PROJECT NARRATIVE

December 15, 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
104 Bunker Hill Road Andover, CT 06232
Latitude: 41'44'16.055" / Longitude: -72' 20' 59.449"

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 104 Bunker Hill Road in Andover (the "Property"). The existing 178-foot monopole tower is owned by American Tower Corporation ("ATC"). The underlying property is owned by Leon & Benjamin Price. 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 Jeffrey J. Maguire, First Selectman of Town of Andover, Randy Heckman, Town of Andover Building Official and Leon & Benjamin Price as the property owner.

Background

The tower was approved by the Town of Andover under Building Permit No. 1157 on April 26, 2001. A copy of the approval is included in the filing attachments. The existing ATC facility consists of a 178-foot monopole tower located within an existing leased area. Sprint Nextel currently maintains antennas at the 180, 168, 97 and 88-foot levels. Verizon Wireless currently maintains antennas at the 158 and 108-foot levels. T-Mobile currently maintains antennas at the 148-foot level. AT&T currently maintains antennas at the 137-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 ATC have agreed to the proposed shared use of the 104 Bunker Hill Road 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 124-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 104 Bunker Hill Road 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

ORIGINAL FACILITY APPROVAL

TOWN OF ANDOVER

CERTIFICATE OF USE AND OCCUPANCY

Building Zone 7/R80 MAP 033 BLOCK 036 LOT 003

This is to certify that the structure at 104 Bunker Hill Rd., Andover, Connecticut

the owner of record of which on this date is Leon Price & Deborah Green

and which was built or altered under the authority of Building Permit No. 1157

Dated: 4/26/01

has been inspected and has been found to conform substantially to the requirements of the Connecticut Building Code. It is approved for use as stated hereinafter.

Use Group U Type of Construction 3B CT Bld Code 1999

To be occupied and used as cellular antennas & equipment shelter

Special Permit Conditions: _____

Date: 1/8/02 _____ Building Official

Notice: Any change or extension of use herein approved requires a new Certificate of Use and

ENGINEERING DRAWINGS

dish wireless

DISH WIRELESS, L.L.C. SITE ID:

BOBDL00010A

DISH WIRELESS, L.L.C. SITE ADDRESS:

104 BUNKER HILL ROAD
ANDOVER, CT 06232

CONNECTICUT CODE COMPLIANCE

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

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

SHEET INDEX

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

SCOPE OF WORK

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

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED ANTENNA PLATFORM
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRHs (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 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 CIENA BOX (IF REQUIRED)
- INSTALL (1) PROPOSED METER SOCKET

SITE PHOTO

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

811

GENERAL NOTES

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

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).

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

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

SITE INFORMATION

PROPERTY OWNER:	LEON PRICE
ADDRESS:	104 BUNKER HILL ROAD ANDOVER, CT 06232
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	302472
TOWER APP NUMBER:	13683503
COUNTY:	TOLLAND
LATITUDE (NAD 83):	41° 44' 16.055" N 41.73779302
LONGITUDE (NAD 83):	72° 20' 59.449" W –72.34984685
ZONING JURISDICTION:	CT SITING COUNCIL
ZONING DISTRICT:	AARD
PARCEL NUMBER:	09013001–33/036/000003
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	V–B
POWER COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	FRONTIER COMMUNICATIONS

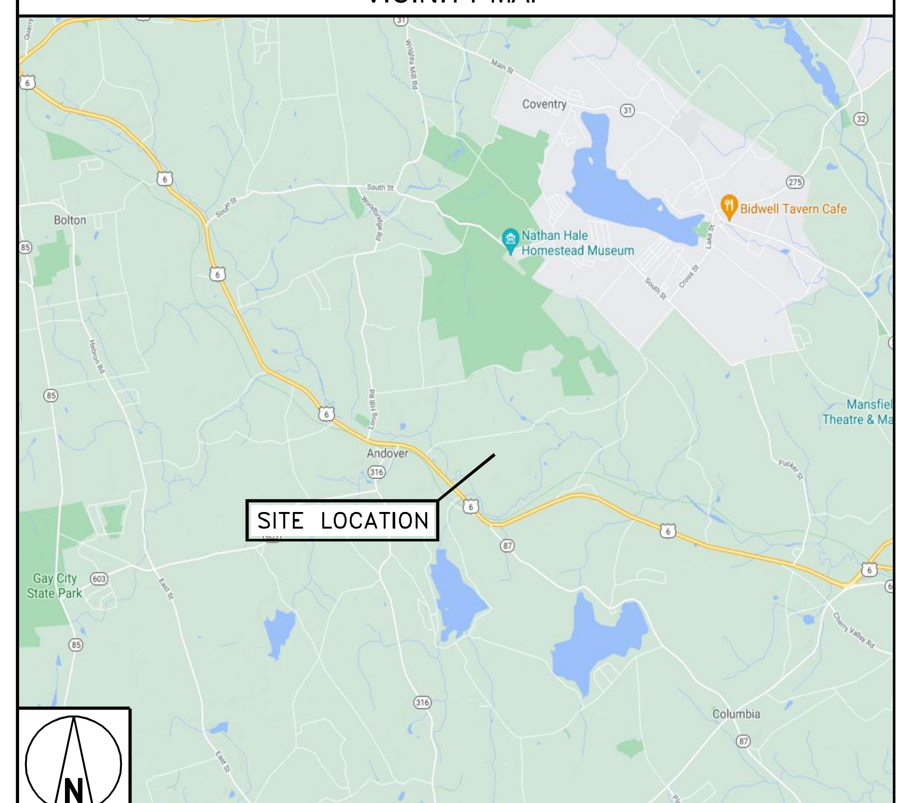
PROJECT DIRECTORY

APPLICANT:	DISH WIRELESS, L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120 (303) 706–5008
TOWER OWNER:	AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801
ENGINEER:	NB+C ENGINEERING SERVICES, LLC. 8601 SIX FORKS ROAD, SUITE 540 RALEIGH, NC 27615
SITE ACQUISITION:	DAVID TALLEY DAVID.TALLEY@DISH.COM
CONSTRUCTION MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM
RF ENGINEER:	BOSSENER CHARLES BOSSENER.CHARLES@DISH.COM

DIRECTIONS

I–287 EAST TO I–684 NORTH TO I–284 EAST INTO CONNECTICUT. FOLLOW I–84 THROUGH HARTFORD TO I–384 SOUTH/EAST. FOLLOW I–384 TO END THEN EAST ON ROUTE 6. FOLLOW ROUTE 6 THROUGH COLUMBIA AND INTO THE TOWN OF ANDOVER. TURN LEFT (NORTH) ONTO BUNKER HILL ROAD. THE SITE WILL BE ON YOUR RIGHT (#104).

VICINITY MAP



NO SCALE

dish wireless

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC
8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615
(919) 657-9131

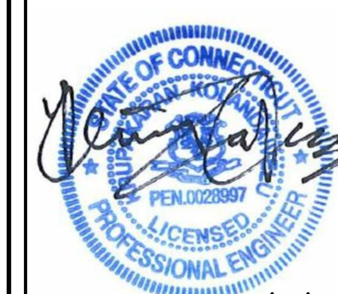
DRAWN BY:	CHECKED BY:	APPROVED BY:
JOA	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	08/03/2021	ISSUED FOR REVIEW
0	10/18/2021	ISSUED FOR CONSTRUCTION



10/18/2021

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

A&E PROJECT NUMBER

302472–13683503

DISH WIRELESS, L.L.C.
PROJECT INFORMATION

BOBDL00010A

104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE

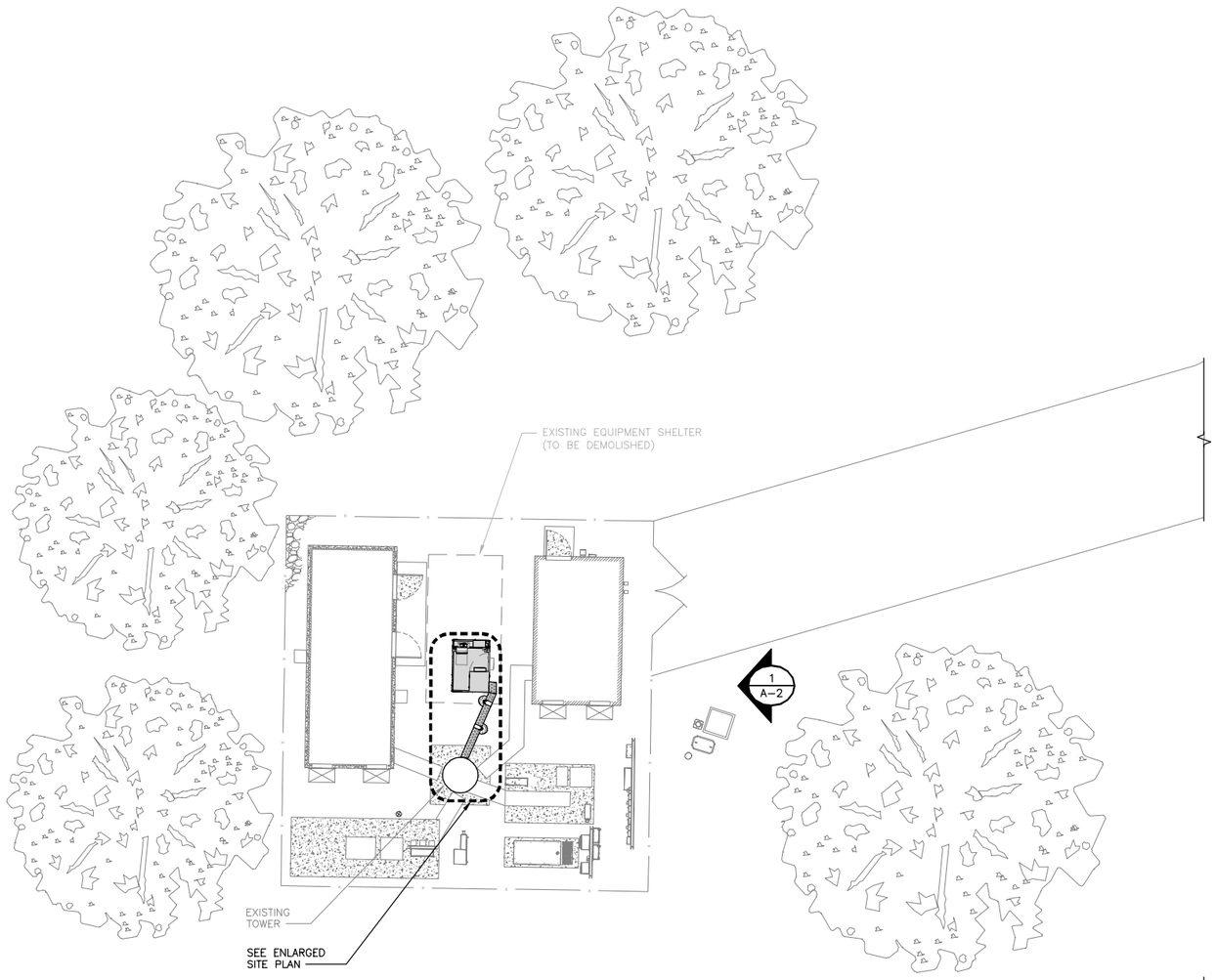
TITLE SHEET

SHEET NUMBER

T-1

NOTES

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



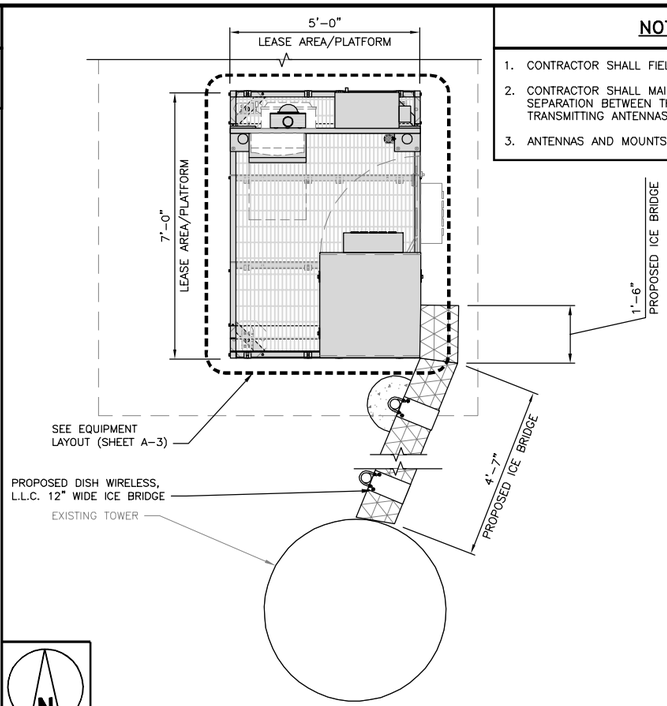
OVERALL SITE PLAN

10' 0 10' 20'
1"=10'

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.



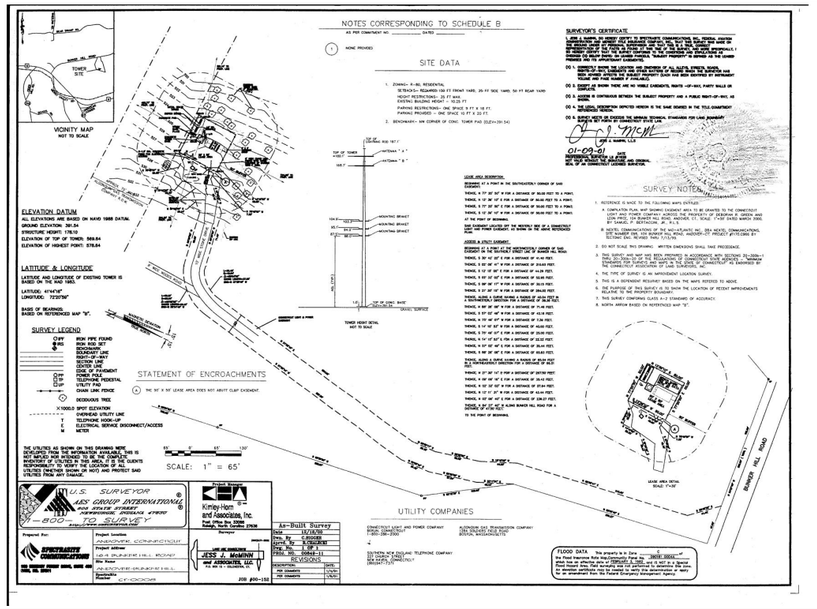
ENLARGED SITE PLAN

2' 0 2' 4'
1"=2'

2

NOTES

1. THE SURVEY PROVIDED ON THIS SHEET IS PROVIDED FOR REFERENCE ONLY, THE UTILITY ROUTE AND EXISTING EASEMENTS MUST BE VERIFIED PRIOR TO CONSTRUCTION.



EXISTING SURVEY (BY OTHERS)

NO SCALE

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC
8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615
(919) 657-9131

DRAWN BY:	CHECKED BY:	APPROVED BY:
JOA	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	08/03/2021	ISSUED FOR REVIEW
0	10/18/2021	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
BRIAN KOTARA
PEN.0028997
LICENSED PROFESSIONAL ENGINEER
10/18/2021

A&E PROJECT NUMBER
302472-13683503

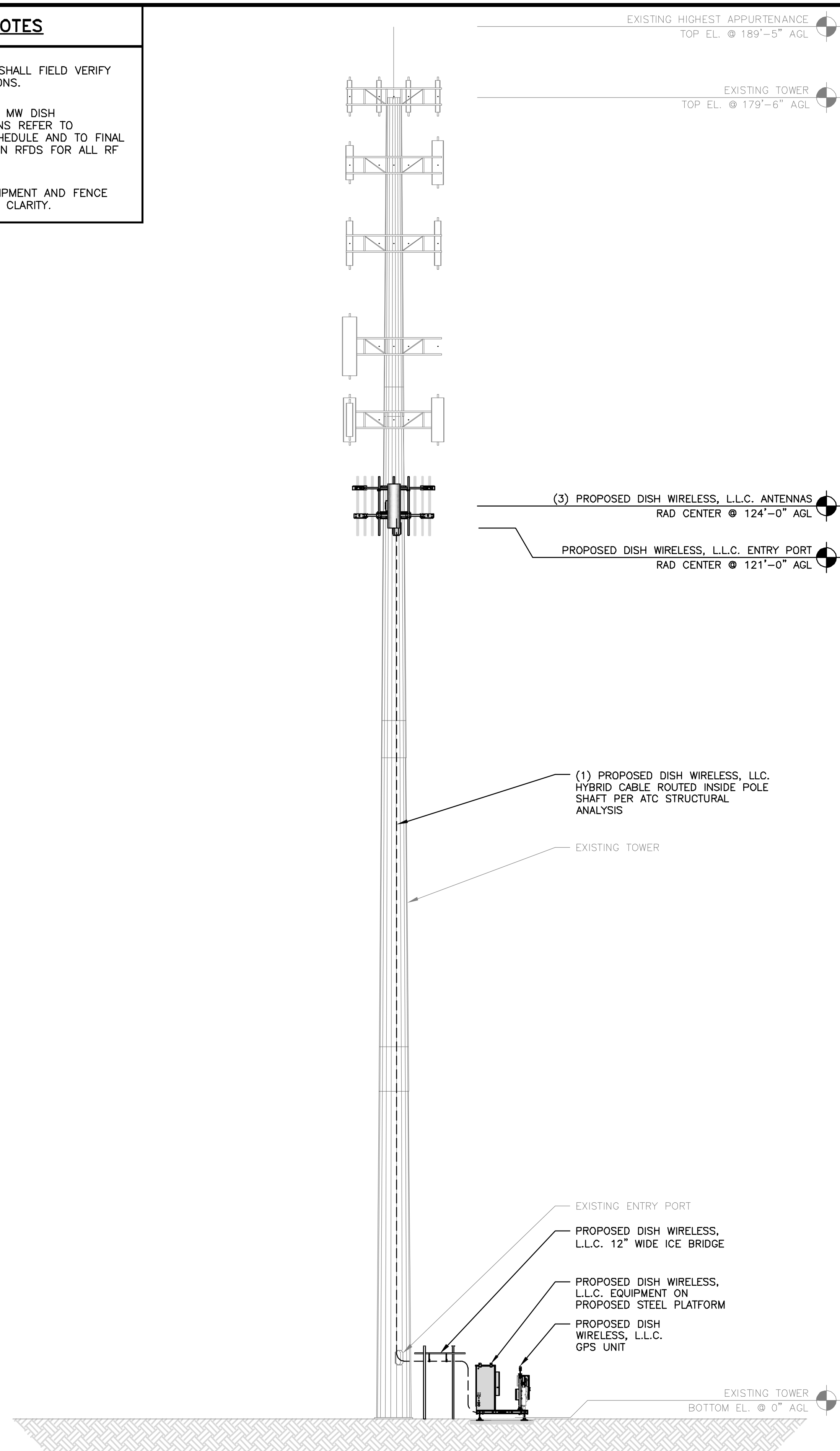
DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

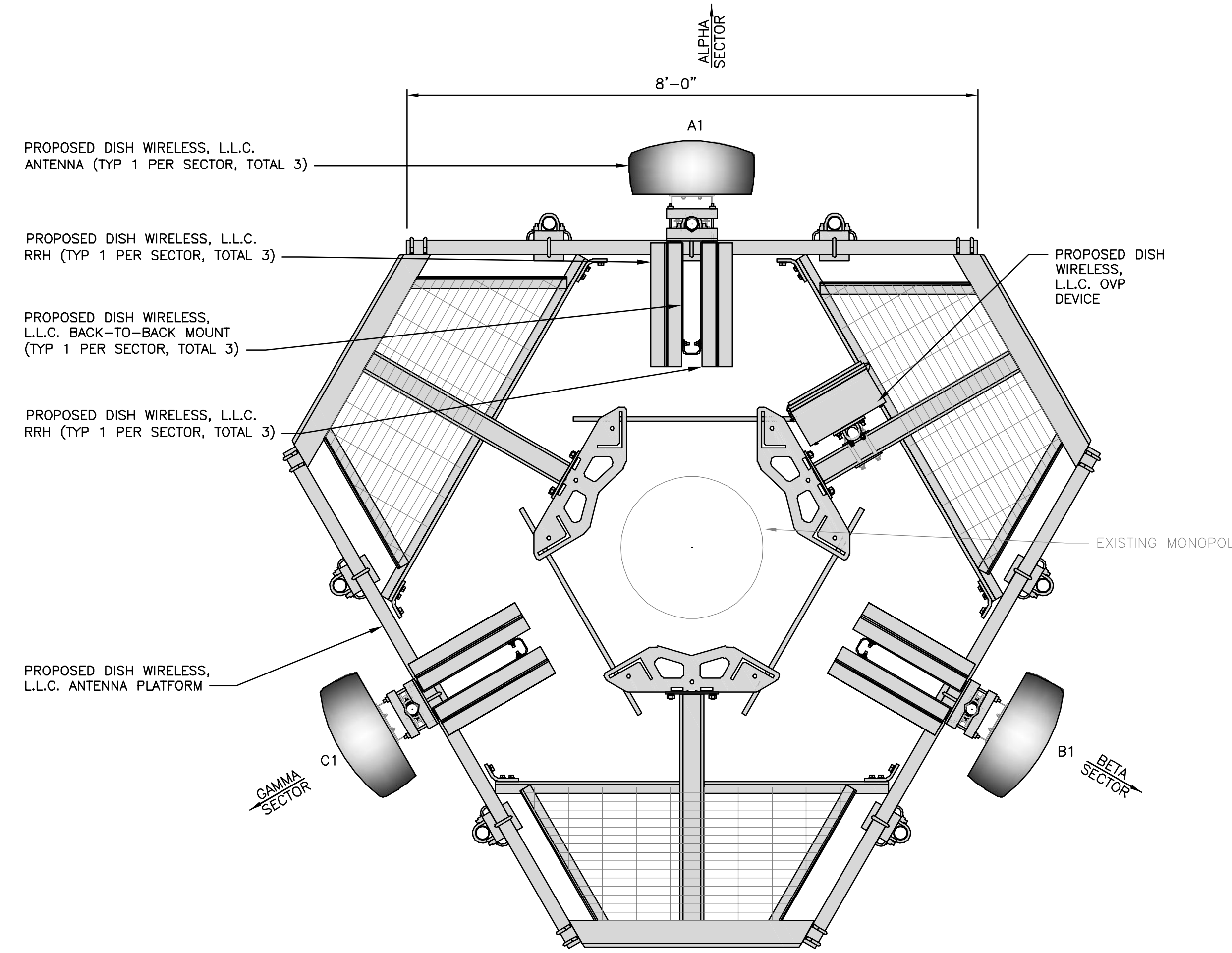
SHEET NUMBER
A-1

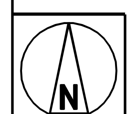
NOTES

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 NORTHEAST ELEVATION — 10' 0 10' 20' — 1"=10' — 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 – MX08FRO665–21	5G	72.0" x 20.0"	0'	124'–0"		(1) HIGH–CAPACITY HYBRID CABLE (154' LONG)
BETA	B1	PROPOSED	JMA – MX08FRO665–21	5G	72.0" X 20.0"	120'	124'–0"		
GAMMA	C1	PROPOSED	JMA – MX08FRO665–21	5G	72.0" X 20.0"	240'	124'–0"		

SECTOR	POSITION	RRH	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
ALPHA	A1	FUJITSU – TA08025–B604	N29, N71
	A1	FUJITSU – TA08025–B605	N66, N70
BETA	B1	FUJITSU – TA08025–B604	N29, N71
	B1	FUJITSU – TA08025–B605	N66, N70
GAMMA	C1	FUJITSU – TA08025–B604	N29, N71
	C1	FUJITSU – TA08025–B605	N66, N70

SECTOR	POSITION	OVP	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
ALPHA	N/A	RAYCAP – RDIDC–9181–PF–48	N/A

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

NB+C TOTALLY COMMITTED.

NB+C ENGINEERING SERVICES, LLC
8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615
(919) 657-9131

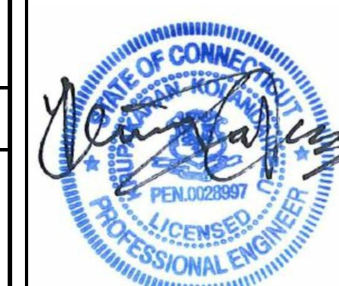
DRAWN BY:	CHECKED BY:	APPROVED BY:
JOA	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	08/03/2021	ISSUED FOR REVIEW
0	10/18/2021	ISSUED FOR CONSTRUCTION



10/18/2021

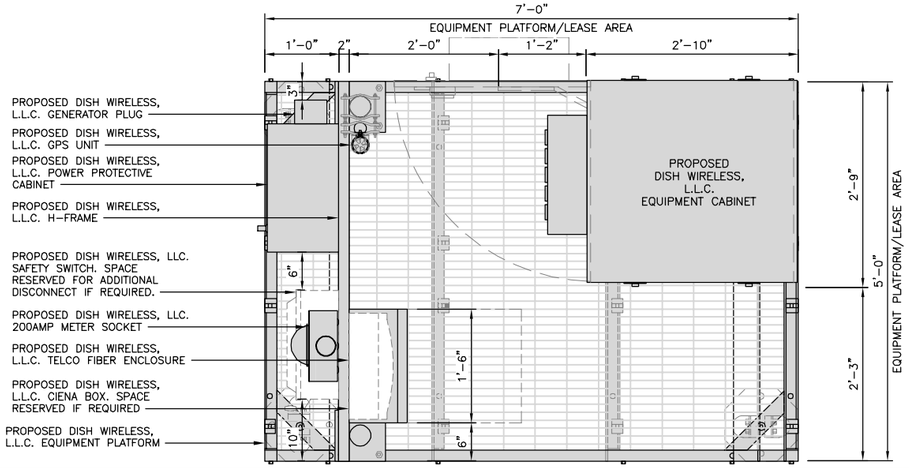
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

A&E PROJECT NUMBER
302472–13683503

DISH WIRELESS, L.L.C. PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



PLATFORM EQUIPMENT PLAN

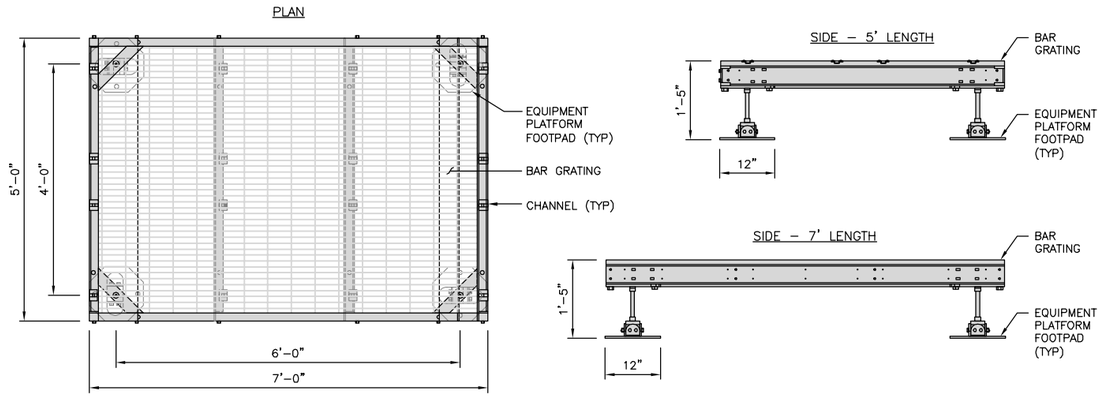
12" 9" 6" 3" 0 1' 2"
1"=1'-0"

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"

NOTE:
PLATFORM MUST BE LEVEL WITHIN 1 DEGREE

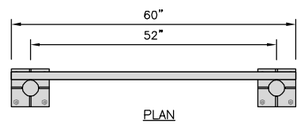


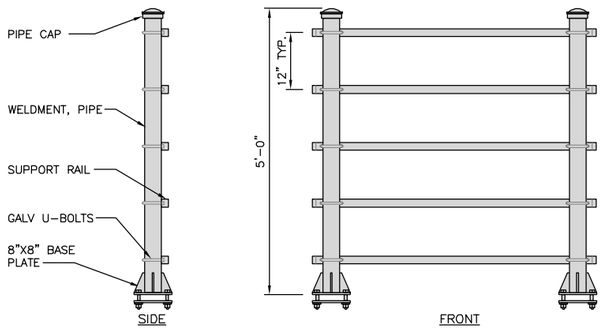
PLATFORM DETAIL

NO SCALE

2

KENWOOD T1701KT5-5S H-FRAME	
UNISTRUT/SUPPORT RAIL	5
WEIGHT/ VOLUME	173.6 LBS





H-FRAME DETAIL

NO SCALE

3

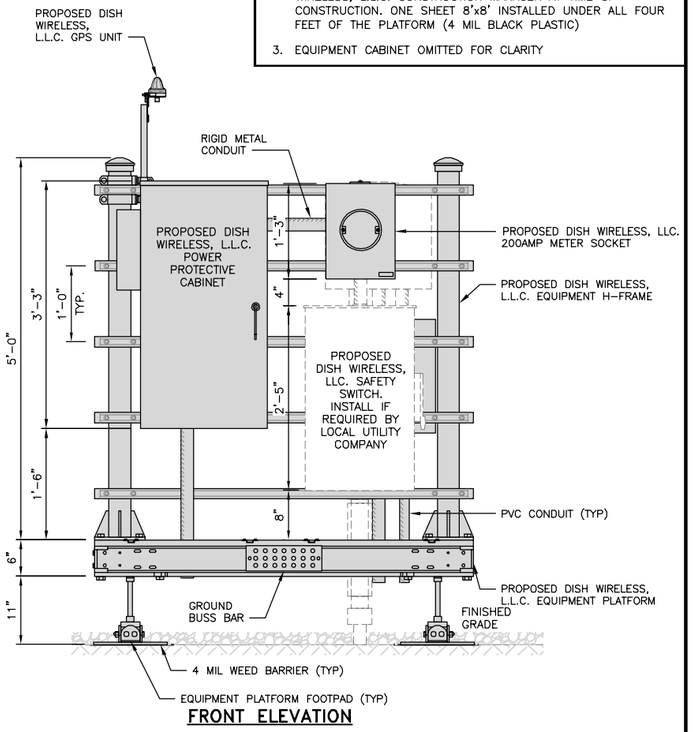
NOT USED

NO SCALE

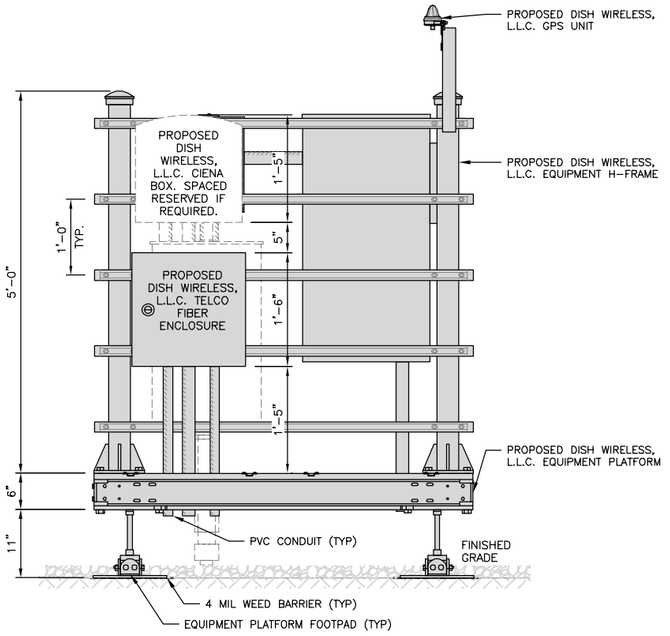
4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

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

5

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

NB+C TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC
8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615
(919) 657-9131

DRAWN BY:	CHECKED BY:	APPROVED BY:
JOA	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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10/18/2021

A&E PROJECT NUMBER
302472-13683503

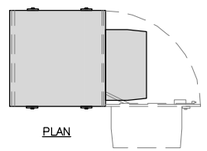
DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

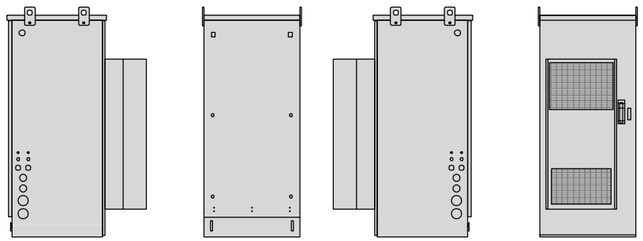
SHEET NUMBER
A-3

CHARLES INDUSTRY HEX CUBE–PM639155N4

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



PLAN

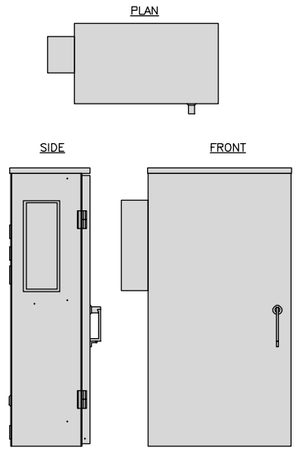


SIDE BACK SIDE FRONT

CABINET DETAIL | NO SCALE | 1

RAYCAP RDIAC–6512–P–240–MTS POWER & TELCO PROTECTION CABINET

DIMENSIONS (HxWxD)	40"x20"x10"
WEIGHT/ VOLUME	124 LBS
MANUAL TRANSFER SWITCH	200A
LOAD CENTER	30 POSITION
MAIN BREAKER	200A, 65kA AIC
GENERATOR RECEPTACLE	CAMLOCK
NEMA RATING	3R POWDER COATED ALUMINUM
SURGE PROTECTION DEVICE	UL 1449 4TH EDITION LISTED

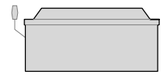


PLAN SIDE FRONT

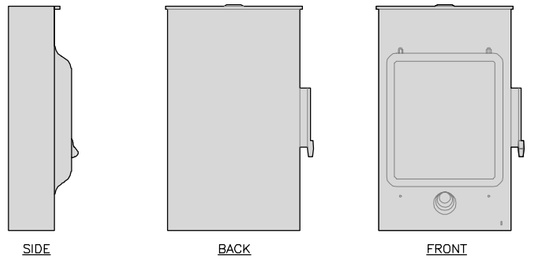
POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

SQUARE D SAFETY SWITCH D324NRB

ENCLOSURE DIM (HxWxD)	29.25"x17.25"x8.25"
TOTAL WEIGHT (EMPTY)	45.33 LBS
MAX VOLTAGE/AMPS/WATT	240V/200A/48000W
ENCLOSURE RATING	OUTDOOR NEMA 3R



PLAN

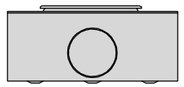


SIDE BACK FRONT

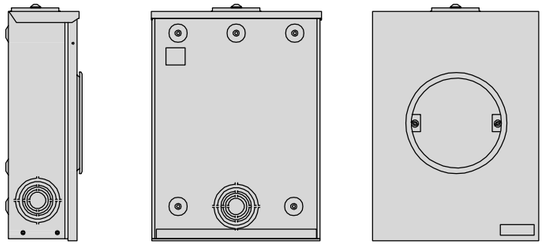
SAFETY SWITCH | NO SCALE | 3

EATON METER SOCKET UNRRS213BEUSE

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



PLAN



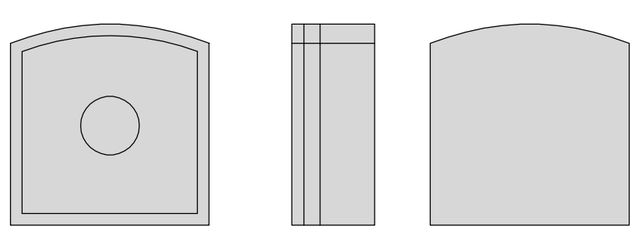
SIDE BACK FRONT

METER SOCKET DETAIL | NO SCALE | 4

CIENA 3931 SERVICE DELIVERY SWITCH

DIMENSIONS (HxWxD)	17.0"x16.8"x7.0" 431x427x178mm
WEIGHT	28.6 LBS/13.0 KG
POWER INPUT	60W MAX

PLAN



FRONT SIDE BACK

CIENA DETAIL | NO SCALE | 5

CHARLES FIBER TELCO ENCLOSURE CUBE–MP1818WB–A

ENCLOSURE DIM (HxWxD)	18.0"x18.0"x9.25"
NEMA RATING	4X
THERMAL	SEALED
MOUNTING BACKBOARD	WOOD

PLAN

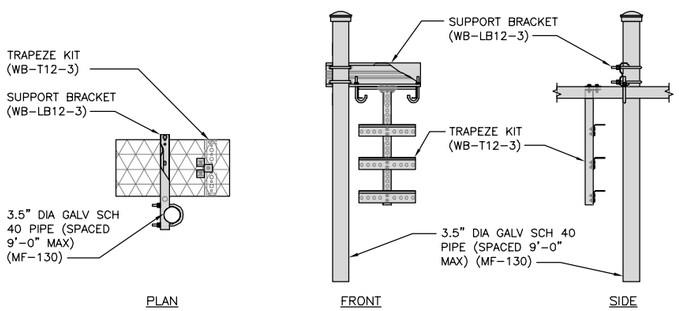
SIDE BACK FRONT

FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT

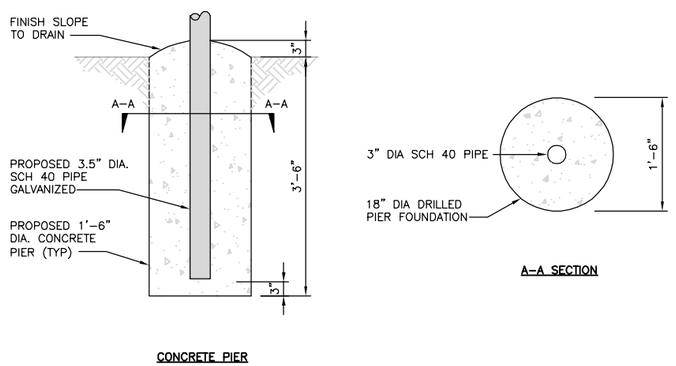
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

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



PLAN FRONT SIDE

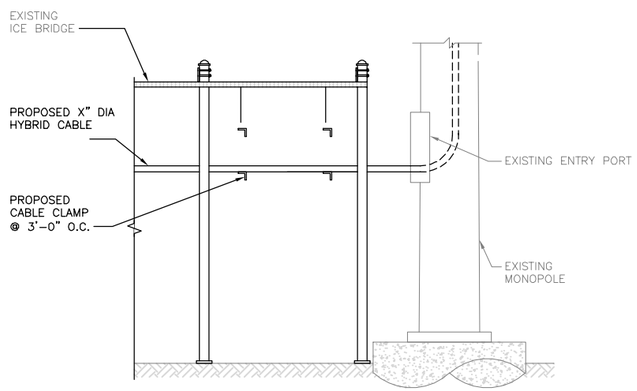
ICE BRIDGE DETAIL | NO SCALE | 7



CONCRETE PIER

A–A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC
8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615
(919) 657-9131

DRAWN BY:	CHECKED BY:	APPROVED BY:
JOA	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

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0	10/18/2021	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT · SUSAN KOTARBA · PEN.0028997 · LICENSED PROFESSIONAL ENGINEER

10/18/2021

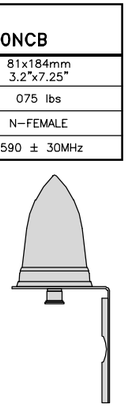
A&E PROJECT NUMBER
302472–13683503

DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE
EQUIPMENT DETAILS

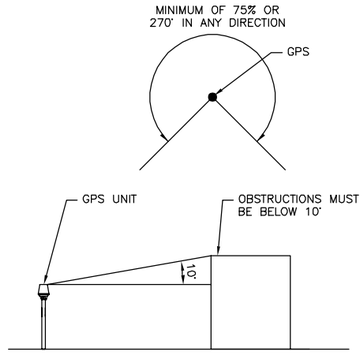
SHEET NUMBER
A-4

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



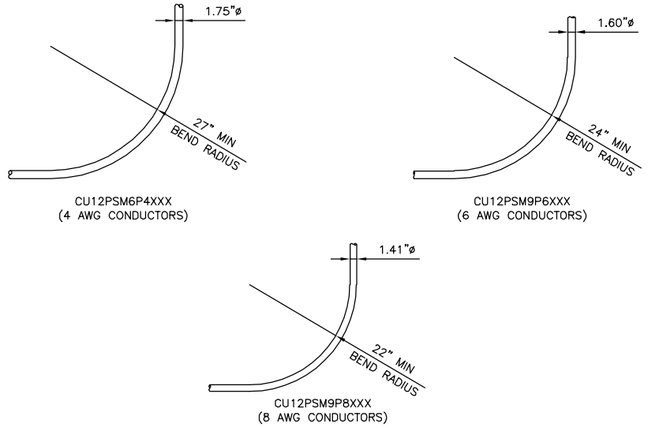
GPS DETAIL

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC
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(919) 657-9131

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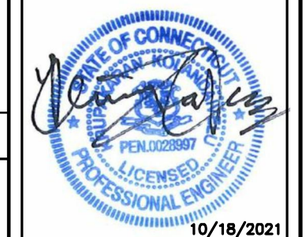


10/18/2021

A&E PROJECT NUMBER
302472-13683503

DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE
EQUIPMENT DETAILS

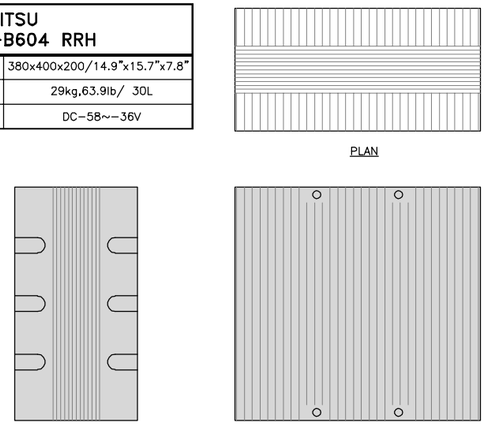
SHEET NUMBER
A-5

NOT USED

NO SCALE | 1

FUJITSU TA08025-B604 RRH

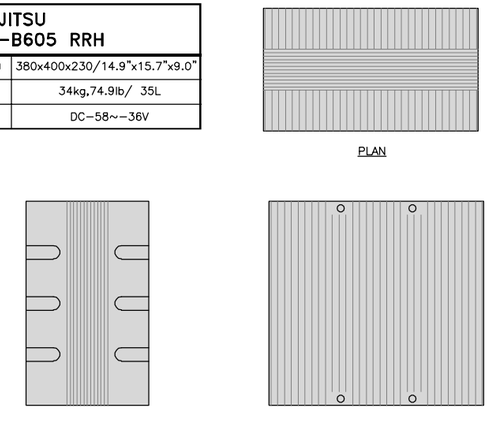
DIMENSIONS (HxWxD) (KG/IN)	380x400x200/14.9"x15.7"x7.8"
WEIGHT(KG,LB)/ VOLUME	29kg,63.9lb/ 30L
POWER SUPPLY	DC-58~-36V



REMOTE RADIO HEAD DETAIL | NO SCALE | 2

FUJITSU TA08025-B605 RRH

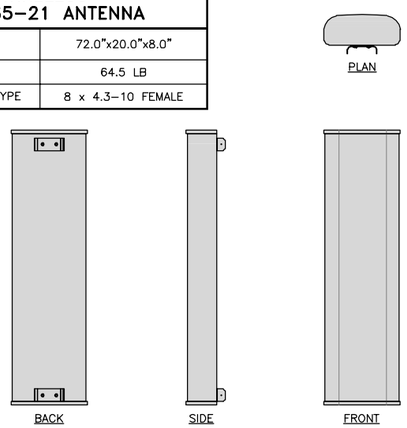
DIMENSIONS (HxWxD) (KG/IN)	380x400x230/14.9"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~-36V



REMOTE RADIO HEAD DETAIL | NO SCALE | 3

JMA WIRELESS MX08FRO665-21 ANTENNA

DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE

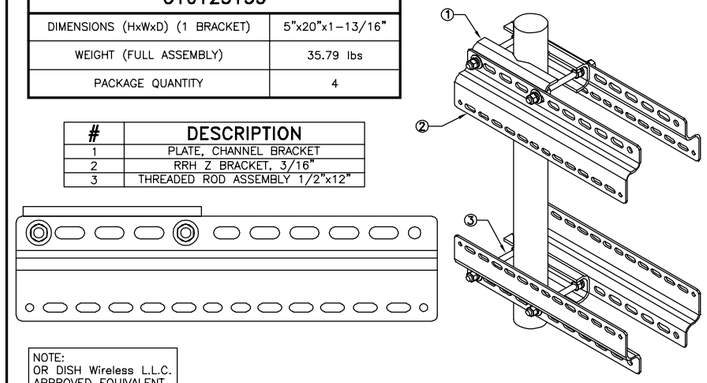


ANTENNA DETAIL | NO SCALE | 4

SABRE DOUBLE Z-BRACKET C10123155

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

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



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

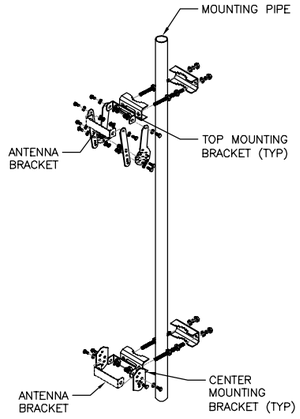
RRH MOUNT DETAIL | NO SCALE | 5

JMA ANTENNA MOUNTING BRACKET #91900318

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

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

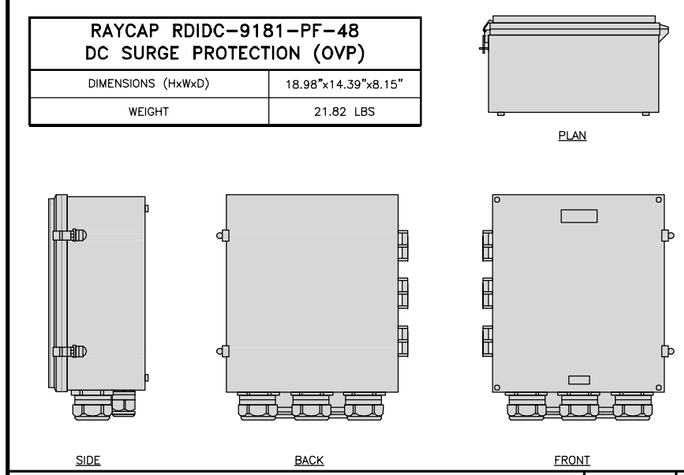
ANTENNA BRACKET NOT PART OF KIT



ANTENNA BRACKET DETAIL | NO SCALE | 6

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

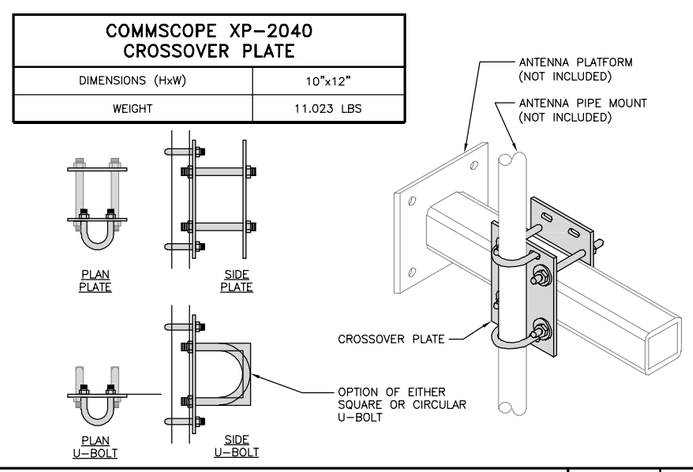
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

COMMSCOPE XP-2040 CROSSOVER PLATE

DIMENSIONS (HxW)	10"x12"
WEIGHT	11.023 LBS

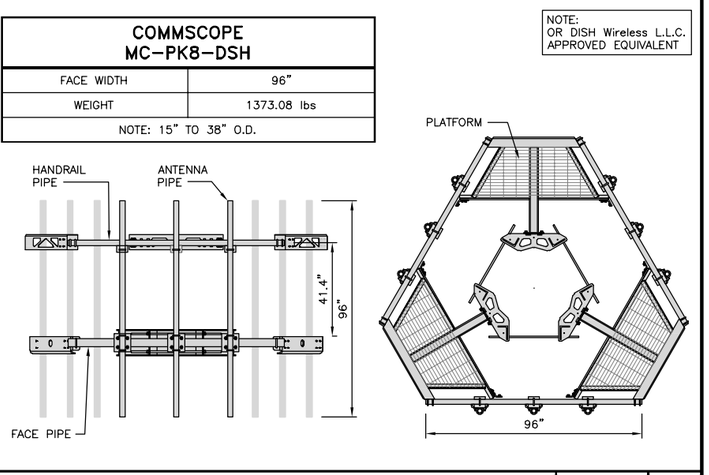


RRH/OVP MOUNT DETAIL | NO SCALE | 8

COMMSCOPE MC-PK8-DSH

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

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



ANTENNA PLATFORM DETAIL | NO SCALE | 9

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

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NB+C ENGINEERING SERVICES, LLC
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STATE OF CONNECTICUT
BRIAN KOTARA
PEN.0028997
LICENSED PROFESSIONAL ENGINEER
10/18/2021

A&E PROJECT NUMBER
302472-13683503

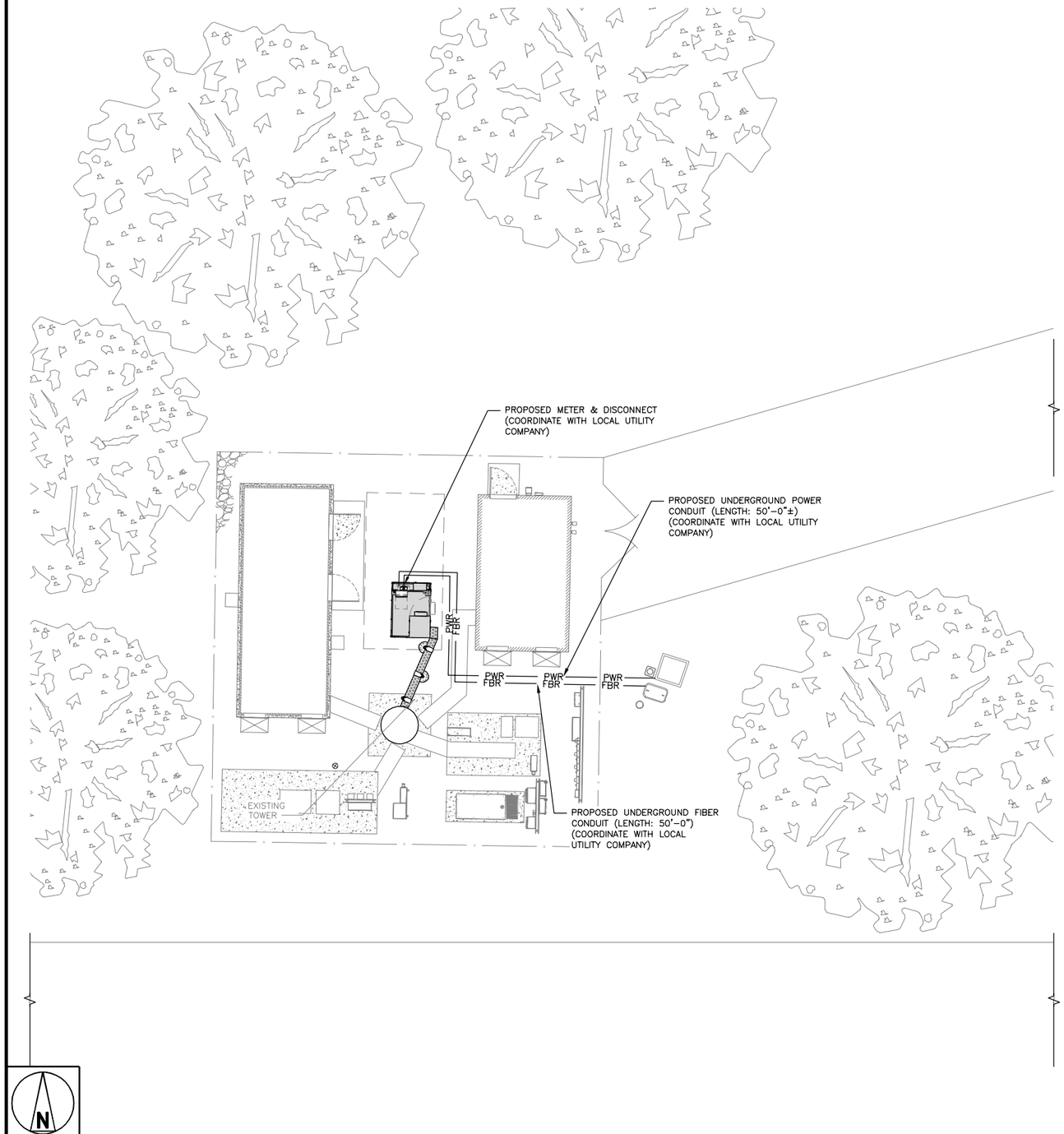
DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

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



UTILITY ROUTE PLAN

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

1

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

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

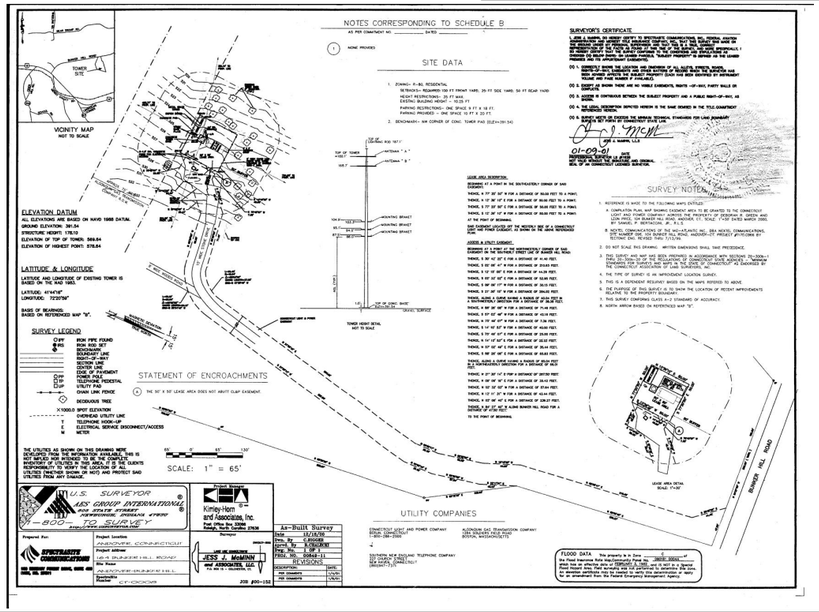
ELECTRICAL NOTES

NO SCALE

2

NOTES

1. THE SURVEY PROVIDED ON THIS SHEET IS PROVIDED FOR REFERENCE ONLY, THE UTILITY ROUTE AND EXISTING EASEMENTS MUST BE VERIFIED PRIOR TO CONSTRUCTION.



