# PROJECT NARRATIVE

April 22, 2022

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
405 Brushy Plain Rd, Branford, CT 06405
Latitude: 41'19'0.5" / Longitude: -72'49'10.9"

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 405 Brushy Plain Rd in Branford (the "Property"). The existing 150-foot monopole is owned by American Tower Corporation ("ATC"). The underlying property is owned by Edward F. Jaconette Jr. 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 James Cosgrove, First Selectman for the Town of Branford, Anthony Cinicola, Town of Branford Building Official and Edward F. Jaconette Jr. as the property owner.

**Background**

This facility was originally approved by the Council under Docket No. 44 on July 24, 1984. A copy of the Decision and Order is included in this filing. The existing ATC facility consists of a 150-foot self-support tower located within an existing leased area. AT&T Mobility currently maintains antennas at the 153-foot level. Verizon Wireless currently maintains antennas at the 150-foot level and 113-foot level. T-Mobile currently maintains antennas at the 140-foot level. Clearwire Corporation currently maintains antennas at the 130-foot level. Alma Radio Inc currently maintains currently maintains antennas at the 122-foot level and antennas are maintained by Others at the 160-foot and 70-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 405 Brushy Plain Rd tower pursuant to mutually acceptable terms and conditions. Likewise, DISH and ATC have agreed to the proposed installation of equipment cabinets on the ground 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 103-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 405 Brushy Plain Rd 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

NETWORK BUILDING AND CONSULTING LLC/ DISH WIRELESS L.L.C.

I, Margaret Robinson, Senior Counsel, US Tower Division on behalf of American Tower*, owner/operator of the tower facility located at the address identified below (the "Tower Facilities"), do hereby authorize NETWORK BUILDING AND CONSULTING LLC, its successors and assigns, to act as American Tower's non-exclusive agent for the purpose of filing and securing any zoning, land-use, building permit and/or electrical permit application(s) and approvals of the applicable jurisdiction for and to conduct the construction of the installation of antennas and related telecommunications equipment on the Tower Facility located at the above address. This installation shall not affect adjoining lands and will occur only within the area leased by American Tower.

American Tower understands that the application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by American Tower of conditions related to American Tower's installation. Any such conditions of approval or modifications will not be effective unless approved in writing by American Tower.

The above authorization does not permit NETWORK BUILDING AND CONSULTING LLC to modify or alter any existing permit(s) and/or zoning or land-use conditions or impose any additional conditions unrelated to American Tower's installation of telecommunications equipment without the prior written approval of American Tower.

| ATC Asset # | Site Name | Customer Site Number | Project Number | Site Address |
|---|---|---|---|---|
| 302484 | Branford CT 6 | BOHVN00142A | 13701211 | 405 Brushy Plain Rd, Branford |
| 302516 | Mlfd - Milford | BOHVN00144A | 13702496 | 438 Bridgeport Ave, Milford |
| 88008 | BETHANY CT | BOHVN00151A | 13709244 | 93 Old Amity Road, Bethany |
| 302467 | Bilkays Express | BOHVN00140A | 13701206 | 90 North Plains Industrial Rd., Wallingford |

Signature: _____

Margaret Robinson, Senior Counsel
US Tower Division

**See attached Notary Block**

**LETTER OF AUTHORIZATION**
**NETWORK BUILDING AND CONSULTING LLC/ DISH WIRELESS L.L.C**

**NOTARY BLOCK**

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel of American Tower (Tower Facility owner), 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/she executed the same.

WITNESS my hand and official seal, this 1st day of December, 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

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

# ORIGINAL FACILITY APPROVAL

DOCKET NO. 44

| | | |
|---|---|---|
| AN APPLICATION SUBMITTED BY THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE AND OPERATION OF FACILITIES TO PROVIDE CELLULAR SERVICE IN NEW HAVEN COUNTY | : | CONNECTICUT SITING COUNCIL |
| | : | July 24, 1984 |

## D E C I S I O N  A N D  O R D E R

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut, revisions of 1958, revised to 1983, as amended, be issued to the Southern New England Telephone Company for the construction, operation, and maintenance of a telecommunications tower and associated equipment to provide cellular service at each of the following sites:

Jasudowich tract, Brushy Plain Road, Branford, Connecticut;
Town of Guilford tract, Tanner Marsh Road, Guilford, Connecticut;
Bridgeport Avenue, Milford, Connecticut;
Quagliaro tract, Farmdale Drive, Waterbury, Connecticut;
Pease Road, Woodbridge, Connecticut; and
Dwight Street, North Haven, Connecticut.

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

1. The towers including antennas shall be no taller than necessary to provide the proposed service and in no event shall exceed

   a) 167' at the Branford site,
   b) 167' at the Guilford site,
   c) 117' at the Milford site,
   d) 167' at the Waterbury site,
   e) 167' at the Woodbridge site,
   f) 167' at the North Haven site;

2. A fence not lower than eight feet shall surround each tower and its associated equipment;

3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities;
4. The applicant or its successor shall permit, in accordance with representations made by it during the proceeding, public or private entities to share space on the facilities, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing;
5. Unless necessary to comply with condition number six, below, no lights shall be installed on any of these towers;
6. The facilities shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations;
7. The applicant shall submit a development and management plan (D&M) for the Branford, Milford, Woodbridge, and North Haven sites pursuant to sections 16-50j-85 through 16-50j-87 of the regulations of state agencies, except that irrelevant items in section 16-50j-86 need only be identified as such. The D&M plans shall include appropriate evergreen screening of the sites, erosion control measures, reseeding plans, and tree removal plans. The applicant shall comply with the reporting requirements of section 16-50j-87 for all sites;
8. Construction activities shall take place during daylight working hours;
9. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and removed, or reapplication for any new use shall be made to the Connecticut

Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction;

10. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, New Haven Register, and the Waterbury Republican.

The parties to this proceeding are

The Southern New England Telephone Company
Room 314
227 Church Street
New Haven, Connecticut 06506

(Applicant)

ATTENTION: Mr. Peter J. Tyrrell
Senior Attorney

(its attorney)

Town of Hamden
Peter F. Villano, Mayor
Shirley Gonzales, Town Planner

represented by:

Mr. Hugh Manke, Esquire
Office of the Town Attorney
Memorial Town Hall
2372 Whitney Avenue
Hamden, Connecticut 06518

Inland Wetlands Agency
Town of Woodbridge

represented by:

Robert J. Klancko
Chairman
Town Hall
11 Meeting House Lane
Woodbridge, Connecticut 06525

Town Plan and Zoning Commission
Town of Woodbridge

represented by:

Norman Fineberg
Chairman
Town Hall
11 Meeting House Lane
Woodbridge, Connecticut 06525

The Honorable Peter M. Lerner
State Representative
State of Connecticut
House of Representatives
State Capitol
Hartford, Connecticut 06115

John Menta
Felicia Tencza

represented by:

Ms. Felicia Tencza
580 Gaylord Mountain Road
Hamden, Connecticut 06518

Ms. Renee Robinson
265 Blue Trail
Hamden, Connecticut 06518

(service waived)

Irene L. Wong
Edson H. Mount
Dr. & Mrs. H.M. Fiskio
Dr. & Mrs. Alexander Gottschalk

represented by:

Dr. & Mrs. Alexander Gottschalk
230 Six Rod Highway
Hamden, Connecticut 06518

The Sleeping Giant Park Association

represented by:

Mr. Dag Pfeiffer
President
Box 14
Quinnipiac College
Hamden, Connecticut 06518

West Rock Ridge Park Association

represented by:

Mr. William L. Dohney, Jr., D.D.S.
President
220 Mountain Road
Hamden, Connecticut 06514

Sierra Club

represented by:

Ms. M. Kim Yanoshick
Executive Director
Hartford Chapter
118 Oak Street
Hartford, Connecticut 06106

| | |
|---|---|
| Quinnipiac College | represented by:<br><br>Mr. Richard A. Terry<br>President<br>Hamden, Connecticut 06518 |
| Guilford Conservation Commission | represented by:<br><br>Ms. Carolyn K. Evans<br>Chairman<br>Town Hall<br>Park Street<br>Guilford, Connecticut 06437 |
| Mrs. Barbara R. Peterson<br>Mary & Phil Faust<br>Anita L. & Richard M. Sullivan | represented by:<br><br>Anita L. & Richard M. Sullivan<br>315 Chestnut Lane<br>Hamden, Connecticut 06518 |
| Mrs. Pauline H. Hoff | represented by:<br><br>Herbert L. Emanuelson, Jr.<br>Emanuelson and Wynne<br>205 Church Street<br>New Haven, Connecticut 06510 |
| Hamden League of Women Voters | represented by:<br><br>Mrs. Sherrill Zoller<br>605 West Woods Road<br>Hamden, Connecticut 06518<br>(service waived) |
| Joan Rosenberg<br>230 Ridewood Avenue<br>Hamden, Connecticut 06517 | |
| Mr. & Mrs. Richard Sykes<br>110 Blue Trail<br>Hamden, Connecticut 06518 | |
| Thomas & Claudia Sullivan, Jr.<br>100 Blue Trail<br>Hamden, Connecticut 06518 | |
| Mr. William N. Pantalone<br>27 Pease Road<br>Woodbridge, Connecticut 06525 | (service waived) |

INTERVENORS

Metromedia TeleCommunications
Nutmeg Telecommunications, Inc.
CSI of New Haven
CSI of Stamford
Cellular Communications, Inc.
LIN Cellular Corp.
Cellular Mobile Services
Maxcell TeleCommunications, Inc.
Mobile Cellular Telephone, Inc.
Cellular Dynamics
Connecticut Corridor Cellular
Chase/Post Cellular

represented by:

Dwight A. Johnson
Murtha, Cullina, Richter
and Pinney
101 Pearl Street
P.O. Box 3197
Hartford, Connecticut 06103-0197

# C E R T I F I C A T I O N

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut, this 24th day of July, 1984.

| Council Members | Vote Cast |
|---|---|
| _____ )<br>Gloria Dibble Pond<br>Chairperson | Absent |
| _____ )<br>Commissioner John Downey<br>Designee: Commissioner Peter G. Boucher | Absent |
| Brian Emerick _____ )<br>Commissioner Stanley Pac<br>Designee: Brian Emerick | ~~Yes~~ ~~Absent~~ Abstain |
| Owen L. Clark _____ )<br>Owen L. Clark | Yes |
| Fred J. Doocy _____ )<br>Fred J. Doocy | Yes |
| Mortimer A. Gelston _____ )<br>Mortimer A. Gelston | Yes |
| James G. Horsfall _____ )<br>James G. Horsfall | Yes |
| _____ )<br>Janet Sitty | Absent |
| Colin C. Tait _____ )<br>Colin C. Tait<br>Acting Chairperson | Yes |

STATE OF CONNECTICUT )
: ss. New Britain, July 24, 1984
COUNTY OF HARTFORD )

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

Christopher S. Wood, Executive Director
Connecticut Siting Council

# ENGINEERING DRAWINGS

DISH Wireless L.L.C. SITE ID:

# BOHVN00142A

DISH Wireless L.L.C. SITE ADDRESS:

# 405 BRUSHY PLAIN RD
# BRANFORD, CT 06405

## 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



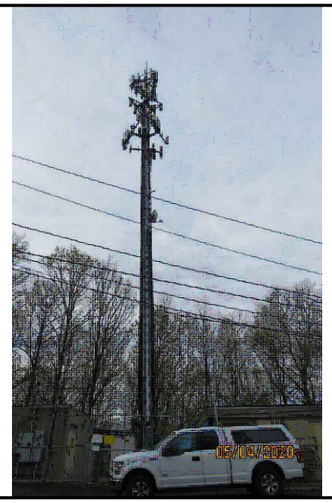
## SCOPE OF WORK

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 TOWER PLATFORM MOUNT
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED)
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)
- 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: | JACONETTE EDWARD F JR |
| ADDRESS: | 405 BRUSHY PLAIN RD<br>BRANFORD, CT 06405 |
| TOWER TYPE: | MONOPOLE |
| TOWER CO SITE ID: | 302484 |
| TOWER APP NUMBER: | 13701211 |
| COUNTY: | NEW HAVEN |
| LATITUDE (NAD 83): | 41° 19' 0.5" N<br>41.31680556 N |
| LONGITUDE (NAD 83): | 72° 49' 10.9" W<br>72.8197 W |
| ZONING JURISDICTION: | NEW HAVEN COUNTY |
| ZONING DISTRICT: | UNZONNED |
| PARCEL NUMBER: | D02/000/003/00001 |
| OCCUPANCY GROUP: | U |
| CONSTRUCTION TYPE: | II-B |
| POWER COMPANY: | T.B.D. |
| TELEPHONE COMPANY: | T.B.D. |

## PROJECT DIRECTORY

| | |
|---|---|
| APPLICANT: | DISH Wireless L.L.C.<br>5701 SOUTH SANTA FE DRIVE<br>LITTLETON, CO 80120 |
| TOWER OWNER: | AMERICAN TOWER CORPORATION<br>10 PRESIDENTIAL WAY<br>WOBURN, MA 01801<br>(781) 926-4500 |
| SITE DESIGNER: | B+T GROUP<br>1717 S. BOULDER AVE, SUITE 300<br>TULSA, OK 74119<br>(918) 587-4630 |
| SITE ACQUISITION: | APRIL PARROTT<br>april.parrott@dish.com |
| CONSTRUCTION MANAGER: | JAVIER SOTO<br>javier.soto@dish.com |
| RF ENGINEER: | SYED ZAIDI<br>syed.zaidi@dish.com |

## DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:

CONTINUE TO BRADLEY INTERNATIONAL AIRPORT CON HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT SLIGHT LEFT TAKE I-91 S TO E CENTER ST IN WALLINGFORD. TAKE EXIT 14 FROM I-91 S CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON TURN LEFT ONTO E CENTER ST TURN RIGHT ONTO NORTHFORD RD CONTINUE ONTO WOODS HILL RD TURN RIGHT ONTO CT-17 S CONTINUE ONTO CT-22 E CONTINUE STRAIGHT TO STAY ON CT-22 E TURN RIGHT ONTO MILL RD TURN LEFT ONTO CAPUTO RD TURN RIGHT ONTO CT-80 W TURN LEFT ONTO TOTOKET RD CONTINUE ONTO BRUSHY PLAIN RD TURN LEFT ONTO HILLTOP DR - ARRIVE AT BOHVN00142A

## VICINITY MAP


NO SCALE


dish wireless
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

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


STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
11/3/21

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



| DRAWN BY: | CHECKED BY: | APPROVED BY: |
|---|---|---|
| ANP | JCO | MDW |

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

| REV | DATE | DESCRIPTION |
|---|---|---|
| A | 8/1/21 | ISSUED FOR REVIEW |
| 0 | 11/3/21 | ISSUED FOR CONSTRUCTION |

A&E PROJECT NUMBER

154059.004.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

SHEET TITLE

TITLE SHEET

SHEET NUMBER

**T-1**

## STATEMENT OF ENCROACHMENTS

NO ENCROACHMENTS WERE FOUND WITH PROVIDED TITLE SEARCH.

## Survey Related Items

TITLE REFERENCE:

LINCOLN ABSTRACT SETTLEMENT SERVICES, SCORE REPORT FILE NO. 2014110596, SEARCHED FROM 11/14/1994 - 11/14/2014.

1) NOTICE OF LEASE OPTION (VOL 355 PAGE 793)
2) MEMORANDUM OF SUBLEASE (VOL 803 PAGE 200)
3) MEMORANDUM OF SITE AGREEMENT (VOL 817 PAGE 189)
4) MEMORANDUM OF AGREEMENT (VOL 977 PAGE 163)
5) ASSIGNMENT AND ASSUMPTION OF LEASE (VOL 1013 PAGE 156)

ALL ITEMS ARE RECORDED IN THE TOWN OF BRANFORD LAND RECORDS. ALL ITEMS APPLY TO PARENT AND LEASED PARCEL. ALL ITEMS ARE PLOTTED WITH RESPECT TO MAP REFERENCE 1.

## GENERAL NOTES

1) THIS SURVEY WAS CONDUCTED ON THE GROUND IN NOV. 2014 AND TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.
2) THIS TYPE OF SURVEY IS A "DEPENDENT RESURVEY" (BASED ON MAP REFERENCE 1) AND IT CONFORMS TO CLASS A-2 HORIZONTAL ACCURACY.
3) BEARINGS SHOWN ARE BASED ON MAGNETIC NORTH NOV. 2014.
4) LATITUDE & LONGITUDE OF CENTER POINT OF TOWER ARE REFERENCED TO HORIZONTAL DATUM BASED ON CONNECTICUT COORDINATE GRID NAD 83.
5) UNDERGROUND UTILITIES WERE NOT INVESTIGATED AS PART OF THIS SURVEY.
6) PROPERTY IS SUBJECT TO TO THE FOLLOWING EASEMENTS AND RIGHTS:
   CONNECTICUT LIGHT AND POWER: VOL 132 PG 32
   SOUTHERN NEW ENGLAND TELEPHONE COMPANY: VOL 355 PG 793
   PUBLIC RIGHT OF WAY AND PUBLIC UTILITY COMPANY:
7) PROPERTY IS RECORDED IN BRANFORD LAND RECORDS AS VOL 788 PG 1038.
8) PROPERTY HAS ADEQUATE ACCESS TO PUBLIC RIGHT OF WAY THROUGH BRUSHY PLAIN ROAD, A MAINTAINED PUBLIC ROAD.

MAP REFERENCE:

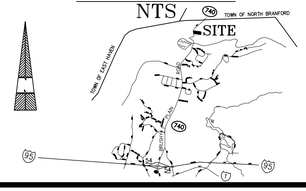
1. "Parcel to be leased by: Southern New England Telephone co. from Marsha Jasudowich #405 Brushy Plain Road Branford, Connecticut." Prepared by Cahn INC. Wallingford, Connecticut Scale 1"=20' Dated June 1982. Which map is on file in the Town of Branford land records.

ZONING REGULATIONS SCHEDULE OF LOT AND BUILDING REQUIREMENTS.

| DISTRICT | MIN LOT AREA | MIN LOT RECTANGLE | MIN FRONT YARD | MIN SIDE YARD | MIN REAR YARD | MAX LOT COVERAGE | MAX BUILDING HEIGHT | MAX IMPERVIOUS SURFACE COVERAGE |
|---|---|---|---|---|---|---|---|---|
| R-4 | 20,000 sq. ft. | 125' X 125' | 40' | 20' | 50' | 25% | 35' | N/A |

## VICINITY MAP

NTS

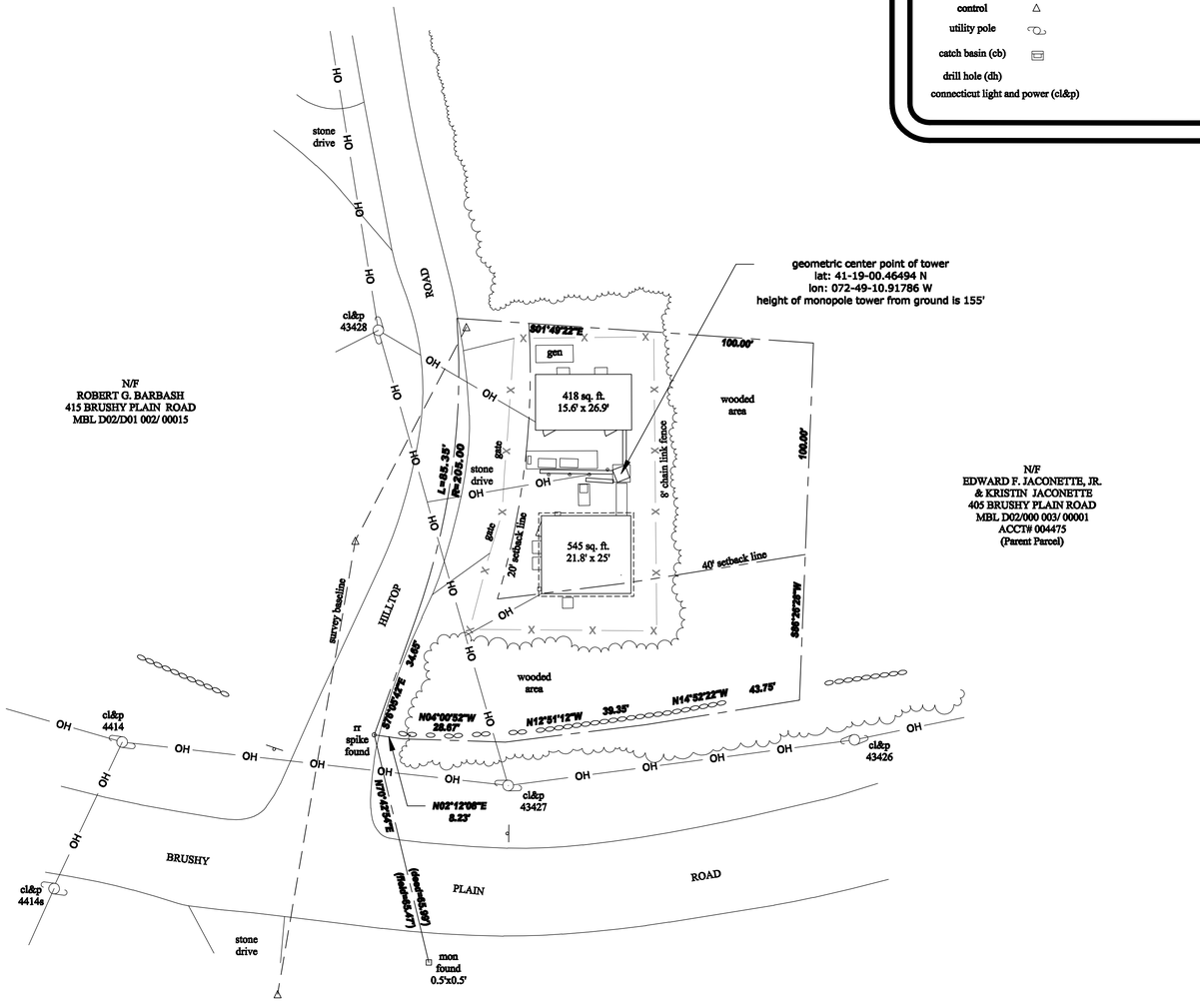



## LAND AREA

THE PRESENT PARENT PARCEL KNOW AS 405 BRUSHY PLAIN ROAD MBL (D02/ 000 003/00001) BRANFORD, CT, BEING OWNED BY EDWARD F. & KRISTIN L. JACONETTE CONTAINS 4.5 AC. (196,020 SQ. FT.). THE LEASED PARCEL CONTAINS 0.267 AC. (11,613.26 SQ. FT.)

