 mph wind with no ice
0.9D + 1.0W Normal	118 mph wind with no ice
0.9D + 1.0W 60°	118 mph wind with no ice
0.9D + 1.0W 90°	118 mph wind with no ice
0.9D + 1.0W 120°	118 mph wind with no ice
0.9D + 1.0W 180°	118 mph wind with no ice
0.9D + 1.0W 210°	118 mph wind with no ice
0.9D + 1.0W 240°	118 mph wind with no ice
0.9D + 1.0W 300°	118 mph wind with no ice
0.9D + 1.0W 330°	118 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 60°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 90°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 120°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 180°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 210°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 240°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 300°	50 mph wind with 1.5" radial ice
1.2D + 1.0Di + 1.0Wi 330°	50 mph wind with 1.5" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
1.2D + 1.0Ev + 1.0Eh 60°	Seismic
1.2D + 1.0Ev + 1.0Eh 90°	Seismic
1.2D + 1.0Ev + 1.0Eh 120°	Seismic
1.2D + 1.0Ev + 1.0Eh 180°	Seismic
1.2D + 1.0Ev + 1.0Eh 210°	Seismic
1.2D + 1.0Ev + 1.0Eh 240°	Seismic
1.2D + 1.0Ev + 1.0Eh 300°	Seismic
1.2D + 1.0Ev + 1.0Eh 330°	Seismic

LOAD CASES	
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 60°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 90°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 120°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 180°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 210°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 240°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 300°	Seismic (Reduced DL)
0.9D - 1.0Ev + 1.0Eh 330°	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice
1.0D + 1.0W Service 60°	60 mph Wind with No Ice
1.0D + 1.0W Service 90°	60 mph Wind with No Ice
1.0D + 1.0W Service 120°	60 mph Wind with No Ice
1.0D + 1.0W Service 180°	60 mph Wind with No Ice
1.0D + 1.0W Service 210°	60 mph Wind with No Ice
1.0D + 1.0W Service 240°	60 mph Wind with No Ice
1.0D + 1.0W Service 300°	60 mph Wind with No Ice
1.0D + 1.0W Service 330°	60 mph Wind with No Ice

TOWER LOADING

Discrete Appurtenance Properties 1.2D + 1.0W

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient Factor	Vert Ecc (ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
102.0	Alcatel-Lucent RRH4x30W-B25	3	55	2.0	1.7	11.4	6.3	0.80	0.50	0.0	0.00	29.75	60	198
102.0	Alcatel-Lucent B13 RRH4x30-4R	3	58	2.1	1.8	12.0	8.9	0.80	0.50	0.0	0.00	29.75	65	208
102.0	Alcatel-Lucent RRH4x45-1900	3	60	2.4	2.1	11.1	11.4	0.80	0.50	0.0	0.00	29.75	72	216
102.0	RFS DB-T1-6Z-8AB-0Z	3	44	4.8	2.0	24.0	10.0	0.80	0.50	0.0	0.00	29.75	146	158
102.0	Amphenol Antel BXA-70063-6CF-E	3	17	7.6	5.9	11.2	5.2	0.80	0.66	0.0	0.00	29.75	303	61
102.0	Andrew SBNHH-1D65B	6	51	8.2	6.1	11.9	7.1	0.80	0.69	0.0	0.00	29.75	684	365
102.0	Commscope LNX-8514DS-T4M	3	51	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.00	29.75	486	182
102.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.00	29.75	549	1080
95.0	Commscope VHLP3-11W	1	53	10.7	3.3	39.4	24.3	1.00	1.00	0.0	0.00	29.15	265	64
90.0	Powerwave Allgon TT19-08BP111-	3	16	0.6	0.8	6.7	5.4	0.80	0.50	0.0	0.00	28.70	16	58
90.0	CCI DTMABP7819VG12A	3	19	1.0	0.9	11.0	3.8	0.80	0.50	0.0	0.00	28.70	28	69
90.0	Raycap DC6-48-60-18-8F	3	20	1.3	2.0	9.7	9.7	0.80	0.50	0.0	0.00	28.70	37	72
90.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.50	0.0	0.00	28.70	80	191
90.0	Ericsson RRUS-11	3	55	3.8	2.1	18.2	6.7	0.80	0.50	0.0	0.00	28.70	111	198
90.0	Kathrein Scala 800-10121	3	44	5.2	4.5	10.3	5.9	0.80	0.68	0.0	0.00	28.70	206	159
90.0	KMW AM-X-CD-16-65-00T-RET	1	49	8.0	6.0	11.8	5.9	0.80	1.00	0.0	0.00	28.70	157	58
90.0	CCI HPA-65R-BUU-H6	3	51	9.7	6.0	14.8	9.0	0.80	0.69	0.0	0.00	28.70	390	184
90.0	Andrew SBNH-1D6565C (60.8 lbs)	1	61	11.4	8.0	11.9	7.1	0.80	1.00	0.0	0.00	28.70	223	73
90.0	Powerwave Allgon P65-17-XLH-RR	1	59	11.5	8.0	12.0	6.0	0.80	1.00	0.0	0.00	28.70	224	71
90.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	28.70	737	1440
88.0	Decibel DB806-XT	1	21	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.00	28.52	58	25
88.0	Generic Round Side Arm	1	188	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	28.52	126	225
80.0	Commscope VHLP3-11W	1	53	10.7	3.3	39.4	24.3	1.00	1.00	0.0	0.00	27.75	252	64
78.0	Generic Round Side Arm	1	188	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	27.55	122	225
76.0	Commscope VHLP3-11W	1	53	10.7	3.3	39.4	24.3	1.00	1.00	0.0	0.00	27.35	248	64
65.0	Jaybeam SmartTilt AISG Modem	3	1	0.1	0.3	2.3	2.0	0.80	0.50	0.0	0.00	26.15	2	4
65.0	Ericsson Radio 4449 B12,B71	3	74	1.6	1.2	13.2	9.3	0.80	0.50	0.0	0.00	26.15	44	266
65.0	Ericsson AIR 21	3	91	6.0	4.7	12.0	7.9	0.80	0.70	0.0	0.00	26.15	226	328
65.0	Ericsson AIR 32 (57" Height)	3	99	6.2	4.8	12.0	8.0	0.80	0.71	0.0	0.00	26.15	234	356
65.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	26.15	540	1080
65.0	RFS APXVAARR24_43-U-NA20	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.00	26.15	680	460
55.0	Commscope RDIDC-9181-PF-48	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.00	24.93	32	26
55.0	Fujitsu TA08025-B604	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.00	24.93	50	230
55.0	Fujitsu TA08025-B605	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.00	24.93	50	270
55.0	JMA Wireless MX08FRO665-21	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.00	24.93	407	232
55.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	24.93	640	1440
	Totals	91	8,666	635.6									8,549	10,400

TOWER LOADING

Discrete Appurtenance Properties 0.9D + 1.0W

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient Factor	Vert Ecc (ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
102.0	Alcatel-Lucent RRH4x30W-B25	3	55	2.0	1.7	11.4	6.3	0.80	0.50	0.0	0.00	29.75	60	149
102.0	Alcatel-Lucent B13 RRH4x30-4R	3	58	2.1	1.8	12.0	8.9	0.80	0.50	0.0	0.00	29.75	65	156
102.0	Alcatel-Lucent RRH4x45-1900	3	60	2.4	2.1	11.1	11.4	0.80	0.50	0.0	0.00	29.75	72	162
102.0	RFS DB-T1-6Z-8AB-0Z	3	44	4.8	2.0	24.0	10.0	0.80	0.50	0.0	0.00	29.75	146	119
102.0	Amphenol Antel BXA-70063-6CF-E	3	17	7.6	5.9	11.2	5.2	0.80	0.66	0.0	0.00	29.75	303	46
102.0	Andrew SBNHH-1D65B	6	51	8.2	6.1	11.9	7.1	0.80	0.69	0.0	0.00	29.75	684	274
102.0	Commscope LNX-8514DS-T4M	3	51	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.00	29.75	486	136
102.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.00	29.75	549	810
95.0	Commscope VHLP3-11W	1	53	10.7	3.3	39.4	24.3	1.00	1.00	0.0	0.00	29.15	265	48
90.0	Powerwave Allgon TT19-08BP111-	3	16	0.6	0.8	6.7	5.4	0.80	0.50	0.0	0.00	28.70	16	43
90.0	CCI DTMABP7819VG12A	3	19	1.0	0.9	11.0	3.8	0.80	0.50	0.0	0.00	28.70	28	52
90.0	Raycap DC6-48-60-18-8F	3	20	1.3	2.0	9.7	9.7	0.80	0.50	0.0	0.00	28.70	37	54
90.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.50	0.0	0.00	28.70	80	143
90.0	Ericsson RRUS-11	3	55	3.8	2.1	18.2	6.7	0.80	0.50	0.0	0.00	28.70	111	148
90.0	Kathrein Scala 800-10121	3	44	5.2	4.5	10.3	5.9	0.80	0.68	0.0	0.00	28.70	206	119
90.0	KMW AM-X-CD-16-65-00T-RET	1	49	8.0	6.0	11.8	5.9	0.80	1.00	0.0	0.00	28.70	157	44
90.0	CCI HPA-65R-BUU-H6	3	51	9.7	6.0	14.8	9.0	0.80	0.69	0.0	0.00	28.70	390	138
90.0	Andrew SBNH-1D6565C (60.8 lbs)	1	61	11.4	8.0	11.9	7.1	0.80	1.00	0.0	0.00	28.70	223	55
90.0	Powerwave Allgon P65-17-XLH-RR	1	59	11.5	8.0	12.0	6.0	0.80	1.00	0.0	0.00	28.70	224	53
90.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	28.70	737	1080

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient Factor	Vert Ecc (ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
88.0	Decibel DB806-XT	1	21	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.00	28.52	58	19
88.0	Generic Round Side Arm	1	188	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	28.52	126	169
80.0	Commscope VHLP3-11W	1	53	10.7	3.3	39.4	24.3	1.00	1.00	0.0	0.00	27.75	252	48
78.0	Generic Round Side Arm	1	188	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	27.55	122	169
76.0	Commscope VHLP3-11W	1	53	10.7	3.3	39.4	24.3	1.00	1.00	0.0	0.00	27.35	248	48
65.0	Jaybeam SmartTilt AISG Modem	3	1	0.1	0.3	2.3	2.0	0.80	0.50	0.0	0.00	26.15	2	3
65.0	Ericsson Radio 4449 B12,B71	3	74	1.6	1.2	13.2	9.3	0.80	0.50	0.0	0.00	26.15	44	200
65.0	Ericsson AIR 21	3	91	6.0	4.7	12.0	7.9	0.80	0.70	0.0	0.00	26.15	226	246
65.0	Ericsson AIR 32 (57" Height)	3	99	6.2	4.8	12.0	8.0	0.80	0.71	0.0	0.00	26.15	234	267
65.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	26.15	540	810
65.0	RFS APXVAARR24_43-U-NA20	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.00	26.15	680	345
55.0	Commscope RDIDC-9181-PF-48	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.00	24.93	32	20
55.0	Fujitsu TA08025-B604	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.00	24.93	50	173
55.0	Fujitsu TA08025-B605	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.00	24.93	50	202
55.0	JMA Wireless MX08FRO665-21	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.00	24.93	407	174
55.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	24.93	640	1080
	Totals	91	8,666	635.6									8,549	7,800

TOWER LOADING

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elev (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient Factor	Vert Ecc (ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
102.0	Alcatel-Lucent RRH4x30W-B25	3	107	2.9	1.7	11.4	6.3	0.80	0.50	0.0	0.00	5.34	16	354
102.0	Alcatel-Lucent B13 RRH4x30-4R	3	124	3.1	1.8	12.0	8.9	0.80	0.50	0.0	0.00	5.34	17	407
102.0	Alcatel-Lucent RRH4x45-1900	3	140	3.4	2.1	11.1	11.4	0.80	0.50	0.0	0.00	5.34	19	457
102.0	RFS DB-T1-6Z-8AB-0Z	3	165	6.2	2.0	24.0	10.0	0.80	0.50	0.0	0.00	5.34	34	522
102.0	Amphenol Antel BXA-70063-6CF-E	3	159	10.2	5.9	11.2	5.2	0.80	0.66	0.0	0.00	5.34	74	488
102.0	Andrew SBNHH-1D65B	6	220	10.9	6.1	11.9	7.1	0.80	0.69	0.0	0.00	5.34	164	1378
102.0	Commscope LNX-8514DS-T4M	3	271	14.6	8.0	11.9	7.1	0.80	0.70	0.0	0.00	5.34	111	844
102.0	Generic Round Sector Frame	3	654	30.3	0.0	0.0	0.0	0.75	0.67	0.0	0.00	5.34	208	2142
95.0	Commscope VHLP3-11W	1	261	12.5	3.3	39.4	24.3	1.00	1.00	0.0	0.00	5.23	56	271
90.0	Powerwave Allgon TT19-08BP111-	3	35	1.0	0.8	6.7	5.4	0.80	0.50	0.0	0.00	5.15	5	115
90.0	CCI DTMABP7819VG12A	3	43	1.6	0.9	11.0	3.8	0.80	0.50	0.0	0.00	5.15	8	142
90.0	Raycap DC6-48-60-18-8F	3	70	1.9	2.0	9.7	9.7	0.80	0.50	0.0	0.00	5.15	10	222
90.0	Ericsson RRUS 32 B2	3	123	3.9	2.3	12.1	7.0	0.80	0.50	0.0	0.00	5.15	20	400
90.0	Ericsson RRUS-11	3	140	5.0	2.1	18.2	6.7	0.80	0.50	0.0	0.00	5.15	26	454
90.0	Kathrein Scala 800-10121	3	153	7.2	4.5	10.3	5.9	0.80	0.68	0.0	0.00	5.15	51	485
90.0	KMW AM-X-CD-16-65-00T-RET	1	202	10.7	6.0	11.8	5.9	0.80	1.00	0.0	0.00	5.15	37	212
90.0	CCI HPA-65R-BUU-H6	3	259	12.3	6.0	14.8	9.0	0.80	0.69	0.0	0.00	5.15	89	809
90.0	Andrew SBNH-1D6565C (60.8 lbs)	1	279	14.5	8.0	11.9	7.1	0.80	1.00	0.0	0.00	5.15	51	291
90.0	Powerwave Allgon P65-17-XLH-RR	1	264	14.5	8.0	12.0	6.0	0.80	1.00	0.0	0.00	5.15	51	276
90.0	Generic Flat Light Sector Fram	3	686	32.2	0.0	0.0	0.0	0.75	0.75	0.0	0.00	5.15	238	2298
88.0	Decibel DB806-XT	1	79	5.1	8.0	3.0	3.0	1.00	1.00	0.0	0.00	5.12	22	83
88.0	Generic Round Side Arm	1	274	7.8	0.0	0.0	0.0	1.00	1.00	0.0	0.00	5.12	34	312
80.0	Commscope VHLP3-11W	1	255	12.5	3.3	39.4	24.3	1.00	1.00	0.0	0.00	4.98	53	266
78.0	Generic Round Side Arm	1	273	7.7	0.0	0.0	0.0	1.00	1.00	0.0	0.00	4.95	33	310
76.0	Commscope VHLP3-11W	1	255	12.5	3.3	39.4	24.3	1.00	1.00	0.0	0.00	4.91	52	266
65.0	Jaybeam SmartTilt AISG Modem	3	4	0.3	0.3	2.3	2.0	0.80	0.50	0.0	0.00	4.70	1	13
65.0	Ericsson Radio 4449 B12,B71	3	125	2.4	1.2	13.2	9.3	0.80	0.50	0.0	0.00	4.70	12	421
65.0	Ericsson AIR 21	3	224	8.0	4.7	12.0	7.9	0.80	0.70	0.0	0.00	4.70	54	727
65.0	Ericsson AIR 32 (57" Height)	3	235	8.2	4.8	12.0	8.0	0.80	0.71	0.0	0.00	4.70	56	765
65.0	Generic Round Sector Frame	3	638	29.6	0.0	0.0	0.0	0.75	0.75	0.0	0.00	4.70	199	2093
65.0	RFS APXVAARR24_43-U-NA20	3	488	23.6	8.0	24.0	8.7	0.80	0.63	0.0	0.00	4.70	143	1542
55.0	Commscope RDIDC-9181-PF-48	1	73	2.7	1.3	14.0	8.0	0.80	1.00	0.0	0.00	4.48	8	78
55.0	Fujitsu TA08025-B604	3	117	2.8	1.3	15.0	7.9	0.80	0.50	0.0	0.00	4.48	13	388
55.0	Fujitsu TA08025-B605	3	132	2.8	1.3	15.0	9.1	0.80	0.50	0.0	0.00	4.48	13	440
55.0	JMA Wireless MX08FRO665-21	3	297	15.0	6.0	20.0	8.0	0.80	0.64	0.0	0.00	4.48	88	929
55.0	Generic Flat Light Sector Fram	3	672	31.5	0.0	0.0	0.0	0.75	0.75	0.0	0.00	4.48	202	2256
	Totals	91	21,724	946.0									2266	23,457

TOWER LOADING

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elev (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K_a	Orient Factor	Vert Ecc (ft)	M_u (lb-ft)	Q_z (psf)	F_a (WL) (lb)	P_a (DL) (lb)
102.0	Alcatel-Lucent RRH4x30W-B25	3	55	2.0	1.7	11.4	6.3	0.80	0.50	0.0	0.00	7.69	15	165
102.0	Alcatel-Lucent B13 RRH4x30-4R	3	58	2.1	1.8	12.0	8.9	0.80	0.50	0.0	0.00	7.69	17	173
102.0	Alcatel-Lucent RRH4x45-1900	3	60	2.4	2.1	11.1	11.4	0.80	0.50	0.0	0.00	7.69	19	180
102.0	RFS DB-T1-6Z-8AB-0Z	3	44	4.8	2.0	24.0	10.0	0.80	0.50	0.0	0.00	7.69	38	132
102.0	Amphenol Antel BXA-70063-6CF-E	3	17	7.6	5.9	11.2	5.2	0.80	0.66	0.0	0.00	7.69	78	51
102.0	Andrew SBNHH-1D65B	6	51	8.2	6.1	11.9	7.1	0.80	0.69	0.0	0.00	7.69	177	304
102.0	Commscope LNX-8514DS-T4M	3	51	11.4	8.0	11.9	7.1	0.80	0.70	0.0	0.00	7.69	126	152
102.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.00	7.69	142	900
95.0	Commscope VHLP3-11W	1	53	10.7	3.3	39.4	24.3	1.00	1.00	0.0	0.00	7.54	68	53
90.0	Powerwave Allgon TT19-08BP111-	3	16	0.6	0.8	6.7	5.4	0.80	0.50	0.0	0.00	7.42	4	48
90.0	CCI DTMABP7819VG12A	3	19	1.0	0.9	11.0	3.8	0.80	0.50	0.0	0.00	7.42	7	58
90.0	Raycap DC6-48-60-18-8F	3	20	1.3	2.0	9.7	9.7	0.80	0.50	0.0	0.00	7.42	10	60
90.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.50	0.0	0.00	7.42	21	159
90.0	Ericsson RRUS-11	3	55	3.8	2.1	18.2	6.7	0.80	0.50	0.0	0.00	7.42	29	165
90.0	Kathrein Scala 800-10121	3	44	5.2	4.5	10.3	5.9	0.80	0.68	0.0	0.00	7.42	53	132
90.0	KMW AM-X-CD-16-65-00T-RET	1	49	8.0	6.0	11.8	5.9	0.80	1.00	0.0	0.00	7.42	40	48
90.0	CCI HPA-65R-BUU-H6	3	51	9.7	6.0	14.8	9.0	0.80	0.69	0.0	0.00	7.42	101	153
90.0	Andrew SBNH-1D6565C (60.8 lbs)	1	61	11.4	8.0	11.9	7.1	0.80	1.00	0.0	0.00	7.42	58	61
90.0	Powerwave Allgon P65-17-XLH-RR	1	59	11.5	8.0	12.0	6.0	0.80	1.00	0.0	0.00	7.42	58	59
90.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	7.42	191	1200
88.0	Decibel DB806-XT	1	21	2.4	8.0	3.0	3.0	1.00	1.00	0.0	0.00	7.37	15	21
88.0	Generic Round Side Arm	1	188	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	7.37	33	188
80.0	Commscope VHLP3-11W	1	53	10.7	3.3	39.4	24.3	1.00	1.00	0.0	0.00	7.17	65	53
78.0	Generic Round Side Arm	1	188	5.2	0.0	0.0	0.0	1.00	1.00	0.0	0.00	7.12	31	188
76.0	Commscope VHLP3-11W	1	53	10.7	3.3	39.4	24.3	1.00	1.00	0.0	0.00	7.07	64	53
65.0	Jaybeam SmartTilt AISG Modem	3	1	0.1	0.3	2.3	2.0	0.80	0.50	0.0	0.00	6.76	1	3
65.0	Ericsson Radio 4449 B12,B71	3	74	1.6	1.2	13.2	9.3	0.80	0.50	0.0	0.00	6.76	11	222
65.0	Ericsson AIR 21	3	91	6.0	4.7	12.0	7.9	0.80	0.70	0.0	0.00	6.76	58	273
65.0	Ericsson AIR 32 (57" Height)	3	99	6.2	4.8	12.0	8.0	0.80	0.71	0.0	0.00	6.76	60	297
65.0	Generic Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.00	6.76	140	900
65.0	RFS APXVAARR24_43-U-NA20	3	128	20.2	8.0	24.0	8.7	0.80	0.63	0.0	0.00	6.76	176	384
55.0	Commscope RDIDC-9181-PF-48	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.00	6.45	8	22
55.0	Fujitsu TA08025-B604	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.00	6.45	13	192
55.0	Fujitsu TA08025-B605	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.00	6.45	13	225
55.0	JMA Wireless MX08FRO665-21	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.00	6.45	105	194
55.0	Generic Flat Light Sector Fram	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.00	6.45	166	1200
	Totals	91	8,666	635.6									2,210	8,666

TOWER LOADING

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	% In Wind	Spread On Faces	Bundling	Cluster Dia (in)	Out of Zone	Spacing (in)	Orient Factor	K_a Override
0.0	102.0	1 5/8" Hybriflex	2	1.98	1.30	100	3	Individual	0.00	N	1.00	1.00	0.01
0.0	102.0	1 5/8" Coax	12	1.98	0.82	50	3	Block	0.00	N	1.00	1.00	0.00
0.0	102.0	Waveguide	2	2.00	6.00	100	1,3	Individual	0.00	N	1.00	1.00	0.00
0.0	95.0	0.24" (6mm) Cat 5	2	0.24	0.04	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	90.0	1 5/8" Hybriflex	1	1.98	1.30	100	3	Individual	0.00	N	1.00	1.00	0.00
0.0	90.0	3/8" (0.38"- 9.5mm) RET Contro	2	0.38	0.23	100	3	Individual	0.00	N	1.00	1.00	0.01
0.0	90.0	1 5/8" Coax	12	1.98	0.82	50	3	Block	0.00	N	1.00	1.00	0.00
0.0	90.0	0.78" (19.7mm) 8 AWG 6	2	0.78	0.59	100	3	Individual	0.00	N	1.00	1.00	0.01
0.0	79.0	1/2" Coax	1	0.63	0.15	100	1	Individual	0.00	N	1.00	1.00	0.00
0.0	76.0	1/2" Coax	2	0.63	0.15	50	1	Block	0.00	N	1.00	1.00	0.96
0.0	65.0	1 5/8" Hybriflex	3	1.98	1.30	100	1	Individual	0.00	N	1.00	1.00	0.44
0.0	65.0	1.25" (31.8mm) Hybrid	3	1.25	1.21	100	1	Individual	0.00	N	1.00	1.00	0.48
0.0	55.0	1.60" (40.6mm) Hybrid	1	1.60	2.34	100	1	Individual	0.00	N	1.00	1.00	0.00

SECTION FORCES

1.2D + 1.0W Normal — Gust Response Factor (Gh): 0.85
118 mph wind with no ice — Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	535	0	476	252	728
9	94	29.06	1.923	1.662	0.00	0.133	2.83	1.00	1.00	0.0	2.86	8.12	0.00	268	0	200	167	368
8	88	28.52	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	687	0	459	531	990
7	82	27.95	3.030	1.662	0.00	0.175	2.68	1.00	1.00	0.0	3.98	10.67	0.00	387	0	254	293	547
6	72	26.98	17.762	7.560	0.00	0.224	2.52	1.00	1.00	0.0	22.14	55.72	0.00	1963	0	1278	1093	2371
5	62	25.86	4.711	2.520	0.00	0.169	2.70	1.00	1.00	0.0	6.15	16.61	0.00	639	0	365	400	765
4	53	24.72	10.649	6.590	0.00	0.136	2.82	1.00	1.00	0.0	14.38	40.58	0.00	1986	0	853	1036	1889
3	43	23.29	4.700	3.810	0.00	0.122	2.88	1.00	1.00	0.0	6.85	19.73	0.00	1034	0	391	493	884
2	30	20.97	19.445	11.424	0.00	0.130	2.85	1.00	1.00	0.0	25.91	73.73	0.00	3819	0	1314	1332	2646
1	10	20.95	21.316	13.440	0.00	0.125	2.87	1.00	1.00	0.0	28.92	82.90	0.00	4209	0	1476	1331	2807
														15,526	0			13,995

1.2D + 1.0W 60° — Gust Response Factor (Gh): 0.85
118 mph wind with no ice — Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	535	0	407	252	659
9	94	29.06	1.923	1.662	0.00	0.133	2.83	0.80	1.00	0.0	2.48	7.03	0.00	268	0	174	167	341
8	88	28.52	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	687	0	392	531	924
7	82	27.95	3.030	1.662	0.00	0.175	2.68	0.80	1.00	0.0	3.37	9.05	0.00	387	0	215	293	508
6	72	26.98	17.762	7.560	0.00	0.224	2.52	0.80	1.00	0.0	18.59	46.78	0.00	1963	0	1073	1093	2166
5	62	25.86	4.711	2.520	0.00	0.169	2.70	0.80	1.00	0.0	5.20	14.06	0.00	639	0	309	400	709
4	53	24.72	10.649	6.590	0.00	0.136	2.82	0.80	1.00	0.0	12.25	34.57	0.00	1986	0	726	1036	1763
3	43	23.29	4.700	3.810	0.00	0.122	2.88	0.80	1.00	0.0	5.91	17.03	0.00	1034	0	337	493	831
2	30	20.97	19.445	11.424	0.00	0.130	2.85	0.80	1.00	0.0	22.02	62.66	0.00	3819	0	1117	1332	2449
1	10	20.95	21.316	13.440	0.00	0.125	2.87	0.80	1.00	0.0	24.65	70.68	0.00	4209	0	1259	1331	2590
														15,526	0			12,938

1.2D + 1.0W 90° — Gust Response Factor (Gh): 0.85
118 mph wind with no ice — Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	535	0	424	252	676
9	94	29.06	1.923	1.662	0.00	0.133	2.83	0.85	1.00	0.0	2.58	7.30	0.00	268	0	180	167	347
8	88	28.52	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	687	0	409	531	940
7	82	27.95	3.030	1.662	0.00	0.175	2.68	0.85	1.00	0.0	3.52	9.46	0.00	387	0	225	293	518
6	72	26.98	17.762	7.560	0.00	0.224	2.52	0.85	1.00	0.0	19.48	49.02	0.00	1963	0	1124	1093	2217
5	62	25.86	4.711	2.520	0.00	0.169	2.70	0.85	1.00	0.0	5.44	14.70	0.00	639	0	323	400	723
4	53	24.72	10.649	6.590	0.00	0.136	2.82	0.85	1.00	0.0	12.78	36.08	0.00	1986	0	758	1036	1794
3	43	23.29	4.700	3.810	0.00	0.122	2.88	0.85	1.00	0.0	6.15	17.70	0.00	1034	0	350	493	844
2	30	20.97	19.445	11.424	0.00	0.130	2.85	0.85	1.00	0.0	22.99	65.43	0.00	3819	0	1166	1332	2498
1	10	20.95	21.316	13.440	0.00	0.125	2.87	0.85	1.00	0.0	25.72	73.73	0.00	4209	0	1313	1331	2644
														15,526	0			13,202

1.2D + 1.0W 120° — Gust Response Factor (Gh): 0.85
118 mph wind with no ice — Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	535	0	476	252	728
9	94	29.06	1.923	1.662	0.00	0.133	2.83	1.00	1.00	0.0	2.86	8.12	0.00	268	0	200	167	368

SECTION FORCES

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
8	88	28.52	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	687	0	459	531	990
7	82	27.95	3.030	1.662	0.00	0.175	2.68	1.00	1.00	0.0	3.98	10.67	0.00	387	0	254	293	547
6	72	26.98	17.762	7.560	0.00	0.224	2.52	1.00	1.00	0.0	22.14	55.72	0.00	1963	0	1278	1093	2371
5	62	25.86	4.711	2.520	0.00	0.169	2.70	1.00	1.00	0.0	6.15	16.61	0.00	639	0	365	400	765
4	53	24.72	10.649	6.590	0.00	0.136	2.82	1.00	1.00	0.0	14.38	40.58	0.00	1986	0	853	1036	1889
3	43	23.29	4.700	3.810	0.00	0.122	2.88	1.00	1.00	0.0	6.85	19.73	0.00	1034	0	391	493	884
2	30	20.97	19.445	11.424	0.00	0.130	2.85	1.00	1.00	0.0	25.91	73.73	0.00	3819	0	1314	1332	2646
1	10	20.95	21.316	13.440	0.00	0.125	2.87	1.00	1.00	0.0	28.92	82.90	0.00	4209	0	1476	1331	2807
														15,526	0			13,995

1.2D + 1.0W 180° Gust Response Factor (Gh): 0.85
118 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	535	0	407	252	659
9	94	29.06	1.923	1.662	0.00	0.133	2.83	0.80	1.00	0.0	2.48	7.03	0.00	268	0	174	167	341
8	88	28.52	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	687	0	392	531	924
7	82	27.95	3.030	1.662	0.00	0.175	2.68	0.80	1.00	0.0	3.37	9.05	0.00	387	0	215	293	508
6	72	26.98	17.762	7.560	0.00	0.224	2.52	0.80	1.00	0.0	18.59	46.78	0.00	1963	0	1073	1093	2166
5	62	25.86	4.711	2.520	0.00	0.169	2.70	0.80	1.00	0.0	5.20	14.06	0.00	639	0	309	400	709
4	53	24.72	10.649	6.590	0.00	0.136	2.82	0.80	1.00	0.0	12.25	34.57	0.00	1986	0	726	1036	1763
3	43	23.29	4.700	3.810	0.00	0.122	2.88	0.80	1.00	0.0	5.91	17.03	0.00	1034	0	337	493	831
2	30	20.97	19.445	11.424	0.00	0.130	2.85	0.80	1.00	0.0	22.02	62.66	0.00	3819	0	1117	1332	2449
1	10	20.95	21.316	13.440	0.00	0.125	2.87	0.80	1.00	0.0	24.65	70.68	0.00	4209	0	1259	1331	2590
														15,526	0			12,938

1.2D + 1.0W 210° Gust Response Factor (Gh): 0.85
118 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	535	0	424	252	676
9	94	29.06	1.923	1.662	0.00	0.133	2.83	0.85	1.00	0.0	2.58	7.30	0.00	268	0	180	167	347
8	88	28.52	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	687	0	409	531	940
7	82	27.95	3.030	1.662	0.00	0.175	2.68	0.85	1.00	0.0	3.52	9.46	0.00	387	0	225	293	518
6	72	26.98	17.762	7.560	0.00	0.224	2.52	0.85	1.00	0.0	19.48	49.02	0.00	1963	0	1124	1093	2217
5	62	25.86	4.711	2.520	0.00	0.169	2.70	0.85	1.00	0.0	5.44	14.70	0.00	639	0	323	400	723
4	53	24.72	10.649	6.590	0.00	0.136	2.82	0.85	1.00	0.0	12.78	36.08	0.00	1986	0	758	1036	1794
3	43	23.29	4.700	3.810	0.00	0.122	2.88	0.85	1.00	0.0	6.15	17.70	0.00	1034	0	350	493	844
2	30	20.97	19.445	11.424	0.00	0.130	2.85	0.85	1.00	0.0	22.99	65.43	0.00	3819	0	1166	1332	2498
1	10	20.95	21.316	13.440	0.00	0.125	2.87	0.85	1.00	0.0	25.72	73.73	0.00	4209	0	1313	1331	2644
														15,526	0			13,202

1.2D + 1.0W 240° Gust Response Factor (Gh): 0.85
118 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	535	0	476	252	728
9	94	29.06	1.923	1.662	0.00	0.133	2.83	1.00	1.00	0.0	2.86	8.12	0.00	268	0	200	167	368
8	88	28.52	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	687	0	459	531	990
7	82	27.95	3.030	1.662	0.00	0.175	2.68	1.00	1.00	0.0	3.98	10.67	0.00	387	0	254	293	547
6	72	26.98	17.762	7.560	0.00	0.224	2.52	1.00	1.00	0.0	22.14	55.72	0.00	1963	0	1278	1093	2371
5	62	25.86	4.711	2.520	0.00	0.169	2.70	1.00	1.00	0.0	6.15	16.61	0.00	639	0	365	400	765
4	53	24.72	10.649	6.590	0.00	0.136	2.82	1.00	1.00	0.0	14.38	40.58	0.00	1986	0	853	1036	1889
3	43	23.29	4.700	3.810	0.00	0.122	2.88	1.00	1.00	0.0	6.85	19.73	0.00	1034	0	391	493	884
2	30	20.97	19.445	11.424	0.00	0.130	2.85	1.00	1.00	0.0	25.91	73.73	0.00	3819	0	1314	1332	2646
1	10	20.95	21.316	13.440	0.00	0.125	2.87	1.00	1.00	0.0	28.92	82.90	0.00	4209	0	1476	1331	2807

SECTION FORCES

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
														15,526	0			13,995

1.2D + 1.0W 300° — Gust Response Factor (Gh): 0.85
118 mph wind with no ice — Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	535	0	407	252	659
9	94	29.06	1.923	1.662	0.00	0.133	2.83	0.80	1.00	0.0	2.48	7.03	0.00	268	0	174	167	341
8	88	28.52	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	687	0	392	531	924
7	82	27.95	3.030	1.662	0.00	0.175	2.68	0.80	1.00	0.0	3.37	9.05	0.00	387	0	215	293	508
6	72	26.98	17.762	7.560	0.00	0.224	2.52	0.80	1.00	0.0	18.59	46.78	0.00	1963	0	1073	1093	2166
5	62	25.86	4.711	2.520	0.00	0.169	2.70	0.80	1.00	0.0	5.20	14.06	0.00	639	0	309	400	709
4	53	24.72	10.649	6.590	0.00	0.136	2.82	0.80	1.00	0.0	12.25	34.57	0.00	1986	0	726	1036	1763
3	43	23.29	4.700	3.810	0.00	0.122	2.88	0.80	1.00	0.0	5.91	17.03	0.00	1034	0	337	493	831
2	30	20.97	19.445	11.424	0.00	0.130	2.85	0.80	1.00	0.0	22.02	62.66	0.00	3819	0	1117	1332	2449
1	10	20.95	21.316	13.440	0.00	0.125	2.87	0.80	1.00	0.0	24.65	70.68	0.00	4209	0	1259	1331	2590
														15,526	0			12,938

1.2D + 1.0W 330° — Gust Response Factor (Gh): 0.85
118 mph wind with no ice — Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	535	0	424	252	676
9	94	29.06	1.923	1.662	0.00	0.133	2.83	0.85	1.00	0.0	2.58	7.30	0.00	268	0	180	167	347
8	88	28.52	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	687	0	409	531	940
7	82	27.95	3.030	1.662	0.00	0.175	2.68	0.85	1.00	0.0	3.52	9.46	0.00	387	0	225	293	518
6	72	26.98	17.762	7.560	0.00	0.224	2.52	0.85	1.00	0.0	19.48	49.02	0.00	1963	0	1124	1093	2217
5	62	25.86	4.711	2.520	0.00	0.169	2.70	0.85	1.00	0.0	5.44	14.70	0.00	639	0	323	400	723
4	53	24.72	10.649	6.590	0.00	0.136	2.82	0.85	1.00	0.0	12.78	36.08	0.00	1986	0	758	1036	1794
3	43	23.29	4.700	3.810	0.00	0.122	2.88	0.85	1.00	0.0	6.15	17.70	0.00	1034	0	350	493	844
2	30	20.97	19.445	11.424	0.00	0.130	2.85	0.85	1.00	0.0	22.99	65.43	0.00	3819	0	1166	1332	2498
1	10	20.95	21.316	13.440	0.00	0.125	2.87	0.85	1.00	0.0	25.72	73.73	0.00	4209	0	1313	1331	2644
														15,526	0			13,202