EXISTING SURVEY (BY OTHERS)

NO SCALE

3

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JOA	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

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0	10/18/2021	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
BRIAN KOTARA
PEN.0028997
LICENSED PROFESSIONAL ENGINEER
10/18/2021

A&E PROJECT NUMBER
302472-13683503

DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

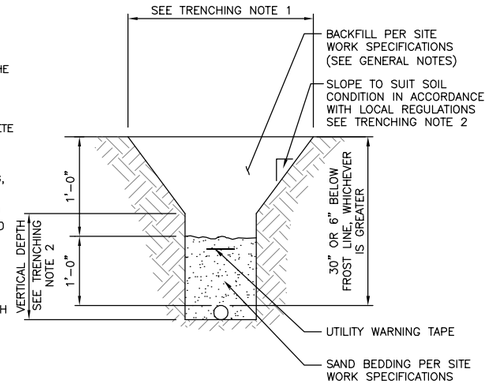
SHEET NUMBER
E-1

NOT USED

NO SCALE | 1

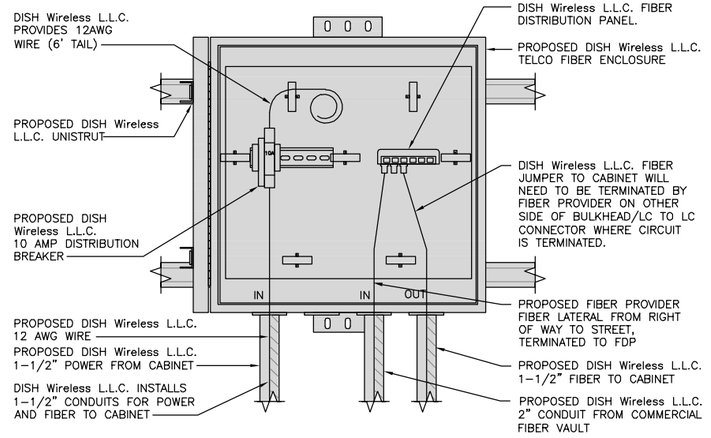
TRENCHING NOTES

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.



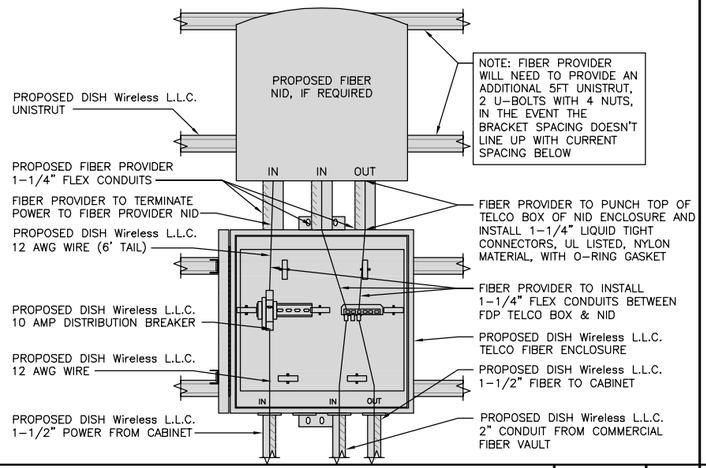
TYPICAL UNDERGROUND TRENCH DETAIL

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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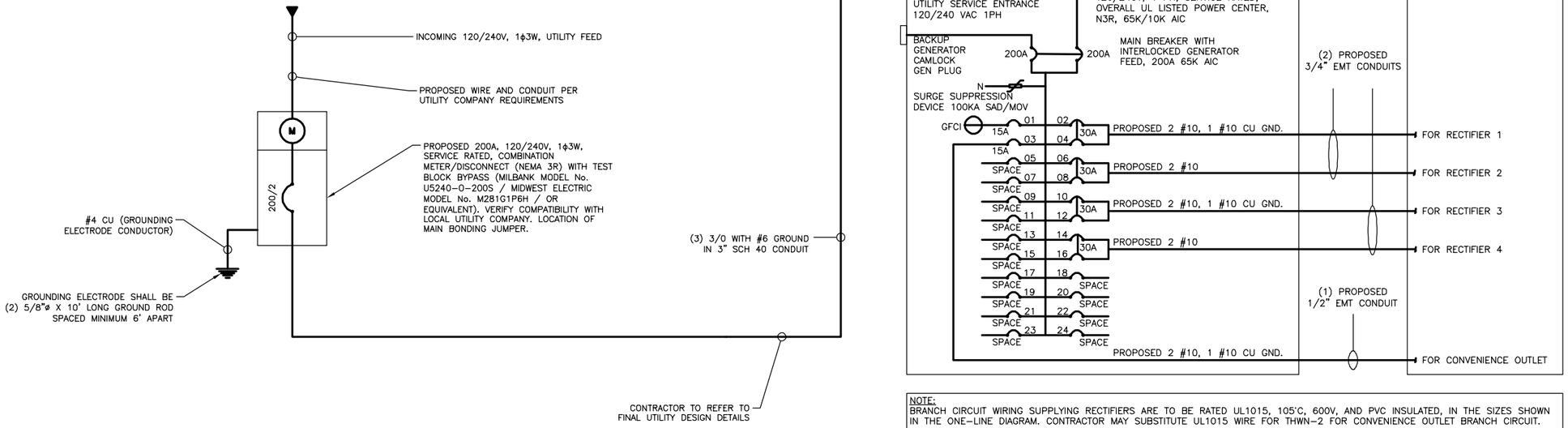
DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

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

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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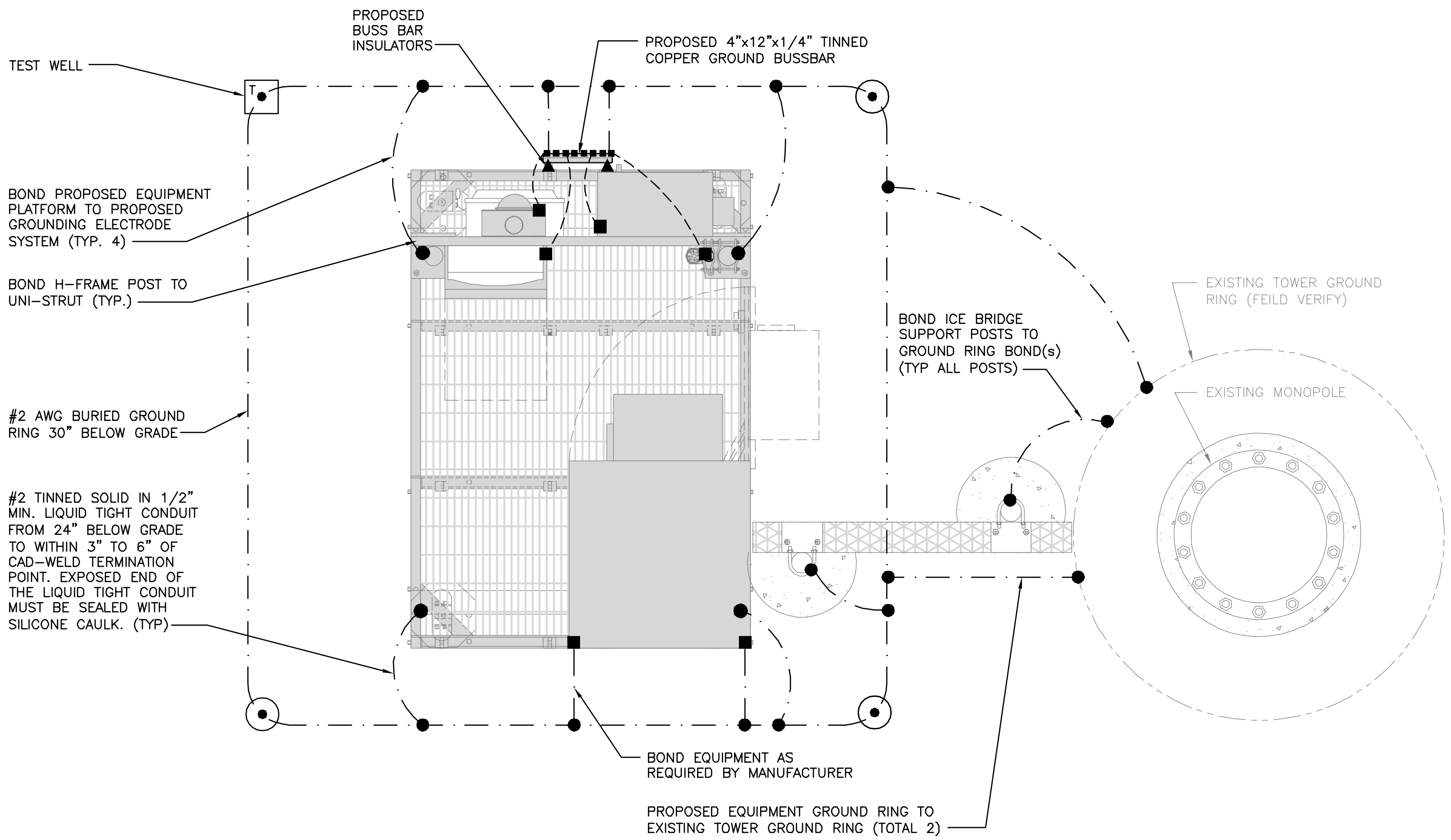
DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

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

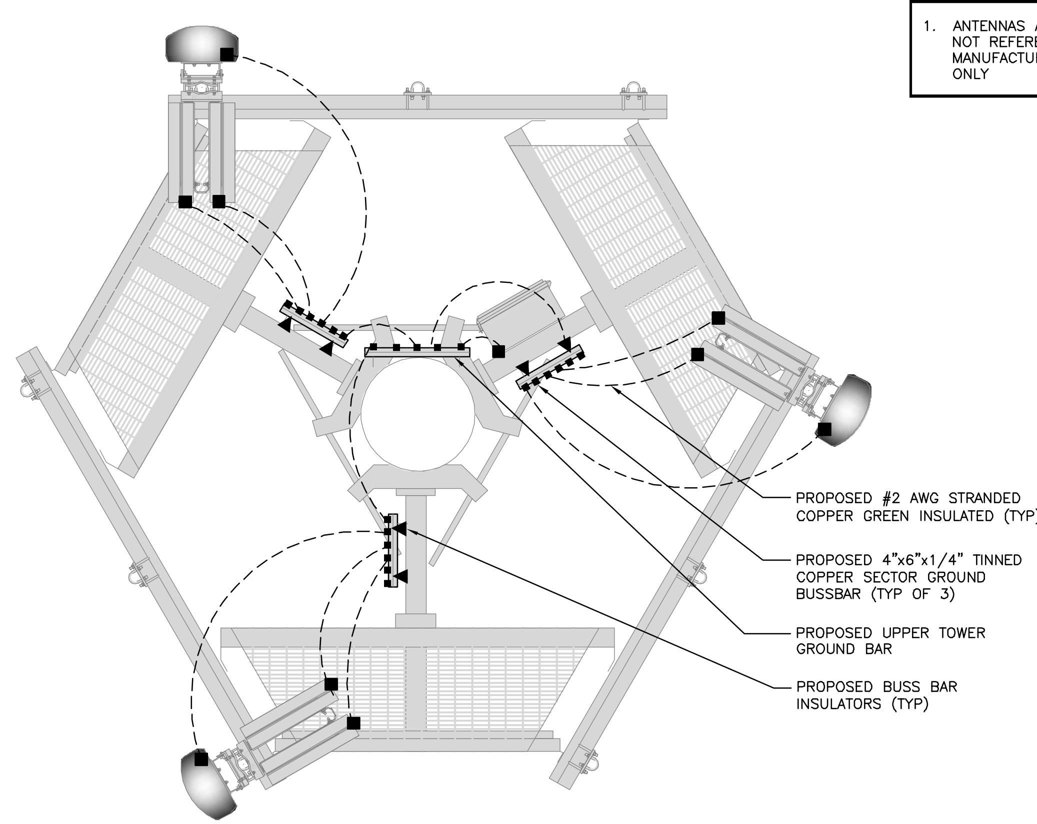
SHEET NUMBER
E-3



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 5/8" 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.

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

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

(L) 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.

(M) 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.

(N) 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

(P) 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.

(Q) 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

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

REFER TO DISH WIRELESS, L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES | NO SCALE | 3

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JOA	BIW	BIW

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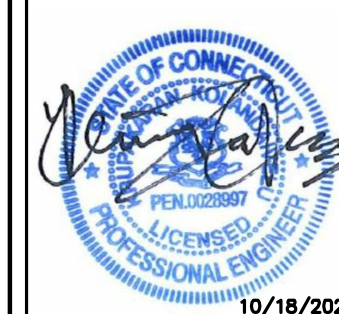


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

A&E PROJECT NUMBER
302472-13683503

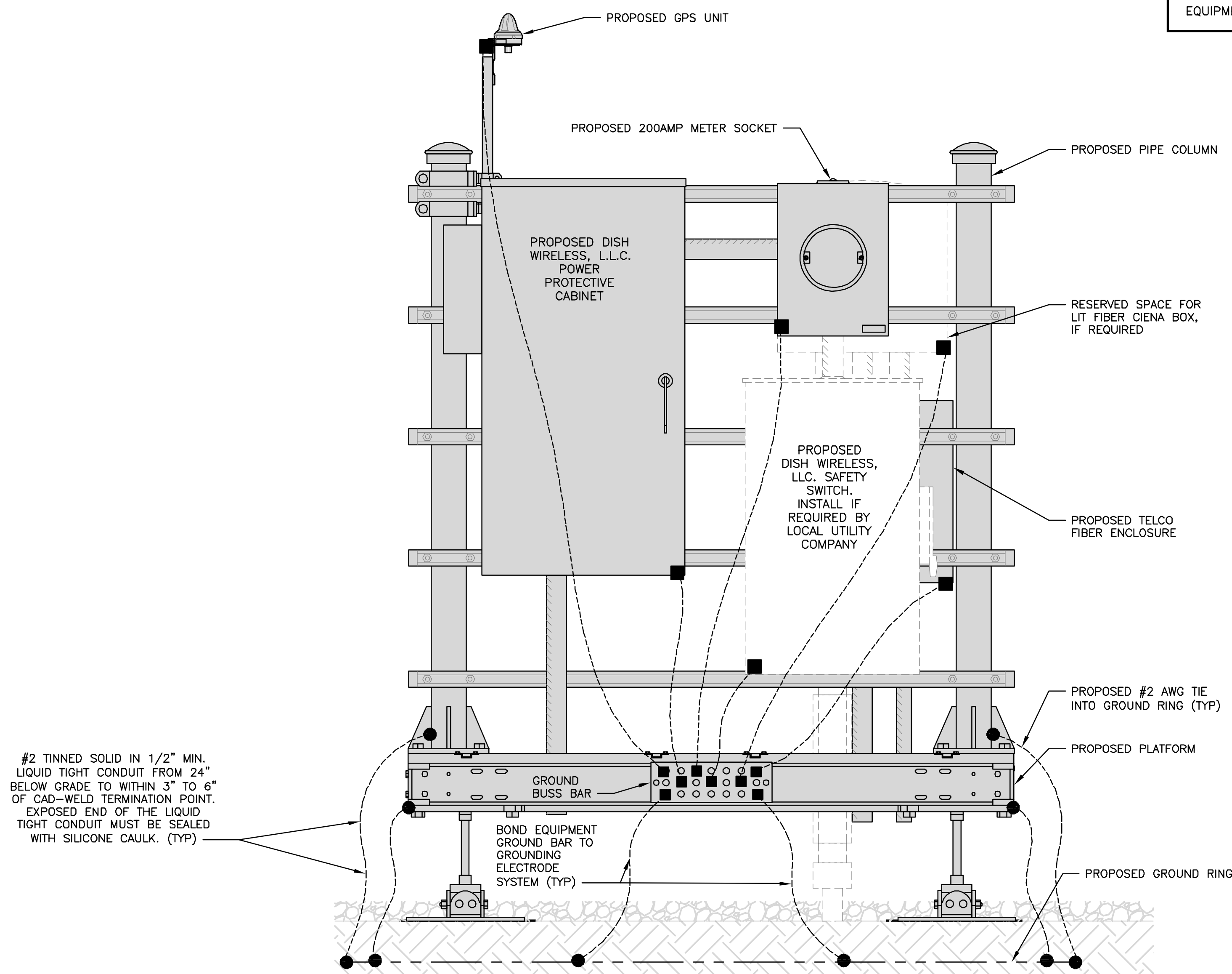
DISH WIRELESS, L.L.C. PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

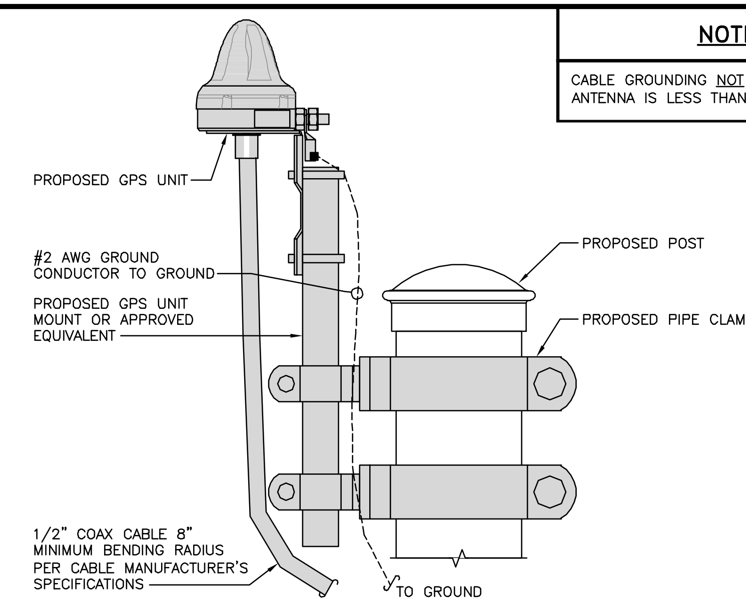
EQUIPMENT CABINET OMITTED FOR CLARITY



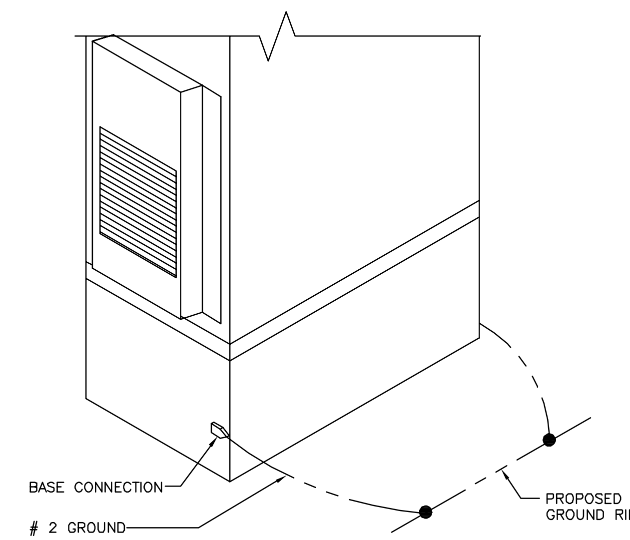
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

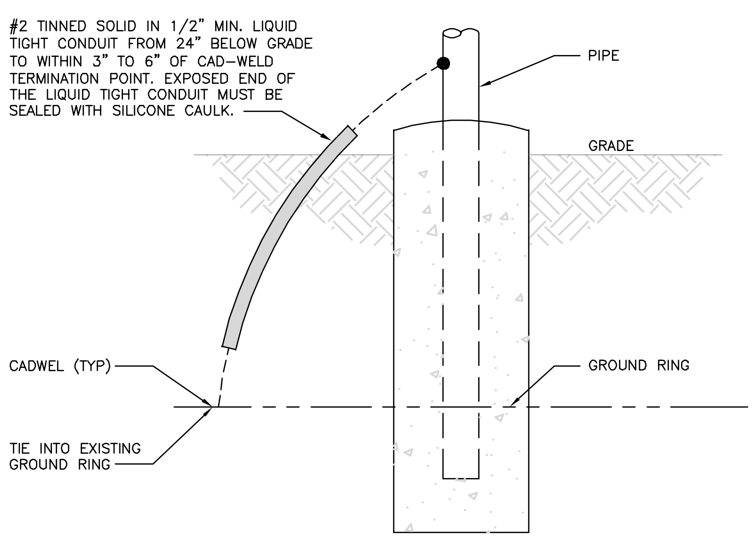
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



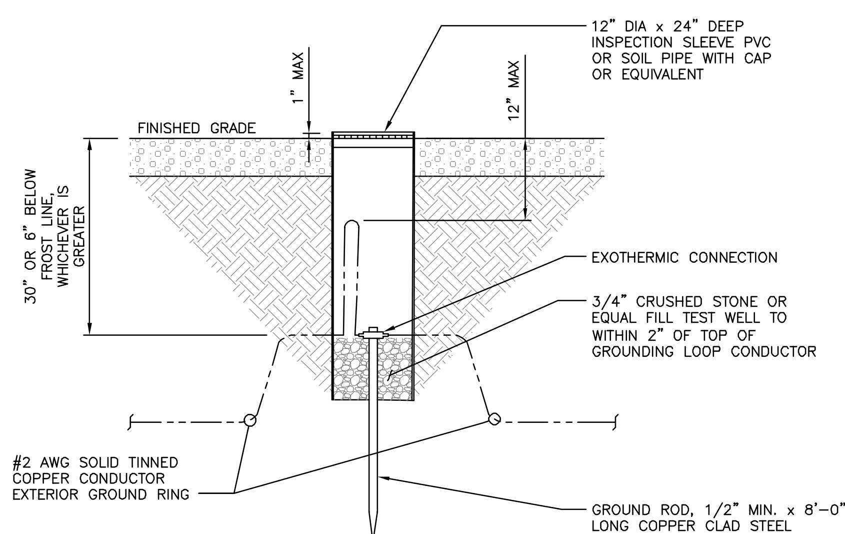
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



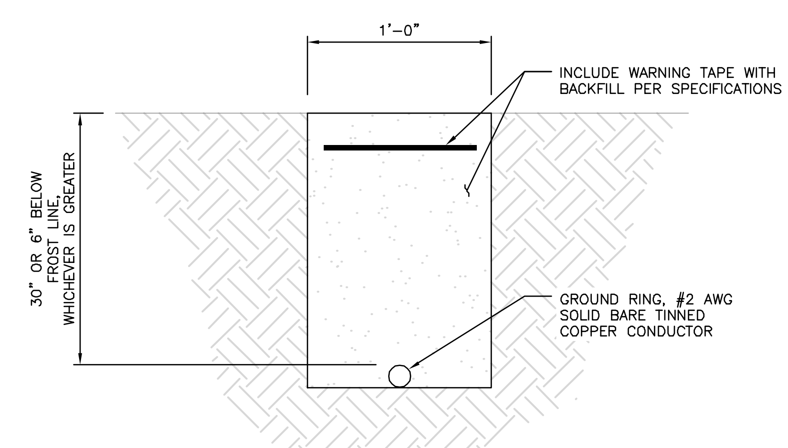
OUTDOOR CABINET GROUNDING | NO SCALE | 3



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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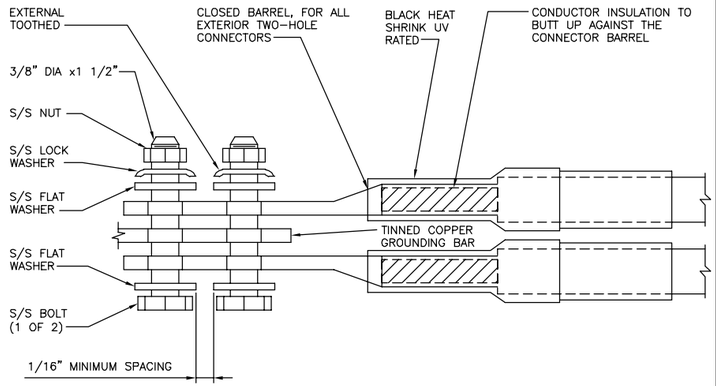
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE
GROUNDING DETAILS

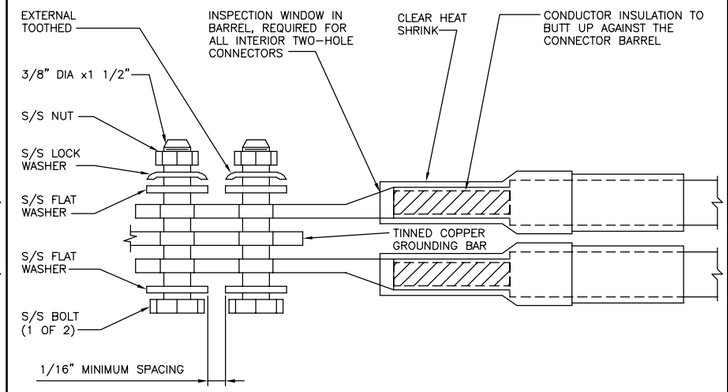
SHEET NUMBER
G-2

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.
9. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).

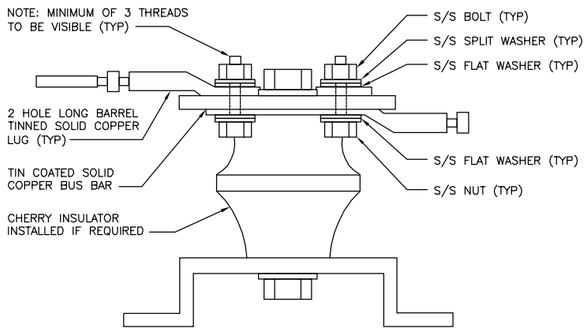
TYPICAL GROUNDING NOTES | NO SCALE | 1



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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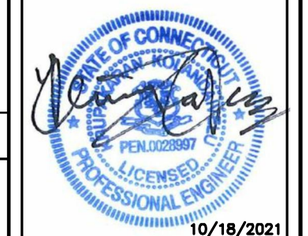

10/18/2021

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SHEET TITLE
GROUNDING DETAILS

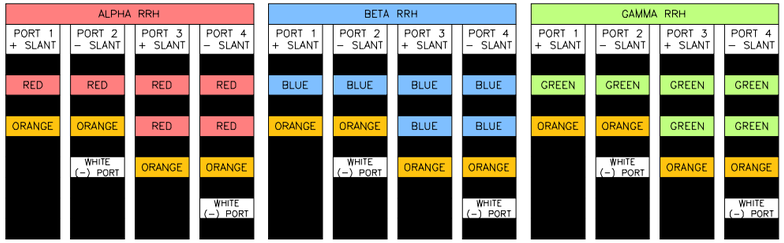
SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

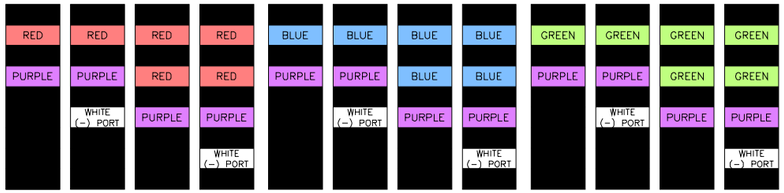
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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)

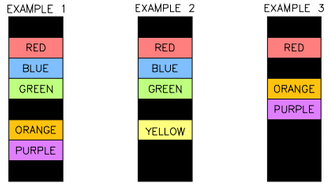


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

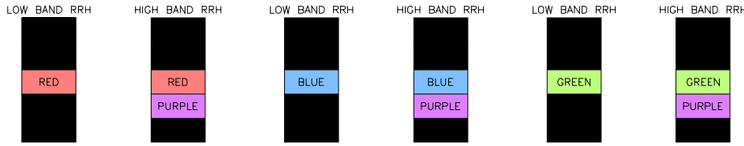
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS
ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

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



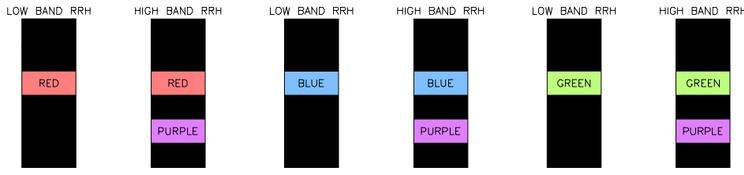
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

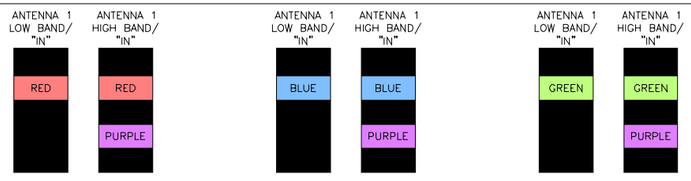


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY



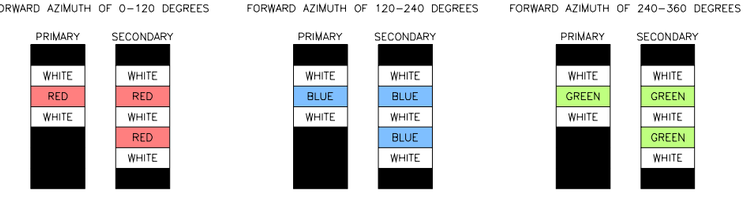
RET MOTORS AT ANTENNAS



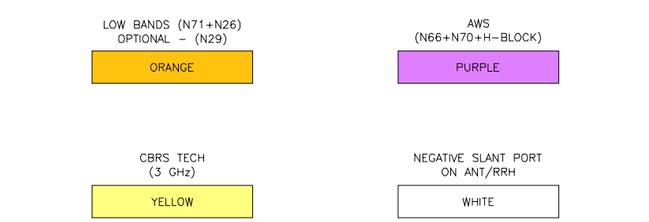
MICROWAVE RADIO LINKS

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



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

NB+C TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC
8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615
(919) 657-9131

DRAWN BY:	CHECKED BY:	APPROVED BY:
JOA	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

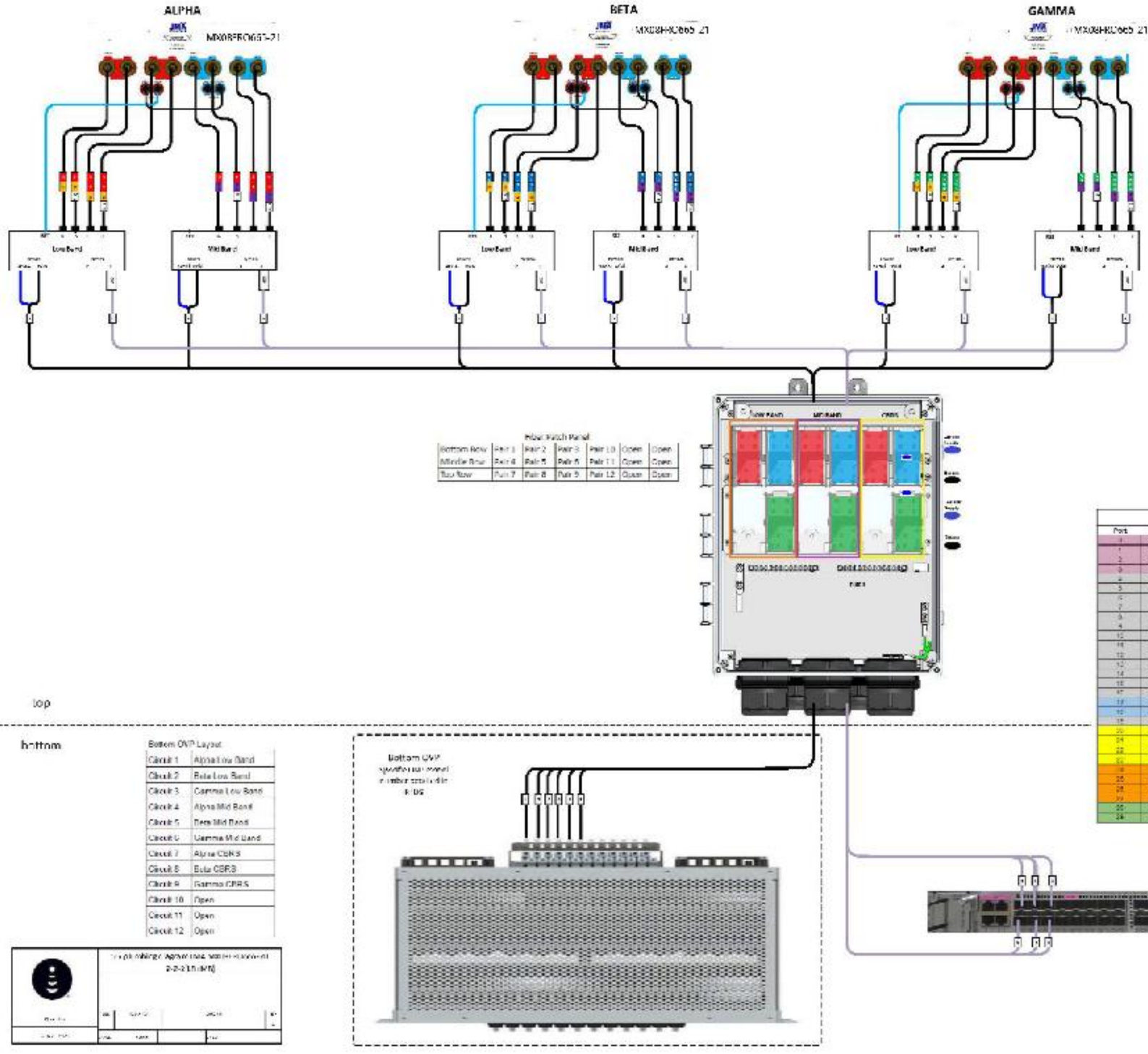
REV	DATE	DESCRIPTION
A	08/03/2021	ISSUED FOR REVIEW
0	10/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
302472-13683503

DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1



PLUMBING DIAGRAM

NO SCALE

1

dish wireless.

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STATE OF CONNECTICUT
BRIAN KOTARA
PEN.0028997
LICENSED PROFESSIONAL ENGINEER

10/18/2021

A&E PROJECT NUMBER
302472-13683503

DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE
RF
PLUMBING DIAGRAM

SHEET NUMBER
RF-2

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM — T

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE — T

SINGLE POLE SWITCH — $

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE — GFCI

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.

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LITTLETON, CO 80120

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DRAWN BY:	CHECKED BY:	APPROVED BY:
JOA	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	08/03/2021	ISSUED FOR REVIEW
0	10/18/2021	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT — BRIAN KOTANCHIK — PEN.0028997 — LICENSED PROFESSIONAL ENGINEER

10/18/2021

A&E PROJECT NUMBER
302472–13683503

DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

SHEET TITLE
LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH WIRELESS, L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

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RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	08/03/2021	ISSUED FOR REVIEW
0	10/18/2021	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT
BRIAN KOTANCHIK
PEN.0028997
LICENSED PROFESSIONAL ENGINEER
10/18/2021

A&E PROJECT NUMBER
302472-13683503

DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

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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RFDS REV #: 1

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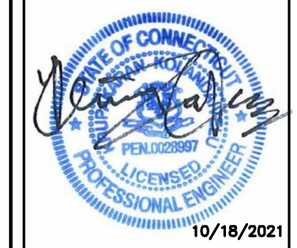

10/18/2021

A&E PROJECT NUMBER

302472-13683503

DISH WIRELESS, L.L.C.
PROJECT INFORMATION

BOBDL00010A

104 BUNKER HILL ROAD
ANDOVER, CT 06232

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.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."

2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:

A. ASTM A-572, GRADE 50 – ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE

B. ASTM A-36 – ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.

C. ASTM A-500, GRADE B – HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)

D. ASTM A-325, TYPE SC OR N – ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS

E. ASTM F-1554 07 – ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE

3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.

4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.

6. CONNECTIONS:

A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.

B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.

C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.

D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.

E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.

F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.

G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING ½" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

H. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE REQUIRED DURING CONSTRUCTION UNTIL ALL CONNECTIONS ARE COMPLETE.

I. ANY FIELD CHANGES OR SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL FROM THE ENGINEER, AND DISH WIRELESS L.L.C. PROJECT MANAGER IN WRITING

dish wireless.
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STATE OF CONNECTICUT
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LICENSED PROFESSIONAL ENGINEER
10/18/2021

A&E PROJECT NUMBER
302472-13683503

DISH WIRELESS, L.L.C.
PROJECT INFORMATION
BOBDL00010A
104 BUNKER HILL ROAD
ANDOVER, CT 06232

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

TOWER ENGINEERING PROFESSIONALS

Structural Analysis Report

Structure	:	**178 ft Monopole**
ATC Site Name	:	**Andover-bunker Hill Road, CT**
ATC Asset Number	:	**302472**
Engineering Number	:	**13683503_C3_03**
Proposed Carrier	:	**DISH WIRELESS L.L.C.**
Carrier Site Name	:	**BOBDL00010A**
Carrier Site Number	:	**BOBDL00010A**
Site Location	:	**104 Bunker Hill Road** **Andover, CT 06232-1301** **41.737800,-72.349800**
County	:	**Tolland**
Date	:	**July 14, 2021**
Max Usage	:	**87%**
Result	:	**Pass**

Prepared By:
Greg Trotta

Reviewed By:

STATE OF CONNECTICUT
AARON THOMAS RUCKER
32608
LICENSED PROFESSIONAL ENGINEER

07/15/2021

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 178 ft monopole to reflect the change in loading by DISH WIRELESS L.L.C..

Supporting Documents

Tower Drawings	PJF Job #29200-028, dated January 14, 2000
Foundation Drawing	PJF Job #29200-012, dated January 14, 2000
Geotechnical Report	Tectonic Project #1170.C966, dated November 30, 1999

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:	119 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1 1/2" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Hill
Crest Height (H):	344 ft
Crest Length (L):	2786 ft
Spectral Response:	Ss = 0.19, S_1 = 0.05
Site Class:	D - Stiff Soil

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
180.4	12	Powerwave Allgon 7120.16.05.00 / A-800-110-13I-0-N	Low Profile Platform	-	SPRINT NEXTEL
168.0	3	Alcatel-Lucent 1900 MHz 4X45 RRH	Platform with Handrails	(4) 1 1/4" Hybriflex Cable (6) 1 5/8" Coax	
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	3	RFS APXVTM14-ALU-I20			
	6	Alcatel-Lucent RRH2x50-08			
	3	Commscope NNVV-65B-R4			
158.0	3	Samsung B2/B66A RRH-BR049	Platform with Handrails	(6) 1 5/8" Coax (1) 1.58" (40.1mm) Hybrid	VERIZON WIRELESS
	3	Samsung B5/B13 RRH-BR04C			
	1	Raycap RCMDC-6600-PF-48			
	3	Samsung MT6407-77A			
	6	Antel LPA-80080/4CF ___			
	6	Andrew SBNHH-1D65B			
148.0	3	Ericsson KRY 112 489/2	Low Profile Platform	(1) 1 5/8" (1.63"-41.3mm) Fiber (12) 1 5/8" Coax	T-MOBILE
	3	Ericsson KRY 112 144/1			
	3	Ericsson Radio 4449 B12,B71			
	3	RFS APXVAARR24_43-U-NA20			
	3	EMS RR90-17-02DP			
137.0	6	Powerwave Allgon LGP21401	Platform with Handrails	(2) 2" Carflex Non-Metallic Conduit (2) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (12) 1 1/4" Coax	AT&T MOBILITY
	3	Raycap DC6-48-60-18-8F ("Squid")			
	3	Ericsson RRUS 8843 B2, B66A			
	6	LGP Allgon LGP21903			
	3	Ericsson RRUS 4478 B14			
	6	CCI DMP65R-BU6DA			
	3	Powerwave Allgon 7770.00			
	3	Ericsson RRUS 4449 B5, B12			
108.0	1	GPS	Stand-Off	(1) 1/2" Coax	VERIZON WIRELESS
97.0	1	GPS	Stand-Off	(1) 1/2" Coax	SPRINT NEXTEL
88.5	1	GPS	Stand-Off	-	

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
124.0	1	Commscope RDIDC-9181-PF-48	Platform with Handrails	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B605			
	3	Fujitsu TA08025-B604			
	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.