## BASIS OF BEARINGS

MAGNETIC NORTH
NOV. 2014




MAGNETIC NORTH NOV. 2014

0 20 40
GRAPHIC SCALE: 1" = 20'

## LEGEND

| | | | |
|---|---|---|---|
| ipipe | ○ | rail road spike (rr) | ◦ |
| monument (mon) | □ | stonewall | |
| bollard | ◦ | sign | |
| control | △ | | |
| utility pole | | | |
| catch basin (cb) | | | |
| drill hole (dh) | | | |
| connecticut light and power (cl&p) | | | |

## LEGAL DESCRIPTION

405 Brushy Plain Road Branford, CT

MBL D02/000 03/00001

LEASED PARCEL

A CERTAIN PIECE OR PARCEL OF LAND CONTAINING 0.267 ACRES, LOCATED ON THE EASTERLY SIDE OF BRUSHY PLAIN ROAD IN THE TOWN OF BRANFORD, COUNTY OF NEW HAVEN AND STATE OF CONNECTICUT, AND BEING MORE PARTICULARLY SHOWN ON MAP ENTITLED "PARCEL TO BE LEASED BY: SOUTHERN NEW ENGLAND TELEPHONE CO. FROM MARSHA JASUDOWICH #405 BRUSHY PLAIN ROAD BRANFORD, CONNECTICUT." PREPARED BY CAHN INC. WALLINGFORD, CONNECTICUT SCALE 1"=20' DATED JUNE 1982. WHICH MAP IS ON FILE IN THE TOWN OF BRANFORD LAND RECORDS AND MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTH WEST CORNER OF THE PARENT PARCEL KNOW AS 405 BRUSHY PLAIN ROAD BEING MARKED BY A RR SPIKE WHICH IS ON THE EASTERLY STREET LINE OF BRUSHY PLAIN ROAD AND SOUTHERLY STREET LINE OF HILLTOP ROAD (PRIVATE), SAID POINT MARKING THE LINE BETWEEN LAND N/F OF ROBERT G. BARBASH AND EDWARD F. & KRISTIN L. JACONETTE; THENCE RUNNING S76°05'42"E ALONG THE SOUTHERLY STREET LINE OF HILLTOP ROAD (PRIVATE) A DISTANCE OF 34.65' TO A POINT; THENCE RUNNING ALONG A CURVED LINE HAVING A RADIUS OF 205 AND A LENGTH OF 85.35 TO A POINT; THENCE RUNNING S01°49'22"E A DISTANCE OF 100.0' TO A POINT; THENCE RUNNING S86°26'28"W A DISTANCE OF 100.0' TO A POINT, THE LAST TWO COURSES BEING ALONG LAND N/F OF EDWARD F. & KRISTIN L. JACONETTE; THENCE RUNNING N14°52'22"W FOR A DISTANCE OF 43.75 TO A POINT; THENCE RUNNING N12°51'12"WA DISTANCE OF 39.55' TO A POINT; THENCE RUNNING N04°00'52"W A DISTANCE OF 28.67' TO A POINT; THENCE RUNNING N02°12'08"W A DISTANCE OF 8.23' TO SAID POINT OF BEGINNING, THE LAST FOUR COURSES BEING ALONG THE EASTERLY STREET LINE OF BRUSHY PLAIN ROAD. (AS SURVEYED DESCRIPTION)

PARENT PARCEL

THE PARENT TRACT IS DESCRIBED AND DEPICTED AS FOLLOWS:

ALL THAT CERTAIN PIECE OR PARCEL OF LAND WITH BUILDINGS AND IMPROVEMENTS THEREON, SITUATED IN THE TOWN OF BRANFORD, COUNTY OF NEW HAVEN, AND STATE OF CONNECTICUT, CONTAINING FOUR AND ONE-HALF (4 ½) ACRES, MORE OR LESS, AND BEING BOUNDED AND DESCRIBED AS FOLLOWS: WESTERLY; BY BRUSHY PLAIN ROAD, NORTHERLY; BY A RIGHT OF WAY, KNOW AS HILLTOP DRIVE, EASTERLY; BY LAND NOW OR FORMERLY OF PHILIMINA WALSTONE, ALSO KNOW AS PHILOMINA WALTON. 432.40 FEET, MORE OR LESS, SOUTHERLY; BY LAND NOW OR FORMERLY OF ANTONIO TREGLIA, TOGETHER WITH RIGHT OF WAY OVER SAID HILLTOP DRIVE. SAID PREMISES ARE SUBJECT TO PUBLIC UTILITY COMPANY EASEMENTS AS OF RECORD APPEAR.

The property hereon described is the same as the pertinent property as described in Lincoln Abstract settlement services. Score Report file no. 2014110596 searched from 11/14/1994 - 11/14/2014

SHEET TITLE
As Built Survey

PROJECT
302484 BRANFORD, CT 6
405 BRUSHY PLAIN ROAD
BRANFORD, CONNECTICUT 06405

SURVEYED BY:


CARDINAL ENGINEERING ASSOCIATES
3 Colony Street I Meriden, CT 06451 I 203-238-1949
CARDINAL-ENGINEERING.COM
CEA JOB #2206


DRAWN BY: AJC
CHECKED BY: BJC

## As Built Survey

SURVEYOR'S CERTIFICATE:

To: American Towers LLC & Lincoln Abstract Settlement Services.

THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTION 20-300b-1 THROUGH 20-300b-20, AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS. INC. ON SEPTEMBER 26, 1996.

The field work was completed on 11-25-14.

Date of Plat or Map: DEC. 19, 2014

STATE OF CONNECTICUT
BERNARD V. PENKOLA
No. 18825
LICENSED LAND SURVEYOR

BERNARD V. PENKOLA L.S. #18825

| NO. | DATE | REVISION |
|---|---|---|
| 1. | 12/19/14 | ORDDS COMMENTS |
| 2. | | |
| 3. | | |
| 4. | | |
| 5. | | |

COORDINATED BY:

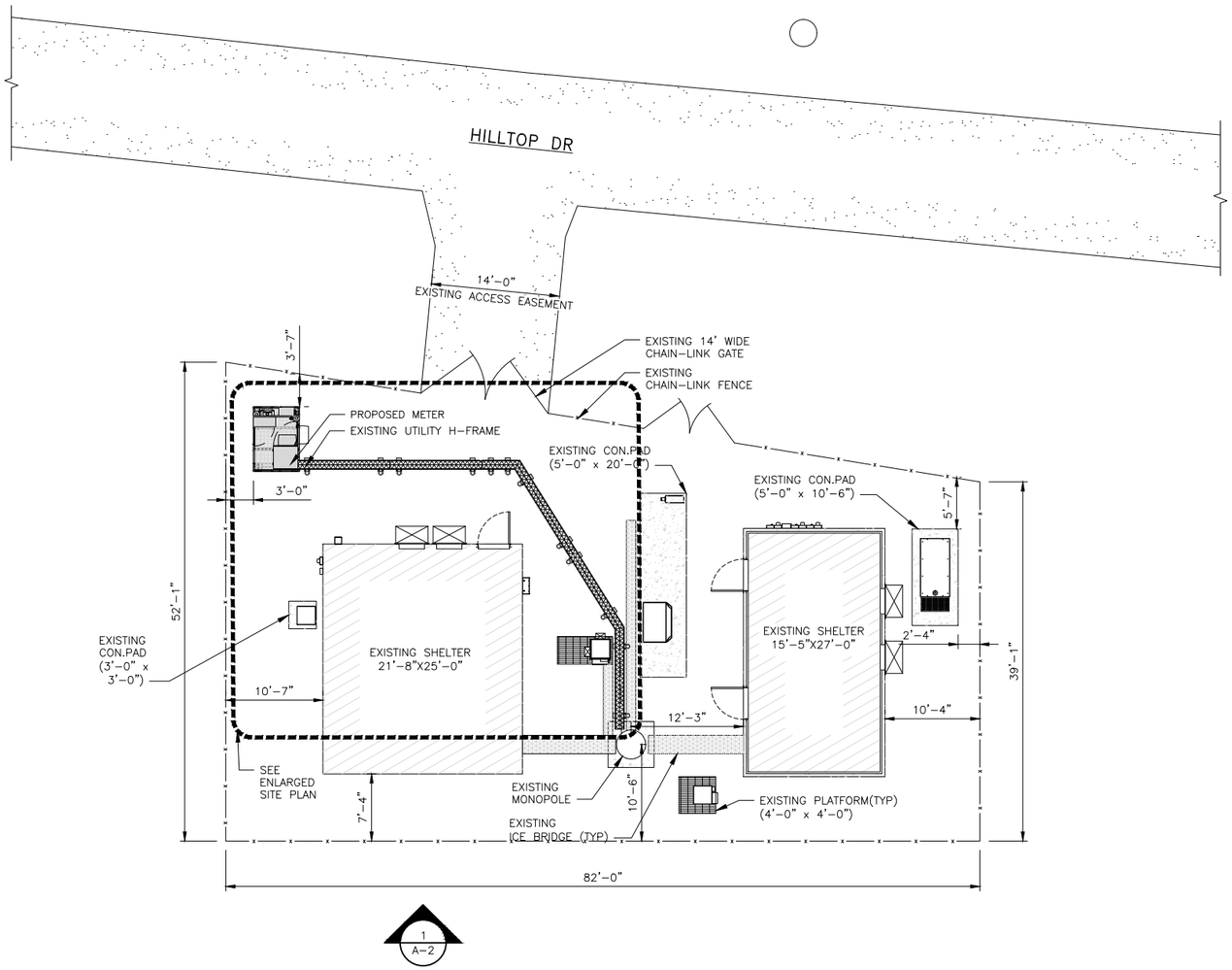

OLD REPUBLIC COMMERCIAL DUE DILIGENCE SERVICES
A MEMBER OF THE OLD REPUBLIC TITLE INSURANCE GROUP
Preston Park Financial Center East
4965 Preston Park Blvd #620
Plano, TX 75093
P:(972) 943-5300 F:(972) 943-5339


PROJECT NUMBER
142616-S

SHEET
1 OF 1

## NOTES

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





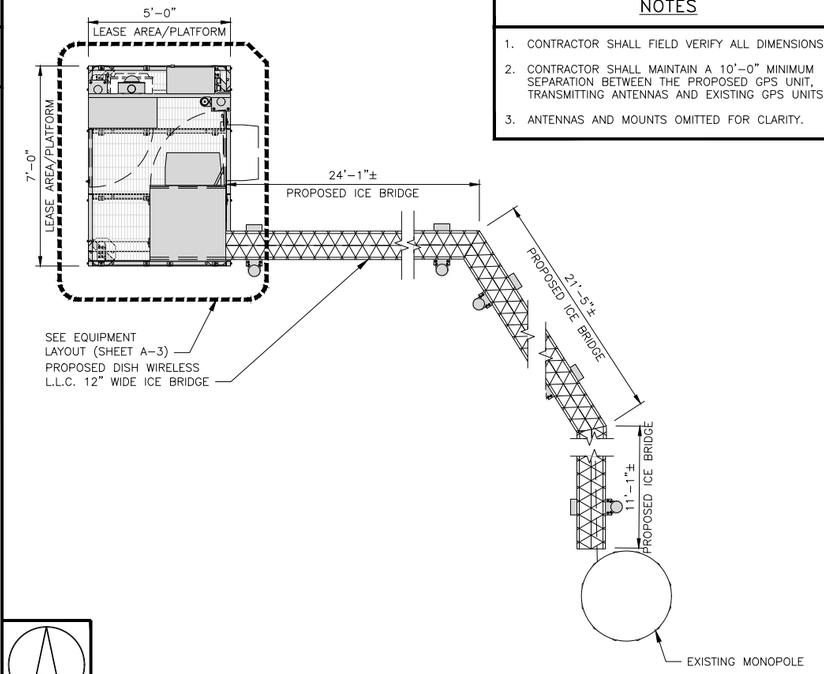
OVERALL SITE PLAN

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

1

## NOTES

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





ENLARGED SITE PLAN

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

2


AERIAL IMAGE

3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STATE OF CONNECTICUT ★ CHAD JOSEPH TUTTLE ★ No. 23924 LICENSED PROFESSIONAL ENGINEER

11/3/21

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



| DRAWN BY: | CHECKED BY: | APPROVED BY: |
|---|---|---|
| ANP | JCO | MDW |

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

| REV | DATE | DESCRIPTION |
|---|---|---|
| A | 8/1/21 | ISSUED FOR REVIEW |
| 0 | 11/3/21 | ISSUED FOR CONSTRUCTION |

A&E PROJECT NUMBER

154059.004.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

SHEET TITLE

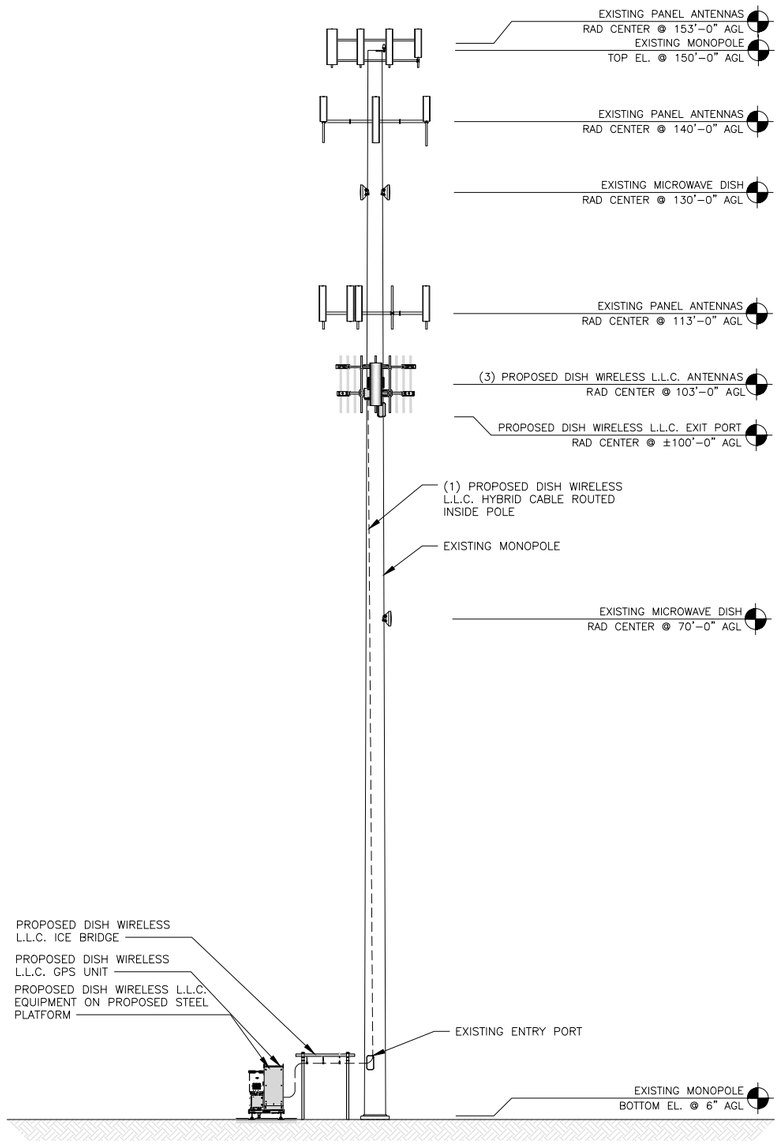
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

**A-1**

## NOTES

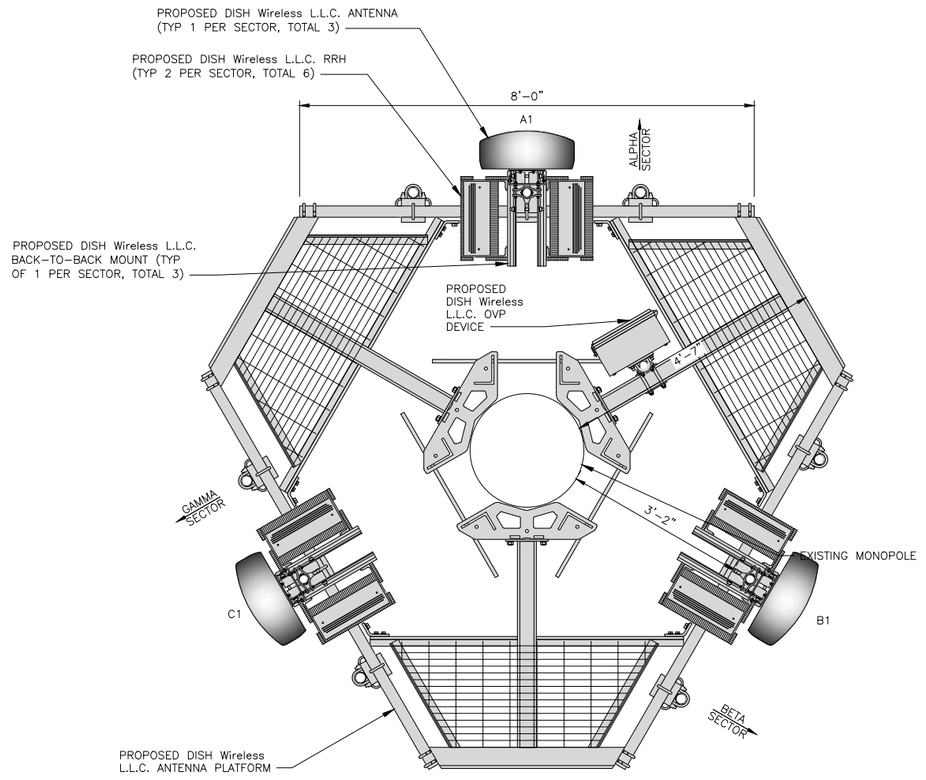
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.




PROPOSED SOUTH ELEVATION

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

1




N

ANTENNA LAYOUT

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

2

| SECTOR | POSITION | ANTENNA | | | | | | TRANSMISSION CABLE |
|---|---|---|---|---|---|---|---|---|
| | | EXISTING OR PROPOSED | MANUFACTURER – MODEL NUMBER | TECHNOLOGY | SIZE (HxW) | AZIMUTH | RAD CENTER | FEED LINE TYPE AND LENGTH |
| ALPHA | A1 | PROPOSED | JMA – MX08FRO665-21 | 5G | 72.0" x 20.0" | 0° | 103'-0" | (1) HIGH-CAPACITY HYBRID CABLE (185' LONG) |
| BETA | B1 | PROPOSED | JMA – MX08FRO665-21 | 5G | 72.0" x 20.0" | 120° | 103'-0" | |
| GAMMA | C1 | PROPOSED | JMA – MX08FRO665-21 | 5G | 72.0" x 20.0" | 240° | 103'-0" | |

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

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3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11/3/21


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




| DRAWN BY: | CHECKED BY: | APPROVED BY: |
|---|---|---|
| ANP | JCO | MDW |

RFDS REV #: 1.0

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| 0 | 11/3/21 | ISSUED FOR CONSTRUCTION |

A&E PROJECT NUMBER

154059.004.01

DISH Wireless L.L.C.
PROJECT INFORMATION

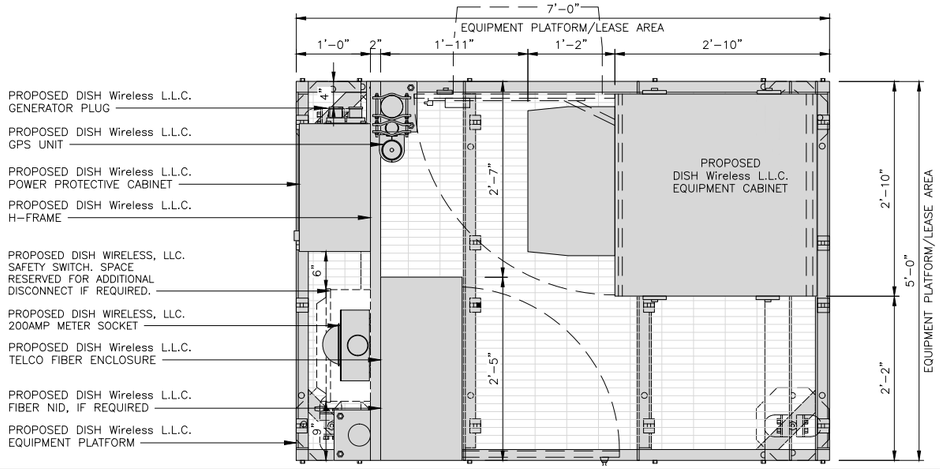
BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

**A-2**



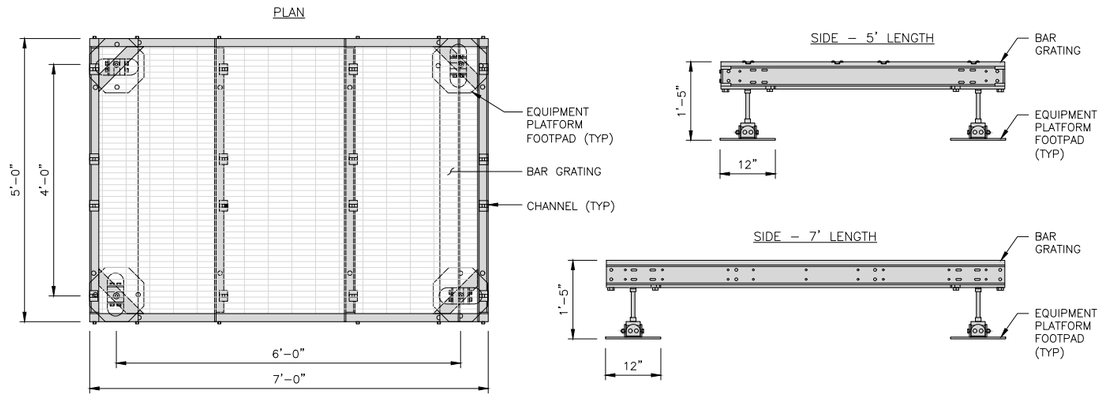

PLATFORM EQUIPMENT PLAN

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

1

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

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

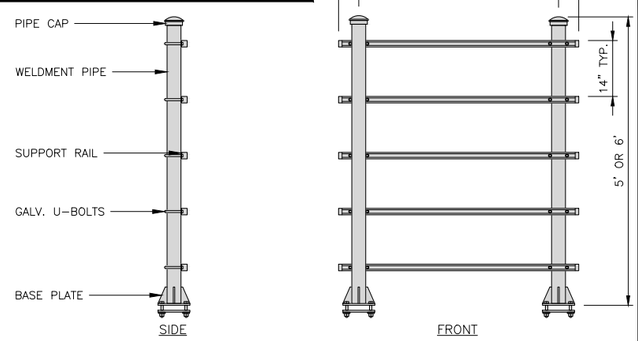



PLATFORM DETAIL

NO SCALE

2

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




H-FRAME DETAIL

NO SCALE

3

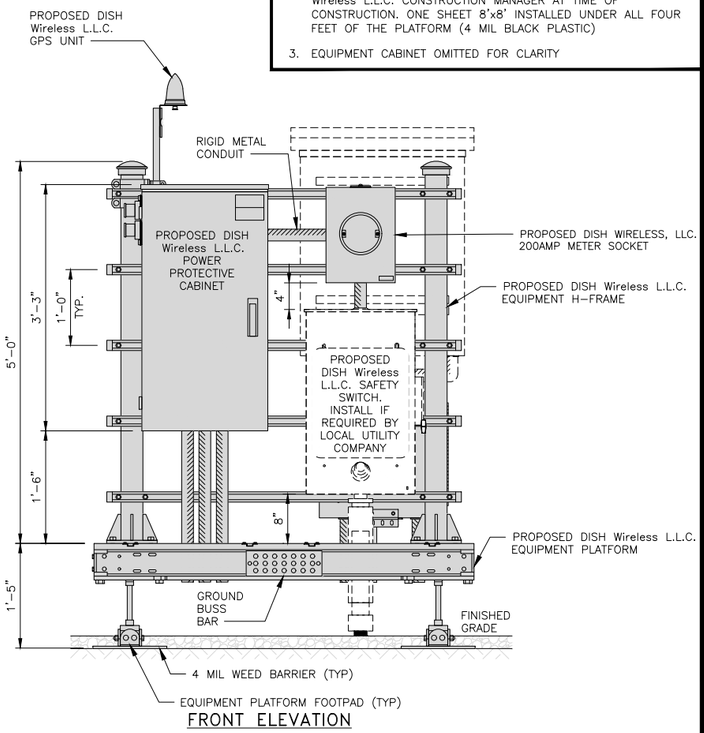
NOT USED

NO SCALE

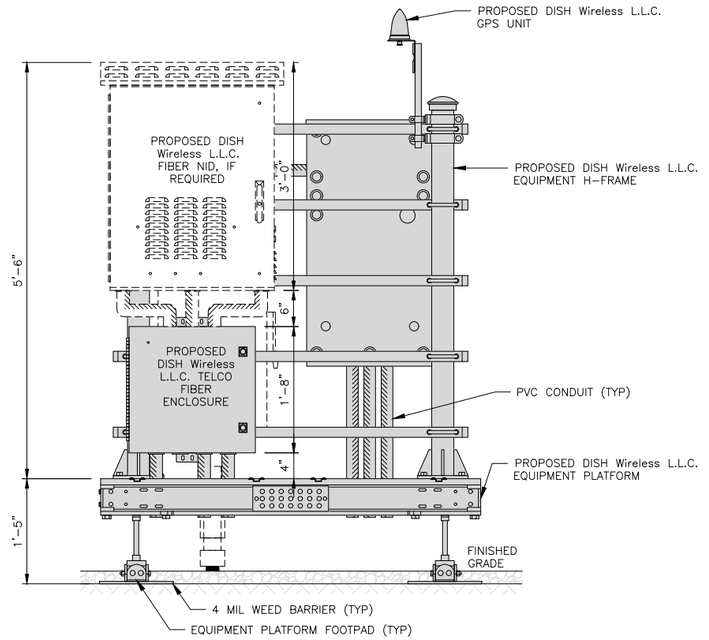
4

## NOTES

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




FRONT ELEVATION




BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

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

5

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RFDS REV #: 1.0

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A&E PROJECT NUMBER
154059.004.01

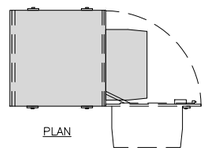
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

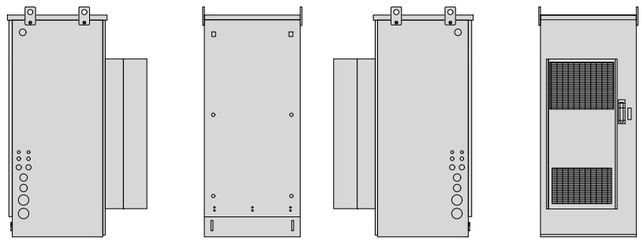
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