0.9D + 1.0W Normal — Gust Response Factor (Gh): 0.85
118 mph wind with no ice — Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	401	0	476	252	728
9	94	29.06	1.923	1.662	0.00	0.133	2.83	1.00	1.00	0.0	2.86	8.12	0.00	201	0	200	167	368
8	88	28.52	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	515	0	459	531	990
7	82	27.95	3.030	1.662	0.00	0.175	2.68	1.00	1.00	0.0	3.98	10.67	0.00	290	0	254	293	547
6	72	26.98	17.762	7.560	0.00	0.224	2.52	1.00	1.00	0.0	22.14	55.72	0.00	1472	0	1278	1093	2371
5	62	25.86	4.711	2.520	0.00	0.169	2.70	1.00	1.00	0.0	6.15	16.61	0.00	479	0	365	400	765
4	53	24.72	10.649	6.590	0.00	0.136	2.82	1.00	1.00	0.0	14.38	40.58	0.00	1489	0	853	1036	1889
3	43	23.29	4.700	3.810	0.00	0.122	2.88	1.00	1.00	0.0	6.85	19.73	0.00	775	0	391	493	884
2	30	20.97	19.445	11.424	0.00	0.130	2.85	1.00	1.00	0.0	25.91	73.73	0.00	2864	0	1314	1332	2646
1	10	20.95	21.316	13.440	0.00	0.125	2.87	1.00	1.00	0.0	28.92	82.90	0.00	3157	0	1476	1331	2807
														11,644	0			13,995

0.9D + 1.0W 60° — Gust Response Factor (Gh): 0.85
118 mph wind with no ice — Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	401	0	407	252	659

SECTION FORCES

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
9	94	29.06	1.923	1.662	0.00	0.133	2.83	0.80	1.00	0.0	2.48	7.03	0.00	201	0	174	167	341
8	88	28.52	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	515	0	392	531	924
7	82	27.95	3.030	1.662	0.00	0.175	2.68	0.80	1.00	0.0	3.37	9.05	0.00	290	0	215	293	508
6	72	26.98	17.762	7.560	0.00	0.224	2.52	0.80	1.00	0.0	18.59	46.78	0.00	1472	0	1073	1093	2166
5	62	25.86	4.711	2.520	0.00	0.169	2.70	0.80	1.00	0.0	5.20	14.06	0.00	479	0	309	400	709
4	53	24.72	10.649	6.590	0.00	0.136	2.82	0.80	1.00	0.0	12.25	34.57	0.00	1489	0	726	1036	1763
3	43	23.29	4.700	3.810	0.00	0.122	2.88	0.80	1.00	0.0	5.91	17.03	0.00	775	0	337	493	831
2	30	20.97	19.445	11.424	0.00	0.130	2.85	0.80	1.00	0.0	22.02	62.66	0.00	2864	0	1117	1332	2449
1	10	20.95	21.316	13.440	0.00	0.125	2.87	0.80	1.00	0.0	24.65	70.68	0.00	3157	0	1259	1331	2590
														11,644	0			12,938

0.9D + 1.0W 90° Gust Response Factor (Gh): 0.85
118 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	401	0	424	252	676
9	94	29.06	1.923	1.662	0.00	0.133	2.83	0.85	1.00	0.0	2.58	7.30	0.00	201	0	180	167	347
8	88	28.52	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	515	0	409	531	940
7	82	27.95	3.030	1.662	0.00	0.175	2.68	0.85	1.00	0.0	3.52	9.46	0.00	290	0	225	293	518
6	72	26.98	17.762	7.560	0.00	0.224	2.52	0.85	1.00	0.0	19.48	49.02	0.00	1472	0	1124	1093	2217
5	62	25.86	4.711	2.520	0.00	0.169	2.70	0.85	1.00	0.0	5.44	14.70	0.00	479	0	323	400	723
4	53	24.72	10.649	6.590	0.00	0.136	2.82	0.85	1.00	0.0	12.78	36.08	0.00	1489	0	758	1036	1794
3	43	23.29	4.700	3.810	0.00	0.122	2.88	0.85	1.00	0.0	6.15	17.70	0.00	775	0	350	493	844
2	30	20.97	19.445	11.424	0.00	0.130	2.85	0.85	1.00	0.0	22.99	65.43	0.00	2864	0	1166	1332	2498
1	10	20.95	21.316	13.440	0.00	0.125	2.87	0.85	1.00	0.0	25.72	73.73	0.00	3157	0	1313	1331	2644
														11,644	0			13,202

0.9D + 1.0W 120° Gust Response Factor (Gh): 0.85
118 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	401	0	476	252	728
9	94	29.06	1.923	1.662	0.00	0.133	2.83	1.00	1.00	0.0	2.86	8.12	0.00	201	0	200	167	368
8	88	28.52	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	515	0	459	531	990
7	82	27.95	3.030	1.662	0.00	0.175	2.68	1.00	1.00	0.0	3.98	10.67	0.00	290	0	254	293	547
6	72	26.98	17.762	7.560	0.00	0.224	2.52	1.00	1.00	0.0	22.14	55.72	0.00	1472	0	1278	1093	2371
5	62	25.86	4.711	2.520	0.00	0.169	2.70	1.00	1.00	0.0	6.15	16.61	0.00	479	0	365	400	765
4	53	24.72	10.649	6.590	0.00	0.136	2.82	1.00	1.00	0.0	14.38	40.58	0.00	1489	0	853	1036	1889
3	43	23.29	4.700	3.810	0.00	0.122	2.88	1.00	1.00	0.0	6.85	19.73	0.00	775	0	391	493	884
2	30	20.97	19.445	11.424	0.00	0.130	2.85	1.00	1.00	0.0	25.91	73.73	0.00	2864	0	1314	1332	2646
1	10	20.95	21.316	13.440	0.00	0.125	2.87	1.00	1.00	0.0	28.92	82.90	0.00	3157	0	1476	1331	2807
														11,644	0			13,995

0.9D + 1.0W 180° Gust Response Factor (Gh): 0.85
118 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	401	0	407	252	659
9	94	29.06	1.923	1.662	0.00	0.133	2.83	0.80	1.00	0.0	2.48	7.03	0.00	201	0	174	167	341
8	88	28.52	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	515	0	392	531	924
7	82	27.95	3.030	1.662	0.00	0.175	2.68	0.80	1.00	0.0	3.37	9.05	0.00	290	0	215	293	508
6	72	26.98	17.762	7.560	0.00	0.224	2.52	0.80	1.00	0.0	18.59	46.78	0.00	1472	0	1073	1093	2166
5	62	25.86	4.711	2.520	0.00	0.169	2.70	0.80	1.00	0.0	5.20	14.06	0.00	479	0	309	400	709
4	53	24.72	10.649	6.590	0.00	0.136	2.82	0.80	1.00	0.0	12.25	34.57	0.00	1489	0	726	1036	1763
3	43	23.29	4.700	3.810	0.00	0.122	2.88	0.80	1.00	0.0	5.91	17.03	0.00	775	0	337	493	831
2	30	20.97	19.445	11.424	0.00	0.130	2.85	0.80	1.00	0.0	22.02	62.66	0.00	2864	0	1117	1332	2449

SECTION FORCES

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
1	10	20.95	21.316	13.440	0.00	0.125	2.87	0.80	1.00	0.0	24.65	70.68	0.00	3157	0	1259	1331	2590
														11,644	0			12,938

0.9D + 1.0W 210° Gust Response Factor (Gh): 0.85
118 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	401	0	424	252	676
9	94	29.06	1.923	1.662	0.00	0.133	2.83	0.85	1.00	0.0	2.58	7.30	0.00	201	0	180	167	347
8	88	28.52	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	515	0	409	531	940
7	82	27.95	3.030	1.662	0.00	0.175	2.68	0.85	1.00	0.0	3.52	9.46	0.00	290	0	225	293	518
6	72	26.98	17.762	7.560	0.00	0.224	2.52	0.85	1.00	0.0	19.48	49.02	0.00	1472	0	1124	1093	2217
5	62	25.86	4.711	2.520	0.00	0.169	2.70	0.85	1.00	0.0	5.44	14.70	0.00	479	0	323	400	723
4	53	24.72	10.649	6.590	0.00	0.136	2.82	0.85	1.00	0.0	12.78	36.08	0.00	1489	0	758	1036	1794
3	43	23.29	4.700	3.810	0.00	0.122	2.88	0.85	1.00	0.0	6.15	17.70	0.00	775	0	350	493	844
2	30	20.97	19.445	11.424	0.00	0.130	2.85	0.85	1.00	0.0	22.99	65.43	0.00	2864	0	1166	1332	2498
1	10	20.95	21.316	13.440	0.00	0.125	2.87	0.85	1.00	0.0	25.72	73.73	0.00	3157	0	1313	1331	2644
														11,644	0			13,202

0.9D + 1.0W 240° Gust Response Factor (Gh): 0.85
118 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	401	0	476	252	728
9	94	29.06	1.923	1.662	0.00	0.133	2.83	1.00	1.00	0.0	2.86	8.12	0.00	201	0	200	167	368
8	88	28.52	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	515	0	459	531	990
7	82	27.95	3.030	1.662	0.00	0.175	2.68	1.00	1.00	0.0	3.98	10.67	0.00	290	0	254	293	547
6	72	26.98	17.762	7.560	0.00	0.224	2.52	1.00	1.00	0.0	22.14	55.72	0.00	1472	0	1278	1093	2371
5	62	25.86	4.711	2.520	0.00	0.169	2.70	1.00	1.00	0.0	6.15	16.61	0.00	479	0	365	400	765
4	53	24.72	10.649	6.590	0.00	0.136	2.82	1.00	1.00	0.0	14.38	40.58	0.00	1489	0	853	1036	1889
3	43	23.29	4.700	3.810	0.00	0.122	2.88	1.00	1.00	0.0	6.85	19.73	0.00	775	0	391	493	884
2	30	20.97	19.445	11.424	0.00	0.130	2.85	1.00	1.00	0.0	25.91	73.73	0.00	2864	0	1314	1332	2646
1	10	20.95	21.316	13.440	0.00	0.125	2.87	1.00	1.00	0.0	28.92	82.90	0.00	3157	0	1476	1331	2807
														11,644	0			13,995

0.9D + 1.0W 300° Gust Response Factor (Gh): 0.85
118 mph wind with no ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	401	0	407	252	659
9	94	29.06	1.923	1.662	0.00	0.133	2.83	0.80	1.00	0.0	2.48	7.03	0.00	201	0	174	167	341
8	88	28.52	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	515	0	392	531	924
7	82	27.95	3.030	1.662	0.00	0.175	2.68	0.80	1.00	0.0	3.37	9.05	0.00	290	0	215	293	508
6	72	26.98	17.762	7.560	0.00	0.224	2.52	0.80	1.00	0.0	18.59	46.78	0.00	1472	0	1073	1093	2166
5	62	25.86	4.711	2.520	0.00	0.169	2.70	0.80	1.00	0.0	5.20	14.06	0.00	479	0	309	400	709
4	53	24.72	10.649	6.590	0.00	0.136	2.82	0.80	1.00	0.0	12.25	34.57	0.00	1489	0	726	1036	1763
3	43	23.29	4.700	3.810	0.00	0.122	2.88	0.80	1.00	0.0	5.91	17.03	0.00	775	0	337	493	831
2	30	20.97	19.445	11.424	0.00	0.130	2.85	0.80	1.00	0.0	22.02	62.66	0.00	2864	0	1117	1332	2449
1	10	20.95	21.316	13.440	0.00	0.125	2.87	0.80	1.00	0.0	24.65	70.68	0.00	3157	0	1259	1331	2590
														11,644	0			12,938

0.9D + 1.0W 330° Gust Response Factor (Gh): 0.85
118 mph wind with no ice Wind Importance Factor (Iw): 1.00

SECTION FORCES

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	29.58	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	401	0	424	252	676
9	94	29.06	1.923	1.662	0.00	0.133	2.83	0.85	1.00	0.0	2.58	7.30	0.00	201	0	180	167	347
8	88	28.52	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	515	0	409	531	940
7	82	27.95	3.030	1.662	0.00	0.175	2.68	0.85	1.00	0.0	3.52	9.46	0.00	290	0	225	293	518
6	72	26.98	17.762	7.560	0.00	0.224	2.52	0.85	1.00	0.0	19.48	49.02	0.00	1472	0	1124	1093	2217
5	62	25.86	4.711	2.520	0.00	0.169	2.70	0.85	1.00	0.0	5.44	14.70	0.00	479	0	323	400	723
4	53	24.72	10.649	6.590	0.00	0.136	2.82	0.85	1.00	0.0	12.78	36.08	0.00	1489	0	758	1036	1794
3	43	23.29	4.700	3.810	0.00	0.122	2.88	0.85	1.00	0.0	6.15	17.70	0.00	775	0	350	493	844
2	30	20.97	19.445	11.424	0.00	0.130	2.85	0.85	1.00	0.0	22.99	65.43	0.00	2864	0	1166	1332	2498
1	10	20.95	21.316	13.440	0.00	0.125	2.87	0.85	1.00	0.0	25.72	73.73	0.00	3157	0	1313	1331	2644
														11,644	0			13,202

1.2D + 1.0Di + 1.0Wi Normal — Gust Response Factor (Gh): 0.85 — Ice Importance Factor: 1.00
50 mph wind with 1.5" radial ice — Wind Importance Factor (Iw): 1.00 — Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	5.31	4.986	18.672	15.51	0.422	2.02	1.00	1.00	1.7	17.16	34.68	15.51	1873	1338	157	59	216
9	94	5.22	1.923	8.301	6.72	0.365	2.14	1.00	1.00	1.7	7.13	15.25	6.72	953	686	68	46	114
8	88	5.12	4.986	18.476	15.31	0.419	2.03	1.00	1.00	1.7	17.00	34.46	15.31	2617	1931	150	137	287
7	82	5.02	3.030	10.085	8.50	0.469	1.94	1.00	1.00	1.6	9.83	19.10	8.50	1479	1093	81	68	150
6	72	4.84	17.762	39.029	31.83	0.486	1.92	1.00	1.00	1.6	44.44	85.30	31.83	6882	4919	351	271	622
5	62	4.64	4.711	10.551	8.15	0.346	2.18	1.00	1.00	1.6	11.27	24.57	8.15	2296	1657	97	130	227
4	53	4.44	10.649	30.761	24.36	0.319	2.25	1.00	1.00	1.6	29.38	66.00	24.36	6297	4311	249	341	590
3	43	4.18	4.700	14.679	11.48	0.270	2.38	1.00	1.00	1.5	13.72	32.64	11.48	3300	2266	116	164	280
2	30	3.76	19.445	44.944	35.34	0.266	2.39	1.00	1.00	1.5	47.00	112.33	35.34	10806	6987	359	437	796
1	10	3.76	21.316	45.058	33.37	0.234	2.49	1.00	1.00	1.3	48.53	120.61	33.37	10436	6227	386	420	806
														46,940	31,414			4,088

1.2D + 1.0Di + 1.0Wi 60° — Gust Response Factor (Gh): 0.85 — Ice Importance Factor: 1.00
50 mph wind with 1.5" radial ice — Wind Importance Factor (Iw): 1.00 — Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	5.31	4.986	18.672	15.51	0.422	2.02	0.80	1.00	1.7	16.16	32.66	15.51	1873	1338	147	59	206
9	94	5.22	1.923	8.301	6.72	0.365	2.14	0.80	1.00	1.7	6.75	14.42	6.72	953	686	64	46	110
8	88	5.12	4.986	18.476	15.31	0.419	2.03	0.80	1.00	1.7	16.00	32.44	15.31	2617	1931	141	137	278
7	82	5.02	3.030	10.085	8.50	0.469	1.94	0.80	1.00	1.6	9.22	17.92	8.50	1479	1093	76	68	145
6	72	4.84	17.762	39.029	31.83	0.486	1.92	0.80	1.00	1.6	40.89	78.48	31.83	6882	4919	323	271	594
5	62	4.64	4.711	10.551	8.15	0.346	2.18	0.80	1.00	1.6	10.33	22.51	8.15	2296	1657	89	130	219
4	53	4.44	10.649	30.761	24.36	0.319	2.25	0.80	1.00	1.6	27.25	61.22	24.36	6297	4311	231	341	572
3	43	4.18	4.700	14.679	11.48	0.270	2.38	0.80	1.00	1.5	12.78	30.40	11.48	3300	2266	108	164	272
2	30	3.76	19.445	44.944	35.34	0.266	2.39	0.80	1.00	1.5	43.11	103.03	35.34	10806	6987	330	437	767
1	10	3.76	21.316	45.058	33.37	0.234	2.49	0.80	1.00	1.3	44.27	110.01	33.37	10436	6227	352	420	772
														46,940	31,414			3,935

1.2D + 1.0Di + 1.0Wi 90° — Gust Response Factor (Gh): 0.85 — Ice Importance Factor: 1.00
50 mph wind with 1.5" radial ice — Wind Importance Factor (Iw): 1.00 — Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	5.31	4.986	18.672	15.51	0.422	2.02	0.85	1.00	1.7	16.41	33.16	15.51	1873	1338	150	59	209
9	94	5.22	1.923	8.301	6.72	0.365	2.14	0.85	1.00	1.7	6.85	14.63	6.72	953	686	65	46	111
8	88	5.12	4.986	18.476	15.31	0.419	2.03	0.85	1.00	1.7	16.25	32.95	15.31	2617	1931	143	137	280
7	82	5.02	3.030	10.085	8.50	0.469	1.94	0.85	1.00	1.6	9.37	18.22	8.50	1479	1093	78	68	146
6	72	4.84	17.762	39.029	31.83	0.486	1.92	0.85	1.00	1.6	41.78	80.19	31.83	6882	4919	330	271	601
5	62	4.64	4.711	10.551	8.15	0.346	2.18	0.85	1.00	1.6	10.56	23.03	8.15	2296	1657	91	130	221
4	53	4.44	10.649	30.761	24.36	0.319	2.25	0.85	1.00	1.6	27.78	62.42	24.36	6297	4311	235	341	576
3	43	4.18	4.700	14.679	11.48	0.270	2.38	0.85	1.00	1.5	13.02	30.96	11.48	3300	2266	110	164	274

SECTION FORCES

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
2	30	3.76	19.445	44.944	35.34	0.266	2.39	0.85	1.00	1.5	44.08	105.36	35.34	10806	6987	337	437	774
1	10	3.76	21.316	45.058	33.37	0.234	2.49	0.85	1.00	1.3	45.33	112.66	33.37	10436	6227	360	420	780
														46,940	31,414			3,973

1.2D + 1.0Di + 1.0Wi 120° — Gust Response Factor (Gh): 0.85 — Ice Importance Factor: 1.00
50 mph wind with 1.5" radial ice — Wind Importance Factor (Iw): 1.00 — Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	5.31	4.986	18.672	15.51	0.422	2.02	1.00	1.00	1.7	17.16	34.68	15.51	1873	1338	157	59	216
9	94	5.22	1.923	8.301	6.72	0.365	2.14	1.00	1.00	1.7	7.13	15.25	6.72	953	686	68	46	114
8	88	5.12	4.986	18.476	15.31	0.419	2.03	1.00	1.00	1.7	17.00	34.46	15.31	2617	1931	150	137	287
7	82	5.02	3.030	10.085	8.50	0.469	1.94	1.00	1.00	1.6	9.83	19.10	8.50	1479	1093	81	68	150
6	72	4.84	17.762	39.029	31.83	0.486	1.92	1.00	1.00	1.6	44.44	85.30	31.83	6882	4919	351	271	622
5	62	4.64	4.711	10.551	8.15	0.346	2.18	1.00	1.00	1.6	11.27	24.57	8.15	2296	1657	97	130	227
4	53	4.44	10.649	30.761	24.36	0.319	2.25	1.00	1.00	1.6	29.38	66.00	24.36	6297	4311	249	341	590
3	43	4.18	4.700	14.679	11.48	0.270	2.38	1.00	1.00	1.5	13.72	32.64	11.48	3300	2266	116	164	280
2	30	3.76	19.445	44.944	35.34	0.266	2.39	1.00	1.00	1.5	47.00	112.33	35.34	10806	6987	359	437	796
1	10	3.76	21.316	45.058	33.37	0.234	2.49	1.00	1.00	1.3	48.53	120.61	33.37	10436	6227	386	420	806
														46,940	31,414			4,088

1.2D + 1.0Di + 1.0Wi 180° — Gust Response Factor (Gh): 0.85 — Ice Importance Factor: 1.00
50 mph wind with 1.5" radial ice — Wind Importance Factor (Iw): 1.00 — Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	5.31	4.986	18.672	15.51	0.422	2.02	0.80	1.00	1.7	16.16	32.66	15.51	1873	1338	147	59	206
9	94	5.22	1.923	8.301	6.72	0.365	2.14	0.80	1.00	1.7	6.75	14.42	6.72	953	686	64	46	110
8	88	5.12	4.986	18.476	15.31	0.419	2.03	0.80	1.00	1.7	16.00	32.44	15.31	2617	1931	141	137	278
7	82	5.02	3.030	10.085	8.50	0.469	1.94	0.80	1.00	1.6	9.22	17.92	8.50	1479	1093	76	68	145
6	72	4.84	17.762	39.029	31.83	0.486	1.92	0.80	1.00	1.6	40.89	78.48	31.83	6882	4919	323	271	594
5	62	4.64	4.711	10.551	8.15	0.346	2.18	0.80	1.00	1.6	10.33	22.51	8.15	2296	1657	89	130	219
4	53	4.44	10.649	30.761	24.36	0.319	2.25	0.80	1.00	1.6	27.25	61.22	24.36	6297	4311	231	341	572
3	43	4.18	4.700	14.679	11.48	0.270	2.38	0.80	1.00	1.5	12.78	30.40	11.48	3300	2266	108	164	272
2	30	3.76	19.445	44.944	35.34	0.266	2.39	0.80	1.00	1.5	43.11	103.03	35.34	10806	6987	330	437	767
1	10	3.76	21.316	45.058	33.37	0.234	2.49	0.80	1.00	1.3	44.27	110.01	33.37	10436	6227	352	420	772
														46,940	31,414			3,935

1.2D + 1.0Di + 1.0Wi 210° — Gust Response Factor (Gh): 0.85 — Ice Importance Factor: 1.00
50 mph wind with 1.5" radial ice — Wind Importance Factor (Iw): 1.00 — Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	5.31	4.986	18.672	15.51	0.422	2.02	0.85	1.00	1.7	16.41	33.16	15.51	1873	1338	150	59	209
9	94	5.22	1.923	8.301	6.72	0.365	2.14	0.85	1.00	1.7	6.85	14.63	6.72	953	686	65	46	111
8	88	5.12	4.986	18.476	15.31	0.419	2.03	0.85	1.00	1.7	16.25	32.95	15.31	2617	1931	143	137	280
7	82	5.02	3.030	10.085	8.50	0.469	1.94	0.85	1.00	1.6	9.37	18.22	8.50	1479	1093	78	68	146
6	72	4.84	17.762	39.029	31.83	0.486	1.92	0.85	1.00	1.6	41.78	80.19	31.83	6882	4919	330	271	601
5	62	4.64	4.711	10.551	8.15	0.346	2.18	0.85	1.00	1.6	10.56	23.03	8.15	2296	1657	91	130	221
4	53	4.44	10.649	30.761	24.36	0.319	2.25	0.85	1.00	1.6	27.78	62.42	24.36	6297	4311	235	341	576
3	43	4.18	4.700	14.679	11.48	0.270	2.38	0.85	1.00	1.5	13.02	30.96	11.48	3300	2266	110	164	274
2	30	3.76	19.445	44.944	35.34	0.266	2.39	0.85	1.00	1.5	44.08	105.36	35.34	10806	6987	337	437	774
1	10	3.76	21.316	45.058	33.37	0.234	2.49	0.85	1.00	1.3	45.33	112.66	33.37	10436	6227	360	420	780
														46,940	31,414			3,973

1.2D + 1.0Di + 1.0Wi 240° — Gust Response Factor (Gh): 0.85 — Ice Importance Factor: 1.00
50 mph wind with 1.5" radial ice — Wind Importance Factor (Iw): 1.00 — Ice Dead Load Factor: 1.00

Sect	Elev	Q_Z	A_f	A_r	Ice A_r	e	C_f	D_f	D_r	T_{iz}	A_e	EPA_a	EPA_{ai}	Wt.	Ice Wt	F_{st}	F_a	Force (lb)

SECTION FORCES

#	(ft)	(psf)	(sf)	(sf)	(sf)					(in)	(sf)	(sf)	(sf)	(lb)	(lb)	(lb)	(lb)	
10	100	5.31	4.986	18.672	15.51	0.422	2.02	1.00	1.00	1.7	17.16	34.68	15.51	1873	1338	157	59	216
9	94	5.22	1.923	8.301	6.72	0.365	2.14	1.00	1.00	1.7	7.13	15.25	6.72	953	686	68	46	114
8	88	5.12	4.986	18.476	15.31	0.419	2.03	1.00	1.00	1.7	17.00	34.46	15.31	2617	1931	150	137	287
7	82	5.02	3.030	10.085	8.50	0.469	1.94	1.00	1.00	1.6	9.83	19.10	8.50	1479	1093	81	68	150
6	72	4.84	17.762	39.029	31.83	0.486	1.92	1.00	1.00	1.6	44.44	85.30	31.83	6882	4919	351	271	622
5	62	4.64	4.711	10.551	8.15	0.346	2.18	1.00	1.00	1.6	11.27	24.57	8.15	2296	1657	97	130	227
4	53	4.44	10.649	30.761	24.36	0.319	2.25	1.00	1.00	1.6	29.38	66.00	24.36	6297	4311	249	341	590
3	43	4.18	4.700	14.679	11.48	0.270	2.38	1.00	1.00	1.5	13.72	32.64	11.48	3300	2266	116	164	280
2	30	3.76	19.445	44.944	35.34	0.266	2.39	1.00	1.00	1.5	47.00	112.33	35.34	10806	6987	359	437	796
1	10	3.76	21.316	45.058	33.37	0.234	2.49	1.00	1.00	1.3	48.53	120.61	33.37	10436	6227	386	420	806
														46,940	31,414			4,088

1.2D + 1.0Di + 1.0Wi 300° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
50 mph wind with 1.5" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	5.31	4.986	18.672	15.51	0.422	2.02	0.80	1.00	1.7	16.16	32.66	15.51	1873	1338	147	59	206
9	94	5.22	1.923	8.301	6.72	0.365	2.14	0.80	1.00	1.7	6.75	14.42	6.72	953	686	64	46	110
8	88	5.12	4.986	18.476	15.31	0.419	2.03	0.80	1.00	1.7	16.00	32.44	15.31	2617	1931	141	137	278
7	82	5.02	3.030	10.085	8.50	0.469	1.94	0.80	1.00	1.6	9.22	17.92	8.50	1479	1093	76	68	145
6	72	4.84	17.762	39.029	31.83	0.486	1.92	0.80	1.00	1.6	40.89	78.48	31.83	6882	4919	323	271	594
5	62	4.64	4.711	10.551	8.15	0.346	2.18	0.80	1.00	1.6	10.33	22.51	8.15	2296	1657	89	130	219
4	53	4.44	10.649	30.761	24.36	0.319	2.25	0.80	1.00	1.6	27.25	61.22	24.36	6297	4311	231	341	572
3	43	4.18	4.700	14.679	11.48	0.270	2.38	0.80	1.00	1.5	12.78	30.40	11.48	3300	2266	108	164	272
2	30	3.76	19.445	44.944	35.34	0.266	2.39	0.80	1.00	1.5	43.11	103.03	35.34	10806	6987	330	437	767
1	10	3.76	21.316	45.058	33.37	0.234	2.49	0.80	1.00	1.3	44.27	110.01	33.37	10436	6227	352	420	772
														46,940	31,414			3,935

1.2D + 1.0Di + 1.0Wi 330° Gust Response Factor (Gh): 0.85 Ice Importance Factor: 1.00
50 mph wind with 1.5" radial ice Wind Importance Factor (Iw): 1.00 Ice Dead Load Factor: 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	5.31	4.986	18.672	15.51	0.422	2.02	0.85	1.00	1.7	16.41	33.16	15.51	1873	1338	150	59	209
9	94	5.22	1.923	8.301	6.72	0.365	2.14	0.85	1.00	1.7	6.85	14.63	6.72	953	686	65	46	111
8	88	5.12	4.986	18.476	15.31	0.419	2.03	0.85	1.00	1.7	16.25	32.95	15.31	2617	1931	143	137	280
7	82	5.02	3.030	10.085	8.50	0.469	1.94	0.85	1.00	1.6	9.37	18.22	8.50	1479	1093	78	68	146
6	72	4.84	17.762	39.029	31.83	0.486	1.92	0.85	1.00	1.6	41.78	80.19	31.83	6882	4919	330	271	601
5	62	4.64	4.711	10.551	8.15	0.346	2.18	0.85	1.00	1.6	10.56	23.03	8.15	2296	1657	91	130	221
4	53	4.44	10.649	30.761	24.36	0.319	2.25	0.85	1.00	1.6	27.78	62.42	24.36	6297	4311	235	341	576
3	43	4.18	4.700	14.679	11.48	0.270	2.38	0.85	1.00	1.5	13.02	30.96	11.48	3300	2266	110	164	274
2	30	3.76	19.445	44.944	35.34	0.266	2.39	0.85	1.00	1.5	44.08	105.36	35.34	10806	6987	337	437	774
1	10	3.76	21.316	45.058	33.37	0.234	2.49	0.85	1.00	1.3	45.33	112.66	33.37	10436	6227	360	420	780
														46,940	31,414			3,973

1.0D + 1.0W Service Normal Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	7.65	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	446	0	123	65	188
9	94	7.51	1.923	1.662	0.00	0.133	2.83	1.00	1.00	0.0	2.86	8.12	0.00	223	0	52	43	95
8	88	7.37	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	572	0	119	137	256
7	82	7.23	3.030	1.662	0.00	0.175	2.68	1.00	1.00	0.0	3.98	10.67	0.00	322	0	66	76	141
6	72	6.98	17.762	7.560	0.00	0.224	2.52	1.00	1.00	0.0	22.14	55.72	0.00	1636	0	330	283	613
5	62	6.69	4.711	2.520	0.00	0.169	2.70	1.00	1.00	0.0	6.15	16.61	0.00	533	0	94	103	198
4	53	6.39	10.649	6.590	0.00	0.136	2.82	1.00	1.00	0.0	14.38	40.58	0.00	1655	0	220	268	488
3	43	6.02	4.700	3.810	0.00	0.122	2.88	1.00	1.00	0.0	6.85	19.73	0.00	861	0	101	128	229
2	30	5.42	19.445	11.424	0.00	0.130	2.85	1.00	1.00	0.0	25.91	73.73	0.00	3183	0	340	344	684

SECTION FORCES

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
1	10	5.42	21.316	13.440	0.00	0.125	2.87	1.00	1.00	0.0	28.92	82.90	0.00	3508	0	382	344	726
														12,938	0			3,618

1.0D + 1.0W Service 60° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	7.65	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	446	0	105	65	170
9	94	7.51	1.923	1.662	0.00	0.133	2.83	0.80	1.00	0.0	2.48	7.03	0.00	223	0	45	43	88
8	88	7.37	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	572	0	101	137	239
7	82	7.23	3.030	1.662	0.00	0.175	2.68	0.80	1.00	0.0	3.37	9.05	0.00	322	0	56	76	131
6	72	6.98	17.762	7.560	0.00	0.224	2.52	0.80	1.00	0.0	18.59	46.78	0.00	1636	0	277	283	560
5	62	6.69	4.711	2.520	0.00	0.169	2.70	0.80	1.00	0.0	5.20	14.06	0.00	533	0	80	103	183
4	53	6.39	10.649	6.590	0.00	0.136	2.82	0.80	1.00	0.0	12.25	34.57	0.00	1655	0	188	268	456
3	43	6.02	4.700	3.810	0.00	0.122	2.88	0.80	1.00	0.0	5.91	17.03	0.00	861	0	87	128	215
2	30	5.42	19.445	11.424	0.00	0.130	2.85	0.80	1.00	0.0	22.02	62.66	0.00	3183	0	289	344	633
1	10	5.42	21.316	13.440	0.00	0.125	2.87	0.80	1.00	0.0	24.65	70.68	0.00	3508	0	325	344	670
														12,938	0			3,345

1.0D + 1.0W Service 90° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	7.65	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	446	0	110	65	175
9	94	7.51	1.923	1.662	0.00	0.133	2.83	0.85	1.00	0.0	2.58	7.30	0.00	223	0	47	43	90
8	88	7.37	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	572	0	106	137	243
7	82	7.23	3.030	1.662	0.00	0.175	2.68	0.85	1.00	0.0	3.52	9.46	0.00	322	0	58	76	134
6	72	6.98	17.762	7.560	0.00	0.224	2.52	0.85	1.00	0.0	19.48	49.02	0.00	1636	0	291	283	573
5	62	6.69	4.711	2.520	0.00	0.169	2.70	0.85	1.00	0.0	5.44	14.70	0.00	533	0	84	103	187
4	53	6.39	10.649	6.590	0.00	0.136	2.82	0.85	1.00	0.0	12.78	36.08	0.00	1655	0	196	268	464
3	43	6.02	4.700	3.810	0.00	0.122	2.88	0.85	1.00	0.0	6.15	17.70	0.00	861	0	91	128	218
2	30	5.42	19.445	11.424	0.00	0.130	2.85	0.85	1.00	0.0	22.99	65.43	0.00	3183	0	302	344	646
1	10	5.42	21.316	13.440	0.00	0.125	2.87	0.85	1.00	0.0	25.72	73.73	0.00	3508	0	339	344	684
														12,938	0			3,413

1.0D + 1.0W Service 120° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	7.65	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	446	0	123	65	188
9	94	7.51	1.923	1.662	0.00	0.133	2.83	1.00	1.00	0.0	2.86	8.12	0.00	223	0	52	43	95
8	88	7.37	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	572	0	119	137	256
7	82	7.23	3.030	1.662	0.00	0.175	2.68	1.00	1.00	0.0	3.98	10.67	0.00	322	0	66	76	141
6	72	6.98	17.762	7.560	0.00	0.224	2.52	1.00	1.00	0.0	22.14	55.72	0.00	1636	0	330	283	613
5	62	6.69	4.711	2.520	0.00	0.169	2.70	1.00	1.00	0.0	6.15	16.61	0.00	533	0	94	103	198
4	53	6.39	10.649	6.590	0.00	0.136	2.82	1.00	1.00	0.0	14.38	40.58	0.00	1655	0	220	268	488
3	43	6.02	4.700	3.810	0.00	0.122	2.88	1.00	1.00	0.0	6.85	19.73	0.00	861	0	101	128	229
2	30	5.42	19.445	11.424	0.00	0.130	2.85	1.00	1.00	0.0	25.91	73.73	0.00	3183	0	340	344	684
1	10	5.42	21.316	13.440	0.00	0.125	2.87	1.00	1.00	0.0	28.92	82.90	0.00	3508	0	382	344	726
														12,938	0			3,618

1.0D + 1.0W Service 180° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

SECTION FORCES

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	7.65	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	446	0	105	65	170
9	94	7.51	1.923	1.662	0.00	0.133	2.83	0.80	1.00	0.0	2.48	7.03	0.00	223	0	45	43	88
8	88	7.37	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	572	0	101	137	239
7	82	7.23	3.030	1.662	0.00	0.175	2.68	0.80	1.00	0.0	3.37	9.05	0.00	322	0	56	76	131
6	72	6.98	17.762	7.560	0.00	0.224	2.52	0.80	1.00	0.0	18.59	46.78	0.00	1636	0	277	283	560
5	62	6.69	4.711	2.520	0.00	0.169	2.70	0.80	1.00	0.0	5.20	14.06	0.00	533	0	80	103	183
4	53	6.39	10.649	6.590	0.00	0.136	2.82	0.80	1.00	0.0	12.25	34.57	0.00	1655	0	188	268	456
3	43	6.02	4.700	3.810	0.00	0.122	2.88	0.80	1.00	0.0	5.91	17.03	0.00	861	0	87	128	215
2	30	5.42	19.445	11.424	0.00	0.130	2.85	0.80	1.00	0.0	22.02	62.66	0.00	3183	0	289	344	633
1	10	5.42	21.316	13.440	0.00	0.125	2.87	0.80	1.00	0.0	24.65	70.68	0.00	3508	0	325	344	670
														12,938	0			3,345

1.0D + 1.0W Service 210° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	7.65	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	446	0	110	65	175
9	94	7.51	1.923	1.662	0.00	0.133	2.83	0.85	1.00	0.0	2.58	7.30	0.00	223	0	47	43	90
8	88	7.37	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	572	0	106	137	243
7	82	7.23	3.030	1.662	0.00	0.175	2.68	0.85	1.00	0.0	3.52	9.46	0.00	322	0	58	76	134
6	72	6.98	17.762	7.560	0.00	0.224	2.52	0.85	1.00	0.0	19.48	49.02	0.00	1636	0	291	283	573
5	62	6.69	4.711	2.520	0.00	0.169	2.70	0.85	1.00	0.0	5.44	14.70	0.00	533	0	84	103	187
4	53	6.39	10.649	6.590	0.00	0.136	2.82	0.85	1.00	0.0	12.78	36.08	0.00	1655	0	196	268	464
3	43	6.02	4.700	3.810	0.00	0.122	2.88	0.85	1.00	0.0	6.15	17.70	0.00	861	0	91	128	218
2	30	5.42	19.445	11.424	0.00	0.130	2.85	0.85	1.00	0.0	22.99	65.43	0.00	3183	0	302	344	646
1	10	5.42	21.316	13.440	0.00	0.125	2.87	0.85	1.00	0.0	25.72	73.73	0.00	3508	0	339	344	684
														12,938	0			3,413