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	82%	Pass
Shaft	87%	Pass
Base Plate	10%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	5628.56	65%
Axial (Kips)	68.4	49%
Shear (Kips)	43.42	29%

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 and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
124.0	Commscope RDIDC-9181-PF-48	DISH WIRELESS L.L.C.	1.237	1.218
	Fujitsu TA08025-B605			
	Fujitsu TA08025-B604			
	JMA Wireless MX08FRO665-21			

***Deflection 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:

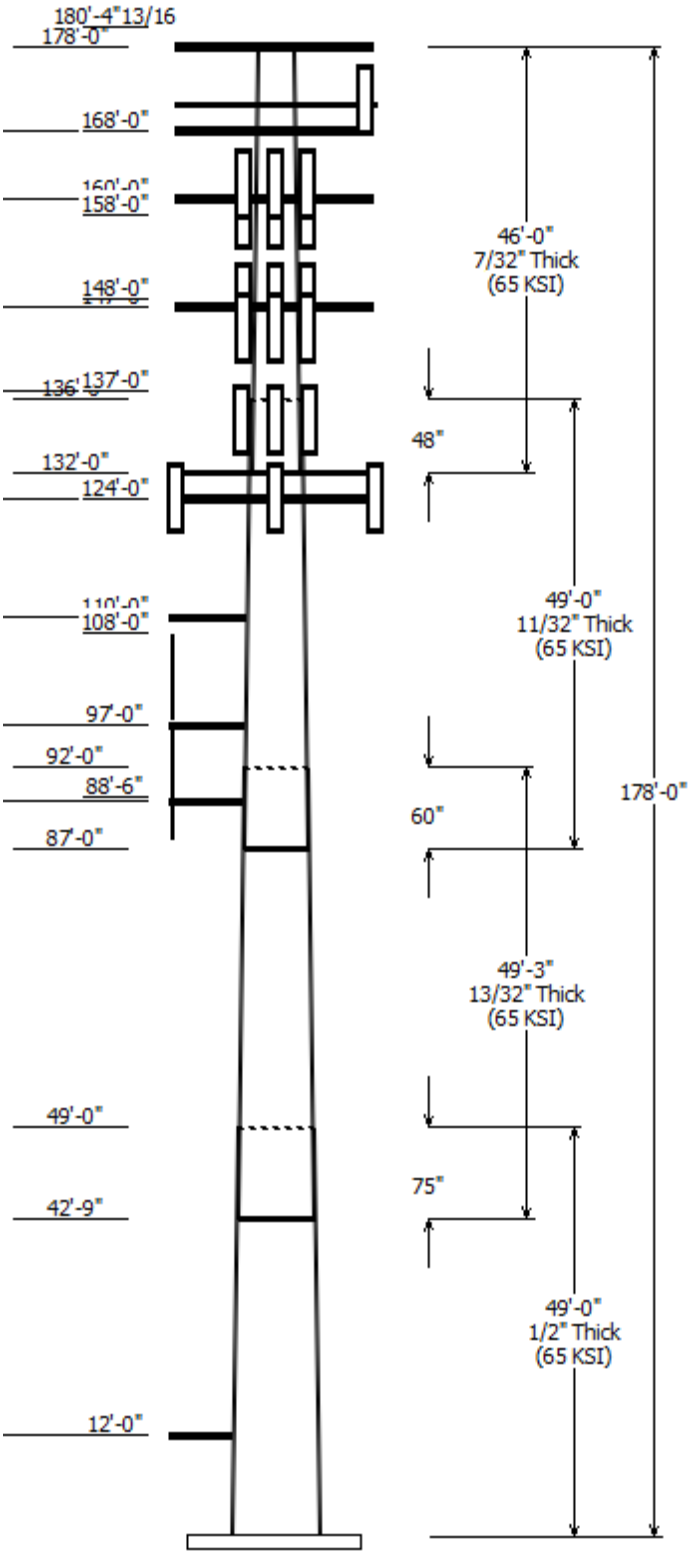
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

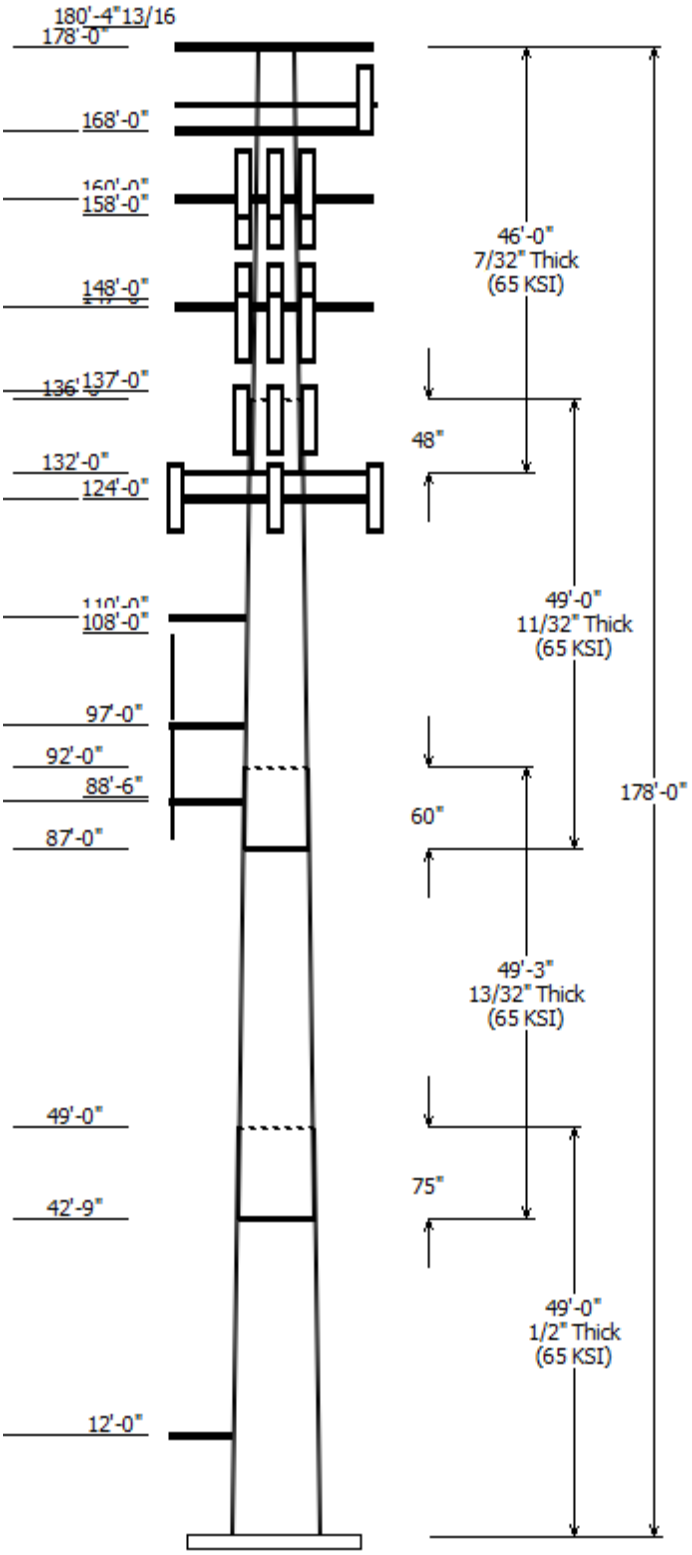
Client :	DISH WIRELESS L.L.C.		
Pole :	302472	Code:	ANSI/TIA-222-H
Location :	Andover-bunker Hill Road, CT		
Description :		Risk Category :	II
Shape :	18 Sides	Exposure :	B
Height :	178.00 (ft)	Topo Method :	Method 2
Base Elev (ft):	0.00	Topographic Feature :	Hill
Taper:	0.207008 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	49.000	46.76	56.91	0.500		0.000	18 Sides	65
2	49.250	38.67	48.87	0.406	Slip Joint	75.000	18 Sides	65
3	49.000	30.25	40.40	0.344	Slip Joint	60.000	18 Sides	65
4	46.000	22.00	31.52	0.219	Slip Joint	48.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
180.400	180.400	12	Powerwave Allgon
178.000	178.000	1	Flat Low Profile Platform
168.000	168.000	1	Round Platform w/ Handrails
168.000	171.000	3	RFS APXVTM14-ALU-I20
168.000	171.800	3	Alcatel-Lucent TD-RRH8x20-25
168.000	171.000	3	Alcatel-Lucent 1900 MHz 4X45
168.000	171.000	3	Commscope NNVV-65B-R4
168.000	170.800	6	Alcatel-Lucent RRH2x50-08
160.000	160.000	1	Flat Platform w/ Handrails
158.000	160.100	6	Andrew SBNHH-1D65B
158.000	159.500	6	Antel LPA-80080/4CF ___
158.000	158.000	3	Samsung MT6407-77A
158.000	158.000	1	Raycap RCMDC-6600-PF-48
158.000	158.000	3	Samsung B5/B13 RRH-BR04C
158.000	158.000	3	Samsung B2/B66A RRH-BR049
148.000	146.100	3	RFS APXVAARR24_43-U-NA20
148.000	148.000	3	EMS RR90-17-02DP
148.000	147.600	3	Ericsson Radio 4449 B12,B71
148.000	144.300	3	Ericsson KRY 112 489/2
148.000	144.300	3	Ericsson KRY 112 144/1
147.000	147.000	1	Generic Round Low Profile
147.000	147.000	3	Generic Mount Reinforcement
137.000	137.000	1	Platform with Handrails RMQP-
137.000	136.300	6	CCI DMP65R-BU6DA
137.000	136.600	3	Powerwave Allgon 7770.00
137.000	137.700	3	Ericsson RRUS 4449 B5, B12
137.000	137.600	3	Ericsson RRUS 4478 B14
137.000	137.600	3	Ericsson RRUS 8843 B2, B66A
137.000	136.200	6	Powerwave Allgon LGP21401
137.000	134.600	6	LGP Allgon LGP21903
137.000	138.100	3	Raycap DC6-48-60-18-8F
124.000	124.000	1	Generic Flat Platform with Han
124.000	124.000	3	JMA Wireless MX08FRO665-21
124.000	124.000	3	Fujitsu TA08025-B604
124.000	124.000	3	Fujitsu TA08025-B605
124.000	124.000	1	Commscope RDIDC-9181-PF-48
110.000	110.000	1	Stand-Off
108.000	106.600	1	Generic GPS
97.000	97.000	1	Stand-Off
97.000	95.700	1	Generic GPS
88.500	88.500	1	Generic GPS
88.000	88.000	1	Stand-Off
12.000	12.000	1	Stand-Off



Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	97.000	1/2" Coax	No
0.000	108.0	1/2" Coax	No
0.000	124.0	1.60" (40.6mm)	No
0.000	137.0	0.39" (10mm)	No
0.000	137.0	0.78" (19.7mm) 8	No
0.000	137.0	1 1/4" Coax	No
0.000	138.0	2" Carflex Non-	No
0.000	148.0	1 5/8" (1.63"-	No
0.000	148.0	1 5/8" Coax	No
0.000	158.0	1 5/8" Coax	No
0.000	158.0	1.58" (40.1mm)	No
0.000	168.0	1 1/4" Hybriflex	No
0.000	168.0	1 5/8" Coax	No

Load Cases

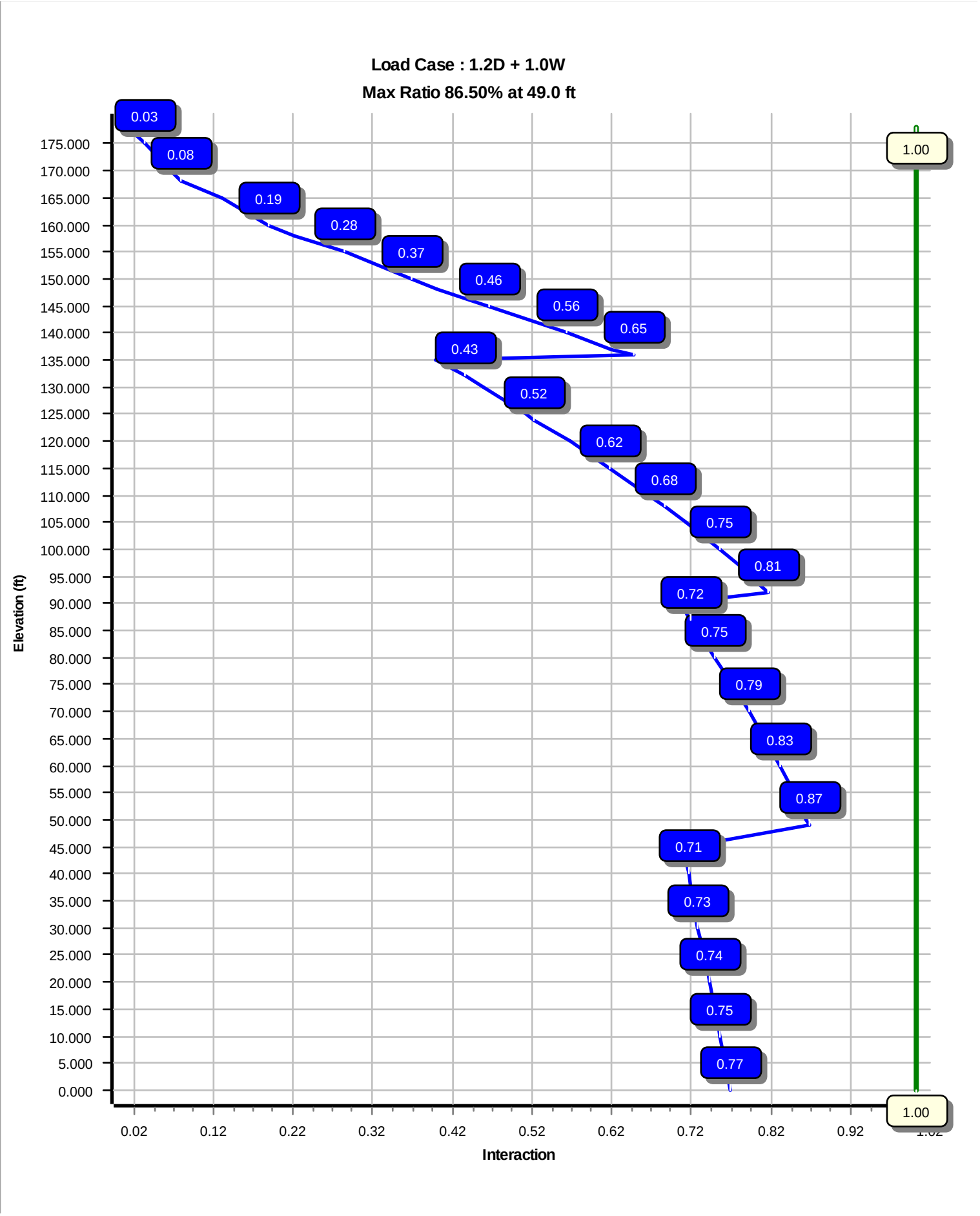
1.2D + 1.0W	119 mph with No Ice
0.9D + 1.0W	119 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.50 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.0W	5628.56	43.42	68.38
0.9D + 1.0W	5533.10	43.39	51.26
1.2D + 1.0Di + 1.0Wi	1657.01	12.39	104.29
1.2D + 1.0Ev + 1.0Eh	253.01	1.72	68.67
0.9D - 1.0Ev + 1.0Eh	247.53	1.71	47.52
1.0D + 1.0W	1269.29	9.87	57.05

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000


Load Case : 1.2D + 1.0W
Max Ratio 86.50% at 49.0 ft
0.03
0.08
0.19
0.28
0.37
0.46
0.56
0.65
0.43
0.52
0.62
0.68
0.75
0.81
0.72
0.75
0.79
0.83
0.87
0.71
0.73
0.74
0.75
0.77
1.00
1.00
175.000
170.000
165.000
160.000
155.000
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 302472 Code: ANSI/TIA-222-H

Site Name: Andover-bunker Hill Road, CT Engineering Number:13683503_C3_03 7/14/2021 3:41:00 PM

Customer: DISH WIRELESS L.L.C.

Analysis Parameters

Location :	Tolland County, CT	Height (ft) :	178
Code :	ANSI/TIA-222-H	Base Diameter (in) :	56.91
Shape :	18 Sides	Top Diameter (in) :	22.00
Pole Type :	Taper	Taper (in/ft) :	0.207
Pole Manfacturer :	PJF	Rotation (deg) :	0.00
Kd (non-service) :	0.95	Ke :	0.98

Ice & Wind Parameters

Exposure Category:	B	Design Wind Speed Without Ice:	119 mph
Risk Category:	II	Design Wind Speed With Ice:	50 mph
Topographic Factor Procedure:	Method 2	Operational Wind Speed:	60 mph
Feature:	Hill	Design Ice Thickness:	1.50 in
Crest Height (H):	344 ft	HMSL:	547.00 ft
Crest Length (L):	2786 ft		
Distance from Apex (x):	483 ft		
Upwind / Downwind	Downwind		

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	3.03				
T_L (sec):	6	p:	1	C_s:	0.030
S_s:	0.193	S_1:	0.055	C_s Max:	0.030
F_a:	1.600	F_v :	2.400	C_s Min:	0.030
S_{ds}:	0.206	S_{d1}:	0.088		

Load Cases

1.2D + 1.0W	119 mph with No Ice
0.9D + 1.0W	119 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.50 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	49.000	0.5000	65		0.00	13,584	56.91	0.00	89.52	35990.1	18.31	113.82	46.76	49.00	73.42	19857.1	14.73	93.53	0.207008
2-18	49.250	0.4063	65	Slip	75.00	9,371	48.87	42.75	62.49	18546.7	19.45	120.30	38.67	92.00	49.35	9131.9	15.02	95.21	0.207008
3-18	49.000	0.3438	65	Slip	60.00	6,364	40.40	87.00	43.70	8859.4	18.96	117.53	30.25	136.00	32.64	3689.5	13.76	88.02	0.207008
4-18	46.000	0.2188	65	Slip	48.00	2,885	31.52	132.00	21.73	2690.8	23.65	144.10	22.00	178.00	15.12	906.4	15.97	100.57	0.207008
				Shaft Weight		32,204													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
180.40	Powerwave Allgon	12	0.80	0.000	15.40	5.317	0.70	186.10	4.977	0.70
178.00	Flat Low Profile Platform	1	1.00	0.000	1,500.00	26.100	1.00	2,209.79	47.016	1.00
168.00	Alcatel-Lucent RRH2x50-08	6	0.75	2.800	52.90	1.701	0.50	117.57	2.643	0.50
168.00	Alcatel-Lucent 1900 MHz 4X45	3	0.75	3.000	60.00	2.322	0.67	147.95	3.501	0.67
168.00	Alcatel-Lucent TD-RRH8x20-25	3	0.75	3.800	70.00	4.046	0.61	173.14	5.495	0.61
168.00	RFS APXVTM14-ALU-I20	3	0.75	3.000	56.20	6.342	0.66	206.48	8.719	0.66
168.00	Commscope NNVV-65B-R4	3	0.75	3.000	77.40	12.271	0.64	351.63	15.331	0.64
168.00	Round Platform w/ Handrails	1	1.00	0.000	2,000.00	27.200	1.00	3,414.17	53.877	1.00
160.00	Flat Platform w/ Handrails	1	1.00	0.000	2,000.00	42.400	1.00	3,546.28	65.218	1.00
158.00	Samsung B2/B66A RRH-BR049	3	0.75	0.000	84.40	1.875	0.50	153.74	2.856	0.50
158.00	Samsung B5/B13 RRH-BR04C	3	0.75	0.000	70.30	1.875	0.50	132.47	2.856	0.50
158.00	Raycap RCMDC-6600-PF-48	1	0.75	0.000	31.50	4.056	1.00	169.64	5.539	1.00
158.00	Samsung MT6407-77A	3	0.75	0.000	81.60	4.709	0.61	192.38	6.360	0.61
158.00	Antel LPA-80080/4CF ___	6	0.75	1.500	12.00	5.399	0.62	161.57	3.541	0.62
158.00	Andrew SBNHH-1D65B	6	0.75	2.100	50.70	8.173	0.69	241.42	11.249	0.69
148.00	Ericsson KRY 112 144/1	3	0.80	-3.700	11.00	0.351	0.50	22.65	0.790	0.50
148.00	Ericsson KRY 112 489/2	3	0.80	-3.700	15.40	0.559	0.50	34.52	1.127	0.50
148.00	Ericsson Radio 4449 B12,B71	3	0.80	-0.400	74.00	1.639	0.50	134.61	2.552	0.50
148.00	EMS RR90-17-02DP	3	0.80	0.000	13.50	4.356	0.64	122.66	5.434	0.64
148.00	RFS APXVAARR24_43-U-NA20	3	0.80	-1.900	127.90	20.243	0.63	552.88	24.258	0.63
147.00	Generic Mount Reinforcement	3	1.00	0.000	200.00	7.500	1.00	409.35	15.599	1.00
147.00	Generic Round Low Profile	1	1.00	0.000	1,875.00	21.700	1.00	2,751.07	42.469	1.00
137.00	LGP Allgon LGP21903	6	0.75	-2.400	5.50	0.231	0.50	14.56	0.597	0.50
137.00	Powerwave Allgon LGP21401	6	0.75	-0.800	14.10	1.104	0.50	40.96	1.872	0.50
137.00	Raycap DC6-48-60-18-8F	3	0.75	1.100	31.80	1.470	1.00	98.23	2.222	1.00
137.00	Ericsson RRUS 8843 B2, B66A	3	0.75	0.600	72.00	1.639	0.50	138.00	2.549	0.50
137.00	Ericsson RRUS 4478 B14	3	0.75	0.600	59.90	1.842	0.50	119.43	2.808	0.50
137.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.700	71.00	1.969	0.50	140.39	2.973	0.50
137.00	Powerwave Allgon 7770.00	3	0.75	-0.400	35.00	5.508	0.65	182.72	6.650	0.65
137.00	CCI DMP65R-BU6DA	6	0.75	-0.700	79.40	12.709	0.63	356.76	15.712	0.63
137.00	Platform with Handrails RMQP-	1	1.00	0.000	2,500.00	34.800	1.00	4,375.27	60.904	1.00
124.00	Commscope RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	82.69	2.828	1.00
124.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	141.92	2.945	0.50
124.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	126.19	2.945	0.50
124.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	339.05	15.491	0.64
124.00	Generic Flat Platform with	1	1.00	0.000	2,500.00	42.400	1.00	4,397.58	64.802	1.00
110.00	Stand-Off	1	1.00	0.000	100.00	3.000	1.00	151.66	4.661	1.00
108.00	Generic GPS	1	1.00	-1.400	10.00	0.900	1.00	40.94	1.576	1.00
97.00	Generic GPS	1	1.00	-1.300	10.00	0.900	1.00	40.70	1.571	1.00
97.00	Stand-Off	1	1.00	0.000	100.00	3.000	1.00	151.17	4.645	1.00
88.50	Generic GPS	1	1.00	0.000	10.00	0.900	1.00	40.50	1.567	1.00
88.00	Stand-Off	1	1.00	0.000	100.00	3.000	1.00	150.80	4.633	1.00
12.00	Stand-Off	1	1.00	0.000	100.00	3.000	1.00	142.17	4.355	1.00
Totals	Num Loadings:43	126			18,575.20			41,255.85		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	168.00	4	1 1/4" Hybriflex Cable	1.54	1.00	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	168.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL
0.00	158.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	158.00	1	1.58" (40.1mm) Hybrid	1.58	1.61	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	148.00	1	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	148.00	12	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	138.00	2	2" Carflex Non-	2.36	0.68	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	137.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	137.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	137.00	12	1 1/4" Coax	1.55	0.63	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	124.00	1	1.60" (40.6mm) Hybrid	1.60	2.34	N	0	0.00	0.00	0	0.00	N	DISH WIRELESS
0.00	108.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	97.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	SPRINT NEXTEL

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.5000	56.910	89.519	35,990.1	18.31	113.82	79.9	1245.	0.0	0.0
5.00		0.5000	55.875	87.877	34,045.1	17.94	111.75	80.3	1200.	0.0	1,509.1
10.00		0.5000	54.840	86.234	32,171.5	17.58	109.68	80.7	1155.	0.0	1,481.2
12.00		0.5000	54.426	85.577	31,441.7	17.43	108.85	80.9	1137.	0.0	584.6
15.00		0.5000	53.805	84.592	30,367.9	17.21	107.61	81.2	1111.	0.0	868.6
20.00		0.5000	52.770	82.949	28,633.1	16.85	105.54	81.6	1068.	0.0	1,425.3
25.00		0.5000	51.735	81.307	26,965.5	16.48	103.47	82.0	1026.	0.0	1,397.3
30.00		0.5000	50.700	79.664	25,364.1	16.12	101.40	82.4	985.4	0.0	1,369.4
35.00		0.5000	49.665	78.022	23,827.3	15.75	99.33	82.6	944.9	0.0	1,341.4
40.00		0.5000	48.630	76.379	22,353.9	15.39	97.26	82.6	905.4	0.0	1,313.5
42.75	Bot - Section 2	0.5000	48.060	75.476	21,570.0	15.19	96.12	82.6	884.0	0.0	710.5
45.00		0.5000	47.595	74.736	20,942.5	15.02	95.19	82.6	866.7	0.0	1,051.2
49.00	Top - Section 1	0.4063	47.579	60.824	17,100.7	18.89	117.12	79.2	707.9	0.0	1,843.5
50.00		0.4063	47.372	60.557	16,876.6	18.80	116.61	79.3	701.7	0.0	206.5
55.00		0.4063	46.337	59.223	15,785.2	18.35	114.06	79.8	671.0	0.0	1,019.0
60.00		0.4063	45.302	57.888	14,741.9	17.90	111.51	80.3	640.9	0.0	996.3
65.00		0.4063	44.267	56.554	13,745.6	17.45	108.96	80.9	611.6	0.0	973.5
70.00		0.4063	43.232	55.219	12,795.3	17.00	106.42	81.4	582.9	0.0	950.8
75.00		0.4063	42.197	53.884	11,889.8	16.55	103.87	81.9	555.0	0.0	928.1
80.00		0.4063	41.162	52.550	11,028.1	16.10	101.32	82.5	527.7	0.0	905.4
85.00		0.4063	40.127	51.215	10,209.0	15.65	98.77	82.6	501.1	0.0	882.7
87.00	Bot - Section 3	0.4063	39.713	50.681	9,893.1	15.47	97.75	82.6	490.7	0.0	346.7
88.00		0.4063	39.506	50.415	9,737.6	15.38	97.24	82.6	485.5	0.0	320.3
88.50		0.4063	39.402	50.281	9,660.5	15.34	96.99	82.6	482.9	0.0	159.5
90.00		0.4063	39.092	49.881	9,431.5	15.20	96.23	82.6	475.2	0.0	476.1
92.00	Top - Section 2	0.3438	39.365	42.573	8,190.3	18.43	114.52	79.7	409.8	0.0	628.9
95.00		0.3438	38.744	41.896	7,805.4	18.11	112.71	80.1	396.8	0.0	431.1
97.00		0.3438	38.330	41.444	7,555.7	17.90	111.51	80.3	388.3	0.0	283.6
100.0		0.3438	37.709	40.767	7,191.1	17.58	109.70	80.7	375.6	0.0	419.6
105.0		0.3438	36.674	39.637	6,609.9	17.05	106.69	81.3	355.0	0.0	684.0
108.0		0.3438	36.053	38.960	6,276.7	16.73	104.88	81.7	342.9	0.0	401.2
110.0		0.3438	35.639	38.508	6,060.9	16.52	103.68	82.0	335.0	0.0	263.6
115.0		0.3438	34.604	37.379	5,543.2	15.99	100.67	82.6	315.5	0.0	645.6
120.0		0.3438	33.569	36.250	5,055.8	15.46	97.66	82.6	296.6	0.0	626.4
124.0		0.3438	32.741	35.346	4,687.2	15.03	95.25	82.6	282.0	0.0	487.2
125.0		0.3438	32.534	35.120	4,597.9	14.93	94.64	82.6	278.4	0.0	119.9
130.0		0.3438	31.499	33.991	4,168.5	14.39	91.63	82.6	260.7	0.0	587.9
132.0	Bot - Section 4	0.3438	31.085	33.539	4,004.5	14.18	90.43	82.6	253.7	0.0	229.8
135.0		0.3438	30.464	32.862	3,766.7	13.86	88.62	82.6	243.5	0.0	558.6
136.0	Top - Section 3	0.2188	30.694	21.159	2,482.8	22.98	140.32	74.4	159.3	0.0	183.7
137.0		0.2188	30.487	21.015	2,432.6	22.81	139.37	74.6	157.2	0.0	71.8
140.0		0.2188	29.866	20.584	2,285.9	22.31	136.53	75.2	150.8	0.0	212.3
145.0		0.2188	28.831	19.865	2,054.8	21.48	131.80	76.1	140.4	0.0	344.1
147.0		0.2188	28.417	19.578	1,966.8	21.14	129.91	76.5	136.3	0.0	134.2
148.0		0.2188	28.210	19.434	1,923.8	20.98	128.96	76.7	134.3	0.0	66.4
150.0		0.2188	27.796	19.147	1,839.7	20.64	127.07	77.1	130.4	0.0	131.3
155.0		0.2188	26.761	18.428	1,640.3	19.81	122.34	78.1	120.7	0.0	319.6
158.0		0.2188	26.140	17.997	1,527.8	19.31	119.50	78.7	115.1	0.0	185.9
160.0		0.2188	25.726	17.709	1,455.8	18.97	117.61	79.1	111.5	0.0	121.5
165.0		0.2188	24.691	16.991	1,285.6	18.14	112.87	80.1	102.6	0.0	295.2
168.0		0.2188	24.070	16.560	1,190.2	17.64	110.03	80.7	97.4	0.0	171.2
170.0		0.2188	23.656	16.272	1,129.3	17.31	108.14	81.0	94.0	0.0	111.7
175.0		0.2188	22.621	15.554	986.2	16.47	103.41	82.0	85.9	0.0	270.7
178.0		0.2188	22.000	15.122	906.4	15.97	100.57	82.6	81.2	0.0	156.6
											32,204.2

Site Number: 302472 Code: ANSI/TIA-222-H

Site Name: Andover-bunker Hill Road, CT Engineering Number:13683503_C3_03 7/14/2021 3:41:00 PM

Customer: DISH WIRELESS L.L.C.

Load Case: 1.2D + 1.0W 119 mph with No Ice 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		315.8	0.0					0.0	0.0	315.8	0.0	0.0	0.0
5.00		624.4	1,810.9					0.0	252.7	624.4	2,063.6	0.0	0.0
10.00		430.1	1,777.4					0.0	252.7	430.1	2,030.1	0.0	0.0
12.00	Appurtenance(s)	301.6	701.6	107.9	0.0	0.0	120.0	0.0	101.1	409.4	922.7	0.0	0.0
15.00		474.6	1,042.3					0.0	151.6	474.6	1,193.9	0.0	0.0
20.00		582.2	1,710.3					0.0	252.7	582.2	1,963.0	0.0	0.0
25.00		568.3	1,676.8					0.0	252.7	568.3	1,929.5	0.0	0.0
30.00		561.2	1,643.2					0.0	252.7	561.2	1,896.0	0.0	0.0
35.00		565.5	1,609.7					0.0	252.7	565.5	1,862.4	0.0	0.0
40.00		443.1	1,576.2					0.0	252.7	443.1	1,828.9	0.0	0.0
42.75	Bot - Section 2	290.2	852.6					0.0	139.0	290.2	991.6	0.0	0.0
45.00		367.8	1,261.4					0.0	113.7	367.8	1,375.2	0.0	0.0
49.00	Top - Section 1	294.8	2,212.1					0.0	202.2	294.8	2,414.3	0.0	0.0
50.00		354.7	247.8					0.0	50.5	354.7	298.4	0.0	0.0
55.00		591.2	1,222.8					0.0	252.7	591.2	1,475.5	0.0	0.0
60.00		590.3	1,195.5					0.0	252.7	590.3	1,448.2	0.0	0.0
65.00		587.9	1,168.3					0.0	252.7	587.9	1,421.0	0.0	0.0
70.00		584.3	1,141.0					0.0	252.7	584.3	1,393.7	0.0	0.0
75.00		579.5	1,113.8					0.0	252.7	579.5	1,366.5	0.0	0.0
80.00		573.7	1,086.5					0.0	252.7	573.7	1,339.2	0.0	0.0
85.00		398.4	1,059.3					0.0	252.7	398.4	1,312.0	0.0	0.0
87.00	Bot - Section 3	170.5	416.1					0.0	101.1	170.5	517.2	0.0	0.0
88.00	Appurtenance(s)	85.9	384.4	138.3	0.0	0.0	120.0	0.0	50.5	224.3	554.9	0.0	0.0
88.50	Appurtenance(s)	114.2	191.4	41.6	0.0	0.0	12.0	0.0	25.3	155.8	228.7	0.0	0.0
90.00		199.2	571.3					0.0	75.8	199.2	647.1	0.0	0.0
92.00	Top - Section 2	282.7	754.7					0.0	101.1	282.7	855.8	0.0	0.0
95.00		281.0	517.4					0.0	151.6	281.0	669.0	0.0	0.0
97.00	Appurtenance(s)	278.5	340.3	183.6	0.0	-55.0	132.0	0.0	101.1	462.1	573.4	0.0	0.0
100.00		440.4	503.5					0.0	151.1	440.4	654.6	0.0	0.0
105.00		435.9	820.8					0.0	251.8	435.9	1,072.6	0.0	0.0
108.00	Appurtenance(s)	269.0	481.4	43.3	0.0	-60.6	12.0	0.0	151.1	312.3	644.5	0.0	0.0
110.00	Appurtenance(s)	370.8	316.3	145.2	0.0	0.0	120.0	0.0	100.4	516.0	536.7	0.0	0.0
115.00		522.2	774.7					0.0	250.9	522.2	1,025.6	0.0	0.0
120.00		461.0	751.6					0.0	250.9	461.0	1,002.5	0.0	0.0
124.00	Appurtenance(s)	252.7	584.7	3,285.6	0.0	0.0	3,758.5	0.0	200.7	3,538.3	4,544.0	0.0	0.0
125.00		296.9	143.9					0.0	47.4	296.9	191.2	0.0	0.0
130.00		343.8	705.5					0.0	236.9	343.8	942.4	0.0	0.0
132.00	Bot - Section 4	242.7	275.7					0.0	94.8	242.7	370.5	0.0	0.0
135.00		193.8	670.3					0.0	142.1	193.8	812.4	0.0	0.0
136.00	Top - Section 3	95.9	220.4					0.0	47.4	95.9	267.8	0.0	0.0
137.00	Appurtenance(s)	189.7	86.1	4,623.4	0.0	-1,220.3	4,683.7	0.0	47.4	4,813.1	4,817.2	0.0	0.0
140.00		373.2	254.8					0.0	98.5	373.2	353.3	0.0	0.0
145.00		322.0	412.9					0.0	161.4	322.0	574.3	0.0	0.0
147.00	Appurtenance(s)	135.6	161.1	2,269.8	0.0	0.0	2,970.0	0.0	64.6	2,405.4	3,195.6	0.0	0.0
148.00	Appurtenance(s)	134.0	79.6	2,070.9	0.0	-3,230.0	870.5	0.0	32.3	2,204.9	982.4	0.0	0.0
150.00		307.0	157.5					0.0	37.1	307.0	194.6	0.0	0.0
155.00		345.3	383.6					0.0	92.7	345.3	476.3	0.0	0.0
158.00	Appurtenance(s)	210.9	223.1	2,825.4	0.0	3,961.0	1,339.9	0.0	55.6	3,036.3	1,618.6	0.0	0.0

Load Case: 1.2D + 1.0W 119 mph with No Ice 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.00

160.00	Appurtenance(s)	287.3	145.8	2,213.3	0.0	0.0	2,400.0	0.0	21.4	2,500.7	2,567.2	0.0	0.0
165.00		322.6	354.2					0.0	53.5	322.6	407.8	0.0	0.0
168.00	Appurtenance(s)	185.9	205.5	3,546.1	0.0	6,533.6	3,729.8	0.0	32.1	3,732.0	3,967.4	0.0	0.0
170.00		230.4	134.1					0.0	0.0	230.4	134.1	0.0	0.0
175.00		258.1	324.9					0.0	0.0	258.1	324.9	0.0	0.0
178.00	Appurtenance(s)	94.9	187.9	1,390.0	0.0	0.0	1,800.0	0.0	0.0	1,484.9	1,987.9	0.0	0.0
								Totals:		41,697.8	68,238.3	0.00	0.00

Load Case: 1.2D + 1.0W 119 mph with No Ice 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-68.38	-43.42	0.00	-5,628.56	0.00	5,628.56	6,434.86	1,571.07	8,004.98	7,461.32	0.00	0.00	0.766
5.00	-66.15	-43.05	0.00	-5,411.46	0.00	5,411.46	6,350.74	1,542.24	7,713.96	7,227.48	0.12	-0.22	0.760
10.00	-64.00	-42.78	0.00	-5,196.22	0.00	5,196.22	6,265.35	1,513.41	7,428.32	6,995.84	0.46	-0.44	0.754
12.00	-63.00	-42.49	0.00	-5,110.66	0.00	5,110.66	6,230.84	1,501.88	7,315.57	6,903.82	0.67	-0.53	0.751
15.00	-61.68	-42.20	0.00	-4,983.20	0.00	4,983.20	6,178.70	1,484.59	7,148.07	6,766.48	1.05	-0.67	0.747
20.00	-59.55	-41.83	0.00	-4,772.21	0.00	4,772.21	6,090.77	1,455.76	6,873.21	6,539.47	1.87	-0.90	0.740
25.00	-57.47	-41.46	0.00	-4,563.07	0.00	4,563.07	6,001.58	1,426.93	6,603.74	6,314.89	2.93	-1.13	0.733
30.00	-55.41	-41.09	0.00	-4,355.76	0.00	4,355.76	5,911.12	1,398.11	6,339.65	6,092.85	4.24	-1.36	0.725
35.00	-53.40	-40.70	0.00	-4,150.32	0.00	4,150.32	5,796.61	1,369.28	6,080.96	5,850.41	5.79	-1.60	0.720
40.00	-51.45	-40.37	0.00	-3,946.83	0.00	3,946.83	5,674.58	1,340.45	5,827.65	5,605.46	7.60	-1.84	0.714
42.75	-50.38	-40.16	0.00	-3,835.81	0.00	3,835.81	5,607.46	1,324.60	5,690.63	5,472.97	8.70	-1.98	0.711
45.00	-48.91	-39.87	0.00	-3,745.46	0.00	3,745.46	5,552.55	1,311.63	5,579.74	5,365.75	9.66	-2.09	0.708
49.00	-46.42	-39.59	0.00	-3,585.97	0.00	3,585.97	4,334.74	1,067.47	4,548.33	4,204.21	11.50	-2.29	0.865
50.00	-46.02	-39.36	0.00	-3,546.38	0.00	3,546.38	4,321.48	1,062.78	4,508.51	4,172.80	11.99	-2.34	0.862
55.00	-44.38	-38.93	0.00	-3,349.58	0.00	3,349.58	4,254.40	1,039.36	4,312.00	4,016.72	14.60	-2.63	0.846
60.00	-42.76	-38.49	0.00	-3,154.92	0.00	3,154.92	4,186.06	1,015.94	4,119.88	3,862.35	17.51	-2.93	0.828
65.00	-41.18	-38.04	0.00	-2,962.46	0.00	2,962.46	4,116.45	992.52	3,932.13	3,709.77	20.73	-3.22	0.810
70.00	-39.63	-37.58	0.00	-2,772.26	0.00	2,772.26	4,045.56	969.09	3,748.76	3,559.07	24.27	-3.52	0.790
75.00	-38.11	-37.12	0.00	-2,584.34	0.00	2,584.34	3,973.41	945.67	3,569.77	3,410.31	28.11	-3.82	0.769
80.00	-36.62	-36.64	0.00	-2,398.77	0.00	2,398.77	3,899.99	922.25	3,395.16	3,263.60	32.26	-4.11	0.746
85.00	-35.21	-36.28	0.00	-2,215.56	0.00	2,215.56	3,805.04	898.83	3,224.92	3,102.48	36.73	-4.41	0.725
87.00	-34.65	-36.12	0.00	-2,143.01	0.00	2,143.01	3,765.38	889.46	3,158.06	3,037.81	38.60	-4.53	0.716
88.00	-34.09	-35.88	0.00	-2,106.89	0.00	2,106.89	3,745.55	884.78	3,124.89	3,005.74	39.55	-4.59	0.712
88.50	-33.83	-35.74	0.00	-2,088.95	0.00	2,088.95	3,735.63	882.43	3,108.37	2,989.76	40.04	-4.63	0.709
90.00	-33.14	-35.55	0.00	-2,035.34	0.00	2,035.34	3,705.89	875.41	3,059.07	2,942.10	41.50	-4.72	0.702
92.00	-32.22	-35.28	0.00	-1,964.23	0.00	1,964.23	3,054.73	747.16	2,633.46	2,450.31	43.50	-4.84	0.814
95.00	-31.48	-35.03	0.00	-1,858.38	0.00	1,858.38	3,020.24	735.27	2,550.32	2,383.75	46.60	-5.02	0.792
97.00	-30.85	-34.61	0.00	-1,788.32	0.00	1,788.32	2,996.99	727.34	2,495.63	2,339.67	48.72	-5.15	0.777
100.00	-30.08	-34.25	0.00	-1,684.49	0.00	1,684.49	2,961.74	715.45	2,414.71	2,274.01	52.02	-5.34	0.753
105.00	-28.91	-33.84	0.00	-1,513.26	0.00	1,513.26	2,901.98	695.63	2,282.80	2,165.84	57.78	-5.66	0.711
108.00	-28.21	-33.54	0.00	-1,411.75	0.00	1,411.75	2,865.51	683.74	2,205.44	2,101.73	61.39	-5.85	0.684
110.00	-27.61	-33.07	0.00	-1,344.67	0.00	1,344.67	2,840.94	675.82	2,154.60	2,059.32	63.86	-5.97	0.665
115.00	-26.48	-32.58	0.00	-1,179.31	0.00	1,179.31	2,777.06	656.00	2,030.10	1,953.41	70.27	-6.27	0.616
120.00	-25.40	-32.12	0.00	-1,016.41	0.00	1,016.41	2,693.16	636.18	1,909.31	1,836.59	76.98	-6.55	0.565
124.00	-21.23	-28.13	0.00	-887.94	0.00	887.94	2,626.04	620.32	1,815.34	1,745.73	82.55	-6.77	0.519
125.00	-21.00	-27.86	0.00	-859.82	0.00	859.82	2,609.26	616.36	1,792.22	1,723.38	83.97	-6.82	0.509
130.00	-20.03	-27.47	0.00	-720.50	0.00	720.50	2,525.36	596.54	1,678.84	1,613.77	91.23	-7.06	0.457
132.00	-19.63	-27.22	0.00	-665.56	0.00	665.56	2,491.80	588.61	1,634.52	1,570.93	94.20	-7.16	0.434
135.00	-18.81	-26.95	0.00	-583.91	0.00	583.91	2,441.46	576.72	1,569.16	1,507.76	98.73	-7.29	0.397
136.00	-18.54	-26.84	0.00	-556.95	0.00	556.95	1,416.30	371.34	1,022.14	888.70	100.26	-7.34	0.645
137.00	-14.34	-21.48	0.00	-530.11	0.00	530.11	1,410.39	368.82	1,008.30	878.94	101.80	-7.38	0.617
140.00	-13.95	-21.11	0.00	-465.69	0.00	465.69	1,392.36	361.25	967.35	849.77	106.48	-7.55	0.561
145.00	-13.37	-20.76	0.00	-360.12	0.00	360.12	1,361.30	348.64	901.00	801.59	114.51	-7.81	0.463

Load Case: 1.2D + 1.0W 119 mph with No Ice 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.00

147.00	-10.51	-17.95	0.00	-318.61	0.00	318.61	1,348.51	343.59	875.11	782.49	117.79	-7.90	0.418
148.00	-9.82	-15.64	0.00	-300.66	0.00	300.66	1,342.05	341.07	862.31	772.98	119.44	-7.95	0.398
150.00	-9.63	-15.33	0.00	-269.37	0.00	269.37	1,328.96	336.02	837.00	754.03	122.78	-8.03	0.367
155.00	-9.18	-14.95	0.00	-192.71	0.00	192.71	1,295.36	323.41	775.35	707.16	131.27	-8.21	0.282
158.00	-8.00	-11.72	0.00	-143.91	0.00	143.91	1,274.59	315.85	739.50	679.41	136.44	-8.30	0.219
160.00	-5.81	-8.88	0.00	-120.47	0.00	120.47	1,260.48	310.80	716.07	661.07	139.91	-8.35	0.188
165.00	-5.44	-8.51	0.00	-76.08	0.00	76.08	1,224.34	298.19	659.14	615.84	148.68	-8.44	0.129
168.00	-2.07	-4.23	0.00	-44.02	0.00	44.02	1,202.05	290.62	626.12	589.15	153.98	-8.49	0.077
170.00	-1.97	-3.99	0.00	-35.56	0.00	35.56	1,186.93	285.58	604.57	571.55	157.53	-8.51	0.064
175.00	-1.68	-3.68	0.00	-15.63	0.00	15.63	1,148.25	272.97	552.36	528.28	166.42	-8.54	0.031
178.00	0.00	-3.39	0.00	-4.58	0.00	4.58	1,123.52	265.40	522.16	502.43	171.77	-8.55	0.009

Load Case: 0.9D + 1.0W — 119 mph with No Ice (Reduced DL) — 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		315.8	0.0					0.0	0.0	315.8	0.0	0.0	0.0
5.00		624.4	1,358.2					0.0	189.5	624.4	1,547.7	0.0	0.0
10.00		430.1	1,333.0					0.0	189.5	430.1	1,522.6	0.0	0.0
12.00	Appurtenance(s)	301.6	526.2	107.9	0.0	0.0	90.0	0.0	75.8	409.4	692.0	0.0	0.0
15.00		474.6	781.7					0.0	113.7	474.6	895.4	0.0	0.0
20.00		582.2	1,282.7					0.0	189.5	582.2	1,472.3	0.0	0.0
25.00		568.3	1,257.6					0.0	189.5	568.3	1,447.1	0.0	0.0
30.00		561.2	1,232.4					0.0	189.5	561.2	1,422.0	0.0	0.0
35.00		565.5	1,207.3					0.0	189.5	565.5	1,396.8	0.0	0.0
40.00		443.1	1,182.1					0.0	189.5	443.1	1,371.7	0.0	0.0
42.75	Bot - Section 2	290.2	639.5					0.0	104.2	290.2	743.7	0.0	0.0
45.00		367.8	946.1					0.0	85.3	367.8	1,031.4	0.0	0.0
49.00	Top - Section 1	294.8	1,659.1					0.0	151.6	294.8	1,810.7	0.0	0.0
50.00		354.7	185.9					0.0	37.9	354.7	223.8	0.0	0.0
55.00		591.2	917.1					0.0	189.5	591.2	1,106.6	0.0	0.0
60.00		590.3	896.6					0.0	189.5	590.3	1,086.2	0.0	0.0
65.00		587.9	876.2					0.0	189.5	587.9	1,065.7	0.0	0.0
70.00		584.3	855.8					0.0	189.5	584.3	1,045.3	0.0	0.0
75.00		579.5	835.3					0.0	189.5	579.5	1,024.9	0.0	0.0
80.00		573.7	814.9					0.0	189.5	573.7	1,004.4	0.0	0.0
85.00		398.4	794.5					0.0	189.5	398.4	984.0	0.0	0.0
87.00	Bot - Section 3	170.5	312.1					0.0	75.8	170.5	387.9	0.0	0.0
88.00	Appurtenance(s)	85.9	288.3	138.3	0.0	0.0	90.0	0.0	37.9	224.3	416.2	0.0	0.0
88.50	Appurtenance(s)	114.2	143.6	41.6	0.0	0.0	9.0	0.0	19.0	155.8	171.5	0.0	0.0
90.00		199.2	428.5					0.0	56.9	199.2	485.3	0.0	0.0
92.00	Top - Section 2	282.7	566.0					0.0	75.8	282.7	641.8	0.0	0.0
95.00		281.0	388.0					0.0	113.7	281.0	501.8	0.0	0.0
97.00	Appurtenance(s)	278.5	255.2	183.6	0.0	-55.0	99.0	0.0	75.8	462.1	430.0	0.0	0.0
100.00		440.4	377.7					0.0	113.3	440.4	491.0	0.0	0.0
105.00		435.9	615.6					0.0	188.9	435.9	804.5	0.0	0.0
108.00	Appurtenance(s)	269.0	361.1	43.3	0.0	-60.6	9.0	0.0	113.3	312.3	483.4	0.0	0.0
110.00	Appurtenance(s)	370.8	237.2	145.2	0.0	0.0	90.0	0.0	75.3	516.0	402.5	0.0	0.0
115.00		522.2	581.0					0.0	188.2	522.2	769.2	0.0	0.0
120.00		461.0	563.7					0.0	188.2	461.0	751.9	0.0	0.0
124.00	Appurtenance(s)	252.7	438.5	3,285.6	0.0	0.0	2,818.9	0.0	150.6	3,538.3	3,408.0	0.0	0.0
125.00		296.9	107.9					0.0	35.5	296.9	143.4	0.0	0.0
130.00		343.8	529.1					0.0	177.7	343.8	706.8	0.0	0.0
132.00	Bot - Section 4	242.7	206.8					0.0	71.1	242.7	277.9	0.0	0.0
135.00		193.8	502.7					0.0	106.6	193.8	609.3	0.0	0.0
136.00	Top - Section 3	95.9	165.3					0.0	35.5	95.9	200.8	0.0	0.0
137.00	Appurtenance(s)	189.7	64.6	4,623.4	0.0	-1,220.3	3,512.8	0.0	35.5	4,813.1	3,612.9	0.0	0.0
140.00		373.2	191.1					0.0	73.9	373.2	264.9	0.0	0.0
145.00		322.0	309.7					0.0	121.0	322.0	430.7	0.0	0.0
147.00	Appurtenance(s)	135.6	120.8	2,269.8	0.0	0.0	2,227.5	0.0	48.4	2,405.4	2,396.7	0.0	0.0
148.00	Appurtenance(s)	134.0	59.7	2,070.9	0.0	-3,230.0	652.9	0.0	24.2	2,204.9	736.8	0.0	0.0
150.00		307.0	118.2					0.0	27.8	307.0	146.0	0.0	0.0
155.00		345.3	287.7					0.0	69.5	345.3	357.2	0.0	0.0
158.00	Appurtenance(s)	210.9	167.3	2,825.4	0.0	3,961.0	1,004.9	0.0	41.7	3,036.3	1,214.0	0.0	0.0

Load Case: 0.9D + 1.0W 119 mph with No Ice (Reduced DL) 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.00

160.00	Appurtenance(s)	287.3	109.4	2,213.3	0.0	0.0	1,800.0	0.0	16.1	2,500.7	1,925.4	0.0	0.0
165.00		322.6	265.7					0.0	40.1	322.6	305.8	0.0	0.0
168.00	Appurtenance(s)	185.9	154.1	3,546.1	0.0	6,533.6	2,797.4	0.0	24.1	3,732.0	2,975.6	0.0	0.0
170.00		230.4	100.5					0.0	0.0	230.4	100.5	0.0	0.0
175.00		258.1	243.7					0.0	0.0	258.1	243.7	0.0	0.0
178.00	Appurtenance(s)	94.9	140.9	1,390.0	0.0	0.0	1,350.0	0.0	0.0	1,484.9	1,490.9	0.0	0.0
								Totals:		41,697.8	51,178.7	0.00	0.00