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

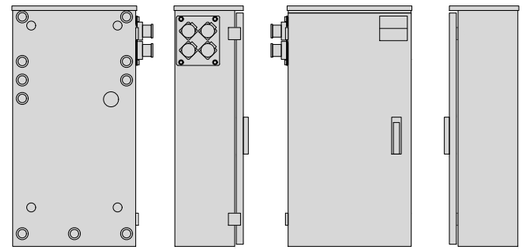

SIDE BACK SIDE FRONT

CABINET DETAIL | NO SCALE | 1

## RAYCAP PPC RDIAC–2465–P–240–MTS

| | |
|---|---|
| ENCLOSURE DIMENSIONS (HxWxD): | 39"x22.855"x12.593 |
| WEIGHT: | 80 lbs |
| OPERATING AC VOLTAGE | 240/120 1 PHASE 3W+G |


TOP

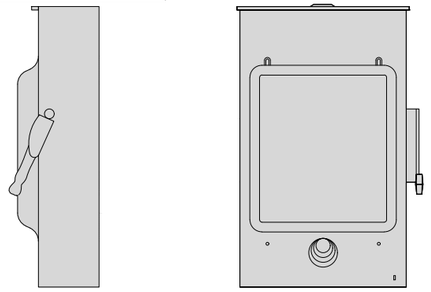

BACK SIDE FRONT SIDE

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

## SQUARE D SAFETY SWITCHES D224NRB

| | |
|---|---|
| ENCLOSURE DIM (HxWxD) | 29.25"x19.00"x8.50" |
| ENCLOSURE TYPE | NEMA 3R RAINPROOF |
| UL LISTED | FILE E–2875 |

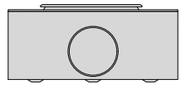

TOP

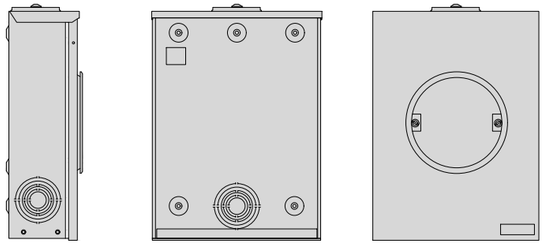

SIDE FRONT

SAFETY SWITCH DETAIL | NO SCALE | 3

## 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 FIBER NID ENCLOSURE

| | |
|---|---|
| DIMENSIONS (HxWxD) | 17"x16.8"x7" |
| WEIGHT | 28.6 lbs |

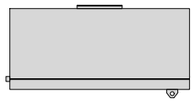

TOP

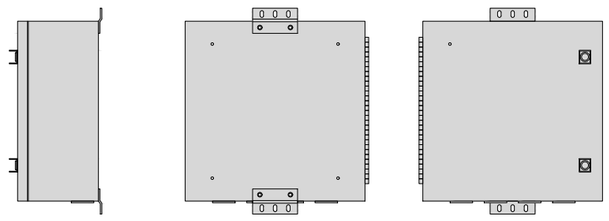

SIDE FRONT

FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

## CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE

| | |
|---|---|
| ENCLOSURE DIMS (HxWxD) | 20"x20"x9" |
| ENCLOSURE WEIGHT | 20 lbs |
| MOUNTING | WALL |
| COMPLIANCE | TYPE 4 |


FRONT

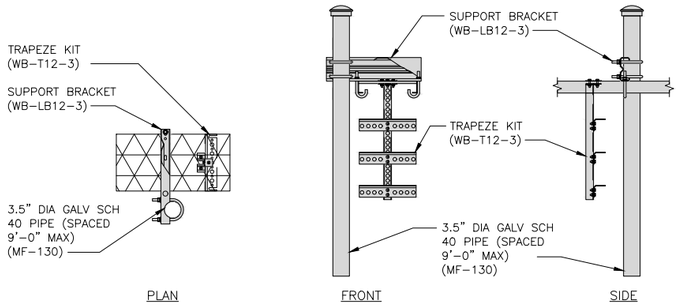

SIDE BACK FRONT

FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

## COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT

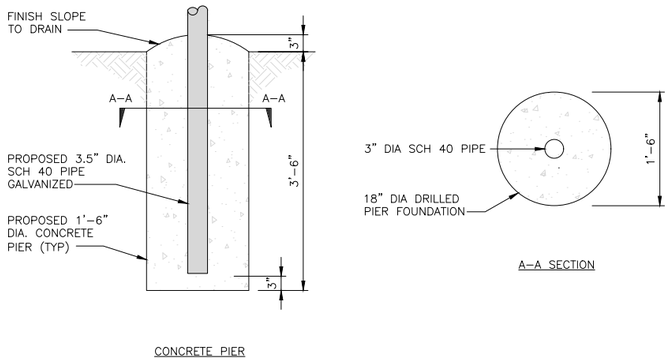
| | |
|---|---|
| DIMENSIONS (HxL) | 160"x10' |
| WEIGHT/ VOLUME | 325.0 LBS |
| CABLE RUN (QTY) | 12 |

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



PLAN FRONT SIDE

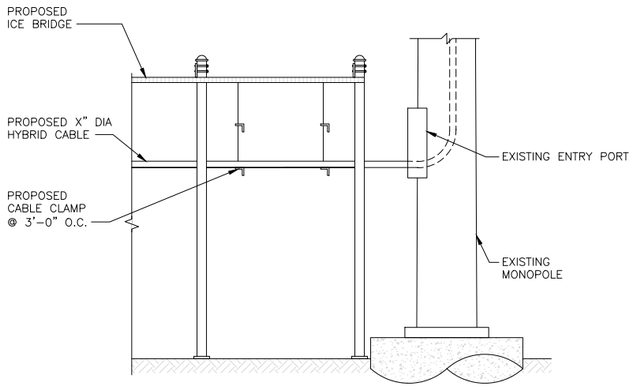
ICE BRIDGE DETAIL | NO SCALE | 7



CONCRETE PIER

A–A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8




HYBRID CABLE RUN | NO SCALE | 9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| DRAWN BY: | CHECKED BY: | APPROVED BY: |
|---|---|---|
| ANP | JCO | MDW |

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

| REV | DATE | DESCRIPTION |
|---|---|---|
| A | 8/1/21 | ISSUED FOR REVIEW |
| 0 | 11/3/21 | ISSUED FOR CONSTRUCTION |

A&E PROJECT NUMBER

154059.004.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

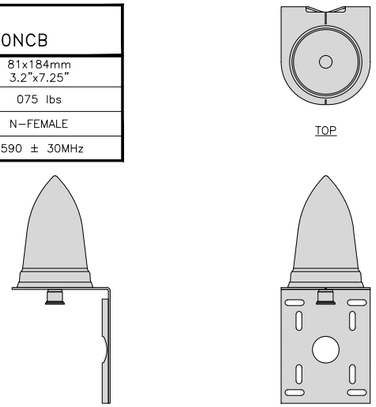
SHEET TITLE

EQUIPMENT DETAILS

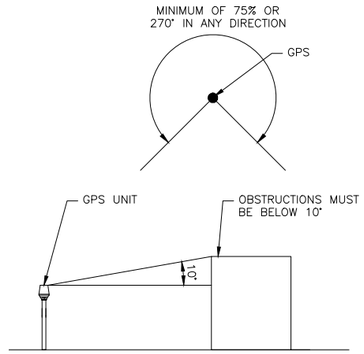
SHEET NUMBER

A-4

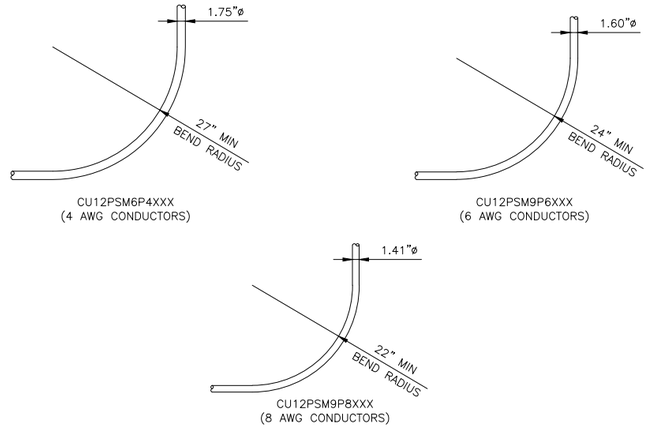
| PCTEL GPSGL-TMG-SPI-40NCB | |
|---|---|
| DIMENSIONS (DIAxH) MM/INCH | 81x184mm 3.2"x7.25" |
| WEIGHT W/ACCESSORIES | 075 lbs |
| CONNECTOR | N-FEMALE |
| FREQUENCY RANGE | 1590 ± 30MHz |




GPS DETAIL | NO SCALE | 1




GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2




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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9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DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

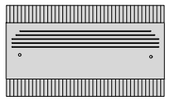
SHEET TITLE

EQUIPMENT DETAILS

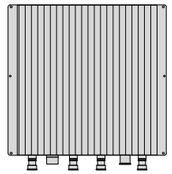
SHEET NUMBER

**A-5**

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



PLAN



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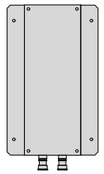
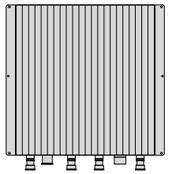


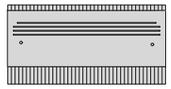
SIDE



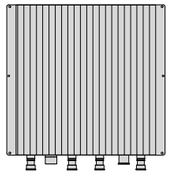
FRONT

RRH DETAIL | NO SCALE | 1

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



PLAN



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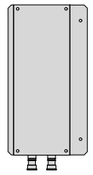
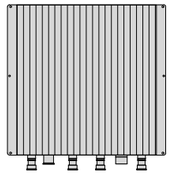


SIDE

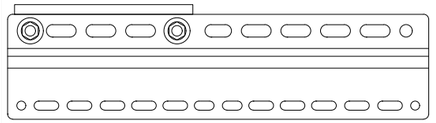


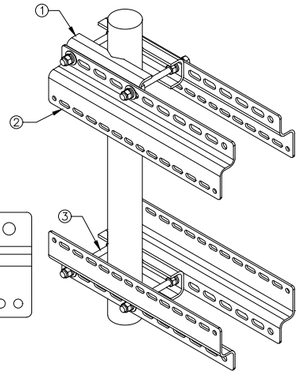
FRONT

RRH DETAIL | NO SCALE | 2

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

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

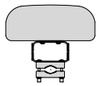




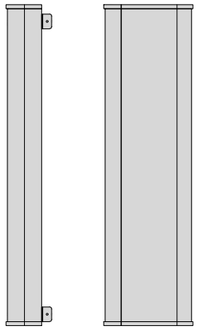

NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

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



PLAN



SIDE



FRONT

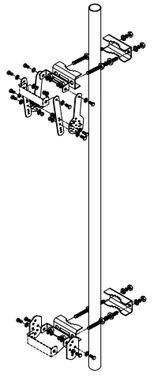
ANTENNA DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

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

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

ANTENNA BRACKET NOT PART OF KIT

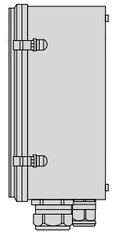


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

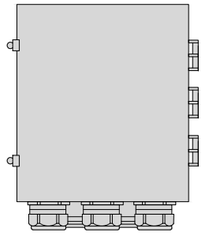
ANTENNA BRACKET DETAIL | NO SCALE | 6

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

PLAN



SIDE



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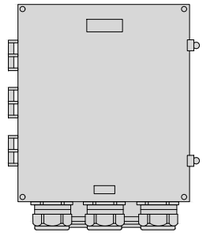
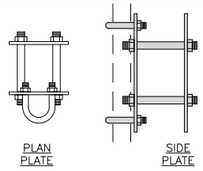


FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

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

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

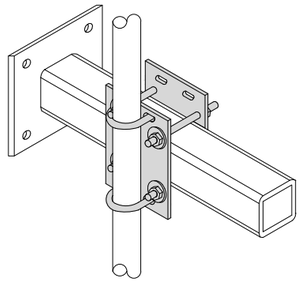


PLAN PLATE

SIDE PLATE

PLAN U-BOLT

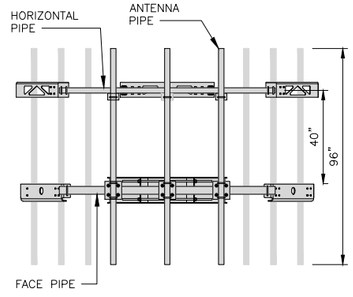
SIDE U-BOLT

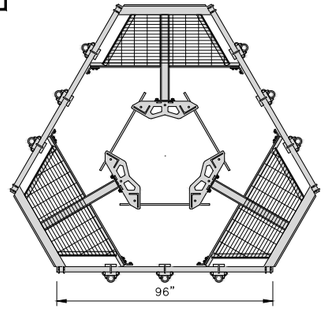


RRH/OVP MOUNT DETAIL | NO SCALE | 8

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

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




ANTENNA PLATFORM DETAIL | NO SCALE | 9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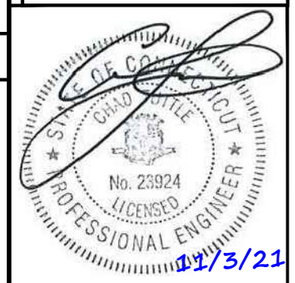


11/3/21


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Expires 2/10/22




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| ANP | JCO | MDW |

RFDS REV #: 1.0

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A&E PROJECT NUMBER

154059.004.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

SHEET TITLE

EQUIPMENT DETAILS

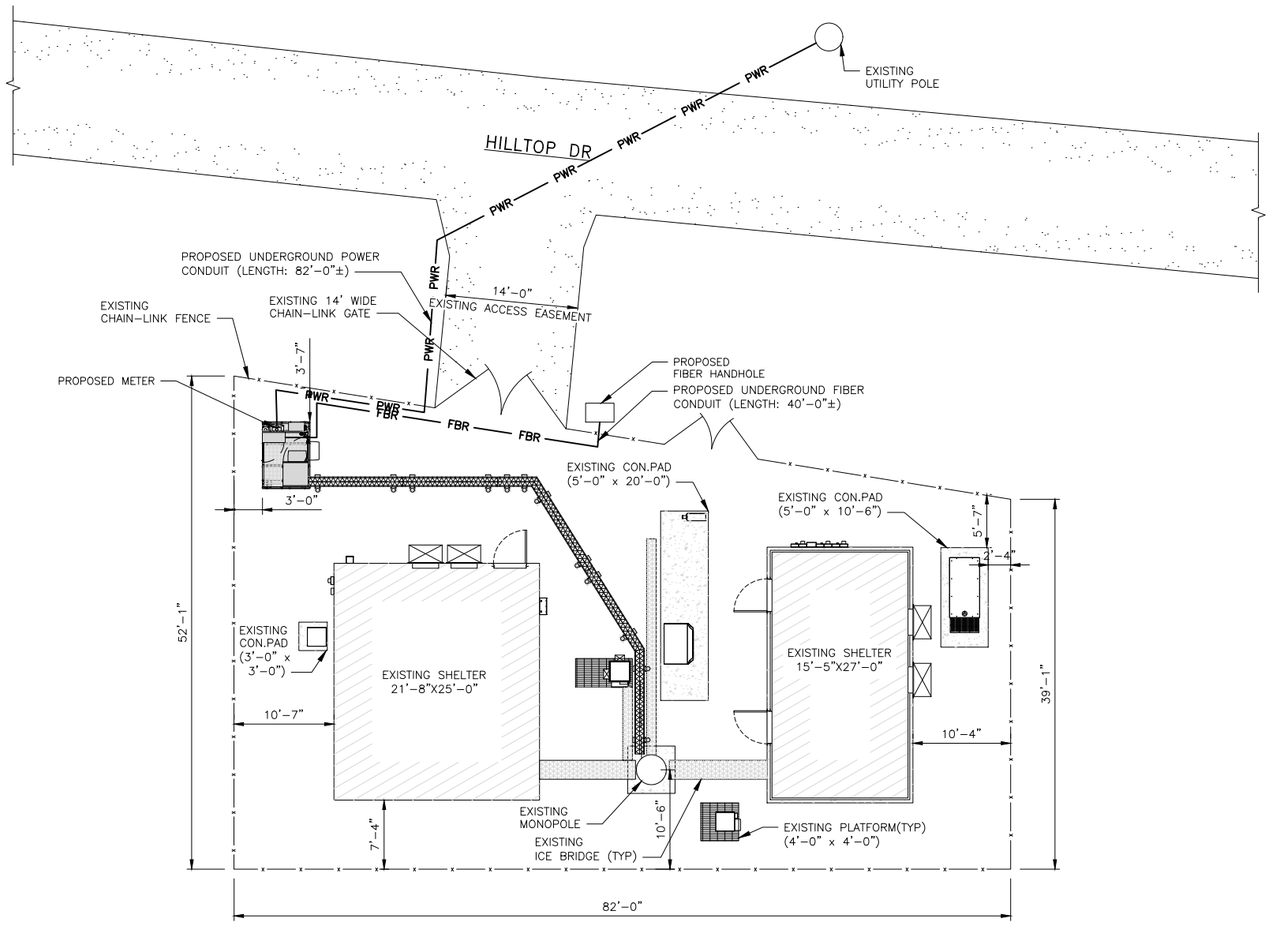
SHEET NUMBER

**A-6**

FINAL POWER OR FIBER DESIGN
NOT AVAILABLE AT TIME OF ISSUE

## NOTES

1. AMERICAN TOWER'S GROUND RIGHTS DO NOT INCLUDE A UTILITIES EASEMENT. LICENSEE WILL NEED TO OBTAIN A UTILITY EASEMENT AND CONSTRUCTION CONTRACTOR MUST FIELD VERIFY ALL PROPOSED UTILITY ROUTES ARE WITHIN THE OBTAINED EASEMENT.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.




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

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



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DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
**E-1**

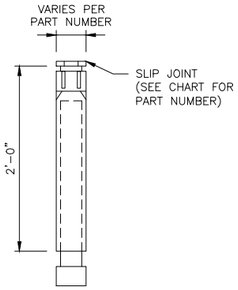
N

UTILITY ROUTE PLAN | 8' 4' 0 8' 16' (1/8"=1'-0") | 1

ELECTRICAL NOTES | NO SCALE | 2

## CARLON EXPANSION FITTINGS

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

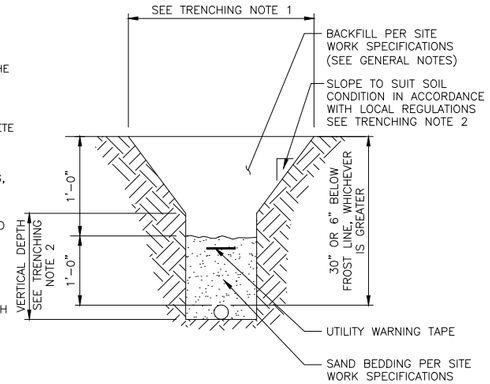



NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

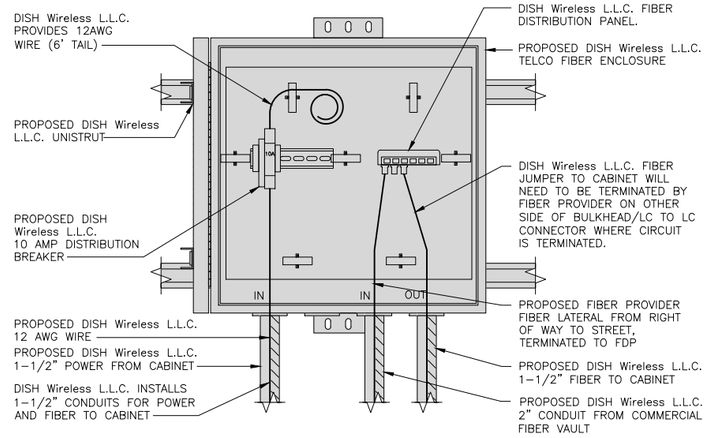
EXPANSION JOINT DETAIL | NO SCALE | 1

## TRENCHING NOTES

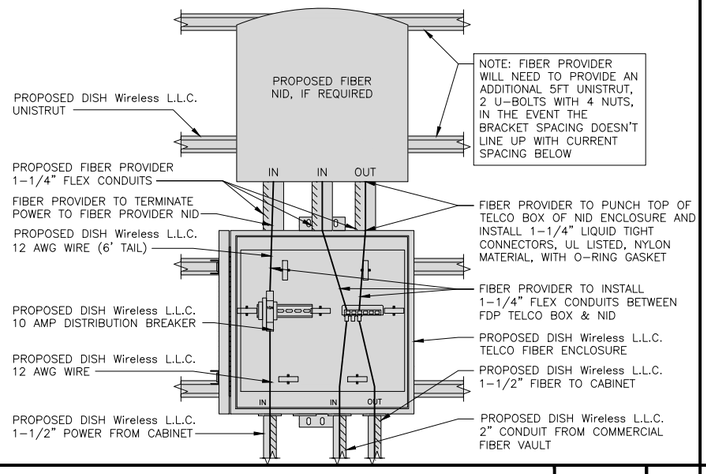
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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




TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2




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




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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9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STATE OF CONNECTICUT
CHAD JOSEPH TUTTLE
No. 23924
LICENSED PROFESSIONAL ENGINEER
11/3/21


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




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|---|---|---|
| ANP | JCO | MDW |

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

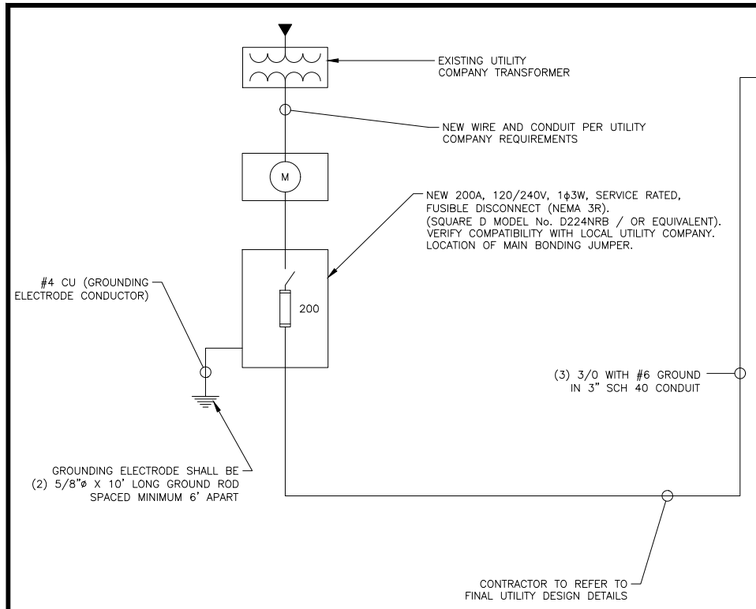
| REV | DATE | DESCRIPTION |
|---|---|---|
| A | 8/1/21 | ISSUED FOR REVIEW |
| 0 | 11/3/21 | ISSUED FOR CONSTRUCTION |

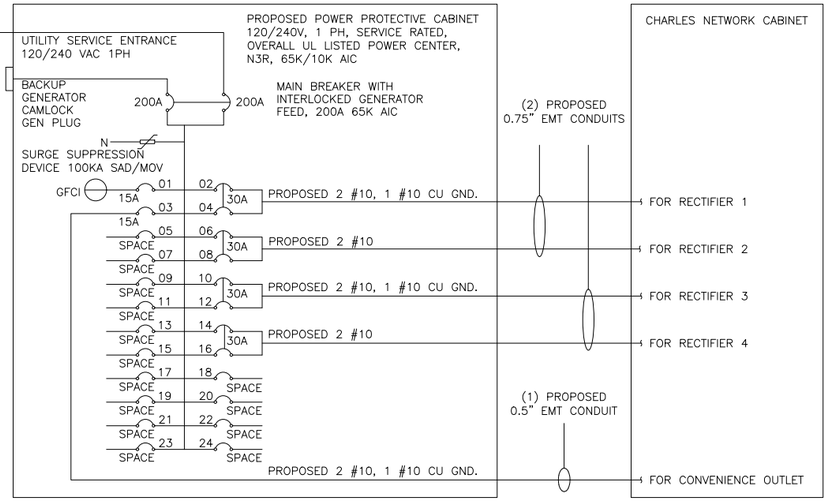
A&E PROJECT NUMBER
154059.004.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2