1.0D + 1.0W Service 240° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	7.65	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	446	0	123	65	188
9	94	7.51	1.923	1.662	0.00	0.133	2.83	1.00	1.00	0.0	2.86	8.12	0.00	223	0	52	43	95
8	88	7.37	4.986	3.325	0.00	0.155	2.75	1.00	1.00	0.0	6.87	18.94	0.00	572	0	119	137	256
7	82	7.23	3.030	1.662	0.00	0.175	2.68	1.00	1.00	0.0	3.98	10.67	0.00	322	0	66	76	141
6	72	6.98	17.762	7.560	0.00	0.224	2.52	1.00	1.00	0.0	22.14	55.72	0.00	1636	0	330	283	613
5	62	6.69	4.711	2.520	0.00	0.169	2.70	1.00	1.00	0.0	6.15	16.61	0.00	533	0	94	103	198
4	53	6.39	10.649	6.590	0.00	0.136	2.82	1.00	1.00	0.0	14.38	40.58	0.00	1655	0	220	268	488
3	43	6.02	4.700	3.810	0.00	0.122	2.88	1.00	1.00	0.0	6.85	19.73	0.00	861	0	101	128	229
2	30	5.42	19.445	11.424	0.00	0.130	2.85	1.00	1.00	0.0	25.91	73.73	0.00	3183	0	340	344	684
1	10	5.42	21.316	13.440	0.00	0.125	2.87	1.00	1.00	0.0	28.92	82.90	0.00	3508	0	382	344	726
														12,938	0			3,618

1.0D + 1.0W Service 300° Gust Response Factor (Gh): 0.85
60 mph Wind with No Ice Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	7.65	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	446	0	105	65	170
9	94	7.51	1.923	1.662	0.00	0.133	2.83	0.80	1.00	0.0	2.48	7.03	0.00	223	0	45	43	88
8	88	7.37	4.986	3.325	0.00	0.155	2.75	0.80	1.00	0.0	5.88	16.19	0.00	572	0	101	137	239
7	82	7.23	3.030	1.662	0.00	0.175	2.68	0.80	1.00	0.0	3.37	9.05	0.00	322	0	56	76	131
6	72	6.98	17.762	7.560	0.00	0.224	2.52	0.80	1.00	0.0	18.59	46.78	0.00	1636	0	277	283	560
5	62	6.69	4.711	2.520	0.00	0.169	2.70	0.80	1.00	0.0	5.20	14.06	0.00	533	0	80	103	183
4	53	6.39	10.649	6.590	0.00	0.136	2.82	0.80	1.00	0.0	12.25	34.57	0.00	1655	0	188	268	456
3	43	6.02	4.700	3.810	0.00	0.122	2.88	0.80	1.00	0.0	5.91	17.03	0.00	861	0	87	128	215

SECTION FORCES

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
2	30	5.42	19.445	11.424	0.00	0.130	2.85	0.80	1.00	0.0	22.02	62.66	0.00	3183	0	289	344	633
1	10	5.42	21.316	13.440	0.00	0.125	2.87	0.80	1.00	0.0	24.65	70.68	0.00	3508	0	325	344	670
														12,938	0			3,345

1.0D + 1.0W Service 330°
60 mph Wind with No Ice

Gust Response Factor (Gh): 0.85
Wind Importance Factor (Iw): 1.00

Sect #	Elev (ft)	Q_Z (psf)	A_f (sf)	A_r (sf)	Ice A_r (sf)	e	C_f	D_f	D_r	T_{iz} (in)	A_e (sf)	EPA_a (sf)	EPA_{ai} (sf)	Wt. (lb)	Ice Wt (lb)	F_{st} (lb)	F_a (lb)	Force (lb)
10	100	7.65	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	446	0	110	65	175
9	94	7.51	1.923	1.662	0.00	0.133	2.83	0.85	1.00	0.0	2.58	7.30	0.00	223	0	47	43	90
8	88	7.37	4.986	3.325	0.00	0.155	2.75	0.85	1.00	0.0	6.13	16.88	0.00	572	0	106	137	243
7	82	7.23	3.030	1.662	0.00	0.175	2.68	0.85	1.00	0.0	3.52	9.46	0.00	322	0	58	76	134
6	72	6.98	17.762	7.560	0.00	0.224	2.52	0.85	1.00	0.0	19.48	49.02	0.00	1636	0	291	283	573
5	62	6.69	4.711	2.520	0.00	0.169	2.70	0.85	1.00	0.0	5.44	14.70	0.00	533	0	84	103	187
4	53	6.39	10.649	6.590	0.00	0.136	2.82	0.85	1.00	0.0	12.78	36.08	0.00	1655	0	196	268	464
3	43	6.02	4.700	3.810	0.00	0.122	2.88	0.85	1.00	0.0	6.15	17.70	0.00	861	0	91	128	218
2	30	5.42	19.445	11.424	0.00	0.130	2.85	0.85	1.00	0.0	22.99	65.43	0.00	3183	0	302	344	646
1	10	5.42	21.316	13.440	0.00	0.125	2.87	0.85	1.00	0.0	25.72	73.73	0.00	3508	0	339	344	684
														12,938	0			3,413

EQUIVALENT LATERAL FORCE METHOD

Spectral Response Acceleration for Short Period (S_S):	0.20
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v:	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.21
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09
Seismic Response Coefficient (C_s):	0.04
Upper Limit C_S:	0.04
Lower Limit C_S:	0.03
Period based on Rayleigh Method (sec):	0.81
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.15
Total Unfactored Dead Load:	21.60 k
Seismic Base Shear (E):	1.02 k

SEISMIC

Load Case: 0.9D - 1.0Ev + 1.0Eh Seismic

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	Cvx	Horizontal Force (lb)	Vertical Force (lb)
10	100.00	446	90,291	0.038	39	383
9	94.00	223	42,060	0.018	18	192
8	88.00	572	99,958	0.042	43	491
7	82.00	322	51,862	0.022	22	277
6	72.50	1,636	228,479	0.097	99	1,404
5	62.50	533	62,695	0.027	27	457
4	53.34	1,655	162,241	0.069	70	1,420
3	43.34	861	66,477	0.028	29	739
2	30.00	3,183	160,716	0.068	70	2,732
1	10.00	3,508	49,901	0.021	22	3,011
Alcatel-Lucent RRH4x30W-B25	102.00	165	34,229	0.014	15	142
Alcatel-Lucent B13 RRH4x30-4R	102.00	173	35,907	0.015	16	149
Alcatel-Lucent RRH4x45-1900	102.00	180	37,273	0.016	16	155
RFS DB-T1-6Z-8AB-0Z	102.00	132	27,334	0.012	12	113
Amphenol Antel BXA-70063-6CF-EDIN-X	102.00	51	10,561	0.004	5	44
Andrew SBNHH-1D65B	102.00	304	62,992	0.027	27	261
Commscope LNX-8514DS-T4M	102.00	152	31,372	0.013	14	130
Generic Round Sector Frame	102.00	900	186,367	0.079	81	773
Commscope VHLP3-11W	95.00	53	10,111	0.004	4	45
Powerwave Allgon TT19-08BP111-001	90.00	48	8,604	0.004	4	41
CCI DTMABP7819VG12A	90.00	58	10,324	0.004	4	49
Raycap DC6-48-60-18-8F	90.00	60	10,755	0.005	5	52
Ericsson RRUS 32 B2	90.00	159	28,500	0.012	12	136
Ericsson RRUS-11	90.00	165	29,575	0.012	13	142
Kathrein Scala 800-10121	90.00	132	23,714	0.010	10	114
KMW AM-X-CD-16-65-00T-RET	90.00	48	8,693	0.004	4	42
CCI HPA-65R-BUU-H6	90.00	153	27,424	0.012	12	131
Andrew SBNH-1D6565C (60.8 lbs)	90.00	61	10,898	0.005	5	52
Powerwave Allgon P65-17-XLH-RR	90.00	59	10,575	0.004	5	51
Generic Flat Light Sector Frame	90.00	1,200	215,094	0.091	93	1,030
Decibel DB806-XT	88.00	21	3,668	0.002	2	18
Generic Round Side Arm	88.00	188	32,749	0.014	14	161

Commscope VHLP3-11W	80.00	53	8,293	0.004	4	45
Generic Round Side Arm	78.00	188	28,496	0.012	12	161
Commscope VHLP3-11W	76.00	53	7,817	0.003	3	45
Jaybeam SmartTilt AISG Modem	65.00	3	369	0.000	0	3
Ericsson Radio 4449 B12,B71	65.00	222	27,342	0.012	12	191
Ericsson AIR 21	65.00	273	33,623	0.014	15	234
Ericsson AIR 32 (57" Height)	65.00	297	36,579	0.016	16	255
Generic Round Sector Frame	65.00	900	110,846	0.047	48	773
RFS APXVAARR24_43-U-NA20	65.00	384	47,257	0.020	20	329
Commscope RDIDC-9181-PF-48	55.00	22	2,225	0.001	1	19
Fujitsu TA08025-B604	55.00	192	19,473	0.008	8	165
Fujitsu TA08025-B605	55.00	225	22,856	0.010	10	193
JMA Wireless MX08FRO665-21	55.00	194	19,656	0.008	9	166
Generic Flat Light Sector Frame	55.00	1,200	121,899	0.052	53	1,030
Totals		21,605	2,358,135	1.000	1,022	18,545

SEISMIC

Load Case: 1.2D + 1.0Ev + 1.0Eh Seismic

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	Cvx	Horizontal Force (lb)	Vertical Force (lb)
10	100.00	446	90,291	0.038	39	554
9	94.00	223	42,060	0.018	18	277
8	88.00	572	99,958	0.042	43	711
7	82.00	322	51,862	0.022	22	400
6	72.50	1,636	228,479	0.097	99	2,031
5	62.50	533	62,695	0.027	27	661
4	53.34	1,655	162,241	0.069	70	2,055
3	43.34	861	66,477	0.028	29	1,070
2	30.00	3,183	160,716	0.068	70	3,952
1	10.00	3,508	49,901	0.021	22	4,355
Alcatel-Lucent RRH4x30W-B25	102.00	165	34,229	0.014	15	205
Alcatel-Lucent B13 RRH4x30-4R	102.00	173	35,907	0.015	16	215
Alcatel-Lucent RRH4x45-1900	102.00	180	37,273	0.016	16	223
RFS DB-T1-6Z-8AB-0Z	102.00	132	27,334	0.012	12	164
Amphenol Antel BXA-70063-6CF-EDIN-X	102.00	51	10,561	0.004	5	63
Andrew SBNHH-1D65B	102.00	304	62,992	0.027	27	378
Commscope LNX-8514DS-T4M	102.00	152	31,372	0.013	14	188
Generic Round Sector Frame	102.00	900	186,367	0.079	81	1,117
Commscope VHLP3-11W	95.00	53	10,111	0.004	4	66
Powerwave Allgon TT19-08BP111-001	90.00	48	8,604	0.004	4	60
CCI DTMABP7819VG12A	90.00	58	10,324	0.004	4	72
Raycap DC6-48-60-18-8F	90.00	60	10,755	0.005	5	74
Ericsson RRUS 32 B2	90.00	159	28,500	0.012	12	197
Ericsson RRUS-11	90.00	165	29,575	0.012	13	205
Kathrein Scala 800-10121	90.00	132	23,714	0.010	10	164
KMW AM-X-CD-16-65-00T-RET	90.00	48	8,693	0.004	4	60
CCI HPA-65R-BUU-H6	90.00	153	27,424	0.012	12	190
Andrew SBNH-1D6565C (60.8 lbs)	90.00	61	10,898	0.005	5	75
Powerwave Allgon P65-17-XLH-RR	90.00	59	10,575	0.004	5	73
Generic Flat Light Sector Frame	90.00	1,200	215,094	0.091	93	1,490
Decibel DB806-XT	88.00	21	3,668	0.002	2	26
Generic Round Side Arm	88.00	188	32,749	0.014	14	233
Commscope VHLP3-11W	80.00	53	8,293	0.004	4	66
Generic Round Side Arm	78.00	188	28,496	0.012	12	233
Commscope VHLP3-11W	76.00	53	7,817	0.003	3	66
Jaybeam SmartTilt AISG Modem	65.00	3	369	0.000	0	4
Ericsson Radio 4449 B12,B71	65.00	222	27,342	0.012	12	276
Ericsson AIR 21	65.00	273	33,623	0.014	15	339
Ericsson AIR 32 (57" Height)	65.00	297	36,579	0.016	16	369
Generic Round Sector Frame	65.00	900	110,846	0.047	48	1,117
RFS APXVAARR24_43-U-NA20	65.00	384	47,257	0.020	20	476
Commscope RDIDC-9181-PF-48	55.00	22	2,225	0.001	1	27
Fujitsu TA08025-B604	55.00	192	19,473	0.008	8	238
Fujitsu TA08025-B605	55.00	225	22,856	0.010	10	279
JMA Wireless MX08FRO665-21	55.00	194	19,656	0.008	9	240
Generic Flat Light Sector Frame	55.00	1,200	121,899	0.052	53	1,490
Totals		21,605	2,358,135	1.000	1,022	26,824

FORCE/STRESS SUMMARY

Section 1 – Bolt Elevation 0.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L PX - 3" DIA PIPE	-122.95	1.2D + 1.0W N	0.25	100	100	15	0.00	0.0	196.20	0.00	0.00	0	0	62	User Input
D SAE - 2.5X2.5X0.375	-4.75	1.2D + 1.0W 90°	14.524	50	50	50	178.94	36.0	15.46	8.84	20.88	1	1	53	Bolt Shear

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L PX - 3" DIA PIPE	103.60	0.9D + 1.0W 60°	50.0	65	284.30	0.00	0.00		0	0	36	User Input
D SAE - 2.5X2.5X0.375	4.51	1.2D + 1.0W 90°	36.0	58	49.56	8.84	12.40	17.54	1	1	51	Bolt Shear

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	85.10	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	103.61	0.9D + 1.0W 60°	0.00	0	0	
Bot Compression	122.97	1.2D + 1.0W 120°	0.00	0	0	

Section 2 – Bolt Elevation 20.0 (ft) and Height 20.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L PX - 2-1/2" DIA PIPE	-101.41	1.2D + 1.0W N	0.25	100	100	15	0.00	0.0	127.10	0.00	0.00	0	0	79	User Input
D SAE - 2.5X2.5X0.375	-4.63	1.2D + 1.0W 90°	12.736	50	50	50	156.91	36.0	20.11	8.84	20.88	1	1	52	Bolt Shear

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L PX - 2-1/2" DIA PIPE	85.26	0.9D + 1.0W 60°	50.0	65	221.30	0.00	0.00		0	0	38	User Input
D SAE - 2.5X2.5X0.375	4.54	1.2D + 1.0W 90°	36.0	58	49.56	8.84	12.40	17.54	1	1	51	Bolt Shear

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	64.28	0.9D + 1.0W 60°	0.00	0	0	
Bot Tension	85.10	0.9D + 1.0W 180°	120.41	71	4	0.75" A325

Section 3 – Bolt Elevation 40.0 (ft) and Height 6.67 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2-1/2" DIA PIPE	-77.28	1.2D + 1.0W N	0.25	100	100	15	0.00	0.0	112.60	0.00	0.00	0	0	68	User Input
D SAE - 2X2X0.375	-4.53	1.2D + 1.0W 90°	12.09	50	50	50	186.47	36.0	11.19	8.84	20.88	1	1	51	Bolt Shear

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2-1/2" DIA PIPE	63.15	1.2D + 1.0W 60°	50.0	65	196.60	0.00	0.00		0	0	32	User Input
D SAE - 2X2X0.375	4.35	1.2D + 1.0W 90°	36.0	58	37.49	8.84	12.40	13.46	1	1	49	Bolt Shear

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	55.79	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	64.28	0.9D + 1.0W 60°	81.36	79	4	5/8 A325

Section 4 – Bolt Elevation 46.7 (ft) and Height 13.33 (ft)

FORCE/STRESS SUMMARY

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2-1/2" DIA PIPE	-68.48	1.2D + 1.0W N	0.25	100	100	15	0.00	0.0	112.60	0.00	0.00	0	0	60	User Input
H SAE - 2X2X0.1875	-0.70	0.9D + 1.0W N	9.89	100	100	100	301.22	36.0	2.26	8.84	10.44	1	1	31	Member Z
D SAE - 2X2X0.375	-3.92	1.2D + 1.0W N	11.518	50	50	50	177.65	36.0	12.33	8.84	20.88	1	1	0	Bolt Shear

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2-1/2" DIA PIPE	55.29	1.2D + 1.0W 60°	50.0	65	196.60	0.00	0.00		0	0	28	User Input
H SAE - 2X2X0.1875	0.82	1.2D + 1.0W 60°	36.0	58	19.89	8.84	6.20	6.73	1	1	13	Bolt Bear
D SAE - 2X2X0.375	4.14	1.2D + 1.0W 90°	36.0	58	37.49	8.84	12.40	13.46	1	1	46	Bolt Shear

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	41.27	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	55.79	0.9D + 1.0W 180°	0.00	0	0	

Section 5 – Bolt Elevation 60.0 (ft) and Height 5.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2-1/2" DIA PIPE	-50.17	1.2D + 1.0W N	0.25	50	50	50	1.59	50.0	76.67	0.00	0.00	0	0	65	Member X
D SAE - 2X2X0.1875	-3.74	1.2D + 1.0W 90°	9.557	50	50	50	145.53	36.0	9.66	8.84	10.44	1	1	42	Bolt Shear

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2-1/2" DIA PIPE	41.38	0.9D + 1.0W 60°	50.0	65	76.68	0.00	0.00		0	0	53	Member
D SAE - 2X2X0.1875	3.61	1.2D + 1.0W 90°	36.0	58	19.89	8.84	6.20	6.73	1	1	58	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	34.62	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	41.27	0.9D + 1.0W 180°	81.36	51	4	5/8 A325

Section 6 – Bolt Elevation 65.0 (ft) and Height 15.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2-1/2" DIA PIPE	-38.81	1.2D + 1.0W N	4.925	50	50	50	31.21	50.0	71.41	0.00	0.00	0	0	54	Member X
H SAE - 2X2X0.1875	-1.45	0.9D + 1.0W N	7.549	100	100	100	229.92	36.0	3.87	8.84	10.44	1	1	37	Member Z
D SAE - 2X2X0.1875	-3.55	1.2D + 1.0W N	8.391	50	50	50	127.78	36.0	12.53	8.84	10.44	1	1	40	Bolt Shear

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2-1/2" DIA PIPE	32.52	0.9D + 1.0W 60°	50.0	65	76.68	0.00	0.00		0	0	42	Member
H SAE - 2X2X0.1875	1.90	1.2D + 1.0W 60°	36.0	58	19.89	8.84	6.20	6.73	1	1	30	Bolt Bear
D SAE - 2X2X0.1875	3.04	0.9D + 1.0W 60°	36.0	58	19.89	8.84	6.20	6.73	1	1	49	Bolt Bear

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	19.35	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	34.62	0.9D + 1.0W 180°	0.00	0	0	

Section 7 – Bolt Elevation 80.0 (ft) and Height 4.00 (ft)

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Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2" DIA PIPE	-21.20	1.2D + 1.0W N	3.75	100	100	100	57.18	50.0	37.91	0.00	0.00	0	0	55	Member X
D SAE - 1.5X1.5X0.1875	-3.06	1.2D + 1.0W 90°	7.524	50	50	50	154.07	36.0	6.39	8.84	10.44	1	1	47	Member Z

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2" DIA PIPE	19.29	0.9D + 1.0W 60°	50.0	65	48.15	0.00	0.00		0	0	40	Member
H SAE - 2X2X0.1875	0.29	1.2D + 1.0Di + 1.0Wi N	36.0	58	19.89	8.84	6.20	6.73	1	1	4	Bolt Bear
D SAE - 1.5X1.5X0.1875	2.92	1.2D + 1.0W 90°	36.0	58	13.85	8.84	6.20	4.69	1	1	62	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	14.20	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	19.35	0.9D + 1.0W 180°	81.36	24	4	5/8 A325

Section 8 – Bolt Elevation 84.0 (ft) and Height 8.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2" DIA PIPE	-16.11	1.2D + 1.0W N	3.875	100	100	100	59.09	50.0	37.30	0.00	0.00	0	0	43	Member X
H SAE - 2X2X0.1875	-0.59	1.2D + 1.0W 60°	6.523	100	100	100	198.66	36.0	5.19	8.84	10.44	1	1	11	Member Z
D SAE - 1.5X1.5X0.1875	-2.69	1.2D + 1.0W 90°	7.587	50	50	50	155.36	36.0	6.28	8.84	10.44	1	1	42	Member Z

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2" DIA PIPE	11.85	0.9D + 1.0W 60°	50.0	65	48.15	0.00	0.00		0	0	24	Member
H SAE - 2X2X0.1875	0.65	1.2D + 1.0W N	36.0	58	19.89	8.84	6.20	6.73	1	1	10	Bolt Bear
D SAE - 1.5X1.5X0.1875	2.67	1.2D + 1.0W 90°	36.0	58	13.85	8.84	6.20	4.69	1	1	56	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	5.68	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	14.20	0.9D + 1.0W 180°	0.00	0	0	

Section 9 – Bolt Elevation 92.0 (ft) and Height 4.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2" DIA PIPE	-6.46	1.2D + 1.0W N	3.75	100	100	100	57.18	50.0	37.91	0.00	0.00	0	0	17	Member X
D SAE - 1.5X1.5X0.1875	-1.49	1.2D + 1.0W 90°	7.524	50	50	50	154.07	36.0	6.39	8.84	10.44	1	1	23	Member Z

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2" DIA PIPE	5.48	1.2D + 1.0W 60°	50.0	65	48.15	0.00	0.00		0	0	11	Member
D SAE - 1.5X1.5X0.1875	1.46	1.2D + 1.0W 90°	36.0	58	13.85	8.84	6.20	4.69	1	1	31	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Top Tension	3.23	0.9D + 1.0W 180°	0.00	0	0	
Bot Tension	5.68	0.9D + 1.0W 180°	81.36	7	4	5/8 A325

Section 10 – Bolt Elevation 96.0 (ft) and Height 8.00 (ft)

Max Compression	Pu (kip)	Load Case	Len (ft)	Bracing % X	Y	Z	KL/R	F'_y (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2" DIA PIPE	-3.99	1.2D + 1.0W N	3.875	100	100	100	59.09	50.0	37.30	0.00	0.00	0	0	10	Member X

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H SAE - 2X2X0.1875	-0.59	1.2D + 1.0W 60°	6.523	100	100	100	198.66	36.0	5.19	8.84	10.44	1	1	11	Member Z
D SAE - 1.5X1.5X0.1875	-1.15	1.2D + 1.0W 90°	7.587	50	50	50	155.36	36.0	6.28	8.84	10.44	1	1	18	Member Z

Max Tension Member	Pu (kip)	Load Case	F_y (ksi)	F_u (ksi)	$\Phi_c P_n$ (kip)	Shear ΦR_{nv} (kip)	Bear ΦR_n (kip)	Blk Shear $\Phi_t P_n$ (kip)	# Bolt	# Hole	Use %	Controls
L PST - 2" DIA PIPE	2.17	0.9D + 1.0W 60°	50.0	65	48.15	0.00	0.00		0	0	4	Member
H SAE - 2X2X0.1875	0.64	1.2D + 1.0W N	36.0	58	19.89	8.84	6.20	6.73	1	1	10	Bolt Bear
D SAE - 1.5X1.5X0.1875	1.19	1.2D + 1.0W 90°	36.0	58	13.85	8.84	6.20	4.69	1	1	25	Blk Shear

Max Splice Forces	Pu (kip)	Load Case	ΦR_{nt} (kip)	Use %	Num Bolts	Bolt Type
Bot Tension	3.23	0.9D + 1.0W 180°	0.00	0	0	

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down *F_X (kip)	*F_Y (kip)	*F_Z (kip)
1.2D + 1.0W Normal	8.47	0.00	0	1	0.00	122.59	-14.07
	8.47	0.00	120	1a	4.69	-48.33	-4.24
	8.47	0.00	240	1b	-4.69	-48.33	-4.24
1.2D + 1.0W 60°	8.47	0.00	0	1	-1.27	63.41	-7.01
	8.47	0.00	120	1a	-6.70	63.41	2.41
	8.47	0.00	240	1b	-10.64	-100.90	-6.14
1.2D + 1.0W 90°	8.47	0.00	0	1	-1.47	8.64	-0.56
	8.47	0.00	120	1a	-10.65	104.46	5.28
	8.47	0.00	240	1b	-9.63	-87.18	-4.72
1.2D + 1.0W 120°	8.47	0.00	0	1	-1.32	-48.33	6.18
	8.47	0.00	120	1a	-12.18	122.59	7.04
	8.47	0.00	240	1b	-6.02	-48.33	-1.94
1.2D + 1.0W 180°	8.47	0.00	0	1	0.00	-100.90	12.28
	8.47	0.00	120	1a	-5.43	63.41	4.60
	8.47	0.00	240	1b	5.43	63.41	4.60
1.2D + 1.0W 210°	8.47	0.00	0	1	0.72	-87.18	10.70
	8.47	0.00	120	1a	0.25	8.64	1.56
	8.47	0.00	240	1b	9.90	104.46	6.58
1.2D + 1.0W 240°	8.47	0.00	0	1	1.32	-48.33	6.18
	8.47	0.00	120	1a	6.02	-48.33	-1.94
	8.47	0.00	240	1b	12.18	122.59	7.04
1.2D + 1.0W 300°	8.47	0.00	0	1	1.27	63.41	-7.01
	8.47	0.00	120	1a	10.64	-100.90	-6.14
	8.47	0.00	240	1b	6.70	63.41	2.41
1.2D + 1.0W 330°	8.47	0.00	0	1	0.75	104.46	-11.86
	8.47	0.00	120	1a	8.90	-87.18	-5.98
	8.47	0.00	240	1b	1.22	8.64	-1.00
0.9D + 1.0W Normal	8.47	0.00	0	1	0.00	120.23	-13.91
	8.47	0.00	120	1a	4.82	-50.39	-4.32
	8.47	0.00	240	1b	-4.82	-50.39	-4.32
0.9D + 1.0W 60°	8.47	0.00	0	1	-1.27	61.16	-6.85
	8.47	0.00	120	1a	-6.57	61.16	2.33
	8.47	0.00	240	1b	-10.77	-102.87	-6.22
0.9D + 1.0W 90°	8.47	0.00	0	1	-1.47	6.48	-0.40
	8.47	0.00	120	1a	-10.51	102.14	5.20
	8.47	0.00	240	1b	-9.77	-89.17	-4.80
0.9D + 1.0W 120°	8.47	0.00	0	1	-1.33	-50.39	6.34
	8.47	0.00	120	1a	-12.05	120.23	6.96
	8.47	0.00	240	1b	-6.15	-50.39	-2.02
0.9D + 1.0W 180°	8.47	0.00	0	1	0.00	-102.87	12.44
	8.47	0.00	120	1a	-5.30	61.16	4.52
	8.47	0.00	240	1b	5.30	61.16	4.52
0.9D + 1.0W 210°	8.47	0.00	0	1	0.73	-89.17	10.85
	8.47	0.00	120	1a	0.39	6.48	1.48
	8.47	0.00	240	1b	9.76	102.13	6.50
0.9D + 1.0W 240°	8.47	0.00	0	1	1.33	-50.39	6.34
	8.47	0.00	120	1a	6.15	-50.39	-2.02
	8.47	0.00	240	1b	12.05	120.23	6.96
0.9D + 1.0W 300°	8.47	0.00	0	1	1.27	61.16	-6.85
	8.47	0.00	120	1a	10.77	-102.87	-6.22
	8.47	0.00	240	1b	6.57	61.16	2.33
0.9D + 1.0W 330°	8.47	0.00	0	1	0.75	102.13	-11.70
	8.47	0.00	120	1a	9.04	-89.17	-6.06
	8.47	0.00	240	1b	1.09	6.48	-1.08
1.2D + 1.0Di + 1.0Wi Normal	8.47	0.00	0	1	0.00	55.36	-4.79
	8.47	0.00	120	1a	0.60	7.52	-0.77
	8.47	0.00	240	1b	-0.60	7.52	-0.77
1.2D + 1.0Di + 1.0Wi 60°	8.47	0.00	0	1	-0.36	39.10	-2.84
	8.47	0.00	120	1a	-2.64	39.10	1.11
	8.47	0.00	240	1b	-2.35	-7.81	-1.36
1.2D + 1.0Di + 1.0Wi 90°	8.47	0.00	0	1	-0.42	23.47	-0.99
	8.47	0.00	120	1a	-3.76	50.68	1.93
	8.47	0.00	240	1b	-2.04	-3.75	-0.94
1.2D + 1.0Di + 1.0Wi 120°	8.47	0.00	0	1	-0.37	7.52	0.91
	8.47	0.00	120	1a	-4.15	55.36	2.39
	8.47	0.00	240	1b	-0.97	7.52	-0.13
1.2D + 1.0Di + 1.0Wi 180°	8.47	0.00	0	1	0.00	-7.81	2.72
	8.47	0.00	120	1a	-2.28	39.10	1.73

DETAILED REACTIONS

*(-) Uplift and (+) Down

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*Fx (kip)	*Fy (kip)	*Fz (kip)
	8.47	0.00	240	1b	2.28	39.10	1.73
1.2D + 1.0Di + 1.0Wi 210°	8.47	0.00	0	1	0.21	-3.75	2.24
	8.47	0.00	120	1a	-0.65	23.47	0.86
	8.47	0.00	240	1b	3.55	50.68	2.29
1.2D + 1.0Di + 1.0Wi 240°	8.47	0.00	0	1	0.37	7.52	0.91
	8.47	0.00	120	1a	0.97	7.52	-0.13
	8.47	0.00	240	1b	4.15	55.36	2.39
1.2D + 1.0Di + 1.0Wi 300°	8.47	0.00	0	1	0.36	39.10	-2.84
	8.47	0.00	120	1a	2.35	-7.81	-1.36
	8.47	0.00	240	1b	2.64	39.10	1.11
1.2D + 1.0Di + 1.0Wi 330°	8.47	0.00	0	1	0.21	50.68	-4.22
	8.47	0.00	120	1a	1.84	-3.75	-1.30
	8.47	0.00	240	1b	1.07	23.47	0.13
1.2D + 1.0Ev + 1.0Eh Normal	8.47	0.00	0	1	0.00	14.63	-1.27
	8.47	0.00	120	1a	-0.32	5.73	0.14
	8.47	0.00	240	1b	0.32	5.73	0.14
1.2D + 1.0Ev + 1.0Eh 60°	8.47	0.00	0	1	-0.04	11.67	-0.96
	8.47	0.00	120	1a	-0.85	11.67	0.45
	8.47	0.00	240	1b	0.03	2.76	0.02
1.2D + 1.0Ev + 1.0Eh 90°	8.47	0.00	0	1	-0.05	8.70	-0.66
	8.47	0.00	120	1a	-1.04	13.84	0.58
	8.47	0.00	240	1b	0.09	3.56	0.08
1.2D + 1.0Ev + 1.0Eh 120°	8.47	0.00	0	1	-0.04	5.73	-0.35
	8.47	0.00	120	1a	-1.10	14.63	0.64
	8.47	0.00	240	1b	0.28	5.73	0.21
1.2D + 1.0Ev + 1.0Eh 180°	8.47	0.00	0	1	0.00	2.77	-0.04
	8.47	0.00	120	1a	-0.82	11.67	0.52
	8.47	0.00	240	1b	0.82	11.67	0.52
1.2D + 1.0Ev + 1.0Eh 210°	8.47	0.00	0	1	0.02	3.56	-0.12
	8.47	0.00	120	1a	-0.54	8.70	0.37
	8.47	0.00	240	1b	1.02	13.84	0.61
1.2D + 1.0Ev + 1.0Eh 240°	8.47	0.00	0	1	0.04	5.73	-0.35
	8.47	0.00	120	1a	-0.28	5.73	0.21
	8.47	0.00	240	1b	1.10	14.63	0.64
1.2D + 1.0Ev + 1.0Eh 300°	8.47	0.00	0	1	0.04	11.67	-0.96
	8.47	0.00	120	1a	-0.03	2.76	0.02
	8.47	0.00	240	1b	0.85	11.67	0.45
1.2D + 1.0Ev + 1.0Eh 330°	8.47	0.00	0	1	0.02	13.84	-1.19
	8.47	0.00	120	1a	-0.12	3.56	0.04
	8.47	0.00	240	1b	0.59	8.70	0.29
0.9D - 1.0Ev + 1.0Eh Normal	8.47	0.00	0	1	0.00	11.94	-1.07
	8.47	0.00	120	1a	-0.15	3.05	0.04
	8.47	0.00	240	1b	0.15	3.05	0.04
0.9D - 1.0Ev + 1.0Eh 60°	8.47	0.00	0	1	-0.04	8.98	-0.76
	8.47	0.00	120	1a	-0.68	8.98	0.35
	8.47	0.00	240	1b	-0.14	0.09	-0.08
0.9D - 1.0Ev + 1.0Eh 90°	8.47	0.00	0	1	-0.05	6.01	-0.45
	8.47	0.00	120	1a	-0.87	11.14	0.47
	8.47	0.00	240	1b	-0.08	0.89	-0.02
0.9D - 1.0Ev + 1.0Eh 120°	8.47	0.00	0	1	-0.04	3.05	-0.15
	8.47	0.00	120	1a	-0.93	11.94	0.54
	8.47	0.00	240	1b	0.11	3.05	0.11
0.9D - 1.0Ev + 1.0Eh 180°	8.47	0.00	0	1	0.00	0.09	0.16
	8.47	0.00	120	1a	-0.64	8.98	0.42
	8.47	0.00	240	1b	0.64	8.98	0.42
0.9D - 1.0Ev + 1.0Eh 210°	8.47	0.00	0	1	0.02	0.89	0.08
	8.47	0.00	120	1a	-0.37	6.01	0.27
	8.47	0.00	240	1b	0.84	11.14	0.51
0.9D - 1.0Ev + 1.0Eh 240°	8.47	0.00	0	1	0.04	3.05	-0.15
	8.47	0.00	120	1a	-0.11	3.05	0.11
	8.47	0.00	240	1b	0.93	11.94	0.54
0.9D - 1.0Ev + 1.0Eh 300°	8.47	0.00	0	1	0.04	8.98	-0.76
	8.47	0.00	120	1a	0.14	0.09	-0.08
	8.47	0.00	240	1b	0.68	8.98	0.35
0.9D - 1.0Ev + 1.0Eh 330°	8.47	0.00	0	1	0.02	11.14	-0.99
	8.47	0.00	120	1a	0.06	0.89	-0.06
	8.47	0.00	240	1b	0.42	6.01	0.19
1.0D + 1.0W Service Normal	8.47	0.00	0	1	0.00	36.43	-3.99
	8.47	0.00	120	1a	0.88	-7.41	-0.90

DETAILED REACTIONS

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	*(-) Uplift and (+) Down *F_X (kip)	*F_Y (kip)	*F_Z (kip)
	8.47	0.00	240	1b	-0.88	-7.41	-0.90
1.0D + 1.0W Service 60°	8.47	0.00	0	1	-0.32	21.25	-2.18
	8.47	0.00	120	1a	-2.05	21.25	0.81
	8.47	0.00	240	1b	-2.41	-20.89	-1.39
1.0D + 1.0W Service 90°	8.47	0.00	0	1	-0.38	7.20	-0.52
	8.47	0.00	120	1a	-3.06	31.78	1.55
	8.47	0.00	240	1b	-2.15	-17.37	-1.03
1.0D + 1.0W Service 120°	8.47	0.00	0	1	-0.34	-7.41	1.21
	8.47	0.00	120	1a	-3.46	36.43	2.00
	8.47	0.00	240	1b	-1.22	-7.41	-0.31
1.0D + 1.0W Service 180°	8.47	0.00	0	1	0.00	-20.89	2.79
	8.47	0.00	120	1a	-1.72	21.25	1.37
	8.47	0.00	240	1b	1.72	21.25	1.37
1.0D + 1.0W Service 210°	8.47	0.00	0	1	0.19	-17.37	2.38
	8.47	0.00	120	1a	-0.26	7.20	0.59
	8.47	0.00	240	1b	2.87	31.78	1.88
1.0D + 1.0W Service 240°	8.47	0.00	0	1	0.34	-7.41	1.21
	8.47	0.00	120	1a	1.22	-7.41	-0.31
	8.47	0.00	240	1b	3.46	36.43	2.00
1.0D + 1.0W Service 300°	8.47	0.00	0	1	0.32	21.25	-2.18
	8.47	0.00	120	1a	2.41	-20.89	-1.39
	8.47	0.00	240	1b	2.05	21.25	0.81
1.0D + 1.0W Service 330°	8.47	0.00	0	1	0.19	31.78	-3.42
	8.47	0.00	120	1a	1.96	-17.37	-1.35
	8.47	0.00	240	1b	0.64	7.20	-0.07

Max Uplift:	102.87 (kip)	Moment Ice:	405.09 (kip-ft)	Moment:	1447.29 (kip-ft)
Max Down:	122.59 (kip)	Total Down Ice:	70.4 (kip)	Total Down:	25.93 (kip)
Max Shear:	14.07 (kip)	Total Shear Ice:	6.34 (kip)	Total Shear:	22.54(kip)