Load Case: 0.9D + 1.0W — 119 mph with No Ice (Reduced DL) — 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-51.26	-43.39	0.00	-5,533.10	0.00	5,533.10	6,434.86	1,571.07	8,004.98	7,461.32	0.00	0.00	0.750
5.00	-49.55	-42.95	0.00	-5,316.17	0.00	5,316.17	6,350.74	1,542.24	7,713.96	7,227.48	0.12	-0.21	0.744
10.00	-47.92	-42.64	0.00	-5,101.43	0.00	5,101.43	6,265.35	1,513.41	7,428.32	6,995.84	0.46	-0.43	0.738
12.00	-47.15	-42.31	0.00	-5,016.16	0.00	5,016.16	6,230.84	1,501.88	7,315.57	6,903.82	0.66	-0.52	0.735
15.00	-46.13	-41.97	0.00	-4,889.23	0.00	4,889.23	6,178.70	1,484.59	7,148.07	6,766.48	1.03	-0.66	0.731
20.00	-44.50	-41.55	0.00	-4,679.36	0.00	4,679.36	6,090.77	1,455.76	6,873.21	6,539.47	1.84	-0.88	0.724
25.00	-42.90	-41.13	0.00	-4,471.62	0.00	4,471.62	6,001.58	1,426.93	6,603.74	6,314.89	2.88	-1.11	0.716
30.00	-41.32	-40.70	0.00	-4,265.99	0.00	4,265.99	5,911.12	1,398.11	6,339.65	6,092.85	4.16	-1.34	0.708
35.00	-39.78	-40.27	0.00	-4,062.48	0.00	4,062.48	5,796.61	1,369.28	6,080.96	5,850.41	5.69	-1.57	0.702
40.00	-38.29	-39.91	0.00	-3,861.15	0.00	3,861.15	5,674.58	1,340.45	5,827.65	5,605.46	7.46	-1.81	0.696
42.75	-37.47	-39.67	0.00	-3,751.41	0.00	3,751.41	5,607.46	1,324.60	5,690.63	5,472.97	8.54	-1.94	0.693
45.00	-36.35	-39.36	0.00	-3,662.16	0.00	3,662.16	5,552.55	1,311.63	5,579.74	5,365.75	9.48	-2.05	0.690
49.00	-34.47	-39.07	0.00	-3,504.70	0.00	3,504.70	4,334.74	1,067.47	4,548.33	4,204.21	11.28	-2.25	0.843
50.00	-34.15	-38.81	0.00	-3,465.63	0.00	3,465.63	4,321.48	1,062.78	4,508.51	4,172.80	11.76	-2.30	0.840
55.00	-32.87	-38.34	0.00	-3,271.57	0.00	3,271.57	4,254.40	1,039.36	4,312.00	4,016.72	14.32	-2.58	0.824
60.00	-31.63	-37.86	0.00	-3,079.88	0.00	3,079.88	4,186.06	1,015.94	4,119.88	3,862.35	17.17	-2.87	0.806
65.00	-30.41	-37.37	0.00	-2,890.60	0.00	2,890.60	4,116.45	992.52	3,932.13	3,709.77	20.33	-3.15	0.788
70.00	-29.21	-36.87	0.00	-2,703.77	0.00	2,703.77	4,045.56	969.09	3,748.76	3,559.07	23.78	-3.44	0.768
75.00	-28.04	-36.37	0.00	-2,519.41	0.00	2,519.41	3,973.41	945.67	3,569.77	3,410.31	27.54	-3.73	0.747
80.00	-26.90	-35.87	0.00	-2,337.56	0.00	2,337.56	3,899.99	922.25	3,395.16	3,263.60	31.61	-4.02	0.725
85.00	-25.82	-35.49	0.00	-2,158.22	0.00	2,158.22	3,805.04	898.83	3,224.92	3,102.48	35.97	-4.31	0.704
87.00	-25.39	-35.33	0.00	-2,087.24	0.00	2,087.24	3,765.38	889.46	3,158.06	3,037.81	37.81	-4.43	0.695
88.00	-24.96	-35.09	0.00	-2,051.91	0.00	2,051.91	3,745.55	884.78	3,124.89	3,005.74	38.74	-4.49	0.691
88.50	-24.77	-34.95	0.00	-2,034.36	0.00	2,034.36	3,735.63	882.43	3,108.37	2,989.76	39.21	-4.52	0.689
90.00	-24.24	-34.76	0.00	-1,981.93	0.00	1,981.93	3,705.89	875.41	3,059.07	2,942.10	40.65	-4.61	0.682
92.00	-23.53	-34.48	0.00	-1,912.42	0.00	1,912.42	3,054.73	747.16	2,633.46	2,450.31	42.60	-4.73	0.790
95.00	-22.97	-34.22	0.00	-1,808.97	0.00	1,808.97	3,020.24	735.27	2,550.32	2,383.75	45.62	-4.90	0.769
97.00	-22.48	-33.79	0.00	-1,740.53	0.00	1,740.53	2,996.99	727.34	2,495.63	2,339.67	47.70	-5.03	0.754
100.00	-21.89	-33.40	0.00	-1,639.16	0.00	1,639.16	2,961.74	715.45	2,414.71	2,274.01	50.92	-5.22	0.730
105.00	-20.99	-32.98	0.00	-1,472.16	0.00	1,472.16	2,901.98	695.63	2,282.80	2,165.84	56.55	-5.53	0.689
108.00	-20.45	-32.68	0.00	-1,373.21	0.00	1,373.21	2,865.51	683.74	2,205.44	2,101.73	60.08	-5.71	0.663
110.00	-19.99	-32.20	0.00	-1,307.86	0.00	1,307.86	2,840.94	675.82	2,154.60	2,059.32	62.50	-5.84	0.644
115.00	-19.12	-31.69	0.00	-1,146.87	0.00	1,146.87	2,777.06	656.00	2,030.10	1,953.41	68.75	-6.12	0.596
120.00	-18.29	-31.23	0.00	-988.42	0.00	988.42	2,693.16	636.18	1,909.31	1,836.59	75.30	-6.40	0.547
124.00	-15.25	-27.36	0.00	-863.51	0.00	863.51	2,626.04	620.32	1,815.34	1,745.73	80.74	-6.61	0.502
125.00	-15.07	-27.09	0.00	-836.15	0.00	836.15	2,609.26	616.36	1,792.22	1,723.38	82.13	-6.66	0.493
130.00	-14.33	-26.70	0.00	-700.71	0.00	700.71	2,525.36	596.54	1,678.84	1,613.77	89.22	-6.90	0.442
132.00	-14.03	-26.46	0.00	-647.30	0.00	647.30	2,491.80	588.61	1,634.52	1,570.93	92.12	-6.99	0.420
135.00	-13.41	-26.21	0.00	-567.93	0.00	567.93	2,441.46	576.72	1,569.16	1,507.76	96.54	-7.12	0.384
136.00	-13.21	-26.10	0.00	-541.72	0.00	541.72	1,416.30	371.34	1,022.14	888.70	98.03	-7.16	0.624
137.00	-10.19	-20.89	0.00	-515.62	0.00	515.62	1,410.39	368.82	1,008.30	878.94	99.53	-7.20	0.597
140.00	-9.89	-20.52	0.00	-452.95	0.00	452.95	1,392.36	361.25	967.35	849.77	104.10	-7.37	0.543
145.00	-9.45	-20.18	0.00	-350.33	0.00	350.33	1,361.30	348.64	901.00	801.59	111.93	-7.62	0.447

Load Case: 0.9D + 1.0W — 119 mph with No Ice (Reduced DL) — 27 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.00

147.00	-7.38	-17.48	0.00	-309.97	0.00	309.97	1,348.51	343.59	875.11	782.49	115.14	-7.71	0.404
148.00	-6.93	-15.21	0.00	-292.49	0.00	292.49	1,342.05	341.07	862.31	772.98	116.75	-7.75	0.386
150.00	-6.79	-14.90	0.00	-262.08	0.00	262.08	1,328.96	336.02	837.00	754.03	120.01	-7.84	0.355
155.00	-6.45	-14.52	0.00	-187.60	0.00	187.60	1,295.36	323.41	775.35	707.16	128.29	-8.01	0.272
158.00	-5.66	-11.35	0.00	-140.08	0.00	140.08	1,274.59	315.85	739.50	679.41	133.34	-8.10	0.212
160.00	-4.10	-8.61	0.00	-117.38	0.00	117.38	1,260.48	310.80	716.07	661.07	136.73	-8.14	0.182
165.00	-3.83	-8.25	0.00	-74.34	0.00	74.34	1,224.34	298.19	659.14	615.84	145.28	-8.24	0.125
168.00	-1.42	-4.13	0.00	-43.06	0.00	43.06	1,202.05	290.62	626.12	589.15	150.45	-8.28	0.074
170.00	-1.35	-3.89	0.00	-34.80	0.00	34.80	1,186.93	285.58	604.57	571.55	153.91	-8.30	0.062
175.00	-1.15	-3.60	0.00	-15.37	0.00	15.37	1,148.25	272.97	552.36	528.28	162.59	-8.33	0.030
178.00	0.00	-3.39	0.00	-4.58	0.00	4.58	1,123.52	265.40	522.16	502.43	167.81	-8.34	0.009

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.50 in Radial Ice — 27 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		95.8	0.0					0.0	0.0	95.8	0.0	0.0	0.0
5.00		190.0	2,277.3					0.0	252.7	190.0	2,530.0	0.0	0.0
10.00		131.4	2,289.0					0.0	252.7	131.4	2,541.7	0.0	0.0
12.00	Appurtenance(s)	92.3	912.6	27.7	0.0	0.0	155.2	0.0	101.1	120.0	1,168.9	0.0	0.0
15.00		145.6	1,361.8					0.0	151.6	145.6	1,513.4	0.0	0.0
20.00		179.0	2,246.3					0.0	252.7	179.0	2,499.0	0.0	0.0
25.00		175.2	2,215.5					0.0	252.7	175.2	2,468.2	0.0	0.0
30.00		173.4	2,181.7					0.0	252.7	173.4	2,434.5	0.0	0.0
35.00		175.1	2,145.9					0.0	252.7	175.1	2,398.6	0.0	0.0
40.00		137.4	2,108.6					0.0	252.7	137.4	2,361.3	0.0	0.0
42.75	Bot - Section 2	90.1	1,144.8					0.0	139.0	90.1	1,283.8	0.0	0.0
45.00		114.2	1,503.4					0.0	113.7	114.2	1,617.1	0.0	0.0
49.00	Top - Section 1	91.6	2,637.9					0.0	202.2	91.6	2,840.1	0.0	0.0
50.00		110.4	354.3					0.0	50.5	110.4	404.8	0.0	0.0
55.00		184.3	1,746.7					0.0	252.7	184.3	1,999.4	0.0	0.0
60.00		184.4	1,712.3					0.0	252.7	184.4	1,965.0	0.0	0.0
65.00		184.1	1,677.3					0.0	252.7	184.1	1,930.1	0.0	0.0
70.00		183.3	1,641.9					0.0	252.7	183.3	1,894.7	0.0	0.0
75.00		182.2	1,606.1					0.0	252.7	182.2	1,858.9	0.0	0.0
80.00		180.8	1,570.0					0.0	252.7	180.8	1,822.7	0.0	0.0
85.00		125.8	1,533.6					0.0	252.7	125.8	1,786.3	0.0	0.0
87.00	Bot - Section 3	53.9	604.6					0.0	101.1	53.9	705.7	0.0	0.0
88.00	Appurtenance(s)	27.2	479.9	37.7	0.0	0.0	163.8	0.0	50.5	64.9	694.2	0.0	0.0
88.50	Appurtenance(s)	36.1	239.1	12.8	0.0	0.0	38.3	0.0	25.3	48.9	302.7	0.0	0.0
90.00		63.0	713.3					0.0	75.8	63.0	789.1	0.0	0.0
92.00	Top - Section 2	89.5	942.5					0.0	101.1	89.5	1,043.6	0.0	0.0
95.00		89.1	795.4					0.0	151.6	89.1	947.0	0.0	0.0
97.00	Appurtenance(s)	88.4	524.1	51.7	0.0	-16.9	202.7	0.0	101.1	140.1	827.9	0.0	0.0
100.00		140.1	775.6					0.0	151.1	140.1	926.7	0.0	0.0
105.00		138.9	1,263.7					0.0	251.8	138.9	1,515.5	0.0	0.0
108.00	Appurtenance(s)	85.9	743.7	13.4	0.0	-18.7	38.7	0.0	151.1	99.3	933.5	0.0	0.0
110.00	Appurtenance(s)	118.7	489.6	39.8	0.0	0.0	164.7	0.0	100.4	158.5	754.6	0.0	0.0
115.00		167.5	1,196.8					0.0	250.9	167.5	1,447.8	0.0	0.0
120.00		148.3	1,163.2					0.0	250.9	148.3	1,414.1	0.0	0.0
124.00	Appurtenance(s)	81.5	907.1	839.9	0.0	0.0	6,502.2	0.0	200.7	921.4	7,610.1	0.0	0.0
125.00		96.0	224.1					0.0	47.4	96.0	271.5	0.0	0.0
130.00		111.3	1,095.4					0.0	236.9	111.3	1,332.3	0.0	0.0
132.00	Bot - Section 4	78.7	430.1					0.0	94.8	78.7	524.8	0.0	0.0
135.00		62.9	900.8					0.0	142.1	62.9	1,043.0	0.0	0.0
136.00	Top - Section 3	31.2	296.9					0.0	47.4	31.2	344.2	0.0	0.0
137.00	Appurtenance(s)	61.8	162.1	1,207.5	0.0	-269.5	9,060.8	0.0	47.4	1,269.3	9,270.3	0.0	0.0
140.00		121.8	478.6					0.0	98.5	121.8	577.1	0.0	0.0
145.00		105.3	774.6					0.0	161.4	105.3	936.0	0.0	0.0
147.00	Appurtenance(s)	44.5	304.0	809.3	0.0	0.0	4,274.5	0.0	64.6	853.8	4,643.1	0.0	0.0
148.00	Appurtenance(s)	44.0	150.7	456.5	0.0	-719.0	2,541.6	0.0	32.3	500.5	2,724.6	0.0	0.0
150.00		101.1	297.8					0.0	37.1	101.1	334.9	0.0	0.0
155.00		114.0	722.5					0.0	92.7	114.0	815.2	0.0	0.0
158.00	Appurtenance(s)	69.9	422.4	590.4	0.0	812.5	3,981.3	0.0	55.6	660.3	4,459.3	0.0	0.0

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.50 in Radial Ice 27 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

160.00	Appurtenance(s)	95.6	276.9	601.0	0.0	0.0	3,742.3	0.0	21.4	696.7	4,040.6	0.0	0.0
165.00		107.7	670.1					0.0	53.5	107.7	723.6	0.0	0.0
168.00	Appurtenance(s)	63.7	390.9	1,003.2	0.0	1,551.4	6,684.9	0.0	32.1	1,066.9	7,107.9	0.0	0.0
170.00		82.4	255.8					0.0	0.0	82.4	255.8	0.0	0.0
175.00		92.7	617.4					0.0	0.0	92.7	617.4	0.0	0.0
178.00	Appurtenance(s)	34.2	359.2	442.0	0.0	0.0	2,416.8	0.0	0.0	476.2	2,776.0	0.0	0.0
								Totals:		12,106.3	102,028.	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.50 in Radial Ice 27 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-104.29	-12.39	0.00	-1,657.01	0.00	1,657.01	6,434.86	1,571.07	8,004.98	7,461.32	0.00	0.00	0.238
5.00	-101.75	-12.31	0.00	-1,595.08	0.00	1,595.08	6,350.74	1,542.24	7,713.96	7,227.48	0.03	-0.06	0.237
10.00	-99.20	-12.25	0.00	-1,533.54	0.00	1,533.54	6,265.35	1,513.41	7,428.32	6,995.84	0.14	-0.13	0.235
12.00	-98.02	-12.19	0.00	-1,509.04	0.00	1,509.04	6,230.84	1,501.88	7,315.57	6,903.82	0.20	-0.16	0.234
15.00	-96.50	-12.13	0.00	-1,472.47	0.00	1,472.47	6,178.70	1,484.59	7,148.07	6,766.48	0.31	-0.20	0.233
20.00	-93.98	-12.05	0.00	-1,411.83	0.00	1,411.83	6,090.77	1,455.76	6,873.21	6,539.47	0.55	-0.26	0.231
25.00	-91.50	-11.97	0.00	-1,351.58	0.00	1,351.58	6,001.58	1,426.93	6,603.74	6,314.89	0.86	-0.33	0.229
30.00	-89.05	-11.89	0.00	-1,291.72	0.00	1,291.72	5,911.12	1,398.11	6,339.65	6,092.85	1.25	-0.40	0.227
35.00	-86.64	-11.81	0.00	-1,232.25	0.00	1,232.25	5,796.61	1,369.28	6,080.96	5,850.41	1.71	-0.47	0.226
40.00	-84.27	-11.73	0.00	-1,173.21	0.00	1,173.21	5,674.58	1,340.45	5,827.65	5,605.46	2.25	-0.55	0.224
42.75	-82.98	-11.68	0.00	-1,140.95	0.00	1,140.95	5,607.46	1,324.60	5,690.63	5,472.97	2.57	-0.59	0.223
45.00	-81.36	-11.62	0.00	-1,114.66	0.00	1,114.66	5,552.55	1,311.63	5,579.74	5,365.75	2.86	-0.62	0.222
49.00	-78.51	-11.54	0.00	-1,068.19	0.00	1,068.19	4,334.74	1,067.47	4,548.33	4,204.21	3.40	-0.68	0.272
50.00	-78.10	-11.50	0.00	-1,056.65	0.00	1,056.65	4,321.48	1,062.78	4,508.51	4,172.80	3.54	-0.69	0.271
55.00	-76.08	-11.41	0.00	-999.15	0.00	999.15	4,254.40	1,039.36	4,312.00	4,016.72	4.32	-0.78	0.267
60.00	-74.10	-11.31	0.00	-942.13	0.00	942.13	4,186.06	1,015.94	4,119.88	3,862.35	5.18	-0.87	0.262
65.00	-72.16	-11.20	0.00	-885.60	0.00	885.60	4,116.45	992.52	3,932.13	3,709.77	6.14	-0.96	0.256
70.00	-70.25	-11.10	0.00	-829.59	0.00	829.59	4,045.56	969.09	3,748.76	3,559.07	7.19	-1.05	0.251
75.00	-68.38	-10.98	0.00	-774.11	0.00	774.11	3,973.41	945.67	3,569.77	3,410.31	8.33	-1.13	0.244
80.00	-66.54	-10.87	0.00	-719.19	0.00	719.19	3,899.99	922.25	3,395.16	3,263.60	9.57	-1.22	0.238
85.00	-64.75	-10.78	0.00	-664.85	0.00	664.85	3,805.04	898.83	3,224.92	3,102.48	10.90	-1.31	0.231
87.00	-64.04	-10.74	0.00	-643.30	0.00	643.30	3,765.38	889.46	3,158.06	3,037.81	11.45	-1.35	0.229
88.00	-63.34	-10.67	0.00	-632.56	0.00	632.56	3,745.55	884.78	3,124.89	3,005.74	11.74	-1.37	0.228
88.50	-63.04	-10.63	0.00	-627.23	0.00	627.23	3,735.63	882.43	3,108.37	2,989.76	11.88	-1.38	0.227
90.00	-62.24	-10.59	0.00	-611.28	0.00	611.28	3,705.89	875.41	3,059.07	2,942.10	12.32	-1.40	0.225
92.00	-61.20	-10.52	0.00	-590.11	0.00	590.11	3,054.73	747.16	2,633.46	2,450.31	12.91	-1.44	0.261
95.00	-60.24	-10.45	0.00	-558.55	0.00	558.55	3,020.24	735.27	2,550.32	2,383.75	13.84	-1.49	0.254
97.00	-59.41	-10.34	0.00	-537.65	0.00	537.65	2,996.99	727.34	2,495.63	2,339.67	14.47	-1.53	0.250
100.00	-58.47	-10.26	0.00	-506.62	0.00	506.62	2,961.74	715.45	2,414.71	2,274.01	15.45	-1.59	0.243
105.00	-56.95	-10.15	0.00	-455.33	0.00	455.33	2,901.98	695.63	2,282.80	2,165.84	17.17	-1.69	0.230
108.00	-56.01	-10.07	0.00	-424.88	0.00	424.88	2,865.51	683.74	2,205.44	2,101.73	18.25	-1.74	0.222
110.00	-55.25	-9.95	0.00	-404.74	0.00	404.74	2,840.94	675.82	2,154.60	2,059.32	18.99	-1.78	0.216
115.00	-53.79	-9.82	0.00	-355.00	0.00	355.00	2,777.06	656.00	2,030.10	1,953.41	20.91	-1.87	0.201
120.00	-52.37	-9.69	0.00	-305.91	0.00	305.91	2,693.16	636.18	1,909.31	1,836.59	22.91	-1.96	0.186
124.00	-44.79	-8.54	0.00	-267.15	0.00	267.15	2,626.04	620.32	1,815.34	1,745.73	24.58	-2.02	0.170
125.00	-44.52	-8.47	0.00	-258.61	0.00	258.61	2,609.26	616.36	1,792.22	1,723.38	25.01	-2.04	0.167
130.00	-43.18	-8.34	0.00	-216.29	0.00	216.29	2,525.36	596.54	1,678.84	1,613.77	27.18	-2.11	0.151
132.00	-42.66	-8.27	0.00	-199.60	0.00	199.60	2,491.80	588.61	1,634.52	1,570.93	28.07	-2.14	0.144
135.00	-41.61	-8.19	0.00	-174.79	0.00	174.79	2,441.46	576.72	1,569.16	1,507.76	29.43	-2.18	0.133
136.00	-41.27	-8.15	0.00	-166.60	0.00	166.60	1,416.30	371.34	1,022.14	888.70	29.88	-2.19	0.217
137.00	-32.05	-6.55	0.00	-158.44	0.00	158.44	1,410.39	368.82	1,008.30	878.94	30.34	-2.20	0.203
140.00	-31.47	-6.44	0.00	-138.80	0.00	138.80	1,392.36	361.25	967.35	849.77	31.75	-2.26	0.186
145.00	-30.54	-6.32	0.00	-106.61	0.00	106.61	1,361.30	348.64	901.00	801.59	34.15	-2.33	0.156

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.50 in Radial Ice 27 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

147.00	-25.93	-5.29	0.00	-93.96	0.00	93.96	1,348.51	343.59	875.11	782.49	35.13	-2.36	0.140
148.00	-23.23	-4.68	0.00	-88.67	0.00	88.67	1,342.05	341.07	862.31	772.98	35.63	-2.37	0.132
150.00	-22.89	-4.59	0.00	-79.30	0.00	79.30	1,328.96	336.02	837.00	754.03	36.63	-2.40	0.123
155.00	-22.08	-4.45	0.00	-56.38	0.00	56.38	1,295.36	323.41	775.35	707.16	39.17	-2.45	0.097
158.00	-17.65	-3.61	0.00	-42.21	0.00	42.21	1,274.59	315.85	739.50	679.41	40.72	-2.48	0.076
160.00	-13.64	-2.74	0.00	-34.99	0.00	34.99	1,260.48	310.80	716.07	661.07	41.76	-2.49	0.064
165.00	-12.93	-2.61	0.00	-21.29	0.00	21.29	1,224.34	298.19	659.14	615.84	44.38	-2.52	0.045
168.00	-5.87	-1.23	0.00	-11.93	0.00	11.93	1,202.05	290.62	626.12	589.15	45.97	-2.53	0.025
170.00	-5.62	-1.13	0.00	-9.47	0.00	9.47	1,186.93	285.58	604.57	571.55	47.03	-2.54	0.021
175.00	-5.01	-1.01	0.00	-3.80	0.00	3.80	1,148.25	272.97	552.36	528.28	49.69	-2.54	0.012
178.00	0.00	-0.79	0.00	-0.76	0.00	0.76	1,123.52	265.40	522.16	502.43	51.29	-2.55	0.002

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		71.8	0.0					0.0	0.0	71.8	0.0	0.0	0.0
5.00		142.0	1,509.1					0.0	210.6	142.0	1,719.7	0.0	0.0
10.00		97.8	1,481.2					0.0	210.6	97.8	1,691.8	0.0	0.0
12.00	Appurtenance(s)	68.6	584.6	24.5	0.0	0.0	100.0	0.0	84.2	93.1	768.9	0.0	0.0
15.00		108.0	868.6					0.0	126.4	108.0	994.9	0.0	0.0
20.00		132.4	1,425.3					0.0	210.6	132.4	1,635.9	0.0	0.0
25.00		129.3	1,397.3					0.0	210.6	129.3	1,607.9	0.0	0.0
30.00		127.7	1,369.4					0.0	210.6	127.7	1,580.0	0.0	0.0
35.00		128.6	1,341.4					0.0	210.6	128.6	1,552.0	0.0	0.0
40.00		100.8	1,313.5					0.0	210.6	100.8	1,524.1	0.0	0.0
42.75	Bot - Section 2	66.0	710.5					0.0	115.8	66.0	826.3	0.0	0.0
45.00		83.7	1,051.2					0.0	94.8	83.7	1,146.0	0.0	0.0
49.00	Top - Section 1	67.0	1,843.5					0.0	168.5	67.0	2,011.9	0.0	0.0
50.00		80.7	206.5					0.0	42.1	80.7	248.6	0.0	0.0
55.00		134.5	1,019.0					0.0	210.6	134.5	1,229.6	0.0	0.0
60.00		134.3	996.3					0.0	210.6	134.3	1,206.9	0.0	0.0
65.00		133.7	973.5					0.0	210.6	133.7	1,184.1	0.0	0.0
70.00		132.9	950.8					0.0	210.6	132.9	1,161.4	0.0	0.0
75.00		131.8	928.1					0.0	210.6	131.8	1,138.7	0.0	0.0
80.00		130.5	905.4					0.0	210.6	130.5	1,116.0	0.0	0.0
85.00		90.6	882.7					0.0	210.6	90.6	1,093.3	0.0	0.0
87.00	Bot - Section 3	38.8	346.7					0.0	84.2	38.8	431.0	0.0	0.0
88.00	Appurtenance(s)	19.5	320.3	31.5	0.0	0.0	100.0	0.0	42.1	51.0	462.4	0.0	0.0
88.50	Appurtenance(s)	26.0	159.5	9.5	0.0	0.0	10.0	0.0	21.1	35.4	190.6	0.0	0.0
90.00		45.3	476.1					0.0	63.2	45.3	539.3	0.0	0.0
92.00	Top - Section 2	64.3	628.9					0.0	84.2	64.3	713.2	0.0	0.0
95.00		63.9	431.1					0.0	126.4	63.9	557.5	0.0	0.0
97.00	Appurtenance(s)	63.3	283.6	41.8	0.0	-12.5	110.0	0.0	84.2	105.1	477.8	0.0	0.0
100.00		100.2	419.6					0.0	125.9	100.2	545.5	0.0	0.0
105.00		99.1	684.0					0.0	209.8	99.1	893.8	0.0	0.0
108.00	Appurtenance(s)	61.2	401.2	9.8	0.0	-13.8	10.0	0.0	125.9	71.0	537.1	0.0	0.0
110.00	Appurtenance(s)	84.3	263.6	33.0	0.0	0.0	100.0	0.0	83.6	117.4	447.2	0.0	0.0
115.00		118.8	645.6					0.0	209.1	118.8	854.7	0.0	0.0
120.00		104.9	626.4					0.0	209.1	104.9	835.5	0.0	0.0
124.00	Appurtenance(s)	57.5	487.2	747.3	0.0	0.0	3,132.1	0.0	167.3	804.8	3,786.6	0.0	0.0
125.00		67.5	119.9					0.0	39.5	67.5	159.4	0.0	0.0
130.00		78.2	587.9					0.0	197.4	78.2	785.3	0.0	0.0
132.00	Bot - Section 4	55.2	229.8					0.0	79.0	55.2	308.8	0.0	0.0
135.00		44.1	558.6					0.0	118.4	44.1	677.0	0.0	0.0
136.00	Top - Section 3	21.8	183.7					0.0	39.5	21.8	223.2	0.0	0.0
137.00	Appurtenance(s)	43.2	71.8	1,051.6	0.0	-277.6	3,903.1	0.0	39.5	1,094.8	4,014.3	0.0	0.0
140.00		84.9	212.3					0.0	82.1	84.9	294.4	0.0	0.0
145.00		73.2	344.1					0.0	134.5	73.2	478.6	0.0	0.0
147.00	Appurtenance(s)	30.8	134.2	516.3	0.0	0.0	2,475.0	0.0	53.8	547.1	2,663.0	0.0	0.0
148.00	Appurtenance(s)	30.5	66.4	471.0	0.0	-734.7	725.4	0.0	26.9	501.5	818.7	0.0	0.0
150.00		69.8	131.3					0.0	30.9	69.8	162.2	0.0	0.0
155.00		78.5	319.6					0.0	77.3	78.5	396.9	0.0	0.0
158.00	Appurtenance(s)	48.0	185.9	642.7	0.0	901.0	1,116.6	0.0	46.4	690.6	1,348.9	0.0	0.0

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
Wind Load Factor :1.00

160.00	Appurtenance(s)	65.4	121.5	503.4	0.0	0.0	2,000.0	0.0	17.8	568.8	2,139.3	0.0	0.0
165.00		73.4	295.2					0.0	44.6	73.4	339.8	0.0	0.0
168.00	Appurtenance(s)	42.3	171.2	806.6	0.0	1,486.1	3,108.2	0.0	26.8	848.9	3,306.2	0.0	0.0
170.00		52.4	111.7					0.0	0.0	52.4	111.7	0.0	0.0
175.00		58.7	270.7					0.0	0.0	58.7	270.7	0.0	0.0
178.00	Appurtenance(s)	21.6	156.6	316.2	0.0	0.0	1,500.0	0.0	0.0	337.7	1,656.6	0.0	0.0
								Totals:		9,484.57	56,865.2	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-57.05	-9.87	0.00	-1,269.29	0.00	1,269.29	6,434.86	1,571.07	8,004.98	7,461.32	0.00	0.00	0.179
5.00	-55.32	-9.78	0.00	-1,219.93	0.00	1,219.93	6,350.74	1,542.24	7,713.96	7,227.48	0.03	-0.05	0.178
10.00	-53.62	-9.71	0.00	-1,171.05	0.00	1,171.05	6,265.35	1,513.41	7,428.32	6,995.84	0.10	-0.10	0.176
12.00	-52.85	-9.64	0.00	-1,151.63	0.00	1,151.63	6,230.84	1,501.88	7,315.57	6,903.82	0.15	-0.12	0.175
15.00	-51.85	-9.57	0.00	-1,122.72	0.00	1,122.72	6,178.70	1,484.59	7,148.07	6,766.48	0.24	-0.15	0.174
20.00	-50.20	-9.47	0.00	-1,074.89	0.00	1,074.89	6,090.77	1,455.76	6,873.21	6,539.47	0.42	-0.20	0.173
25.00	-48.59	-9.38	0.00	-1,027.53	0.00	1,027.53	6,001.58	1,426.93	6,603.74	6,314.89	0.66	-0.25	0.171
30.00	-47.00	-9.29	0.00	-980.62	0.00	980.62	5,911.12	1,398.11	6,339.65	6,092.85	0.96	-0.31	0.169
35.00	-45.44	-9.20	0.00	-934.17	0.00	934.17	5,796.61	1,369.28	6,080.96	5,850.41	1.31	-0.36	0.168
40.00	-43.91	-9.12	0.00	-888.19	0.00	888.19	5,674.58	1,340.45	5,827.65	5,605.46	1.71	-0.42	0.166
42.75	-43.08	-9.07	0.00	-863.12	0.00	863.12	5,607.46	1,324.60	5,690.63	5,472.97	1.96	-0.45	0.165
45.00	-41.93	-9.00	0.00	-842.72	0.00	842.72	5,552.55	1,311.63	5,579.74	5,365.75	2.18	-0.47	0.165
49.00	-39.91	-8.93	0.00	-806.73	0.00	806.73	4,334.74	1,067.47	4,548.33	4,204.21	2.59	-0.52	0.201
50.00	-39.66	-8.88	0.00	-797.79	0.00	797.79	4,321.48	1,062.78	4,508.51	4,172.80	2.70	-0.53	0.200
55.00	-38.42	-8.78	0.00	-753.40	0.00	753.40	4,254.40	1,039.36	4,312.00	4,016.72	3.29	-0.59	0.197
60.00	-37.20	-8.67	0.00	-709.53	0.00	709.53	4,186.06	1,015.94	4,119.88	3,862.35	3.95	-0.66	0.193
65.00	-36.01	-8.56	0.00	-666.18	0.00	666.18	4,116.45	992.52	3,932.13	3,709.77	4.67	-0.73	0.188
70.00	-34.84	-8.46	0.00	-623.35	0.00	623.35	4,045.56	969.09	3,748.76	3,559.07	5.47	-0.79	0.184
75.00	-33.70	-8.35	0.00	-581.07	0.00	581.07	3,973.41	945.67	3,569.77	3,410.31	6.33	-0.86	0.179
80.00	-32.57	-8.24	0.00	-539.33	0.00	539.33	3,899.99	922.25	3,395.16	3,263.60	7.27	-0.93	0.174
85.00	-31.47	-8.16	0.00	-498.14	0.00	498.14	3,805.04	898.83	3,224.92	3,102.48	8.27	-0.99	0.169
87.00	-31.04	-8.12	0.00	-481.83	0.00	481.83	3,765.38	889.46	3,158.06	3,037.81	8.69	-1.02	0.167
88.00	-30.58	-8.07	0.00	-473.71	0.00	473.71	3,745.55	884.78	3,124.89	3,005.74	8.91	-1.03	0.166
88.50	-30.39	-8.03	0.00	-469.67	0.00	469.67	3,735.63	882.43	3,108.37	2,989.76	9.02	-1.04	0.165
90.00	-29.84	-7.99	0.00	-457.62	0.00	457.62	3,705.89	875.41	3,059.07	2,942.10	9.35	-1.06	0.164
92.00	-29.13	-7.93	0.00	-441.64	0.00	441.64	3,054.73	747.16	2,633.46	2,450.31	9.80	-1.09	0.190
95.00	-28.57	-7.87	0.00	-417.85	0.00	417.85	3,020.24	735.27	2,550.32	2,383.75	10.50	-1.13	0.185
97.00	-28.09	-7.78	0.00	-402.10	0.00	402.10	2,996.99	727.34	2,495.63	2,339.67	10.98	-1.16	0.181
100.00	-27.53	-7.69	0.00	-378.76	0.00	378.76	2,961.74	715.45	2,414.71	2,274.01	11.72	-1.20	0.176
105.00	-26.64	-7.60	0.00	-340.29	0.00	340.29	2,901.98	695.63	2,282.80	2,165.84	13.02	-1.27	0.166
108.00	-26.10	-7.53	0.00	-317.49	0.00	317.49	2,865.51	683.74	2,205.44	2,101.73	13.83	-1.32	0.160
110.00	-25.65	-7.43	0.00	-302.42	0.00	302.42	2,840.94	675.82	2,154.60	2,059.32	14.39	-1.34	0.156
115.00	-24.79	-7.32	0.00	-265.28	0.00	265.28	2,777.06	656.00	2,030.10	1,953.41	15.83	-1.41	0.145
120.00	-23.95	-7.21	0.00	-228.69	0.00	228.69	2,693.16	636.18	1,909.31	1,836.59	17.34	-1.47	0.134
124.00	-20.18	-6.32	0.00	-199.83	0.00	199.83	2,626.04	620.32	1,815.34	1,745.73	18.60	-1.52	0.122
125.00	-20.02	-6.26	0.00	-193.51	0.00	193.51	2,609.26	616.36	1,792.22	1,723.38	18.92	-1.53	0.120
130.00	-19.23	-6.17	0.00	-162.20	0.00	162.20	2,525.36	596.54	1,678.84	1,613.77	20.56	-1.59	0.108
132.00	-18.92	-6.12	0.00	-149.85	0.00	149.85	2,491.80	588.61	1,634.52	1,570.93	21.23	-1.61	0.103
135.00	-18.24	-6.06	0.00	-131.50	0.00	131.50	2,441.46	576.72	1,569.16	1,507.76	22.25	-1.64	0.095
136.00	-18.02	-6.04	0.00	-125.43	0.00	125.43	1,416.30	371.34	1,022.14	888.70	22.59	-1.65	0.154
137.00	-14.04	-4.83	0.00	-119.40	0.00	119.40	1,410.39	368.82	1,008.30	878.94	22.94	-1.66	0.146
140.00	-13.74	-4.75	0.00	-104.90	0.00	104.90	1,392.36	361.25	967.35	849.77	24.00	-1.70	0.133
145.00	-13.26	-4.67	0.00	-81.14	0.00	81.14	1,361.30	348.64	901.00	801.59	25.81	-1.76	0.111

Load Case: 1.0D + 1.0W Serviceability 60 mph 26 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
Wind Load Factor :1.00

147.00	-10.61	-4.05	0.00	-71.79	0.00	71.79	1,348.51	343.59	875.11	782.49	26.55	-1.78	0.100
148.00	-9.81	-3.52	0.00	-67.75	0.00	67.75	1,342.05	341.07	862.31	772.98	26.92	-1.79	0.095
150.00	-9.65	-3.45	0.00	-60.70	0.00	60.70	1,328.96	336.02	837.00	754.03	27.68	-1.81	0.088
155.00	-9.25	-3.37	0.00	-43.44	0.00	43.44	1,295.36	323.41	775.35	707.16	29.59	-1.85	0.069
158.00	-7.93	-2.63	0.00	-32.44	0.00	32.44	1,274.59	315.85	739.50	679.41	30.76	-1.87	0.054
160.00	-5.81	-2.00	0.00	-27.17	0.00	27.17	1,260.48	310.80	716.07	661.07	31.54	-1.88	0.046
165.00	-5.47	-1.91	0.00	-17.19	0.00	17.19	1,224.34	298.19	659.14	615.84	33.52	-1.90	0.032
168.00	-2.19	-0.96	0.00	-9.96	0.00	9.96	1,202.05	290.62	626.12	589.15	34.72	-1.91	0.019
170.00	-2.08	-0.90	0.00	-8.04	0.00	8.04	1,186.93	285.58	604.57	571.55	35.52	-1.91	0.016
175.00	-1.81	-0.83	0.00	-3.54	0.00	3.54	1,148.25	272.97	552.36	528.28	37.53	-1.92	0.008
178.00	0.00	-0.77	0.00	-1.04	0.00	1.04	1,123.52	265.40	522.16	502.43	38.74	-1.92	0.002

Equivalent Lateral Forces Method Analysis

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.05
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coeffiecient F_v:	2.40
Response Modification Coefficient (R):	1.50
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):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	3.03
Redundancy Factor (p):	1.00
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	57.05 k
Seismic Base Shear (E):	1.71 k

Load Case 1.2D + 1.0Ev + 1.0Eh Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
53	176.50	157	4,878	0.007	13	194
52	172.50	271	8,056	0.012	21	336
51	169.00	112	3,191	0.005	8	139
50	166.50	198	5,489	0.008	14	246
49	162.50	340	8,973	0.014	23	422
48	159.00	139	3,523	0.005	9	173
47	156.50	232	5,689	0.009	15	288
46	152.50	397	9,230	0.014	24	493
45	149.00	162	3,601	0.005	9	201
44	147.50	93	2,029	0.003	5	116
43	146.00	188	4,008	0.006	10	233
42	142.50	479	9,719	0.015	25	594
41	138.50	294	5,647	0.009	15	365
40	136.50	111	2,073	0.003	5	138
39	135.50	223	4,097	0.006	11	277
38	133.50	677	12,066	0.018	31	840
37	131.00	309	5,298	0.008	14	383
36	127.50	785	12,766	0.019	33	975
35	124.50	159	2,470	0.004	6	198
34	122.00	655	9,742	0.015	25	812
33	117.50	835	11,534	0.017	30	1,037
32	112.50	855	10,817	0.016	28	1,061
31	109.00	347	4,126	0.006	11	431
30	106.50	527	5,978	0.009	15	654
29	102.50	894	9,391	0.014	24	1,109

28	98.50	546	5,293	0.008	14	677
27	96.00	368	3,390	0.005	9	457
26	93.50	558	4,874	0.007	13	692
25	91.00	713	5,906	0.009	15	885
24	89.25	539	4,296	0.006	11	669
23	88.25	181	1,406	0.002	4	224
22	87.50	362	2,775	0.004	7	450
21	86.00	431	3,187	0.005	8	535
20	82.50	1,093	7,441	0.011	19	1,357
19	77.50	1,116	6,703	0.010	17	1,385
18	72.50	1,139	5,985	0.009	15	1,413
17	67.50	1,161	5,292	0.008	14	1,442
16	62.50	1,184	4,626	0.007	12	1,470
15	57.50	1,207	3,990	0.006	10	1,498
14	52.50	1,230	3,389	0.005	9	1,526
13	49.50	249	609	0.001	2	309
12	47.00	2,012	4,444	0.007	11	2,497
11	43.88	1,146	2,206	0.003	6	1,422
10	41.38	826	1,415	0.002	4	1,026
9	37.50	1,524	2,143	0.003	6	1,892
8	32.50	1,552	1,639	0.002	4	1,926
7	27.50	1,580	1,195	0.002	3	1,961
6	22.50	1,608	814	0.001	2	1,996
5	17.50	1,636	501	0.001	1	2,030
4	13.50	995	181	0.000	0	1,235
3	11.00	669	81	0.000	0	830
2	7.50	1,692	95	0.000	0	2,100
1	2.50	1,720	11	0.000	0	2,134
Powerwave Allgon 712	178.00	185	5,855	0.009	15	229
Flat Low Profile Pla	178.00	1,500	47,526	0.072	123	1,862
Alcatel-Lucent RRH2x	168.00	317	8,958	0.014	23	394
Alcatel-Lucent 1900	168.00	180	5,080	0.008	13	223
Alcatel-Lucent TD-RR	168.00	210	5,927	0.009	15	261
RFS APXVTM14-ALU-I20	168.00	169	4,759	0.007	12	209
Commscope NNVV-65B-R	168.00	232	6,554	0.010	17	288
Round Platform w/ Ha	168.00	2,000	56,448	0.085	146	2,482
Flat Platform w/ Han	160.00	2,000	51,200	0.077	132	2,482
Samsung B2/B66A RRH-	158.00	253	6,321	0.010	16	314
Samsung B5/B13 RRH-B	158.00	211	5,265	0.008	14	262
Raycap RCMDC-6600-PF	158.00	32	786	0.001	2	39
Samsung MT6407-77A	158.00	245	6,111	0.009	16	304
Antel LPA-80080/4CF	158.00	72	1,797	0.003	5	89
Andrew SBNHH-1D65B	158.00	304	7,594	0.011	20	378
Ericsson KRY 112 144	148.00	33	723	0.001	2	41
Ericsson KRY 112 489	148.00	46	1,012	0.002	3	57
Ericsson Radio 4449	148.00	222	4,863	0.007	13	276
EMS RR90-17-02DP	148.00	41	887	0.001	2	50
RFS APXVAARR24_43-U-	148.00	384	8,405	0.013	22	476
Generic Mount Reinfo	147.00	600	12,965	0.020	33	745
Generic Round Low Pr	147.00	1,875	40,517	0.061	105	2,327
LGP Allgon LGP21903	137.00	33	619	0.001	2	41
Powerwave Allgon LGP	137.00	85	1,588	0.002	4	105
Raycap DC6-48-60-18-	137.00	95	1,791	0.003	5	118
Ericsson RRUS 8843 B	137.00	216	4,054	0.006	10	268
Ericsson RRUS 4478 B	137.00	180	3,373	0.005	9	223
Ericsson RRUS 4449 B	137.00	213	3,998	0.006	10	264
Powerwave Allgon 777	137.00	105	1,971	0.003	5	130
CCI DMP65R-BU6DA	137.00	476	8,942	0.013	23	591
Platform with Handra	137.00	2,500	46,923	0.071	121	3,103
Commscope RDIDC-9181	124.00	22	337	0.001	1	27
Fujitsu TA08025-B605	124.00	225	3,460	0.005	9	279
Fujitsu TA08025-B604	124.00	192	2,948	0.004	8	238
JMA Wireless MX08FRO	124.00	193	2,975	0.004	8	240
Generic Flat Platfor	124.00	2,500	38,440	0.058	99	3,103

Stand-Off	110.00	100	1,210	0.002	3	124
Generic GPS	108.00	10	117	0.000	0	12
Generic GPS	97.00	10	94	0.000	0	12
Stand-Off	97.00	100	941	0.001	2	124
Generic GPS	88.50	10	78	0.000	0	12
Stand-Off	88.00	100	774	0.001	2	124
Stand-Off	12.00	100	14	0.000	0	124
		57,050	662,478	1.000	1,712	70,809

Load Case 0.9D - 1.0Ev + 1.0Eh Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
53	176.50	157	4,878	0.007	13	134
52	172.50	271	8,056	0.012	21	233
51	169.00	112	3,191	0.005	8	96
50	166.50	198	5,489	0.008	14	170
49	162.50	340	8,973	0.014	23	292
48	159.00	139	3,523	0.005	9	120
47	156.50	232	5,689	0.009	15	199
46	152.50	397	9,230	0.014	24	341
45	149.00	162	3,601	0.005	9	139
44	147.50	93	2,029	0.003	5	80
43	146.00	188	4,008	0.006	10	161
42	142.50	479	9,719	0.015	25	411
41	138.50	294	5,647	0.009	15	253
40	136.50	111	2,073	0.003	5	96
39	135.50	223	4,097	0.006	11	192
38	133.50	677	12,066	0.018	31	581
37	131.00	309	5,298	0.008	14	265
36	127.50	785	12,766	0.019	33	674
35	124.50	159	2,470	0.004	6	137
34	122.00	655	9,742	0.015	25	562
33	117.50	835	11,534	0.017	30	718
32	112.50	855	10,817	0.016	28	734
31	109.00	347	4,126	0.006	11	298
30	106.50	527	5,978	0.009	15	453
29	102.50	894	9,391	0.014	24	768
28	98.50	546	5,293	0.008	14	469
27	96.00	368	3,390	0.005	9	316
26	93.50	558	4,874	0.007	13	479
25	91.00	713	5,906	0.009	15	612
24	89.25	539	4,296	0.006	11	463
23	88.25	181	1,406	0.002	4	155
22	87.50	362	2,775	0.004	7	311
21	86.00	431	3,187	0.005	8	370
20	82.50	1,093	7,441	0.011	19	939
19	77.50	1,116	6,703	0.010	17	958
18	72.50	1,139	5,985	0.009	15	978
17	67.50	1,161	5,292	0.008	14	997
16	62.50	1,184	4,626	0.007	12	1,017
15	57.50	1,207	3,990	0.006	10	1,036
14	52.50	1,230	3,389	0.005	9	1,056
13	49.50	249	609	0.001	2	214
12	47.00	2,012	4,444	0.007	11	1,728
11	43.88	1,146	2,206	0.003	6	984
10	41.38	826	1,415	0.002	4	710
9	37.50	1,524	2,143	0.003	6	1,309
8	32.50	1,552	1,639	0.002	4	1,333
7	27.50	1,580	1,195	0.002	3	1,357
6	22.50	1,608	814	0.001	2	1,381

5	17.50	1,636	501	0.001	1	1,405
4	13.50	995	181	0.000	0	854
3	11.00	669	81	0.000	0	574
2	7.50	1,692	95	0.000	0	1,453
1	2.50	1,720	11	0.000	0	1,477
Powerwave Allgon 712	178.00	185	5,855	0.009	15	159
Flat Low Profile Pla	178.00	1,500	47,526	0.072	123	1,288
Alcatel-Lucent RRH2x	168.00	317	8,958	0.014	23	273
Alcatel-Lucent 1900	168.00	180	5,080	0.008	13	155
Alcatel-Lucent TD-RR	168.00	210	5,927	0.009	15	180
RFS APXVTM14-ALU-I20	168.00	169	4,759	0.007	12	145
Commscope NNVV-65B-R	168.00	232	6,554	0.010	17	199
Round Platform w/ Ha	168.00	2,000	56,448	0.085	146	1,718
Flat Platform w/ Han	160.00	2,000	51,200	0.077	132	1,718
Samsung B2/B66A RRH-	158.00	253	6,321	0.010	16	217
Samsung B5/B13 RRH-B	158.00	211	5,265	0.008	14	181
Raycap RCMDC-6600-PF	158.00	32	786	0.001	2	27
Samsung MT6407-77A	158.00	245	6,111	0.009	16	210
Antel LPA-80080/4CF	158.00	72	1,797	0.003	5	62
Andrew SBNHH-1D65B	158.00	304	7,594	0.011	20	261
Ericsson KRY 112 144	148.00	33	723	0.001	2	28
Ericsson KRY 112 489	148.00	46	1,012	0.002	3	40
Ericsson Radio 4449	148.00	222	4,863	0.007	13	191
EMS RR90-17-02DP	148.00	41	887	0.001	2	35
RFS APXVAARR24_43-U-	148.00	384	8,405	0.013	22	330
Generic Mount Reinfo	147.00	600	12,965	0.020	33	515
Generic Round Low Pr	147.00	1,875	40,517	0.061	105	1,610
LGP Allgon LGP21903	137.00	33	619	0.001	2	28
Powerwave Allgon LGP	137.00	85	1,588	0.002	4	73
Raycap DC6-48-60-18-	137.00	95	1,791	0.003	5	82
Ericsson RRUS 8843 B	137.00	216	4,054	0.006	10	186
Ericsson RRUS 4478 B	137.00	180	3,373	0.005	9	154
Ericsson RRUS 4449 B	137.00	213	3,998	0.006	10	183
Powerwave Allgon 777	137.00	105	1,971	0.003	5	90
CCI DMP65R-BU6DA	137.00	476	8,942	0.013	23	409
Platform with Handra	137.00	2,500	46,923	0.071	121	2,147
Commscope RDIDC-9181	124.00	22	337	0.001	1	19
Fujitsu TA08025-B605	124.00	225	3,460	0.005	9	193
Fujitsu TA08025-B604	124.00	192	2,948	0.004	8	165
JMA Wireless MX08FRO	124.00	193	2,975	0.004	8	166
Generic Flat Platfor	124.00	2,500	38,440	0.058	99	2,147
Stand-Off	110.00	100	1,210	0.002	3	86
Generic GPS	108.00	10	117	0.000	0	9
Generic GPS	97.00	10	94	0.000	0	9
Stand-Off	97.00	100	941	0.001	2	86
Generic GPS	88.50	10	78	0.000	0	9
Stand-Off	88.00	100	774	0.001	2	86
Stand-Off	12.00	100	14	0.000	0	86
		57,050	662,478	1.000	1,712	48,996