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

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

## NOTES

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

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

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

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

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

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

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

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

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

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

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

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

PPC ONE–LINE DIAGRAM | NO SCALE | 1

## PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE | NO SCALE | 2

NOT USED | NO SCALE | 3

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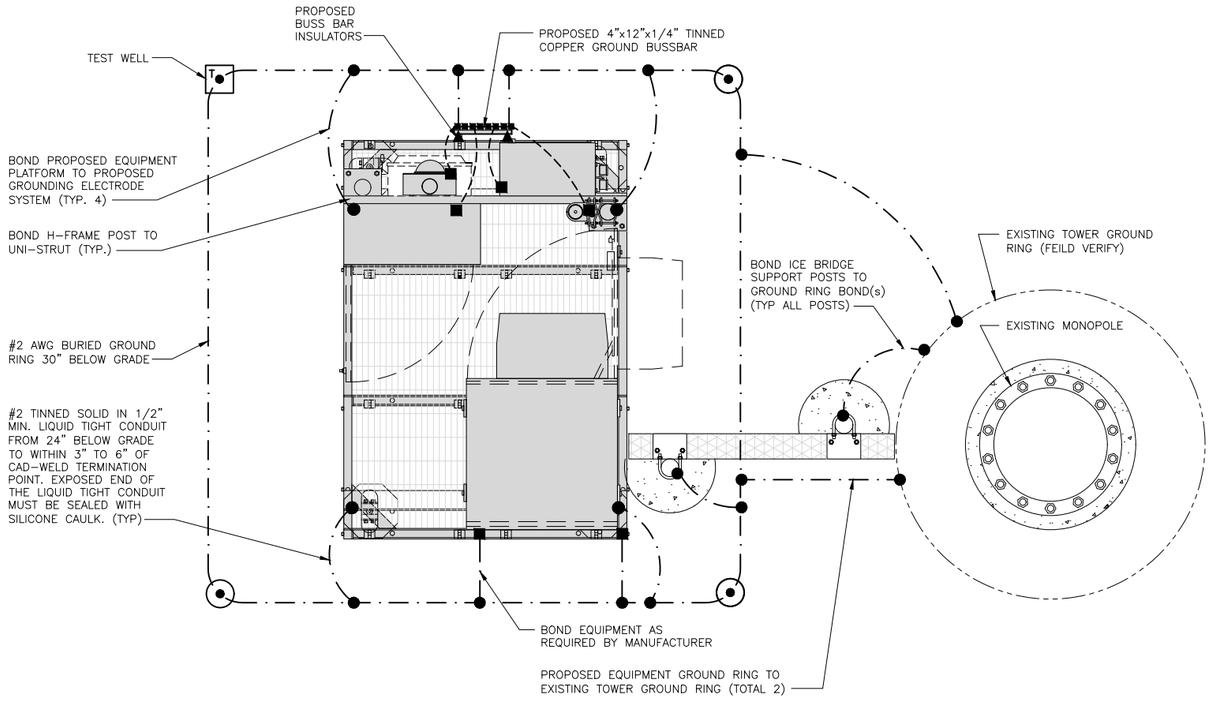
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

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

SHEET NUMBER
E-3

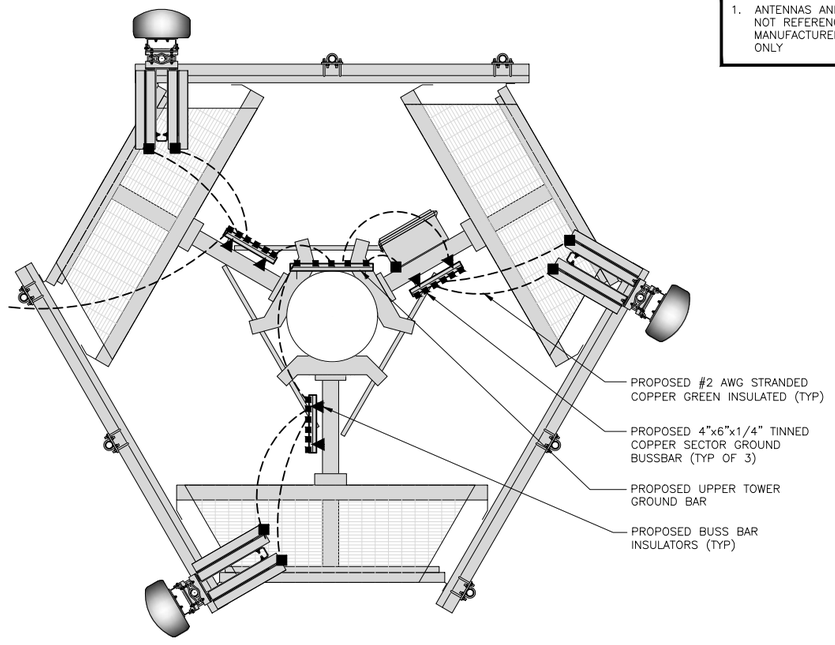



## TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1

### NOTES

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




## TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

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

## GROUNDING LEGEND

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

## GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

## GROUNDING KEY NOTES

NO SCALE | 3

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A&E PROJECT NUMBER
154059.004.01

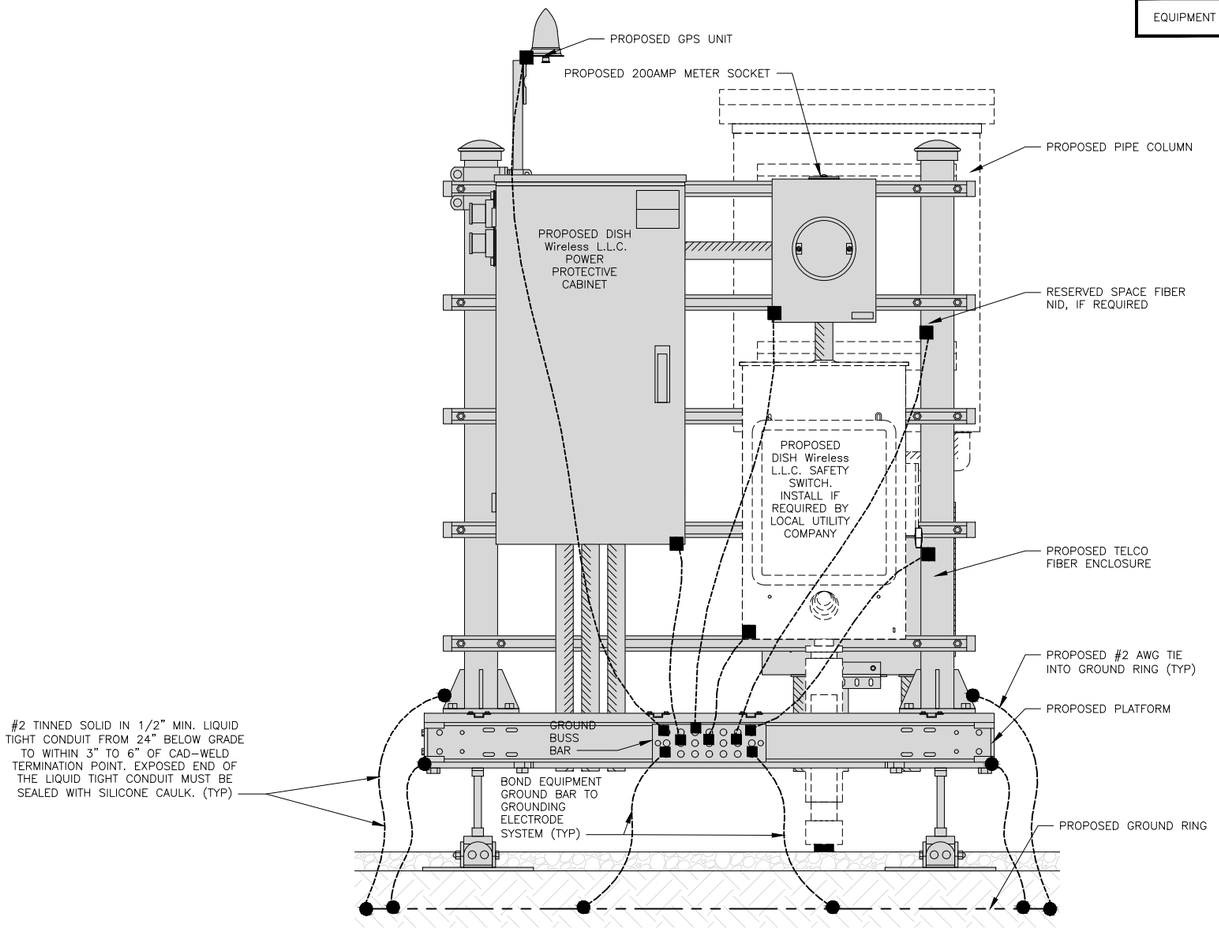
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

## NOTES

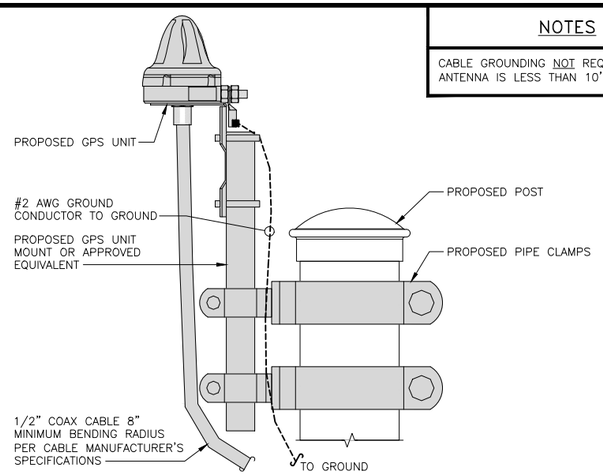
EQUIPMENT CABINET OMITTED FOR CLARITY



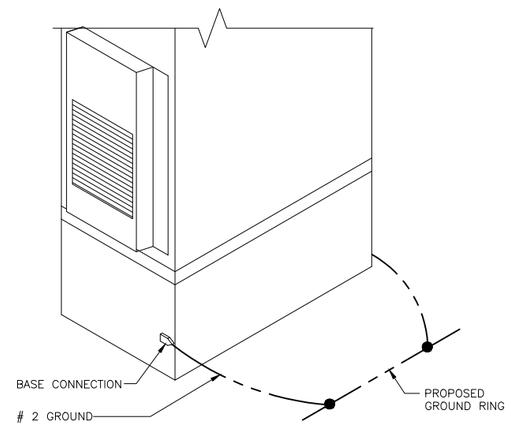

H-FRAME GROUNDING DETAIL | NO SCALE | 1

## NOTES

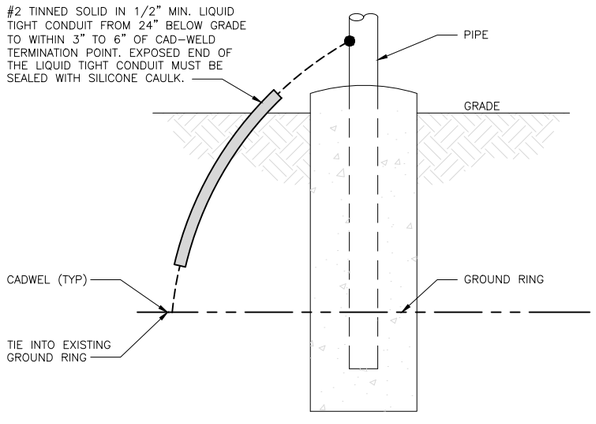
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



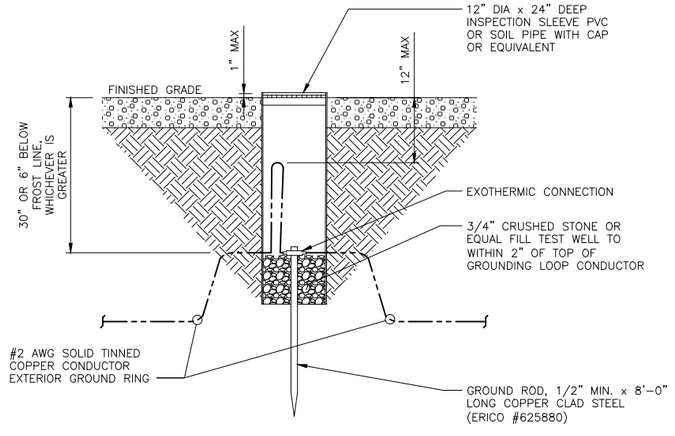

TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



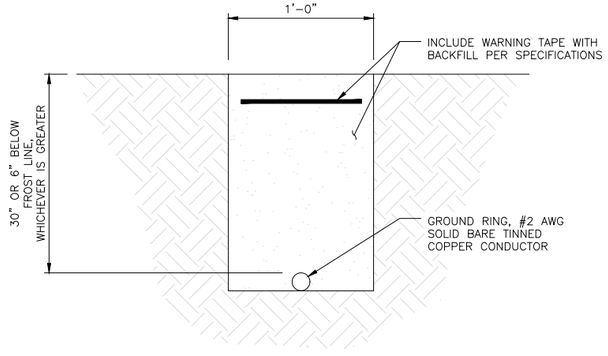

OUTDOOR CABINET GROUNDING | NO SCALE | 3




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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BRANFORD, CT 06405

SHEET TITLE

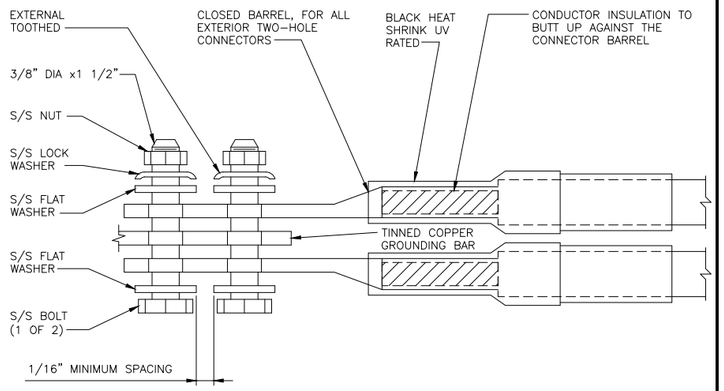
GROUNDING DETAILS

SHEET NUMBER

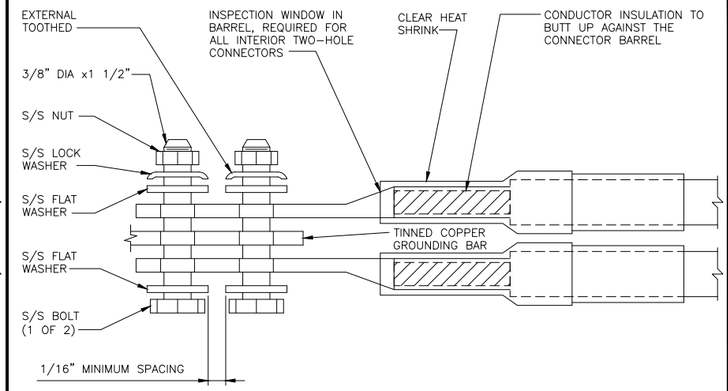
**G-2**

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

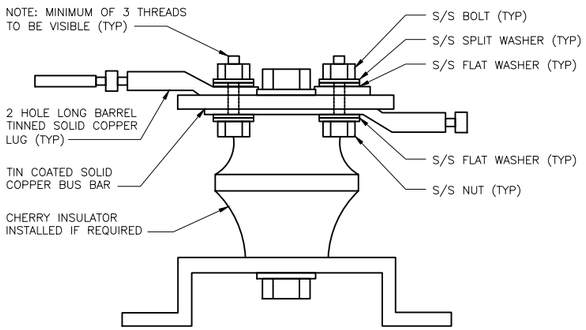
TYPICAL GROUNDING NOTES | NO SCALE | 1




TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2




TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3




LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9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405 BRUSHY PLAIN RD
BRANFORD, CT 06405

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

**G-3**

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

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

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

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

MID–BAND RRH
(AWS BANDS N66+N70)

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

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

## HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

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

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

EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.

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

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

## FIBER JUMPERS TO RRHs

LOW–BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.

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

## POWER CABLES TO RRHs

LOW–BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY

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

## RET MOTORS AT ANTENNAS

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

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

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

## MICROWAVE RADIO LINKS

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

MICROWAVE CABLES WILL REQUIRE P–TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID's.

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

RF CABLE COLOR CODES | | 1

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

AWS (N66+N70+H–BLOCK): PURPLE

CBRS TECH (3 GHz): YELLOW

NEGATIVE SLANT PORT ON ANT/RRH: WHITE

| ALPHA SECTOR | BETA SECTOR | GAMMA SECTOR |
|---|---|---|
| RED | BLUE | GREEN |

COLOR IDENTIFIER | | 2

NOT USED | | 3

NOT USED | | 4


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STATE OF CONNECTICUT — CHAD M. TUTTLE — No. 23924 — LICENSED PROFESSIONAL ENGINEER

11/3/21


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




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CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER
154059.004.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
**RF-1**

## LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM — 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 |


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154059.004.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

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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A&E PROJECT NUMBER

154059.004.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

**GN-2**

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.
5701 SOUTH SANTA FE DRIVE
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AMERICAN TOWER®
10 PRESIDENTIAL WAY
WOBURN, MA 01801

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STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER
11/3/21

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



| DRAWN BY: | CHECKED BY: | APPROVED BY: |
|---|---|---|
| ANP | JCO | MDW |

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

| REV | DATE | DESCRIPTION |
|---|---|---|
| A | 8/1/21 | ISSUED FOR REVIEW |
| 0 | 11/3/21 | ISSUED FOR CONSTRUCTION |

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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


dish wireless.

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STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER

11/3/21


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




| DRAWN BY: | CHECKED BY: | APPROVED BY: |
|---|---|---|
| ANP | JCO | MDW |

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS

| REV | DATE | DESCRIPTION |
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| A | 8/1/21 | ISSUED FOR REVIEW |
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PROJECT INFORMATION

BOHVN00142A
405 BRUSHY PLAIN RD
BRANFORD, CT 06405

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** | : | **150 ft Monopole** |
| **ATC Site Name** | : | **Branford CT 6, CT** |
| **ATC Asset Number** | : | **302484** |
| **Engineering Number** | : | **13701211_C3_03** |
| **Proposed Carrier** | : | **DISH WIRELESS L.L.C.** |
| **Carrier Site Name** | : | **BOHVN00142A** |
| **Carrier Site Number** | : | **BOHVN00142A** |
| **Site Location** | : | **405 Brushy Plain Rd**<br>**Branford, CT 06405-2308**<br>**41.316800,-72.819700** |
| **County** | : | **New Haven** |
| **Date** | : | **August 3, 2021** |
| **Max Usage** | : | **97%** |
| **Result** | : | **Pass** |

Prepared By:
Andy Schaffner
TEP

Reviewed By:

STATE OF CONNECTICUT
AARON THOMAS RUCKER
32608
LICENSED PROFESSIONAL ENGINEER

08/04/2021

**COA: PEC.0001553**

**Table of Contents**

## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 150 ft monopole to reflect the change in loading by DISH WIRELESS L.L.C..

## Supporting Documents

| | |
|---|---|
| **Tower Drawings** | PJF Job # 29297-629, dated October 2, 1997<br>SpectraSite Drawing #CT-0020/15, dated December 13, 2000 |
| **Foundation Drawing** | Mapped by ATC Tower ID #302484, dated February 13, 2009 |
| **Geotechnical Report** | Clarence Welti Geotechnical Engineering ID #CT-0020, dated October 8, 1996 |
| **Modifications** | SpectraSite Drawing CT-0020 M1, dated March 26, 2004<br>ATC Job # 26487334, dated September 15, 2006<br>ATC Job # 53055832, dated June 2, 2013 |

## 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:** | 117.94 mph (3-Second Gust)** |
| **Basic Wind Speed w/ Ice:** | 48.73 mph (3-Second Gust) w/ 0.85" 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 1 |
| **Topographic Category:** | 1 |
| **Spectral Response:** | Ss = 0.20, $S_1$ = 0.05 |
| **Site Class:** | D - Stiff Soil |

****Wind load and Ice thickness have been reduced by applicable existing structure load modification factors in accordance with TIA-222-H, Annex S.**

## 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 |
|---|---|---|---|---|---|
| 160.0 | 1 | 11' Dipole | Platform with Handrails | (3) 7/8" Coax<br>(1) 1 5/8" Coax | OTHER |
| 159.0 | 1 | 4' Omni | | | |
| 153.0 | 6 | Powerwave Allgon LGP21401 | | (2) 0.39" (10mm) Fiber Trunk<br>(4) 0.78" (19.7mm) 8 AWG 6<br>(6) 1 5/8" Coax<br>(3) 3" conduit<br>(1) 3/8" (0.38"-9.5mm) RET Control Cable | AT&T MOBILITY |
| | 1 | Raycap DC6-48-60-18-8F ("Squid") | | | |
| | 3 | Ericsson RRUS 8843 B2, B66A | | | |
| | 3 | Kathrein Scala 782-10250 | | | |
| | 6 | Powerwave Allgon 7020.00 Dual Band RET | | | |
| | 3 | Ericsson RRUS 4449 B5, B12 | | | |
| | 1 | Raycap DC6-48-60-18-8C | | | |
| | 3 | Ericsson RRUS 32 B30 (53 lbs) | | | |
| | 1 | Raycap DC6-48-60-18-8C-EV | | | |
| | 3 | Powerwave Allgon 7770.00 | | | |
| | 3 | CCI HPA65R-BU6A | | | |
| | 3 | Commscope SBNHH-1D65B | | | |
| | 3 | Kathrein Scala 80010965 | | | |
| 150.0 | 1 | GPS | Flush | (1) 1/2" Coax | VERIZON WIRELESS |
| 140.0 | 3 | Ericsson AIR 21, 1.3 M, B2A B4P | PerfectVision PV-RP14M-9-96 Platform with Handrails | (1) 1 1/4" (1.25"-31.8mm) Fiber<br>(3) 1 5/8" (1.63"-41.3mm) Fiber<br>(6) 1 5/8" Coax | T-MOBILE |
| | 3 | Ericsson Radio 4449 B12,B71 | | | |
| | 3 | Ericsson KRY 112 144/1 | | | |
| | 3 | Ericsson AIR 21, 1.3M, B4A B2P | | | |
| | 3 | RFS APXVAARR24_43-U-NA20 | | | |
| 132.0 | 1 | 12" x 12" Junction Box | Side Arm | (4) 1/2" Coax<br>(2) 2" conduit<br>(6) 5/16" (0.31"-7.9mm) Coax | CLEARWIRE CORPORATION |
| 130.0 | 2 | DragonWave Horizon Compact | | | |
| | 1 | DragonWave A-ANT-23G-1-C | | | |
| | 3 | NextNet BTS-2500 | | | |
| | 3 | Argus LLPX310R | | | |
| | 1 | DragonWave A-ANT-18G-2.5-C | | | |
| 122.0 | 1 | SWR FMEC/1 | Flush | (3) 1/2" Coax | ALMA RADIO INC. |
| 113.0 | 3 | Commscope CBC78-DS-43 | T-Arm | (6) 1 1/4" Coax<br>(2) 1 5/8" Hybriflex | VERIZON WIRELESS |
| | 3 | Samsung Outdoor CBRS 20W RRH –Clip-on Antenna | | | |
| | 3 | Samsung RT4401-48A | | | |
| | 3 | Samsung B2/B66A RRH-BR049 | | | |
| | 3 | Samsung B5/B13 RRH-BR04C | | | |
| | 4 | RFS APL868013-12T0 | | | |
| | 2 | RFS APL866513-12T0-00 | | | |
| | 3 | Samsung MT6407-77A | | | |
| | 2 | RFS DB-T1-6Z-8AB-0Z | | | |
| | 6 | Commscope JAHH-65B-R3B | | | |
| 70.0 | 1 | 4' Std. Dish | Flush | (1) 0.28" (7mm) RG-6 | OTHER |

**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 |
|---|---|---|---|---|---|
| 103.0 | 1 | Commscope RDIDC-9181-PF-48 | Platform with Handrails | (1) 1.60" (40.6mm) Hybrid | DISH WIRELESS L.L.C. |
| | 3 | Fujitsu TA08025-B604 | | | |
| | 3 | Fujitsu TA08025-B605 | | | |
| | 3 | JMA Wireless MX08FRO665-21 | | | |

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

Install proposed lines inside the pole shaft.