1.2D + 1.0W Normal

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0W Normal 118 mph wind with no ice	53.34	0.256	0.0060	0.4931	0.4931
1.2D + 1.0W Normal 118 mph wind with no ice	65.00	0.386	0.0120	0.6513	0.6514
1.2D + 1.0W Normal 118 mph wind with no ice	74.83	0.512	0.0223	0.7327	0.7330
1.2D + 1.0W Normal 118 mph wind with no ice	79.75	0.580	0.0202	1.0953	1.0953
1.2D + 1.0W Normal 118 mph wind with no ice	80.00	0.584	0.0199	1.1299	1.1299
1.2D + 1.0W Normal 118 mph wind with no ice	87.88	0.703	0.0186	0.8569	0.8571
1.2D + 1.0W Normal 118 mph wind with no ice	91.75	0.763	0.0194	1.1082	1.1082
1.2D + 1.0W Normal 118 mph wind with no ice	96.00	0.832	0.0184	0.8648	0.8650
1.2D + 1.0W Normal 118 mph wind with no ice	103.75	0.953	0.0185	0.9173	0.9175
1.2D + 1.0W 60° 118 mph wind with no ice	53.34	0.246	0.0090	0.4742	0.4743
1.2D + 1.0W 60° 118 mph wind with no ice	65.00	0.372	0.0148	0.6253	0.6254
1.2D + 1.0W 60° 118 mph wind with no ice	74.83	0.494	0.0247	0.7065	0.7069
1.2D + 1.0W 60° 118 mph wind with no ice	79.75	0.560	0.0203	1.0415	1.0415
1.2D + 1.0W 60° 118 mph wind with no ice	80.00	0.565	0.0198	1.0722	1.0722
1.2D + 1.0W 60° 118 mph wind with no ice	87.88	0.679	0.0208	0.8301	0.8304
1.2D + 1.0W 60° 118 mph wind with no ice	91.75	0.737	0.0198	1.0688	1.0688
1.2D + 1.0W 60° 118 mph wind with no ice	96.00	0.803	0.0207	0.8375	0.8378
1.2D + 1.0W 60° 118 mph wind with no ice	103.75	0.922	0.0206	0.8873	0.8875
1.2D + 1.0W 90° 118 mph wind with no ice	53.34	0.248	0.0087	0.4939	0.4939
1.2D + 1.0W 90° 118 mph wind with no ice	65.00	0.376	0.0155	0.6494	0.6495
1.2D + 1.0W 90° 118 mph wind with no ice	74.83	0.498	0.0270	0.7256	0.7261
1.2D + 1.0W 90° 118 mph wind with no ice	79.75	0.565	0.0232	1.0357	1.0358
1.2D + 1.0W 90° 118 mph wind with no ice	80.00	0.570	0.0227	1.0653	1.0654
1.2D + 1.0W 90° 118 mph wind with no ice	87.88	0.685	0.0227	0.8413	0.8416
1.2D + 1.0W 90° 118 mph wind with no ice	91.75	0.744	0.0226	1.0578	1.0578
1.2D + 1.0W 90° 118 mph wind with no ice	96.00	0.810	0.0225	0.8529	0.8532
1.2D + 1.0W 90° 118 mph wind with no ice	103.75	0.929	0.0225	0.9003	0.9005
1.2D + 1.0W 120° 118 mph wind with no ice	53.34	0.256	0.0061	0.4931	0.4932
1.2D + 1.0W 120° 118 mph wind with no ice	65.00	0.386	0.0120	0.6513	0.6514
1.2D + 1.0W 120° 118 mph wind with no ice	74.83	0.512	0.0220	0.7326	0.7330
1.2D + 1.0W 120° 118 mph wind with no ice	79.75	0.580	0.0197	1.0954	1.0954
1.2D + 1.0W 120° 118 mph wind with no ice	80.00	0.584	0.0194	1.1299	1.1299
1.2D + 1.0W 120° 118 mph wind with no ice	87.88	0.703	0.0181	0.8569	0.8571
1.2D + 1.0W 120° 118 mph wind with no ice	91.75	0.763	0.0189	1.1082	1.1082
1.2D + 1.0W 120° 118 mph wind with no ice	96.00	0.832	0.0178	0.8647	0.8649
1.2D + 1.0W 120° 118 mph wind with no ice	103.75	0.953	0.0179	0.9172	0.9174
1.2D + 1.0W 180° 118 mph wind with no ice	53.34	0.246	0.0089	0.4741	0.4742
1.2D + 1.0W 180° 118 mph wind with no ice	65.00	0.372	0.0148	0.6253	0.6254
1.2D + 1.0W 180° 118 mph wind with no ice	74.83	0.494	0.0250	0.7066	0.7070
1.2D + 1.0W 180° 118 mph wind with no ice	79.75	0.560	0.0208	1.0415	1.0415
1.2D + 1.0W 180° 118 mph wind with no ice	80.00	0.565	0.0203	1.0722	1.0722
1.2D + 1.0W 180° 118 mph wind with no ice	87.88	0.679	0.0214	0.8301	0.8304
1.2D + 1.0W 180° 118 mph wind with no ice	91.75	0.738	0.0204	1.0689	1.0689
1.2D + 1.0W 180° 118 mph wind with no ice	96.00	0.803	0.0213	0.8375	0.8378
1.2D + 1.0W 180° 118 mph wind with no ice	103.75	0.922	0.0212	0.8873	0.8876
1.2D + 1.0W 210° 118 mph wind with no ice	53.34	0.248	0.0086	0.4939	0.4940
1.2D + 1.0W 210° 118 mph wind with no ice	65.00	0.376	0.0154	0.6494	0.6495
1.2D + 1.0W 210° 118 mph wind with no ice	74.83	0.498	0.0269	0.7256	0.7261
1.2D + 1.0W 210° 118 mph wind with no ice	79.75	0.565	0.0231	1.0356	1.0356
1.2D + 1.0W 210° 118 mph wind with no ice	80.00	0.570	0.0227	1.0651	1.0652
1.2D + 1.0W 210° 118 mph wind with no ice	87.88	0.685	0.0226	0.8413	0.8416
1.2D + 1.0W 210° 118 mph wind with no ice	91.75	0.744	0.0225	1.0578	1.0579
1.2D + 1.0W 210° 118 mph wind with no ice	96.00	0.810	0.0225	0.8529	0.8532
1.2D + 1.0W 210° 118 mph wind with no ice	103.75	0.929	0.0224	0.9003	0.9005
1.2D + 1.0W 240° 118 mph wind with no ice	53.34	0.256	0.0061	0.4931	0.4932
1.2D + 1.0W 240° 118 mph wind with no ice	65.00	0.386	-0.0120	0.6513	0.6514
1.2D + 1.0W 240° 118 mph wind with no ice	74.83	0.512	-0.0220	0.7326	0.7330
1.2D + 1.0W 240° 118 mph wind with no ice	79.75	0.580	-0.0197	1.0954	1.0954
1.2D + 1.0W 240° 118 mph wind with no ice	80.00	0.584	-0.0194	1.1299	1.1299
1.2D + 1.0W 240° 118 mph wind with no ice	87.88	0.703	-0.0181	0.8569	0.8571
1.2D + 1.0W 240° 118 mph wind with no ice	91.75	0.763	-0.0189	1.1082	1.1082
1.2D + 1.0W 240° 118 mph wind with no ice	96.00	0.832	-0.0178	0.8647	0.8649
1.2D + 1.0W 240° 118 mph wind with no ice	103.75	0.953	-0.0179	0.9172	0.9174
1.2D + 1.0W 300° 118 mph wind with no ice	53.34	0.246	-0.0090	0.4742	0.4743

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0W 300° 118 mph wind with no ice	65.00	0.372	-0.0148	0.6253	0.6254
1.2D + 1.0W 300° 118 mph wind with no ice	74.83	0.494	-0.0247	0.7065	0.7069
1.2D + 1.0W 300° 118 mph wind with no ice	79.75	0.560	-0.0203	1.0415	1.0415
1.2D + 1.0W 300° 118 mph wind with no ice	80.00	0.565	-0.0198	1.0722	1.0722
1.2D + 1.0W 300° 118 mph wind with no ice	87.88	0.679	-0.0208	0.8301	0.8304
1.2D + 1.0W 300° 118 mph wind with no ice	91.75	0.737	-0.0198	1.0688	1.0688
1.2D + 1.0W 300° 118 mph wind with no ice	96.00	0.803	-0.0207	0.8375	0.8378
1.2D + 1.0W 300° 118 mph wind with no ice	103.75	0.922	-0.0206	0.8873	0.8875
1.2D + 1.0W 330° 118 mph wind with no ice	53.34	0.248	0.0086	0.4939	0.4940
1.2D + 1.0W 330° 118 mph wind with no ice	65.00	0.376	0.0154	0.6494	0.6495
1.2D + 1.0W 330° 118 mph wind with no ice	74.83	0.498	0.0269	0.7256	0.7261
1.2D + 1.0W 330° 118 mph wind with no ice	79.75	0.565	0.0231	1.0356	1.0357
1.2D + 1.0W 330° 118 mph wind with no ice	80.00	0.570	0.0227	1.0652	1.0653
1.2D + 1.0W 330° 118 mph wind with no ice	87.88	0.685	0.0226	0.8413	0.8416
1.2D + 1.0W 330° 118 mph wind with no ice	91.75	0.744	0.0225	1.0578	1.0578
1.2D + 1.0W 330° 118 mph wind with no ice	96.00	0.810	0.0224	0.8529	0.8532
1.2D + 1.0W 330° 118 mph wind with no ice	103.75	0.929	0.0224	0.9003	0.9005
0.9D + 1.0W Normal 118 mph wind with no ice	53.34	0.255	0.0060	0.4918	0.4919
0.9D + 1.0W Normal 118 mph wind with no ice	65.00	0.385	0.0120	0.6492	0.6493
0.9D + 1.0W Normal 118 mph wind with no ice	74.83	0.510	0.0222	0.7305	0.7308
0.9D + 1.0W Normal 118 mph wind with no ice	79.75	0.579	0.0201	1.0906	1.0906
0.9D + 1.0W Normal 118 mph wind with no ice	80.00	0.583	0.0198	1.1247	1.1247
0.9D + 1.0W Normal 118 mph wind with no ice	87.88	0.701	0.0185	0.8545	0.8547
0.9D + 1.0W Normal 118 mph wind with no ice	91.75	0.761	0.0194	1.1045	1.1045
0.9D + 1.0W Normal 118 mph wind with no ice	96.00	0.829	0.0183	0.8623	0.8625
0.9D + 1.0W Normal 118 mph wind with no ice	103.75	0.951	0.0184	0.9145	0.9147
0.9D + 1.0W 60° 118 mph wind with no ice	53.34	0.246	0.0090	0.4732	0.4733
0.9D + 1.0W 60° 118 mph wind with no ice	65.00	0.371	0.0147	0.6241	0.6243
0.9D + 1.0W 60° 118 mph wind with no ice	74.83	0.493	0.0246	0.7049	0.7053
0.9D + 1.0W 60° 118 mph wind with no ice	79.75	0.559	0.0202	1.0395	1.0395
0.9D + 1.0W 60° 118 mph wind with no ice	80.00	0.563	0.0197	1.0703	1.0703
0.9D + 1.0W 60° 118 mph wind with no ice	87.88	0.678	0.0207	0.8278	0.8281
0.9D + 1.0W 60° 118 mph wind with no ice	91.75	0.736	0.0197	1.0659	1.0659
0.9D + 1.0W 60° 118 mph wind with no ice	96.00	0.801	0.0206	0.8352	0.8354
0.9D + 1.0W 60° 118 mph wind with no ice	103.75	0.919	0.0205	0.8849	0.8851
0.9D + 1.0W 90° 118 mph wind with no ice	53.34	0.247	0.0087	0.4927	0.4928
0.9D + 1.0W 90° 118 mph wind with no ice	65.00	0.375	0.0154	0.6477	0.6479
0.9D + 1.0W 90° 118 mph wind with no ice	74.83	0.497	0.0269	0.7237	0.7242
0.9D + 1.0W 90° 118 mph wind with no ice	79.75	0.564	0.0231	1.0313	1.0314
0.9D + 1.0W 90° 118 mph wind with no ice	80.00	0.568	0.0227	1.0606	1.0606
0.9D + 1.0W 90° 118 mph wind with no ice	87.88	0.683	0.0226	0.8390	0.8393
0.9D + 1.0W 90° 118 mph wind with no ice	91.75	0.742	0.0225	1.0542	1.0543
0.9D + 1.0W 90° 118 mph wind with no ice	96.00	0.808	0.0224	0.8505	0.8508
0.9D + 1.0W 90° 118 mph wind with no ice	103.75	0.927	0.0224	0.8977	0.8980
0.9D + 1.0W 120° 118 mph wind with no ice	53.34	0.255	0.0061	0.4919	0.4919
0.9D + 1.0W 120° 118 mph wind with no ice	65.00	0.385	0.0119	0.6492	0.6493
0.9D + 1.0W 120° 118 mph wind with no ice	74.83	0.510	0.0219	0.7305	0.7308
0.9D + 1.0W 120° 118 mph wind with no ice	79.75	0.579	0.0196	1.0906	1.0906
0.9D + 1.0W 120° 118 mph wind with no ice	80.00	0.583	0.0193	1.1247	1.1247
0.9D + 1.0W 120° 118 mph wind with no ice	87.88	0.701	0.0180	0.8545	0.8546
0.9D + 1.0W 120° 118 mph wind with no ice	91.75	0.761	0.0188	1.1044	1.1044
0.9D + 1.0W 120° 118 mph wind with no ice	96.00	0.829	0.0177	0.8623	0.8625
0.9D + 1.0W 120° 118 mph wind with no ice	103.75	0.951	0.0178	0.9145	0.9146
0.9D + 1.0W 180° 118 mph wind with no ice	53.34	0.246	0.0088	0.4731	0.4732
0.9D + 1.0W 180° 118 mph wind with no ice	65.00	0.371	0.0148	0.6241	0.6243
0.9D + 1.0W 180° 118 mph wind with no ice	74.83	0.493	0.0249	0.7050	0.7054
0.9D + 1.0W 180° 118 mph wind with no ice	79.75	0.559	0.0207	1.0395	1.0395
0.9D + 1.0W 180° 118 mph wind with no ice	80.00	0.563	0.0202	1.0703	1.0703
0.9D + 1.0W 180° 118 mph wind with no ice	87.88	0.678	0.0213	0.8279	0.8281
0.9D + 1.0W 180° 118 mph wind with no ice	91.75	0.736	0.0203	1.0659	1.0659
0.9D + 1.0W 180° 118 mph wind with no ice	96.00	0.801	0.0212	0.8352	0.8355
0.9D + 1.0W 180° 118 mph wind with no ice	103.75	0.919	0.0211	0.8849	0.8852
0.9D + 1.0W 210° 118 mph wind with no ice	53.34	0.247	0.0086	0.4927	0.4928
0.9D + 1.0W 210° 118 mph wind with no ice	65.00	0.375	0.0153	0.6477	0.6479
0.9D + 1.0W 210° 118 mph wind with no ice	74.83	0.497	0.0268	0.7237	0.7242
0.9D + 1.0W 210° 118 mph wind with no ice	79.75	0.564	0.0230	1.0312	1.0312
0.9D + 1.0W 210° 118 mph wind with no ice	80.00	0.568	0.0226	1.0604	1.0605
0.9D + 1.0W 210° 118 mph wind with no ice	87.88	0.683	0.0225	0.8390	0.8393

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
0.9D + 1.0W 210° 118 mph wind with no ice	91.75	0.742	0.0224	1.0542	1.0543
0.9D + 1.0W 210° 118 mph wind with no ice	96.00	0.808	0.0224	0.8505	0.8508
0.9D + 1.0W 210° 118 mph wind with no ice	103.75	0.927	0.0223	0.8977	0.8980
0.9D + 1.0W 240° 118 mph wind with no ice	53.34	0.255	-0.0061	0.4919	0.4919
0.9D + 1.0W 240° 118 mph wind with no ice	65.00	0.385	-0.0119	0.6492	0.6493
0.9D + 1.0W 240° 118 mph wind with no ice	74.83	0.510	-0.0219	0.7305	0.7308
0.9D + 1.0W 240° 118 mph wind with no ice	79.75	0.579	-0.0196	1.0906	1.0906
0.9D + 1.0W 240° 118 mph wind with no ice	80.00	0.583	-0.0193	1.1247	1.1247
0.9D + 1.0W 240° 118 mph wind with no ice	87.88	0.701	-0.0180	0.8545	0.8546
0.9D + 1.0W 240° 118 mph wind with no ice	91.75	0.761	-0.0188	1.1044	1.1044
0.9D + 1.0W 240° 118 mph wind with no ice	96.00	0.829	-0.0177	0.8623	0.8625
0.9D + 1.0W 240° 118 mph wind with no ice	103.75	0.951	-0.0178	0.9145	0.9146
0.9D + 1.0W 300° 118 mph wind with no ice	53.34	0.246	-0.0090	0.4732	0.4733
0.9D + 1.0W 300° 118 mph wind with no ice	65.00	0.371	-0.0147	0.6241	0.6243
0.9D + 1.0W 300° 118 mph wind with no ice	74.83	0.493	-0.0246	0.7049	0.7053
0.9D + 1.0W 300° 118 mph wind with no ice	79.75	0.559	-0.0202	1.0395	1.0395
0.9D + 1.0W 300° 118 mph wind with no ice	80.00	0.563	-0.0197	1.0703	1.0703
0.9D + 1.0W 300° 118 mph wind with no ice	87.88	0.678	-0.0207	0.8278	0.8281
0.9D + 1.0W 300° 118 mph wind with no ice	91.75	0.736	-0.0197	1.0659	1.0659
0.9D + 1.0W 300° 118 mph wind with no ice	96.00	0.801	-0.0206	0.8352	0.8354
0.9D + 1.0W 300° 118 mph wind with no ice	103.75	0.919	-0.0205	0.8849	0.8851
0.9D + 1.0W 330° 118 mph wind with no ice	53.34	0.247	0.0086	0.4927	0.4928
0.9D + 1.0W 330° 118 mph wind with no ice	65.00	0.375	0.0153	0.6477	0.6479
0.9D + 1.0W 330° 118 mph wind with no ice	74.83	0.497	0.0268	0.7237	0.7242
0.9D + 1.0W 330° 118 mph wind with no ice	79.75	0.564	0.0230	1.0312	1.0313
0.9D + 1.0W 330° 118 mph wind with no ice	80.00	0.568	0.0226	1.0604	1.0605
0.9D + 1.0W 330° 118 mph wind with no ice	87.88	0.683	0.0225	0.8390	0.8393
0.9D + 1.0W 330° 118 mph wind with no ice	91.75	0.742	0.0224	1.0542	1.0543
0.9D + 1.0W 330° 118 mph wind with no ice	96.00	0.808	0.0223	0.8505	0.8508
0.9D + 1.0W 330° 118 mph wind with no ice	103.75	0.927	0.0223	0.8977	0.8980
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	53.34	0.072	0.0016	0.1402	0.1402
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	65.00	0.108	0.0025	0.1851	0.1851
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	74.83	0.143	0.0043	0.2061	0.2062
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	79.75	0.162	0.0030	0.3170	0.3170
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	80.00	0.163	0.0029	0.3290	0.3290
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	87.88	0.196	0.0015	0.2392	0.2392
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	91.75	0.213	0.0010	0.3131	0.3131
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	96.00	0.232	0.0006	0.2412	0.2412
1.2D + 1.0Di + 1.0Wi Normal 50 mph wind with 1.5" radial ice	103.75	0.266	0.0003	0.2572	0.2572
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	53.34	0.070	0.0018	0.1320	0.1320
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	65.00	0.106	0.0027	0.1732	0.1732
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	74.83	0.141	0.0045	0.1974	0.1975
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	79.75	0.159	0.0030	0.2841	0.2841
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	80.00	0.161	0.0028	0.2906	0.2906
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	87.88	0.193	0.0016	0.2344	0.2345
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	91.75	0.210	0.0010	0.2997	0.2997
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	96.00	0.228	0.0008	0.2369	0.2369
1.2D + 1.0Di + 1.0Wi 60° 50 mph wind with 1.5" radial ice	103.75	0.262	0.0004	0.2503	0.2503
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	53.34	0.070	0.0020	0.1396	0.1396
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	65.00	0.107	0.0030	0.1831	0.1831
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	74.83	0.141	0.0051	0.2044	0.2044
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	79.75	0.160	0.0034	0.3029	0.3029
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	80.00	0.161	0.0033	0.3134	0.3134
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	87.88	0.194	0.0018	0.2372	0.2372
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	91.75	0.210	0.0012	0.3022	0.3022
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	96.00	0.229	0.0008	0.2405	0.2405
1.2D + 1.0Di + 1.0Wi 90° 50 mph wind with 1.5" radial ice	103.75	0.263	0.0004	0.2542	0.2542
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	53.34	0.072	0.0016	0.1401	0.1401
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	65.00	0.108	0.0025	0.1851	0.1851
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	74.83	0.143	0.0043	0.2061	0.2062
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	79.75	0.162	0.0029	0.3170	0.3170
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	80.00	0.163	0.0028	0.3290	0.3290
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	87.88	0.196	0.0015	0.2392	0.2392
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	91.75	0.213	0.0010	0.3131	0.3131
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	96.00	0.232	0.0006	0.2412	0.2412
1.2D + 1.0Di + 1.0Wi 120° 50 mph wind with 1.5" radial ice	103.75	0.266	0.0003	0.2572	0.2572
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	53.34	0.070	0.0018	0.1319	0.1319
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	65.00	0.106	0.0027	0.1732	0.1732

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	74.83	0.141	0.0045	0.1975	0.1975
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	79.75	0.159	0.0031	0.2840	0.2840
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	80.00	0.161	0.0029	0.2905	0.2905
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	87.88	0.193	0.0017	0.2344	0.2344
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	91.75	0.210	0.0011	0.2997	0.2997
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	96.00	0.228	0.0008	0.2369	0.2369
1.2D + 1.0Di + 1.0Wi 180° 50 mph wind with 1.5" radial ice	103.75	0.262	0.0005	0.2503	0.2503
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	53.34	0.070	0.0019	0.1396	0.1396
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	65.00	0.107	0.0030	0.1831	0.1831
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	74.83	0.141	0.0051	0.2044	0.2044
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	79.75	0.160	0.0034	0.3028	0.3028
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	80.00	0.161	0.0033	0.3133	0.3133
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	87.88	0.194	0.0018	0.2372	0.2372
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	91.75	0.210	0.0012	0.3022	0.3022
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	96.00	0.229	0.0008	0.2405	0.2405
1.2D + 1.0Di + 1.0Wi 210° 50 mph wind with 1.5" radial ice	103.75	0.263	0.0004	0.2542	0.2542
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	53.34	0.072	0.0016	0.1401	0.1401
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	65.00	0.108	-0.0025	0.1851	0.1851
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	74.83	0.143	0.0043	0.2061	0.2062
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	79.75	0.162	0.0029	0.3170	0.3170
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	80.00	0.163	-0.0028	0.3290	0.3290
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	87.88	0.196	-0.0015	0.2392	0.2392
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	91.75	0.213	0.0010	0.3131	0.3131
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	96.00	0.232	0.0006	0.2412	0.2412
1.2D + 1.0Di + 1.0Wi 240° 50 mph wind with 1.5" radial ice	103.75	0.266	0.0003	0.2572	0.2572
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	53.34	0.070	0.0018	0.1320	0.1320
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	65.00	0.106	-0.0027	0.1732	0.1732
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	74.83	0.141	-0.0045	0.1974	0.1975
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	79.75	0.159	-0.0030	0.2841	0.2841
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	80.00	0.161	-0.0028	0.2906	0.2906
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	87.88	0.193	-0.0016	0.2344	0.2345
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	91.75	0.210	-0.0010	0.2997	0.2997
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	96.00	0.228	-0.0008	0.2369	0.2369
1.2D + 1.0Di + 1.0Wi 300° 50 mph wind with 1.5" radial ice	103.75	0.262	0.0004	0.2503	0.2503
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	53.34	0.070	0.0019	0.1396	0.1396
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	65.00	0.107	0.0029	0.1831	0.1831
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	74.83	0.141	0.0050	0.2044	0.2044
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	79.75	0.160	0.0034	0.3028	0.3028
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	80.00	0.161	0.0032	0.3133	0.3134
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	87.88	0.194	0.0018	0.2372	0.2372
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	91.75	0.210	0.0011	0.3022	0.3022
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	96.00	0.229	0.0008	0.2405	0.2405
1.2D + 1.0Di + 1.0Wi 330° 50 mph wind with 1.5" radial ice	103.75	0.263	0.0004	0.2542	0.2542
1.2D + 1.0Ev + 1.0Eh Normal Seismic	53.34	0.014	0.0003	0.0272	0.0272
1.2D + 1.0Ev + 1.0Eh Normal Seismic	65.00	0.021	0.0004	0.0373	0.0373
1.2D + 1.0Ev + 1.0Eh Normal Seismic	74.83	0.028	0.0007	0.0419	0.0419
1.2D + 1.0Ev + 1.0Eh Normal Seismic	79.75	0.032	0.0004	0.0678	0.0678
1.2D + 1.0Ev + 1.0Eh Normal Seismic	80.00	0.032	0.0004	0.0709	0.0709
1.2D + 1.0Ev + 1.0Eh Normal Seismic	87.88	0.039	0.0001	0.0485	0.0485
1.2D + 1.0Ev + 1.0Eh Normal Seismic	91.75	0.042	0.0000	0.0661	0.0661
1.2D + 1.0Ev + 1.0Eh Normal Seismic	96.00	0.046	0.0000	0.0492	0.0492
1.2D + 1.0Ev + 1.0Eh Normal Seismic	103.75	0.053	0.0001	0.0546	0.0546
1.2D + 1.0Ev + 1.0Eh 60° Seismic	53.34	0.014	0.0003	0.0271	0.0271
1.2D + 1.0Ev + 1.0Eh 60° Seismic	65.00	0.021	0.0004	0.0358	0.0358
1.2D + 1.0Ev + 1.0Eh 60° Seismic	74.83	0.028	0.0007	0.0407	0.0407
1.2D + 1.0Ev + 1.0Eh 60° Seismic	79.75	0.032	0.0004	0.0594	0.0594
1.2D + 1.0Ev + 1.0Eh 60° Seismic	80.00	0.032	0.0004	0.0613	0.0613
1.2D + 1.0Ev + 1.0Eh 60° Seismic	87.88	0.039	0.0001	0.0482	0.0482
1.2D + 1.0Ev + 1.0Eh 60° Seismic	91.75	0.042	0.0000	0.0644	0.0644
1.2D + 1.0Ev + 1.0Eh 60° Seismic	96.00	0.046	0.0000	0.0492	0.0492
1.2D + 1.0Ev + 1.0Eh 60° Seismic	103.75	0.053	0.0001	0.0543	0.0543
1.2D + 1.0Ev + 1.0Eh 90° Seismic	53.34	0.014	0.0003	0.0279	0.0279
1.2D + 1.0Ev + 1.0Eh 90° Seismic	65.00	0.021	0.0005	0.0370	0.0370
1.2D + 1.0Ev + 1.0Eh 90° Seismic	74.83	0.028	0.0008	0.0417	0.0417
1.2D + 1.0Ev + 1.0Eh 90° Seismic	79.75	0.032	0.0005	0.0653	0.0653
1.2D + 1.0Ev + 1.0Eh 90° Seismic	80.00	0.032	0.0004	0.0680	0.0680
1.2D + 1.0Ev + 1.0Eh 90° Seismic	87.88	0.039	0.0001	0.0486	0.0486
1.2D + 1.0Ev + 1.0Eh 90° Seismic	91.75	0.042	0.0000	0.0645	0.0645

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.2D + 1.0Ev + 1.0Eh 90° Seismic	96.00	0.046	0.0000	0.0498	0.0498
1.2D + 1.0Ev + 1.0Eh 90° Seismic	103.75	0.053	0.0001	0.0545	0.0545
1.2D + 1.0Ev + 1.0Eh 120° Seismic	53.34	0.014	0.0003	0.0272	0.0272
1.2D + 1.0Ev + 1.0Eh 120° Seismic	65.00	0.021	0.0004	0.0373	0.0373
1.2D + 1.0Ev + 1.0Eh 120° Seismic	74.83	0.028	0.0007	0.0419	0.0419
1.2D + 1.0Ev + 1.0Eh 120° Seismic	79.75	0.032	0.0004	0.0678	0.0678
1.2D + 1.0Ev + 1.0Eh 120° Seismic	80.00	0.032	0.0004	0.0709	0.0709
1.2D + 1.0Ev + 1.0Eh 120° Seismic	87.88	0.039	0.0001	0.0485	0.0485
1.2D + 1.0Ev + 1.0Eh 120° Seismic	91.75	0.042	0.0000	0.0661	0.0661
1.2D + 1.0Ev + 1.0Eh 120° Seismic	96.00	0.046	0.0000	0.0492	0.0492
1.2D + 1.0Ev + 1.0Eh 120° Seismic	103.75	0.053	0.0001	0.0546	0.0546
1.2D + 1.0Ev + 1.0Eh 180° Seismic	53.34	0.014	0.0003	0.0271	0.0271
1.2D + 1.0Ev + 1.0Eh 180° Seismic	65.00	0.021	0.0004	0.0359	0.0359
1.2D + 1.0Ev + 1.0Eh 180° Seismic	74.83	0.028	0.0007	0.0407	0.0407
1.2D + 1.0Ev + 1.0Eh 180° Seismic	79.75	0.032	0.0004	0.0593	0.0593
1.2D + 1.0Ev + 1.0Eh 180° Seismic	80.00	0.032	0.0004	0.0612	0.0612
1.2D + 1.0Ev + 1.0Eh 180° Seismic	87.88	0.039	0.0001	0.0482	0.0482
1.2D + 1.0Ev + 1.0Eh 180° Seismic	91.75	0.042	0.0000	0.0644	0.0644
1.2D + 1.0Ev + 1.0Eh 180° Seismic	96.00	0.046	0.0000	0.0492	0.0492
1.2D + 1.0Ev + 1.0Eh 180° Seismic	103.75	0.053	0.0001	0.0543	0.0543
1.2D + 1.0Ev + 1.0Eh 210° Seismic	53.34	0.014	0.0003	0.0279	0.0279
1.2D + 1.0Ev + 1.0Eh 210° Seismic	65.00	0.021	0.0005	0.0370	0.0370
1.2D + 1.0Ev + 1.0Eh 210° Seismic	74.83	0.028	0.0008	0.0417	0.0417
1.2D + 1.0Ev + 1.0Eh 210° Seismic	79.75	0.032	0.0005	0.0653	0.0653
1.2D + 1.0Ev + 1.0Eh 210° Seismic	80.00	0.032	0.0005	0.0680	0.0680
1.2D + 1.0Ev + 1.0Eh 210° Seismic	87.88	0.039	0.0001	0.0486	0.0486
1.2D + 1.0Ev + 1.0Eh 210° Seismic	91.75	0.042	0.0000	0.0645	0.0645
1.2D + 1.0Ev + 1.0Eh 210° Seismic	96.00	0.046	0.0000	0.0498	0.0498
1.2D + 1.0Ev + 1.0Eh 210° Seismic	103.75	0.053	-0.0001	0.0545	0.0545
1.2D + 1.0Ev + 1.0Eh 240° Seismic	53.34	0.014	0.0003	0.0272	0.0272
1.2D + 1.0Ev + 1.0Eh 240° Seismic	65.00	0.021	0.0004	0.0373	0.0373
1.2D + 1.0Ev + 1.0Eh 240° Seismic	74.83	0.028	0.0007	0.0419	0.0419
1.2D + 1.0Ev + 1.0Eh 240° Seismic	79.75	0.032	0.0004	0.0678	0.0678
1.2D + 1.0Ev + 1.0Eh 240° Seismic	80.00	0.032	0.0004	0.0709	0.0709
1.2D + 1.0Ev + 1.0Eh 240° Seismic	87.88	0.039	0.0001	0.0485	0.0485
1.2D + 1.0Ev + 1.0Eh 240° Seismic	91.75	0.042	0.0000	0.0661	0.0661
1.2D + 1.0Ev + 1.0Eh 240° Seismic	96.00	0.046	0.0000	0.0492	0.0492
1.2D + 1.0Ev + 1.0Eh 240° Seismic	103.75	0.053	0.0001	0.0546	0.0546
1.2D + 1.0Ev + 1.0Eh 300° Seismic	53.34	0.014	0.0003	0.0271	0.0271
1.2D + 1.0Ev + 1.0Eh 300° Seismic	65.00	0.021	0.0004	0.0358	0.0358
1.2D + 1.0Ev + 1.0Eh 300° Seismic	74.83	0.028	0.0007	0.0407	0.0407
1.2D + 1.0Ev + 1.0Eh 300° Seismic	79.75	0.032	0.0004	0.0594	0.0594
1.2D + 1.0Ev + 1.0Eh 300° Seismic	80.00	0.032	0.0004	0.0613	0.0613
1.2D + 1.0Ev + 1.0Eh 300° Seismic	87.88	0.039	0.0001	0.0482	0.0482
1.2D + 1.0Ev + 1.0Eh 300° Seismic	91.75	0.042	0.0000	0.0644	0.0644
1.2D + 1.0Ev + 1.0Eh 300° Seismic	96.00	0.046	0.0000	0.0492	0.0492
1.2D + 1.0Ev + 1.0Eh 300° Seismic	103.75	0.053	0.0001	0.0543	0.0543
1.2D + 1.0Ev + 1.0Eh 330° Seismic	53.34	0.014	0.0003	0.0279	0.0279
1.2D + 1.0Ev + 1.0Eh 330° Seismic	65.00	0.021	0.0005	0.0370	0.0370
1.2D + 1.0Ev + 1.0Eh 330° Seismic	74.83	0.028	0.0008	0.0417	0.0417
1.2D + 1.0Ev + 1.0Eh 330° Seismic	79.75	0.032	0.0005	0.0653	0.0653
1.2D + 1.0Ev + 1.0Eh 330° Seismic	80.00	0.032	0.0004	0.0680	0.0680
1.2D + 1.0Ev + 1.0Eh 330° Seismic	87.88	0.039	0.0001	0.0486	0.0486
1.2D + 1.0Ev + 1.0Eh 330° Seismic	91.75	0.042	0.0000	0.0645	0.0645
1.2D + 1.0Ev + 1.0Eh 330° Seismic	96.00	0.046	-0.0001	0.0498	0.0498
1.2D + 1.0Ev + 1.0Eh 330° Seismic	103.75	0.053	-0.0001	0.0545	0.0545
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	53.34	0.014	0.0003	0.0271	0.0271
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	65.00	0.021	0.0004	0.0368	0.0368
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	74.83	0.028	0.0007	0.0415	0.0415
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	79.75	0.032	0.0004	0.0660	0.0660
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	80.00	0.032	0.0004	0.0687	0.0687
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	87.88	0.039	0.0001	0.0483	0.0483
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	91.75	0.042	0.0000	0.0656	0.0656
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	96.00	0.046	0.0000	0.0491	0.0491
0.9D - 1.0Ev + 1.0Eh Normal Seismic (Reduced DL)	103.75	0.053	0.0001	0.0543	0.0543
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	53.34	0.014	0.0003	0.0271	0.0271
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	65.00	0.021	0.0004	0.0351	0.0351
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	74.83	0.028	0.0007	0.0402	0.0402