Load Case 1.2D + 1.0Ev + 1.0Eh Seismic

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-68.67	-1.72	0.00	-253.01	0.00	253.01	6,434.86	1,571.07	8,004.98	7,461.32	0.00	0.00	0.045
5.00	-66.57	-1.73	0.00	-244.43	0.00	244.43	6,350.74	1,542.24	7,713.96	7,227.48	0.01	-0.01	0.044
10.00	-65.74	-1.74	0.00	-235.79	0.00	235.79	6,265.35	1,513.41	7,428.32	6,995.84	0.02	-0.02	0.044
12.00	-64.38	-1.74	0.00	-232.32	0.00	232.32	6,230.84	1,501.88	7,315.57	6,903.82	0.03	-0.02	0.044
15.00	-62.35	-1.75	0.00	-227.10	0.00	227.10	6,178.70	1,484.59	7,148.07	6,766.48	0.05	-0.03	0.044
20.00	-60.36	-1.75	0.00	-218.37	0.00	218.37	6,090.77	1,455.76	6,873.21	6,539.47	0.08	-0.04	0.043
25.00	-58.40	-1.76	0.00	-209.60	0.00	209.60	6,001.58	1,426.93	6,603.74	6,314.89	0.13	-0.05	0.043
30.00	-56.47	-1.77	0.00	-200.79	0.00	200.79	5,911.12	1,398.11	6,339.65	6,092.85	0.19	-0.06	0.043
35.00	-54.58	-1.77	0.00	-191.97	0.00	191.97	5,796.61	1,369.28	6,080.96	5,850.41	0.26	-0.07	0.042
40.00	-53.55	-1.77	0.00	-183.13	0.00	183.13	5,674.58	1,340.45	5,827.65	5,605.46	0.35	-0.08	0.042
42.75	-52.13	-1.77	0.00	-178.26	0.00	178.26	5,607.46	1,324.60	5,690.63	5,472.97	0.40	-0.09	0.042
45.00	-49.63	-1.76	0.00	-174.28	0.00	174.28	5,552.55	1,311.63	5,579.74	5,365.75	0.44	-0.10	0.041
49.00	-49.32	-1.76	0.00	-167.24	0.00	167.24	4,334.74	1,067.47	4,548.33	4,204.21	0.52	-0.11	0.051
50.00	-47.80	-1.76	0.00	-165.48	0.00	165.48	4,321.48	1,062.78	4,508.51	4,172.80	0.55	-0.11	0.051
55.00	-46.30	-1.76	0.00	-156.69	0.00	156.69	4,254.40	1,039.36	4,312.00	4,016.72	0.67	-0.12	0.050
60.00	-44.83	-1.75	0.00	-147.91	0.00	147.91	4,186.06	1,015.94	4,119.88	3,862.35	0.80	-0.13	0.049
65.00	-43.39	-1.74	0.00	-139.16	0.00	139.16	4,116.45	992.52	3,932.13	3,709.77	0.95	-0.15	0.048
70.00	-41.97	-1.74	0.00	-130.44	0.00	130.44	4,045.56	969.09	3,748.76	3,559.07	1.11	-0.16	0.047
75.00	-40.59	-1.72	0.00	-121.77	0.00	121.77	3,973.41	945.67	3,569.77	3,410.31	1.29	-0.18	0.046
80.00	-39.23	-1.71	0.00	-113.15	0.00	113.15	3,899.99	922.25	3,395.16	3,263.60	1.48	-0.19	0.045
85.00	-38.70	-1.71	0.00	-104.60	0.00	104.60	3,805.04	898.83	3,224.92	3,102.48	1.69	-0.20	0.044
87.00	-38.25	-1.70	0.00	-101.19	0.00	101.19	3,765.38	889.46	3,158.06	3,037.81	1.78	-0.21	0.043
88.00	-37.88	-1.69	0.00	-99.49	0.00	99.49	3,745.55	884.78	3,124.89	3,005.74	1.82	-0.21	0.043
88.50	-37.22	-1.68	0.00	-98.64	0.00	98.64	3,735.63	882.43	3,108.37	2,989.76	1.84	-0.21	0.043
90.00	-36.33	-1.67	0.00	-96.12	0.00	96.12	3,705.89	875.41	3,059.07	2,942.10	1.91	-0.22	0.042
92.00	-35.64	-1.66	0.00	-92.78	0.00	92.78	3,054.73	747.16	2,633.46	2,450.31	2.01	-0.22	0.050
95.00	-35.18	-1.65	0.00	-87.81	0.00	87.81	3,020.24	735.27	2,550.32	2,383.75	2.15	-0.23	0.048
97.00	-34.37	-1.64	0.00	-84.51	0.00	84.51	2,996.99	727.34	2,495.63	2,339.67	2.25	-0.24	0.048
100.00	-33.26	-1.61	0.00	-79.61	0.00	79.61	2,961.74	715.45	2,414.71	2,274.01	2.40	-0.25	0.046
105.00	-32.60	-1.60	0.00	-71.54	0.00	71.54	2,901.98	695.63	2,282.80	2,165.84	2.67	-0.26	0.044
108.00	-32.16	-1.59	0.00	-66.73	0.00	66.73	2,865.51	683.74	2,205.44	2,101.73	2.84	-0.27	0.043
110.00	-30.97	-1.56	0.00	-63.55	0.00	63.55	2,840.94	675.82	2,154.60	2,059.32	2.96	-0.28	0.042
115.00	-29.94	-1.53	0.00	-55.74	0.00	55.74	2,777.06	656.00	2,030.10	1,953.41	3.25	-0.29	0.039
120.00	-29.12	-1.51	0.00	-48.07	0.00	48.07	2,693.16	636.18	1,909.31	1,836.59	3.57	-0.31	0.037
124.00	-25.04	-1.36	0.00	-42.03	0.00	42.03	2,626.04	620.32	1,815.34	1,745.73	3.83	-0.32	0.034
125.00	-24.07	-1.32	0.00	-40.67	0.00	40.67	2,609.26	616.36	1,792.22	1,723.38	3.90	-0.32	0.033
130.00	-23.68	-1.31	0.00	-34.04	0.00	34.04	2,525.36	596.54	1,678.84	1,613.77	4.24	-0.33	0.030
132.00	-22.84	-1.28	0.00	-31.42	0.00	31.42	2,491.80	588.61	1,634.52	1,570.93	4.38	-0.33	0.029
135.00	-22.56	-1.27	0.00	-27.58	0.00	27.58	2,441.46	576.72	1,569.16	1,507.76	4.59	-0.34	0.028
136.00	-22.43	-1.26	0.00	-26.31	0.00	26.31	1,416.30	371.34	1,022.14	888.70	4.66	-0.34	0.045
137.00	-17.22	-1.03	0.00	-25.05	0.00	25.05	1,410.39	368.82	1,008.30	878.94	4.73	-0.34	0.041
140.00	-16.62	-1.00	0.00	-21.96	0.00	21.96	1,392.36	361.25	967.35	849.77	4.95	-0.35	0.038
145.00	-16.39	-0.99	0.00	-16.95	0.00	16.95	1,361.30	348.64	901.00	801.59	5.33	-0.37	0.033
147.00	-13.20	-0.83	0.00	-14.96	0.00	14.96	1,348.51	343.59	875.11	782.49	5.48	-0.37	0.029
148.00	-12.10	-0.77	0.00	-14.13	0.00	14.13	1,342.05	341.07	862.31	772.98	5.56	-0.37	0.027
150.00	-11.61	-0.75	0.00	-12.58	0.00	12.58	1,328.96	336.02	837.00	754.03	5.72	-0.38	0.025
155.00	-11.32	-0.73	0.00	-8.84	0.00	8.84	1,295.36	323.41	775.35	707.16	6.11	-0.38	0.021

158.00	-9.76	-0.64	0.00	-6.64	0.00	6.64	1,274.59	315.85	739.50	679.41	6.36	-0.39	0.017
160.00	-6.86	-0.47	0.00	-5.36	0.00	5.36	1,260.48	310.80	716.07	661.07	6.52	-0.39	0.014
165.00	-6.62	-0.45	0.00	-3.02	0.00	3.02	1,224.34	298.19	659.14	615.84	6.93	-0.39	0.010
168.00	-2.62	-0.19	0.00	-1.67	0.00	1.67	1,202.05	290.62	626.12	589.15	7.18	-0.40	0.005
170.00	-2.28	-0.17	0.00	-1.29	0.00	1.29	1,186.93	285.58	604.57	571.55	7.35	-0.40	0.004
175.00	-2.09	-0.15	0.00	-0.46	0.00	0.46	1,148.25	272.97	552.36	528.28	7.76	-0.40	0.003
178.00	0.00	-0.14	0.00	0.00	0.00	0.00	1,123.52	265.40	522.16	502.43	8.01	-0.40	0.000

Load Case 0.9D - 1.0Ev + 1.0Eh Seismic (Reduced DL)

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-47.52	-1.71	0.00	-247.53	0.00	247.53	6,434.86	1,571.07	8,004.98	7,461.32	0.00	0.00	0.041
5.00	-46.07	-1.72	0.00	-238.96	0.00	238.96	6,350.74	1,542.24	7,713.96	7,227.48	0.01	-0.01	0.040
10.00	-45.49	-1.73	0.00	-230.35	0.00	230.35	6,265.35	1,513.41	7,428.32	6,995.84	0.02	-0.02	0.040
12.00	-44.55	-1.73	0.00	-226.89	0.00	226.89	6,230.84	1,501.88	7,315.57	6,903.82	0.03	-0.02	0.040
15.00	-43.15	-1.73	0.00	-221.70	0.00	221.70	6,178.70	1,484.59	7,148.07	6,766.48	0.05	-0.03	0.040
20.00	-41.76	-1.74	0.00	-213.03	0.00	213.03	6,090.77	1,455.76	6,873.21	6,539.47	0.08	-0.04	0.039
25.00	-40.41	-1.74	0.00	-204.34	0.00	204.34	6,001.58	1,426.93	6,603.74	6,314.89	0.13	-0.05	0.039
30.00	-39.07	-1.74	0.00	-195.63	0.00	195.63	5,911.12	1,398.11	6,339.65	6,092.85	0.19	-0.06	0.039
35.00	-37.76	-1.74	0.00	-186.91	0.00	186.91	5,796.61	1,369.28	6,080.96	5,850.41	0.26	-0.07	0.038
40.00	-37.05	-1.74	0.00	-178.19	0.00	178.19	5,674.58	1,340.45	5,827.65	5,605.46	0.34	-0.08	0.038
42.75	-36.07	-1.74	0.00	-173.39	0.00	173.39	5,607.46	1,324.60	5,690.63	5,472.97	0.39	-0.09	0.038
45.00	-34.34	-1.73	0.00	-169.47	0.00	169.47	5,552.55	1,311.63	5,579.74	5,365.75	0.43	-0.09	0.038
49.00	-34.13	-1.73	0.00	-162.55	0.00	162.55	4,334.74	1,067.47	4,548.33	4,204.21	0.51	-0.10	0.047
50.00	-33.07	-1.73	0.00	-160.81	0.00	160.81	4,321.48	1,062.78	4,508.51	4,172.80	0.53	-0.10	0.046
55.00	-32.04	-1.72	0.00	-152.18	0.00	152.18	4,254.40	1,039.36	4,312.00	4,016.72	0.65	-0.12	0.045
60.00	-31.02	-1.71	0.00	-143.57	0.00	143.57	4,186.06	1,015.94	4,119.88	3,862.35	0.78	-0.13	0.045
65.00	-30.02	-1.71	0.00	-135.00	0.00	135.00	4,116.45	992.52	3,932.13	3,709.77	0.93	-0.14	0.044
70.00	-29.04	-1.69	0.00	-126.47	0.00	126.47	4,045.56	969.09	3,748.76	3,559.07	1.09	-0.16	0.043
75.00	-28.08	-1.68	0.00	-118.00	0.00	118.00	3,973.41	945.67	3,569.77	3,410.31	1.26	-0.17	0.042
80.00	-27.14	-1.67	0.00	-109.59	0.00	109.59	3,899.99	922.25	3,395.16	3,263.60	1.45	-0.19	0.041
85.00	-26.77	-1.66	0.00	-101.27	0.00	101.27	3,805.04	898.83	3,224.92	3,102.48	1.65	-0.20	0.040
87.00	-26.46	-1.65	0.00	-97.95	0.00	97.95	3,765.38	889.46	3,158.06	3,037.81	1.73	-0.20	0.039
88.00	-26.21	-1.65	0.00	-96.29	0.00	96.29	3,745.55	884.78	3,124.89	3,005.74	1.78	-0.21	0.039
88.50	-25.75	-1.64	0.00	-95.47	0.00	95.47	3,735.63	882.43	3,108.37	2,989.76	1.80	-0.21	0.039
90.00	-25.14	-1.62	0.00	-93.01	0.00	93.01	3,705.89	875.41	3,059.07	2,942.10	1.86	-0.21	0.038
92.00	-24.66	-1.61	0.00	-89.77	0.00	89.77	3,054.73	747.16	2,633.46	2,450.31	1.95	-0.22	0.045
95.00	-24.34	-1.60	0.00	-84.94	0.00	84.94	3,020.24	735.27	2,550.32	2,383.75	2.09	-0.23	0.044
97.00	-23.78	-1.59	0.00	-81.74	0.00	81.74	2,996.99	727.34	2,495.63	2,339.67	2.19	-0.23	0.043
100.00	-23.01	-1.56	0.00	-76.97	0.00	76.97	2,961.74	715.45	2,414.71	2,274.01	2.34	-0.24	0.042
105.00	-22.56	-1.55	0.00	-69.15	0.00	69.15	2,901.98	695.63	2,282.80	2,165.84	2.60	-0.26	0.040
108.00	-22.25	-1.54	0.00	-64.49	0.00	64.49	2,865.51	683.74	2,205.44	2,101.73	2.76	-0.26	0.038
110.00	-21.43	-1.51	0.00	-61.41	0.00	61.41	2,840.94	675.82	2,154.60	2,059.32	2.88	-0.27	0.037
115.00	-20.71	-1.48	0.00	-53.85	0.00	53.85	2,777.06	656.00	2,030.10	1,953.41	3.17	-0.28	0.035
120.00	-20.15	-1.46	0.00	-46.44	0.00	46.44	2,693.16	636.18	1,909.31	1,836.59	3.47	-0.30	0.033
124.00	-17.32	-1.31	0.00	-40.60	0.00	40.60	2,626.04	620.32	1,815.34	1,745.73	3.72	-0.31	0.030
125.00	-16.65	-1.28	0.00	-39.29	0.00	39.29	2,609.26	616.36	1,792.22	1,723.38	3.79	-0.31	0.029
130.00	-16.38	-1.27	0.00	-32.89	0.00	32.89	2,525.36	596.54	1,678.84	1,613.77	4.12	-0.32	0.027
132.00	-15.80	-1.23	0.00	-30.35	0.00	30.35	2,491.80	588.61	1,634.52	1,570.93	4.25	-0.32	0.026
135.00	-15.61	-1.22	0.00	-26.65	0.00	26.65	2,441.46	576.72	1,569.16	1,507.76	4.46	-0.33	0.024
136.00	-15.52	-1.22	0.00	-25.43	0.00	25.43	1,416.30	371.34	1,022.14	888.70	4.53	-0.33	0.040
137.00	-11.91	-0.99	0.00	-24.21	0.00	24.21	1,410.39	368.82	1,008.30	878.94	4.60	-0.33	0.036
140.00	-11.50	-0.97	0.00	-21.22	0.00	21.22	1,392.36	361.25	967.35	849.77	4.81	-0.34	0.033
145.00	-11.34	-0.96	0.00	-16.38	0.00	16.38	1,361.30	348.64	901.00	801.59	5.18	-0.35	0.029
147.00	-9.14	-0.80	0.00	-14.46	0.00	14.46	1,348.51	343.59	875.11	782.49	5.33	-0.36	0.025
148.00	-8.37	-0.75	0.00	-13.66	0.00	13.66	1,342.05	341.07	862.31	772.98	5.40	-0.36	0.024
150.00	-8.03	-0.72	0.00	-12.16	0.00	12.16	1,328.96	336.02	837.00	754.03	5.55	-0.36	0.022
155.00	-7.83	-0.71	0.00	-8.55	0.00	8.55	1,295.36	323.41	775.35	707.16	5.94	-0.37	0.018

158.00	-6.75	-0.62	0.00	-6.42	0.00	6.42	1,274.59	315.85	739.50	679.41	6.18	-0.38	0.015
160.00	-4.75	-0.45	0.00	-5.18	0.00	5.18	1,260.48	310.80	716.07	661.07	6.33	-0.38	0.012
165.00	-4.58	-0.44	0.00	-2.92	0.00	2.92	1,224.34	298.19	659.14	615.84	6.73	-0.38	0.008
168.00	-1.81	-0.18	0.00	-1.61	0.00	1.61	1,202.05	290.62	626.12	589.15	6.97	-0.38	0.004
170.00	-1.58	-0.16	0.00	-1.25	0.00	1.25	1,186.93	285.58	604.57	571.55	7.13	-0.38	0.004
175.00	-1.45	-0.15	0.00	-0.44	0.00	0.44	1,148.25	272.97	552.36	528.28	7.54	-0.39	0.002
178.00	0.00	-0.14	0.00	0.00	0.00	0.00	1,123.52	265.40	522.16	502.43	7.78	-0.39	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	43.42	0.00	68.38	0.00	0.00	5628.56	49.00	0.87
0.9D + 1.0W	43.39	0.00	51.26	0.00	0.00	5533.10	49.00	0.84
1.2D + 1.0Di + 1.0Wi	12.39	0.00	104.29	0.00	0.00	1657.01	49.00	0.27
1.2D + 1.0Ev + 1.0Eh	1.72	0.00	68.67	0.00	0.00	253.01	49.00	0.05
0.9D - 1.0Ev + 1.0Eh	1.71	0.00	47.52	0.00	0.00	247.53	49.00	0.05
1.0D + 1.0W	9.87	0.00	57.05	0.00	0.00	1269.29	49.00	0.20

Site Name: LAKE WASHINGTON - Town Hall NY, NY
Site Number: 420598
Tower Type: MP
Design Loads (Factored) - Analysis per TIA-222-H Standards

Monolithic Mat & Pier Foundation Analysis

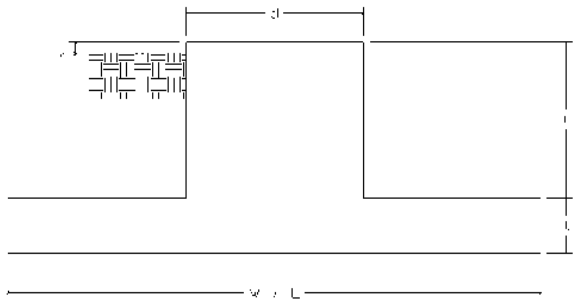
Foundation Analysis Parameters		
Design / Analysis / Mapping:	Analysis	-
Compression/Leg:	68.4	k
Uplift/Leg:	0.0	k
Total Shear:	43.4	k
Moment:	5,628.6	k-ft
Tower + Appurtenance Weight:	68.4	k
Depth to Base of Foundation (l + t - h):	9.5	ft
Diameter of Pier (d):	8	ft
Length of Pier (l):	6	ft
Height of Pier above Ground (h):	0.5	ft
Width of Pad (W):	24	ft
Length of Pad (L):	24	ft
Thickness of Pad (t):	4	ft
Tower Leg Center to Center:	0	ft
Number of Tower Legs:	1	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	99	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil Above Water Table:	125	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	62.6	pcf
Friction Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.30	-
Ultimate Compressive Bearing Pressure:	8,000	psf
Ultimate Passive Pressure on Pad Face:	0	psf
$f_{Soil\ and\ Concrete\ Weight}$:	0.9	-
f_{Soil}:	0.75	-

Overturning Moment Usage		
Design OTM:	6062.6	k-ft
OTM Resistance:	9354.7	k-ft
Design OTM / OTM Resistance:	65%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	2950	psf
Factored Nominal Bearing Pressure:	6000	psf
Factored Nominal (Net) Bearing Pressure:	49%	Pass
Load Direction Controling Design Bearing Pressure:	*Diagonal to Pad Edge*	

Sliding Factor of Safety		
Ultimate Friction Resistance:	242.8	k
Ultimate Passive Pressure Resistance:	0.0	k
Total Factored Sliding Resistance:	182.1	k
Sliding Design / Sliding Resistance:	24%	Pass

Foundation Steel Parameters		
Shear/Leg (Compression):	43.4	k
Shear/Leg (Uplift):	43.4	k
Concrete Strength (f'_c):	3,000	psi
Pad Tension Steel Depth:	44.31	in
Dead Load Factor:	0.9	-
f_{Shear}:	0.75	-
$f_{Flexure\ /\ Tension}$:	0.9	-
$f_{Compression:}$	0.65	-
b:	0.85	-
Bottom Pad Rebar Size #:	11	-
# of Bottom Pad Rebar:	24	-
Pad Bottom Steel Area:	37.44	in^2
Pad Steel F_y:	60,000	psi
Top Pad Rebar Size #:	11	-
# of Top Pad Rebar:	24	-
Pad Top Steel Area:	37.44	in^2
Pier Rebar Size #:	11	-
Pier Steel Area (Single Bar):	1.56	in^2
# of Pier Rebar:	40	-
Pier Steel F_y:	60,000	psi
Pier Cage Diameter:	87.4	in
Rebar Strain Limit:	0.008	-
Steel Elastic Modulus:	29,000	ksi
Tie Rebar Size #:	5	-
Tie Steel Area (Single Bar):	0.31	in^2
Tie Spacing:	6	in
Tie Steel F_y:	60,000	psi
Clear Cover:	3	in



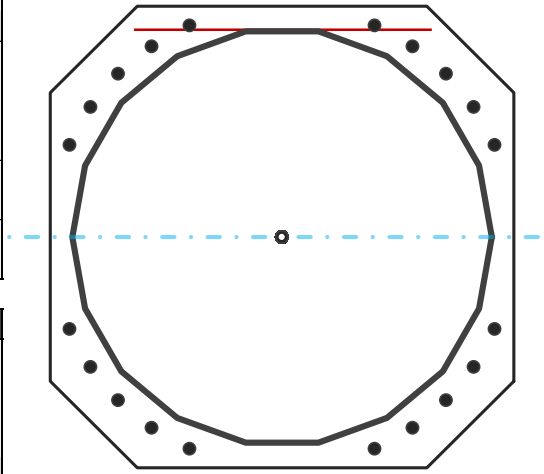
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	56.91	in
Thickness	1/2	in
Orientation Offset		°

Base Reactions		
Moment, Mu	5,628.6	k-ft
Axial, Pu	68.4	k
Shear, Vu	43.4	k
Neutral Axis	0	°

Report Capacities		
Component	Capacity	Result
Base Plate	10%	Pass
Anchor Rods	82%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	64	in
Thickness	3	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	12	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	324.9	k
Bending Stress, ϕMn	3389.3	k



Original Anchor Rods		
Arrangement	Cluster	-
Quantity	20	-
Diameter, ø	2 1/4	in
Bolt Circle	64	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	196.9	k
Anchor Rods, ϕPn	243.6	k

Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	43.4	5628.6	1.00
Anchor Rod Forces	43.4	5628.6	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	88.1594	4.8977	0.4100		35073.77
Bolt	3.9761	3.2477	0.8393	4.5	33273.13
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	64	in
Thickness, t	3	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	29.279	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	20	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	64	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	196.9	k
Applied Shear, Vu	1.3	k
Compressive Capacity, ϕPn	243.6	k
Tensile Capacity, ϕRnt	0.808	OK
Interaction Capacity	0.819	OK

External Base Plate		
Chord Length AA	33.475	in
Additional AA	0.000	in
Section Modulus, Z	75.318	in^3
Applied Moment, Mu	324.9	k-ft
Bending Capacity, ϕMn	3389.3	k-ft
Capacity, Mu/ϕMn	0.096	OK
Chord Length AB	32.595	in
Additional AB	0.000	in
Section Modulus, Z	73.338	in^3
Applied Moment, Mu	151.7	k-ft
Bending Capacity, ϕMn	3300.2	k-ft
Capacity, Mu/ϕMn	0.046	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in^3
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

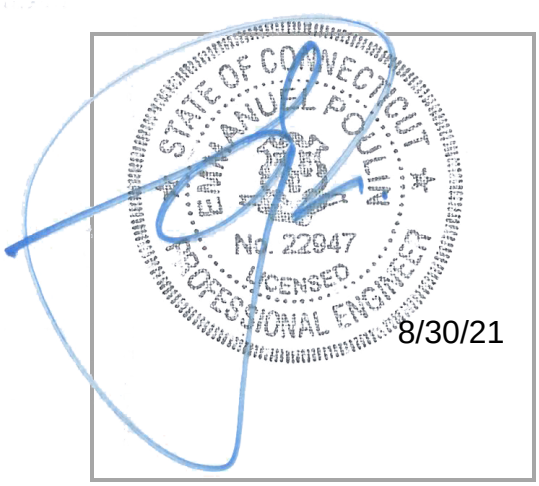
Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

MOUNT ANALYSIS REPORT

August 30, 2021

Dish Wireless Site Name	BOBDL00010A
Dish Wireless Site Number	BOBDL00010A
ATC Site Name	Andover-bunker Hill Road, CT
ATC Site Number	302472
Infinigy Job Number	1197-F0001-B
Client	ATC
Carrier	Dish Wireless
Site Location	104 Bunker Hill Road Andover, CT 06232-1301 Tolland County 41.737786 N NAD83 72.34983889 W NAD83
Mount Type	8.0 ft Platform
Mount Elevation	124.0 ft AGL
Structural Usage Ratio	**48.4%**
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 130 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 Platform 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	130 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 2" ice
Code / Standard	TIA-222-H
Adopted Code	2018 Connecticut State Building Code (2015 IBC)
Risk Category	II
Exposure Category	B
Topographic Category	2
Calculated Crest Height	344.0 ft.
Seismic Spectral Response	S_s = 0.176 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 - 124.0 ft. AGL Platform

Antenna Centerline (ft)	Qty.	Appurtenance Manufacturers	Appurtenance Models
124.0	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-ATC-T-302472 Rev 1, Site #BOBDL00010A, dated June 14, 2021
Mount Manufacturer Drawings	Commscope Document # MC-PK8-DSH, dated March 08, 2021
Structural Analysis Report	ATC, Asset #302472, dated July 14, 2021

5. RESULTS

Components	Capacity	Pass/Fail
Mount Pipes	26.1%	Pass
Horizontals	15.9%	Pass
Standoffs	37.8%	Pass
Handrails	31.7%	Pass
Connections	48.4%	Pass
MOUNT RATING =	**48.4%**	**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 124.0 ft. The installation shall be performed in accordance with the construction documents issued for this site.

Alisha Khadka
Project Engineer II | **INFINIGY**

7. ASSUMPTIONS

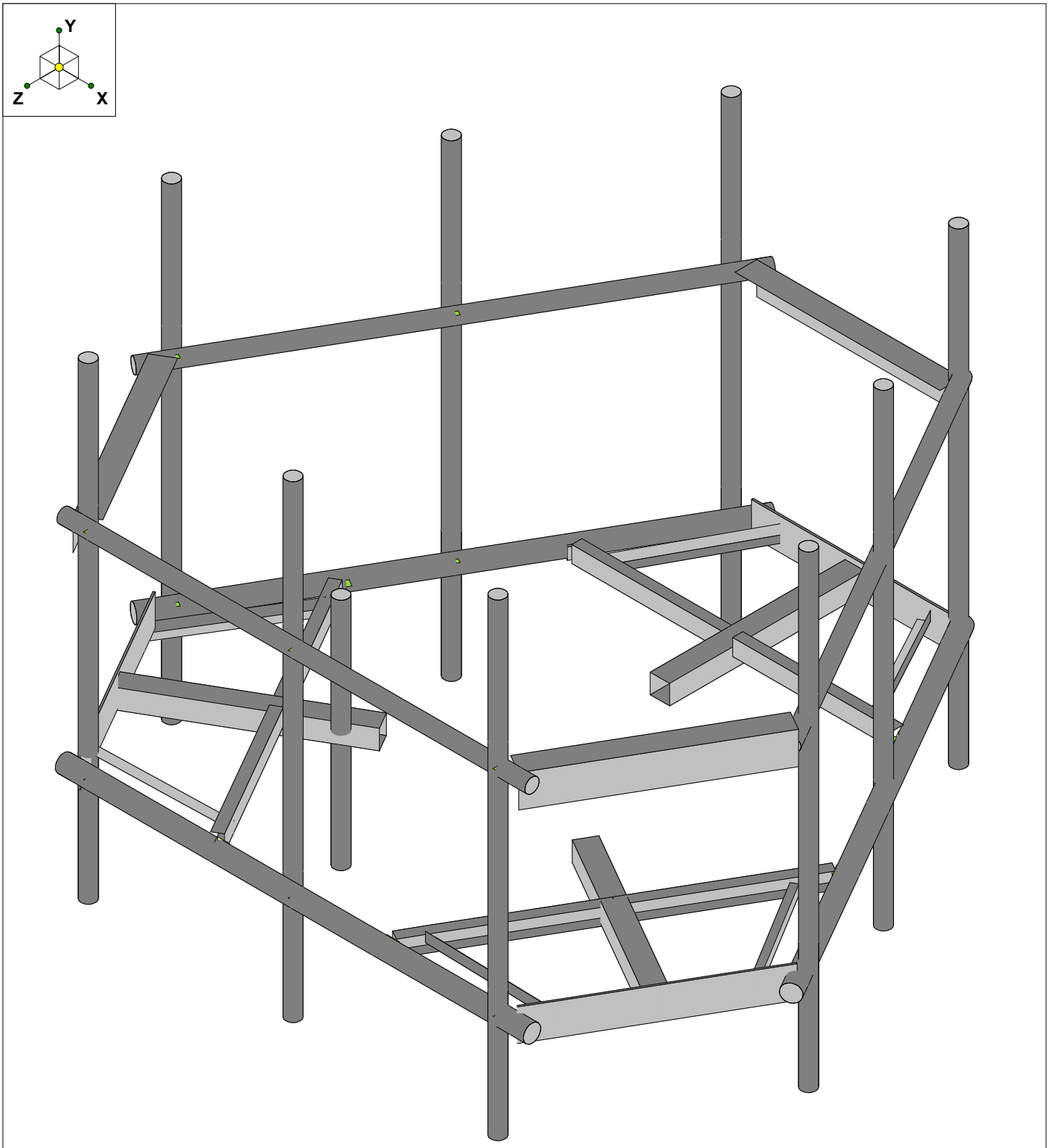
The antenna mounting system was properly fabricated, installed and maintained in accordance with its original design and manufacturer's specifications.
The configuration of antennas, mounts, and other appurtenances are as specified in the proposed loading configuration table.
All member connections are 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, Solid Round, Plate, Built-up Angle — ASTM A1011 36 KSI Structural Angle — ASTM A529 Gr. 50 HSS (Rectangular) — ASTM A500-B GR 46 HSS (Circular) — ASTM A500-B GR 42 Pipe — ASTM A500 Gr C Connection Bolts — ASTM A325 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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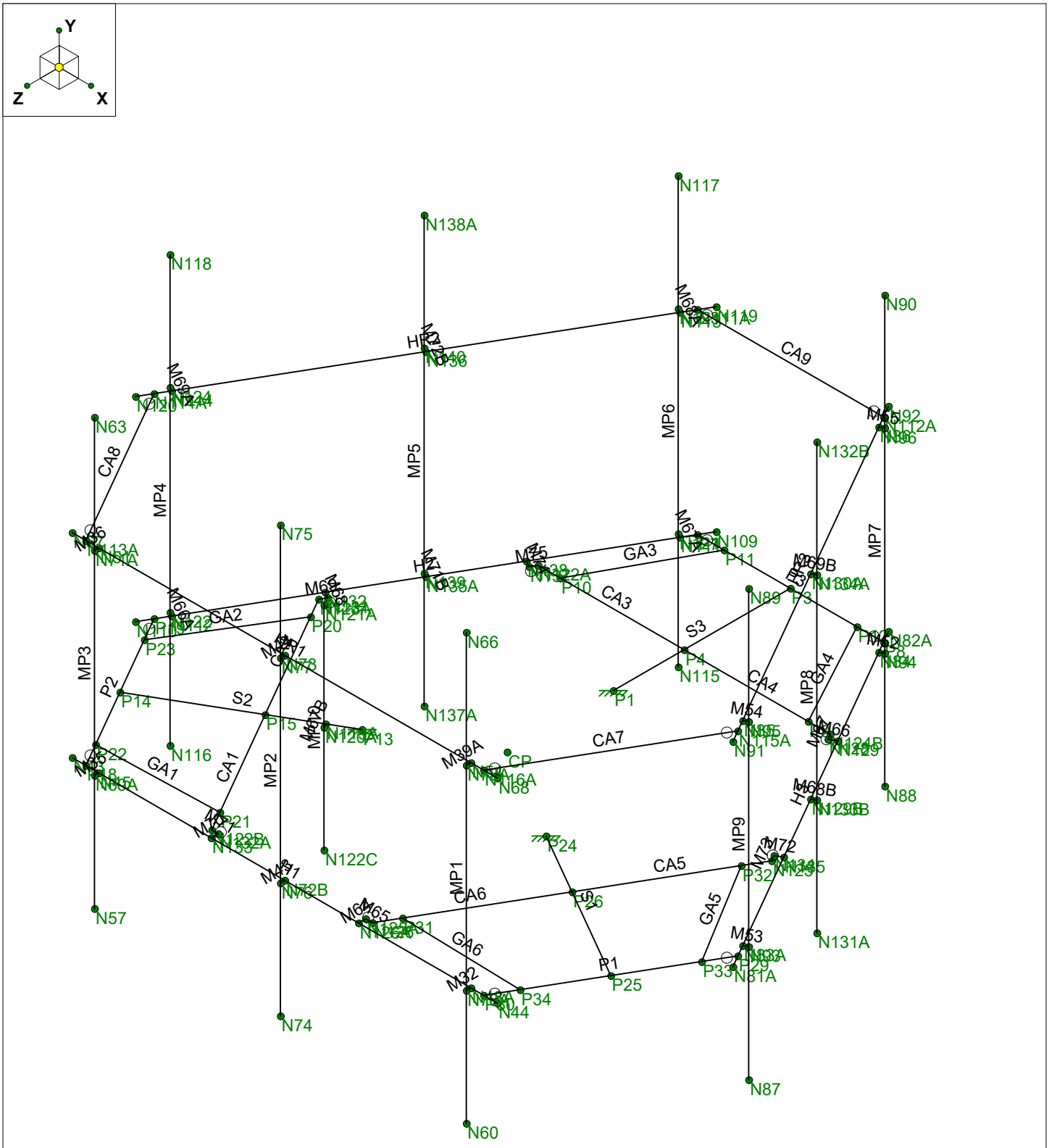

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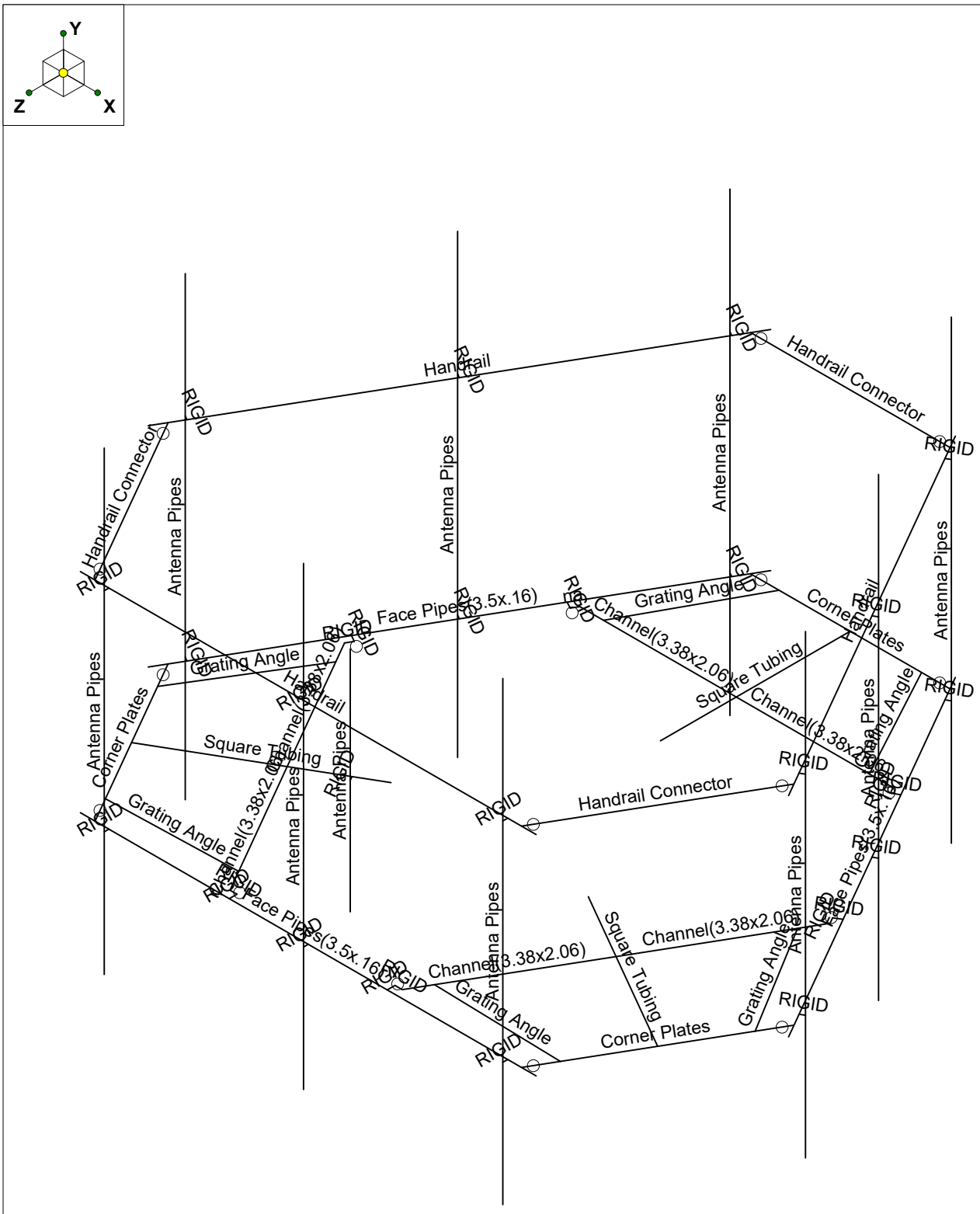

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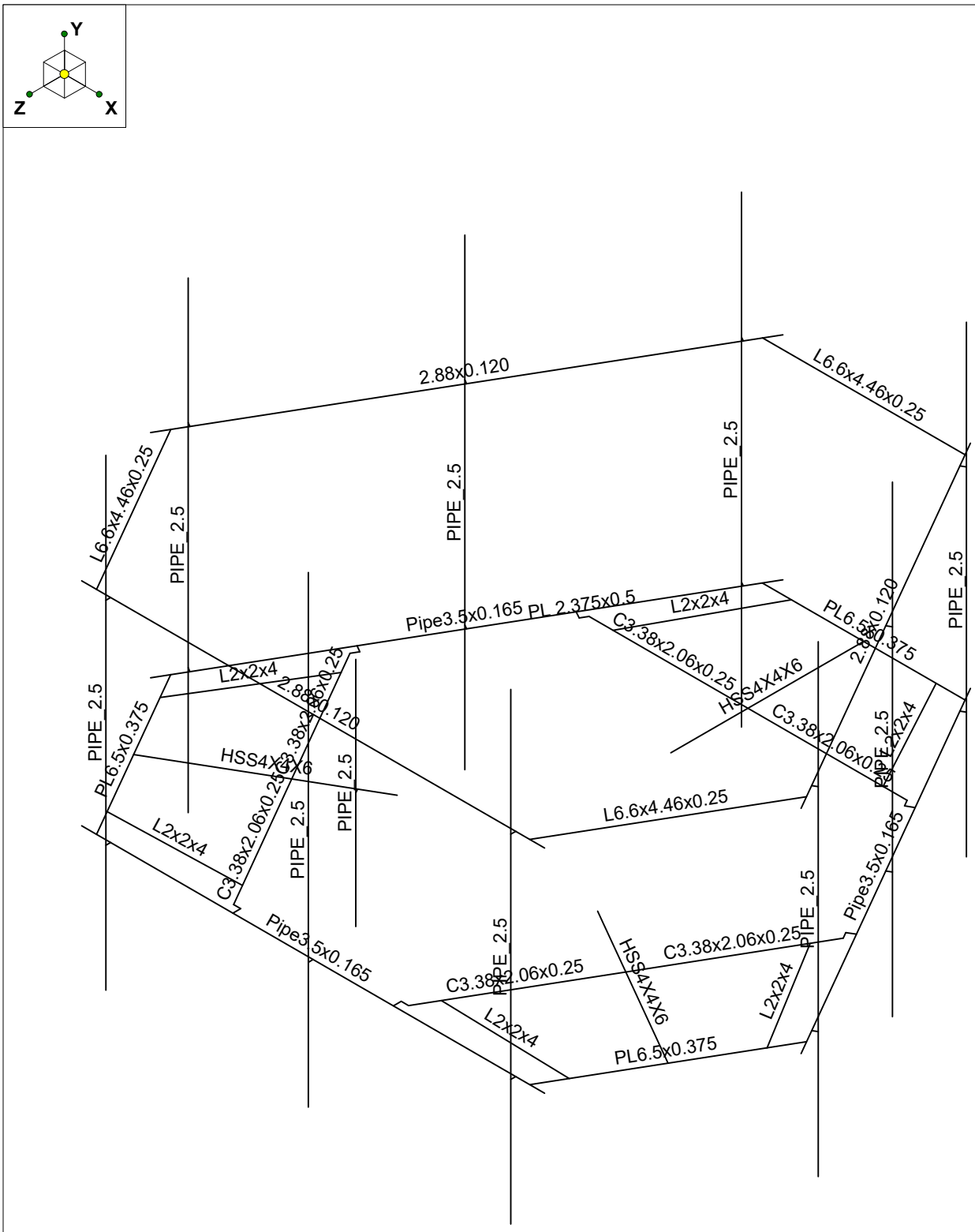

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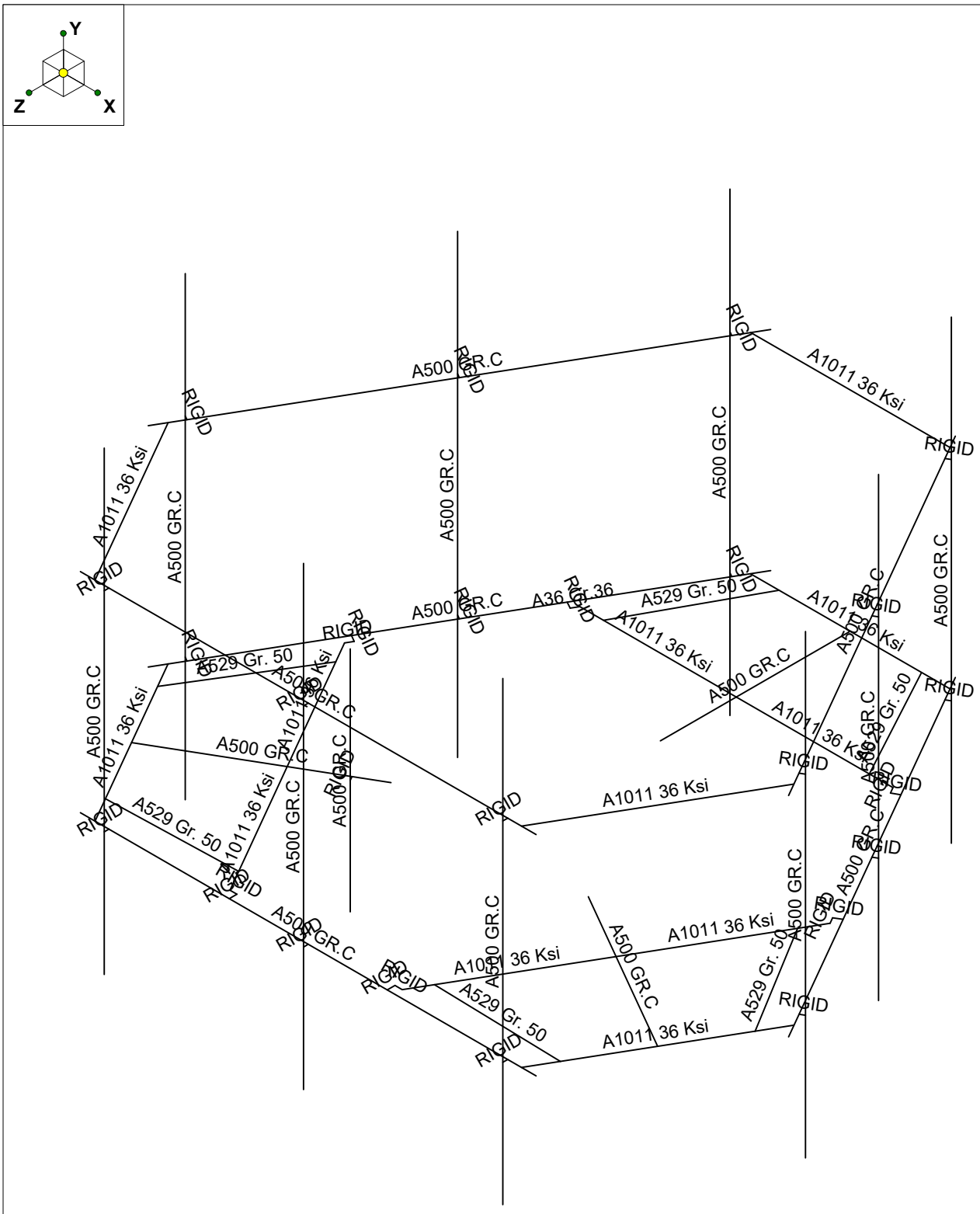

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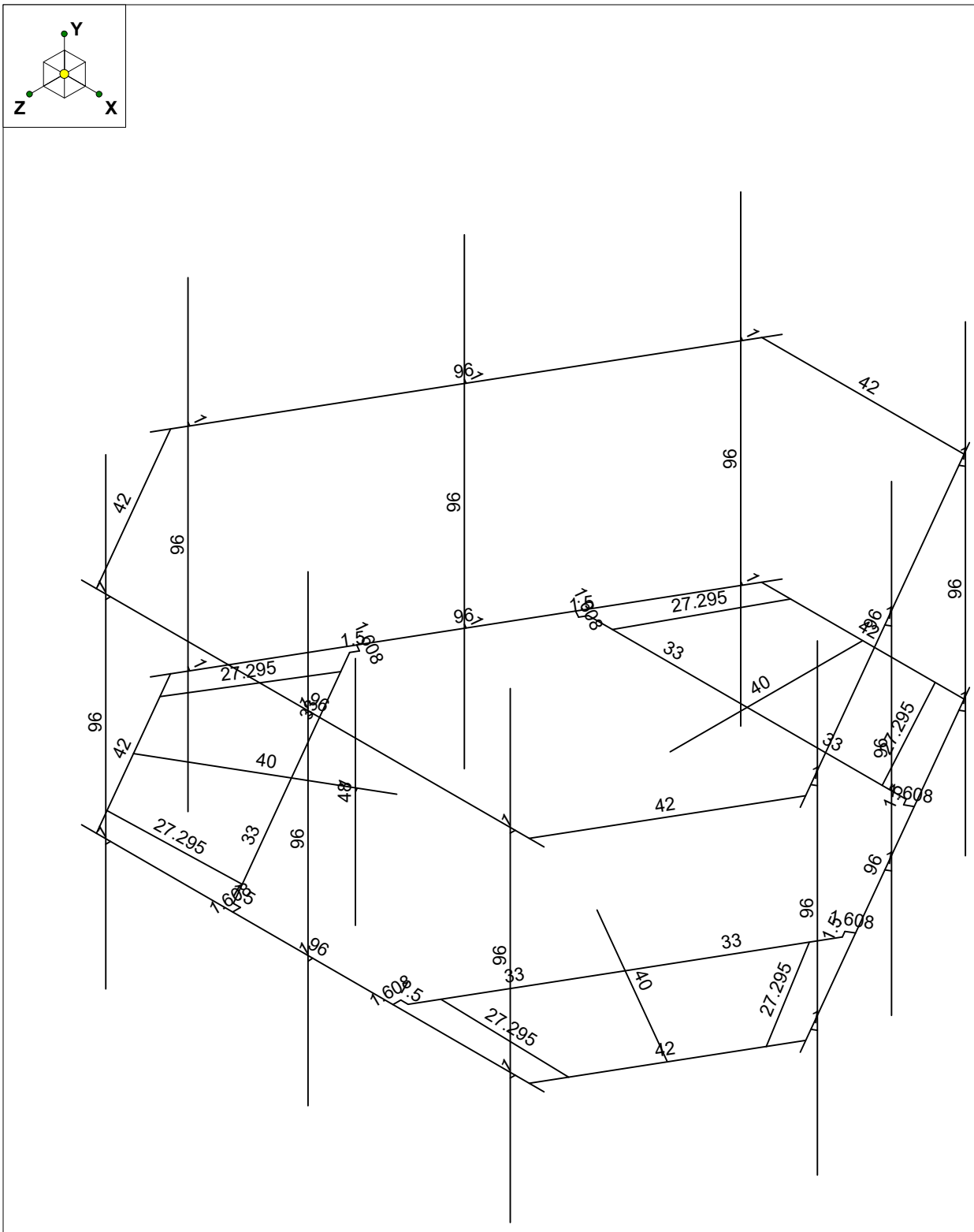

Member Length (in) Displayed
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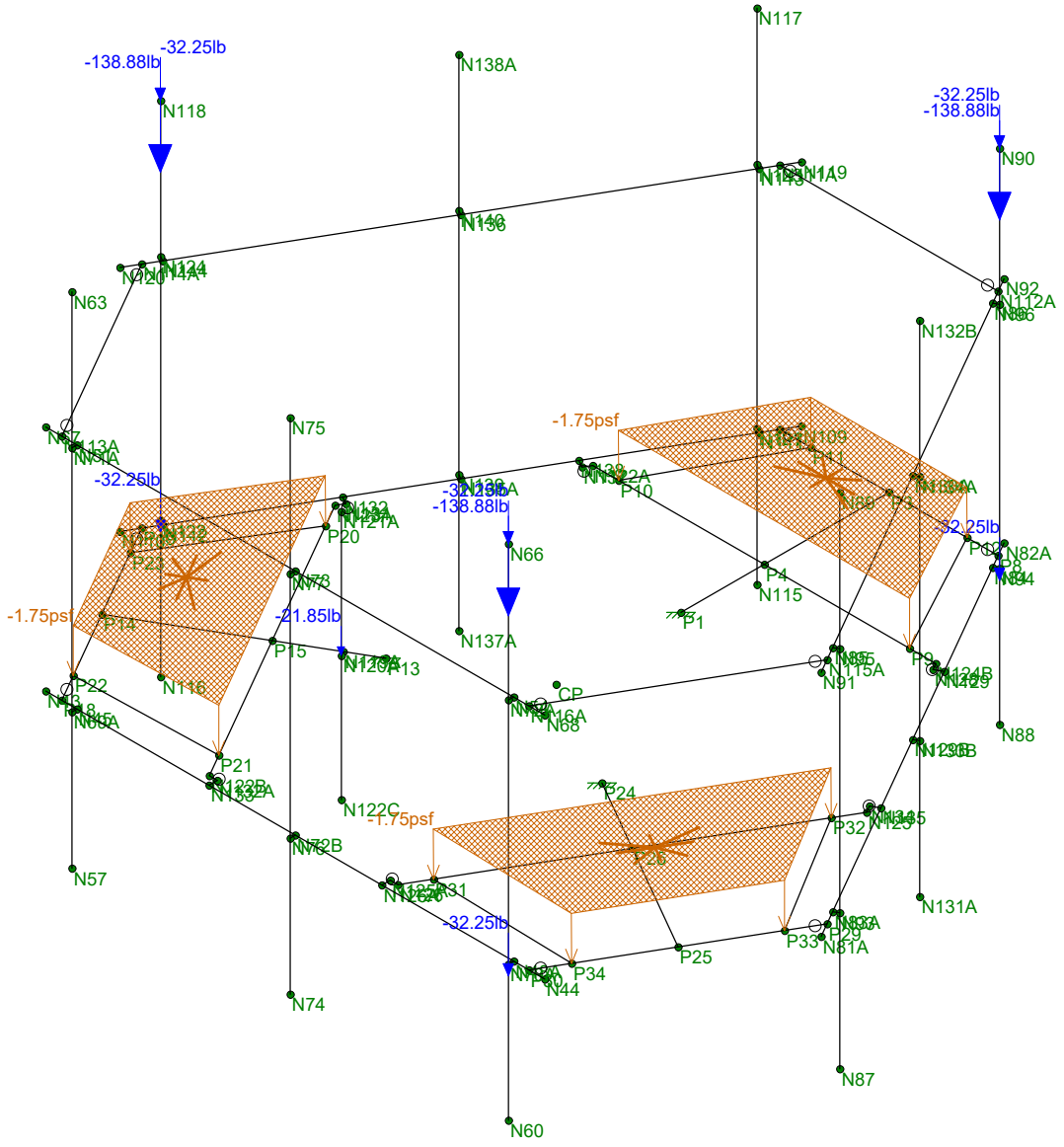