## Structure Usages

| Structural Component | Controlling Usage | Pass/Fail |
|---|---|---|
| Anchor Bolts | 84% | Pass |
| Shaft | 94% | Pass |
| Base Plate | 56% | Pass |
| Reinforcement | 97% | Pass |
| Flange | 22% | Pass |

## Foundations

| Reaction Component | Analysis Reactions | % of Usage |
|---|---|---|
| Moment (Kips-Ft) | 3,127.7 | 55% |
| Shear (Kips) | 29.3 | 7% |

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) (°) |
|---|---|---|---|---|
| 130.0 | DragonWave A-ANT-23G-1-C | CLEARWIRE CORPORATION | 1.722 | 1.649 |
| | DragonWave A-ANT-18G-2.5-C | | | |
| 103.0 | Commscope RDIDC-9181-PF-48 | DISH WIRELESS L.L.C. | 1.068 | 1.231 |
| | Fujitsu TA08025-B604 | | | |
| | Fujitsu TA08025-B605 | | | |
| | JMA Wireless MX08FRO665-21 | | | |
| 70.0 | 4' Std. Dish | OTHER | 0.473 | 0.810 |

***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:

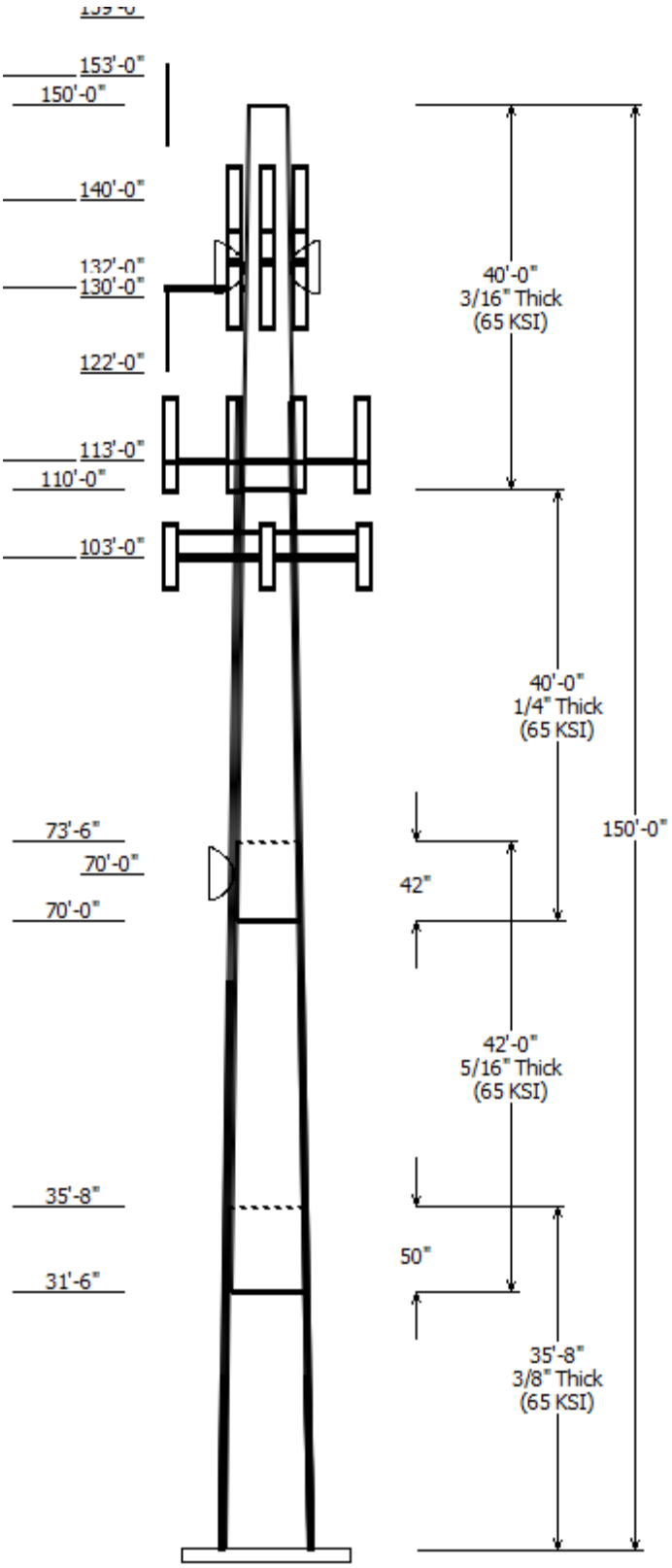
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

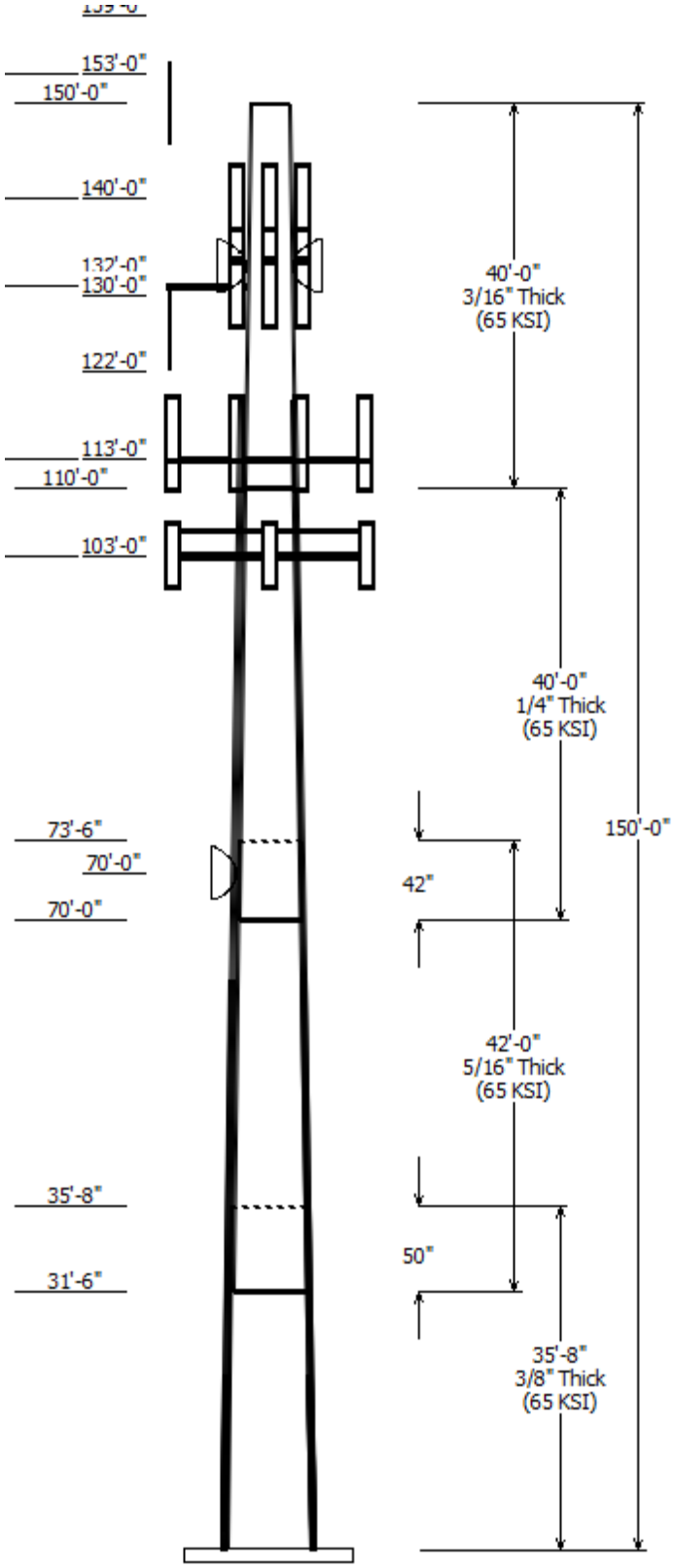
| | | | |
|---|---|---|---|
| Client : | DISH WIRELESS L.L.C. | | |
| Pole : | 302484 | Code: | ANSI/TIA-222-H |
| Location : | Branford CT 6, CT | | |
| Description : | 150 ft. ITT Meyer - Model Verified 10/25/11 | Risk Category : | II |
| Shape : | 12 Sides | Exposure : | B |
| Height : | 150.00 (ft) | Topo Method : | Method 1 |
| Base Elev (ft): | 0.00 | Topographic Category : | 1 |
| Taper: | 0.156700 (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 | 35.667 | 31.79 | 37.38 | 0.375 | | 0.000 | 12 Sides | 65 |
| 2 | 42.000 | 26.48 | 33.07 | 0.313 | Slip Joint | 50.000 | 12 Sides | 65 |
| 3 | 40.000 | 21.26 | 27.53 | 0.250 | Slip Joint | 42.000 | 12 Sides | 65 |
| 4 | 40.000 | 15.00 | 21.26 | 0.188 | Butt Joint | 0.000 | 12 Sides | 65 |

## Discrete Appurtenance

| Attach Elev (ft) | Force Elev (ft) | Qty | Description |
|---|---|---|---|
| 160.000 | 160.000 | 1 | Generic 11' Dipole |
| 159.000 | 159.000 | 1 | Generic 4' Omni |
| 153.000 | 153.000 | 1 | Generic Round Platform with |
| 153.000 | 153.000 | 3 | Kathrein Scala 80010965 |
| 153.000 | 153.000 | 3 | Commscope SBNHH-1D65B |
| 153.000 | 153.000 | 3 | CCI HPA65R-BU6A |
| 153.000 | 151.000 | 3 | Powerwave Allgon 7770.00 |
| 153.000 | 153.000 | 1 | Raycap DC6-48-60-18-8C-EV |
| 153.000 | 153.000 | 3 | Ericsson RRUS 32 B30 (53 lbs) |
| 153.000 | 153.000 | 1 | Raycap DC6-48-60-18-8C |
| 153.000 | 153.000 | 3 | Ericsson RRUS 4449 B5, B12 |
| 153.000 | 153.000 | 3 | Ericsson RRUS 8843 B2, B66A |
| 153.000 | 151.000 | 1 | Raycap DC6-48-60-18-8F |
| 153.000 | 151.000 | 6 | Powerwave Allgon LGP21401 |
| 153.000 | 153.000 | 3 | Kathrein Scala 782-10250 |
| 153.000 | 151.000 | 6 | Powerwave Allgon 7020.00 |
| 150.000 | 150.000 | 1 | Generic GPS |
| 140.000 | 140.000 | 1 | PerfectVision PV-RP14M-9-96 |
| 140.000 | 140.000 | 3 | RFS APXVAARR24_43-U-NA20 |
| 140.000 | 136.000 | 3 | Ericsson AIR 21, 1.3M, B4A B2P |
| 140.000 | 136.000 | 3 | Ericsson AIR 21, 1.3 M, B2A B4 |
| 140.000 | 140.000 | 3 | Ericsson Radio 4449 B12,B71 |
| 140.000 | 136.000 | 3 | Ericsson KRY 112 144/1 |
| 132.000 | 132.000 | 1 | Generic 12" x 12" Junction Box |
| 131.000 | 131.000 | 1 | Side Arms |
| 130.000 | 132.000 | 1 | DragonWave A-ANT-18G-2.5-C |
| 130.000 | 130.000 | 3 | Argus LLPX310R |
| 130.000 | 130.000 | 3 | NextNet BTS-2500 |
| 130.000 | 132.000 | 1 | DragonWave A-ANT-23G-1-C |
| 130.000 | 132.000 | 2 | DragonWave Horizon Compact |
| 122.000 | 123.000 | 1 | SWR FMEC/1 |
| 113.000 | 113.000 | 3 | Round T-Arm |
| 113.000 | 115.000 | 6 | Commscope JAHH-65B-R3B |
| 113.000 | 115.000 | 2 | RFS DB-T1-6Z-8AB-0Z |
| 113.000 | 113.000 | 3 | Samsung MT6407-77A |
| 113.000 | 115.000 | 2 | RFS APL866513-12T0-00 |
| 113.000 | 115.000 | 4 | RFS APL868013-12T0 |
| 113.000 | 113.000 | 3 | Samsung B5/B13 RRH-BR04C |
| 113.000 | 113.000 | 3 | Samsung B2/B66A RRH-BR049 |
| 113.000 | 113.000 | 3 | Samsung RT4401-48A |
| 113.000 | 113.000 | 3 | Samsung Outdoor CBRS 20W |
| 113.000 | 113.000 | 3 | Commscope CBC78-DS-43 |
| 103.000 | 103.000 | 3 | JMA Wireless MX08FRO665-21 |
| 103.000 | 103.000 | 3 | Fujitsu TA08025-B605 |



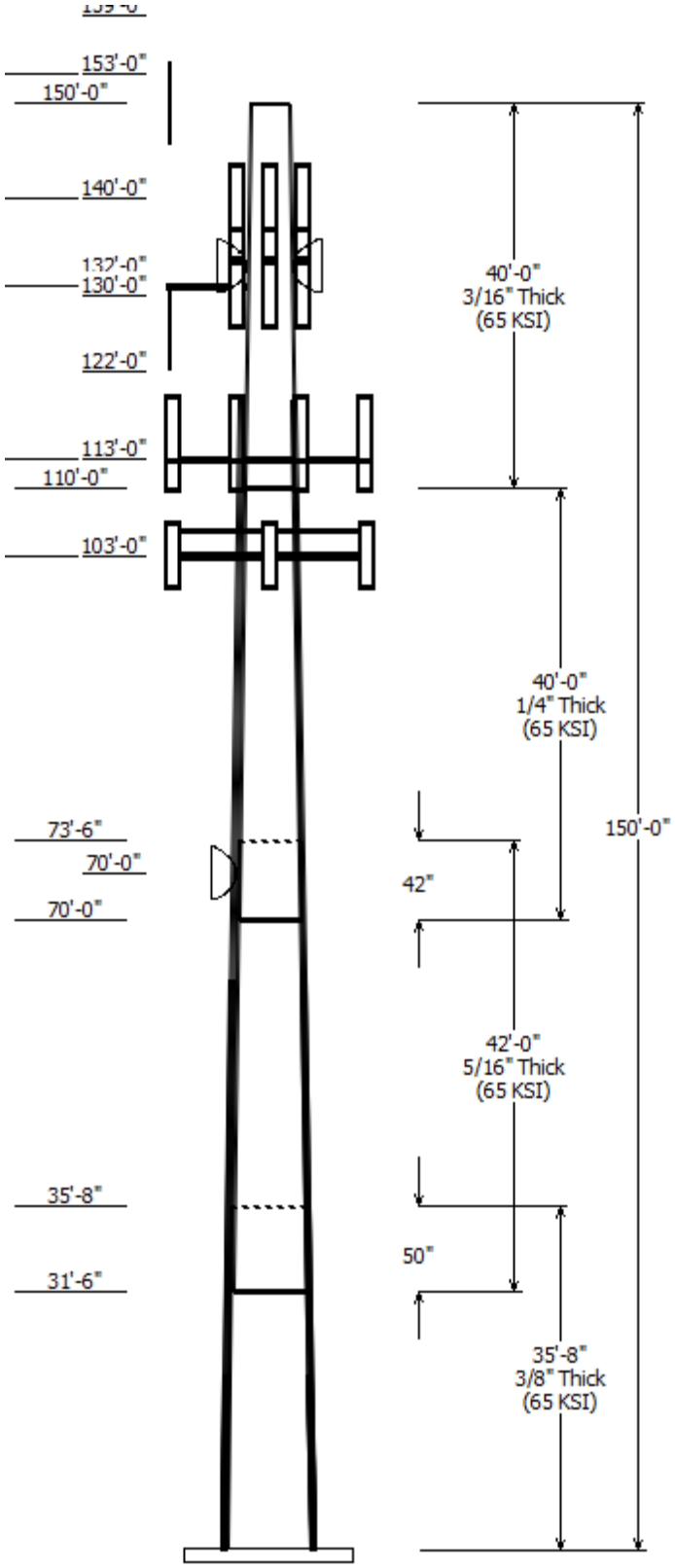

| | | | |
|---|---|---|---|
| 103.000 | 103.000 | 3 | Fujitsu TA08025-B604 |
| 103.000 | 103.000 | 1 | Commscope RDIDC-9181-PF-48 |
| 103.000 | 103.000 | 1 | Generic Flat Platform with Han |
| 70.000 | 70.000 | 1 | Generic 4' Std. Dish |

## Linear Appurtenance

| Elev (ft) From | To | Description | Exposed To Wind |
|---|---|---|---|
| 128.0 | 143.0 | #18 w/ Angle | Yes |
| 128.0 | 143.0 | #18 w/ Angle | Yes |
| 128.0 | 143.0 | #18 w/ Angle | Yes |
| 115.5 | 133.0 | #18 w/ Angle | Yes |
| 115.5 | 133.0 | #18 w/ Angle | Yes |
| 115.5 | 133.0 | #18 w/ Angle | Yes |
| 0.000 | 140.0 | 1 1/4" (1.25"- | No |
| 0.000 | 140.0 | 1 5/8" (1.63"- | No |
| 0.000 | 140.0 | 1 5/8" Coax | Yes |
| 0.000 | 150.0 | 1/2" Coax | No |
| 0.000 | 153.0 | 0.39" (10mm) | No |
| 0.000 | 153.0 | 0.78" (19.7mm) 8 | No |
| 0.000 | 153.0 | 1 5/8" Coax | No |
| 0.000 | 153.0 | 3" conduit | No |
| 0.000 | 153.0 | 3/8" (0.38"- | No |
| 0.000 | 159.0 | 1 5/8" Coax | No |
| 0.000 | 160.0 | 7/8" Coax | No |
| 0.000 | 20.000 | 1" Thick Flat Plate | Yes |
| 0.000 | 20.000 | 1" Thick Flat Plate | Yes |
| 0.000 | 20.000 | 1" Thick Flat Plate | Yes |
| 0.000 | 20.000 | 1" Thick Flat Plate | Yes |
| 0.000 | 65.500 | #18 w/ Angle | Yes |
| 0.000 | 65.500 | #18 w/ Angle | Yes |
| 0.000 | 65.500 | #18 w/ Angle | Yes |
| 0.000 | 65.500 | #18 w/ Angle | Yes |
| 0.000 | 70.000 | 0.28" (7mm) RG-6 | No |
| 0.000 | 103.0 | 1.60" (40.6mm) | No |
| 0.000 | 113.0 | 1 1/4" Coax | No |
| 0.000 | 113.0 | 1 5/8" Hybriflex | No |
| 0.000 | 122.0 | 1/2" Coax | No |
| 0.000 | 123.2 | #18 w/ W Bracket | Yes |
| 0.000 | 123.2 | #18 w/ W Bracket | Yes |
| 0.000 | 123.2 | #18 w/ W Bracket | Yes |
| 0.000 | 123.2 | #18 w/ W Bracket | Yes |
| 0.000 | 123.2 | W5 Brackets for | Yes |
| 0.000 | 123.2 | W5 Brackets for | Yes |
| 0.000 | 123.2 | W5 Brackets for | Yes |
| 0.000 | 123.2 | W5 Brackets for | Yes |
| 0.000 | 130.0 | 1/2" Coax | Yes |
| 0.000 | 130.0 | 5/16" (0.31"- | Yes |
| 0.000 | 132.0 | 1/2" Coax | Yes |
| 0.000 | 132.0 | 2" conduit | Yes |

## Load Cases

| | |
|---|---|
| 1.2D + 1.0W | 118 mph with No Ice |
| 0.9D + 1.0W | 118 mph with No Ice (Reduced DL) |
| 1.2D + 1.0Di + 1.0Wi | 49 mph with 0.85 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 |

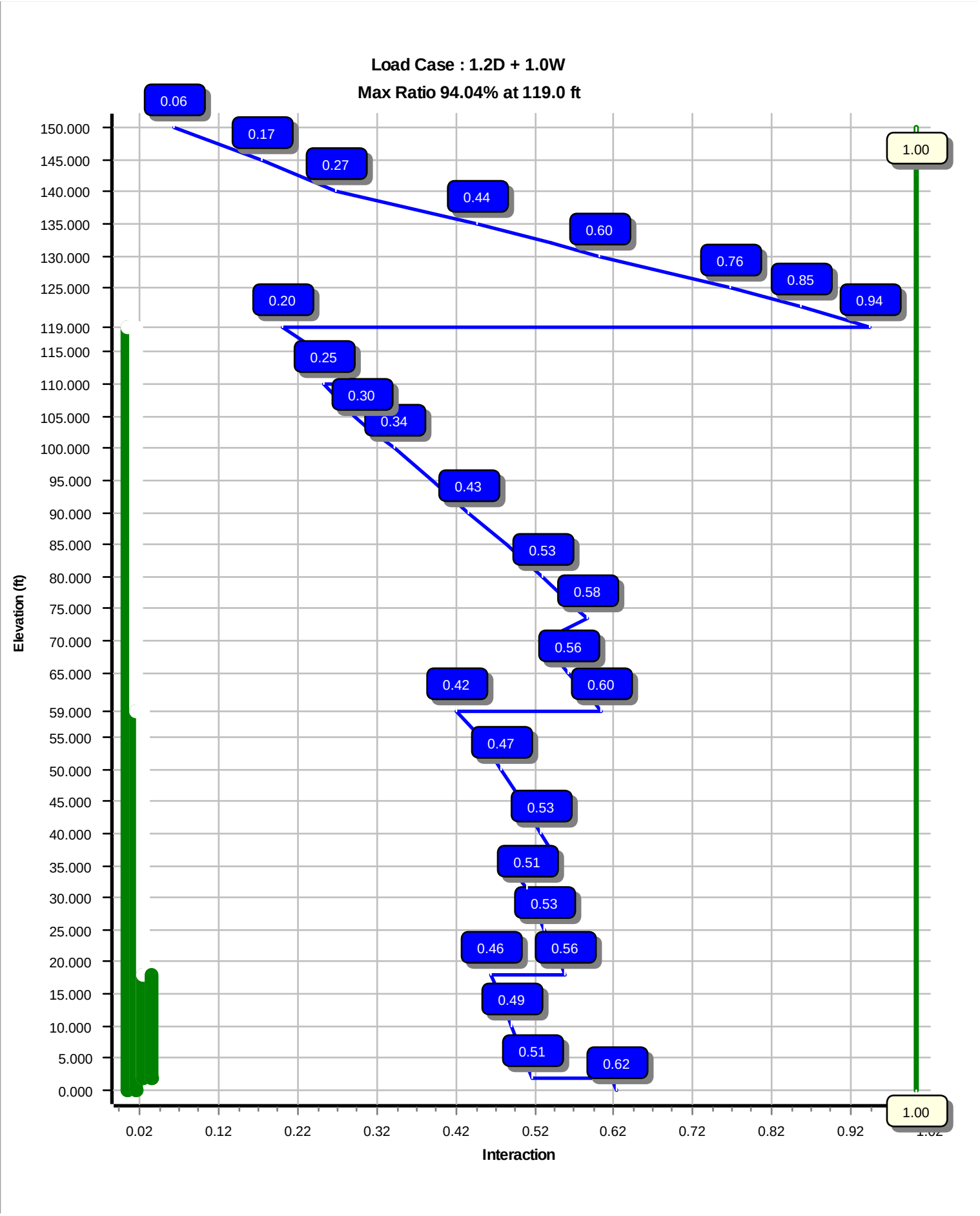



## Reactions

| Load Case | Moment (kip-ft) | Shear (kip) | Axial (kip) |
|---|---|---|---|
| 1.2D + 1.0W | 3127.68 | 29.34 | 62.09 |
| 0.9D + 1.0W | 3065.47 | 29.33 | 46.56 |
| 1.2D + 1.0Di + 1.0Wi | 772.51 | 6.82 | 79.79 |
| 1.2D + 1.0Ev + 1.0Eh | 200.71 | 1.56 | 63.46 |
| 0.9D - 1.0Ev + 1.0Eh | 195.52 | 1.55 | 43.72 |
| 1.0D + 1.0W | 718.58 | 6.81 | 51.76 |

## Dish Deflections

| Load Case | Attach Elev (ft) | Deflection (in) | Rotation (deg) |
|---|---|---|---|
| 1.0D + 1.0W | 70.00 | 5.676 | 0.810 |
| 1.0D + 1.0W | 130.00 | 20.659 | 1.649 |
| 1.0D + 1.0W | 130.00 | 20.659 | 1.649 |


Load Case : 1.2D + 1.0W
Max Ratio 94.04% at 119.0 ft
0.06
0.17
0.27
0.44
0.60
0.76
0.85
0.94
0.20
0.25
0.30
0.34
0.43
0.53
0.58
0.56
0.60
0.42
0.47
0.53
0.51
0.53
0.46
0.56
0.49
0.51
0.62
1.00
1.00
150.000
145.000
140.000
135.000
130.000
125.000
119.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
59.000
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: 302484 Code: ANSI/TIA-222-H 

Site Name: Branford CT 6, CT Engineering Number:13701211_C3_03 8/3/2021 4:57:39 PM

Customer: DISH WIRELESS L.L.C.