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	79.75	0.032	0.0004	0.0586	0.0586
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	80.00	0.032	0.0004	0.0600	0.0600
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	87.88	0.039	0.0001	0.0481	0.0481
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	91.75	0.042	0.0000	0.0644	0.0644
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	96.00	0.046	0.0000	0.0491	0.0491
0.9D - 1.0Ev + 1.0Eh 60° Seismic (Reduced DL)	103.75	0.053	0.0001	0.0539	0.0539
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	53.34	0.014	0.0003	0.0278	0.0278
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	65.00	0.021	0.0005	0.0368	0.0368
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	74.83	0.028	0.0008	0.0416	0.0416
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	79.75	0.032	0.0005	0.0636	0.0636
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	80.00	0.032	0.0004	0.0660	0.0660
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	87.88	0.039	0.0001	0.0485	0.0485
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	91.75	0.042	0.0000	0.0640	0.0640
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	96.00	0.046	0.0000	0.0496	0.0496
0.9D - 1.0Ev + 1.0Eh 90° Seismic (Reduced DL)	103.75	0.053	0.0001	0.0543	0.0543
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	53.34	0.014	0.0003	0.0271	0.0271
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	65.00	0.021	0.0004	0.0368	0.0368
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	74.83	0.028	0.0007	0.0415	0.0415
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	79.75	0.032	0.0004	0.0660	0.0660
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	80.00	0.032	0.0004	0.0687	0.0687
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	87.88	0.039	0.0001	0.0483	0.0483
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	91.75	0.042	0.0000	0.0656	0.0656
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	96.00	0.046	0.0000	0.0491	0.0491
0.9D - 1.0Ev + 1.0Eh 120° Seismic (Reduced DL)	103.75	0.053	0.0001	0.0543	0.0543
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	53.34	0.014	0.0003	0.0270	0.0270
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	65.00	0.021	0.0004	0.0351	0.0351
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	74.83	0.028	0.0007	0.0402	0.0402
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	79.75	0.032	0.0004	0.0586	0.0586
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	80.00	0.032	0.0004	0.0600	0.0600
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	87.88	0.039	0.0001	0.0481	0.0481
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	91.75	0.042	0.0000	0.0644	0.0644
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	96.00	0.046	0.0000	0.0491	0.0491
0.9D - 1.0Ev + 1.0Eh 180° Seismic (Reduced DL)	103.75	0.053	0.0001	0.0539	0.0539
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	53.34	0.014	0.0003	0.0278	0.0278
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	65.00	0.021	0.0005	0.0368	0.0368
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	74.83	0.028	0.0008	0.0416	0.0416
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	79.75	0.032	0.0005	0.0636	0.0636
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	80.00	0.032	0.0004	0.0660	0.0660
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	87.88	0.039	0.0001	0.0485	0.0485
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	91.75	0.042	0.0000	0.0640	0.0640
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	96.00	0.046	0.0000	0.0496	0.0496
0.9D - 1.0Ev + 1.0Eh 210° Seismic (Reduced DL)	103.75	0.053	-0.0001	0.0543	0.0543
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	53.34	0.014	0.0003	0.0271	0.0271
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	65.00	0.021	0.0004	0.0368	0.0368
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	74.83	0.028	0.0007	0.0415	0.0415
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	79.75	0.032	0.0004	0.0660	0.0660
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	80.00	0.032	0.0004	0.0687	0.0687
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	87.88	0.039	0.0001	0.0483	0.0483
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	91.75	0.042	0.0000	0.0656	0.0656
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	96.00	0.046	0.0000	0.0491	0.0491
0.9D - 1.0Ev + 1.0Eh 240° Seismic (Reduced DL)	103.75	0.053	0.0001	0.0543	0.0543
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	53.34	0.014	0.0003	0.0271	0.0271
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	65.00	0.021	0.0004	0.0351	0.0351
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	74.83	0.028	0.0007	0.0402	0.0402
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	79.75	0.032	0.0004	0.0586	0.0586
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	80.00	0.032	0.0004	0.0600	0.0600
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	87.88	0.039	0.0001	0.0481	0.0481
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	91.75	0.042	0.0000	0.0644	0.0644
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	96.00	0.046	0.0000	0.0491	0.0491
0.9D - 1.0Ev + 1.0Eh 300° Seismic (Reduced DL)	103.75	0.053	0.0001	0.0539	0.0539
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	53.34	0.014	0.0003	0.0279	0.0279
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	65.00	0.021	0.0005	0.0368	0.0368
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	74.83	0.028	0.0008	0.0416	0.0416
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	79.75	0.032	0.0005	0.0636	0.0636
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	80.00	0.032	0.0004	0.0660	0.0660
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	87.88	0.039	0.0001	0.0485	0.0485
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	91.75	0.042	0.0000	0.0640	0.0640
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	96.00	0.046	0.0000	0.0496	0.0496

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
0.9D - 1.0Ev + 1.0Eh 330° Seismic (Reduced DL)	103.75	0.053	-0.0001	0.0543	0.0543
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	53.34	0.066	0.0013	0.1264	0.1264
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	65.00	0.099	0.0019	0.1676	0.1676
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	74.83	0.131	0.0034	0.1881	0.1881
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	79.75	0.149	0.0021	0.2822	0.2822
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	80.00	0.150	0.0020	0.2915	0.2915
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	87.88	0.180	0.0007	0.2196	0.2196
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	91.75	0.196	0.0003	0.2838	0.2838
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	96.00	0.213	0.0000	0.2214	0.2214
1.0D + 1.0W Service Normal 60 mph Wind with No Ice	103.75	0.244	0.0002	0.2349	0.2349
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	53.34	0.063	0.0015	0.1213	0.1213
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	65.00	0.095	0.0021	0.1592	0.1592
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	74.83	0.126	0.0035	0.1802	0.1802
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	79.75	0.143	0.0021	0.2642	0.2642
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	80.00	0.144	0.0019	0.2715	0.2715
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	87.88	0.174	0.0008	0.2123	0.2123
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	91.75	0.189	0.0003	0.2727	0.2727
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	96.00	0.206	0.0001	0.2143	0.2143
1.0D + 1.0W Service 60° 60 mph Wind with No Ice	103.75	0.236	0.0002	0.2265	0.2265
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	53.34	0.064	0.0016	0.1265	0.1265
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	65.00	0.096	0.0023	0.1662	0.1662
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	74.83	0.128	0.0039	0.1856	0.1856
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	79.75	0.145	0.0024	0.2669	0.2669
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	80.00	0.146	0.0022	0.2749	0.2749
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	87.88	0.176	0.0009	0.2154	0.2154
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	91.75	0.190	0.0004	0.2709	0.2709
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	96.00	0.208	0.0001	0.2183	0.2183
1.0D + 1.0W Service 90° 60 mph Wind with No Ice	103.75	0.238	0.0002	0.2302	0.2302
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	53.34	0.066	0.0013	0.1264	0.1264
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	65.00	0.099	0.0020	0.1676	0.1676
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	74.83	0.131	0.0034	0.1881	0.1881
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	79.75	0.149	0.0021	0.2822	0.2822
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	80.00	0.150	0.0019	0.2915	0.2915
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	87.88	0.180	0.0007	0.2196	0.2196
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	91.75	0.196	0.0003	0.2838	0.2838
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	96.00	0.213	0.0001	0.2214	0.2214
1.0D + 1.0W Service 120° 60 mph Wind with No Ice	103.75	0.244	0.0003	0.2349	0.2349
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	53.34	0.063	0.0014	0.1213	0.1213
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	65.00	0.095	0.0021	0.1592	0.1592
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	74.83	0.126	0.0035	0.1802	0.1802
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	79.75	0.143	0.0021	0.2642	0.2642
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	80.00	0.144	0.0020	0.2715	0.2715
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	87.88	0.174	0.0009	0.2123	0.2123
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	91.75	0.189	0.0004	0.2727	0.2727
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	96.00	0.206	0.0002	0.2143	0.2143
1.0D + 1.0W Service 180° 60 mph Wind with No Ice	103.75	0.236	0.0001	0.2265	0.2265
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	53.34	0.064	0.0016	0.1265	0.1265
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	65.00	0.096	0.0023	0.1662	0.1662
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	74.83	0.128	0.0039	0.1856	0.1856
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	79.75	0.145	0.0024	0.2668	0.2668
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	80.00	0.146	0.0022	0.2748	0.2748
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	87.88	0.176	0.0009	0.2154	0.2154
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	91.75	0.190	0.0004	0.2709	0.2709
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	96.00	0.208	-0.0002	0.2183	0.2183
1.0D + 1.0W Service 210° 60 mph Wind with No Ice	103.75	0.238	-0.0002	0.2302	0.2302
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	53.34	0.066	0.0013	0.1264	0.1264
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	65.00	0.099	-0.0020	0.1676	0.1676
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	74.83	0.131	-0.0034	0.1881	0.1881
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	79.75	0.149	-0.0021	0.2822	0.2822
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	80.00	0.150	0.0019	0.2915	0.2915
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	87.88	0.180	-0.0007	0.2196	0.2196
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	91.75	0.196	0.0003	0.2838	0.2838
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	96.00	0.213	-0.0001	0.2214	0.2214
1.0D + 1.0W Service 240° 60 mph Wind with No Ice	103.75	0.244	0.0003	0.2349	0.2349
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	53.34	0.063	0.0015	0.1213	0.1213
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	65.00	0.095	0.0021	0.1592	0.1592
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	74.83	0.126	-0.0035	0.1802	0.1802
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	79.75	0.143	-0.0021	0.2642	0.2642

DEFLECTIONS AND ROTATIONS

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	80.00	0.144	-0.0019	0.2715	0.2715
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	87.88	0.174	0.0008	0.2123	0.2123
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	91.75	0.189	0.0003	0.2727	0.2727
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	96.00	0.206	0.0001	0.2143	0.2143
1.0D + 1.0W Service 300° 60 mph Wind with No Ice	103.75	0.236	-0.0002	0.2265	0.2265
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	53.34	0.064	0.0016	0.1265	0.1265
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	65.00	0.096	0.0023	0.1662	0.1662
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	74.83	0.128	0.0039	0.1856	0.1856
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	79.75	0.145	0.0024	0.2669	0.2669
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	80.00	0.146	0.0022	0.2749	0.2749
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	87.88	0.176	0.0009	0.2154	0.2154
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	91.75	0.190	0.0004	0.2709	0.2709
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	96.00	0.208	0.0001	0.2183	0.2183
1.0D + 1.0W Service 330° 60 mph Wind with No Ice	103.75	0.238	-0.0002	0.2302	0.2302

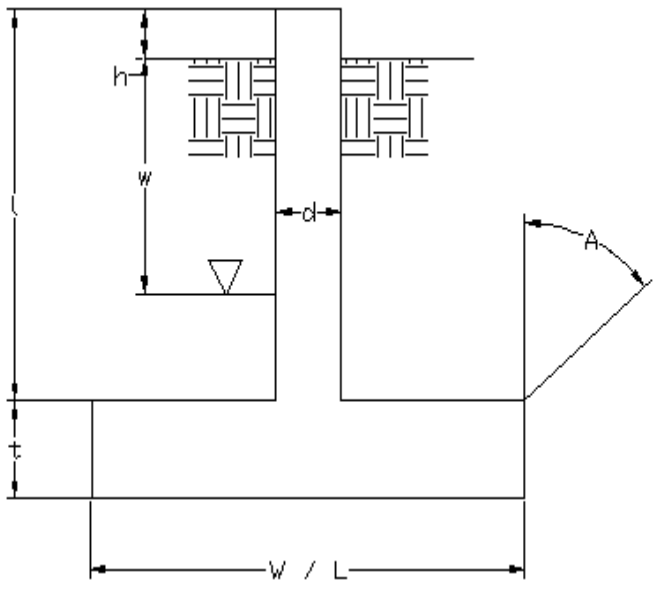
Site Name: Glastonbury, CT
Site Number: 207747
Design Base Loads (Factored) per TIA-222-H

Individual Pad & Pier Foundation Analysis

Foundation Analysis Parameters		
Foundation Mapped:	Y	-
Moment (M_u):	0.0	k-ft
Shear/Leg (V_u):	14.1	k
Compression/Leg (P_u):	122.6	k
Uplift/Leg (T_u):	102.9	k
Tower Type:	SST	-
Pier Shape		-
Diameter/Width of Prismatic Portion of Pier (d):	2.5	ft
Depth to Base of Foundation:	6.3	ft
Pier Height Above Ground (h):	0.7	ft
Length / Width of Pad (w):	6.0	ft
Thickness of Pad (t):	2.0	ft
Depth Below Ground Surface to Water Table (w):	99	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Above Water Table:	130	pcf
Unit Weight of Soil Below Water Table:	67.6	pcf
Friction Angle of Uplift from Top of Pad:	40	°
Friction Angle of Uplift from Base of Pad:	40	°
Uplift Angle Started at Top or Base of Pad (T/B):	T	-
Ultimate Skin Friction:		psf
Ultimate Compressive Bearing Pressure:	30,000	psf
Capacity Increase (Due to Transient Loads):	1	-
Bearing Strength Reduction Factor (f_s):	0.75	-
Uplift Strength Reduction Factor (f_s):	0.75	-

Depth (ft)		Ultimate Lateral	Increment	γ_{Soil}	Cu	ϕ
Top	Bottom	Bearing Pressure (psf)	(psf/ft)	(pcf)	(psf)	(°)
0	4.3	0	100	100	0	0
4.3	6.3	9,886	598	130	1,844	40

Axial Capacities and Design Moment		
Weight of Concrete (Bouyancy Considered):	95.83	k
Weight of Soil (Bouyancy Considered):	51.29	k
Ultimate Skin Friction Resistance:	0.00	k
Controlling Failure Mode (Top / Base):	Top	-
Nominal Uplift Capacity per Leg (f_sT_n):	110.34	k
T_u/f_sT_n:	93%	Pass
P_u:	223.07	k
Nominal Compressive Capacity per Leg (f_sP_n):	810.00	k
P_u/f_sP_n:	28%	Pass
Inflection Point (Below Ground Surface):	4.77	ft
Factored Design Moment At Inflection Point (M_u):	59.17	k-ft



ATC Site #:	207747	TIA Revision	TIA-222-H
Site Name:	Glastonbury		
Eng. File #:	13694576_C3_03		
Date:	8/10/2021		
Engineer:	OTO		

Shear and Moment Interaction of Anchor Rods per TIA-222-H

Uplift:	102.9	kips
Axial:	122.6	kips
Shear:	14.1	kips
Rod Quantity:	4	
Rod Diameter:	7/8	in
Rod Grade:	A354 Gr. BC	
Clear Distance	3.25	in
Grouted?	Yes	
Rod F_y	109	ksi
Rod F_u	125	ksi

[AISC Manual 13th Ed., Page 7-83, Table 7-18]

n^b	9.0	threads per inch	
Net Area (A_n)	0.46	sq. in.	$A_n = \pi/4 * (d_b - 0.9743/n)^2$
Gross Area (A_g)	0.60	sq. in.	$A_g = \pi/4 * d_b^2$

[ANSI/TIA-222-H, 4.9.6.5 - Tension]

Φ_t	0.75		
R_{nt}	57.72	Kips	Nominal Tensile Strength (R_{nt}) = $F_u A_g$

[ANSI/TIA-222-H, 4.9.6.3 - Shear]

Φ_v	0.75		
R_{nv}	37.58	Kips	$R_{nv} = 0.625 * F_u * 0.8 * A_g$
Φ_c	0.90		
R_{nvc}	29.49	Kips	$R_{nv} = 0.6 * F_y * 0.75 * Ag$

[ANSI/TIA-222-H, 4.7.1 - Flexure]

Φ_f	0.90		
Z	0.11	cu. in.	
M_n	12.17	kip-in	$M_n = F_y * Z$

[ANSI/TIA-222-H, 4.5.4.2 - Compression]

r	0.22	ksi	
F_y'	109.00	ksi	
λ_c	0.14	kip-in	
F_{cr}	108.11	kips	
R_{nc}	65.54	kips	$R_{nc} = F_y * A_g$
R_{nb}	65.01	kips	$R_{nb} = F_{cr} * A_g$

[ANSI/TIA-222-H, 4.9.9]

P_u	30.65	kips	Applied Compression Force (P_u) = (Axial/leg) / (Rod quantity/leg)
T_u	25.72	kips	Applied Tension (T_u) = (Uplift/leg) / (Rod quantity/leg)
V_u	3.52	kips	Applied Shear Force (V_u) = (Max Shear/leg) / (Rod quantity/leg)
Interaction 3 Tensile	0.37		
Interaction 3 Compression	0.02		

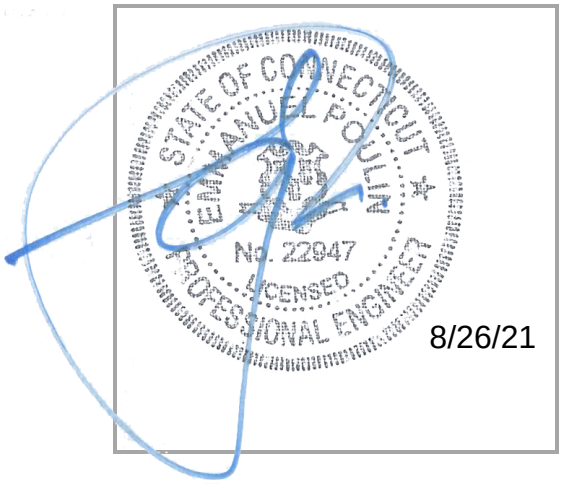
Tensile Interaction	36.9%
Compressive Interaction	1.8%

MOUNT ANALYSIS REPORT

August 26, 2021

Dish Wireless Site Name	BOBDL00149B
Dish Wireless Site Number	BOBDL00149B
ATC Site Name	Glastonbury, CT
ATC Site Number	207747
Infinigy Job Number	1197-F0001-C
Client	ATC
Carrier	Dish Wireless
Site Location	577 Bell Street Glastonbury, CT 06033 Hartford County 41.733622 N NAD83 72.549708 W NAD83
Mount Type	8.0 ft Sector Frames
Mount Elevation	55.0 ft AGL
Structural Usage Ratio	**46.8**
Overall Result	**Pass**

The enclosed mount structural analysis has been performed in accordance with the 2018 Connecticut State Building Code (2015 IBC) based on an ultimate 3-second gust wind speed of 125 mph. The evaluation criteria and applicable codes are presented in the next section of this report.



CONTENTS

1. INTRODUCTION

Infinigy performed a structural analysis on the Dish Wireless proposed telecommunication equipment supporting Sector Frames mounted to the existing structure located at the aforementioned address. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using Risa-3D version 17.0.4 analysis software.

2. DESIGN/ANALYSIS PARAMETERS

Wind Speed	125 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 2.0" ice
Code / Standard	TIA-222-H
Adopted Code	2018 Connecticut State Building Code (2015 IBC)
Risk Category	II
Exposure Category	B
Topographic Category	1
Calculated Crest Height	0 ft.
Seismic Spectral Response	S_s = 0.180 g / S_1 = 0.063 g
Live Load Wind Speed	60 mph
Man Live Load at Mid/End Points	250 lbs
Man Live Load at Mount Pipes	500 lbs

3. PROPOSED LOADING CONFIGURATION - 55.0 ft. AGL Sector Frames

Antenna Centerline (ft)	Qty.	Appurtenance Manufacturers	Appurtenance Models
55.0	3	JMA WIRELESS	MX08FRO665-21
	3	FUJITSU	TA08025-B605
	3	FUJITSU	TA08025-B604
	1	RAYCAP	RDIDC-9181-PF-48

4. SUPPORTING DOCUMENTATION

Proposed Loading	Dish Wireless Asset ID CT-INS-T-CT901 Rev 1, Site #BOBDL00149B, dated July 09, 2021
Mount Manufacturer Drawings	Commscope Document # MTC3975083, dated March 17, 2021
Structural Analysis Report	ATC, Asset #207747, dated August 10, 2021

5. RESULTS

Components	Capacity	Pass/Fail
Mount Pipes	17.9%	Pass
Horizontals	9.6%	Pass
Standoffs	46.8%	Pass
Connections	17.4%	Pass
MOUNT RATING =	**46.8 %**	**Pass**

Notes:
1. See additional documentation in Appendix for calculations supporting the capacity consumed and detailed mount connection calculations.

6. RECOMMENDATIONS

Infinigy recommends installing Dish Wireless's proposed equipment loading configuration on the mount at 55.0 ft. The installation shall be performed in accordance with the construction documents issued for this site.

Pradin Suinyal Magar
Project Engineer II | **INFINIGY**

7. ASSUMPTIONS

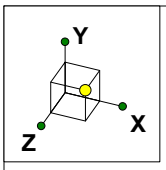
The antenna mounting system was properly fabricated, installed and maintained in accordance with its original design and manufacturer's specifications.
The configuration of antennas, mounts, and other appurtenances are as specified in the proposed loading configuration table.
All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
The analysis will require revisions 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.
Steel grades have been assumed as follows, unless noted otherwise: Channel, Plate, Built-up Angle — ASTM A1011 36 KSI Solid Round — ASTM A529 Gr 50 Structural Angle — ASTM A529 Gr. 50 HSS (Rectangular) — ASTM A500-B GR 46 HSS (Circular) — ASTM A500-B GR 42 Pipe — ASTM A500 Gr 46 Connection Bolts — ASTM A449 U-Bolts — ASTM A307
All bolted connections are pretensioned in accordance with Table 8.2 of the RCSC 2014 Standard

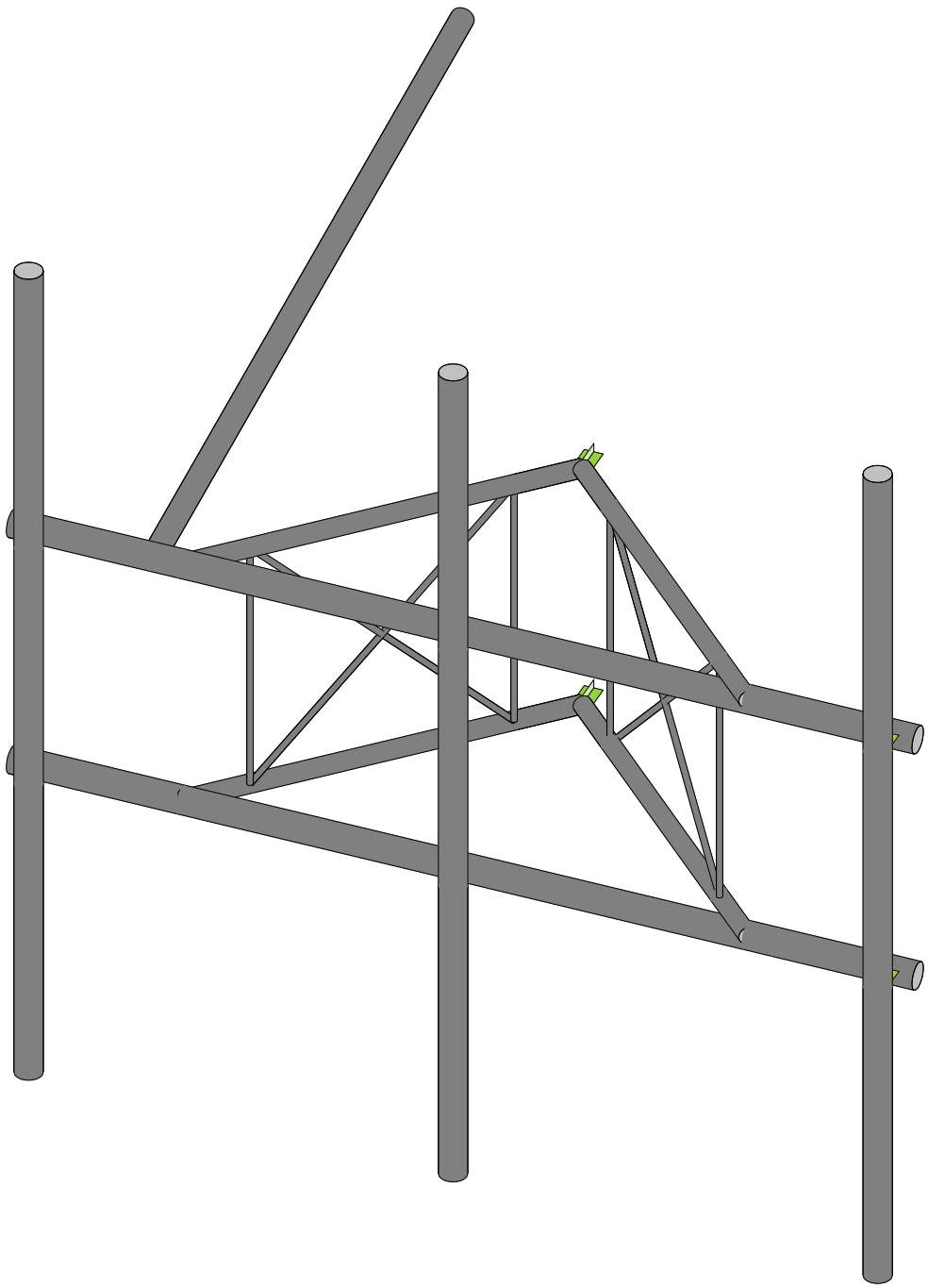
8. LIABILITY WAIVER AND LIMITATIONS

Our structural calculations are completed assuming all information provided to Infinigy is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition as erected and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report, Infinigy should be notified immediately to assess the impact on the results of this report.

Our evaluation is completed using industry standard methods and procedures. The structural results, conclusions and recommendations contained in this report are proprietary and should not be used by others as their own. Infinigy is not responsible for decisions made by others that are or are not based on the stated assumptions and conclusions in this report.

This report is an evaluation of the mount structure only and does not determine the adequacy of the supporting structure, other carrier mounts or cable mounting attachments. The analysis of these elements is outside the scope of this analysis, are assumed to be adequate for the purpose of this report and to have been installed per their manufacturer requirements. This document is not for construction purposes.





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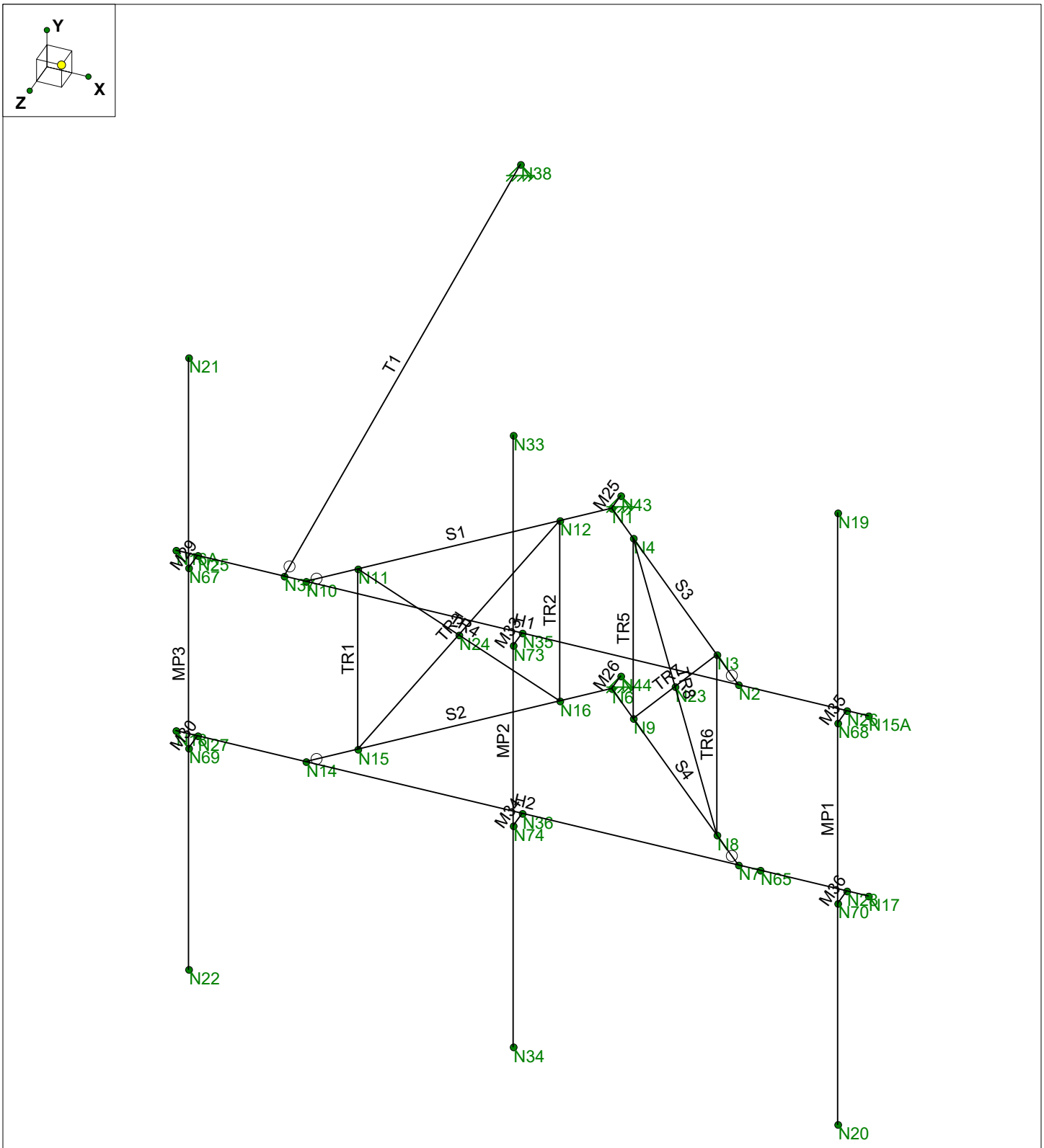

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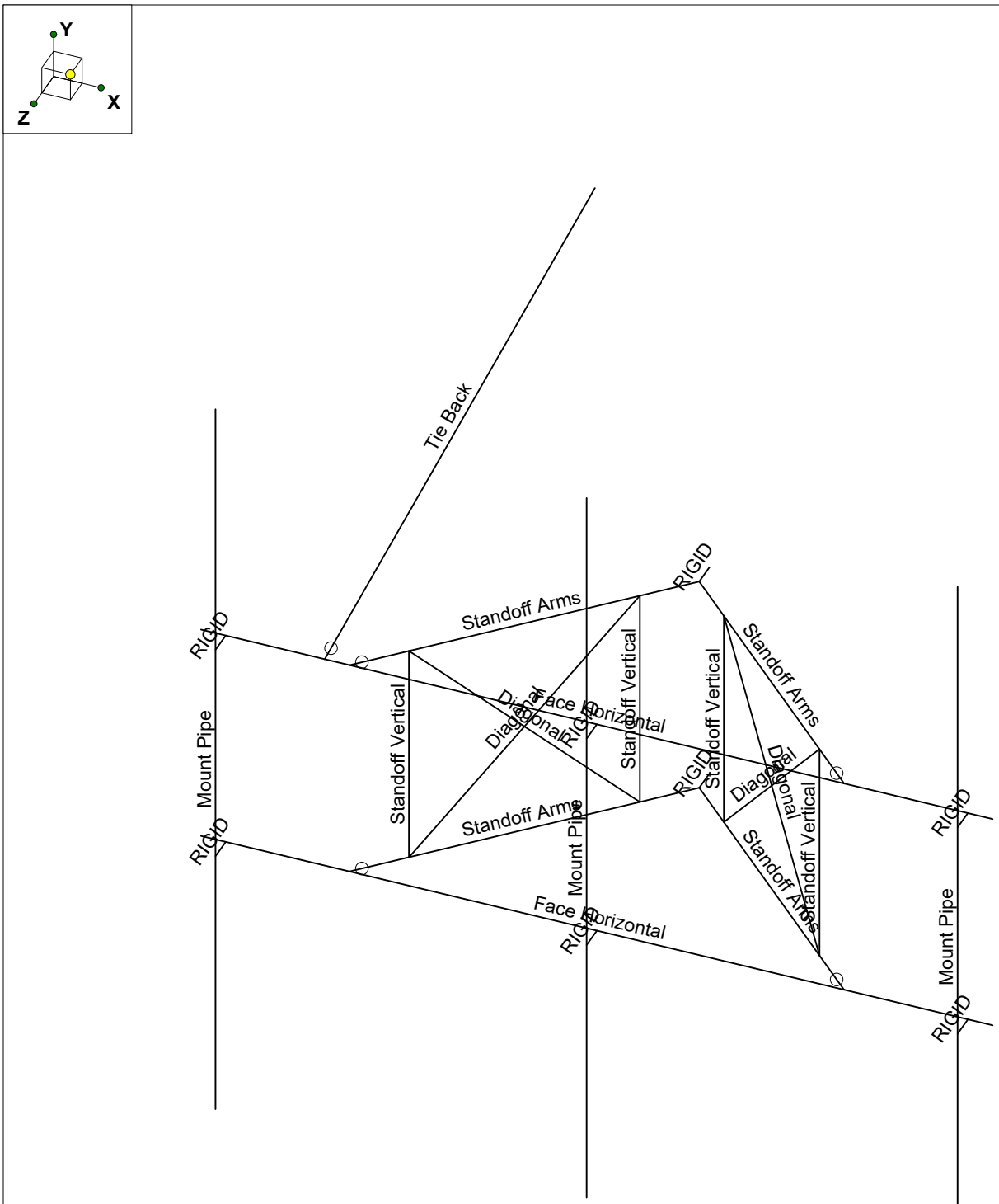

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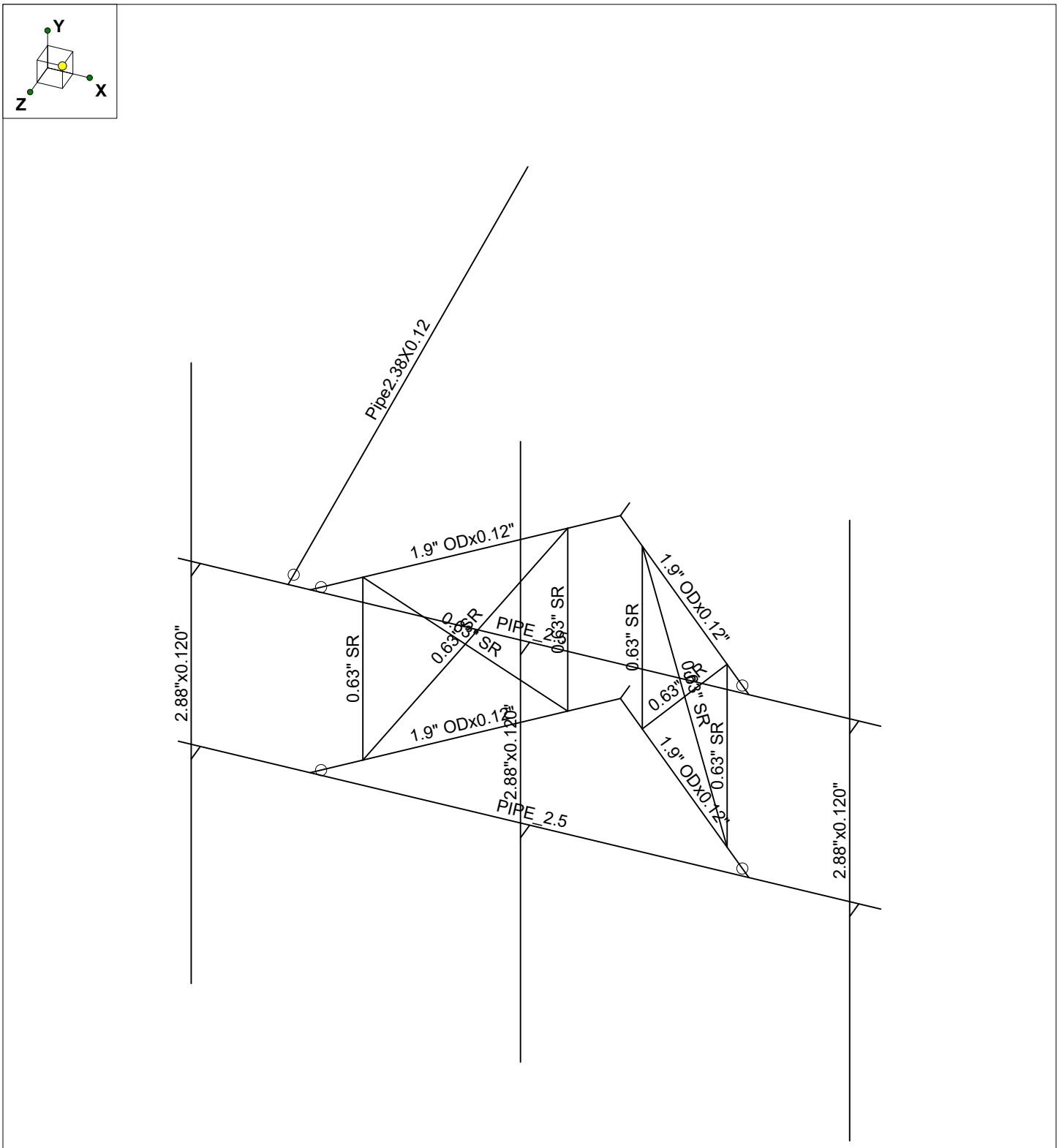

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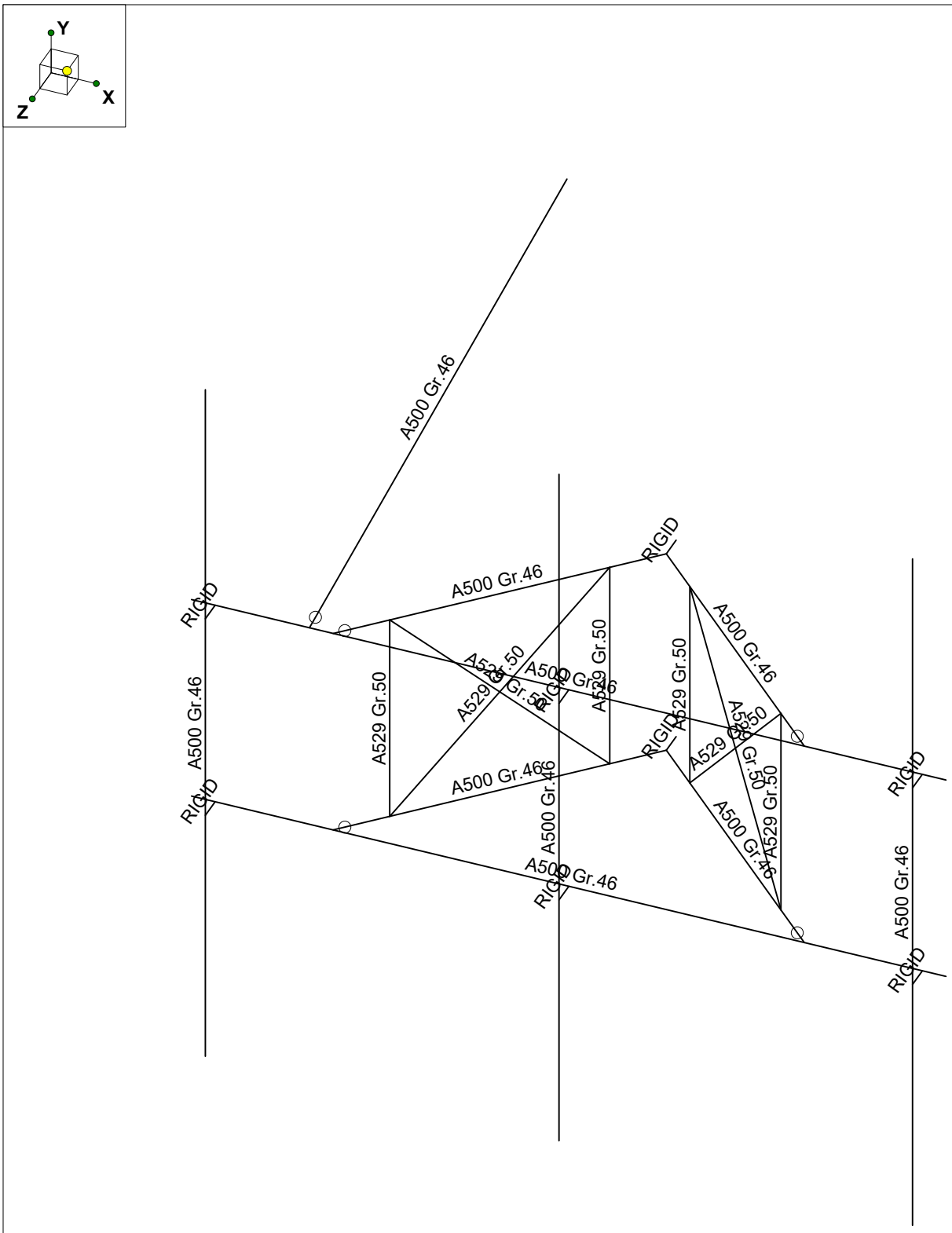