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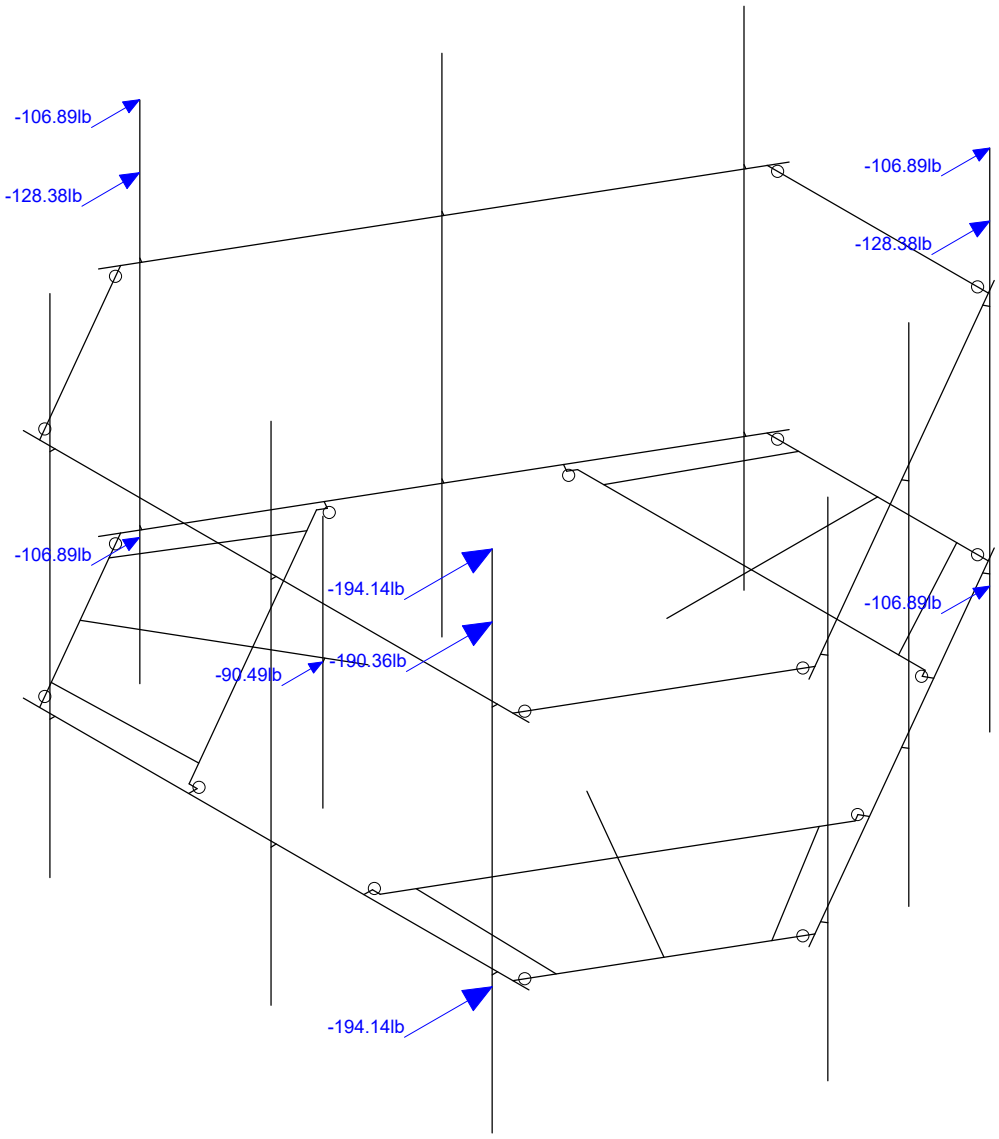

Loads: BLC 2, Wind Load AZI 0
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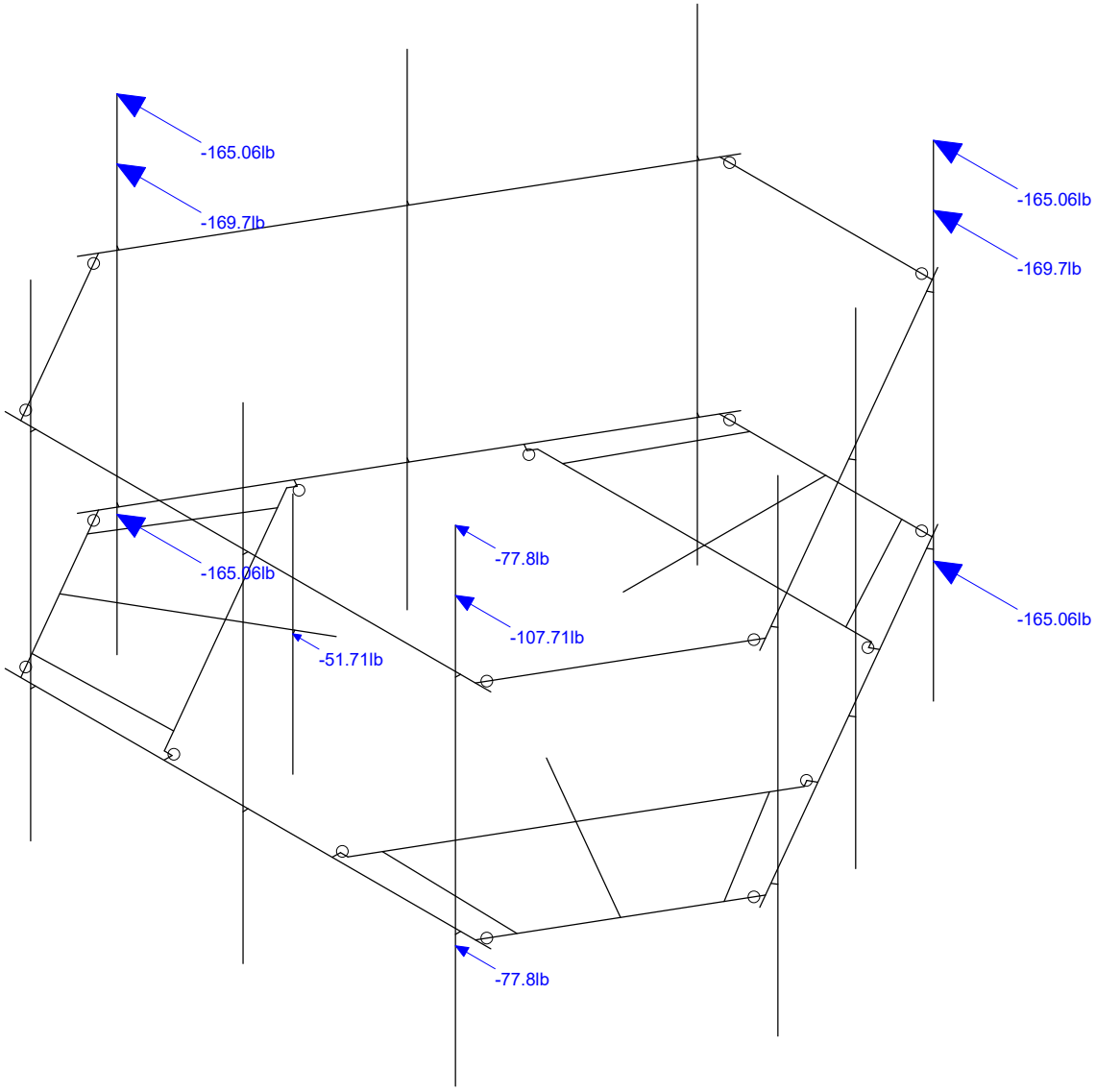

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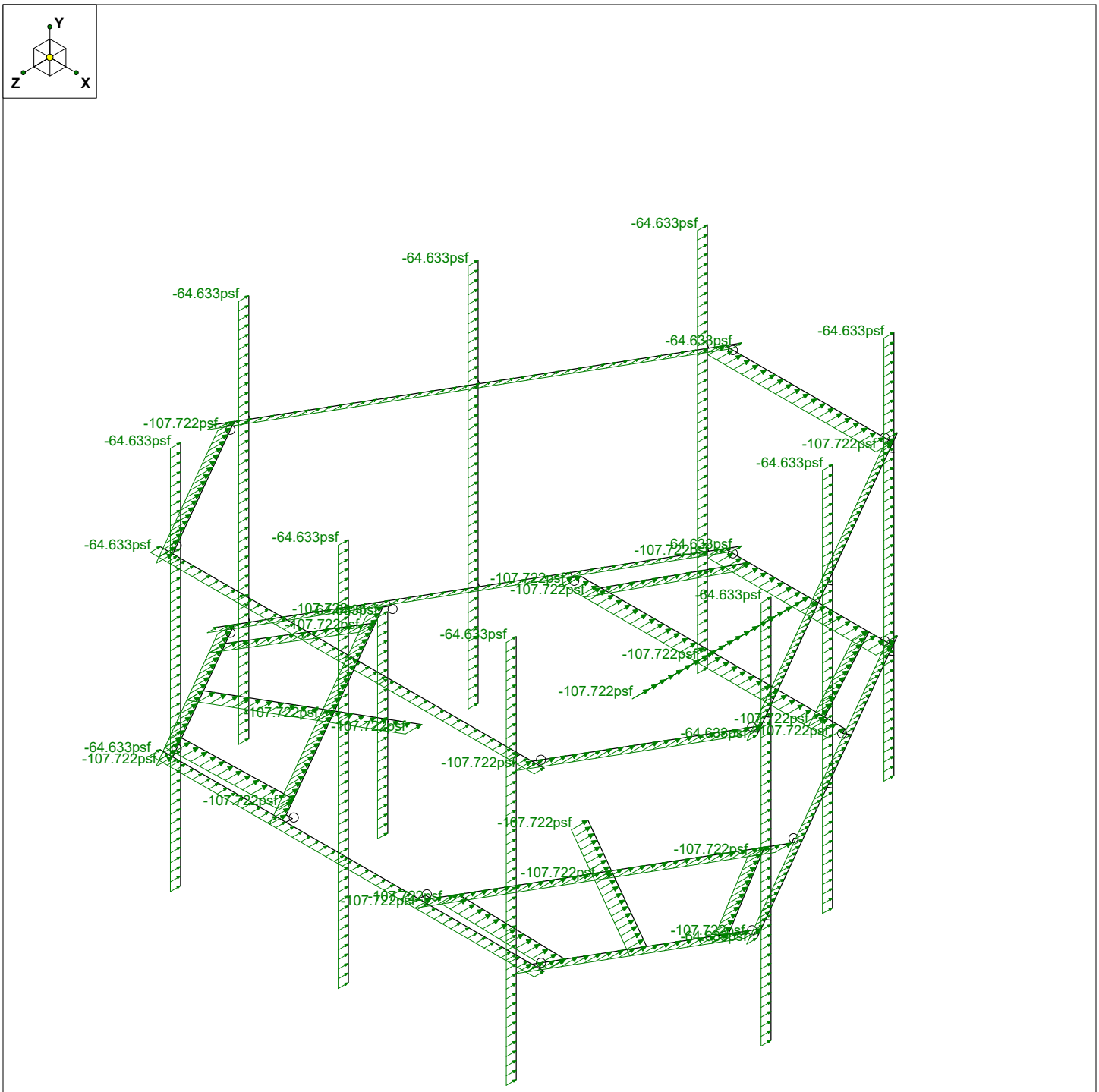
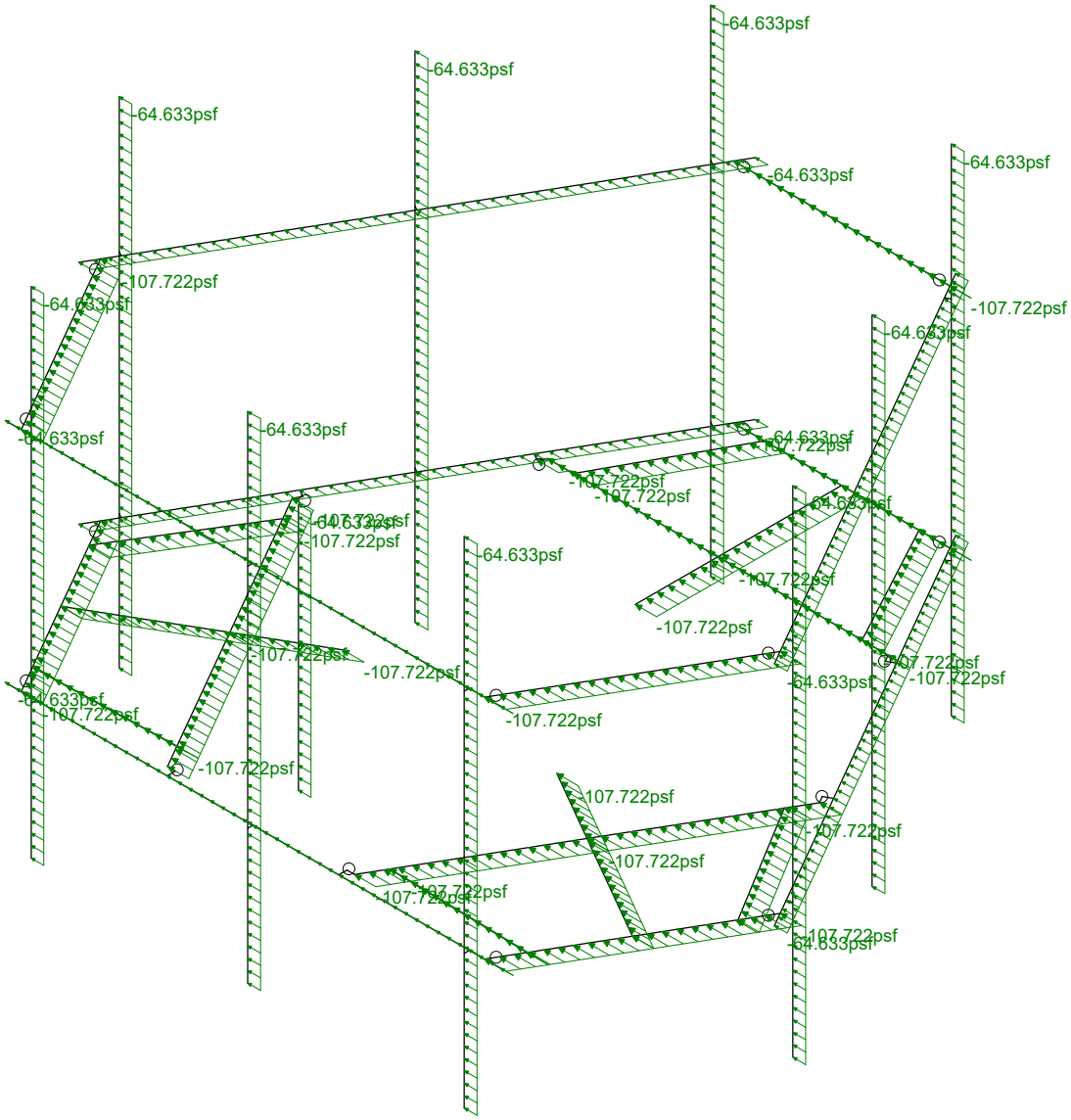
1197-F0001-B		BOBDL00010A_loaded_loaded.r3d



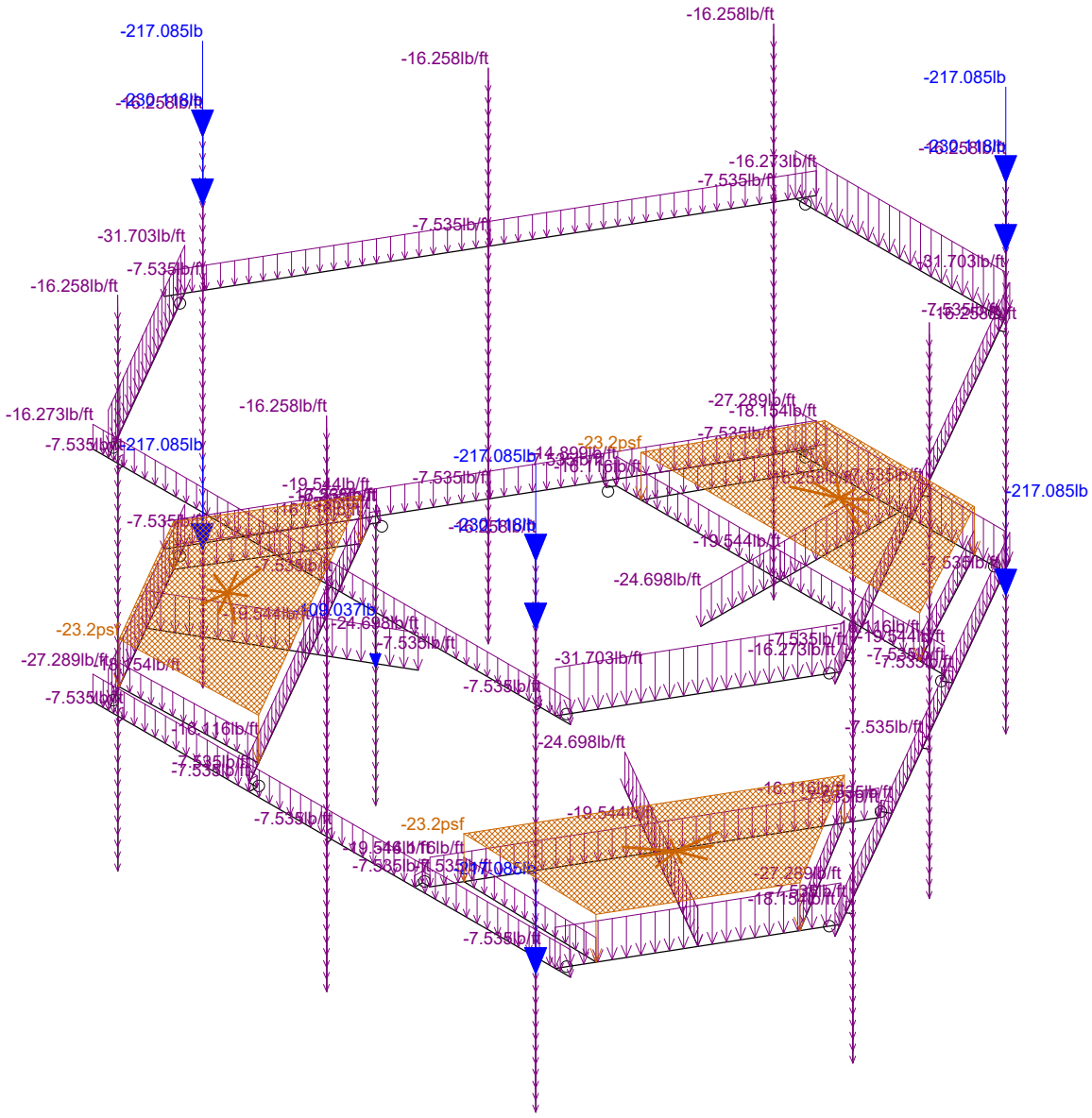
Loads: BLC 14, Distr. Wind Load Z
Envelope Only Solution

Infinigy Engineering	BOBDL00010A	Distr. Wind Load AZI 000
AK		Aug 30, 2021 at 11:07 AM
1197-F0001-B		BOBDL00010A_loaded_loaded.r3d



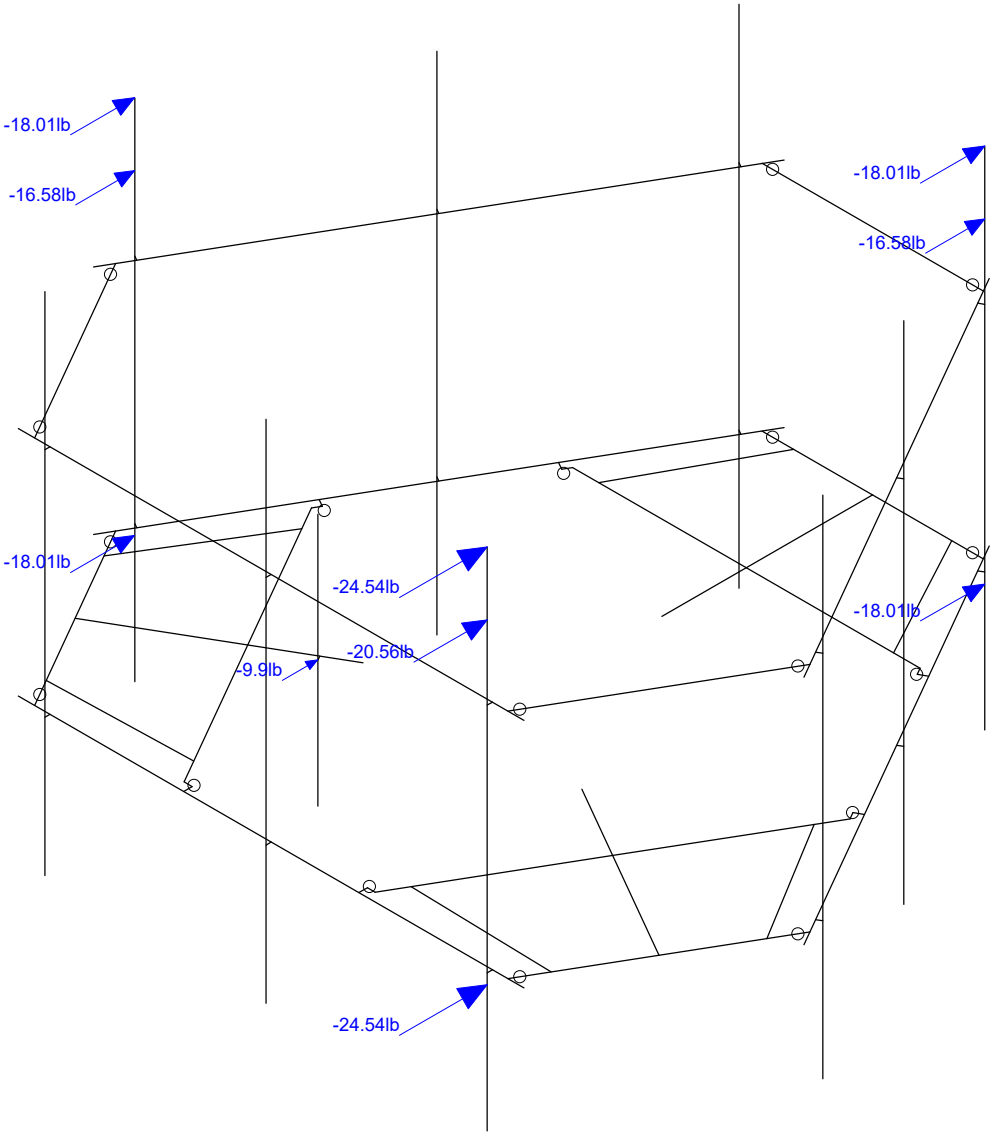
Loads: BLC 15, Distr. Wind Load X
Envelope Only Solution

Infinigy Engineering	BOBDL00010A	Distr. Wind Load AZI 090
AK		Aug 30, 2021 at 11:08 AM
1197-F0001-B		BOBDL00010A_loaded_loaded.r3d



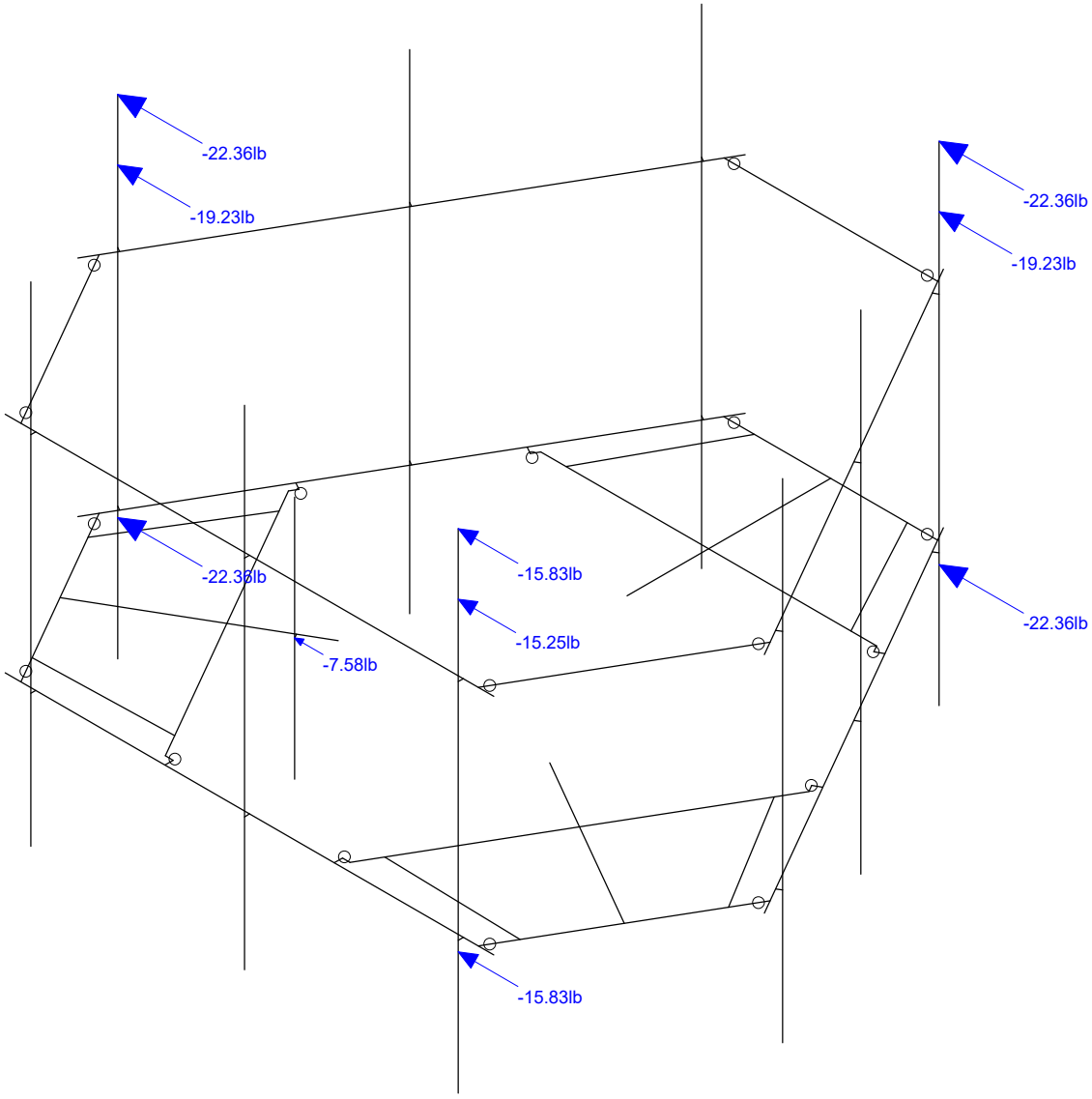
Loads: BLC 16, Ice Weight
Envelope Only Solution

Infinigy Engineering	BOBDL00010A	Ice Load
AK		Aug 30, 2021 at 11:09 AM
1197-F0001-B		BOBDL00010A_loaded_loaded.r3d



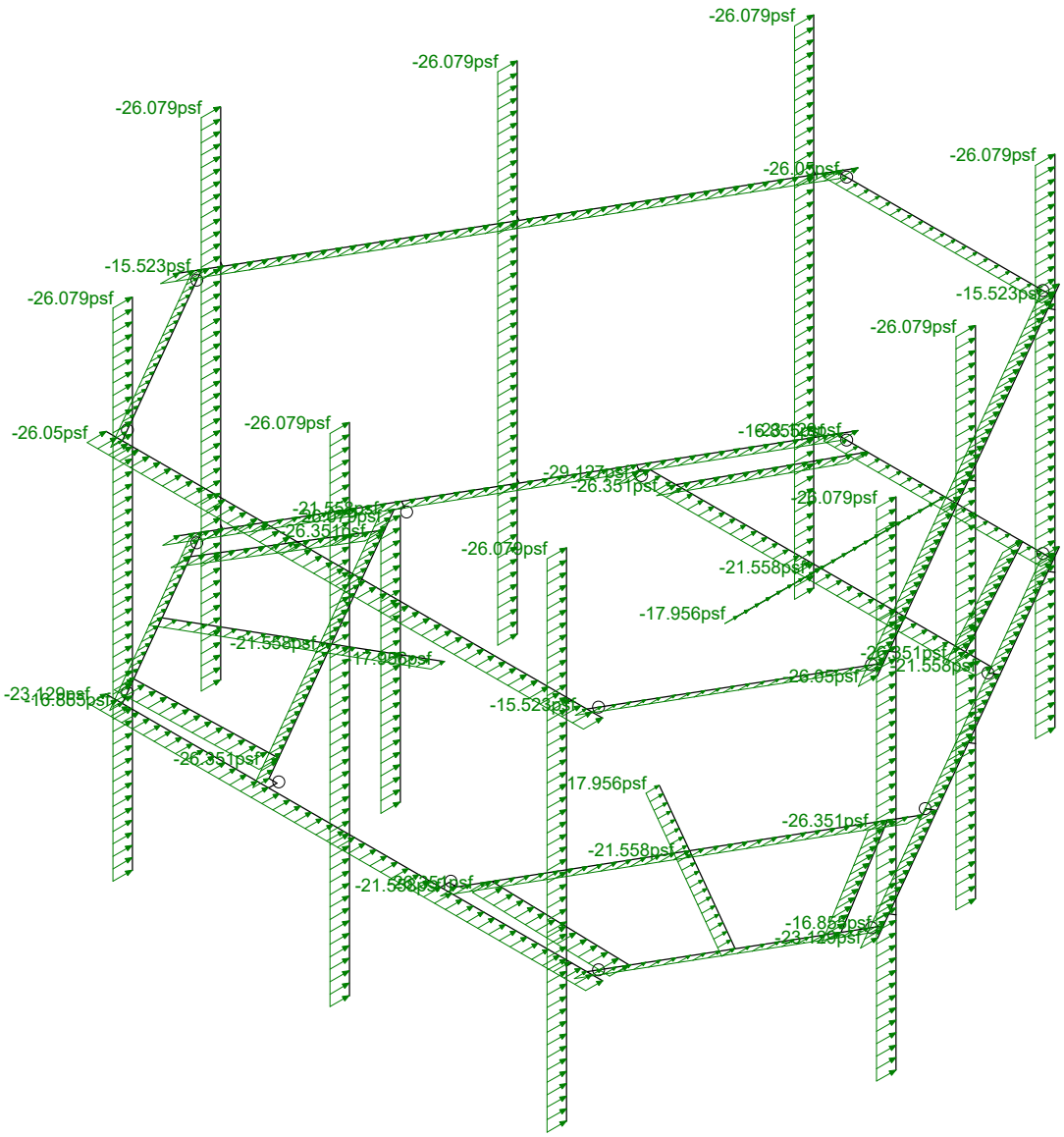
Loads: BLC 17, Ice Wind Load AZI 0
Envelope Only Solution

Infinigy Engineering	BOBDL00010A	Ice + Wind Load AZI 000
AK		Aug 30, 2021 at 11:09 AM
1197-F0001-B		BOBDL00010A_loaded_loaded.r3d



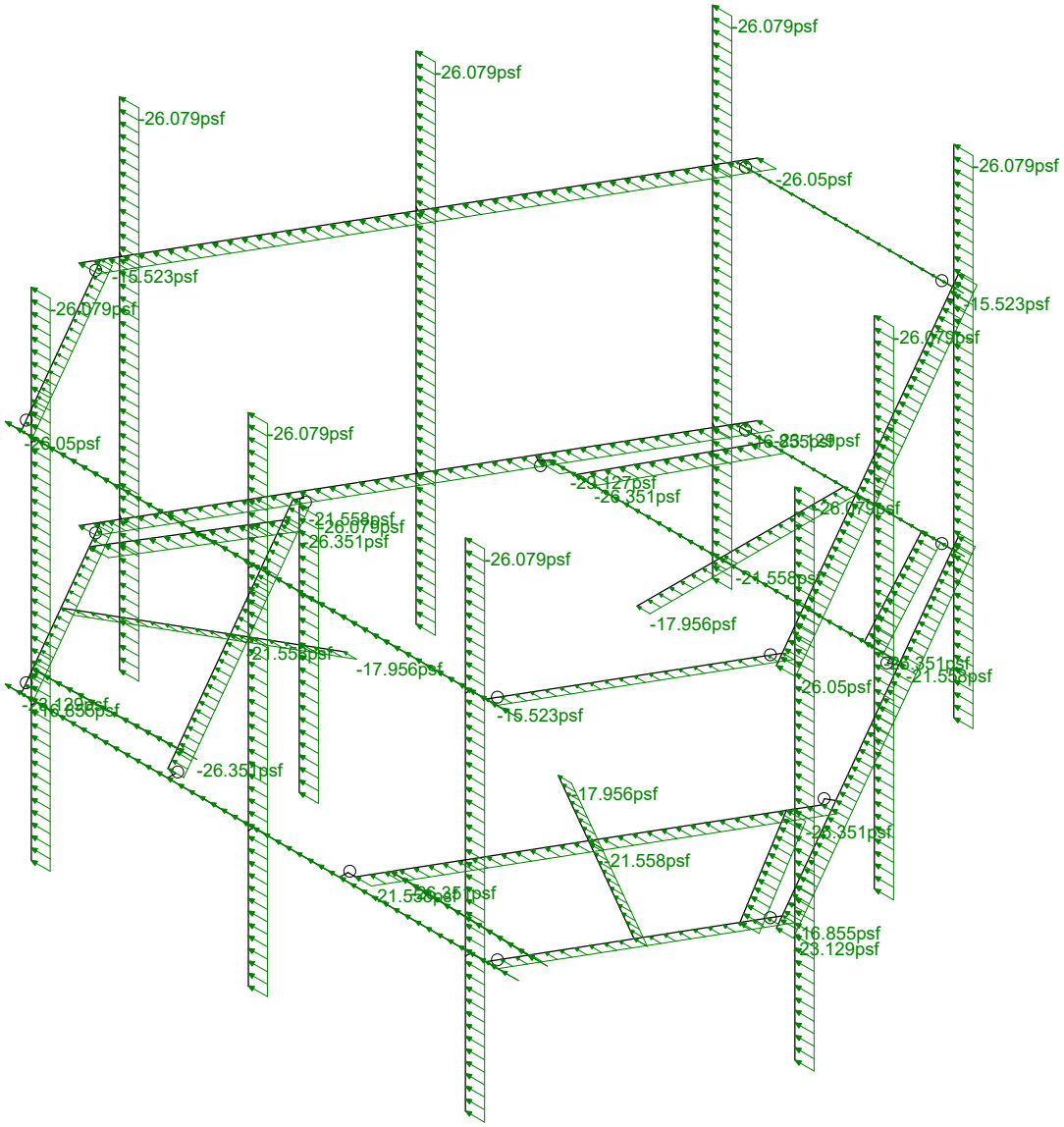
Loads: BLC 20, Ice Wind Load AZI 90
Envelope Only Solution

Infinigy Engineering	BOBDL00010A	Ice + Wind Load AZI 090
AK		Aug 30, 2021 at 11:10 AM
1197-F0001-B		BOBDL00010A_loaded_loaded.r3d



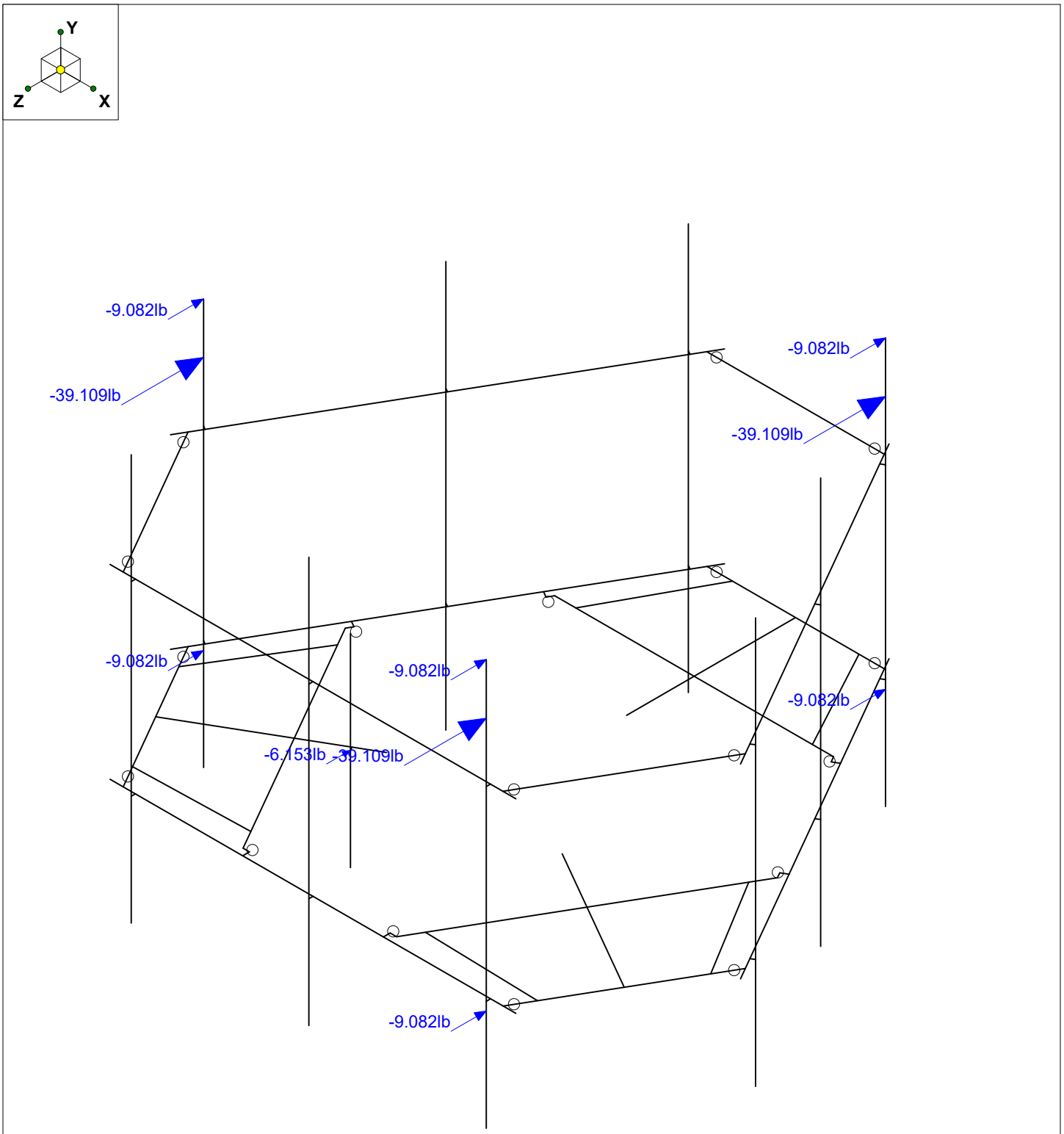
Loads: BLC 29, Distr. Ice Wind Load Z
Envelope Only Solution

Infinigy Engineering	BOBDL00010A	Distr. Ice + Wind Load AZI 000
AK		Aug 30, 2021 at 11:11 AM
1197-F0001-B		BOBDL00010A_loaded_loaded.r3d



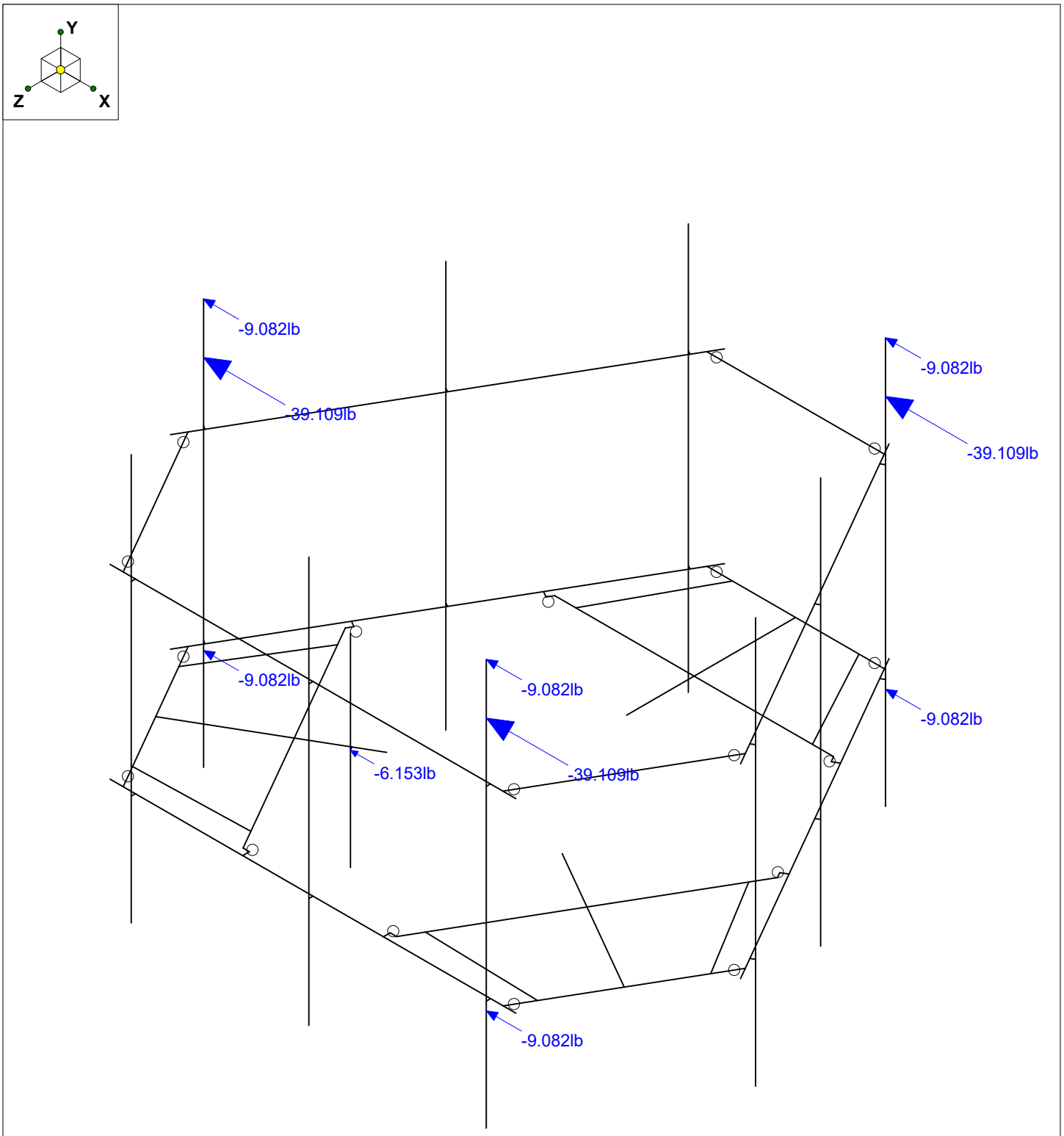
Loads: BLC 30, Distr. Ice Wind Load X
Envelope Only Solution

Infinigy Engineering	BOBDL00010A	Distr. Ice + Wind Load AZI 090
AK		Aug 30, 2021 at 11:12 AM
1197-F0001-B		BOBDL00010A_loaded_loaded.r3d



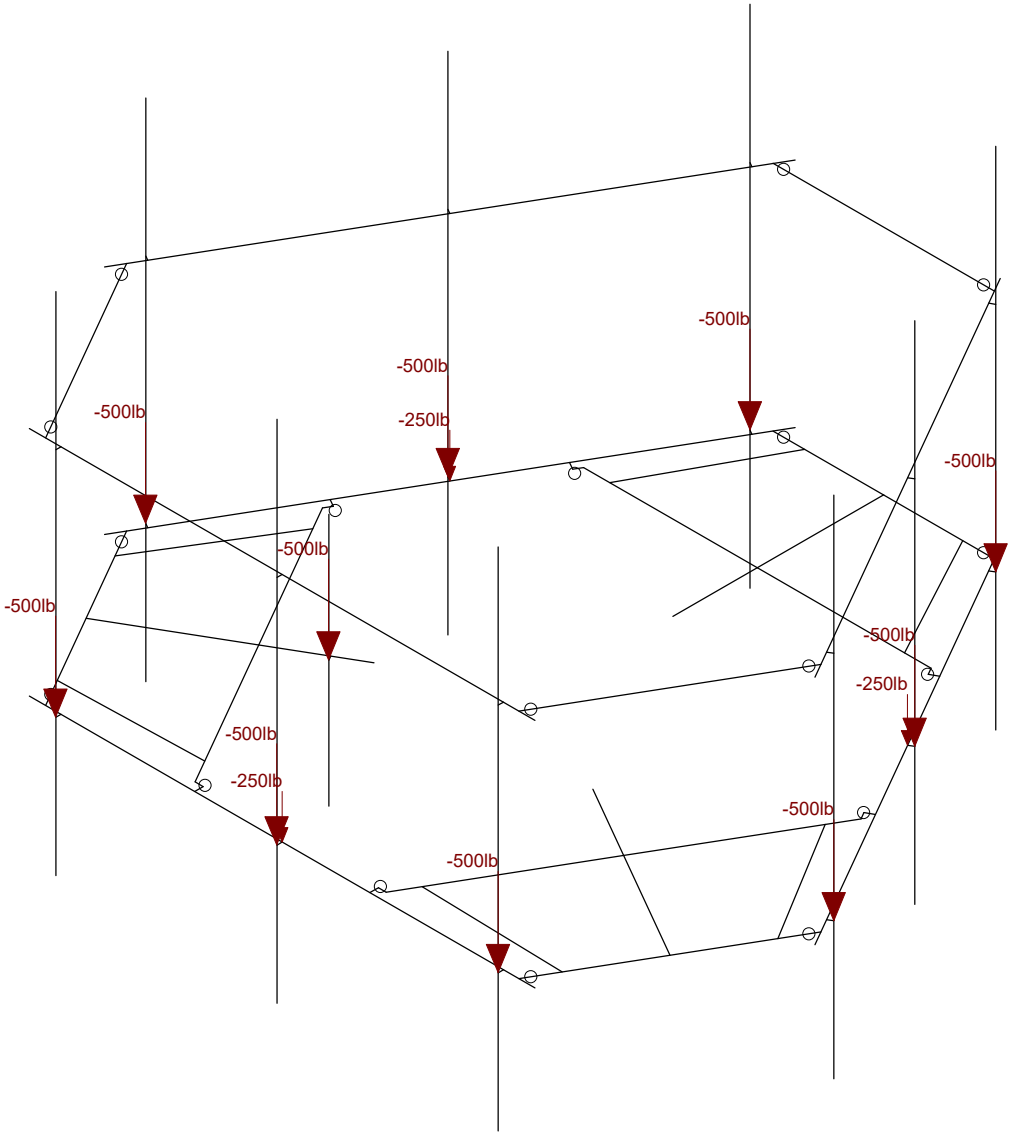
Loads: BLC 31, Seismic Load Z

Infinigy Engineering	BOBDL00010A	Seismic Load AZI 000
AK		Aug 27, 2021 at 5:16 PM
1197-F0001-B		BOBDL00010A_loaded.r3d



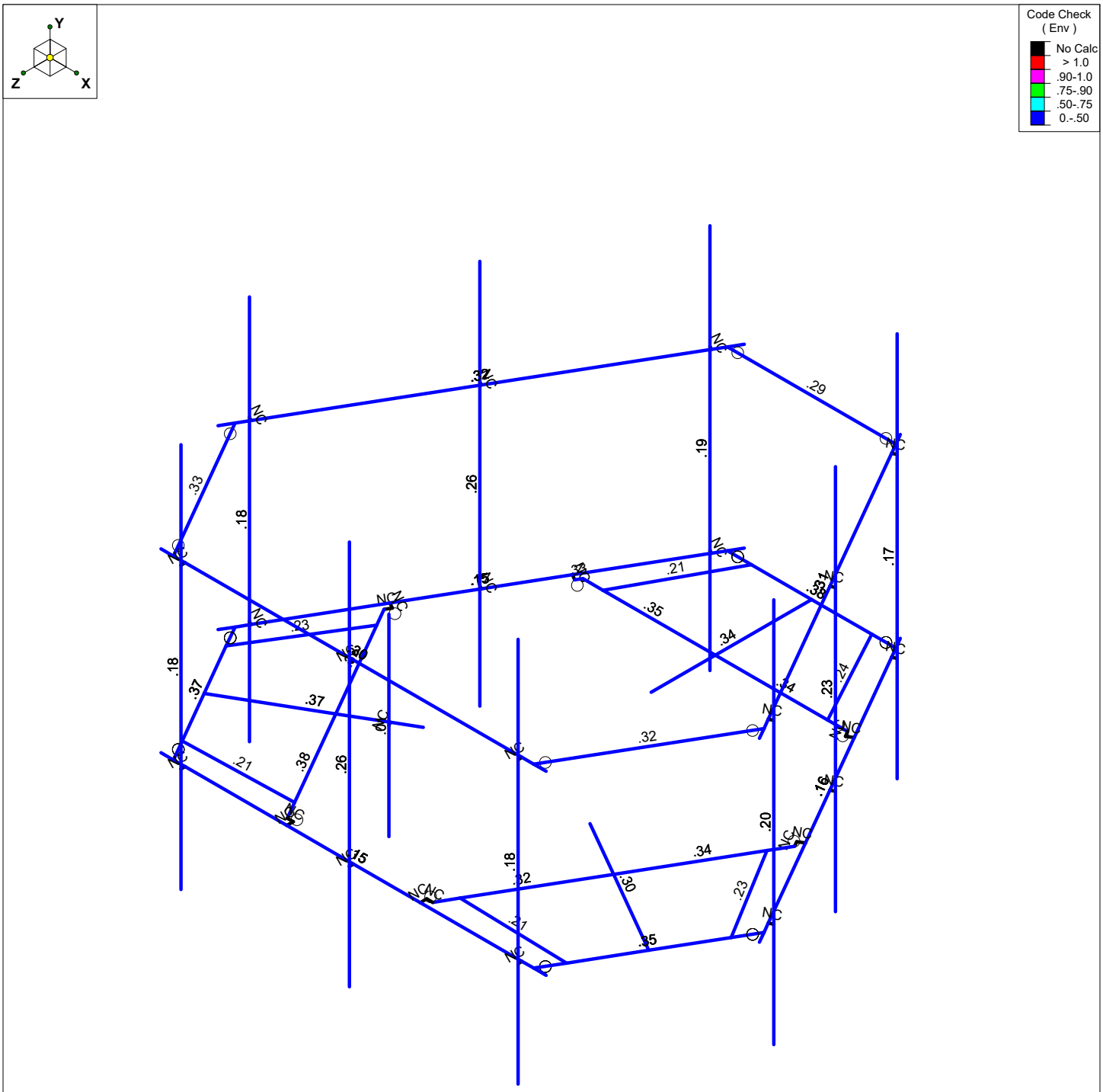
Loads: BLC 32, Seismic Load X

Infinigy Engineering	BOBDL00010A	Seismic Load AZI 090
AK		Aug 27, 2021 at 5:17 PM
1197-F0001-B		BOBDL00010A_loaded.r3d