## Analysis Parameters

| | | | |
|---|---|---|---|
| Location : | New Haven County, CT | Height (ft) : | 150 |
| Code : | ANSI/TIA-222-H | Base Diameter (in) : | 37.38 |
| Shape : | 12 Sides | Top Diameter (in) : | 15.00 |
| Pole Type : | Taper | Taper (in/ft) : | 0.157 |
| Pole Manfacturer : | ITT Meyer | Rotation (deg) : | 0.00 |
| Kd (non-service) : | 0.95 | Ke : | 0.99 |

## Ice & Wind Parameters

| | | | |
|---|---|---|---|
| Exposure Category: | B | Design Wind Speed Without Ice: | 118 mph |
| Risk Category: | II | Design Wind Speed With Ice: | 49 mph |
| Topographic Factor Procedure: | Method 1 | Operational Wind Speed: | 60 mph |
| Topographic Category: | 1 | Design Ice Thickness: | 0.85 in |
| Crest Height: | 0 ft | HMSL: | 240.00 ft |

## Seismic Parameters

| | | | | | |
|---|---|---|---|---|---|
| Analysis Method: | Equivalent Lateral Force Method | | | | |
| Site Class: | D - Stiff Soil | | | | |
| Period Based on Rayleigh Method (sec): | 3.06 | | | | |
| $T_L$ (sec): | 6 | p: | 1 | $C_s$: | 0.030 |
| $S_s$: | 0.203 | $S_1$: | 0.054 | $C_s$ Max: | 0.030 |
| $F_a$: | 1.600 | $F_v$: | 2.400 | $C_s$ Min: | 0.030 |
| $S_{ds}$: | 0.217 | $S_{d1}$: | 0.086 | | |

## Load Cases

| | |
|---|---|
| 1.2D + 1.0W | 118 mph with No Ice |
| 0.9D + 1.0W | 118 mph with No Ice (Reduced DL) |
| 1.2D + 1.0Di + 1.0Wi | 49 mph with 0.85 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) | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-12 | 35.667 | 0.3750 | 65 | | 0.00 | 5,014 | 37.38 | 0.00 | 44.68 | 7810.1 | 24.03 | 99.68 | 31.79 | 35.67 | 37.93 | 4778.9 | 20.04 | 84.78 | 0.156700 |
| 2-12 | 42.000 | 0.3130 | 65 | Slip | 50.00 | 4,244 | 33.07 | 31.50 | 33.01 | 4521.6 | 25.63 | 105.65 | 26.48 | 73.50 | 26.38 | 2307.1 | 20.00 | 84.63 | 0.156700 |
| 3-12 | 40.000 | 0.2500 | 65 | Slip | 42.00 | 2,646 | 27.53 | 70.00 | 21.97 | 2087.6 | 26.83 | 110.15 | 21.26 | 110.00 | 16.92 | 954.2 | 20.12 | 85.08 | 0.156700 |
| 4-12 | 40.000 | 0.1880 | 65 | Butt | 0.00 | 1,479 | 21.26 | 110.00 | 12.76 | 723.9 | 27.63 | 113.13 | 15.00 | 150.00 | 8.97 | 251.1 | 18.70 | 79.79 | 0.156700 |
| | | | | Shaft Weight | | 13,383 | | | | | | | | | | | | | |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 160.00 | Generic 11' Dipole | 1 | 0.75 | 0.000 | 40.00 | 3.580 | 1.00 | 110.33 | 8.410 | 1.00 |
| 159.00 | Generic 4' Omni | 1 | 0.75 | 0.000 | 10.00 | 1.000 | 1.00 | 27.69 | 1.489 | 1.00 |
| 153.00 | Powerwave Allgon 7020.00 Dual | 6 | 0.75 | -2.000 | 2.20 | 0.339 | 0.50 | 7.99 | 0.571 | 0.50 |
| 153.00 | Kathrein Scala 782-10250 | 3 | 0.75 | 0.000 | 6.40 | 0.449 | 0.50 | 13.63 | 0.727 | 0.50 |
| 153.00 | Powerwave Allgon LGP21401 | 6 | 0.75 | -2.000 | 14.10 | 1.104 | 0.50 | 28.24 | 1.509 | 0.50 |
| 153.00 | Raycap DC6-48-60-18-8F | 1 | 0.75 | -2.000 | 31.80 | 1.470 | 0.50 | 66.78 | 1.866 | 0.50 |
| 153.00 | Ericsson RRUS 8843 B2, B66A | 3 | 0.75 | 0.000 | 72.00 | 1.639 | 0.50 | 106.75 | 2.118 | 0.50 |
| 153.00 | Ericsson RRUS 4449 B5, B12 | 3 | 0.75 | 0.000 | 71.00 | 1.969 | 0.50 | 107.54 | 2.498 | 0.50 |
| 153.00 | Raycap DC6-48-60-18-8C | 1 | 0.75 | 0.000 | 16.00 | 2.030 | 0.50 | 49.00 | 2.461 | 0.50 |
| 153.00 | Ericsson RRUS 32 B30 (53 lbs) | 3 | 0.75 | 0.000 | 53.00 | 2.743 | 0.50 | 94.69 | 3.406 | 0.50 |
| 153.00 | Raycap DC6-48-60-18-8C-EV | 1 | 0.75 | 0.000 | 16.00 | 4.788 | 0.50 | 89.20 | 5.622 | 0.50 |
| 153.00 | Powerwave Allgon 7770.00 | 3 | 0.75 | -2.000 | 35.00 | 5.508 | 0.65 | 104.05 | 6.086 | 0.65 |
| 153.00 | CCI HPA65R-BU6A | 3 | 0.75 | 0.000 | 41.90 | 7.864 | 0.70 | 141.25 | 9.429 | 0.70 |
| 153.00 | Commscope SBNHH-1D65B | 3 | 0.75 | 0.000 | 50.70 | 8.173 | 0.69 | 150.19 | 9.777 | 0.69 |
| 153.00 | Kathrein Scala 80010965 | 3 | 0.75 | 0.000 | 97.60 | 13.814 | 0.62 | 248.73 | 15.543 | 0.62 |
| 153.00 | Generic Round Platform with | 1 | 1.00 | 0.000 | 2,500.00 | 27.200 | 1.00 | 3,418.18 | 41.057 | 1.00 |
| 150.00 | Generic GPS | 1 | 1.00 | 0.000 | 10.00 | 0.900 | 1.00 | 26.59 | 1.263 | 1.00 |
| 140.00 | Ericsson KRY 112 144/1 | 3 | 0.75 | -4.000 | 11.00 | 0.351 | 0.50 | 17.06 | 0.579 | 0.50 |
| 140.00 | Ericsson Radio 4449 B12,B71 | 3 | 0.75 | 0.000 | 74.00 | 1.639 | 0.50 | 105.52 | 2.114 | 0.50 |
| 140.00 | Ericsson AIR 21, 1.3 M, B2A B4P | 3 | 0.75 | -4.000 | 83.00 | 6.049 | 0.71 | 165.15 | 7.266 | 0.71 |
| 140.00 | Ericsson AIR 21, 1.3M, B4A B2P | 3 | 0.75 | -4.000 | 81.50 | 6.092 | 0.70 | 163.35 | 7.310 | 0.70 |
| 140.00 | RFS APXVAARR24_43-U-NA20 | 3 | 0.75 | 0.000 | 127.90 | 20.243 | 0.63 | 348.89 | 22.331 | 0.63 |
| 140.00 | PerfectVision PV-RP14M-9-96 | 1 | 1.00 | 0.000 | 2,972.00 | 36.600 | 1.00 | 4,137.48 | 50.953 | 1.00 |
| 132.00 | Generic 12" x 12" Junction Box | 1 | 0.80 | 0.000 | 10.00 | 1.200 | 1.00 | 33.34 | 1.607 | 1.00 |
| 131.00 | Side Arms | 1 | 1.00 | 0.000 | 560.00 | 8.500 | 1.00 | 822.15 | 12.479 | 1.00 |
| 130.00 | DragonWave Horizon Compact | 2 | 0.80 | 2.000 | 10.60 | 0.721 | 0.50 | 23.16 | 1.039 | 0.50 |
| 130.00 | DragonWave A-ANT-23G-1-C | 1 | 1.00 | 2.000 | 15.00 | 1.610 | 1.00 | 34.74 | 2.033 | 1.00 |
| 130.00 | NextNet BTS-2500 | 3 | 0.80 | 0.000 | 35.00 | 1.817 | 0.50 | 60.91 | 2.329 | 0.50 |
| 130.00 | Argus LLPX310R | 3 | 0.80 | 0.000 | 28.60 | 4.292 | 0.63 | 78.95 | 5.216 | 0.63 |
| 130.00 | DragonWave A-ANT-18G-2.5-C | 1 | 1.00 | 2.000 | 47.60 | 8.430 | 1.00 | 143.84 | 9.381 | 1.00 |
| 122.00 | SWR FMEC/1 | 1 | 1.00 | 1.000 | 15.00 | 2.500 | 1.00 | 60.51 | 4.707 | 1.00 |
| 113.00 | Commscope CBC78-DS-43 | 3 | 0.80 | 0.000 | 6.00 | 0.368 | 0.50 | 12.22 | 0.597 | 0.50 |
| 113.00 | Samsung Outdoor CBRS 20W | 3 | 0.80 | 0.000 | 4.40 | 0.892 | 0.50 | 14.32 | 1.244 | 0.50 |
| 113.00 | Samsung RT4401-48A | 3 | 0.80 | 0.000 | 18.60 | 0.996 | 0.50 | 33.49 | 1.373 | 0.50 |
| 113.00 | Samsung B2/B66A RRH-BR049 | 3 | 0.80 | 0.000 | 84.40 | 1.875 | 0.50 | 119.57 | 2.373 | 0.50 |
| 113.00 | Samsung B5/B13 RRH-BR04C | 3 | 0.80 | 0.000 | 70.30 | 1.875 | 0.50 | 101.83 | 2.373 | 0.50 |
| 113.00 | RFS APL868013-12T0 | 4 | 0.80 | 2.000 | 6.30 | 3.615 | 0.50 | 54.87 | 4.645 | 0.50 |
| 113.00 | RFS APL866513-12T0-00 | 2 | 0.80 | 2.000 | 15.70 | 4.050 | 0.82 | 75.77 | 5.075 | 0.82 |
| 113.00 | Samsung MT6407-77A | 3 | 0.80 | 0.000 | 81.60 | 4.709 | 0.61 | 137.79 | 5.546 | 0.61 |
| 113.00 | RFS DB-T1-6Z-8AB-0Z | 2 | 0.80 | 2.000 | 44.00 | 4.800 | 0.50 | 113.38 | 5.583 | 0.50 |
| 113.00 | Commscope JAHH-65B-R3B | 6 | 0.80 | 2.000 | 60.60 | 9.113 | 0.69 | 172.12 | 10.642 | 0.69 |
| 113.00 | Round T-Arm | 3 | 0.75 | 0.000 | 250.00 | 9.700 | 0.67 | 365.21 | 14.245 | 0.67 |
| 103.00 | Commscope RDIDC-9181-PF-48 | 1 | 0.75 | 0.000 | 21.90 | 1.867 | 0.50 | 52.98 | 2.359 | 0.50 |
| 103.00 | Fujitsu TA08025-B604 | 3 | 0.75 | 0.000 | 63.90 | 1.962 | 0.50 | 95.75 | 2.464 | 0.50 |
| 103.00 | Fujitsu TA08025-B605 | 3 | 0.75 | 0.000 | 75.00 | 1.962 | 0.50 | 109.21 | 2.464 | 0.50 |
| 103.00 | JMA Wireless MX08FRO665-21 | 3 | 0.75 | 0.000 | 64.50 | 12.489 | 0.64 | 204.86 | 14.024 | 0.64 |
| 103.00 | Generic Flat Platform with | 1 | 1.00 | 0.000 | 2,500.00 | 42.400 | 1.00 | 3,470.10 | 53.852 | 1.00 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 70.00 | Generic 4' Std. Dish | 1 | 1.00 | 0.000 | 188.00 | 20.910 | 1.00 | 299.58 | 22.521 | 1.00 | |
| Totals | Num Loadings:48 | 119 | | | 14,342.40 | | | 24,039.36 | | | |

## Linear Appurtenance Properties

Load Case Azimuth (deg) : 0

| 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 | 160.00 | 3 | 7/8" Coax | 1.09 | 0.33 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | OTHER |
| 0.00 | 159.00 | 1 | 1 5/8" Coax | 1.98 | 0.82 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | OTHER |
| 0.00 | 153.00 | 2 | 0.39" (10mm) Fiber | 0.39 | 0.06 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | AT&T MOBILITY |
| 0.00 | 153.00 | 4 | 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 | 153.00 | 6 | 1 5/8" Coax | 1.98 | 0.82 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | AT&T MOBILITY |
| 0.00 | 153.00 | 3 | 3" conduit | 3.50 | 7.58 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | AT&T MOBILITY |
| 0.00 | 153.00 | 1 | 3/8" (0.38"- 9.5mm) | 0.38 | 0.23 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | AT&T MOBILITY |
| 0.00 | 150.00 | 1 | 1/2" Coax | 0.63 | 0.15 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | VERIZON WIRELESS |
| 128.00 | 143.00 | 1 | #18 w/ Angle Bracket | 4.55 | 7.88 | N | 1 | 0.00 | 0.00 | 0 | 0.00 | Y | |
| 128.00 | 143.00 | 1 | #18 w/ Angle Bracket | 4.55 | 7.88 | N | 1 | 0.00 | 0.00 | 120 | 0.00 | Y | |
| 128.00 | 143.00 | 1 | #18 w/ Angle Bracket | 4.55 | 7.88 | N | 1 | 0.00 | 0.00 | 240 | 0.00 | Y | |
| 0.00 | 140.00 | 1 | 1 1/4" (1.25"- 31.8mm) | 1.25 | 1.05 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | T-MOBILE |
| 0.00 | 140.00 | 3 | 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 | 140.00 | 6 | 1 5/8" Coax | 1.98 | 0.82 | N | 6 | 0.00 | 0.00 | 90 | 0.25 | Y | T-MOBILE |
| 115.50 | 133.00 | 1 | #18 w/ Angle Bracket | 4.55 | 7.88 | N | 1 | 0.00 | 0.00 | 90 | 0.00 | Y | |
| 115.50 | 133.00 | 1 | #18 w/ Angle Bracket | 4.55 | 7.88 | N | 1 | 0.00 | 0.00 | 335 | 0.00 | Y | |
| 115.50 | 133.00 | 1 | #18 w/ Angle Bracket | 4.55 | 7.88 | N | 1 | 0.00 | 0.00 | 210 | 0.00 | Y | |
| 0.00 | 132.00 | 2 | 1/2" Coax | 0.63 | 0.15 | N | 2 | 0.00 | 0.00 | 200 | 0.25 | Y | CLEARWIRE |
| 0.00 | 132.00 | 2 | 2" conduit | 2.38 | 3.65 | N | 2 | 0.00 | 0.00 | 190 | 0.25 | Y | CLEARWIRE |
| 0.00 | 130.00 | 2 | 1/2" Coax | 0.63 | 0.15 | N | 2 | 0.00 | 0.00 | 200 | 0.25 | Y | CLEARWIRE |
| 0.00 | 130.00 | 6 | 5/16" (0.31"-7.9mm) | 0.31 | 0.05 | N | 6 | 0.00 | 0.00 | 205 | 0.25 | Y | CLEARWIRE |
| 0.00 | 123.20 | 1 | #18 w/ W Bracket | 2.25 | 0.00 | N | 1 | 0.00 | 0.00 | 45 | 5.15 | Y | |
| 0.00 | 123.20 | 1 | #18 w/ W Bracket | 2.25 | 0.00 | N | 1 | 0.00 | 0.00 | 135 | 5.15 | Y | |
| 0.00 | 123.20 | 1 | #18 w/ W Bracket | 2.25 | 0.00 | N | 1 | 0.00 | 0.00 | 225 | 5.15 | Y | |
| 0.00 | 123.20 | 1 | #18 w/ W Bracket | 2.25 | 0.00 | N | 1 | 0.00 | 0.00 | 315 | 5.15 | Y | |
| 0.00 | 123.20 | 1 | W5 Brackets for #18 | 1.55 | 5.70 | Y | 1 | 0.00 | 0.00 | 315 | 1.80 | Y | |
| 0.00 | 123.20 | 1 | W5 Brackets for #18 | 1.55 | 5.70 | Y | 1 | 0.00 | 0.00 | 135 | 1.80 | Y | |
| 0.00 | 123.20 | 1 | W5 Brackets for #18 | 1.55 | 5.70 | Y | 1 | 0.00 | 0.00 | 225 | 1.80 | Y | |
| 0.00 | 123.20 | 1 | W5 Brackets for #18 | 1.55 | 5.70 | Y | 1 | 0.00 | 0.00 | 45 | 1.80 | Y | |
| 0.00 | 122.00 | 3 | 1/2" Coax | 0.63 | 0.15 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | ALMA RADIO INC. |
| 0.00 | 113.00 | 6 | 1 1/4" Coax | 1.55 | 0.63 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | VERIZON WIRELESS |
| 0.00 | 113.00 | 2 | 1 5/8" Hybriflex | 1.98 | 1.30 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | VERIZON WIRELESS |
| 0.00 | 103.00 | 1 | 1.60" (40.6mm) Hybrid | 1.60 | 2.34 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | DISH WIRELESS |
| 0.00 | 70.00 | 1 | 0.28" (7mm) RG-6 | 0.28 | 0.03 | N | 0 | 0.00 | 0.00 | 0 | 0.00 | N | OTHER |
| 0.00 | 65.50 | 1 | #18 w/ Angle Brackets | 3.75 | 4.68 | N | 1 | 0.00 | 0.00 | 270 | 0.00 | Y | |
| 0.00 | 65.50 | 1 | #18 w/ Angle Brackets | 3.75 | 4.68 | N | 1 | 0.00 | 0.00 | 0 | 0.00 | Y | |
| 0.00 | 65.50 | 1 | #18 w/ Angle Brackets | 3.75 | 4.68 | N | 1 | 0.00 | 0.00 | 180 | 0.00 | Y | |
| 0.00 | 65.50 | 1 | #18 w/ Angle Brackets | 3.75 | 4.68 | N | 1 | 0.00 | 0.00 | 90 | 0.00 | Y | |
| 0.00 | 20.00 | 1 | 1" Thick Flat Plate | 1.00 | 0.00 | Y | 1 | 0.00 | 0.00 | 15 | 0.00 | Y | |
| 0.00 | 20.00 | 1 | 1" Thick Flat Plate | 1.00 | 0.00 | Y | 1 | 0.00 | 0.00 | 285 | 0.00 | Y | |
| 0.00 | 20.00 | 1 | 1" Thick Flat Plate | 1.00 | 0.00 | Y | 1 | 0.00 | 0.00 | 195 | 0.00 | Y | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 20.00 | 1 | 1" Thick Flat Plate | 1.00 | 0.00 | Y | 1 | 0.00 | 0.00 | 105 | 0.00 | Y | |

## Additional Steel

| Elev From (ft) | Elev To (ft) | Qty | Description | Fy (ksi) | Offset (in) | Intermediate Connections Description | Spacing (in) | Len (in) | Connectors | Continuation? |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 119.0 | 4 | SOL #18 All Thread | 75 | 5.15 | 6" T Bracket | 30.0 | 3.50 | 5/8" A36 U-Bolt | No |
| 0.00 | 59.00 | 4 | SOL #18 All Thread | 75 | 2.22 | 6" Angle Bracket | 30.0 | 3.50 | 5/8" A36 U-Bolt | No |
| 2.00 | 18.00 | 2 | PL PL 4" x 1" | 50 | 0.00 | 5/8" Hollo Bolt | 12.0 | 3.00 | 5/8" Hollo Bolt | No |
| 2.00 | 18.00 | 2 | PL PL 5" x 1" | 50 | 0.00 | 5/8" Hollo Bolt | 12.0 | 3.00 | 5/8" Hollo Bolt | No |