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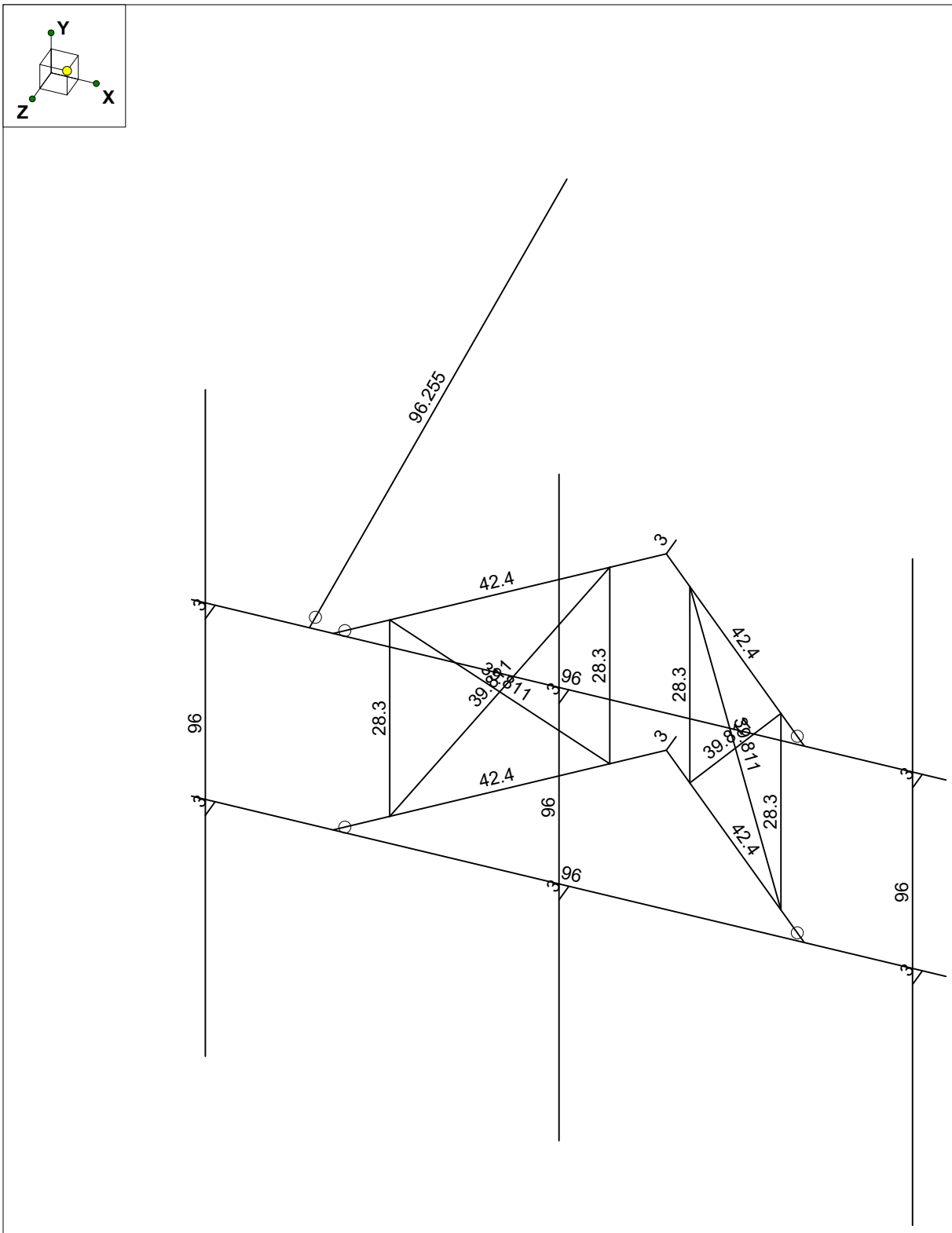

Member Length (in) Displayed
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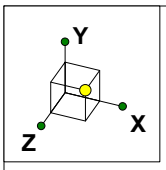

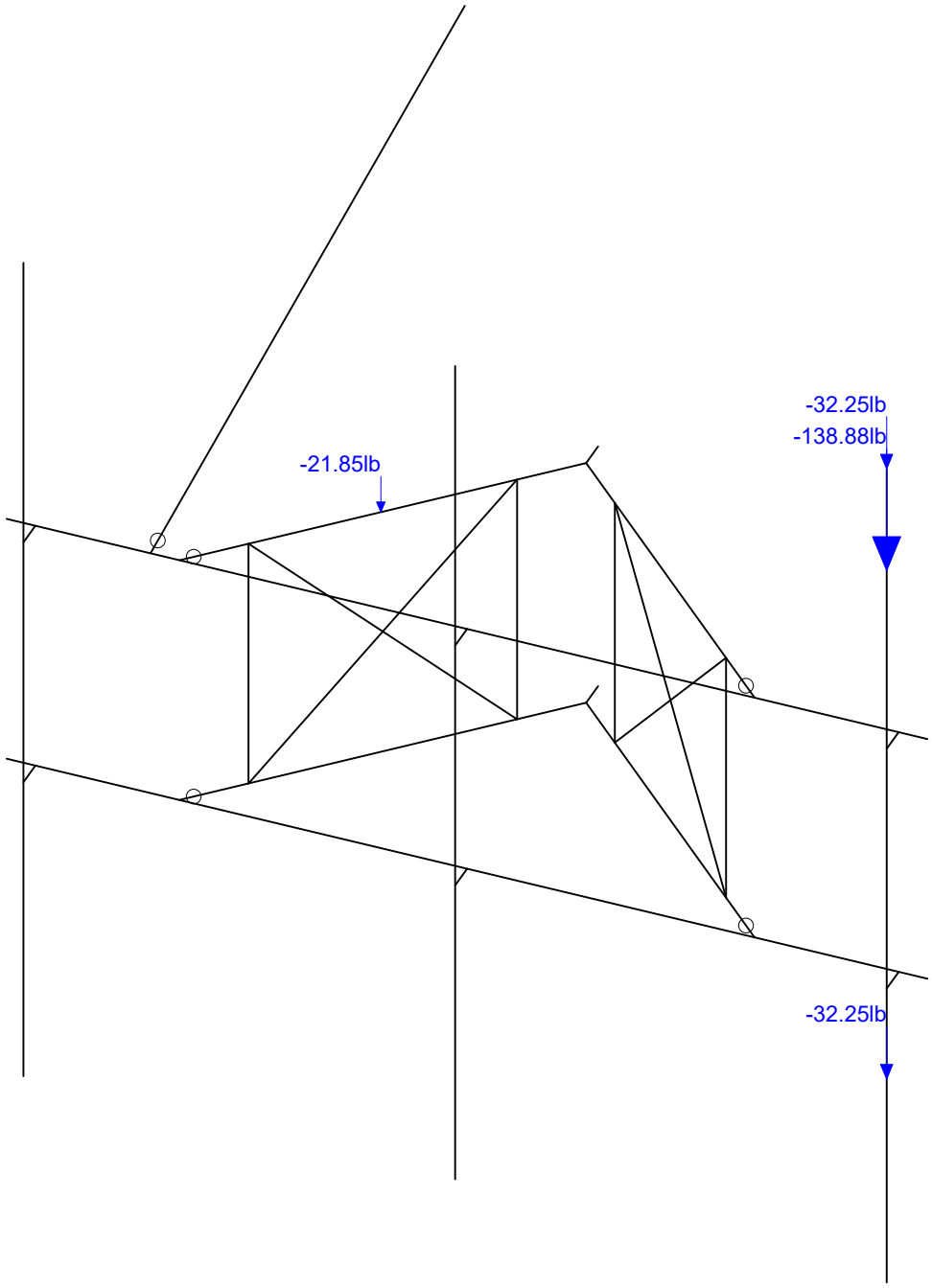

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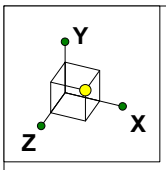

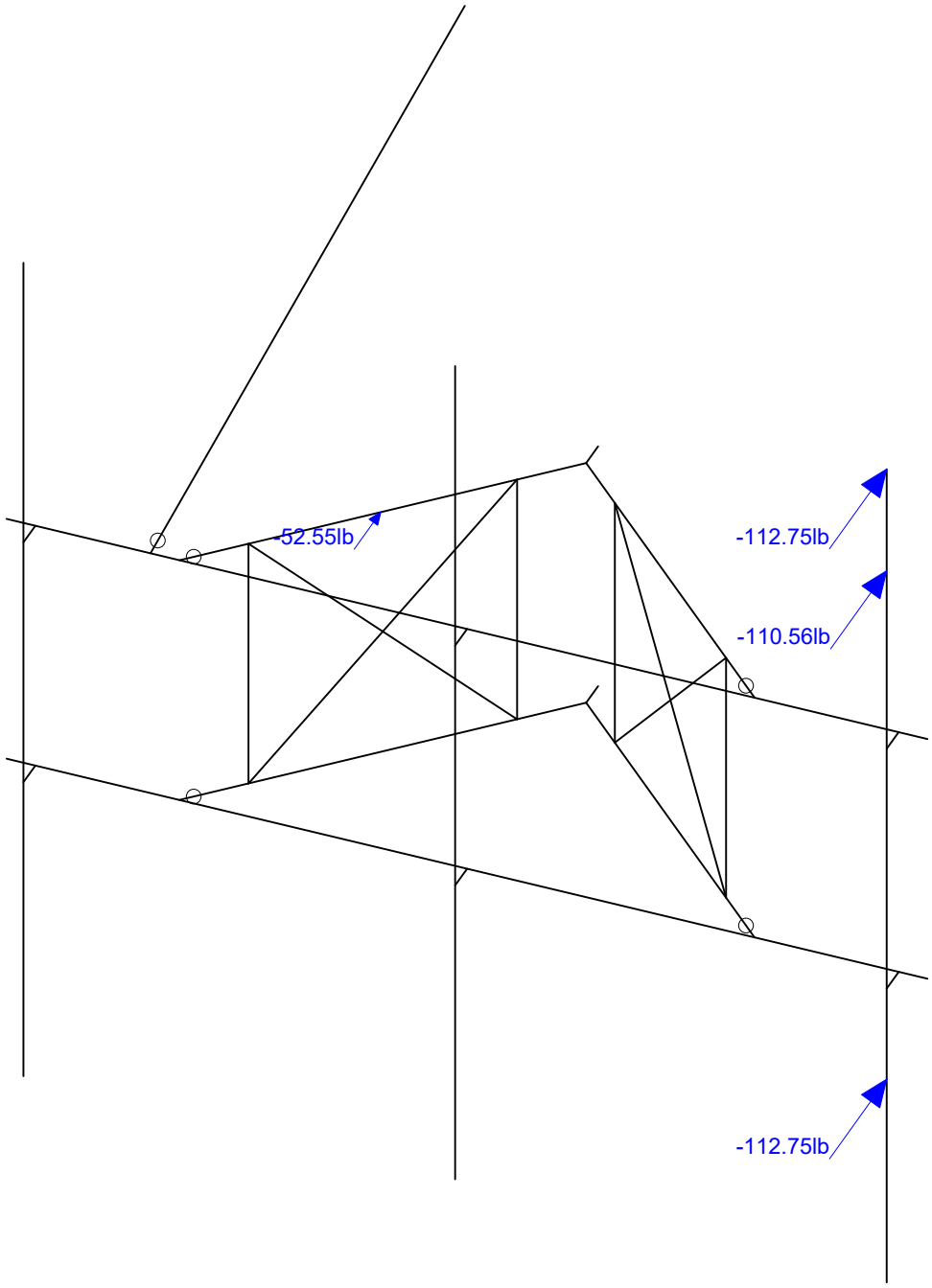

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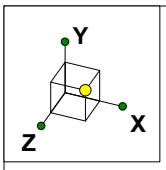

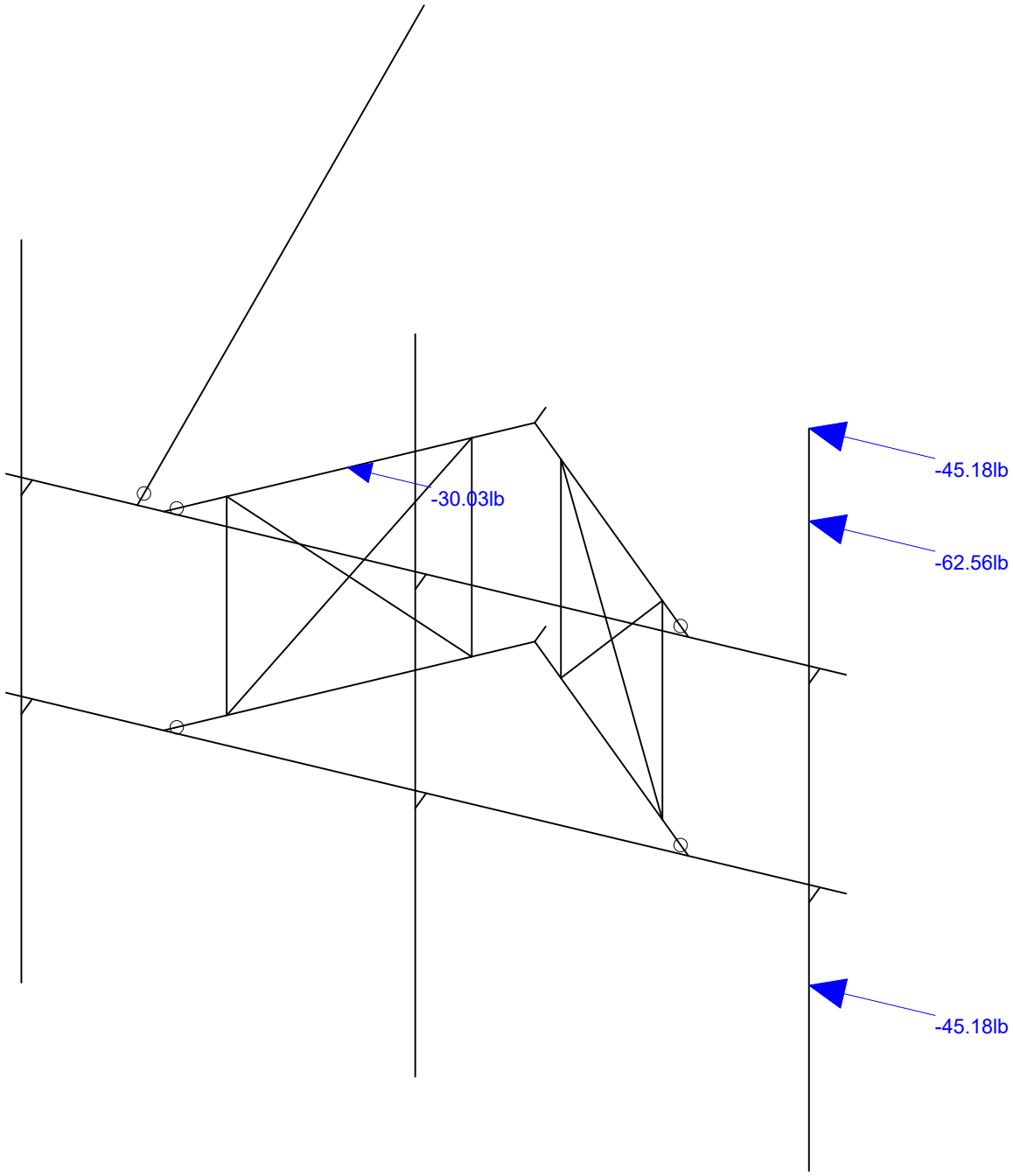

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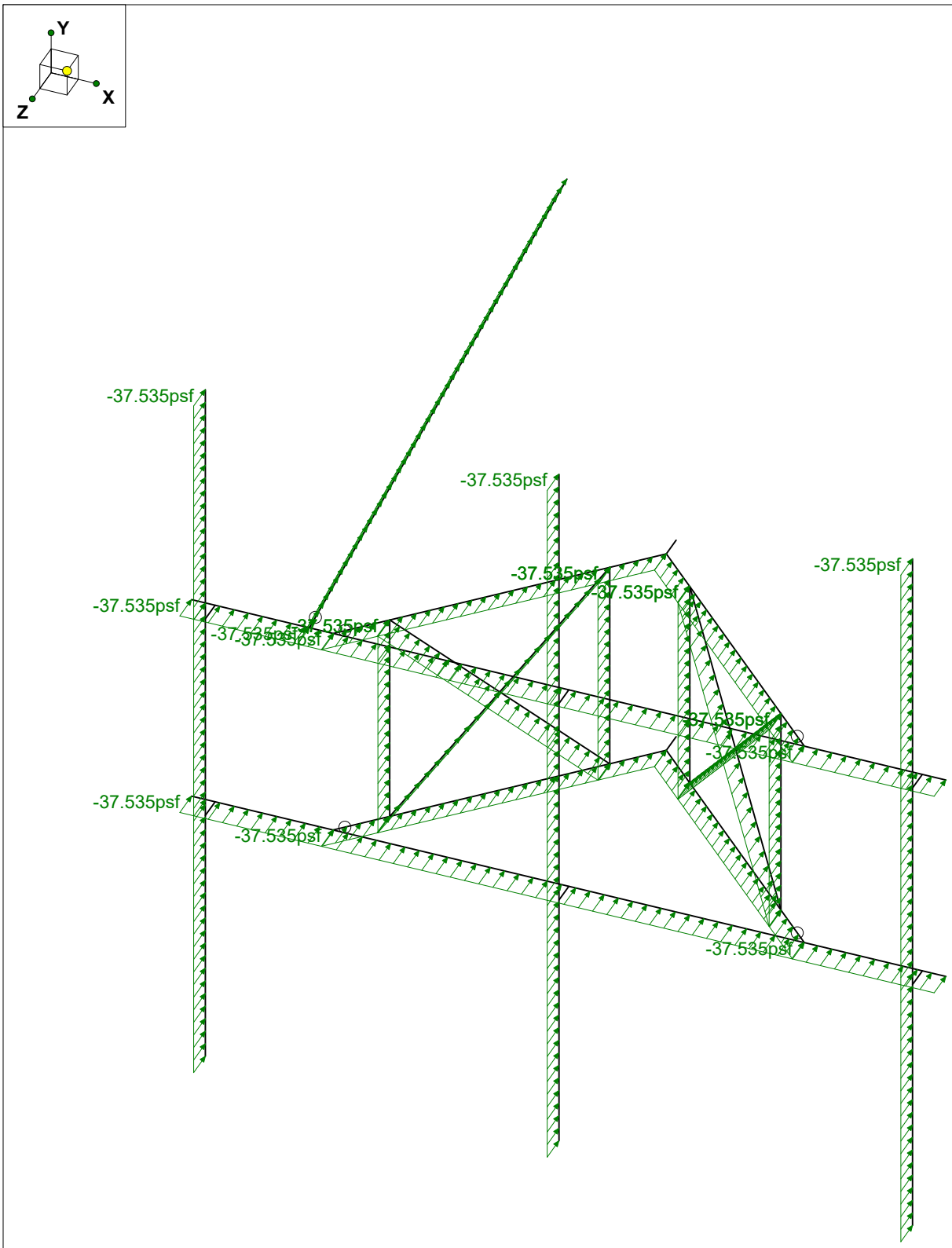

Loads: BLC 14, Distr. Wind Load Z
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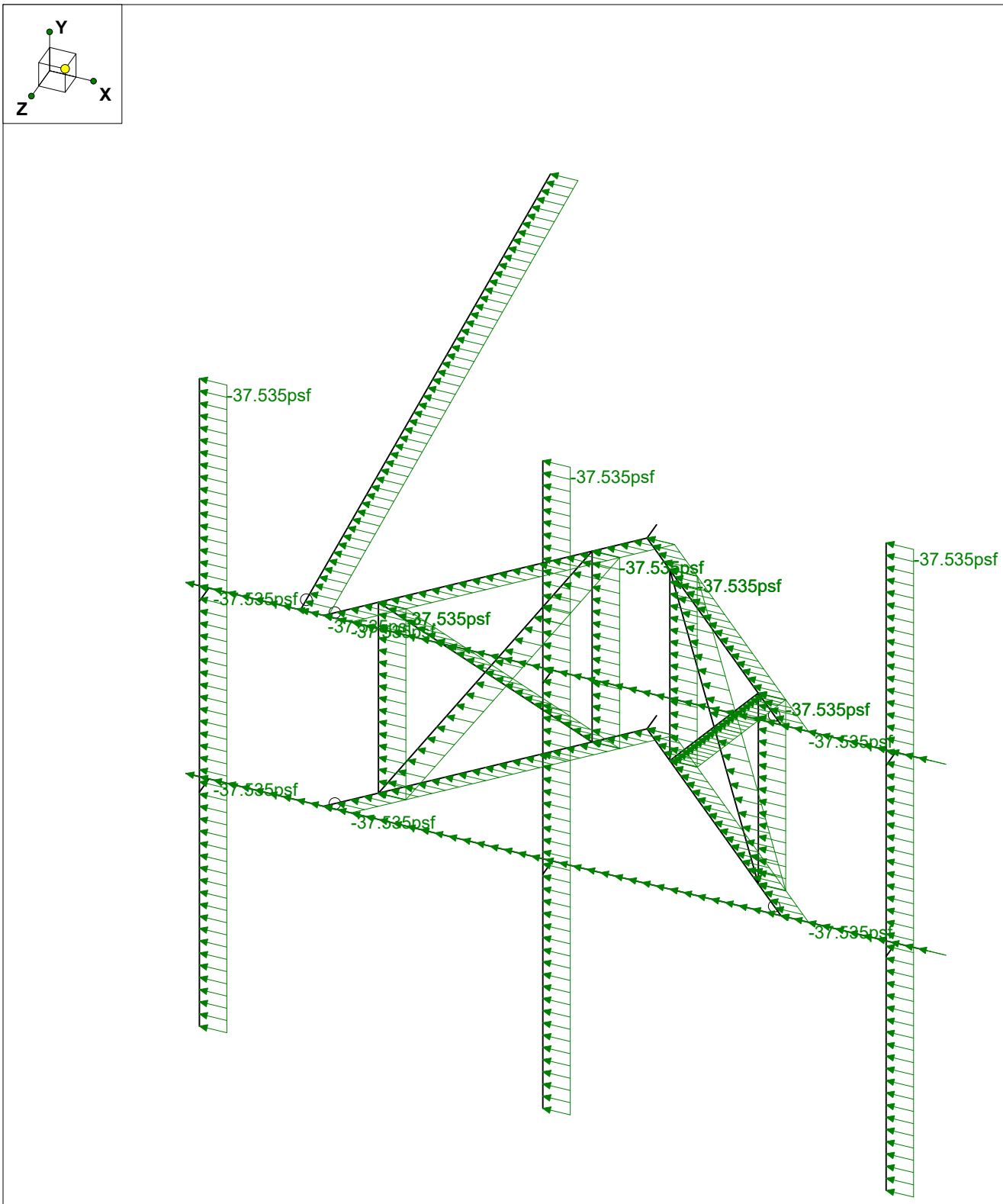

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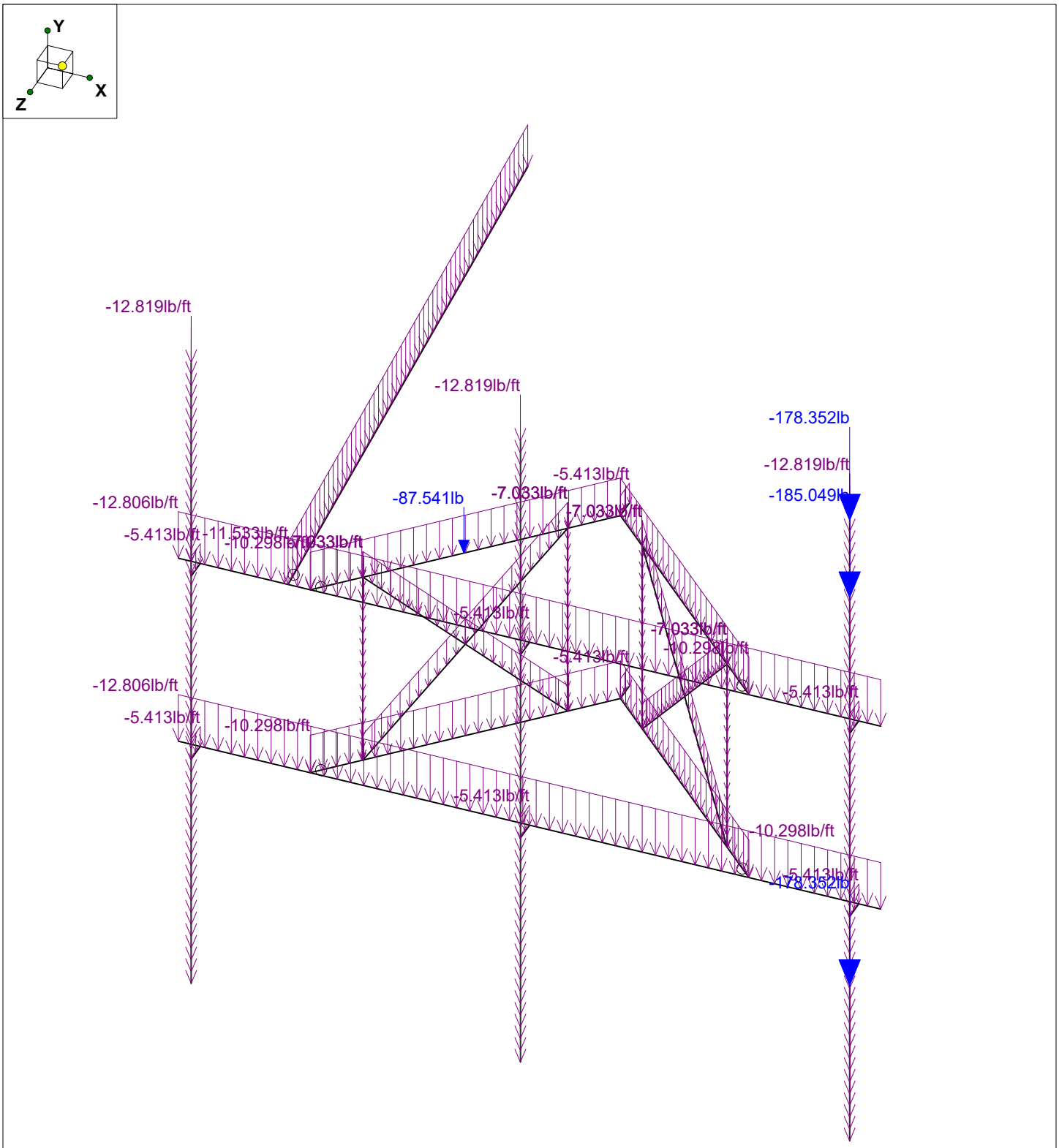

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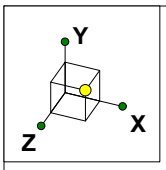

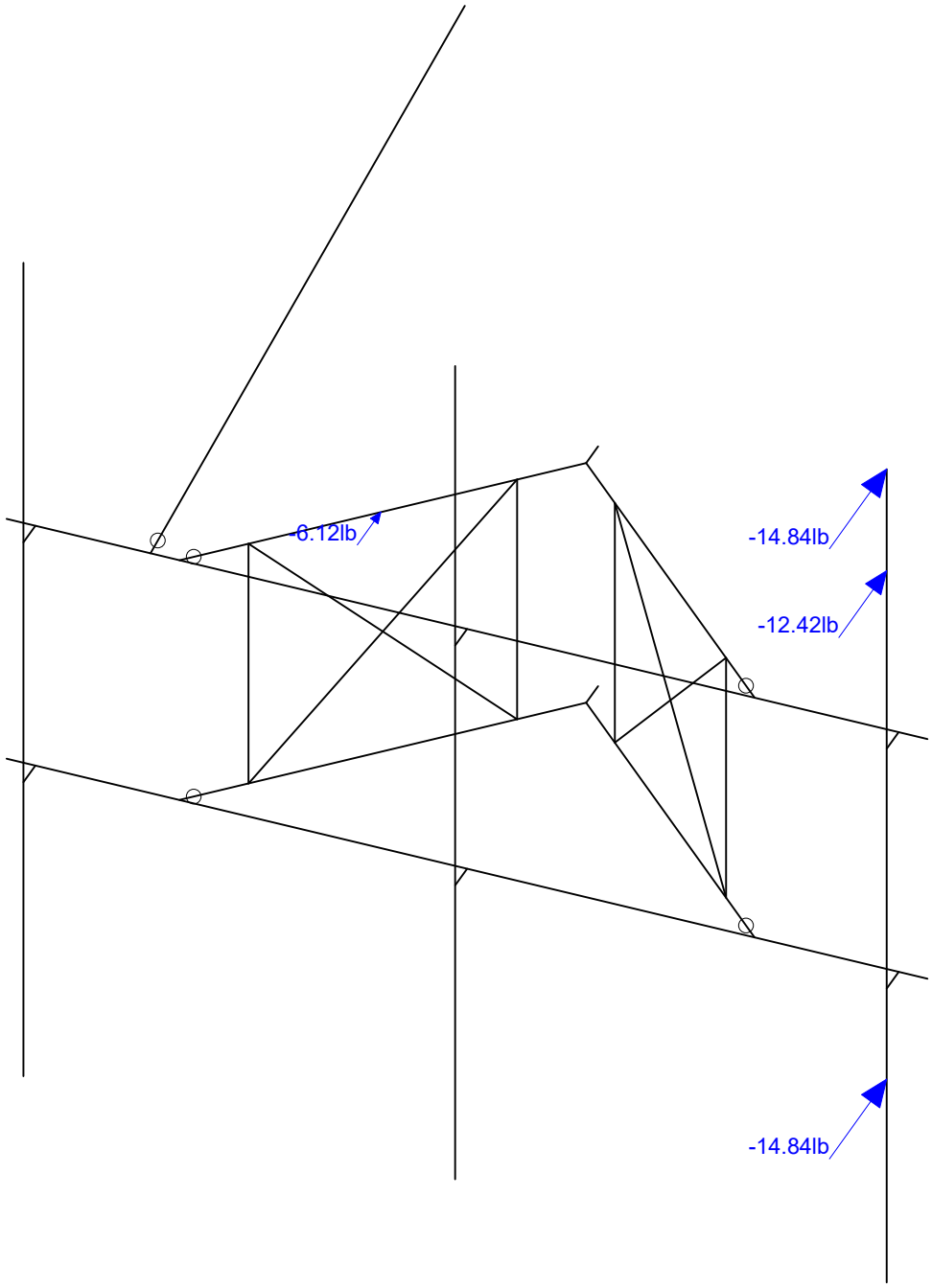

Loads: BLC 17, Ice Wind Load AZI 0
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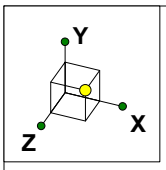

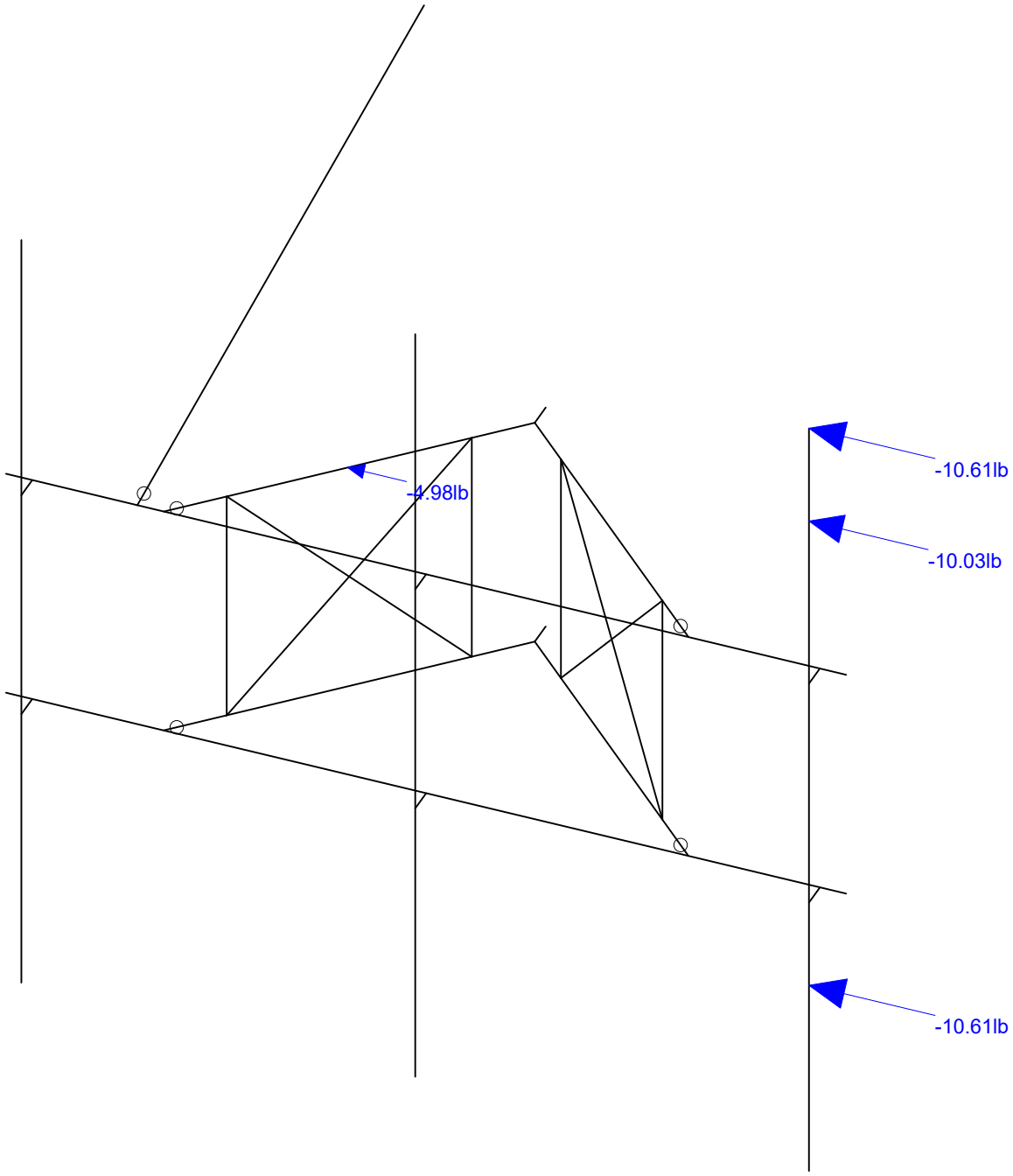

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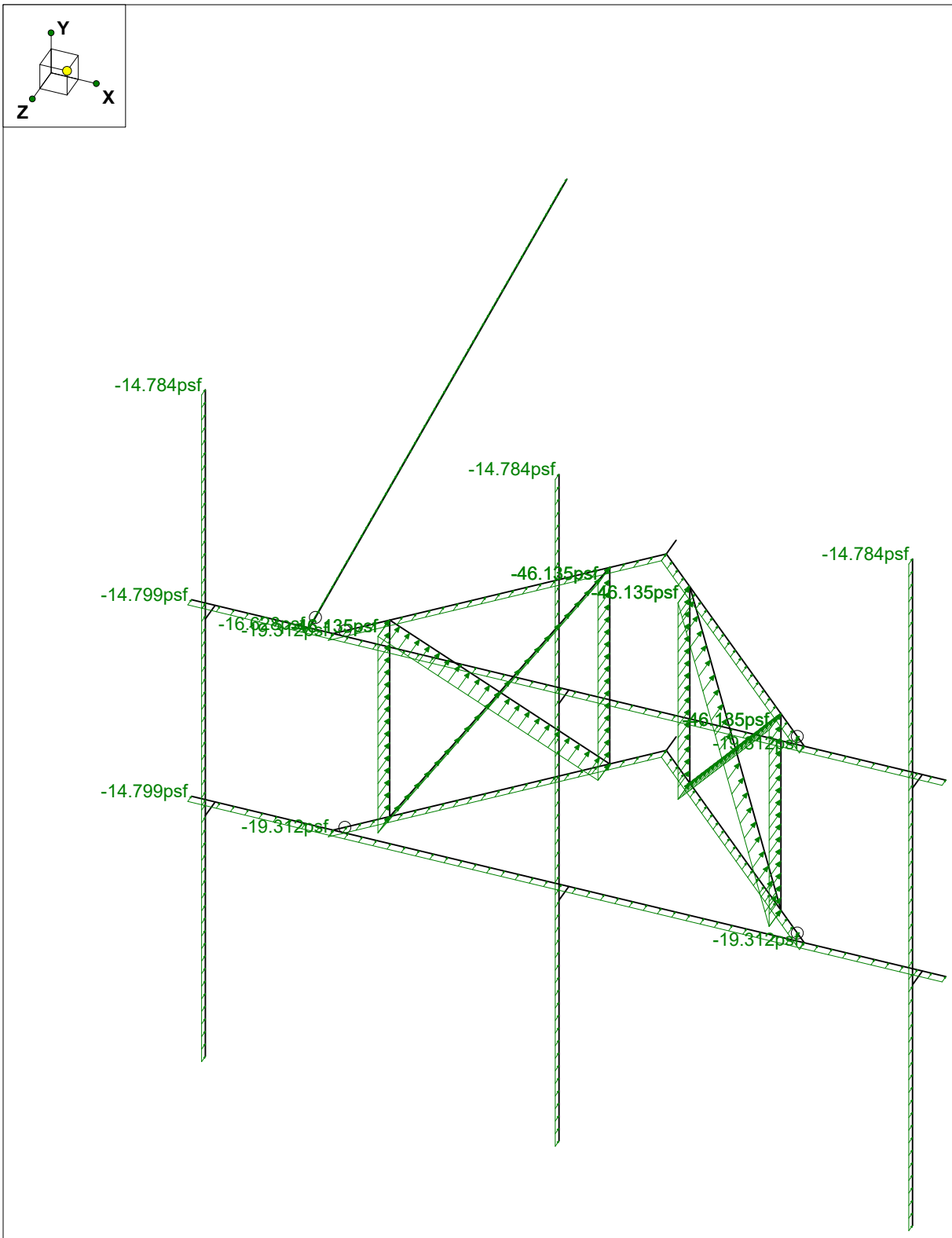