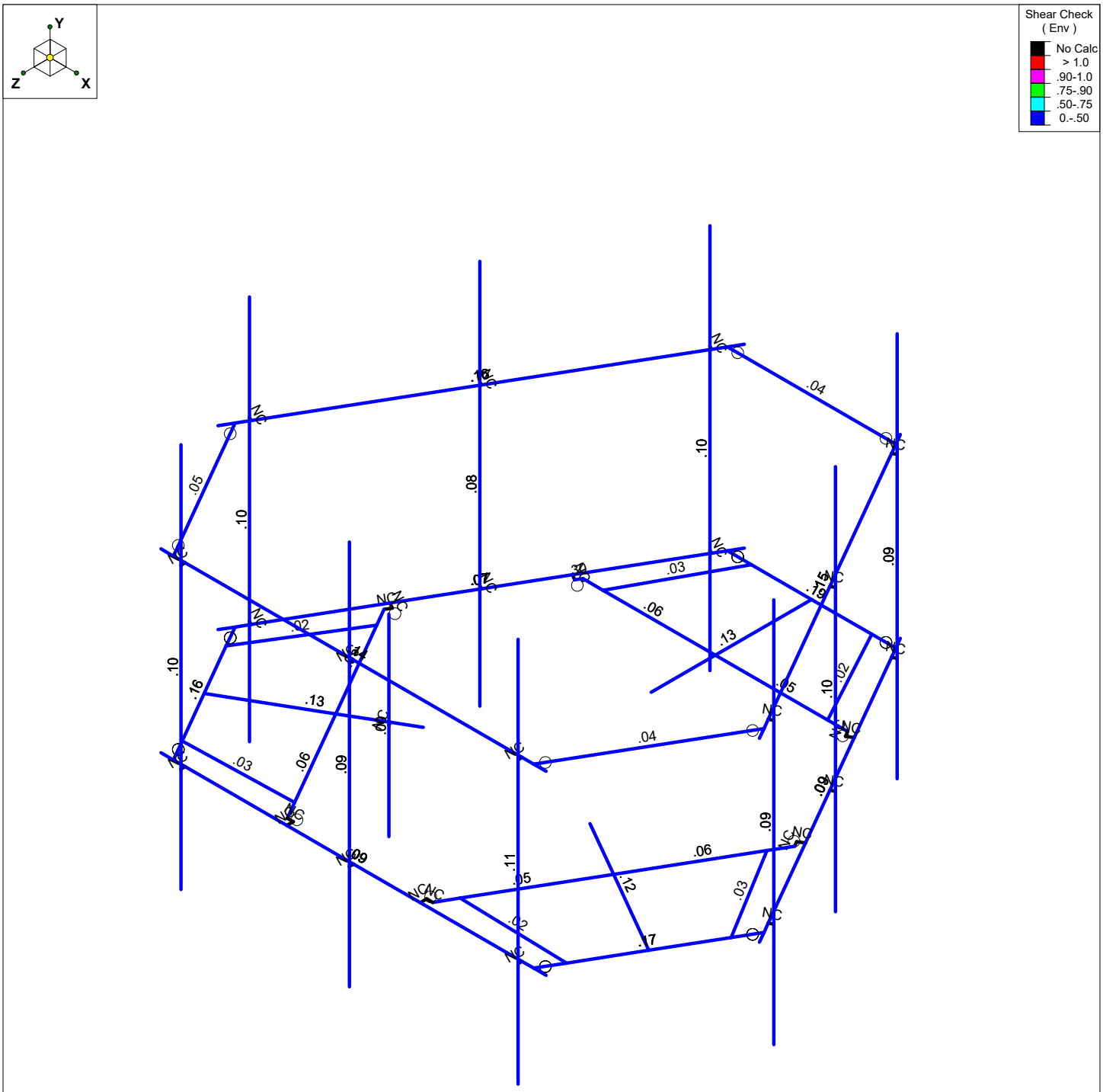
Loads: LL - Live Load
Envelope Only Solution

Infinigy Engineering	BOBDL00010A	Non concurrent Live Loads
AK		Aug 30, 2021 at 11:14 AM
1197-F0001-B		BOBDL00010A_loaded_loaded.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering	BOBDL00010A	Bending Check
AK		Aug 30, 2021 at 11:15 AM
1197-F0001-B		BOBDL00010A_loaded_loaded.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering	BOBDL00010A	Shear Check
AK		Aug 30, 2021 at 11:15 AM
1197-F0001-B		BOBDL00010A_loaded_loaded.r3d

Program Inputs

PROJECT INFORMATION	
Client:	ATC
Carrier:	Dish Wireless
Engineer:	Alisha Khadka

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 2	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	539.98	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	124.00	ft
Tower Height AGL:	178.00	ft

TOPOGRAPHIC DATA		
Topo Feature:	Hill	
Slope Distance:	2786.0	ft
Crest Distance:	483.0	ft
Crest Height:	344.0	ft

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	0.981	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.272	
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}):	130	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	2	in
Flat Pressure:	107.722	psf
Round Pressure:	64.633	psf
Ice Wind Pressure:	9.561	psf

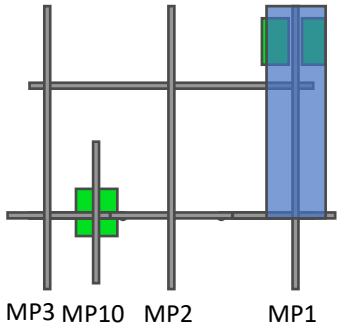
SEISMIC DATA		
Short-Period Accel. (S_s):	0.176	g
1-Second Accel. (S_1):	0.063	g
Short-Period Design (S_{DS}):	0.188	
1-Second Design (S_{D1}):	0.101	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

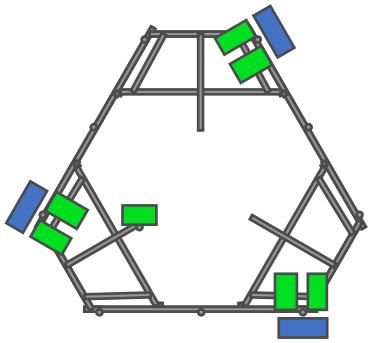
Infinigy Load Calculator V2.1.7

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.7

APPURTENANCE INFORMATION

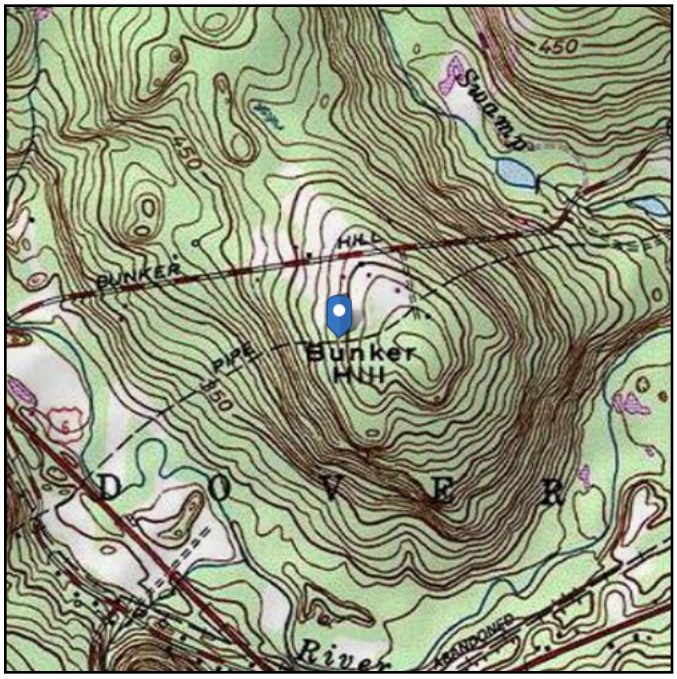
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
JMA WIRELESS MX08FRO665-21	124.0	3	0.90	53.86	8.01	3.21	388.28	155.60	64.50	18.16	MP1
FUJITSU TA08025-B605	124.0	3	0.90	53.86	1.96	1.19	95.18	57.64	74.95	21.11	MP1
FUJITSU TA08025-B604	124.0	3	0.90	53.86	1.96	1.03	95.18	50.07	63.93	18.00	MP1
RAYCAP RDIDC-9181-PF-48	124.0	1	0.90	53.86	1.87	1.07	90.49	51.71	21.85	6.15	MP10

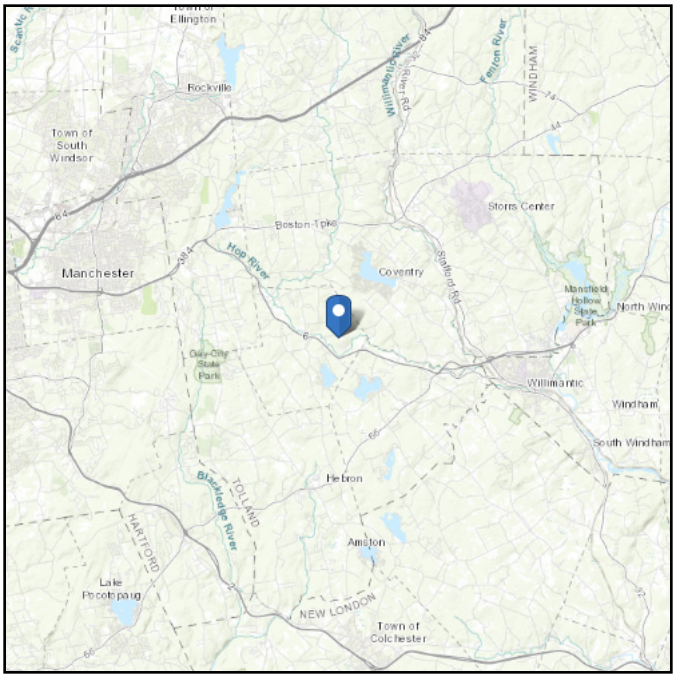
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 539.98 ft (NAVD 88)
Latitude: 41.737786
Longitude: -72.349839





Wind

Results:

Wind Speed:	130 mph per Andover City Requirements in WSEL
10-year MRI	78 Vmph
25-year MRI	87 Vmph
50-year MRI	95 Vmph
100-year MRI	103 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: Fri Aug 27 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.

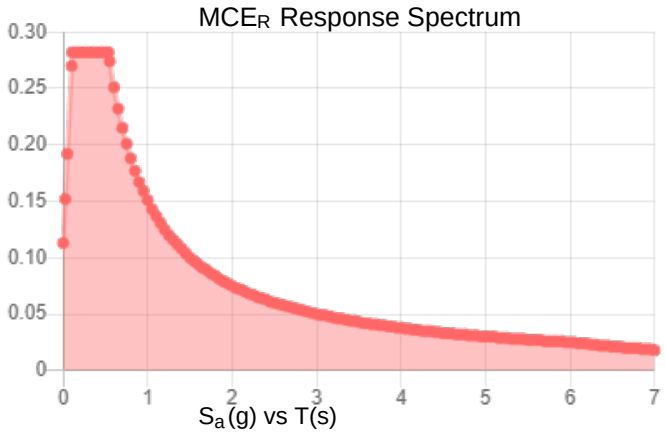
Seismic

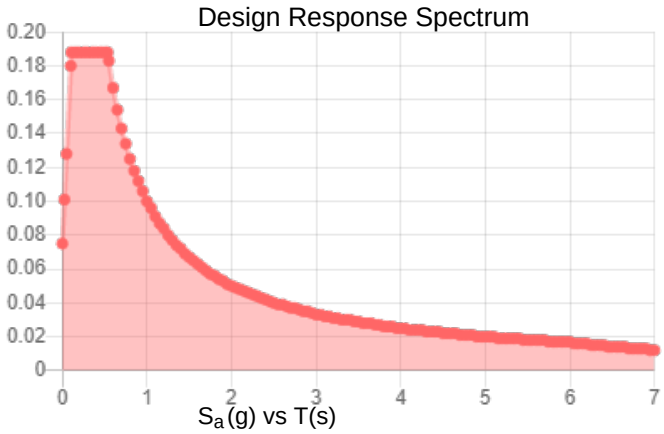
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.176	S_{DS} :	0.188
S_1 :	0.063	S_{D1} :	0.1
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.088
S_{MS} :	0.282	PGA_M :	0.141
S_{M1} :	0.151	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Aug 27 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:	Fri Aug 27 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(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	S3	P1	P3			Square Tubing	Beam	None	A500 GR.C	Typical
2	GA4	P9	P12		270	Grating Angle	Beam	None	A529 Gr. 50	Typical
3	GA3	P10	P11			Grating Angle	Beam	None	A529 Gr. 50	Typical
4	P3	P7	P8			Corner Plates	Beam	None	A1011 36 ...	Typical
5	S2	P13	P14			Square Tubing	Beam	None	A500 GR.C	Typical
6	GA2	P20	P23		270	Grating Angle	Beam	None	A529 Gr. 50	Typical
7	GA1	P21	P22			Grating Angle	Beam	None	A529 Gr. 50	Typical
8	P2	P18	P19			Corner Plates	Beam	None	A1011 36 ...	Typical
9	S1	P24	P25			Square Tubing	Beam	None	A500 GR.C	Typical
10	GA6	P31	P34		270	Grating Angle	Beam	None	A529 Gr. 50	Typical
11	GA5	P32	P33			Grating Angle	Beam	None	A529 Gr. 50	Typical
12	P1	P29	P30			Corner Plates	Beam	None	A1011 36 ...	Typical
13	H1	N43	N44			Face Pipes(3....	Beam	None	A500 GR.C	Typical
14	MP1	N66	N60			Antenna Pipes	Beam	None	A500 GR.C	Typical
15	MP3	N63	N57			Antenna Pipes	Beam	None	A500 GR.C	Typical
16	HR1	N67	N68			Handrail	Beam	None	A500 GR.C	Typical
17	CA8	N114A	N113A		180	Handrail Conn...	Beam	None	A1011 36 ...	Typical
18	CA9	N112A	N111A		180	Handrail Conn...	Beam	None	A1011 36 ...	Typical
19	CA7	N116A	N115A		180	Handrail Conn...	Beam	None	A1011 36 ...	Typical
20	M32	N48A	N70A			RIGID	None	None	RIGID	Typical
21	M35	N45	N69A			RIGID	None	None	RIGID	Typical
22	M36	N51	N71A			RIGID	None	None	RIGID	Typical
23	M39A	N54	N72A			RIGID	None	None	RIGID	Typical
24	CA3	P4	N122A			Channel(3.38x...	Beam	None	A1011 36 ...	Typical
25	CA4	N124B	P4			Channel(3.38x...	Beam	None	A1011 36 ...	Typical
26	CA1	P15	N122B			Channel(3.38x...	Beam	None	A1011 36 ...	Typical
27	CA2	N123A	P15			Channel(3.38x...	Beam	None	A1011 36 ...	Typical
28	CA5	P26	N125			Channel(3.38x...	Beam	None	A1011 36 ...	Typical
29	CA6	N126	P26			Channel(3.38x...	Beam	None	A1011 36 ...	Typical
30	M64	N126A	N125A			RIGID	None	None	RIGID	Typical
31	M65	N126	N125A			RIGID	None	None	RIGID	Typical
32	M66	N129	N128			RIGID	None	None	RIGID	Typical
33	M67	N124B	N128			RIGID	None	None	RIGID	Typical
34	M68	N132	N131			RIGID	None	None	RIGID	Typical
35	M69	N123A	N131			RIGID	None	None	RIGID	Typical
36	M70	N133	N132A			RIGID	None	None	RIGID	Typical
37	M71	N122B	N132A			RIGID	None	None	RIGID	Typical
38	M72	N135	N134			RIGID	None	None	RIGID	Typical
39	M73	N125	N134			RIGID	None	None	RIGID	Typical
40	M74	N138	N137			RIGID	None	None	RIGID	Typical
41	M75	N122A	N137			PL 2.375x0.5	None	None	A36 Gr.36	Typical
42	MP2	N75	N74			Antenna Pipes	Beam	None	A500 GR.C	Typical
43	M43	N72B	N76			RIGID	None	None	RIGID	Typical
44	M44	N73	N77			RIGID	None	None	RIGID	Typical
45	H3	N81A	N82A			Face Pipes(3....	Beam	None	A500 GR.C	Typical
46	MP7	N90	N88			Antenna Pipes	Beam	None	A500 GR.C	Typical
47	MP9	N89	N87			Antenna Pipes	Beam	None	A500 GR.C	Typical
48	HR3	N91	N92			Handrail	Beam	None	A500 GR.C	Typical
49	M52	N84	N94			RIGID	None	None	RIGID	Typical
50	M53	N83A	N93			RIGID	None	None	RIGID	Typical
51	M54	N85	N95			RIGID	None	None	RIGID	Typical
52	M55	N86	N96			RIGID	None	None	RIGID	Typical
53	H2	N109	N110			Face Pipes(3....	Beam	None	A500 GR.C	Typical
54	MP4	N118	N116			Antenna Pipes	Beam	None	A500 GR.C	Typical
55	MP6	N117	N115			Antenna Pipes	Beam	None	A500 GR.C	Typical
56	HR2	N119	N120			Handrail	Beam	None	A500 GR.C	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
57	M66A	N112	N122			RIGID	None	None	RIGID	Typical
58	M67A	N111	N121			RIGID	None	None	RIGID	Typical
59	M68A	N113	N123			RIGID	None	None	RIGID	Typical
60	M69A	N114	N124			RIGID	None	None	RIGID	Typical
61	MP8	N132B	N131A			Antenna Pipes	Beam	None	A500 GR.C	Typical
62	M68B	N129B	N133B			RIGID	None	None	RIGID	Typical
63	M69B	N130A	N134A			RIGID	None	None	RIGID	Typical
64	MP5	N138A	N137A			Antenna Pipes	Beam	None	A500 GR.C	Typical
65	M71B	N135A	N139			RIGID	None	None	RIGID	Typical
66	M72B	N136	N140			RIGID	None	None	RIGID	Typical
67	M67B	N119A	N120A			RIGID	None	None	RIGID	Typical
68	MP10	N121A	N122C			Antenna Pipes	Beam	None	A500 GR.C	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	S3	Square Tubi...	40			Lbyy						Lateral
2	GA4	Grating Angle	27.295			Lbyy						Lateral
3	GA3	Grating Angle	27.295			Lbyy						Lateral
4	P3	Corner Plates	42			Lbyy						Lateral
5	S2	Square Tubi...	40			Lbyy						Lateral
6	GA2	Grating Angle	27.295			Lbyy						Lateral
7	GA1	Grating Angle	27.295			Lbyy						Lateral
8	P2	Corner Plates	42			Lbyy						Lateral
9	S1	Square Tubi...	40			Lbyy						Lateral
10	GA6	Grating Angle	27.295			Lbyy						Lateral
11	GA5	Grating Angle	27.295			Lbyy						Lateral
12	P1	Corner Plates	42			Lbyy						Lateral
13	H1	Face Pipes(...	96			Lbyy						Lateral
14	MP1	Antenna Pip...	96			Lbyy						Lateral
15	MP3	Antenna Pip...	96			Lbyy						Lateral
16	HR1	Handrail	96			Lbyy						Lateral
17	CA8	Handrail Co...	42			Lbyy						Lateral
18	CA9	Handrail Co...	42			Lbyy						Lateral
19	CA7	Handrail Co...	42			Lbyy						Lateral
20	CA3	Channel(3.3...	33			Lbyy						Lateral
21	CA4	Channel(3.3...	33			Lbyy						Lateral
22	CA1	Channel(3.3...	33			Lbyy						Lateral
23	CA2	Channel(3.3...	33			Lbyy						Lateral
24	CA5	Channel(3.3...	33			Lbyy						Lateral
25	CA6	Channel(3.3...	33			Lbyy						Lateral
26	M75	PL 2.375x0.5	1.5			Lbyy						Lateral
27	MP2	Antenna Pip...	96			Lbyy						Lateral
28	H3	Face Pipes(...	96			Lbyy						Lateral
29	MP7	Antenna Pip...	96			Lbyy						Lateral
30	MP9	Antenna Pip...	96			Lbyy						Lateral
31	HR3	Handrail	96			Lbyy						Lateral
32	H2	Face Pipes(...	96			Lbyy						Lateral
33	MP4	Antenna Pip...	96			Lbyy						Lateral
34	MP6	Antenna Pip...	96			Lbyy						Lateral
35	HR2	Handrail	96			Lbyy						Lateral
36	MP8	Antenna Pip...	96			Lbyy						Lateral
37	MP5	Antenna Pip...	96			Lbyy						Lateral
38	MP10	Antenna Pip...	48			Lbyy						Lateral

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	S3						Yes				None
2	GA4						Yes				None
3	GA3						Yes				None
4	P3	BenPIN	BenPIN				Yes	Default			None
5	S2						Yes				None
6	GA2						Yes				None
7	GA1						Yes				None
8	P2	BenPIN	BenPIN				Yes	Default			None
9	S1						Yes	Default			None
10	GA6						Yes				None
11	GA5						Yes				None
12	P1	BenPIN	BenPIN				Yes	Default			None
13	H1						Yes	Default			None
14	MP1						Yes	Default	+y+3		None
15	MP3						Yes		+y+3		None
16	HR1						Yes				None
17	CA8	OOOOOX	OOOOOX				Yes				None
18	CA9	OOOOOX	OOOOOX				Yes				None
19	CA7	OOOOOX	OOOOOX				Yes	Default			None
20	M32						Yes	** NA **			None
21	M35						Yes	** NA **			None
22	M36						Yes	** NA **			None
23	M39A						Yes	** NA **			None
24	CA3						Yes	Default			None
25	CA4						Yes	Default			None
26	CA1						Yes	Default			None
27	CA2						Yes	Default			None
28	CA5						Yes	Default			None
29	CA6						Yes	Default			None
30	M64	BenPIN					Yes	** NA **			None
31	M65						Yes	** NA **			None
32	M66	BenPIN					Yes	** NA **			None
33	M67						Yes	** NA **			None
34	M68	BenPIN					Yes	** NA **			None
35	M69						Yes	** NA **			None
36	M70	BenPIN					Yes	** NA **			None
37	M71						Yes	** NA **			None
38	M72	BenPIN					Yes	** NA **			None
39	M73						Yes	** NA **			None
40	M74	BenPIN					Yes	** NA **			None
41	M75						Yes	** NA **			None
42	MP2						Yes		+y+3		None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	H3						Yes				None
46	MP7						Yes		+y+3		None
47	MP9						Yes		+y+3		None
48	HR3						Yes				None
49	M52						Yes	** NA **			None
50	M53						Yes	** NA **			None
51	M54						Yes	** NA **			None
52	M55						Yes	** NA **			None
53	H2						Yes				None
54	MP4						Yes		+y+3		None
55	MP6						Yes		+y+3		None
56	HR2						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
57	M66A						Yes	** NA **			None
58	M67A						Yes	** NA **			None
59	M68A						Yes	** NA **			None
60	M69A						Yes	** NA **			None
61	MP8						Yes		+y+3		None
62	M68B						Yes	** NA **			None
63	M69B						Yes	** NA **			None
64	MP5						Yes		+y+3		None
65	M71B						Yes	** NA **			None
66	M72B						Yes	** NA **			None
67	M67B						Yes	** NA **			None
68	MP10						Yes	Default			None

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		30	36.1	0
3	Total General		30	36.1	0
4					
5	Hot Rolled Steel				
6	A1011 36 Ksi	C3.38x2.06x0.25	6	198	98.255
7	A1011 36 Ksi	PL6.5x0.375	3	126	87.09
8	A1011 36 Ksi	L6.6x4.46x0.25	3	126	96.558
9	A36 Gr.36	PL 2.375x0.5	1	1.5	.505
10	A500 GR.C	2.88x0.120	3	288	84.974
11	A500 GR.C	HSS4X4X6	3	120	162.653
12	A500 GR.C	Pipe3.5x0.165	3	288	141.202
13	A500 GR.C	PIPE_2.5	10	912	416.364
14	A529 Gr. 50	L2x2x4	6	163.8	43.838
15	Total HR Steel		38	2223.3	1131.439

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Corner Plates	PL6.5x0...	Beam	None	A1011 36 Ksi	Typical	2.438	.029	8.582	.11
2	6"x0.37" Plate	Plate 6x...	Beam	None	A1011 36 Ksi	Typical	2.22	.025	6.66	.097
3	Grating Angle	L2x2x4	Beam	None	A529 Gr. 50	Typical	.944	.346	.346	.021
4	Face Pipes(3.5x.16)	Pipe3.5x...	Beam	None	A500 GR.C	Typical	1.729	2.409	2.409	4.819
5	Antenna Pipes	PIPE_2.5	Beam	None	A500 GR.C	Typical	1.61	1.45	1.45	2.89
6	Channel(3.38x2.06)	C3.38x2...	Beam	None	A1011 36 Ksi	Typical	1.75	.715	3.026	.034
7	Square Tubing	HSS4X4...	Beam	None	A500 GR.C	Typical	4.78	10.3	10.3	17.5
8	Handrail Connector	L6.6x4.4...	Beam	None	A1011 36 Ksi	Typical	2.703	4.759	12.473	.055
9	Handrail	2.88x0.1...	Beam	None	A500 GR.C	Typical	1.04	.993	.993	1.985

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Self Weight	DL		-1			13		3	
2	Wind Load AZI 0	WLZ					26			
3	Wind Load AZI 30	None					26			
4	Wind Load AZI 60	None					26			
5	Wind Load AZI 90	WLX					26			
6	Wind Load AZI 120	None					26			
7	Wind Load AZI 150	None					26			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
8	Wind Load AZI 180	None					26			
9	Wind Load AZI 210	None					26			
10	Wind Load AZI 240	None					26			
11	Wind Load AZI 270	None					26			
12	Wind Load AZI 300	None					26			
13	Wind Load AZI 330	None					26			
14	Distr. Wind Load Z	WLZ						68		
15	Distr. Wind Load X	WLX						68		
16	Ice Weight	OL1					13	68	3	
17	Ice Wind Load AZI 0	OL2					26			
18	Ice Wind Load AZI 30	None					26			
19	Ice Wind Load AZI 60	None					26			
20	Ice Wind Load AZI 90	OL3					26			
21	Ice Wind Load AZI 120	None					26			
22	Ice Wind Load AZI 150	None					26			
23	Ice Wind Load AZI 180	None					26			
24	Ice Wind Load AZI 210	None					26			
25	Ice Wind Load AZI 240	None					26			
26	Ice Wind Load AZI 270	None					26			
27	Ice Wind Load AZI 300	None					26			
28	Ice Wind Load AZI 330	None					26			
29	Distr. Ice Wind Load Z	OL2						68		
30	Distr. Ice Wind Load X	OL3						68		
31	Seismic Load Z	ELZ			-.282		13			
32	Seismic Load X	ELX	-.282				13			
33	Service Live Loads	LL				3				
34	Maintenance Load 1	LL				1				
35	Maintenance Load 2	LL				1				
36	Maintenance Load 3	LL				1				
37	Maintenance Load 4	LL				1				
38	Maintenance Load 5	LL				1				
39	Maintenance Load 6	LL				1				
40	Maintenance Load 7	LL				1				
41	Maintenance Load 8	LL				1				
42	Maintenance Load 9	LL				1				
43	Maintenance Load 10	LL				1				
44	BLC 1 Transient Area...	None						9		
45	BLC 16 Transient Are...	None						9		

Load Combinations

	Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	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													

Load Combinations (Continued)

	Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
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												
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 1...	Y...	Y		1	1.2	16	1	21	1	29	-.5	30	.866										
32	1.2D + 1.0Di +1.0Wi AZI 1...	Y...	Y		1	1.2	16	1	22	1	29	-.8...	30	.5										
33	1.2D + 1.0Di +1.0Wi AZI 1...	Y...	Y		1	1.2	16	1	23	1	29	-1	30											
34	1.2D + 1.0Di +1.0Wi AZI 2...	Y...	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5										
35	1.2D + 1.0Di +1.0Wi AZI 2...	Y...	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...										
36	1.2D + 1.0Di +1.0Wi AZI 2...	Y...	Y		1	1.2	16	1	26	1	29		30	-1										
37	1.2D + 1.0Di +1.0Wi AZI 3...	Y...	Y		1	1.2	16	1	27	1	29	.5	30	-.8...										
38	1.2D + 1.0Di +1.0Wi AZI 3...	Y...	Y		1	1.2	16	1	28	1	29	.866	30	-.5										
39	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.238	31	1	32															
40	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.238	31	.866	32	.5														
41	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.238	31	.5	32	.866														
42	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.238	31		32	1														
43	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.238	31	-.5	32	.866														
44	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.238	31	-.866	32	.5														
45	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.238	31	-1	32															
46	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.238	31	-.866	32	-.5														
47	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.238	31	-.5	32	-.8...														
48	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.238	31		32	-1														
49	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.238	31	.5	32	-.8...														
50	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.238	31	.866	32	-.5														
51	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.862	31	1	32															
52	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.862	31	.866	32	.5														
53	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.862	31	.5	32	.866														
54	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.862	31		32	1														
55	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.862	31	-.5	32	.866														
56	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.862	31	-.866	32	.5														
57	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.862	31	-1	32															
58	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.862	31	-.866	32	-.5														
59	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.862	31	-.5	32	-.8...														
60	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.862	31		32	-1														
61	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.862	31	.5	32	-.8...														
62	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.862	31	.866	32	-.5														
63	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	2	.213	14	.213	15		33	1.5										
64	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	3	.213	14	.184	15	.107	33	1.5										
65	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	4	.213	14	.107	15	.184	33	1.5										
66	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	5	.213	14		15	.213	33	1.5										
67	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	6	.213	14	-.1...	15	.184	33	1.5										
68	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	7	.213	14	-.1...	15	.107	33	1.5										
69	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	8	.213	14	-.2...	15		33	1.5										
70	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	9	.213	14	-.1...	15	-.1...	33	1.5										
71	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	10	.213	14	-.1...	15	-.1...	33	1.5										

Load Combinations (Continued)

	Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
72	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	11	.213	14		15	-.2...	33	1.5										
73	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	12	.213	14	.107	15	-.1...	33	1.5										
74	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	13	.213	14	.184	15	-.1...	33	1.5										
75	1.2DL + 1.5LL	Y...	Y		1	1.2	33	1.5																
76	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	2	.053	14	.053	15											
77	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	3	.053	14	.046	15	.027										
78	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	4	.053	14	.027	15	.046										
79	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	5	.053	14		15	.053										
80	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	6	.053	14	-.0...	15	.046										
81	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	7	.053	14	-.0...	15	.027										
82	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	8	.053	14	-.0...	15											
83	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	9	.053	14	-.0...	15	-.0...										
84	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	10	.053	14	-.0...	15	-.0...										
85	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	11	.053	14		15	-.0...										
86	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	12	.053	14	.027	15	-.0...										
87	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	13	.053	14	.046	15	-.0...										
88	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	2	.053	14	.053	15											
89	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	3	.053	14	.046	15	.027										
90	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	4	.053	14	.027	15	.046										
91	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	5	.053	14		15	.053										
92	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	6	.053	14	-.0...	15	.046										
93	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	7	.053	14	-.0...	15	.027										
94	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	8	.053	14	-.0...	15											
95	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	9	.053	14	-.0...	15	-.0...										
96	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	10	.053	14	-.0...	15	-.0...										
97	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	11	.053	14		15	-.0...										
98	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	12	.053	14	.027	15	-.0...										
99	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	13	.053	14	.046	15	-.0...										
100	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	2	.053	14	.053	15											
101	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	3	.053	14	.046	15	.027										
102	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	4	.053	14	.027	15	.046										
103	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	5	.053	14		15	.053										
104	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	6	.053	14	-.0...	15	.046										
105	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	7	.053	14	-.0...	15	.027										
106	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	8	.053	14	-.0...	15											
107	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	9	.053	14	-.0...	15	-.0...										
108	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	10	.053	14	-.0...	15	-.0...										
109	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	11	.053	14		15	-.0...										
110	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	12	.053	14	.027	15	-.0...										
111	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	13	.053	14	.046	15	-.0...										
112	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	2	.053	14	.053	15											
113	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	3	.053	14	.046	15	.027										
114	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	4	.053	14	.027	15	.046										
115	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	5	.053	14		15	.053										
116	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	6	.053	14	-.0...	15	.046										
117	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	7	.053	14	-.0...	15	.027										
118	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	8	.053	14	-.0...	15											
119	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	9	.053	14	-.0...	15	-.0...										
120	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	10	.053	14	-.0...	15	-.0...										
121	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	11	.053	14		15	-.0...										
122	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	12	.053	14	.027	15	-.0...										
123	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	13	.053	14	.046	15	-.0...										
124	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	2	.053	14	.053	15											
125	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	3	.053	14	.046	15	.027										
126	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	4	.053	14	.027	15	.046										
127	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	5	.053	14		15	.053										
128	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	6	.053	14	-.0...	15	.046										

Load Combinations (Continued)

	Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
129	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	7	.053	14	-.0...	15	.027										
130	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	8	.053	14	-.0...	15											
131	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	9	.053	14	-.0...	15	-.0...										
132	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	10	.053	14	-.0...	15	-.0...										
133	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	11	.053	14		15	-.0...										
134	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	12	.053	14	.027	15	-.0...										
135	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	13	.053	14	.046	15	-.0...										
136	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	2	.053	14	.053	15											
137	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	3	.053	14	.046	15	.027										
138	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	4	.053	14	.027	15	.046										
139	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	5	.053	14		15	.053										
140	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	6	.053	14	-.0...	15	.046										
141	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	7	.053	14	-.0...	15	.027										
142	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	8	.053	14	-.0...	15											
143	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	9	.053	14	-.0...	15	-.0...										
144	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	10	.053	14	-.0...	15	-.0...										
145	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	11	.053	14		15	-.0...										
146	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	12	.053	14	.027	15	-.0...										
147	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	13	.053	14	.046	15	-.0...										
148	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	2	.053	14	.053	15											
149	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	3	.053	14	.046	15	.027										
150	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	4	.053	14	.027	15	.046										
151	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	5	.053	14		15	.053										
152	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	6	.053	14	-.0...	15	.046										
153	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	7	.053	14	-.0...	15	.027										
154	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	8	.053	14	-.0...	15											
155	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	9	.053	14	-.0...	15	-.0...										
156	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	10	.053	14	-.0...	15	-.0...										
157	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	11	.053	14		15	-.0...										
158	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	12	.053	14	.027	15	-.0...										
159	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	13	.053	14	.046	15	-.0...										
160	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	2	.053	14	.053	15											
161	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	3	.053	14	.046	15	.027										
162	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	4	.053	14	.027	15	.046										
163	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	5	.053	14		15	.053										
164	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	6	.053	14	-.0...	15	.046										
165	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	7	.053	14	-.0...	15	.027										
166	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	8	.053	14	-.0...	15											
167	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	9	.053	14	-.0...	15	-.0...										
168	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	10	.053	14	-.0...	15	-.0...										
169	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	11	.053	14		15	-.0...										
170	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	12	.053	14	.027	15	-.0...										
171	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	13	.053	14	.046	15	-.0...										
172	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	2	.053	14	.053	15											
173	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	3	.053	14	.046	15	.027										
174	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	4	.053	14	.027	15	.046										
175	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	5	.053	14		15	.053										
176	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	6	.053	14	-.0...	15	.046										
177	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	7	.053	14	-.0...	15	.027										
178	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	8	.053	14	-.0...	15											
179	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	9	.053	14	-.0...	15	-.0...										
180	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	10	.053	14	-.0...	15	-.0...										
181	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	11	.053	14		15	-.0...										
182	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	12	.053	14	.027	15	-.0...										
183	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	13	.053	14	.046	15	-.0...										
184	1.2DL + 1.5LM-MP10 + 1S...	Y...	Y		1	1.2	43	1.5	2	.053	14	.053	15											
185	1.2DL + 1.5LM-MP10 + 1S...	Y...	Y		1	1.2	43	1.5	3	.053	14	.046	15	.027										

Load Combinations (Continued)

	Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
186	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	4	.053	14	.027	15	.046										
187	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	5	.053	14		15	.053										
188	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	6	.053	14	-.0...	15	.046										
189	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	7	.053	14	-.0...	15	.027										
190	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	8	.053	14	-.0...	15											
191	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	9	.053	14	-.0...	15	-.0...										
192	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	10	.053	14	-.0...	15	-.0...										
193	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	11	.053	14		15	-.0...										
194	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	12	.053	14	.027	15	-.0...										

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	P24	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	P13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	P1	Reaction	Reaction	Reaction	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	P24	max	1187.405	6	2766.814	35	1808.947	13	1377.811	16	2292.053	19	4982.579	35
2		min	-1168.142	24	-767.173	16	-1801.14	19	-4247.5...	35	-2307.8...	13	-2309.0...	16
3	P13	max	1504.331	4	3395.815	31	1971.952	15	1244.455	24	2578.867	15	2184.577	24
4		min	-1504.262	22	-655.904	24	-1977.93	9	-2878.02	31	-2623.21	9	-7398.0...	31
5	P1	max	1869.583	17	2960.343	27	963.482	2	7130.535	27	2117.424	11	1586.12	115
6		min	-1889.242	11	-766.3	20	-973.093	8	-2706.2...	20	-2064.1...	17	-864.582	157
7	Totals:	max	4354.844	5	8257.024	33	4608.951	14						
8		min	-4354.842	23	1553.292	51	-4608.953	8						

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	MP10	Y	-21.85	24
6	MP4	Y	-32.25	0
7	MP4	Y	-32.25	72
8	MP4	Y	-74.95	12
9	MP4	Y	-63.93	12
10	MP7	Y	-32.25	0
11	MP7	Y	-32.25	72
12	MP7	Y	-74.95	12
13	MP7	Y	-63.93	12

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	-194.14	0
3	MP1	X	0	72
4	MP1	Z	-194.14	72
5	MP1	X	0	12
6	MP1	Z	-95.18	12
7	MP1	X	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP1	Z	-95.18	12
9	MP10	X	0	24
10	MP10	Z	-90.49	24
11	MP4	X	0	0
12	MP4	Z	-106.89	0
13	MP4	X	0	72
14	MP4	Z	-106.89	72
15	MP4	X	0	12
16	MP4	Z	-67.03	12
17	MP4	X	0	12
18	MP4	Z	-61.35	12
19	MP7	X	0	0
20	MP7	Z	-106.89	0
21	MP7	X	0	72
22	MP7	Z	-106.89	72
23	MP7	X	0	12
24	MP7	Z	-67.03	12
25	MP7	X	0	12
26	MP7	Z	-61.35	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-82.53	0
2	MP1	Z	-142.94	0
3	MP1	X	-82.53	72
4	MP1	Z	-142.94	72
5	MP1	X	-42.9	12
6	MP1	Z	-74.3	12
7	MP1	X	-41.95	12
8	MP1	Z	-72.66	12
9	MP10	X	-40.4	24
10	MP10	Z	-69.97	24
11	MP4	X	-82.53	0
12	MP4	Z	-142.94	0
13	MP4	X	-82.53	72
14	MP4	Z	-142.94	72
15	MP4	X	-42.9	12
16	MP4	Z	-74.3	12
17	MP4	X	-41.95	12
18	MP4	Z	-72.66	12
19	MP7	X	-38.9	0
20	MP7	Z	-67.38	0
21	MP7	X	-38.9	72
22	MP7	Z	-67.38	72
23	MP7	X	-28.82	12
24	MP7	Z	-49.92	12
25	MP7	X	-25.04	12
26	MP7	Z	-43.36	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-92.57	0
2	MP1	Z	-53.44	0
3	MP1	X	-92.57	72
4	MP1	Z	-53.44	72
5	MP1	X	-58.05	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
6	MP1	Z	-33.51	12
7	MP1	X	-53.13	12
8	MP1	Z	-30.67	12
9	MP10	X	-53.18	24
10	MP10	Z	-30.7	24
11	MP4	X	-168.13	0
12	MP4	Z	-97.07	0
13	MP4	X	-168.13	72
14	MP4	Z	-97.07	72
15	MP4	X	-82.43	12
16	MP4	Z	-47.59	12
17	MP4	X	-82.43	12
18	MP4	Z	-47.59	12
19	MP7	X	-92.57	0
20	MP7	Z	-53.44	0
21	MP7	X	-92.57	72
22	MP7	Z	-53.44	72
23	MP7	X	-58.05	12
24	MP7	Z	-33.51	12
25	MP7	X	-53.13	12
26	MP7	Z	-30.67	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-77.8	0
2	MP1	Z	0	0
3	MP1	X	-77.8	72
4	MP1	Z	0	72
5	MP1	X	-57.64	12
6	MP1	Z	0	12
7	MP1	X	-50.07	12
8	MP1	Z	0	12
9	MP10	X	-51.71	24
10	MP10	Z	0	24
11	MP4	X	-165.06	0
12	MP4	Z	0	0
13	MP4	X	-165.06	72
14	MP4	Z	0	72
15	MP4	X	-85.8	12
16	MP4	Z	0	12
17	MP4	X	-83.9	12
18	MP4	Z	0	12
19	MP7	X	-165.06	0
20	MP7	Z	0	0
21	MP7	X	-165.06	72
22	MP7	Z	0	72
23	MP7	X	-85.8	12
24	MP7	Z	0	12
25	MP7	X	-83.9	12
26	MP7	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-92.57	0
2	MP1	Z	53.44	0
3	MP1	X	-92.57	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP1	Z	53.44	72
5	MP1	X	-58.05	12
6	MP1	Z	33.51	12
7	MP1	X	-53.13	12
8	MP1	Z	30.67	12
9	MP10	X	-53.18	24
10	MP10	Z	30.7	24
11	MP4	X	-92.57	0
12	MP4	Z	53.44	0
13	MP4	X	-92.57	72
14	MP4	Z	53.44	72
15	MP4	X	-58.05	12
16	MP4	Z	33.51	12
17	MP4	X	-53.13	12
18	MP4	Z	30.67	12
19	MP7	X	-168.13	0
20	MP7	Z	97.07	0
21	MP7	X	-168.13	72
22	MP7	Z	97.07	72
23	MP7	X	-82.43	12
24	MP7	Z	47.59	12
25	MP7	X	-82.43	12
26	MP7	Z	47.59	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-82.53	0
2	MP1	Z	142.94	0
3	MP1	X	-82.53	72
4	MP1	Z	142.94	72
5	MP1	X	-42.9	12
6	MP1	Z	74.3	12
7	MP1	X	-41.95	12
8	MP1	Z	72.66	12
9	MP10	X	-40.4	24
10	MP10	Z	69.97	24
11	MP4	X	-38.9	0
12	MP4	Z	67.38	0
13	MP4	X	-38.9	72
14	MP4	Z	67.38	72
15	MP4	X	-28.82	12
16	MP4	Z	49.92	12
17	MP4	X	-25.04	12
18	MP4	Z	43.36	12
19	MP7	X	-82.53	0
20	MP7	Z	142.94	0
21	MP7	X	-82.53	72
22	MP7	Z	142.94	72
23	MP7	X	-42.9	12
24	MP7	Z	74.3	12
25	MP7	X	-41.95	12
26	MP7	Z	72.66	12

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

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

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP1	Z	194.14	0
3	MP1	X	0	72
4	MP1	Z	194.14	72
5	MP1	X	0	12
6	MP1	Z	95.18	12
7	MP1	X	0	12
8	MP1	Z	95.18	12
9	MP10	X	0	24
10	MP10	Z	90.49	24
11	MP4	X	0	0
12	MP4	Z	106.89	0
13	MP4	X	0	72
14	MP4	Z	106.89	72
15	MP4	X	0	12
16	MP4	Z	67.03	12
17	MP4	X	0	12
18	MP4	Z	61.35	12
19	MP7	X	0	0
20	MP7	Z	106.89	0
21	MP7	X	0	72
22	MP7	Z	106.89	72
23	MP7	X	0	12
24	MP7	Z	67.03	12
25	MP7	X	0	12
26	MP7	Z	61.35	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	82.53	0
2	MP1	Z	142.94	0
3	MP1	X	82.53	72
4	MP1	Z	142.94	72
5	MP1	X	42.9	12
6	MP1	Z	74.3	12
7	MP1	X	41.95	12
8	MP1	Z	72.66	12
9	MP10	X	40.4	24
10	MP10	Z	69.97	24
11	MP4	X	82.53	0
12	MP4	Z	142.94	0
13	MP4	X	82.53	72
14	MP4	Z	142.94	72
15	MP4	X	42.9	12
16	MP4	Z	74.3	12
17	MP4	X	41.95	12
18	MP4	Z	72.66	12
19	MP7	X	38.9	0
20	MP7	Z	67.38	0
21	MP7	X	38.9	72
22	MP7	Z	67.38	72
23	MP7	X	28.82	12
24	MP7	Z	49.92	12
25	MP7	X	25.04	12
26	MP7	Z	43.36	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	92.57	0
2	MP1	Z	53.44	0
3	MP1	X	92.57	72
4	MP1	Z	53.44	72
5	MP1	X	58.05	12
6	MP1	Z	33.51	12
7	MP1	X	53.13	12
8	MP1	Z	30.67	12
9	MP10	X	53.18	24
10	MP10	Z	30.7	24
11	MP4	X	168.13	0
12	MP4	Z	97.07	0
13	MP4	X	168.13	72
14	MP4	Z	97.07	72
15	MP4	X	82.43	12
16	MP4	Z	47.59	12
17	MP4	X	82.43	12
18	MP4	Z	47.59	12
19	MP7	X	92.57	0
20	MP7	Z	53.44	0
21	MP7	X	92.57	72
22	MP7	Z	53.44	72
23	MP7	X	58.05	12
24	MP7	Z	33.51	12
25	MP7	X	53.13	12
26	MP7	Z	30.67	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	77.8	0
2	MP1	Z	0	0
3	MP1	X	77.8	72
4	MP1	Z	0	72
5	MP1	X	57.64	12
6	MP1	Z	0	12
7	MP1	X	50.07	12
8	MP1	Z	0	12
9	MP10	X	51.71	24
10	MP10	Z	0	24
11	MP4	X	165.06	0
12	MP4	Z	0	0
13	MP4	X	165.06	72
14	MP4	Z	0	72
15	MP4	X	85.8	12
16	MP4	Z	0	12
17	MP4	X	83.9	12
18	MP4	Z	0	12
19	MP7	X	165.06	0
20	MP7	Z	0	0
21	MP7	X	165.06	72
22	MP7	Z	0	72
23	MP7	X	85.8	12
24	MP7	Z	0	12
25	MP7	X	83.9	12
26	MP7	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	92.57	0
2	MP1	Z	-53.44	0
3	MP1	X	92.57	72
4	MP1	Z	-53.44	72
5	MP1	X	58.05	12
6	MP1	Z	-33.51	12
7	MP1	X	53.13	12
8	MP1	Z	-30.67	12
9	MP10	X	53.18	24
10	MP10	Z	-30.7	24
11	MP4	X	92.57	0
12	MP4	Z	-53.44	0
13	MP4	X	92.57	72
14	MP4	Z	-53.44	72
15	MP4	X	58.05	12
16	MP4	Z	-33.51	12
17	MP4	X	53.13	12
18	MP4	Z	-30.67	12
19	MP7	X	168.13	0
20	MP7	Z	-97.07	0
21	MP7	X	168.13	72
22	MP7	Z	-97.07	72
23	MP7	X	82.43	12
24	MP7	Z	-47.59	12
25	MP7	X	82.43	12
26	MP7	Z	-47.59	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	82.53	0
2	MP1	Z	-142.94	0
3	MP1	X	82.53	72
4	MP1	Z	-142.94	72
5	MP1	X	42.9	12
6	MP1	Z	-74.3	12
7	MP1	X	41.95	12
8	MP1	Z	-72.66	12
9	MP10	X	40.4	24
10	MP10	Z	-69.97	24
11	MP4	X	38.9	0
12	MP4	Z	-67.38	0
13	MP4	X	38.9	72
14	MP4	Z	-67.38	72
15	MP4	X	28.82	12
16	MP4	Z	-49.92	12
17	MP4	X	25.04	12
18	MP4	Z	-43.36	12
19	MP7	X	82.53	0
20	MP7	Z	-142.94	0
21	MP7	X	82.53	72
22	MP7	Z	-142.94	72
23	MP7	X	42.9	12
24	MP7	Z	-74.3	12
25	MP7	X	41.95	12
26	MP7	Z	-72.66	12