## 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) | Additional Reinforcing Area ($in^2$) | Additional Reinforcing Ix ($in^4$) | Additional Reinforcing Weight (lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | | 0.3750 | 37.380 | 44.684 | 7,810.1 | 24.03 | 99.68 | 78.5 | 403.6 | 0.0 | 0.0 | 32.00 | 9,070 | 0.0 |
| 2.00 | Reinf Bottom Reinf | 0.3750 | 37.067 | 44.305 | 7,613.3 | 23.81 | 98.84 | 78.8 | 396.8 | 0.0 | 302.8 | 32.00 | 8,950 | 217.6 |
| 5.00 | | 0.3750 | 36.597 | 43.737 | 7,324.4 | 23.47 | 97.59 | 79.1 | 386.6 | 0.0 | 449.4 | 50.00 | 11,96 | 510.1 |
| 10.00 | | 0.3750 | 35.813 | 42.791 | 6,859.3 | 22.91 | 95.50 | 79.7 | 370.0 | 0.0 | 736.1 | 50.00 | 11,54 | 850.2 |
| 15.00 | | 0.3750 | 35.030 | 41.845 | 6,414.3 | 22.35 | 93.41 | 80.3 | 353.7 | 0.0 | 720.0 | 50.00 | 11,12 | 850.2 |
| 18.00 | Reinf. Top Reinf. | 0.3750 | 34.559 | 41.278 | 6,156.8 | 22.01 | 92.16 | 80.7 | 344.2 | 0.0 | 424.3 | 50.00 | 10,87 | 510.1 |
| 20.00 | | 0.3750 | 34.246 | 40.899 | 5,989.0 | 21.79 | 91.32 | 80.9 | 337.8 | 0.0 | 279.6 | 32.00 | 7,900 | 217.6 |
| 25.00 | | 0.3750 | 33.463 | 39.953 | 5,583.0 | 21.23 | 89.23 | 81.6 | 322.3 | 0.0 | 687.8 | 32.00 | 7,620 | 544.0 |
| 30.00 | | 0.3750 | 32.679 | 39.007 | 5,195.7 | 20.67 | 87.14 | 81.9 | 307.1 | 0.0 | 671.7 | 32.00 | 7,345 | 544.0 |
| 31.50 | Bot - Section 2 | 0.3750 | 32.444 | 38.723 | 5,083.1 | 20.50 | 86.52 | 81.9 | 302.7 | 0.0 | 198.4 | 32.00 | 7,263 | 163.2 |
| 35.00 | | 0.3750 | 31.896 | 38.061 | 4,826.7 | 20.11 | 85.05 | 81.9 | 292.3 | 0.0 | 847.1 | 32.00 | 7,290 | 380.8 |
| 35.67 | Top - Section 1 | 0.3130 | 32.417 | 32.356 | 4,256.6 | 25.07 | 103.57 | 77.4 | 253.7 | 0.0 | 159.7 | 32.00 | 7,254 | 72.5 |
| 40.00 | | 0.3130 | 31.738 | 31.672 | 3,992.2 | 24.49 | 101.40 | 78.0 | 243.0 | 0.0 | 472.1 | 32.00 | 7,022 | 471.5 |
| 45.00 | | 0.3130 | 30.954 | 30.882 | 3,701.0 | 23.82 | 98.90 | 78.7 | 231.0 | 0.0 | 532.1 | 32.00 | 6,758 | 544.0 |
| 50.00 | | 0.3130 | 30.171 | 30.093 | 3,424.3 | 23.15 | 96.39 | 79.5 | 219.3 | 0.0 | 518.7 | 32.00 | 6,499 | 544.0 |
| 55.00 | | 0.3130 | 29.387 | 29.303 | 3,161.7 | 22.48 | 93.89 | 80.2 | 207.8 | 0.0 | 505.3 | 32.00 | 6,246 | 544.0 |
| 59.00 | Reinf. Top | 0.3130 | 28.761 | 28.671 | 2,961.6 | 21.94 | 91.89 | 80.8 | 198.9 | 0.0 | 394.5 | 32.00 | 6,261 | 489.6 |
| 60.00 | | 0.3130 | 28.604 | 28.513 | 2,912.9 | 21.81 | 91.39 | 80.9 | 196.7 | 0.0 | 97.3 | 16.00 | 3,423 | 54.4 |
| 65.00 | | 0.3130 | 27.820 | 27.724 | 2,677.6 | 21.14 | 88.88 | 81.7 | 185.9 | 0.0 | 478.4 | 16.00 | 3,295 | 272.0 |
| 70.00 | Bot - Section 3 | 0.3130 | 27.037 | 26.934 | 2,455.2 | 20.47 | 86.38 | 81.9 | 175.4 | 0.0 | 465.0 | 16.00 | 3,169 | 272.0 |
| 73.50 | Top - Section 2 | 0.2500 | 26.989 | 21.525 | 1,964.2 | 26.25 | 107.95 | 76.1 | 140.6 | 0.0 | 576.5 | 16.00 | 3,161 | 190.4 |
| 75.00 | | 0.2500 | 26.753 | 21.335 | 1,912.9 | 25.99 | 107.01 | 76.4 | 138.1 | 0.0 | 109.4 | 16.00 | 3,124 | 81.6 |
| 80.00 | | 0.2500 | 25.970 | 20.705 | 1,748.2 | 25.16 | 103.88 | 77.3 | 130.0 | 0.0 | 357.6 | 16.00 | 3,001 | 272.0 |
| 85.00 | | 0.2500 | 25.186 | 20.074 | 1,593.3 | 24.32 | 100.75 | 78.2 | 122.2 | 0.0 | 346.9 | 16.00 | 2,881 | 272.0 |
| 90.00 | | 0.2500 | 24.403 | 19.443 | 1,447.8 | 23.48 | 97.61 | 79.1 | 114.6 | 0.0 | 336.2 | 16.00 | 2,763 | 272.0 |
| 95.00 | | 0.2500 | 23.619 | 18.812 | 1,311.4 | 22.64 | 94.48 | 80.0 | 107.3 | 0.0 | 325.4 | 16.00 | 2,648 | 272.0 |
| 100.0 | | 0.2500 | 22.836 | 18.182 | 1,183.9 | 21.80 | 91.34 | 80.9 | 100.2 | 0.0 | 314.7 | 16.00 | 2,536 | 272.0 |
| 103.0 | | 0.2500 | 22.366 | 17.803 | 1,111.5 | 21.29 | 89.46 | 81.5 | 96.0 | 0.0 | 183.7 | 16.00 | 2,469 | 163.2 |
| 105.0 | | 0.2500 | 22.052 | 17.551 | 1,064.9 | 20.96 | 88.21 | 81.9 | 93.3 | 0.0 | 120.3 | 16.00 | 2,425 | 108.8 |
| 110.0 | Top - Section 3 | 0.2500 | 21.269 | 16.920 | 954.2 | 20.12 | 85.08 | 81.9 | 86.7 | 0.0 | 293.2 | 16.00 | 2,318 | 272.0 |
| 110.0 | Bot - Section 4 | 0.1880 | 21.269 | 12.762 | 723.9 | 27.63 | 113.13 | 74.6 | 65.8 | 0.0 | | 16.00 | 2,318 | |
| 113.0 | | 0.1880 | 20.799 | 12.477 | 676.5 | 26.96 | 110.63 | 75.3 | 62.8 | 0.0 | 128.8 | 16.00 | 2,254 | 163.2 |
| 115.0 | | 0.1880 | 20.486 | 12.287 | 646.1 | 26.52 | 108.97 | 75.8 | 60.9 | 0.0 | 84.3 | 16.00 | 2,212 | 108.8 |
| 119.0 | Reinf. Top | 0.1880 | 19.859 | 11.908 | 588.1 | 25.62 | 105.63 | 76.8 | 57.2 | 0.0 | 164.7 | 16.00 | 2,318 | 272.0 |
| 120.0 | | 0.1880 | 19.702 | 11.813 | 574.2 | 25.40 | 104.80 | 77.0 | 56.3 | 0.0 | 40.4 | | | |
| 122.0 | | 0.1880 | 19.389 | 11.623 | 546.9 | 24.95 | 103.13 | 77.5 | 54.5 | 0.0 | 79.7 | | | |
| 125.0 | | 0.1880 | 18.919 | 11.339 | 507.7 | 24.28 | 100.63 | 78.2 | 51.8 | 0.0 | 117.2 | | | |
| 130.0 | | 0.1880 | 18.135 | 10.864 | 446.7 | 23.17 | 96.46 | 79.4 | 47.6 | 0.0 | 188.9 | | | |
| 131.0 | | 0.1880 | 17.978 | 10.770 | 435.1 | 22.94 | 95.63 | 79.7 | 46.7 | 0.0 | 36.8 | | | |
| 132.0 | | 0.1880 | 17.822 | 10.675 | 423.7 | 22.72 | 94.80 | 79.9 | 45.9 | 0.0 | 36.5 | | | |
| 135.0 | | 0.1880 | 17.352 | 10.390 | 390.7 | 22.05 | 92.30 | 80.7 | 43.5 | 0.0 | 107.5 | | | |
| 140.0 | | 0.1880 | 16.568 | 9.916 | 339.6 | 20.93 | 88.13 | 81.9 | 39.6 | 0.0 | 172.7 | | | |
| 145.0 | | 0.1880 | 15.785 | 9.441 | 293.1 | 19.82 | 83.96 | 81.9 | 35.9 | 0.0 | 164.7 | | | |
| 150.0 | | 0.1880 | 15.001 | 8.967 | 251.1 | 18.70 | 79.79 | 81.9 | 32.3 | 0.0 | 156.6 | | | |
| | | | | | | | | | | | 13,383.0 | | | 10,771. |

**Load Case:** 1.2D + 1.0W — 118 mph with No Ice — 26 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 | | 127.8 | 0.0 | | | | | 0.0 | 0.0 | 127.8 | 0.0 | 0.0 | 0.0 |
| 2.00 | Reinf Bottom | 318.3 | 363.4 | | | | | 0.0 | 506.0 | 318.3 | 869.4 | 0.0 | 0.0 |
| 5.00 | | 505.1 | 539.3 | | | | | 0.0 | 979.5 | 505.1 | 1,518.8 | 0.0 | 0.0 |
| 10.00 | | 551.3 | 883.3 | | | | | 99.2 | 1,632.6 | 650.5 | 2,515.9 | 0.0 | 0.0 |
| 15.00 | | 376.2 | 864.0 | | | | | 98.3 | 1,632.6 | 474.5 | 2,496.6 | 0.0 | 0.0 |
| 18.00 | Reinf. Top Reinf. | 231.5 | 509.1 | | | | | 58.5 | 979.5 | 290.0 | 1,488.7 | 0.0 | 0.0 |
| 20.00 | | 318.2 | 335.6 | | | | | 38.8 | 506.0 | 357.0 | 841.6 | 0.0 | 0.0 |
| 25.00 | | 447.3 | 825.4 | | | | | 96.8 | 1,265.1 | 544.1 | 2,090.5 | 0.0 | 0.0 |
| 30.00 | | 286.8 | 806.1 | | | | | 96.8 | 1,265.1 | 383.6 | 2,071.2 | 0.0 | 0.0 |
| 31.50 | Bot - Section 2 | 223.9 | 238.0 | | | | | 29.3 | 379.5 | 253.2 | 617.6 | 0.0 | 0.0 |
| 35.00 | | 188.5 | 1,016.6 | | | | | 69.9 | 885.6 | 258.3 | 1,902.1 | 0.0 | 0.0 |
| 35.67 | Top - Section 1 | 229.0 | 191.7 | | | | | 13.5 | 168.7 | 242.6 | 360.3 | 0.0 | 0.0 |
| 40.00 | | 430.3 | 566.5 | | | | | 89.7 | 1,096.4 | 520.0 | 1,662.9 | 0.0 | 0.0 |
| 45.00 | | 464.7 | 638.6 | | | | | 107.1 | 1,265.1 | 571.8 | 1,903.7 | 0.0 | 0.0 |
| 50.00 | | 466.8 | 622.5 | | | | | 110.5 | 1,265.1 | 577.3 | 1,887.6 | 0.0 | 0.0 |
| 55.00 | | 420.6 | 606.3 | | | | | 113.7 | 1,265.1 | 534.3 | 1,871.4 | 0.0 | 0.0 |
| 59.00 | Reinf. Top | 233.5 | 473.5 | | | | | 93.1 | 1,077.4 | 326.7 | 1,550.8 | 0.0 | 0.0 |
| 60.00 | | 279.4 | 116.8 | | | | | 23.6 | 187.7 | 303.0 | 304.5 | 0.0 | 0.0 |
| 65.00 | | 464.0 | 574.1 | | | | | 119.5 | 938.7 | 583.5 | 1,512.8 | 0.0 | 0.0 |
| 70.00 | Bot - Section 3 | 360.9 | 558.0 | | | | | 122.2 | 837.6 | 483.1 | 1,395.6 | 0.0 | 0.0 |
| 73.50 | Top - Section 2 | 184.9 | 691.8 | | | | | 8.7 | 578.3 | 193.6 | 1,270.1 | 0.0 | 0.0 |
| 75.00 | | 238.4 | 131.3 | | | | | 3.8 | 247.9 | 242.1 | 379.1 | 0.0 | 0.0 |
| 80.00 | | 363.9 | 429.2 | | | | | 12.7 | 826.2 | 376.6 | 1,255.4 | 0.0 | 0.0 |
| 85.00 | | 359.1 | 416.3 | | | | | 12.9 | 826.2 | 372.0 | 1,242.5 | 0.0 | 0.0 |
| 90.00 | | 353.7 | 403.4 | | | | | 13.2 | 826.2 | 366.8 | 1,229.6 | 0.0 | 0.0 |
| 95.00 | | 347.6 | 390.5 | | | | | 13.4 | 826.2 | 361.0 | 1,216.7 | 0.0 | 0.0 |
| 100.00 | | 274.0 | 377.6 | | | | | 13.6 | 826.2 | 287.5 | 1,203.8 | 0.0 | 0.0 |
| 103.00 | Appurtenance(s) | 168.8 | 220.4 | 2,407.9 | 0.0 | 0.0 | 3,758.5 | 8.2 | 495.7 | 2,584.9 | 4,474.6 | 0.0 | 0.0 |
| 105.00 | | 232.3 | 144.4 | | | | | 5.5 | 324.9 | 237.8 | 469.2 | 0.0 | 0.0 |
| 110.00 | Top - Section 3 | 262.7 | 351.9 | | | | | 14.0 | 812.2 | 276.7 | 1,164.1 | 0.0 | 0.0 |
| 113.00 | Appurtenance(s) | 162.5 | 154.6 | 2,796.1 | 0.0 | 3,423.5 | 2,464.9 | 8.5 | 487.3 | 2,967.0 | 3,106.8 | 0.0 | 0.0 |
| 115.00 | | 272.0 | 101.1 | | | | | 5.7 | 309.6 | 277.7 | 410.7 | 0.0 | 0.0 |
| 119.00 | Reinf. Top | 258.1 | 197.6 | | | | | 64.4 | 783.7 | 322.5 | 981.3 | 0.0 | 0.0 |
| 120.00 | | 152.3 | 48.4 | | | | | 16.2 | 117.9 | 168.5 | 166.3 | 0.0 | 0.0 |
| 122.00 | Appurtenance(s) | 251.0 | 95.7 | 96.7 | 0.0 | 96.7 | 18.0 | 32.4 | 235.7 | 380.1 | 349.4 | 0.0 | 0.0 |
| 125.00 | | 337.1 | 140.6 | | | | | 48.9 | 302.7 | 385.9 | 443.4 | 0.0 | 0.0 |
| 130.00 | Appurtenance(s) | 224.1 | 226.7 | 759.6 | 0.0 | 837.9 | 329.5 | 131.2 | 506.6 | 1,115.0 | 1,062.7 | 0.0 | 0.0 |
| 131.00 | Appurtenance(s) | 73.3 | 44.2 | 334.7 | 0.0 | 0.0 | 672.0 | 26.5 | 117.6 | 434.5 | 833.8 | 0.0 | 0.0 |
| 132.00 | Appurtenance(s) | 144.6 | 43.8 | 37.9 | 0.0 | 0.0 | 12.0 | 26.5 | 117.6 | 209.1 | 173.4 | 0.0 | 0.0 |
| 135.00 | | 283.4 | 129.0 | | | | | 80.1 | 268.7 | 363.5 | 397.8 | 0.0 | 0.0 |
| 140.00 | Appurtenance(s) | 344.1 | 207.3 | 3,476.6 | 0.0 | -3,128.8 | 4,925.0 | 110.0 | 400.6 | 3,930.7 | 5,532.9 | 0.0 | 0.0 |
| 145.00 | | 297.3 | 197.6 | | | | | 105.5 | 279.1 | 402.9 | 476.7 | 0.0 | 0.0 |
| 150.00 | Appurtenance(s) | 128.5 | 187.9 | 36.8 | 0.0 | 0.0 | 12.0 | 0.0 | 194.0 | 165.3 | 393.9 | 0.0 | 0.0 |
| | | | | | | | | | Totals: | 24,726.6 | 57,095.9 | 0.00 | 0.00 |

Site Number: 302484 Code: ANSI/TIA-222-H 

Site Name: Branford CT 6, CT Engineering Number:13701211_C3_03 8/3/2021 4:57:52 PM

Customer: DISH WIRELESS L.L.C.

Load Case: 1.2D + 1.0W 118 mph with No Ice 26 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 | -62.09 | -29.34 | 0.00 | -3,127.68 | 0.00 | 3,127.68 | 3,157.17 | 784.20 | 2,737.77 | 2,376.61 | 0.00 | 0.00 | 0.622 |
| 2.00 | -61.15 | -29.16 | 0.00 | -3,069.00 | 0.00 | 3,069.00 | 3,140.17 | 777.55 | 2,691.61 | 2,343.59 | 0.02 | -0.10 | 0.615 |
| 5.00 | -59.54 | -28.84 | 0.00 | -2,981.52 | 0.00 | 2,981.52 | 3,114.35 | 767.59 | 2,623.11 | 2,294.24 | 0.14 | -0.26 | 0.504 |
| 10.00 | -56.92 | -28.39 | 0.00 | -2,837.31 | 0.00 | 2,837.31 | 3,070.50 | 750.99 | 2,510.89 | 2,212.51 | 0.53 | -0.47 | 0.488 |
| 15.00 | -54.35 | -28.05 | 0.00 | -2,695.36 | 0.00 | 2,695.36 | 3,025.61 | 734.39 | 2,401.13 | 2,131.46 | 1.14 | -0.69 | 0.472 |
| 18.00 | -52.81 | -27.84 | 0.00 | -2,611.20 | 0.00 | 2,611.20 | 2,998.18 | 724.42 | 2,336.45 | 2,083.18 | 1.62 | -0.82 | 0.463 |
| 18.00 | -52.81 | -27.84 | 0.00 | -2,611.20 | 0.00 | 2,611.20 | 2,998.18 | 724.42 | 2,336.45 | 2,083.18 | 1.62 | -0.82 | 0.556 |
| 20.00 | -51.89 | -27.63 | 0.00 | -2,555.52 | 0.00 | 2,555.52 | 2,979.68 | 717.78 | 2,293.82 | 2,051.14 | 1.98 | -0.90 | 0.548 |
| 25.00 | -49.69 | -27.27 | 0.00 | -2,417.38 | 0.00 | 2,417.38 | 2,932.71 | 701.18 | 2,188.97 | 1,971.59 | 3.06 | -1.16 | 0.529 |
| 30.00 | -47.55 | -26.97 | 0.00 | -2,281.05 | 0.00 | 2,281.05 | 2,875.21 | 684.57 | 2,086.57 | 1,886.65 | 4.41 | -1.41 | 0.512 |
| 31.50 | -46.88 | -26.81 | 0.00 | -2,240.59 | 0.00 | 2,240.59 | 2,854.29 | 679.59 | 2,056.33 | 1,859.14 | 4.87 | -1.49 | 0.507 |
| 35.00 | -44.94 | -26.58 | 0.00 | -2,146.77 | 0.00 | 2,146.77 | 2,805.48 | 667.97 | 1,986.62 | 1,795.73 | 6.03 | -1.67 | 0.486 |
| 35.67 | -44.53 | -26.42 | 0.00 | -2,129.05 | 0.00 | 2,129.05 | 2,253.08 | 567.85 | 1,719.88 | 1,471.98 | 6.26 | -1.70 | 0.547 |
| 40.00 | -42.78 | -26.02 | 0.00 | -2,014.55 | 0.00 | 2,014.55 | 2,223.50 | 555.84 | 1,647.92 | 1,421.63 | 7.90 | -1.91 | 0.525 |
| 45.00 | -40.79 | -25.56 | 0.00 | -1,884.43 | 0.00 | 1,884.43 | 2,188.39 | 541.99 | 1,566.79 | 1,363.95 | 10.04 | -2.16 | 0.500 |
| 50.00 | -38.82 | -25.08 | 0.00 | -1,756.62 | 0.00 | 1,756.62 | 2,152.25 | 528.13 | 1,487.72 | 1,306.78 | 12.44 | -2.41 | 0.475 |
| 55.00 | -36.88 | -24.60 | 0.00 | -1,631.23 | 0.00 | 1,631.23 | 2,115.06 | 514.27 | 1,410.69 | 1,250.16 | 15.10 | -2.65 | 0.449 |
| 59.00 | -35.29 | -24.27 | 0.00 | -1,532.83 | 0.00 | 1,532.83 | 2,084.57 | 503.18 | 1,350.55 | 1,205.28 | 17.40 | -2.85 | 0.419 |
| 59.00 | -35.29 | -24.27 | 0.00 | -1,532.83 | 0.00 | 1,532.83 | 2,084.57 | 503.18 | 1,350.55 | 1,205.28 | 17.40 | -2.85 | 0.601 |
| 60.00 | -34.93 | -24.07 | 0.00 | -1,508.56 | 0.00 | 1,508.56 | 2,076.84 | 500.41 | 1,335.71 | 1,194.13 | 18.00 | -2.89 | 0.594 |
| 65.00 | -33.32 | -23.59 | 0.00 | -1,388.21 | 0.00 | 1,388.21 | 2,037.58 | 486.55 | 1,262.78 | 1,138.75 | 21.21 | -3.22 | 0.559 |
| 70.00 | -31.66 | -22.48 | 0.00 | -1,270.25 | 0.00 | 1,270.25 | 1,985.31 | 472.69 | 1,191.90 | 1,077.58 | 24.75 | -3.53 | 0.527 |
| 73.50 | -30.35 | -22.28 | 0.00 | -1,191.59 | 0.00 | 1,191.59 | 1,474.00 | 377.76 | 952.88 | 802.36 | 27.42 | -3.75 | 0.584 |
| 75.00 | -29.91 | -22.12 | 0.00 | -1,158.17 | 0.00 | 1,158.17 | 1,466.32 | 374.43 | 936.20 | 791.10 | 28.61 | -3.84 | 0.571 |
| 80.00 | -28.56 | -21.81 | 0.00 | -1,047.55 | 0.00 | 1,047.55 | 1,440.03 | 363.37 | 881.69 | 753.74 | 32.80 | -4.15 | 0.526 |
| 85.00 | -27.25 | -21.49 | 0.00 | -938.50 | 0.00 | 938.50 | 1,412.71 | 352.30 | 828.81 | 716.70 | 37.31 | -4.45 | 0.481 |
| 90.00 | -25.95 | -21.14 | 0.00 | -831.07 | 0.00 | 831.07 | 1,384.35 | 341.23 | 777.56 | 680.02 | 42.12 | -4.73 | 0.434 |
| 95.00 | -24.68 | -20.79 | 0.00 | -725.35 | 0.00 | 725.35 | 1,354.95 | 330.16 | 727.95 | 643.77 | 47.22 | -5.00 | 0.387 |
| 100.00 | -23.44 | -20.47 | 0.00 | -621.40 | 0.00 | 621.40 | 1,324.51 | 319.09 | 679.97 | 607.99 | 52.58 | -5.24 | 0.339 |
| 103.00 | -19.19 | -17.52 | 0.00 | -559.98 | 0.00 | 559.98 | 1,305.75 | 312.45 | 651.97 | 586.76 | 55.91 | -5.37 | 0.307 |
| 105.00 | -18.70 | -17.29 | 0.00 | -524.93 | 0.00 | 524.93 | 1,293.03 | 308.02 | 633.63 | 572.72 | 58.18 | -5.46 | 0.290 |
| 110.00 | -17.52 | -16.95 | 0.00 | -438.50 | 0.00 | 438.50 | 1,247.19 | 296.95 | 588.93 | 532.34 | 64.00 | -5.66 | 0.251 |
| 110.00 | -17.52 | -16.95 | 0.00 | -438.50 | 0.00 | 438.50 | 856.53 | 223.97 | 445.40 | 367.75 | 64.00 | -5.66 | 0.299 |
| 113.00 | -14.70 | -13.71 | 0.00 | -384.24 | 0.00 | 384.24 | 845.63 | 218.97 | 425.76 | 354.91 | 67.58 | -5.76 | 0.261 |
| 115.00 | -14.30 | -13.42 | 0.00 | -356.82 | 0.00 | 356.82 | 838.16 | 215.64 | 412.92 | 346.37 | 70.01 | -5.84 | 0.244 |
| 119.00 | -13.34 | -13.01 | 0.00 | -303.16 | 0.00 | 303.16 | 822.72 | 208.98 | 387.82 | 329.40 | 74.95 | -5.97 | 0.197 |
| 119.00 | -13.34 | -13.01 | 0.00 | -303.16 | 0.00 | 303.16 | 822.72 | 208.98 | 387.82 | 329.40 | 74.95 | -5.97 | 0.940 |
| 120.00 | -13.16 | -12.86 | 0.00 | -290.15 | 0.00 | 290.15 | 818.76 | 207.32 | 381.66 | 325.17 | 76.20 | -6.00 | 0.912 |
| 122.00 | -12.78 | -12.52 | 0.00 | -264.33 | 0.00 | 264.33 | 810.71 | 203.99 | 369.51 | 316.76 | 78.77 | -6.27 | 0.854 |
| 125.00 | -12.28 | -12.19 | 0.00 | -226.77 | 0.00 | 226.77 | 798.31 | 198.99 | 351.64 | 304.20 | 82.82 | -6.65 | 0.765 |
| 130.00 | -11.30 | -11.02 | 0.00 | -164.98 | 0.00 | 164.98 | 776.83 | 190.67 | 322.85 | 283.51 | 90.08 | -7.20 | 0.600 |
| 131.00 | -10.51 | -10.50 | 0.00 | -153.97 | 0.00 | 153.97 | 772.41 | 189.01 | 317.24 | 279.41 | 91.60 | -7.31 | 0.568 |
| 132.00 | -10.33 | -10.30 | 0.00 | -143.47 | 0.00 | 143.47 | 767.94 | 187.34 | 311.67 | 275.32 | 93.14 | -7.40 | 0.538 |

Load Case: 1.2D + 1.0W 118 mph with No Ice 26 Iterations

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

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 135.00 | -9.93 | -9.94 | 0.00 | -112.57 | 0.00 | 112.57 | 754.30 | 182.35 | 295.28 | 263.15 | 97.86 | -7.66 | 0.444 |
| 140.00 | -4.96 | -5.31 | 0.00 | -62.86 | 0.00 | 62.86 | 730.89 | 174.02 | 268.95 | 243.21 | 106.04 | -7.98 | 0.266 |
| 145.00 | -4.54 | -4.86 | 0.00 | -36.29 | 0.00 | 36.29 | 695.93 | 165.70 | 243.85 | 220.38 | 114.49 | -8.19 | 0.172 |
| 150.00 | 0.00 | -4.16 | 0.00 | -11.98 | 0.00 | 11.98 | 660.97 | 157.37 | 219.97 | 198.67 | 123.11 | -8.31 | 0.061 |