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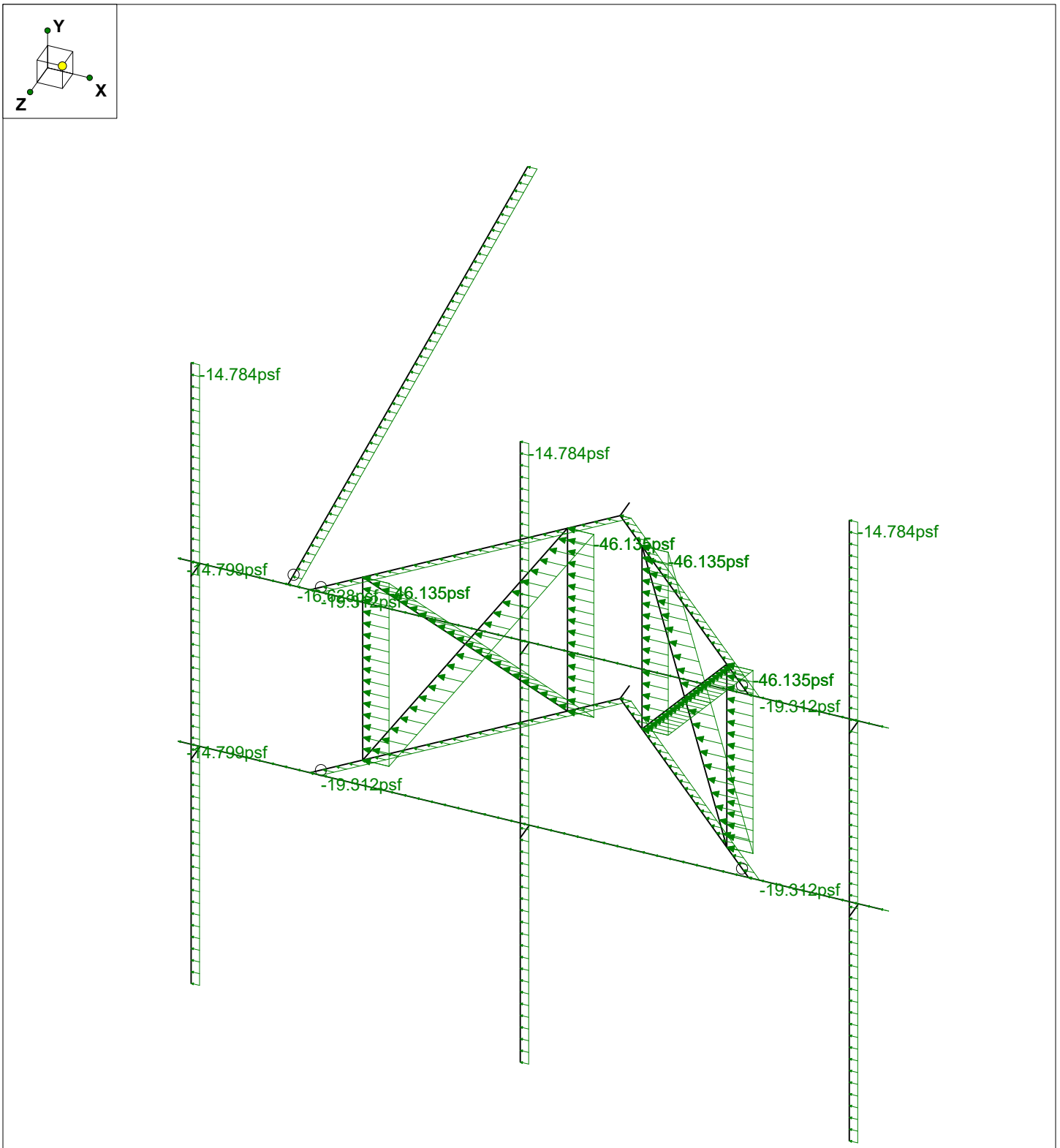
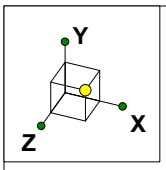
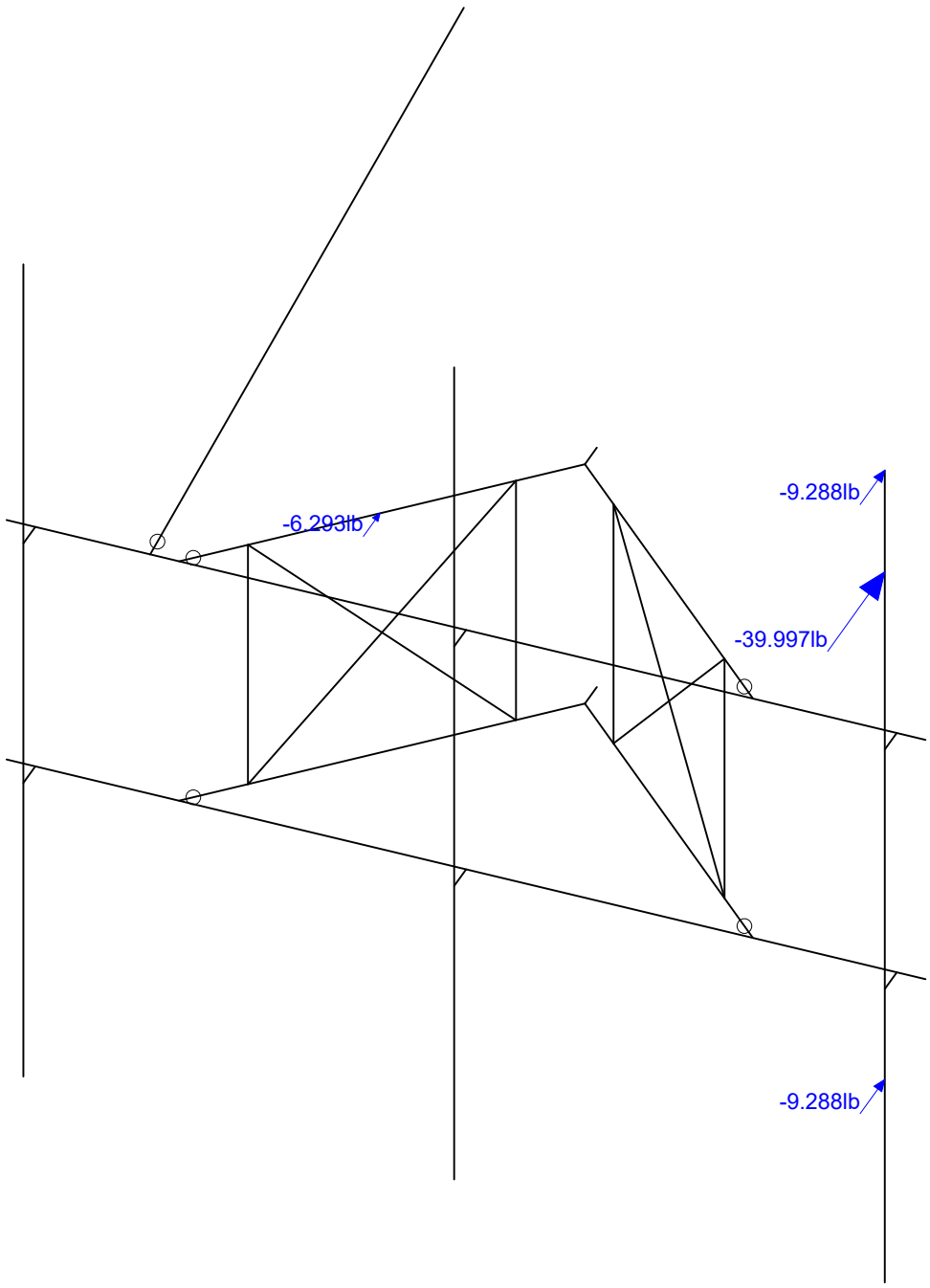


Loads: BLC 30, Distr. Ice Wind Load X
Envelope Only Solution

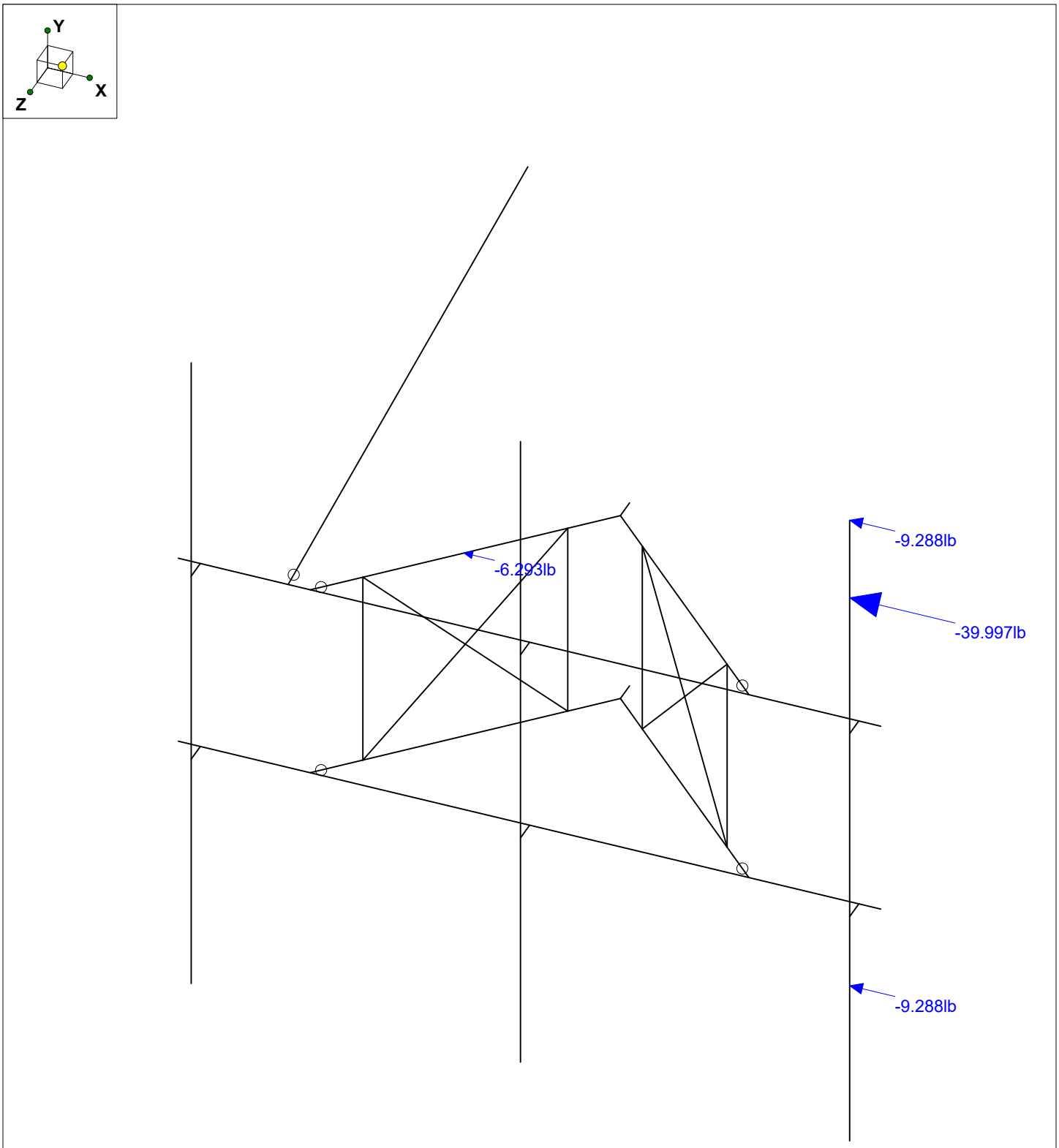
Infinigy Engineering, PLLC	BOBDL00149B	Distr Wind + Ice Load AZI 090
PSM		Aug 26, 2021 at 4:54 PM
1197-F0001-C		BOBDL00149B_loaded.r3d





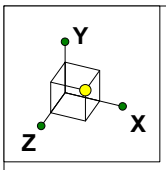
Loads: BLC 31, Seismic Load Z
Envelope Only Solution

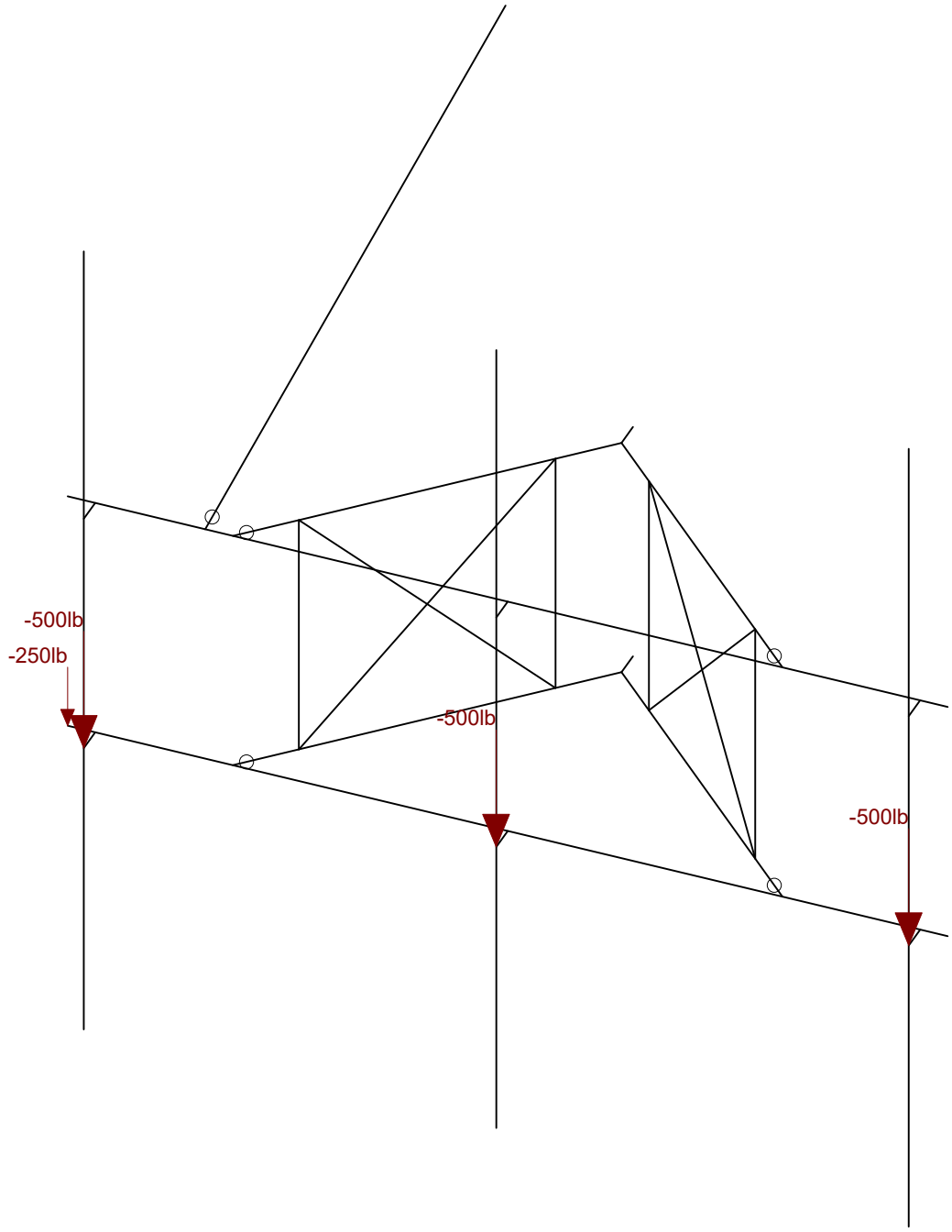
Infinigy Engineering, PLLC	BOBDL00149B	Seismic Load AZI 000
PSM		Aug 26, 2021 at 4:55 PM
1197-F0001-C		BOBDL00149B_loaded.r3d



Loads: BLC 32, Seismic Load X
Envelope Only Solution

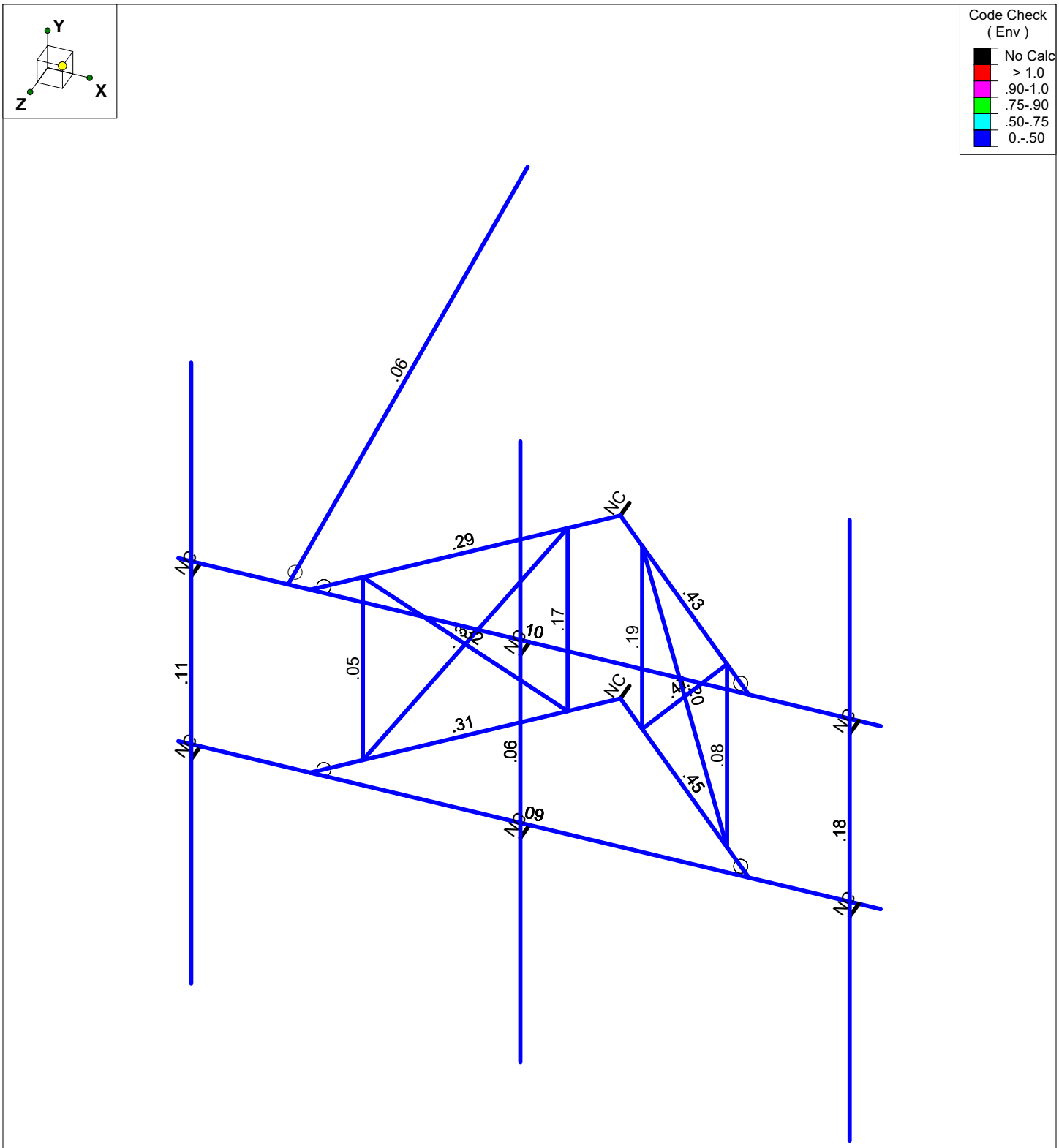
Infinigy Engineering, PLLC	BOBDL00149B	Seismic Load AZI 090
PSM		Aug 26, 2021 at 4:55 PM
1197-F0001-C		BOBDL00149B_loaded.r3d





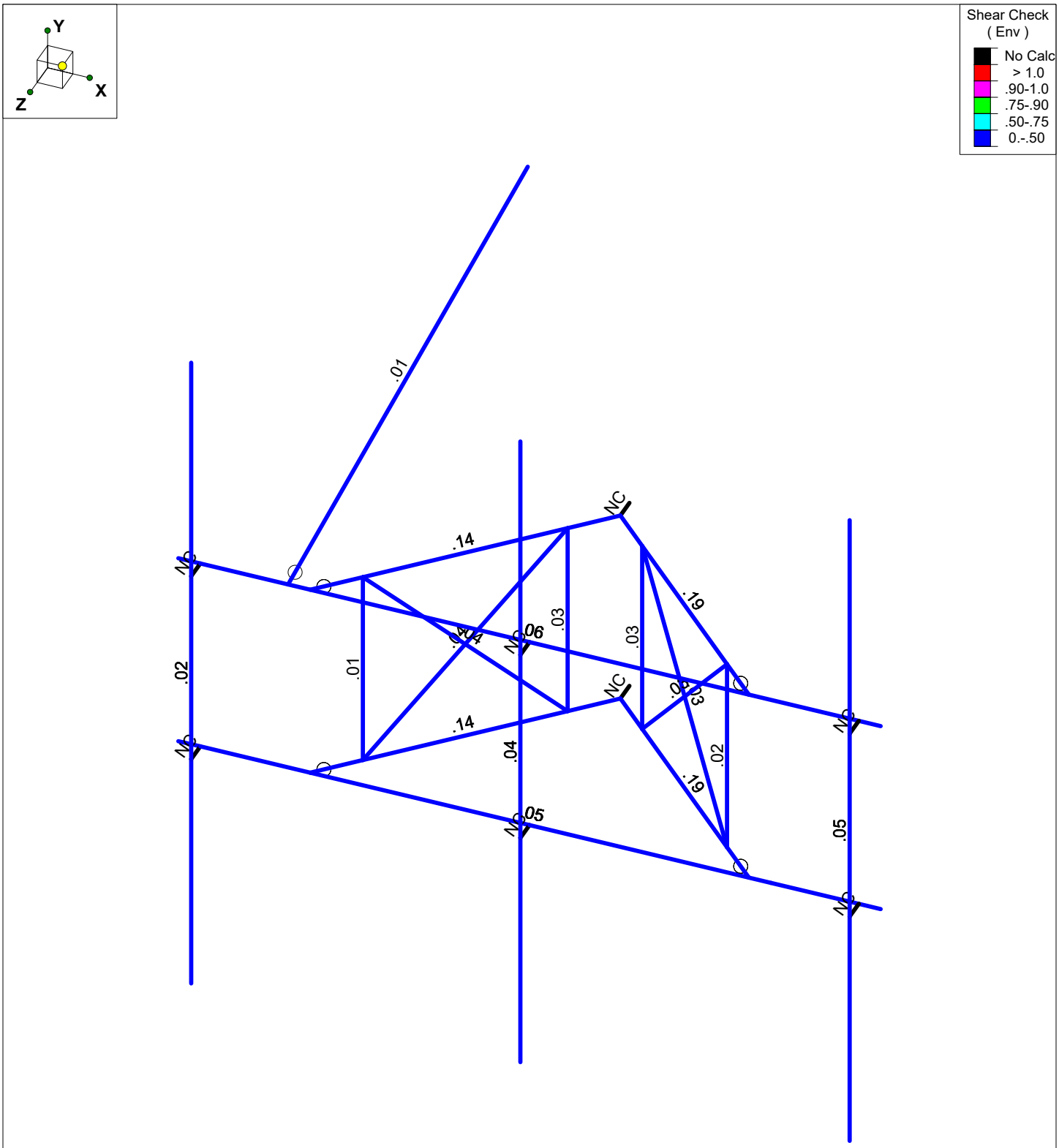
Loads: LL - Live Load
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00149B	Non-concurrent Live Loads
PSM		Aug 26, 2021 at 4:55 PM
1197-F0001-C		BOBDL00149B_loaded.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00149B	Bending Check
PSM		Aug 26, 2021 at 4:55 PM
1197-F0001-C		BOBDL00149B_loaded.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00149B	Shear Check
PSM		Aug 26, 2021 at 4:56 PM
1197-F0001-C		BOBDL00149B_loaded.r3d

Program Inputs

PROJECT INFORMATION	
Client:	ATC
Carrier:	Dish Wireless
Engineer:	Pradin Suinyal Magar, M.S

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	330.86	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Sector Frame	
Num Sectors:	3	
Centerline AGL:	55.00	ft
Tower Height AGL:	104.00	ft

TOPOGRAPHIC DATA		
Topo Feature:	N/A	
Slope Distance:	N/A	ft
Crest Distance:	N/A	ft
Crest Height:	N/A	ft

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	0.988	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_h):	1.000	

CODE STANDARDS		
Building Code:	2015 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-10	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	125	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	2	in
Flat Pressure:	62.559	psf
Round Pressure:	37.535	psf
Ice Wind Pressure:	6.006	psf

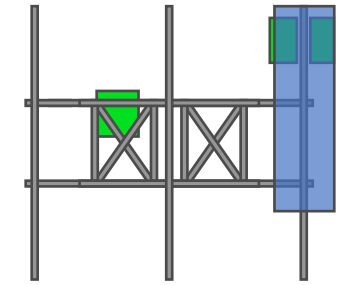
SEISMIC DATA		
Short-Period Accel. (S_s):	0.180	g
1-Second Accel. (S_1):	0.063	g
Short-Period Design (S_{DS}):	0.192	
1-Second Design (S_{D1}):	0.101	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

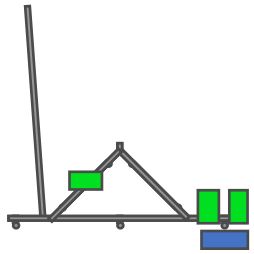
Infinigy Load Calculator V2.1.7

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.7

APPURTENANCE INFORMATION

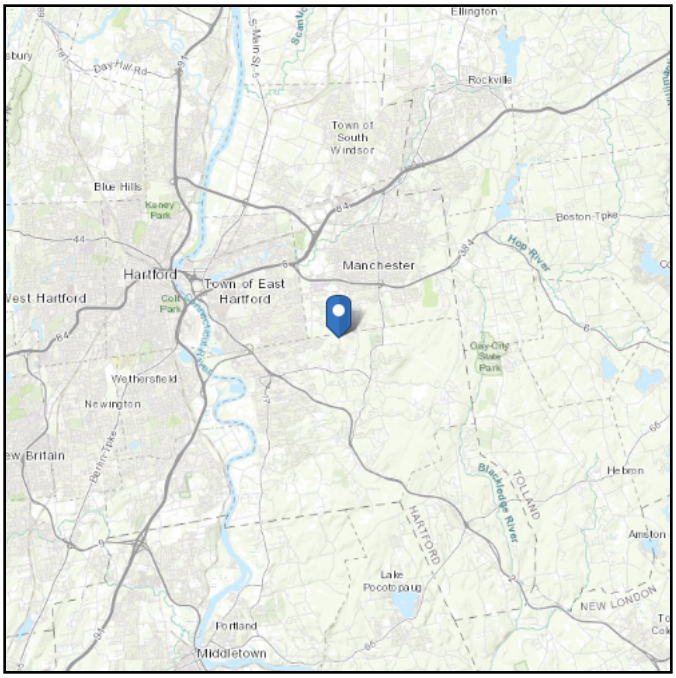
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
JMA WIRELESS MX08FRO665-21	55.0	3	0.90	31.28	8.01	3.21	225.49	90.37	64.50	18.58	MP1
FUJITSU TA08025-B605	55.0	3	0.90	31.28	1.96	1.19	55.28	33.48	74.95	21.59	MP1
FUJITSU TA08025-B604	55.0	3	0.90	31.28	1.96	1.03	55.28	29.08	63.93	18.41	MP1
RAYCAP RDIDC-9181-PF-48	55.0	1	0.90	31.28	1.87	1.07	52.55	30.03	21.85	6.29	S1

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 330.86 ft (NAVD 88)
Latitude: 41.733622
Longitude: -72.549708



Wind

Results:

Wind Speed:	125 mph per Glastonbury City Requirements in WSEL
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	94 Vmph
100-year MRI	101 Vmph

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

Date Accessed: Thu Aug 26 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 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

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

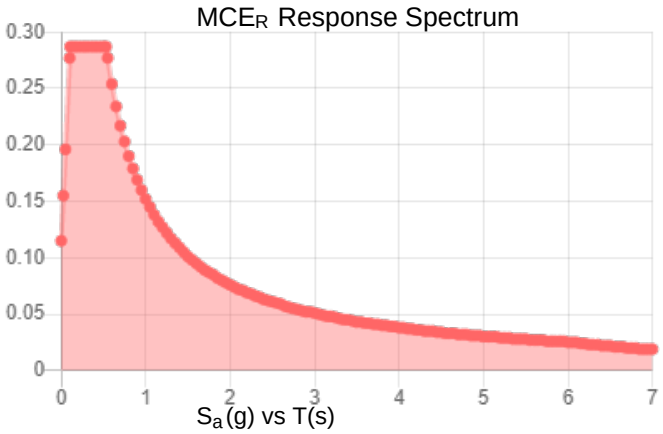
Seismic

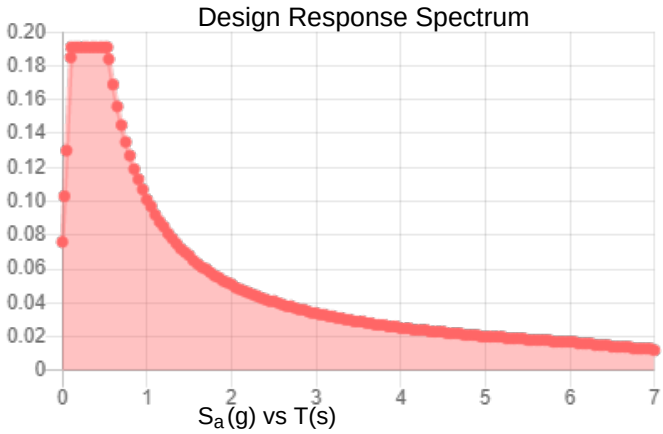
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.180	S_{DS} :	0.191
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.09
S_{MS} :	0.287	PGA_M :	0.144
S_{M1} :	0.152	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Thu Aug 26 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Thu Aug 26 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.

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design Rules
1	S3	N2	N1			Standoff Arms	Beam	Pipe	A500 Gr.46	Typical
2	S4	N7	N6			Standoff Arms	Beam	Pipe	A500 Gr.46	Typical
3	TR6	N3	N8			Standoff Vertical	None	None	A529 Gr.50	Typical
4	TR5	N4	N9			Standoff Vertical	None	None	A529 Gr.50	Typical
5	TR8	N4	N8			Diagonal	None	None	A529 Gr.50	Typical
6	TR7	N3	N9			Diagonal	None	None	A529 Gr.50	Typical
7	S1	N10	N1			Standoff Arms	Beam	Pipe	A500 Gr.46	Typical
8	S2	N14	N6			Standoff Arms	Beam	Pipe	A500 Gr.46	Typical
9	TR1	N11	N15			Standoff Vertical	None	None	A529 Gr.50	Typical
10	TR2	N12	N16			Standoff Vertical	None	None	A529 Gr.50	Typical
11	TR3	N12	N15			Diagonal	None	None	A529 Gr.50	Typical
12	TR4	N11	N16			Diagonal	None	None	A529 Gr.50	Typical
13	H1	N16A	N15A			Face Horizontal	Beam	Pipe	A500 Gr.46	Typical
14	H2	N18	N17			Face Horizontal	Beam	Pipe	A500 Gr.46	Typical
15	MP3	N21	N22			Mount Pipe	Colu...	Pipe	A500 Gr.46	Typical
16	MP1	N19	N20			Mount Pipe	Colu...	Pipe	A500 Gr.46	Typical
17	MP2	N33	N34			Mount Pipe	Colu...	Pipe	A500 Gr.46	Typical
18	T1	N37	N38			Tie Back	None	None	A500 Gr.46	Typical
19	M29	N25	N67			RIGID	None	None	RIGID	Typical
20	M30	N27	N69			RIGID	None	None	RIGID	Typical
21	M33	N35	N73			RIGID	None	None	RIGID	Typical
22	M34	N36	N74			RIGID	None	None	RIGID	Typical
23	M35	N26	N68			RIGID	None	None	RIGID	Typical
24	M36	N28	N70			RIGID	None	None	RIGID	Typical
25	M25	N43	N1			RIGID	None	None	RIGID	Typical
26	M26	N44	N6			RIGID	None	None	RIGID	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Lengt...	Lbyy[in]	Lbzz[in]	Lcomp t...	Lcomp b...	L-tor...	Kyy	Kzz	Cb	Func...
1	S3	Standoff Arms	42.4			Lbyy						Late...
2	S4	Standoff Arms	42.4			Lbyy						Late...
3	TR6	Standoff Vertical	28.3			Lbyy			.65	.65		Late...
4	TR5	Standoff Vertical	28.3			Lbyy			.65	.65		Late...
5	TR8	Diagonal	39.811			Lbyy			.7	.7		Late...
6	TR7	Diagonal	39.811			Lbyy			.5	.5		Late...
7	S1	Standoff Arms	42.4			Lbyy						Late...
8	S2	Standoff Arms	42.4			Lbyy						Late...
9	TR1	Standoff Vertical	28.3			Lbyy			.65	.65		Late...
10	TR2	Standoff Vertical	28.3			Lbyy			.65	.65		Late...
11	TR3	Diagonal	39.811			Lbyy			.7	.7		Late...

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Lengt...	Lbyy[in]	Lbzz[in]	Lcomp t...	Lcomp b...	L-tor...	Kyy	Kzz	Cb	Func...
12	TR4	Diagonal	39.811			Lbyy			.5	.5		Late...
13	H1	Face Horizontal	96			Lbyy						Late...
14	H2	Face Horizontal	96			Lbyy						Late...
15	MP3	Mount Pipe	96			Lbyy						Late...
16	MP1	Mount Pipe	96			Lbyy						Late...
17	MP2	Mount Pipe	96			Lbyy						Late...
18	T1	Tie Back	96.255			Lbyy						Late...