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-217.085	0
2	MP1	Y	-217.085	72
3	MP1	Y	-118.476	12
4	MP1	Y	-111.642	12
5	MP10	Y	-109.037	24
6	MP4	Y	-217.085	0
7	MP4	Y	-217.085	72
8	MP4	Y	-118.476	12
9	MP4	Y	-111.642	12
10	MP7	Y	-217.085	0
11	MP7	Y	-217.085	72
12	MP7	Y	-118.476	12
13	MP7	Y	-111.642	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	-24.54	0
3	MP1	X	0	72
4	MP1	Z	-24.54	72
5	MP1	X	0	12
6	MP1	Z	-10.28	12
7	MP1	X	0	12
8	MP1	Z	-10.28	12
9	MP10	X	0	24
10	MP10	Z	-9.9	24
11	MP4	X	0	0
12	MP4	Z	-18.01	0
13	MP4	X	0	72
14	MP4	Z	-18.01	72
15	MP4	X	0	12
16	MP4	Z	-8.42	12
17	MP4	X	0	12
18	MP4	Z	-8.16	12
19	MP7	X	0	0
20	MP7	Z	-18.01	0
21	MP7	X	0	72
22	MP7	Z	-18.01	72
23	MP7	X	0	12
24	MP7	Z	-8.42	12
25	MP7	X	0	12
26	MP7	Z	-8.16	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-11.18	0
2	MP1	Z	-19.37	0
3	MP1	X	-11.18	72
4	MP1	Z	-19.37	72
5	MP1	X	-4.83	12
6	MP1	Z	-8.37	12
7	MP1	X	-4.79	12
8	MP1	Z	-8.29	12
9	MP10	X	-4.66	24
10	MP10	Z	-8.07	24
11	MP4	X	-11.18	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
12	MP4	Z	-19.37	0
13	MP4	X	-11.18	72
14	MP4	Z	-19.37	72
15	MP4	X	-4.83	12
16	MP4	Z	-8.37	12
17	MP4	X	-4.79	12
18	MP4	Z	-8.29	12
19	MP7	X	-7.91	0
20	MP7	Z	-13.71	0
21	MP7	X	-7.91	72
22	MP7	Z	-13.71	72
23	MP7	X	-3.9	12
24	MP7	Z	-6.76	12
25	MP7	X	-3.73	12
26	MP7	Z	-6.45	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-15.59	0
2	MP1	Z	-9	0
3	MP1	X	-15.59	72
4	MP1	Z	-9	72
5	MP1	X	-7.29	12
6	MP1	Z	-4.21	12
7	MP1	X	-7.07	12
8	MP1	Z	-4.08	12
9	MP10	X	-7.07	24
10	MP10	Z	-4.08	24
11	MP4	X	-21.25	0
12	MP4	Z	-12.27	0
13	MP4	X	-21.25	72
14	MP4	Z	-12.27	72
15	MP4	X	-8.9	12
16	MP4	Z	-5.14	12
17	MP4	X	-8.9	12
18	MP4	Z	-5.14	12
19	MP7	X	-15.59	0
20	MP7	Z	-9	0
21	MP7	X	-15.59	72
22	MP7	Z	-9	72
23	MP7	X	-7.29	12
24	MP7	Z	-4.21	12
25	MP7	X	-7.07	12
26	MP7	Z	-4.08	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-15.83	0
2	MP1	Z	0	0
3	MP1	X	-15.83	72
4	MP1	Z	0	72
5	MP1	X	-7.8	12
6	MP1	Z	0	12
7	MP1	X	-7.45	12
8	MP1	Z	0	12
9	MP10	X	-7.58	24

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
10	MP10	Z	0	24
11	MP4	X	-22.36	0
12	MP4	Z	0	0
13	MP4	X	-22.36	72
14	MP4	Z	0	72
15	MP4	X	-9.66	12
16	MP4	Z	0	12
17	MP4	X	-9.57	12
18	MP4	Z	0	12
19	MP7	X	-22.36	0
20	MP7	Z	0	0
21	MP7	X	-22.36	72
22	MP7	Z	0	72
23	MP7	X	-9.66	12
24	MP7	Z	0	12
25	MP7	X	-9.57	12
26	MP7	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-15.59	0
2	MP1	Z	9	0
3	MP1	X	-15.59	72
4	MP1	Z	9	72
5	MP1	X	-7.29	12
6	MP1	Z	4.21	12
7	MP1	X	-7.07	12
8	MP1	Z	4.08	12
9	MP10	X	-7.07	24
10	MP10	Z	4.08	24
11	MP4	X	-15.59	0
12	MP4	Z	9	0
13	MP4	X	-15.59	72
14	MP4	Z	9	72
15	MP4	X	-7.29	12
16	MP4	Z	4.21	12
17	MP4	X	-7.07	12
18	MP4	Z	4.08	12
19	MP7	X	-21.25	0
20	MP7	Z	12.27	0
21	MP7	X	-21.25	72
22	MP7	Z	12.27	72
23	MP7	X	-8.9	12
24	MP7	Z	5.14	12
25	MP7	X	-8.9	12
26	MP7	Z	5.14	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-11.18	0
2	MP1	Z	19.37	0
3	MP1	X	-11.18	72
4	MP1	Z	19.37	72
5	MP1	X	-4.83	12
6	MP1	Z	8.37	12
7	MP1	X	-4.79	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP1	Z	8.29	12
9	MP10	X	-4.66	24
10	MP10	Z	8.07	24
11	MP4	X	-7.91	0
12	MP4	Z	13.71	0
13	MP4	X	-7.91	72
14	MP4	Z	13.71	72
15	MP4	X	-3.9	12
16	MP4	Z	6.76	12
17	MP4	X	-3.73	12
18	MP4	Z	6.45	12
19	MP7	X	-11.18	0
20	MP7	Z	19.37	0
21	MP7	X	-11.18	72
22	MP7	Z	19.37	72
23	MP7	X	-4.83	12
24	MP7	Z	8.37	12
25	MP7	X	-4.79	12
26	MP7	Z	8.29	12

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	24.54	0
3	MP1	X	0	72
4	MP1	Z	24.54	72
5	MP1	X	0	12
6	MP1	Z	10.28	12
7	MP1	X	0	12
8	MP1	Z	10.28	12
9	MP10	X	0	24
10	MP10	Z	9.9	24
11	MP4	X	0	0
12	MP4	Z	18.01	0
13	MP4	X	0	72
14	MP4	Z	18.01	72
15	MP4	X	0	12
16	MP4	Z	8.42	12
17	MP4	X	0	12
18	MP4	Z	8.16	12
19	MP7	X	0	0
20	MP7	Z	18.01	0
21	MP7	X	0	72
22	MP7	Z	18.01	72
23	MP7	X	0	12
24	MP7	Z	8.42	12
25	MP7	X	0	12
26	MP7	Z	8.16	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	11.18	0
2	MP1	Z	19.37	0
3	MP1	X	11.18	72
4	MP1	Z	19.37	72
5	MP1	X	4.83	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
6	MP1	Z	8.37	12
7	MP1	X	4.79	12
8	MP1	Z	8.29	12
9	MP10	X	4.66	24
10	MP10	Z	8.07	24
11	MP4	X	11.18	0
12	MP4	Z	19.37	0
13	MP4	X	11.18	72
14	MP4	Z	19.37	72
15	MP4	X	4.83	12
16	MP4	Z	8.37	12
17	MP4	X	4.79	12
18	MP4	Z	8.29	12
19	MP7	X	7.91	0
20	MP7	Z	13.71	0
21	MP7	X	7.91	72
22	MP7	Z	13.71	72
23	MP7	X	3.9	12
24	MP7	Z	6.76	12
25	MP7	X	3.73	12
26	MP7	Z	6.45	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	15.59	0
2	MP1	Z	9	0
3	MP1	X	15.59	72
4	MP1	Z	9	72
5	MP1	X	7.29	12
6	MP1	Z	4.21	12
7	MP1	X	7.07	12
8	MP1	Z	4.08	12
9	MP10	X	7.07	24
10	MP10	Z	4.08	24
11	MP4	X	21.25	0
12	MP4	Z	12.27	0
13	MP4	X	21.25	72
14	MP4	Z	12.27	72
15	MP4	X	8.9	12
16	MP4	Z	5.14	12
17	MP4	X	8.9	12
18	MP4	Z	5.14	12
19	MP7	X	15.59	0
20	MP7	Z	9	0
21	MP7	X	15.59	72
22	MP7	Z	9	72
23	MP7	X	7.29	12
24	MP7	Z	4.21	12
25	MP7	X	7.07	12
26	MP7	Z	4.08	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	15.83	0
2	MP1	Z	0	0
3	MP1	X	15.83	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP1	Z	0	72
5	MP1	X	7.8	12
6	MP1	Z	0	12
7	MP1	X	7.45	12
8	MP1	Z	0	12
9	MP10	X	7.58	24
10	MP10	Z	0	24
11	MP4	X	22.36	0
12	MP4	Z	0	0
13	MP4	X	22.36	72
14	MP4	Z	0	72
15	MP4	X	9.66	12
16	MP4	Z	0	12
17	MP4	X	9.57	12
18	MP4	Z	0	12
19	MP7	X	22.36	0
20	MP7	Z	0	0
21	MP7	X	22.36	72
22	MP7	Z	0	72
23	MP7	X	9.66	12
24	MP7	Z	0	12
25	MP7	X	9.57	12
26	MP7	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	15.59	0
2	MP1	Z	-9	0
3	MP1	X	15.59	72
4	MP1	Z	-9	72
5	MP1	X	7.29	12
6	MP1	Z	-4.21	12
7	MP1	X	7.07	12
8	MP1	Z	-4.08	12
9	MP10	X	7.07	24
10	MP10	Z	-4.08	24
11	MP4	X	15.59	0
12	MP4	Z	-9	0
13	MP4	X	15.59	72
14	MP4	Z	-9	72
15	MP4	X	7.29	12
16	MP4	Z	-4.21	12
17	MP4	X	7.07	12
18	MP4	Z	-4.08	12
19	MP7	X	21.25	0
20	MP7	Z	-12.27	0
21	MP7	X	21.25	72
22	MP7	Z	-12.27	72
23	MP7	X	8.9	12
24	MP7	Z	-5.14	12
25	MP7	X	8.9	12
26	MP7	Z	-5.14	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	11.18	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP1	Z	-19.37	0
3	MP1	X	11.18	72
4	MP1	Z	-19.37	72
5	MP1	X	4.83	12
6	MP1	Z	-8.37	12
7	MP1	X	4.79	12
8	MP1	Z	-8.29	12
9	MP10	X	4.66	24
10	MP10	Z	-8.07	24
11	MP4	X	7.91	0
12	MP4	Z	-13.71	0
13	MP4	X	7.91	72
14	MP4	Z	-13.71	72
15	MP4	X	3.9	12
16	MP4	Z	-6.76	12
17	MP4	X	3.73	12
18	MP4	Z	-6.45	12
19	MP7	X	11.18	0
20	MP7	Z	-19.37	0
21	MP7	X	11.18	72
22	MP7	Z	-19.37	72
23	MP7	X	4.83	12
24	MP7	Z	-8.37	12
25	MP7	X	4.79	12
26	MP7	Z	-8.29	12

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-9.082	0
2	MP1	Z	-9.082	72
3	MP1	Z	-21.106	12
4	MP1	Z	-18.003	12
5	MP10	Z	-6.153	24
6	MP4	Z	-9.082	0
7	MP4	Z	-9.082	72
8	MP4	Z	-21.106	12
9	MP4	Z	-18.003	12
10	MP7	Z	-9.082	0
11	MP7	Z	-9.082	72
12	MP7	Z	-21.106	12
13	MP7	Z	-18.003	12

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-9.082	0
2	MP1	X	-9.082	72
3	MP1	X	-21.106	12
4	MP1	X	-18.003	12
5	MP10	X	-6.153	24
6	MP4	X	-9.082	0
7	MP4	X	-9.082	72
8	MP4	X	-21.106	12
9	MP4	X	-18.003	12
10	MP7	X	-9.082	0
11	MP7	X	-9.082	72
12	MP7	X	-21.106	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
13	MP7	X	-18.003	12

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...
1	N72B	L	Y	-250
2	N135A	L	Y	-250
3	N129B	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...
1	N70A	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...
1	N69A	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...
1	N76	L	Y	-500

Joint Loads and Enforced Displacements (BLC 37 : Maintenance Load 4)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N94	L	Y	-500

Joint Loads and Enforced Displacements (BLC 38 : Maintenance Load 5)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N93	L	Y	-500

Joint Loads and Enforced Displacements (BLC 39 : Maintenance Load 6)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N122	L	Y	-500

Joint Loads and Enforced Displacements (BLC 40 : Maintenance Load 7)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N121	L	Y	-500

Joint Loads and Enforced Displacements (BLC 41 : Maintenance Load 8)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N133B	L	Y	-500

Joint Loads and Enforced Displacements (BLC 42 : Maintenance Load 9)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N139	L	Y	-500

Joint Loads and Enforced Displacements (BLC 43 : Maintenance Load 10)

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2...
1	N120A	L	Y	-500

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	SZ	-107.722	-107.722	0	%100
2	GA4	SZ	-107.722	-107.722	0	%100
3	GA3	SZ	-107.722	-107.722	0	%100
4	P3	SZ	-107.722	-107.722	0	%100
5	S2	SZ	-107.722	-107.722	0	%100
6	GA2	SZ	-107.722	-107.722	0	%100
7	GA1	SZ	-107.722	-107.722	0	%100
8	P2	SZ	-107.722	-107.722	0	%100
9	S1	SZ	-107.722	-107.722	0	%100
10	GA6	SZ	-107.722	-107.722	0	%100
11	GA5	SZ	-107.722	-107.722	0	%100
12	P1	SZ	-107.722	-107.722	0	%100
13	H1	SZ	-64.633	-64.633	0	%100
14	MP1	SZ	-64.633	-64.633	0	%100
15	MP3	SZ	-64.633	-64.633	0	%100
16	HR1	SZ	-64.633	-64.633	0	%100
17	CA8	SZ	-107.722	-107.722	0	%100
18	CA9	SZ	-107.722	-107.722	0	%100
19	CA7	SZ	-107.722	-107.722	0	%100
20	M32	SZ	0	0	0	%100
21	M35	SZ	0	0	0	%100
22	M36	SZ	0	0	0	%100
23	M39A	SZ	0	0	0	%100
24	CA3	SZ	-107.722	-107.722	0	%100
25	CA4	SZ	-107.722	-107.722	0	%100
26	CA1	SZ	-107.722	-107.722	0	%100
27	CA2	SZ	-107.722	-107.722	0	%100
28	CA5	SZ	-107.722	-107.722	0	%100
29	CA6	SZ	-107.722	-107.722	0	%100
30	M64	SZ	0	0	0	%100
31	M65	SZ	0	0	0	%100
32	M66	SZ	0	0	0	%100
33	M67	SZ	0	0	0	%100
34	M68	SZ	0	0	0	%100
35	M69	SZ	0	0	0	%100
36	M70	SZ	0	0	0	%100
37	M71	SZ	0	0	0	%100
38	M72	SZ	0	0	0	%100
39	M73	SZ	0	0	0	%100
40	M74	SZ	0	0	0	%100
41	M75	SZ	-107.722	-107.722	0	%100
42	MP2	SZ	-64.633	-64.633	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	H3	SZ	-64.633	-64.633	0	%100
46	MP7	SZ	-64.633	-64.633	0	%100
47	MP9	SZ	-64.633	-64.633	0	%100
48	HR3	SZ	-64.633	-64.633	0	%100
49	M52	SZ	0	0	0	%100
50	M53	SZ	0	0	0	%100
51	M54	SZ	0	0	0	%100
52	M55	SZ	0	0	0	%100
53	H2	SZ	-64.633	-64.633	0	%100
54	MP4	SZ	-64.633	-64.633	0	%100
55	MP6	SZ	-64.633	-64.633	0	%100
56	HR2	SZ	-64.633	-64.633	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
57	M66A	SZ	0	0	0	%100
58	M67A	SZ	0	0	0	%100
59	M68A	SZ	0	0	0	%100
60	M69A	SZ	0	0	0	%100
61	MP8	SZ	-64.633	-64.633	0	%100
62	M68B	SZ	0	0	0	%100
63	M69B	SZ	0	0	0	%100
64	MP5	SZ	-64.633	-64.633	0	%100
65	M71B	SZ	0	0	0	%100
66	M72B	SZ	0	0	0	%100
67	M67B	SZ	0	0	0	%100
68	MP10	SZ	-64.633	-64.633	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	SX	-107.722	-107.722	0	%100
2	GA4	SX	-107.722	-107.722	0	%100
3	GA3	SX	-107.722	-107.722	0	%100
4	P3	SX	-107.722	-107.722	0	%100
5	S2	SX	-107.722	-107.722	0	%100
6	GA2	SX	-107.722	-107.722	0	%100
7	GA1	SX	-107.722	-107.722	0	%100
8	P2	SX	-107.722	-107.722	0	%100
9	S1	SX	-107.722	-107.722	0	%100
10	GA6	SX	-107.722	-107.722	0	%100
11	GA5	SX	-107.722	-107.722	0	%100
12	P1	SX	-107.722	-107.722	0	%100
13	H1	SX	-64.633	-64.633	0	%100
14	MP1	SX	-64.633	-64.633	0	%100
15	MP3	SX	-64.633	-64.633	0	%100
16	HR1	SX	-64.633	-64.633	0	%100
17	CA8	SX	-107.722	-107.722	0	%100
18	CA9	SX	-107.722	-107.722	0	%100
19	CA7	SX	-107.722	-107.722	0	%100
20	M32	SX	0	0	0	%100
21	M35	SX	0	0	0	%100
22	M36	SX	0	0	0	%100
23	M39A	SX	0	0	0	%100
24	CA3	SX	-107.722	-107.722	0	%100
25	CA4	SX	-107.722	-107.722	0	%100
26	CA1	SX	-107.722	-107.722	0	%100
27	CA2	SX	-107.722	-107.722	0	%100
28	CA5	SX	-107.722	-107.722	0	%100
29	CA6	SX	-107.722	-107.722	0	%100
30	M64	SX	0	0	0	%100
31	M65	SX	0	0	0	%100
32	M66	SX	0	0	0	%100
33	M67	SX	0	0	0	%100
34	M68	SX	0	0	0	%100
35	M69	SX	0	0	0	%100
36	M70	SX	0	0	0	%100
37	M71	SX	0	0	0	%100
38	M72	SX	0	0	0	%100
39	M73	SX	0	0	0	%100
40	M74	SX	0	0	0	%100
41	M75	SX	-107.722	-107.722	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
42	MP2	SX	-64.633	-64.633	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	H3	SX	-64.633	-64.633	0	%100
46	MP7	SX	-64.633	-64.633	0	%100
47	MP9	SX	-64.633	-64.633	0	%100
48	HR3	SX	-64.633	-64.633	0	%100
49	M52	SX	0	0	0	%100
50	M53	SX	0	0	0	%100
51	M54	SX	0	0	0	%100
52	M55	SX	0	0	0	%100
53	H2	SX	-64.633	-64.633	0	%100
54	MP4	SX	-64.633	-64.633	0	%100
55	MP6	SX	-64.633	-64.633	0	%100
56	HR2	SX	-64.633	-64.633	0	%100
57	M66A	SX	0	0	0	%100
58	M67A	SX	0	0	0	%100
59	M68A	SX	0	0	0	%100
60	M69A	SX	0	0	0	%100
61	MP8	SX	-64.633	-64.633	0	%100
62	M68B	SX	0	0	0	%100
63	M69B	SX	0	0	0	%100
64	MP5	SX	-64.633	-64.633	0	%100
65	M71B	SX	0	0	0	%100
66	M72B	SX	0	0	0	%100
67	M67B	SX	0	0	0	%100
68	MP10	SX	-64.633	-64.633	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	Y	-24.698	-24.698	0	%100
2	GA4	Y	-16.116	-16.116	0	%100
3	GA3	Y	-16.116	-16.116	0	%100
4	P3	Y	-27.289	-27.289	0	%100
5	S2	Y	-24.698	-24.698	0	%100
6	GA2	Y	-16.116	-16.116	0	%100
7	GA1	Y	-16.116	-16.116	0	%100
8	P2	Y	-27.289	-27.289	0	%100
9	S1	Y	-24.698	-24.698	0	%100
10	GA6	Y	-16.116	-16.116	0	%100
11	GA5	Y	-16.116	-16.116	0	%100
12	P1	Y	-27.289	-27.289	0	%100
13	H1	Y	-18.154	-18.154	0	%100
14	MP1	Y	-16.258	-16.258	0	%100
15	MP3	Y	-16.258	-16.258	0	%100
16	HR1	Y	-16.273	-16.273	0	%100
17	CA8	Y	-31.703	-31.703	0	%100
18	CA9	Y	-31.703	-31.703	0	%100
19	CA7	Y	-31.703	-31.703	0	%100
20	M32	Y	-7.535	-7.535	0	%100
21	M35	Y	-7.535	-7.535	0	%100
22	M36	Y	-7.535	-7.535	0	%100
23	M39A	Y	-7.535	-7.535	0	%100
24	CA3	Y	-19.544	-19.544	0	%100
25	CA4	Y	-19.544	-19.544	0	%100
26	CA1	Y	-19.544	-19.544	0	%100

Member Distributed Loads (BLC 16 : Ice Weight) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
27	CA2	Y	-19.544	-19.544	0	%100
28	CA5	Y	-19.544	-19.544	0	%100
29	CA6	Y	-19.544	-19.544	0	%100
30	M64	Y	-7.535	-7.535	0	%100
31	M65	Y	-7.535	-7.535	0	%100
32	M66	Y	-7.535	-7.535	0	%100
33	M67	Y	-7.535	-7.535	0	%100
34	M68	Y	-7.535	-7.535	0	%100
35	M69	Y	-7.535	-7.535	0	%100
36	M70	Y	-7.535	-7.535	0	%100
37	M71	Y	-7.535	-7.535	0	%100
38	M72	Y	-7.535	-7.535	0	%100
39	M73	Y	-7.535	-7.535	0	%100
40	M74	Y	-7.535	-7.535	0	%100
41	M75	Y	-14.899	-14.899	0	%100
42	MP2	Y	-16.258	-16.258	0	%100
43	M43	Y	-7.535	-7.535	0	%100
44	M44	Y	-7.535	-7.535	0	%100
45	H3	Y	-18.154	-18.154	0	%100
46	MP7	Y	-16.258	-16.258	0	%100
47	MP9	Y	-16.258	-16.258	0	%100
48	HR3	Y	-16.273	-16.273	0	%100
49	M52	Y	-7.535	-7.535	0	%100
50	M53	Y	-7.535	-7.535	0	%100
51	M54	Y	-7.535	-7.535	0	%100
52	M55	Y	-7.535	-7.535	0	%100
53	H2	Y	-18.154	-18.154	0	%100
54	MP4	Y	-16.258	-16.258	0	%100
55	MP6	Y	-16.258	-16.258	0	%100
56	HR2	Y	-16.273	-16.273	0	%100
57	M66A	Y	-7.535	-7.535	0	%100
58	M67A	Y	-7.535	-7.535	0	%100
59	M68A	Y	-7.535	-7.535	0	%100
60	M69A	Y	-7.535	-7.535	0	%100
61	MP8	Y	-16.258	-16.258	0	%100
62	M68B	Y	-7.535	-7.535	0	%100
63	M69B	Y	-7.535	-7.535	0	%100
64	MP5	Y	-16.258	-16.258	0	%100
65	M71B	Y	-7.535	-7.535	0	%100
66	M72B	Y	-7.535	-7.535	0	%100
67	M67B	Y	-7.535	-7.535	0	%100
68	MP10	Y	-16.258	-16.258	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	SZ	-17.956	-17.956	0	%100
2	GA4	SZ	-26.351	-26.351	0	%100
3	GA3	SZ	-26.351	-26.351	0	%100
4	P3	SZ	-16.855	-16.855	0	%100
5	S2	SZ	-17.956	-17.956	0	%100
6	GA2	SZ	-26.351	-26.351	0	%100
7	GA1	SZ	-26.351	-26.351	0	%100
8	P2	SZ	-16.855	-16.855	0	%100
9	S1	SZ	-17.956	-17.956	0	%100
10	GA6	SZ	-26.351	-26.351	0	%100
11	GA5	SZ	-26.351	-26.351	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
12	P1	SZ	-16.855	-16.855	0	%100
13	H1	SZ	-23.129	-23.129	0	%100
14	MP1	SZ	-26.079	-26.079	0	%100
15	MP3	SZ	-26.079	-26.079	0	%100
16	HR1	SZ	-26.05	-26.05	0	%100
17	CA8	SZ	-15.523	-15.523	0	%100
18	CA9	SZ	-15.523	-15.523	0	%100
19	CA7	SZ	-15.523	-15.523	0	%100
20	M32	SZ	0	0	0	%100
21	M35	SZ	0	0	0	%100
22	M36	SZ	0	0	0	%100
23	M39A	SZ	0	0	0	%100
24	CA3	SZ	-21.558	-21.558	0	%100
25	CA4	SZ	-21.558	-21.558	0	%100
26	CA1	SZ	-21.558	-21.558	0	%100
27	CA2	SZ	-21.558	-21.558	0	%100
28	CA5	SZ	-21.558	-21.558	0	%100
29	CA6	SZ	-21.558	-21.558	0	%100
30	M64	SZ	0	0	0	%100
31	M65	SZ	0	0	0	%100
32	M66	SZ	0	0	0	%100
33	M67	SZ	0	0	0	%100
34	M68	SZ	0	0	0	%100
35	M69	SZ	0	0	0	%100
36	M70	SZ	0	0	0	%100
37	M71	SZ	0	0	0	%100
38	M72	SZ	0	0	0	%100
39	M73	SZ	0	0	0	%100
40	M74	SZ	0	0	0	%100
41	M75	SZ	-29.127	-29.127	0	%100
42	MP2	SZ	-26.079	-26.079	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	H3	SZ	-23.129	-23.129	0	%100
46	MP7	SZ	-26.079	-26.079	0	%100
47	MP9	SZ	-26.079	-26.079	0	%100
48	HR3	SZ	-26.05	-26.05	0	%100
49	M52	SZ	0	0	0	%100
50	M53	SZ	0	0	0	%100
51	M54	SZ	0	0	0	%100
52	M55	SZ	0	0	0	%100
53	H2	SZ	-23.129	-23.129	0	%100
54	MP4	SZ	-26.079	-26.079	0	%100
55	MP6	SZ	-26.079	-26.079	0	%100
56	HR2	SZ	-26.05	-26.05	0	%100
57	M66A	SZ	0	0	0	%100
58	M67A	SZ	0	0	0	%100
59	M68A	SZ	0	0	0	%100
60	M69A	SZ	0	0	0	%100
61	MP8	SZ	-26.079	-26.079	0	%100
62	M68B	SZ	0	0	0	%100
63	M69B	SZ	0	0	0	%100
64	MP5	SZ	-26.079	-26.079	0	%100
65	M71B	SZ	0	0	0	%100
66	M72B	SZ	0	0	0	%100
67	M67B	SZ	0	0	0	%100
68	MP10	SZ	-26.079	-26.079	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	SX	-17.956	-17.956	0	%100
2	GA4	SX	-26.351	-26.351	0	%100
3	GA3	SX	-26.351	-26.351	0	%100
4	P3	SX	-16.855	-16.855	0	%100
5	S2	SX	-17.956	-17.956	0	%100
6	GA2	SX	-26.351	-26.351	0	%100
7	GA1	SX	-26.351	-26.351	0	%100
8	P2	SX	-16.855	-16.855	0	%100
9	S1	SX	-17.956	-17.956	0	%100
10	GA6	SX	-26.351	-26.351	0	%100
11	GA5	SX	-26.351	-26.351	0	%100
12	P1	SX	-16.855	-16.855	0	%100
13	H1	SX	-23.129	-23.129	0	%100
14	MP1	SX	-26.079	-26.079	0	%100
15	MP3	SX	-26.079	-26.079	0	%100
16	HR1	SX	-26.05	-26.05	0	%100
17	CA8	SX	-15.523	-15.523	0	%100
18	CA9	SX	-15.523	-15.523	0	%100
19	CA7	SX	-15.523	-15.523	0	%100
20	M32	SX	0	0	0	%100
21	M35	SX	0	0	0	%100
22	M36	SX	0	0	0	%100
23	M39A	SX	0	0	0	%100
24	CA3	SX	-21.558	-21.558	0	%100
25	CA4	SX	-21.558	-21.558	0	%100
26	CA1	SX	-21.558	-21.558	0	%100
27	CA2	SX	-21.558	-21.558	0	%100
28	CA5	SX	-21.558	-21.558	0	%100
29	CA6	SX	-21.558	-21.558	0	%100
30	M64	SX	0	0	0	%100
31	M65	SX	0	0	0	%100
32	M66	SX	0	0	0	%100
33	M67	SX	0	0	0	%100
34	M68	SX	0	0	0	%100
35	M69	SX	0	0	0	%100
36	M70	SX	0	0	0	%100
37	M71	SX	0	0	0	%100
38	M72	SX	0	0	0	%100
39	M73	SX	0	0	0	%100
40	M74	SX	0	0	0	%100
41	M75	SX	-29.127	-29.127	0	%100
42	MP2	SX	-26.079	-26.079	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	H3	SX	-23.129	-23.129	0	%100
46	MP7	SX	-26.079	-26.079	0	%100
47	MP9	SX	-26.079	-26.079	0	%100
48	HR3	SX	-26.05	-26.05	0	%100
49	M52	SX	0	0	0	%100
50	M53	SX	0	0	0	%100
51	M54	SX	0	0	0	%100
52	M55	SX	0	0	0	%100
53	H2	SX	-23.129	-23.129	0	%100
54	MP4	SX	-26.079	-26.079	0	%100
55	MP6	SX	-26.079	-26.079	0	%100
56	HR2	SX	-26.05	-26.05	0	%100
57	M66A	SX	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
58	M67A	SX	0	0	0	%100
59	M68A	SX	0	0	0	%100
60	M69A	SX	0	0	0	%100
61	MP8	SX	-26.079	-26.079	0	%100
62	M68B	SX	0	0	0	%100
63	M69B	SX	0	0	0	%100
64	MP5	SX	-26.079	-26.079	0	%100
65	M71B	SX	0	0	0	%100
66	M72B	SX	0	0	0	%100
67	M67B	SX	0	0	0	%100
68	MP10	SX	-26.079	-26.079	0	%100

Member Distributed Loads (BLC 44 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S2	Y	-3.185	-3.185	16.404	40
2	GA2	Y	-1.605	-1.605	3.828	27.295
3	GA1	Y	-1.605	-1.605	3.828	27.295
4	S3	Y	-3.185	-3.185	16.404	40
5	GA4	Y	-1.605	-1.605	3.828	27.295
6	GA3	Y	-1.605	-1.605	3.828	27.295
7	S1	Y	-3.185	-3.185	16.404	40
8	GA6	Y	-1.605	-1.605	3.828	27.295
9	GA5	Y	-1.605	-1.605	3.828	27.295

Member Distributed Loads (BLC 45 : BLC 16 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S2	Y	-42.228	-42.228	16.404	40
2	GA2	Y	-21.281	-21.281	3.828	27.295
3	GA1	Y	-21.281	-21.281	3.828	27.295
4	S3	Y	-42.228	-42.228	16.404	40
5	GA4	Y	-21.281	-21.281	3.828	27.295
6	GA3	Y	-21.281	-21.281	3.828	27.295
7	S1	Y	-42.228	-42.228	16.404	40
8	GA6	Y	-21.281	-21.281	3.828	27.295
9	GA5	Y	-21.281	-21.281	3.828	27.295

Member Area Loads (BLC 1 : Self Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	P22	P21	P20	P23	Y	Two Way	-1.75
2	P10	P11	P12	P9	Y	Two Way	-1.75
3	P31	P34	P33	P32	Y	Two Way	-1.75

Member Area Loads (BLC 16 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	P22	P21	P20	P23	Y	Two Way	-23.2
2	P10	P11	P12	P9	Y	Two Way	-23.2
3	P31	P34	P33	P32	Y	Two Way	-23.2

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

	Member	Shape	Code Check	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*M...	phi*Mn...	Cb	Eqn
1	P3	PL6.5x..	.378	21	2	.189	36.312	y	30	3658.14	78975	616.9...	7902.666	1.4...	H1-...
2	CA1	C3.38x..	.377	0	31	.063	28.188	y	36	47760....	56700	2202....	5751.945	1.6...	H1-...

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

	Member	Shape	Code Check	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*M...	phi*Mn ...	Cb	Eqn
3	S2	HSS4X...	.371	0	32	.131	0	y	32	188250...	197892	22045...	22045.5	1.9...	H1-...
4	P2	PL6.5x...	.369	21	6	.162	36.312	y	10	3658.14	78975	616.9...	7900.828	1.4...	H1-...
5	P1	PL6.5x...	.349	21	10	.173	36.312	y	2	3658.14	78975	616.9...	7913.201	1.4...	H1-...
6	CA3	C3.38x...	.345	0	27	.062	28.188	y	32	47760....	56700	2202....	5751.945	1.6...	H1-...
7	CA5	C3.38x...	.345	0	35	.061	28.187	y	28	47760....	56700	2202....	5751.945	1.6...	H1-...
8	CA4	C3.38x...	.344	33	2	.052	33	y	31	47760....	56700	2202....	5751.945	1.6...	H1-...
9	S3	HSS4X...	.337	0	38	.130	0	y	29	188250...	197892	22045...	22045.5	1.93	H1-...
10	CA8	L6.6x4....	.333	41.562	22	.045	42	z	4	51170....	87561	2464....	7125.374	1.1...	H2-1
11	M75	PL 2.3...	.325	1.5	12	.298	0	y	28	38256....	38475	400.7...	1903.711	2.2...	H1-...
12	CA2	C3.38x...	.324	33	6	.053	33	y	34	47760....	56700	2202....	5751.945	1.6...	H1-...
13	CA6	C3.38x...	.320	33	10	.051	33	y	38	47760....	56700	2202....	5751.945	1.62	H1-...
14	CA7	L6.6x4....	.318	41.562	3	.042	42	z	8	51170....	87561	2464....	7125.374	1.1...	H2-1
15	HR2	2.88x0....	.317	90	3	.157	92		4	22491....	43076....	3155....	3155.674	1.6...	H1-...
16	HR3	2.88x0....	.314	6	2	.147	92		6	22491....	43076....	3155....	3155.674	1.82	H1-...
17	HR1	2.88x0....	.303	6	4	.137	6		4	22491....	43076....	3155....	3155.674	1.9...	H1-...
18	S1	HSS4X...	.300	0	36	.118	0	y	37	188250...	197892	22045...	22045.5	1.9...	H1-...
19	CA9	L6.6x4....	.290	41.562	6	.040	42	z	12	51170....	87561	2464....	7125.374	1.1...	H2-1
20	MP2	PIPE_...	.261	70	5	.094	70		5	33487....	66654	4726.5	4726.5	4.4...	H1-...
21	MP5	PIPE_...	.259	70	7	.080	70		7	33487....	66654	4726.5	4726.5	4.6...	H1-...
22	GA4	L2x2x4	.243	0	2	.017	27.295	y	9	29527....	42480	959.63	2190.068	2.2...	H2-1
23	GA5	L2x2x4	.233	0	9	.028	27.295	y	38	29527....	42480	959.63	2190.068	2.1...	H2-1
24	MP8	PIPE_...	.232	70	9	.099	70		3	33487....	66654	4726.5	4726.5	4.1...	H1-...
25	GA2	L2x2x4	.225	0	12	.018	0	y	12	29527....	42480	959.63	2190.068	2.3...	H2-1
26	GA1	L2x2x4	.208	0	6	.029	27.295	y	34	29527....	42480	959.63	2190.068	2.2...	H2-1
27	GA6	L2x2x4	.208	0	4	.017	0	y	4	29527....	42480	959.63	2190.068	2.34	H2-1
28	GA3	L2x2x4	.207	0	7	.029	27.295	y	30	29527....	42480	959.63	2190.068	2.1...	H2-1
29	MP9	PIPE_...	.204	70	2	.093	70		7	33487....	66654	4726.5	4726.5	3.2...	H1-...
30	MP6	PIPE_...	.187	70	7	.101	70		6	33487....	66654	4726.5	4726.5	4.5...	H1-...
31	MP1	PIPE_...	.184	70	11	.114	26		8	33487....	66654	4726.5	4726.5	2.6...	H1-...
32	MP3	PIPE_...	.183	70	5	.103	70		3	33487....	66654	4726.5	4726.5	4.3...	H1-...
33	MP4	PIPE_...	.176	70	7	.103	26		4	33487....	66654	4726.5	4726.5	1.8...	H1-...
34	MP7	PIPE_...	.172	70	9	.093	26		6	33487....	66654	4726.5	4726.5	3.4...	H1-...
35	H3	Pipe3....	.159	31	2	.094	90		2	45873....	71580.6	6337....	6337.65	1.8...	H1-...
36	H1	Pipe3....	.153	31	10	.087	48		4	45873....	71580.6	6337....	6337.65	1.9...	H1-...
37	H2	Pipe3....	.152	31	6	.070	48		12	45873....	71580.6	6337....	6337.65	1.7...	H1-...
38	MP10	PIPE_...	.007	24	6	.002	24		6	56116....	66654	4726.5	4726.5	1.5...	H1-...

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	BOBDL00010A
Site Number:	BOBDL00010A
Connection Description:	Platform to Monopole

MAXIMUM BOLT LOADS		
Bolt Tension:	9848.34	lbs
Bolt Shear:	1840.72	lbs

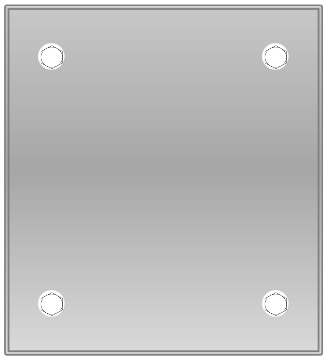
WORST CASE BOLT LOADS[1]		
Bolt Tension:	9848.34	lbs
Bolt Shear:	1729.19	lbs

BOLT PROPERTIES		
Bolt Type:	Bolt	-
Bolt Diameter:	0.625	in
Bolt Grade:	A325	-
# of Bolts:	4	-
Threads Excluded?	No	-

[1] *Worst case bolt loads correspond to Load combination #32 on member S2 in RISA-3D, which causes the maximum demand on the bolts.*

Member Information
I nodes of S3, S2, S1

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	48.4%	
Max Shear Usage	13.3%	
Interaction Check (Worst Case)	0.25	***≤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: BOBDL00010A

BOBDL00010A
104 Bunker Hill Road
Andover, Connecticut 06232

November 11, 2021

EBI Project Number: 6221003970

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**15.57%**

November 11, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00010A - BOBDL00010A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **104 Bunker Hill Road** in **Andover, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless Wireless antenna facility located at 104 Bunker Hill Road in Andover, 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 124 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):	124 feet	Height (AGL):	124 feet	Height (AGL):	124 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 %:	**1.70%**	Antenna B1 MPE %:	**1.70%**	Antenna C1 MPE %:	**1.70%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	1.70%
AT&T	5.16%
Verizon	2.9%
Nextel	0.19%
Sprint	2.1%
T-Mobile	3.52%
Site Total MPE % :	15.57%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	1.70%
Dish Wireless Sector B Total:	1.70%
Dish Wireless Sector C Total:	1.70%
Site Total MPE % :	15.57%

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	124.0	2.31	600 MHz n71	400	0.58%
Dish Wireless 1900 MHz n70	4	542.70	124.0	5.60	1900 MHz n70	1000	0.56%
Dish Wireless 2190 MHz n66	4	542.70	124.0	5.60	2190 MHz n66	1000	0.56%
						Total:	**1.70%**

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

Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	1.70%
Sector B:	1.70%
Sector C:	1.70%
Dish Wireless Maximum MPE % (Sector A):	1.70%
Site Total:	15.57%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **15.57%** 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.

UNDERLYING PROPERTY INFORMATION

104 BUNKER HILL RD

Location	104 BUNKER HILL RD	**Mblu**	33/ 36/ 3/ /
Acct#	1023	**Owner**	PRICE LEON & BENJAMIN
Assessment	$332,220	**Appraisal**	$474,600
PID	1023	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$215,200	$259,400	$474,600
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$150,640	$181,580	$332,220

Owner of Record

Owner	PRICE LEON & BENJAMIN	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	104 BUNKER HILL RD ANDOVER, CT 06232	**Book & Page**	0113/1034
		Sale Date	10/18/2010
		Instrument	26

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
PRICE LEON & BENJAMIN	$0		0113/1034	26	10/18/2010
PRICE LEON	$0		0094/0229		08/23/2004
GREEN DEBORAH R & PRICE LEON	$0		0075/0459		07/06/2000
GREEN DEBORAH R & PRICE LEON	$184,000		0068/0950	00	12/10/1997
ARNER DAVID C & MARSHA A	$69,000		0028/0674	00	04/15/1976

Building Information

Building 1 : Section 1

Year Built: 1969

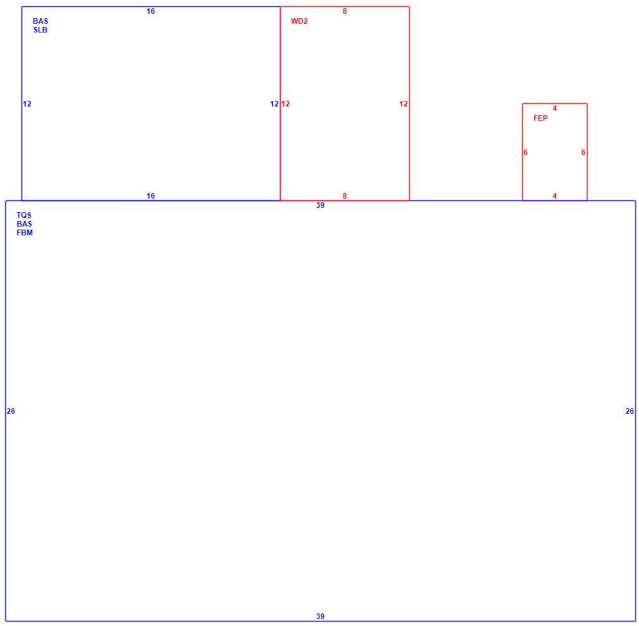
Building Photo

Living Area:	2,017
Replacement Cost:	$248,898
Building Percent Good:	65
Replacement Cost Less Depreciation:	$161,800

Building Attributes	
Field	**Description**
Style	Colonial
Model	Residential
Grade:	C+
Stories:	1 3/4 Stories
Occupancy	1
Exterior Wall 1	Clapboard
Exterior Wall 2	
Roof Structure:	Gambrel
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Flr 1	Laminate
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Hot Water
AC Type:	None
Total Bedrooms:	3 Bedrooms
Total Bthrms:	2
Total Half Baths:	1
Total Xtra Fixtrs:	
Total Rooms:	7 Rooms
Bath Style:	Average
Kitchen Style:	Average
Num Kitchens	01
Cndtn	
Num Park	
Fireplaces	

(http://images.vgsi.com/photos2/AndoverCTPhotos///0004/100_0322_4364

Building Layout



(ParcelSketch.ashx?pid=1023&bid=1023)

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,206	1,206
TQS	Three Quarter Story	1,014	811
FBM	Basement, Finished	1,014	0
FEP	Porch, Enclosed, Finished	24	0
SLB	Slab	192	0
WD2	Deck, Wood	96	0
		3,546	2,017

Extra Features

Extra Features	Legend

No Data for Extra Features

Land

Land Use

Use Code	1010
Description	Single Fam MDL-01
Zone	R-80
Neighborhood	12
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	13.90
Frontage	0
Depth	0
Assessed Value	$181,580
Appraised Value	$259,400

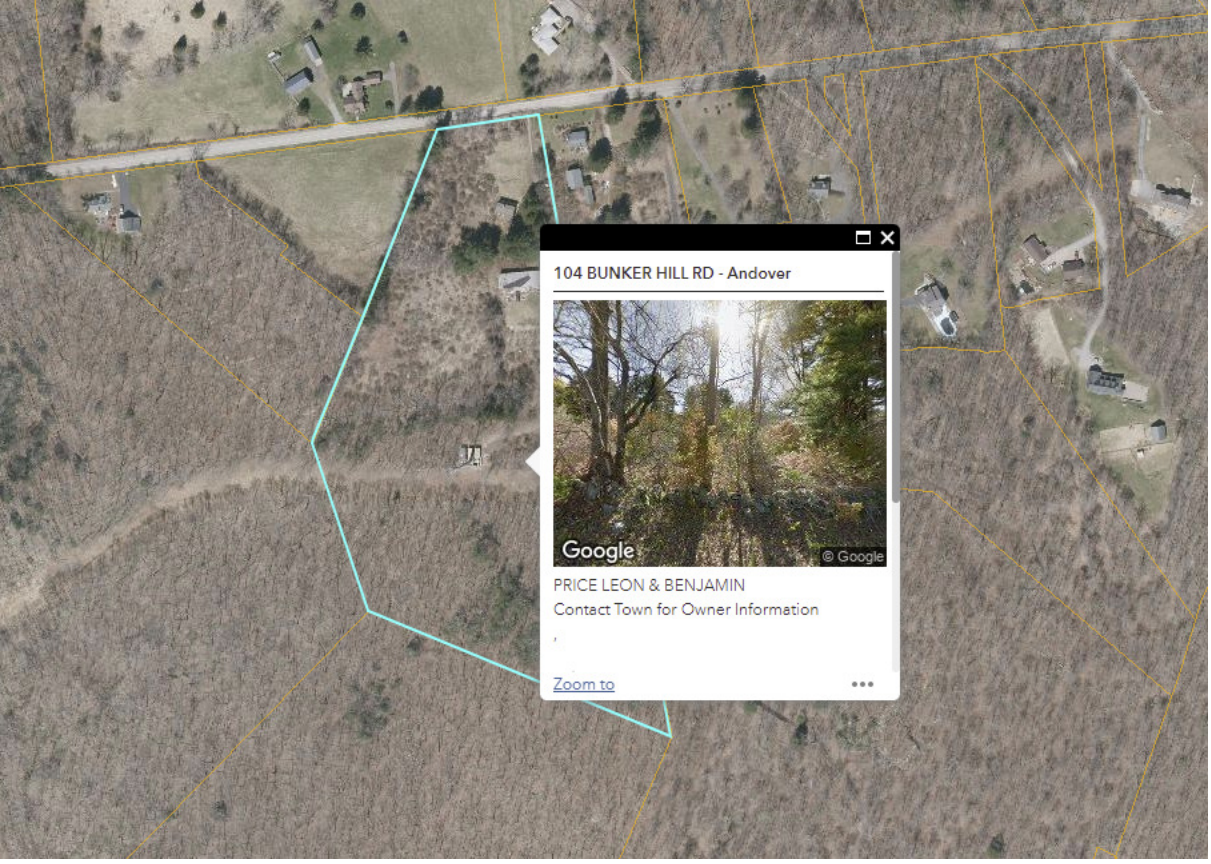
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FN3	Fence-6' Chain			200.00 L.F.	$1,600	1
SHD5	Shed			220.00 S.F.	$5,500	1
SHD5	Shed			768.00 S.F.	$19,400	1
FGR1	Garage Av			2080.00 S.F.	$15,000	1
SHP3	Work Shop Pr			2640.00 S.F.	$11,900	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$192,100	$276,300	$468,400
2015	$210,100	$251,700	$461,800
2011	$210,100	$251,700	$461,800

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$134,500	$193,400	$327,900
2015	$147,000	$176,200	$323,200
2011	$147,000	$176,200	$323,200


104 BUNKER HILL RD - Andover
Google
© Google
PRICE LEON & BENJAMIN
Contact Town for Owner Information
,
Zoom to

NOTIFICATIONS

December 13, 2021

Dear Customer,

The following is the proof-of-delivery for tracking number: 775349157741

Delivery Information:

Status:	Delivered	**Delivered To:**	Receptionist/Front Desk
Signed for by:	C.LEE	**Delivery Location:**	17 SCHOOL RD
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		ANDOVER, CT, 06232
		Delivery date:	Dec 2, 2021 15:43

Shipping Information:

Tracking number:	775349157741	**Ship Date:**	Nov 30, 2021
		Weight:	1.0 LB/0.45 KG

Recipient:
Randy Heckman - Building Official,
Andover Town Hall
17 School Road
ANDOVER, CT, US, 06232

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

Reference 100814

Thank you for choosing FedEx

December 13, 2021

Dear Customer,

The following is the proof-of-delivery for tracking number: 775349213653

Delivery Information:

Status:	Delivered	**Delivered To:**	Receptionist/Front Desk
Signed for by:	C.LEE	**Delivery Location:**	17 SCHOOL RD
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		ANDOVER, CT, 06232
		Delivery date:	Dec 2, 2021 15:43

Shipping Information:

Tracking number:	775349213653	**Ship Date:**	Nov 30, 2021
		Weight:	1.0 LB/0.45 KG

Recipient:
Jeffrey J. Maguire - Selectman,
Andover Town Hall
17 School Road
ANDOVER, CT, US, 06232

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

Reference 100814

Thank you for choosing FedEx

December 13, 2021

Dear Customer,

The following is the proof-of-delivery for tracking number: 775349247456

Delivery Information:

Status:	Delivered	**Delivered To:**	Residence
Signed for by:	Signature not required	**Delivery Location:**	104 BUNKER HILL RD
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday; Residential Delivery		ANDOVER, CT, 06232
		Delivery date:	Dec 2, 2021 15:28

Shipping Information:

Tracking number:	775349247456	**Ship Date:**	Nov 30, 2021
		Weight:	1.0 LB/0.45 KG

Recipient:
Leon & Benjamin Price - Owner,
104 Bunker Hill Road
ANDOVER, CT, US, 06232

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

Reference 100814

Thank you for choosing FedEx