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra...	Analysis ...	Inactive	Seismi...
1	S3	BenPIN					Yes	Default			None
2	S4	BenPIN					Yes	Default			None
3	TR6						Yes	** NA **			None
4	TR5						Yes	** NA **			None
5	TR8						Yes	** NA **			None
6	TR7						Yes	** NA **			None
7	S1	BenPIN					Yes	Default			None
8	S2	BenPIN					Yes	Default			None
9	TR1						Yes	** NA **			None
10	TR2						Yes	** NA **			None
11	TR3						Yes	** NA **			None
12	TR4						Yes	** NA **			None
13	H1						Yes				None
14	H2						Yes				None
15	MP3						Yes	** NA **			None
16	MP1						Yes	** NA **			None
17	MP2						Yes	** NA **			None
18	T1	BenPIN					Yes	** NA **			None
19	M29						Yes	** NA **			None
20	M30						Yes	** NA **			None
21	M33						Yes	** NA **			None
22	M34						Yes	** NA **			None
23	M35						Yes	** NA **			None
24	M36						Yes	** NA **			None
25	M25						Yes	** NA **			None
26	M26						Yes	** NA **			None

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		8	24	0
3	Total General		8	24	0
4					
5	Hot Rolled Steel				
6	A500 Gr.46	1.9" ODx0.12"	4	169.6	32.27
7	A500 Gr.46	PIPE 2.5	2	192	87.656
8	A500 Gr.46	2.88"x0.120"	3	288	84.933
9	A500 Gr.46	Pipe2.38X0.12	1	96.3	23.255
10	A529 Gr.50	0.63" SR	8	272.4	24.082
11	Total HR Steel		18	1018.3	252.196

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in...	Izz [in...	J [in4]
1	Face Horizontal	PIPE 2.5	Beam	Pipe	A500 G...	Typical	1.61	1.45	1.45	2.89
2	Standoff Arms	1.9" ODx0.12"	Beam	Pipe	A500 G...	Typical	.671	.267	.267	.534
3	Diagonal	0.63" SR	None	None	A529 G...	Typical	.312	.008	.008	.015
4	Mount Pipe	2.88"x0.120"	Colu...	Pipe	A500 G...	Typical	1.04	.993	.993	1.985
5	Tie Back	Pipe2.38X0.12	None	None	A500 G...	Typical	.852	.545	.545	1.091
6	End Support Pipe	3.5"x0.120	None	None	A500 G...	Typical	1.274	1.822	1.822	3.644
7	Standoff Vertical	0.63" SR	None	None	A529 G...	Typical	.312	.008	.008	.015

Basic Load Cases

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Memb...	Surface(Plate/Wall)
1	Self Weight	DL		-1			5			
2	Wind Load AZI 0	WLZ					10			
3	Wind Load AZI 30	None					10			
4	Wind Load AZI 60	None					10			
5	Wind Load AZI 90	WLX					10			
6	Wind Load AZI 1...	None					10			
7	Wind Load AZI 1...	None					10			
8	Wind Load AZI 1...	None					10			
9	Wind Load AZI 2...	None					10			
10	Wind Load AZI 2...	None					10			
11	Wind Load AZI 2...	None					10			
12	Wind Load AZI 3...	None					10			
13	Wind Load AZI 3...	None					10			
14	Distr. Wind Load Z	WLZ						26		

Basic Load Cases (Continued)

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Memb...	Surface(Plate/Wall)
15	Distr. Wind Load X	WLX						26		
16	Ice Weight	OL1					5	26		
17	Ice Wind Load A...	OL2					10			
18	Ice Wind Load A...	None					10			
19	Ice Wind Load A...	None					10			
20	Ice Wind Load A...	OL3					10			
21	Ice Wind Load A...	None					10			
22	Ice Wind Load A...	None					10			
23	Ice Wind Load A...	None					10			
24	Ice Wind Load A...	None					10			
25	Ice Wind Load A...	None					10			
26	Ice Wind Load A...	None					10			
27	Ice Wind Load A...	None					10			
28	Ice Wind Load A...	None					10			
29	Distr. Ice Wind L...	OL2						26		
30	Distr. Ice Wind L...	OL3						26		
31	Seismic Load Z	ELZ			-.288		5			
32	Seismic Load X	ELX	-.288				5			
33	Service Live Loa...	LL				1				
34	Maintenance Loa...	LL				1				
35	Maintenance Loa...	LL				1				
36	Maintenance Loa...	LL				1				

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Y...	Y		1	1.4																				
2	1.2DL + 1WL AZI 0	Y...	Y		1	1.2	2	1	14	1	15															
3	1.2DL + 1WL AZI 30	Y...	Y		1	1.2	3	1	14	.866	15	.5														
4	1.2DL + 1WL AZI 60	Y...	Y		1	1.2	4	1	14	.5	15	.866														
5	1.2DL + 1WL AZI 90	Y...	Y		1	1.2	5	1	14		15	1														
6	1.2DL + 1WL AZI 120	Y...	Y		1	1.2	6	1	14	-.5	15	.866														
7	1.2DL + 1WL AZI 150	Y...	Y		1	1.2	7	1	14	-.8...	15	.5														
8	1.2DL + 1WL AZI 180	Y...	Y		1	1.2	8	1	14	-1	15															
9	1.2DL + 1WL AZI 210	Y...	Y		1	1.2	9	1	14	-.8...	15	-.5														
10	1.2DL + 1WL AZI 240	Y...	Y		1	1.2	10	1	14	-.5	15	-.8...														
11	1.2DL + 1WL AZI 270	Y...	Y		1	1.2	11	1	14		15	-1														
12	1.2DL + 1WL AZI 300	Y...	Y		1	1.2	12	1	14	.5	15	-.8...														
13	1.2DL + 1WL AZI 330	Y...	Y		1	1.2	13	1	14	.866	15	-.5														
14	0.9DL + 1WL AZI 0	Y...	Y		1	.9	2	1	14	1	15															
15	0.9DL + 1WL AZI 30	Y...	Y		1	.9	3	1	14	.866	15	.5														
16	0.9DL + 1WL AZI 60	Y...	Y		1	.9	4	1	14	.5	15	.866														

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
17	0.9DL + 1WL AZI 90	Y...	Y		1	.9	5	1	14		15	1														
18	0.9DL + 1WL AZI 120	Y...	Y		1	.9	6	1	14	-.5	15	.866														
19	0.9DL + 1WL AZI 150	Y...	Y		1	.9	7	1	14	-.8...	15	.5														
20	0.9DL + 1WL AZI 180	Y...	Y		1	.9	8	1	14	-1	15															
21	0.9DL + 1WL AZI 210	Y...	Y		1	.9	9	1	14	-.8...	15	-.5														
22	0.9DL + 1WL AZI 240	Y...	Y		1	.9	10	1	14	-.5	15	-.8...														
23	0.9DL + 1WL AZI 270	Y...	Y		1	.9	11	1	14		15	-1														
24	0.9DL + 1WL AZI 300	Y...	Y		1	.9	12	1	14	.5	15	-.8...														
25	0.9DL + 1WL AZI 330	Y...	Y		1	.9	13	1	14	.866	15	-.5														
26	1.2D + 1.0Di	Y...	Y		1	1.2	16	1																		
27	1.2D + 1.0Di +1.0Wi AZI 0	Y...	Y		1	1.2	16	1	17	1	29	1	30													
28	1.2D + 1.0Di +1.0Wi AZI 30	Y...	Y		1	1.2	16	1	18	1	29	.866	30	.5												
29	1.2D + 1.0Di +1.0Wi AZI 60	Y...	Y		1	1.2	16	1	19	1	29	.5	30	.866												
30	1.2D + 1.0Di +1.0Wi AZI 90	Y...	Y		1	1.2	16	1	20	1	29		30	1												
31	1.2D + 1.0Di +1.0Wi AZI 120	Y...	Y		1	1.2	16	1	21	1	29	-.5	30	.866												
32	1.2D + 1.0Di +1.0Wi AZI 150	Y...	Y		1	1.2	16	1	22	1	29	-.8...	30	.5												
33	1.2D + 1.0Di +1.0Wi AZI 180	Y...	Y		1	1.2	16	1	23	1	29	-1	30													
34	1.2D + 1.0Di +1.0Wi AZI 210	Y...	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5												
35	1.2D + 1.0Di +1.0Wi AZI 240	Y...	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...												
36	1.2D + 1.0Di +1.0Wi AZI 270	Y...	Y		1	1.2	16	1	26	1	29		30	-1												
37	1.2D + 1.0Di +1.0Wi AZI 300	Y...	Y		1	1.2	16	1	27	1	29	.5	30	-.8...												
38	1.2D + 1.0Di +1.0Wi AZI 330	Y...	Y		1	1.2	16	1	28	1	29	.866	30	-.5												
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Y...	Y		1	1.2...	31	1	32																	
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Y...	Y		1	1.2...	31	.866	32	.5																
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Y...	Y		1	1.2...	31	.5	32	.866																
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Y...	Y		1	1.2...	31		32	1																
43	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-.5	32	.866																
44	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-.8...	32	.5																
45	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-1	32																	
46	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31	-.8...	32	-.5																
47	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31	-.5	32	-.8...																
48	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31		32	-1																
49	(1.2 + 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	1.2...	31	.5	32	-.8...																
50	(1.2 + 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	1.2...	31	.866	32	-.5																
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Y...	Y		1	.862	31	1	32																	
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Y...	Y		1	.862	31	.866	32	.5																
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Y...	Y		1	.862	31	.5	32	.866																
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Y...	Y		1	.862	31		32	1																
55	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.862	31	-.5	32	.866																
56	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.862	31	-.8...	32	.5																
57	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.862	31	-1	32																	
58	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.862	31	-.8...	32	-.5																

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
59	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.862	31	-.5	32	-.8...															
60	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.862	31		32	-1															
61	(0.9 - 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	.862	31	.5	32	-.8...															
62	(0.9 - 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	.862	31	.866	32	-.5															
63	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	2	.23	14	.23	15		33	1.5											
64	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	3	.23	14	.2	15	.115	33	1.5											
65	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	4	.23	14	.115	15	.2	33	1.5											
66	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	5	.23	14		15	.23	33	1.5											
67	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	6	.23	14	-.1...	15	.2	33	1.5											
68	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	7	.23	14	-.2	15	.115	33	1.5											
69	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	8	.23	14	-.23	15		33	1.5											
70	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	9	.23	14	-.2	15	-.1...	33	1.5											
71	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	10	.23	14	-.1...	15	-.2	33	1.5											
72	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	11	.23	14		15	-.23	33	1.5											
73	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	12	.23	14	.115	15	-.2	33	1.5											
74	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	13	.23	14	.2	15	-.1...	33	1.5											
75	1.2DL + 1.5LL	Y...	Y		1	1.2	33	1.5																	
76	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	2	.058	14	.058	15												
77	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	3	.058	14	.05	15	.029											
78	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	4	.058	14	.029	15	.05											
79	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	5	.058	14		15	.058											
80	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	6	.058	14	-.0...	15	.05											
81	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	7	.058	14	-.05	15	.029											
82	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	8	.058	14	-.0...	15												
83	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	9	.058	14	-.05	15	-.0...											
84	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	10	.058	14	-.0...	15	-.05											
85	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	11	.058	14		15	-.0...											
86	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	12	.058	14	.029	15	-.05											
87	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	13	.058	14	.05	15	-.0...											
88	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	2	.058	14	.058	15												
89	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	3	.058	14	.05	15	.029											
90	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	4	.058	14	.029	15	.05											
91	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	5	.058	14		15	.058											
92	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	6	.058	14	-.0...	15	.05											
93	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	7	.058	14	-.05	15	.029											
94	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	8	.058	14	-.0...	15												
95	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	9	.058	14	-.05	15	-.0...											
96	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	10	.058	14	-.0...	15	-.05											
97	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	11	.058	14		15	-.0...											
98	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	12	.058	14	.029	15	-.05											
99	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	13	.058	14	.05	15	-.0...											
100	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	2	.058	14	.058	15												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
101	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	3	.058	14	.05	15	.029												
102	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	4	.058	14	.029	15	.05												
103	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	5	.058	14		15	.058												
104	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	6	.058	14	-.0...	15	.05												
105	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	7	.058	14	-.05	15	.029												
106	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	8	.058	14	-.0...	15													
107	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	9	.058	14	-.05	15	-.0...												
108	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	10	.058	14	-.0...	15	-.05												
109	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	11	.058	14		15	-.0...												
110	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	12	.058	14	.029	15	-.05												

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N1						
2	N6						
3	N38	Reaction	Reaction	Reaction			
4	N43	Reaction	Reaction	Reaction			
5	N44	Reaction	Reaction	Reaction			

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N38	...	66.347	6	60.282	37	601.396	7	0	110	0	110	0	110
2		...	-66.489	12	10.006	55	-601.692	25	0	1	0	1	0	1
3	N43	...	855.134	78	1046.2...	31	656.324	25	0	110	0	110	0	110
4		...	-1569.947	96	187.539	20	-2534.03	32	0	1	0	1	0	1
5	N44	...	1555.807	91	1021.0...	37	2377.8...	27	0	110	0	110	0	110
6		...	-840.8	85	189.513	14	302.034	20	0	1	0	1	0	1
7	Totals:	...	536.594	17	2123.3	38	849.519	2						
8		...	-536.594	23	411.352	53	-849.517	20						

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-32.25	0
2	MP1	Y	-32.25	72
3	MP1	Y	-74.95	12
4	MP1	Y	-63.93	12
5	S1	Y	-21.85	21

Member Point Loads (BLC 2 : Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	-112.75	0
3	MP1	X	0	72
4	MP1	Z	-112.75	72
5	MP1	X	0	12
6	MP1	Z	-55.28	12
7	MP1	X	0	12
8	MP1	Z	-55.28	12
9	S1	X	0	21
10	S1	Z	-52.55	21

Member Point Loads (BLC 3 : Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-47.93	0
2	MP1	Z	-83.01	0
3	MP1	X	-47.93	72
4	MP1	Z	-83.01	72
5	MP1	X	-24.91	12
6	MP1	Z	-43.15	12
7	MP1	X	-24.36	12
8	MP1	Z	-42.2	12
9	S1	X	-23.46	21
10	S1	Z	-40.63	21

Member Point Loads (BLC 4 : Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-53.76	0
2	MP1	Z	-31.04	0
3	MP1	X	-53.76	72
4	MP1	Z	-31.04	72
5	MP1	X	-33.71	12
6	MP1	Z	-19.46	12
7	MP1	X	-30.85	12
8	MP1	Z	-17.81	12
9	S1	X	-30.88	21
10	S1	Z	-17.83	21

Member Point Loads (BLC 5 : Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-45.18	0
2	MP1	Z	0	0

Member Point Loads (BLC 5 : Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
3	MP1	X	-45.18	72
4	MP1	Z	0	72
5	MP1	X	-33.48	12
6	MP1	Z	0	12
7	MP1	X	-29.08	12
8	MP1	Z	0	12
9	S1	X	-30.03	21
10	S1	Z	0	21

Member Point Loads (BLC 6 : Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-53.76	0
2	MP1	Z	31.04	0
3	MP1	X	-53.76	72
4	MP1	Z	31.04	72
5	MP1	X	-33.71	12
6	MP1	Z	19.46	12
7	MP1	X	-30.85	12
8	MP1	Z	17.81	12
9	S1	X	-30.88	21
10	S1	Z	17.83	21

Member Point Loads (BLC 7 : Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-47.93	0
2	MP1	Z	83.01	0
3	MP1	X	-47.93	72
4	MP1	Z	83.01	72
5	MP1	X	-24.91	12
6	MP1	Z	43.15	12
7	MP1	X	-24.36	12
8	MP1	Z	42.2	12
9	S1	X	-23.46	21
10	S1	Z	40.63	21

Member Point Loads (BLC 8 : Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	112.75	0
3	MP1	X	0	72
4	MP1	Z	112.75	72

Member Point Loads (BLC 8 : Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
5	MP1	X	0	12
6	MP1	Z	55.28	12
7	MP1	X	0	12
8	MP1	Z	55.28	12
9	S1	X	0	21
10	S1	Z	52.55	21

Member Point Loads (BLC 9 : Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	47.93	0
2	MP1	Z	83.01	0
3	MP1	X	47.93	72
4	MP1	Z	83.01	72
5	MP1	X	24.91	12
6	MP1	Z	43.15	12
7	MP1	X	24.36	12
8	MP1	Z	42.2	12
9	S1	X	23.46	21
10	S1	Z	40.63	21

Member Point Loads (BLC 10 : Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	53.76	0
2	MP1	Z	31.04	0
3	MP1	X	53.76	72
4	MP1	Z	31.04	72
5	MP1	X	33.71	12
6	MP1	Z	19.46	12
7	MP1	X	30.85	12
8	MP1	Z	17.81	12
9	S1	X	30.88	21
10	S1	Z	17.83	21

Member Point Loads (BLC 11 : Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	45.18	0
2	MP1	Z	0	0
3	MP1	X	45.18	72
4	MP1	Z	0	72
5	MP1	X	33.48	12
6	MP1	Z	0	12

Member Point Loads (BLC 11 : Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
7	MP1	X	29.08	12
8	MP1	Z	0	12
9	S1	X	30.03	21
10	S1	Z	0	21

Member Point Loads (BLC 12 : Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	53.76	0
2	MP1	Z	-31.04	0
3	MP1	X	53.76	72
4	MP1	Z	-31.04	72
5	MP1	X	33.71	12
6	MP1	Z	-19.46	12
7	MP1	X	30.85	12
8	MP1	Z	-17.81	12
9	S1	X	30.88	21
10	S1	Z	-17.83	21

Member Point Loads (BLC 13 : Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	47.93	0
2	MP1	Z	-83.01	0
3	MP1	X	47.93	72
4	MP1	Z	-83.01	72
5	MP1	X	24.91	12
6	MP1	Z	-43.15	12
7	MP1	X	24.36	12
8	MP1	Z	-42.2	12
9	S1	X	23.46	21
10	S1	Z	-40.63	21

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-178.352	0
2	MP1	Y	-178.352	72
3	MP1	Y	-95.359	12
4	MP1	Y	-89.69	12
5	S1	Y	-87.541	21

Member Point Loads (BLC 17 : Ice Wind Load AZI 0)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]

Member Point Loads (BLC 17 : Ice Wind Load AZI 0) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	-14.84	0
3	MP1	X	0	72
4	MP1	Z	-14.84	72
5	MP1	X	0	12
6	MP1	Z	-6.21	12
7	MP1	X	0	12
8	MP1	Z	-6.21	12
9	S1	X	0	21
10	S1	Z	-6.12	21

Member Point Loads (BLC 18 : Ice Wind Load AZI 30)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-6.89	0
2	MP1	Z	-11.94	0
3	MP1	X	-6.89	72
4	MP1	Z	-11.94	72
5	MP1	X	-2.97	12
6	MP1	Z	-5.14	12
7	MP1	X	-2.94	12
8	MP1	Z	-5.09	12
9	S1	X	-2.92	21
10	S1	Z	-5.05	21

Member Point Loads (BLC 19 : Ice Wind Load AZI 60)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-10.11	0
2	MP1	Z	-5.83	0
3	MP1	X	-10.11	72
4	MP1	Z	-5.83	72
5	MP1	X	-4.68	12
6	MP1	Z	-2.7	12
7	MP1	X	-4.52	12
8	MP1	Z	-2.61	12
9	S1	X	-4.56	21
10	S1	Z	-2.63	21

Member Point Loads (BLC 20 : Ice Wind Load AZI 90)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-10.61	0
2	MP1	Z	0	0

Member Point Loads (BLC 20 : Ice Wind Load AZI 90) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
3	MP1	X	-10.61	72
4	MP1	Z	0	72
5	MP1	X	-5.14	12
6	MP1	Z	0	12
7	MP1	X	-4.89	12
8	MP1	Z	0	12
9	S1	X	-4.98	21
10	S1	Z	0	21

Member Point Loads (BLC 21 : Ice Wind Load AZI 120)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-10.11	0
2	MP1	Z	5.83	0
3	MP1	X	-10.11	72
4	MP1	Z	5.83	72
5	MP1	X	-4.68	12
6	MP1	Z	2.7	12
7	MP1	X	-4.52	12
8	MP1	Z	2.61	12
9	S1	X	-4.56	21
10	S1	Z	2.63	21

Member Point Loads (BLC 22 : Ice Wind Load AZI 150)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-6.89	0
2	MP1	Z	11.94	0
3	MP1	X	-6.89	72
4	MP1	Z	11.94	72
5	MP1	X	-2.97	12
6	MP1	Z	5.14	12
7	MP1	X	-2.94	12
8	MP1	Z	5.09	12
9	S1	X	-2.92	21
10	S1	Z	5.05	21

Member Point Loads (BLC 23 : Ice Wind Load AZI 180)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	14.84	0
3	MP1	X	0	72
4	MP1	Z	14.84	72

Member Point Loads (BLC 23 : Ice Wind Load AZI 180) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
5	MP1	X	0	12
6	MP1	Z	6.21	12
7	MP1	X	0	12
8	MP1	Z	6.21	12
9	S1	X	0	21
10	S1	Z	6.12	21

Member Point Loads (BLC 24 : Ice Wind Load AZI 210)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	6.89	0
2	MP1	Z	11.94	0
3	MP1	X	6.89	72
4	MP1	Z	11.94	72
5	MP1	X	2.97	12
6	MP1	Z	5.14	12
7	MP1	X	2.94	12
8	MP1	Z	5.09	12
9	S1	X	2.92	21
10	S1	Z	5.05	21

Member Point Loads (BLC 25 : Ice Wind Load AZI 240)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	10.11	0
2	MP1	Z	5.83	0
3	MP1	X	10.11	72
4	MP1	Z	5.83	72
5	MP1	X	4.68	12
6	MP1	Z	2.7	12
7	MP1	X	4.52	12
8	MP1	Z	2.61	12
9	S1	X	4.56	21
10	S1	Z	2.63	21

Member Point Loads (BLC 26 : Ice Wind Load AZI 270)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	10.61	0
2	MP1	Z	0	0
3	MP1	X	10.61	72
4	MP1	Z	0	72
5	MP1	X	5.14	12
6	MP1	Z	0	12

Member Point Loads (BLC 26 : Ice Wind Load AZI 270) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
7	MP1	X	4.89	12
8	MP1	Z	0	12
9	S1	X	4.98	21
10	S1	Z	0	21

Member Point Loads (BLC 27 : Ice Wind Load AZI 300)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	10.11	0
2	MP1	Z	-5.83	0
3	MP1	X	10.11	72
4	MP1	Z	-5.83	72
5	MP1	X	4.68	12
6	MP1	Z	-2.7	12
7	MP1	X	4.52	12
8	MP1	Z	-2.61	12
9	S1	X	4.56	21
10	S1	Z	-2.63	21

Member Point Loads (BLC 28 : Ice Wind Load AZI 330)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	6.89	0
2	MP1	Z	-11.94	0
3	MP1	X	6.89	72
4	MP1	Z	-11.94	72
5	MP1	X	2.97	12
6	MP1	Z	-5.14	12
7	MP1	X	2.94	12
8	MP1	Z	-5.09	12
9	S1	X	2.92	21
10	S1	Z	-5.05	21

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-9.288	0
2	MP1	Z	-9.288	72
3	MP1	Z	-21.586	12
4	MP1	Z	-18.412	12
5	S1	Z	-6.293	21

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]

Member Point Loads (BLC 32 : Seismic Load X) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-9.288	0
2	MP1	X	-9.288	72
3	MP1	X	-21.586	12
4	MP1	X	-18.412	12
5	S1	X	-6.293	21

Joint Loads and Enforced Displacements (BLC 33 : Service Live Loads)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N18	L	Y	-250

Joint Loads and Enforced Displacements (BLC 34 : Maintenance Load 1)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N69	L	Y	-500

Joint Loads and Enforced Displacements (BLC 35 : Maintenance Load 2)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N70	L	Y	-500

Joint Loads and Enforced Displacements (BLC 36 : Maintenance Load 3)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N74	L	Y	-500

Member Distributed Loads (BLC 14 : Distr. Wind Load Z)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	SZ	-37.535	-37.535	0	%100
2	S4	SZ	-37.535	-37.535	0	%100
3	TR6	SZ	-37.535	-37.535	0	%100
4	TR5	SZ	-37.535	-37.535	0	%100
5	TR8	SZ	-37.535	-37.535	0	%100
6	TR7	SZ	-37.535	-37.535	0	%100
7	S1	SZ	-37.535	-37.535	0	%100
8	S2	SZ	-37.535	-37.535	0	%100
9	TR1	SZ	-37.535	-37.535	0	%100
10	TR2	SZ	-37.535	-37.535	0	%100
11	TR3	SZ	-37.535	-37.535	0	%100
12	TR4	SZ	-37.535	-37.535	0	%100
13	H1	SZ	-37.535	-37.535	0	%100
14	H2	SZ	-37.535	-37.535	0	%100

Member Distributed Loads (BLC 14 : Distr. Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
15	MP3	SZ	-37.535	-37.535	0	%100
16	MP1	SZ	-37.535	-37.535	0	%100
17	MP2	SZ	-37.535	-37.535	0	%100
18	T1	SZ	-37.535	-37.535	0	%100
19	M29	SZ	0	0	0	%100
20	M30	SZ	0	0	0	%100
21	M33	SZ	0	0	0	%100
22	M34	SZ	0	0	0	%100
23	M35	SZ	0	0	0	%100
24	M36	SZ	0	0	0	%100
25	M25	SZ	0	0	0	%100
26	M26	SZ	0	0	0	%100

Member Distributed Loads (BLC 15 : Distr. Wind Load X)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	SX	-37.535	-37.535	0	%100
2	S4	SX	-37.535	-37.535	0	%100
3	TR6	SX	-37.535	-37.535	0	%100
4	TR5	SX	-37.535	-37.535	0	%100
5	TR8	SX	-37.535	-37.535	0	%100
6	TR7	SX	-37.535	-37.535	0	%100
7	S1	SX	-37.535	-37.535	0	%100
8	S2	SX	-37.535	-37.535	0	%100
9	TR1	SX	-37.535	-37.535	0	%100
10	TR2	SX	-37.535	-37.535	0	%100
11	TR3	SX	-37.535	-37.535	0	%100
12	TR4	SX	-37.535	-37.535	0	%100
13	H1	SX	-37.535	-37.535	0	%100
14	H2	SX	-37.535	-37.535	0	%100
15	MP3	SX	-37.535	-37.535	0	%100
16	MP1	SX	-37.535	-37.535	0	%100
17	MP2	SX	-37.535	-37.535	0	%100
18	T1	SX	-37.535	-37.535	0	%100
19	M29	SX	0	0	0	%100
20	M30	SX	0	0	0	%100
21	M33	SX	0	0	0	%100
22	M34	SX	0	0	0	%100
23	M35	SX	0	0	0	%100
24	M36	SX	0	0	0	%100
25	M25	SX	0	0	0	%100
26	M26	SX	0	0	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	Y	-10.298	-10.298	0	%100
2	S4	Y	-10.298	-10.298	0	%100
3	TR6	Y	-7.033	-7.033	0	%100
4	TR5	Y	-7.033	-7.033	0	%100
5	TR8	Y	-7.033	-7.033	0	%100
6	TR7	Y	-7.033	-7.033	0	%100
7	S1	Y	-10.298	-10.298	0	%100
8	S2	Y	-10.298	-10.298	0	%100
9	TR1	Y	-7.033	-7.033	0	%100
10	TR2	Y	-7.033	-7.033	0	%100
11	TR3	Y	-7.033	-7.033	0	%100
12	TR4	Y	-7.033	-7.033	0	%100
13	H1	Y	-12.806	-12.806	0	%100
14	H2	Y	-12.806	-12.806	0	%100
15	MP3	Y	-12.819	-12.819	0	%100
16	MP1	Y	-12.819	-12.819	0	%100
17	MP2	Y	-12.819	-12.819	0	%100
18	T1	Y	-11.533	-11.533	0	%100
19	M29	Y	-5.413	-5.413	0	%100
20	M30	Y	-5.413	-5.413	0	%100
21	M33	Y	-5.413	-5.413	0	%100
22	M34	Y	-5.413	-5.413	0	%100
23	M35	Y	-5.413	-5.413	0	%100
24	M36	Y	-5.413	-5.413	0	%100
25	M25	Y	-5.413	-5.413	0	%100
26	M26	Y	-5.413	-5.413	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	SZ	-19.312	-19.312	0	%100
2	S4	SZ	-19.312	-19.312	0	%100
3	TR6	SZ	-46.135	-46.135	0	%100
4	TR5	SZ	-46.135	-46.135	0	%100
5	TR8	SZ	-46.135	-46.135	0	%100
6	TR7	SZ	-46.135	-46.135	0	%100
7	S1	SZ	-19.312	-19.312	0	%100
8	S2	SZ	-19.312	-19.312	0	%100
9	TR1	SZ	-46.135	-46.135	0	%100
10	TR2	SZ	-46.135	-46.135	0	%100
11	TR3	SZ	-46.135	-46.135	0	%100
12	TR4	SZ	-46.135	-46.135	0	%100
13	H1	SZ	-14.799	-14.799	0	%100

Member Distributed Loads (BLC 29 : Distr. Ice Wind Load Z) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
14	H2	SZ	-14.799	-14.799	0	%100
15	MP3	SZ	-14.784	-14.784	0	%100
16	MP1	SZ	-14.784	-14.784	0	%100
17	MP2	SZ	-14.784	-14.784	0	%100
18	T1	SZ	-16.628	-16.628	0	%100
19	M29	SZ	0	0	0	%100
20	M30	SZ	0	0	0	%100
21	M33	SZ	0	0	0	%100
22	M34	SZ	0	0	0	%100
23	M35	SZ	0	0	0	%100
24	M36	SZ	0	0	0	%100
25	M25	SZ	0	0	0	%100
26	M26	SZ	0	0	0	%100

Member Distributed Loads (BLC 30 : Distr. Ice Wind Load X)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	SX	-19.312	-19.312	0	%100
2	S4	SX	-19.312	-19.312	0	%100
3	TR6	SX	-46.135	-46.135	0	%100
4	TR5	SX	-46.135	-46.135	0	%100
5	TR8	SX	-46.135	-46.135	0	%100
6	TR7	SX	-46.135	-46.135	0	%100
7	S1	SX	-19.312	-19.312	0	%100
8	S2	SX	-19.312	-19.312	0	%100
9	TR1	SX	-46.135	-46.135	0	%100
10	TR2	SX	-46.135	-46.135	0	%100
11	TR3	SX	-46.135	-46.135	0	%100
12	TR4	SX	-46.135	-46.135	0	%100
13	H1	SX	-14.799	-14.799	0	%100
14	H2	SX	-14.799	-14.799	0	%100
15	MP3	SX	-14.784	-14.784	0	%100
16	MP1	SX	-14.784	-14.784	0	%100
17	MP2	SX	-14.784	-14.784	0	%100
18	T1	SX	-16.628	-16.628	0	%100
19	M29	SX	0	0	0	%100
20	M30	SX	0	0	0	%100
21	M33	SX	0	0	0	%100
22	M34	SX	0	0	0	%100
23	M35	SX	0	0	0	%100
24	M36	SX	0	0	0	%100
25	M25	SX	0	0	0	%100
26	M26	SX	0	0	0	%100

Member Area Loads

Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
No Data to Print ...						

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

	Member	Shape	Code Check	Loc[in]	LC	She...	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*Mn z-z [lb...	Cb	Eqn
1	TR7	0.63" SR	.468	39.811	27	.031	19.905		36	4409....	1402...	147.2...	147.295	2....	H1-1a
2	S4	1.9" ODx0.1...	.449	35.333	29	.187	42.4		38	2049...	2777...	1314....	1314.45	1....	H1-1b
3	S3	1.9" ODx0.1...	.430	35.333	31	.189	42.4		29	2049...	2777...	1314....	1314.45	1....	H1-1b
4	TR4	0.63" SR	.318	39.811	87	.043	19.905		30	4409....	1402...	147.2...	147.295	2....	H1-1a
5	S2	1.9" ODx0.1...	.308	35.333	85	.142	42.4		38	2049...	2777...	1314....	1314.45	1....	H1-1b
6	S1	1.9" ODx0.1...	.291	35.333	81	.138	42.4		36	2049...	2777...	1314....	1314.45	1....	H1-1b
7	TR8	0.63" SR	.199	0	32	.031	19.905		30	2249....	1402...	147.2...	147.295	2....	H1-1b
8	TR5	0.63" SR	.190	28.3	27	.033	0		95	5162....	1402...	147.2...	147.295	2.26	H1-1b
9	MP1	2.88"x0.120"	.179	33	2	.048	33		8	2249...	43056	3156....	3156.75	4....	H1-1b
10	TR2	0.63" SR	.172	0	32	.034	0		95	5162....	1402...	147.2...	147.295	2....	H1-1b
11	TR3	0.63" SR	.125	0	81	.042	19.905		36	2249....	1402...	147.2...	147.295	2....	H1-1b
12	MP3	2.88"x0.120"	.109	33	81	.022	61		87	2249...	43056	3156....	3156.75	4....	H1-1b
13	H1	PIPE_2.5	.096	77	8	.060	78		2	3348...	66654	4726.5	4726.5	2....	H1-1b
14	H2	PIPE_2.5	.087	93	96	.047	78		94	3348...	66654	4726.5	4726.5	2....	H1-1b
15	TR6	0.63" SR	.078	0	33	.016	0		96	5162....	1402...	147.2...	147.295	2....	H1-1b
16	T1	Pipe2.38X0....	.065	48.127	30	.006	96.255		36	1328...	3527...	2114....	2114.85	1....	H1-1b
17	MP2	2.88"x0.120"	.058	33	8	.038	33		93	2249...	43056	3156....	3156.75	4....	H1-1b
18	TR1	0.63" SR	.053	28.3	77	.015	28.3		96	5162....	1402...	147.2...	147.295	2....	H1-1b

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	BOBDL00149B
Site Number:	BOBDL00149B
Connection Description:	Sector Frame to Tower Leg

MAXIMUM BOLT LOADS		
Bolt Tension:	1267.02	lbs
Bolt Shear:	848.72	lbs

WORST CASE BOLT LOADS[1]		
Bolt Tension:	1267.02	lbs
Bolt Shear:	732.45	lbs

WORST CASE CONNECTION SLIP LOADS[2]		
Sliding Force:	1017.05	lbs
Torsion About Leg:	0.00	lbs-ft

BOLT PROPERTIES		
Bolt Type:	Threaded Rod	-
Bolt Diameter:	0.625	in
Bolt Grade:	A449	-
# of Threaded Rods:	2	-
Leg Diameter:	2.875	in
Threads Excluded?	No	-

[1] *Worst case bolt loads correspond to Load combination #32 on member M25 in RISA-3D, which causes the maximum demand on the bolts.*

[2] *Worst Case slip loads correspond to Load combination #32 on member M25 in RISA 3D, which causes the maximum slip demand on the connection.*

Member Information
I nodes of M25, M26

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	6.2%	
Max Shear Usage	6.1%	
Interaction Check (Worst Case)	0.01	***≤1.05***
Result	Pass	

SLIP CHECK (WORST CASE)		
Torsional Slip Resistance	699.91	
Sliding Resistance	5842.69	
Torsional Slip Usage	0.0%	
Sliding Usage	17.4%	
Interaction Check	0.03	***≤1.05***
Result	Pass	

POWER DENSITY STUDY

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: BOBDL00149B

BOBDL00149B
577 Bell Street
Glastonbury, Connecticut 06033

October 6, 2021

EBI Project Number: 6221004021

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**43.46%**

October 6, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00149B - BOBDL00149B

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **577 Bell Street** in **Glastonbury, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless antenna facility located at 577 Bell Street in Glastonbury, 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 MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz / 2190 MHz channel(s) in Sector B, the JMA MX08FRO665-21 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 55 feet above ground level (AGL).

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

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

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
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):	55 feet	Height (AGL):	55 feet	Height (AGL):	55 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 %:	**9.85%**	Antenna B1 MPE %:	**9.85%**	Antenna C1 MPE %:	**9.85%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	9.85%
Town	0.02%
Clearwire	0.77%
T-Mobile	17.07%
AT&T	10.84%
Verizon	4.91%
Site Total MPE % :	43.46%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	9.85%
Dish Wireless Sector B Total:	9.85%
Dish Wireless Sector C Total:	9.85%
Site Total MPE % :	43.46%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	55.0	13.40	600 MHz n71	400	3.35%
Dish Wireless 1900 MHz n70	4	542.70	55.0	32.50	1900 MHz n70	1000	3.25%
Dish Wireless 2190 MHz n66	4	542.70	55.0	32.50	2190 MHz n66	1000	3.25%
						Total:	**9.85%**

• 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:	9.85%
Sector B:	9.85%
Sector C:	9.85%
Dish Wireless Maximum MPE % (Sector A):	9.85%
Site Total:	43.46%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **43.46%** 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.

November 09, 2021

Dear Customer,

The following is the proof-of-delivery for tracking number: 775107215378

Delivery Information:

Status:	Delivered	**Delivered To:**	
Signed for by:	Signature release on file	**Delivery Location:**	2155 MAIN ST
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		GLASTONBURY, CT, 06033
		Delivery date:	Nov 9, 2021 12:09

Shipping Information:

Tracking number:	775107215378	**Ship Date:**	Nov 5, 2021
		Weight:	1.0 LB/0.45 KG

Recipient:
Peter R. Carey,
2155 Main Street
GLASTONBURY, CT, US, 06033

Shipper:
Corey Milan, NB+C
100 Apollo Dr.
Suite 303
CHELMSFORD, MA, US, 01824

Reference 100814

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November 11, 2021

Dear Customer,

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Signed for by:	Signature not required	**Delivery Location:**	499 BELL STREET
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday; Residential Delivery		GLASTONBURY, CT, 06033
		Delivery date:	Nov 11, 2021 13:13

Shipping Information:

Tracking number:	775107289483	**Ship Date:**	Nov 5, 2021
		Weight:	1.0 LB/0.45 KG

Recipient:
577 Bell Street LLC,
499 Bell Street
GLASTONBURY, CT, US, 06033

Shipper:
Corey Milan, NB+C
100 Apollo Dr.
Suite 303
CHELMSFORD, MA, US, 01824

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Signed for by:	C.CHURCHHILL	**Delivery Location:**	2155 MAIN ST
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		GLASTONBURY, CT, 06033
		Delivery date:	Nov 9, 2021 12:07

Shipping Information:

Tracking number:	775107163701	**Ship Date:**	Nov 5, 2021
		Weight:	1.0 LB/0.45 KG

Recipient:
Thomas P. Gullota,
2155 Main Street
GLASTONBURY, CT, US, 06033

Shipper:
Corey Milan, NB+C
100 Apollo Dr.
Suite 303
CHELMSFORD, MA, US, 01824

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