**Load Case:** 0.9D + 1.0W — 118 mph with No Ice (Reduced DL) — 26 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 | | 127.8 | 0.0 | | | | | 0.0 | 0.0 | 127.8 | 0.0 | 0.0 | 0.0 |
| 2.00 | Reinf Bottom | 318.3 | 272.5 | | | | | 0.0 | 379.5 | 318.3 | 652.1 | 0.0 | 0.0 |
| 5.00 | | 505.1 | 404.4 | | | | | 0.0 | 734.6 | 505.1 | 1,139.1 | 0.0 | 0.0 |
| 10.00 | | 551.3 | 662.5 | | | | | 99.2 | 1,224.4 | 650.5 | 1,886.9 | 0.0 | 0.0 |
| 15.00 | | 376.2 | 648.0 | | | | | 98.3 | 1,224.4 | 474.5 | 1,872.4 | 0.0 | 0.0 |
| 18.00 | Reinf. Top Reinf. | 231.5 | 381.8 | | | | | 58.5 | 734.6 | 290.0 | 1,116.5 | 0.0 | 0.0 |
| 20.00 | | 318.2 | 251.7 | | | | | 38.8 | 379.5 | 357.0 | 631.2 | 0.0 | 0.0 |
| 25.00 | | 447.3 | 619.0 | | | | | 96.8 | 948.8 | 544.1 | 1,567.9 | 0.0 | 0.0 |
| 30.00 | | 286.8 | 604.5 | | | | | 96.8 | 948.8 | 383.6 | 1,553.4 | 0.0 | 0.0 |
| 31.50 | Bot - Section 2 | 223.9 | 178.5 | | | | | 29.3 | 284.6 | 253.2 | 463.2 | 0.0 | 0.0 |
| 35.00 | | 188.5 | 762.4 | | | | | 69.9 | 664.2 | 258.3 | 1,426.6 | 0.0 | 0.0 |
| 35.67 | Top - Section 1 | 229.0 | 143.7 | | | | | 13.5 | 126.5 | 242.6 | 270.3 | 0.0 | 0.0 |
| 40.00 | | 430.3 | 424.9 | | | | | 89.7 | 822.3 | 520.0 | 1,247.2 | 0.0 | 0.0 |
| 45.00 | | 464.7 | 478.9 | | | | | 107.1 | 948.8 | 571.8 | 1,427.8 | 0.0 | 0.0 |
| 50.00 | | 466.8 | 466.8 | | | | | 110.5 | 948.8 | 577.3 | 1,415.7 | 0.0 | 0.0 |
| 55.00 | | 420.6 | 454.7 | | | | | 113.7 | 948.8 | 534.3 | 1,403.6 | 0.0 | 0.0 |
| 59.00 | Reinf. Top | 233.5 | 355.1 | | | | | 93.1 | 808.0 | 326.7 | 1,163.1 | 0.0 | 0.0 |
| 60.00 | | 279.4 | 87.6 | | | | | 23.6 | 140.8 | 303.0 | 228.4 | 0.0 | 0.0 |
| 65.00 | | 464.0 | 430.6 | | | | | 119.5 | 704.0 | 583.5 | 1,134.6 | 0.0 | 0.0 |
| 70.00 | Bot - Section 3 | 360.9 | 418.5 | | | | | 122.2 | 628.2 | 483.1 | 1,046.7 | 0.0 | 0.0 |
| 73.50 | Top - Section 2 | 184.9 | 518.8 | | | | | 8.7 | 433.8 | 193.6 | 952.6 | 0.0 | 0.0 |
| 75.00 | | 238.4 | 98.4 | | | | | 3.8 | 185.9 | 242.1 | 284.3 | 0.0 | 0.0 |
| 80.00 | | 363.9 | 321.9 | | | | | 12.7 | 619.6 | 376.6 | 941.5 | 0.0 | 0.0 |
| 85.00 | | 359.1 | 312.2 | | | | | 12.9 | 619.6 | 372.0 | 931.9 | 0.0 | 0.0 |
| 90.00 | | 353.7 | 302.6 | | | | | 13.2 | 619.6 | 366.8 | 922.2 | 0.0 | 0.0 |
| 95.00 | | 347.6 | 292.9 | | | | | 13.4 | 619.6 | 361.0 | 912.5 | 0.0 | 0.0 |
| 100.00 | | 274.0 | 283.2 | | | | | 13.6 | 619.6 | 287.5 | 902.9 | 0.0 | 0.0 |
| 103.00 | Appurtenance(s) | 168.8 | 165.3 | 2,407.9 | 0.0 | 0.0 | 2,818.9 | 8.2 | 371.8 | 2,584.9 | 3,356.0 | 0.0 | 0.0 |
| 105.00 | | 232.3 | 108.3 | | | | | 5.5 | 243.6 | 237.8 | 351.9 | 0.0 | 0.0 |
| 110.00 | Top - Section 3 | 262.7 | 263.9 | | | | | 14.0 | 609.1 | 276.7 | 873.0 | 0.0 | 0.0 |
| 113.00 | Appurtenance(s) | 162.5 | 115.9 | 2,796.1 | 0.0 | 3,423.5 | 1,848.7 | 8.5 | 365.5 | 2,967.0 | 2,330.1 | 0.0 | 0.0 |
| 115.00 | | 272.0 | 75.8 | | | | | 5.7 | 232.2 | 277.7 | 308.0 | 0.0 | 0.0 |
| 119.00 | Reinf. Top | 258.1 | 148.2 | | | | | 64.4 | 587.8 | 322.5 | 735.9 | 0.0 | 0.0 |
| 120.00 | | 152.3 | 36.3 | | | | | 16.2 | 88.4 | 168.5 | 124.7 | 0.0 | 0.0 |
| 122.00 | Appurtenance(s) | 251.0 | 71.8 | 96.7 | 0.0 | 96.7 | 13.5 | 32.4 | 176.8 | 380.1 | 262.1 | 0.0 | 0.0 |
| 125.00 | | 337.1 | 105.5 | | | | | 48.9 | 227.0 | 385.9 | 332.5 | 0.0 | 0.0 |
| 130.00 | Appurtenance(s) | 224.1 | 170.0 | 759.6 | 0.0 | 837.9 | 247.1 | 131.2 | 379.9 | 1,115.0 | 797.0 | 0.0 | 0.0 |
| 131.00 | Appurtenance(s) | 73.3 | 33.1 | 334.7 | 0.0 | 0.0 | 504.0 | 26.5 | 88.2 | 434.5 | 625.3 | 0.0 | 0.0 |
| 132.00 | Appurtenance(s) | 144.6 | 32.8 | 37.9 | 0.0 | 0.0 | 9.0 | 26.5 | 88.2 | 209.1 | 130.0 | 0.0 | 0.0 |
| 135.00 | | 283.4 | 96.8 | | | | | 80.1 | 201.6 | 363.5 | 298.3 | 0.0 | 0.0 |
| 140.00 | Appurtenance(s) | 344.1 | 155.5 | 3,476.6 | 0.0 | -3,128.8 | 3,693.8 | 110.0 | 300.5 | 3,930.7 | 4,149.7 | 0.0 | 0.0 |
| 145.00 | | 297.3 | 148.2 | | | | | 105.5 | 209.3 | 402.9 | 357.5 | 0.0 | 0.0 |
| 150.00 | Appurtenance(s) | 128.5 | 140.9 | 36.8 | 0.0 | 0.0 | 9.0 | 0.0 | 145.5 | 165.3 | 295.4 | 0.0 | 0.0 |
| | | | | | | | | | Totals: | 24,726.6 | 42,821.9 | 0.00 | 0.00 |

Site Number: 302484 Code: ANSI/TIA-222-H 

Site Name: Branford CT 6, CT Engineering Number:13701211_C3_03 8/3/2021 4:58:06 PM

Customer: DISH WIRELESS L.L.C.

Load Case: 0.9D + 1.0W 118 mph with No Ice (Reduced DL) 26 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 | -46.56 | -29.33 | 0.00 | -3,065.47 | 0.00 | 3,065.47 | 3,157.17 | 784.20 | 2,737.77 | 2,376.61 | 0.00 | 0.00 | 0.607 |
| 2.00 | -45.84 | -29.11 | 0.00 | -3,006.82 | 0.00 | 3,006.82 | 3,140.17 | 777.55 | 2,691.61 | 2,343.59 | 0.02 | -0.10 | 0.600 |
| 5.00 | -44.61 | -28.74 | 0.00 | -2,919.50 | 0.00 | 2,919.50 | 3,114.35 | 767.59 | 2,623.11 | 2,294.24 | 0.14 | -0.26 | 0.491 |
| 10.00 | -42.63 | -28.24 | 0.00 | -2,775.79 | 0.00 | 2,775.79 | 3,070.50 | 750.99 | 2,510.89 | 2,212.51 | 0.52 | -0.47 | 0.476 |
| 15.00 | -40.68 | -27.86 | 0.00 | -2,634.62 | 0.00 | 2,634.62 | 3,025.61 | 734.39 | 2,401.13 | 2,131.46 | 1.12 | -0.67 | 0.460 |
| 18.00 | -39.52 | -27.63 | 0.00 | -2,551.04 | 0.00 | 2,551.04 | 2,998.18 | 724.42 | 2,336.45 | 2,083.18 | 1.58 | -0.80 | 0.450 |
| 18.00 | -39.52 | -27.63 | 0.00 | -2,551.04 | 0.00 | 2,551.04 | 2,998.18 | 724.42 | 2,336.45 | 2,083.18 | 1.58 | -0.80 | 0.541 |
| 20.00 | -38.81 | -27.38 | 0.00 | -2,495.78 | 0.00 | 2,495.78 | 2,979.68 | 717.78 | 2,293.82 | 2,051.14 | 1.94 | -0.88 | 0.533 |
| 25.00 | -37.14 | -26.97 | 0.00 | -2,358.90 | 0.00 | 2,358.90 | 2,932.71 | 701.18 | 2,188.97 | 1,971.59 | 3.00 | -1.13 | 0.514 |
| 30.00 | -35.52 | -26.65 | 0.00 | -2,224.08 | 0.00 | 2,224.08 | 2,875.21 | 684.57 | 2,086.57 | 1,886.65 | 4.32 | -1.38 | 0.497 |
| 31.50 | -35.00 | -26.46 | 0.00 | -2,184.11 | 0.00 | 2,184.11 | 2,854.29 | 679.59 | 2,056.33 | 1,859.14 | 4.76 | -1.46 | 0.492 |
| 35.00 | -33.54 | -26.22 | 0.00 | -2,091.51 | 0.00 | 2,091.51 | 2,805.48 | 667.97 | 1,986.62 | 1,795.73 | 5.90 | -1.63 | 0.472 |
| 35.67 | -33.22 | -26.04 | 0.00 | -2,074.03 | 0.00 | 2,074.03 | 2,253.08 | 567.85 | 1,719.88 | 1,471.98 | 6.13 | -1.66 | 0.531 |
| 40.00 | -31.89 | -25.61 | 0.00 | -1,961.18 | 0.00 | 1,961.18 | 2,223.50 | 555.84 | 1,647.92 | 1,421.63 | 7.73 | -1.87 | 0.509 |
| 45.00 | -30.37 | -25.12 | 0.00 | -1,833.14 | 0.00 | 1,833.14 | 2,188.39 | 541.99 | 1,566.79 | 1,363.95 | 9.82 | -2.11 | 0.485 |
| 50.00 | -28.88 | -24.61 | 0.00 | -1,707.56 | 0.00 | 1,707.56 | 2,152.25 | 528.13 | 1,487.72 | 1,306.78 | 12.16 | -2.35 | 0.460 |
| 55.00 | -27.41 | -24.11 | 0.00 | -1,584.54 | 0.00 | 1,584.54 | 2,115.06 | 514.27 | 1,410.69 | 1,250.16 | 14.75 | -2.59 | 0.434 |
| 59.00 | -26.22 | -23.78 | 0.00 | -1,488.09 | 0.00 | 1,488.09 | 2,084.57 | 503.18 | 1,350.55 | 1,205.28 | 17.00 | -2.77 | 0.405 |
| 59.00 | -26.22 | -23.78 | 0.00 | -1,488.09 | 0.00 | 1,488.09 | 2,084.57 | 503.18 | 1,350.55 | 1,205.28 | 17.00 | -2.77 | 0.581 |
| 60.00 | -25.93 | -23.55 | 0.00 | -1,464.31 | 0.00 | 1,464.31 | 2,076.84 | 500.41 | 1,335.71 | 1,194.13 | 17.58 | -2.82 | 0.574 |
| 65.00 | -24.70 | -23.05 | 0.00 | -1,346.55 | 0.00 | 1,346.55 | 2,037.58 | 486.55 | 1,262.78 | 1,138.75 | 20.71 | -3.14 | 0.540 |
| 70.00 | -23.46 | -21.91 | 0.00 | -1,231.33 | 0.00 | 1,231.33 | 1,985.31 | 472.69 | 1,191.90 | 1,077.58 | 24.16 | -3.44 | 0.508 |
| 73.50 | -22.46 | -21.72 | 0.00 | -1,154.64 | 0.00 | 1,154.64 | 1,474.00 | 377.76 | 952.88 | 802.36 | 26.76 | -3.65 | 0.564 |
| 75.00 | -22.12 | -21.53 | 0.00 | -1,122.06 | 0.00 | 1,122.06 | 1,466.32 | 374.43 | 936.20 | 791.10 | 27.92 | -3.74 | 0.551 |
| 80.00 | -21.10 | -21.20 | 0.00 | -1,014.39 | 0.00 | 1,014.39 | 1,440.03 | 363.37 | 881.69 | 753.74 | 32.00 | -4.04 | 0.507 |
| 85.00 | -20.09 | -20.86 | 0.00 | -908.38 | 0.00 | 908.38 | 1,412.71 | 352.30 | 828.81 | 716.70 | 36.39 | -4.33 | 0.463 |
| 90.00 | -19.11 | -20.51 | 0.00 | -804.06 | 0.00 | 804.06 | 1,384.35 | 341.23 | 777.56 | 680.02 | 41.07 | -4.60 | 0.418 |
| 95.00 | -18.14 | -20.16 | 0.00 | -701.50 | 0.00 | 701.50 | 1,354.95 | 330.16 | 727.95 | 643.77 | 46.03 | -4.86 | 0.372 |
| 100.00 | -17.21 | -19.85 | 0.00 | -600.72 | 0.00 | 600.72 | 1,324.51 | 319.09 | 679.97 | 607.99 | 51.24 | -5.09 | 0.325 |
| 103.00 | -14.07 | -16.99 | 0.00 | -541.19 | 0.00 | 541.19 | 1,305.75 | 312.45 | 651.97 | 586.76 | 54.48 | -5.22 | 0.295 |
| 105.00 | -13.70 | -16.76 | 0.00 | -507.20 | 0.00 | 507.20 | 1,293.03 | 308.02 | 633.63 | 572.72 | 56.68 | -5.31 | 0.279 |
| 110.00 | -12.81 | -16.43 | 0.00 | -423.41 | 0.00 | 423.41 | 1,247.19 | 296.95 | 588.93 | 532.34 | 62.34 | -5.50 | 0.240 |
| 110.00 | -12.81 | -16.43 | 0.00 | -423.41 | 0.00 | 423.41 | 856.53 | 223.97 | 445.40 | 367.75 | 62.34 | -5.50 | 0.286 |
| 113.00 | -10.76 | -13.27 | 0.00 | -370.68 | 0.00 | 370.68 | 845.63 | 218.97 | 425.76 | 354.91 | 65.82 | -5.60 | 0.250 |
| 115.00 | -10.46 | -12.98 | 0.00 | -344.14 | 0.00 | 344.14 | 838.16 | 215.64 | 412.92 | 346.37 | 68.18 | -5.67 | 0.234 |
| 119.00 | -9.74 | -12.60 | 0.00 | -292.21 | 0.00 | 292.21 | 822.72 | 208.98 | 387.82 | 329.40 | 72.98 | -5.80 | 0.188 |
| 119.00 | -9.74 | -12.60 | 0.00 | -292.21 | 0.00 | 292.21 | 822.72 | 208.98 | 387.82 | 329.40 | 72.98 | -5.80 | 0.903 |
| 120.00 | -9.60 | -12.45 | 0.00 | -279.61 | 0.00 | 279.61 | 818.76 | 207.32 | 381.66 | 325.17 | 74.20 | -5.82 | 0.875 |
| 122.00 | -9.31 | -12.09 | 0.00 | -254.62 | 0.00 | 254.62 | 810.71 | 203.99 | 369.51 | 316.76 | 76.69 | -6.09 | 0.819 |
| 125.00 | -8.93 | -11.74 | 0.00 | -218.34 | 0.00 | 218.34 | 798.31 | 198.99 | 351.64 | 304.20 | 80.63 | -6.46 | 0.732 |
| 130.00 | -8.22 | -10.59 | 0.00 | -158.78 | 0.00 | 158.78 | 776.83 | 190.67 | 322.85 | 283.51 | 87.67 | -6.99 | 0.574 |
| 131.00 | -7.63 | -10.09 | 0.00 | -148.19 | 0.00 | 148.19 | 772.41 | 189.01 | 317.24 | 279.41 | 89.14 | -7.09 | 0.543 |
| 132.00 | -7.50 | -9.89 | 0.00 | -138.10 | 0.00 | 138.10 | 767.94 | 187.34 | 311.67 | 275.32 | 90.63 | -7.18 | 0.514 |

**Load Case:** 0.9D + 1.0W — 118 mph with No Ice (Reduced DL) — 26 Iterations

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

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 135.00 | -7.20 | -9.53 | 0.00 | -108.43 | 0.00 | 108.43 | 754.30 | 182.35 | 295.28 | 263.15 | 95.21 | -7.43 | 0.424 |
| 140.00 | -3.59 | -5.10 | 0.00 | -60.78 | 0.00 | 60.78 | 730.89 | 174.02 | 268.95 | 243.21 | 103.15 | -7.74 | 0.256 |
| 145.00 | -3.27 | -4.66 | 0.00 | -35.29 | 0.00 | 35.29 | 695.93 | 165.70 | 243.85 | 220.38 | 111.34 | -7.94 | 0.166 |
| 150.00 | 0.00 | -4.16 | 0.00 | -11.98 | 0.00 | 11.98 | 660.97 | 157.37 | 219.97 | 198.67 | 119.70 | -8.05 | 0.061 |

**Load Case:** 1.2D + 1.0Di + 1.0Wi — 49 mph with 0.85 in Radial Ice — 25 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 | | 17.5 | 0.0 | | | | | 0.0 | 0.0 | 17.5 | 0.0 | 0.0 | 0.0 |
| 2.00 | Reinf Bottom | 43.6 | 421.9 | | | | | 4.9 | 575.3 | 48.6 | 997.1 | 0.0 | 0.0 |
| 5.00 | | 69.1 | 637.7 | | | | | 9.2 | 1,098.6 | 78.2 | 1,736.3 | 0.0 | 0.0 |
| 10.00 | | 85.2 | 1,056.8 | | | | | 17.9 | 1,848.7 | 103.1 | 2,905.5 | 0.0 | 0.0 |
| 15.00 | | 67.4 | 1,042.9 | | | | | 20.0 | 1,861.6 | 87.4 | 2,904.5 | 0.0 | 0.0 |
| 18.00 | Reinf. Top Reinf. | 41.7 | 618.1 | | | | | 12.8 | 1,121.4 | 54.4 | 1,739.5 | 0.0 | 0.0 |
| 20.00 | | 57.6 | 408.6 | | | | | 8.8 | 602.2 | 66.4 | 1,010.8 | 0.0 | 0.0 |
| 25.00 | | 81.3 | 1,007.0 | | | | | 22.8 | 1,496.1 | 104.1 | 2,503.1 | 0.0 | 0.0 |
| 30.00 | | 52.4 | 987.2 | | | | | 23.6 | 1,501.5 | 76.0 | 2,488.7 | 0.0 | 0.0 |
| 31.50 | Bot - Section 2 | 41.1 | 292.6 | | | | | 7.3 | 451.4 | 48.4 | 744.0 | 0.0 | 0.0 |
| 35.00 | | 34.7 | 1,145.3 | | | | | 17.6 | 1,054.7 | 52.2 | 2,200.0 | 0.0 | 0.0 |
| 35.67 | Top - Section 1 | 42.2 | 216.3 | | | | | 3.4 | 201.1 | 45.6 | 417.4 | 0.0 | 0.0 |
| 40.00 | | 79.6 | 724.1 | | | | | 22.7 | 1,309.0 | 102.3 | 2,033.1 | 0.0 | 0.0 |
| 45.00 | | 86.5 | 818.3 | | | | | 27.5 | 1,513.7 | 114.0 | 2,332.0 | 0.0 | 0.0 |
| 50.00 | | 87.6 | 799.7 | | | | | 28.6 | 1,517.0 | 116.2 | 2,316.7 | 0.0 | 0.0 |
| 55.00 | | 79.5 | 780.9 | | | | | 41.7 | 1,519.9 | 121.3 | 2,300.8 | 0.0 | 0.0 |
| 59.00 | Reinf. Top | 44.4 | 611.4 | | | | | 34.3 | 1,283.2 | 78.7 | 1,894.6 | 0.0 | 0.0 |
| 60.00 | | 53.5 | 151.2 | | | | | 8.7 | 233.1 | 62.2 | 384.3 | 0.0 | 0.0 |
| 65.00 | | 89.3 | 742.6 | | | | | 44.2 | 1,166.6 | 133.5 | 1,909.2 | 0.0 | 0.0 |
| 70.00 | Bot - Section 3 | 74.5 | 723.2 | | | | | 45.4 | 1,025.3 | 119.9 | 1,748.5 | 0.0 | 0.0 |
| 73.50 | Top - Section 2 | 42.5 | 808.0 | | | | | 32.4 | 707.3 | 74.9 | 1,515.3 | 0.0 | 0.0 |
| 75.00 | | 54.9 | 180.8 | | | | | 14.0 | 303.4 | 68.9 | 484.2 | 0.0 | 0.0 |
| 80.00 | | 83.9 | 590.4 | | | | | 47.5 | 1,012.1 | 131.4 | 1,602.5 | 0.0 | 0.0 |
| 85.00 | | 83.0 | 573.8 | | | | | 48.5 | 1,013.4 | 131.5 | 1,587.2 | 0.0 | 0.0 |
| 90.00 | | 82.0 | 557.1 | | | | | 49.4 | 1,014.7 | 131.4 | 1,571.8 | 0.0 | 0.0 |
| 95.00 | | 80.8 | 540.3 | | | | | 50.3 | 1,015.9 | 131.1 | 1,556.3 | 0.0 | 0.0 |
| 100.00 | | 63.8 | 523.5 | | | | | 51.2 | 1,017.1 | 115.0 | 1,540.6 | 0.0 | 0.0 |
| 103.00 | Appurtenance(s) | 39.4 | 306.5 | 505.2 | 0.0 | 0.0 | 4,953.0 | 31.1 | 610.8 | 575.7 | 5,870.3 | 0.0 | 0.0 |
| 105.00 | | 54.3 | 201.2 | | | | | 20.9 | 401.8 | 75.3 | 602.9 | 0.0 | 0.0 |
| 110.00 | Top - Section 3 | 61.5 | 489.5 | | | | | 52.9 | 1,005.2 | 114.4 | 1,494.7 | 0.0 | 0.0 |
| 113.00 | Appurtenance(s) | 37.9 | 235.7 | 600.9 | 0.0 | 697.1 | 3,892.1 | 32.1 | 603.6 | 670.9 | 4,731.4 | 0.0 | 0.0 |
| 115.00 | | 44.8 | 154.5 | | | | | 24.4 | 387.3 | 69.1 | 541.8 | 0.0 | 0.0 |
| 119.00 | Reinf. Top | 37.0 | 301.6 | | | | | 76.7 | 970.8 | 113.8 | 1,272.4 | 0.0 | 0.0 |
| 120.00 | | 21.9 | 74.3 | | | | | 20.9 | 165.9 | 42.8 | 240.2 | 0.0 | 0.0 |
| 122.00 | Appurtenance(s) | 36.2 | 146.7 | 31.1 | 0.0 | 31.1 | 51.8 | 42.8 | 331.9 | 110.0 | 530.3 | 0.0 | 0.0 |
| 125.00 | | 62.0 | 215.5 | | | | | 38.9 | 411.1 | 100.9 | 626.7 | 0.0 | 0.0 |
| 130.00 | Appurtenance(s) | 48.4 | 347.0 | 154.2 | 0.0 | 165.0 | 604.4 | 51.7 | 665.5 | 254.2 | 1,616.8 | 0.0 | 0.0 |
| 131.00 | Appurtenance(s) | 15.9 | 68.1 | 83.9 | 0.0 | 0.0 | 867.0 | 15.5 | 151.4 | 115.3 | 1,086.4 | 0.0 | 0.0 |
| 132.00 | Appurtenance(s) | 31.5 | 67.5 | 8.7 | 0.0 | 0.0 | 29.4 | 15.6 | 151.4 | 55.7 | 248.3 | 0.0 | 0.0 |
| 135.00 | | 60.5 | 198.6 | | | | | 32.6 | 331.0 | 93.1 | 529.6 | 0.0 | 0.0 |
| 140.00 | Appurtenance(s) | 73.0 | 318.6 | 743.9 | 0.0 | -646.3 | 6,737.8 | 42.9 | 489.6 | 859.8 | 7,546.0 | 0.0 | 0.0 |
| 145.00 | | 67.2 | 304.3 | | | | | 26.4 | 306.4 | 93.6 | 610.7 | 0.0 | 0.0 |
| 150.00 | Appurtenance(s) | 31.1 | 290.0 | 8.8 | 0.0 | 0.0 | 24.4 | 0.0 | 194.0 | 40.0 | 508.4 | 0.0 | 0.0 |
| | | | | | | | | Totals: | | 5,799.04 | 72,480.8 | 0.00 | 0.00 |

Load Case: 1.2D + 1.0Di + 1.0Wi 49 mph with 0.85 in Radial Ice 25 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 | -79.79 | -6.82 | 0.00 | -772.51 | 0.00 | 772.51 | 3,157.17 | 784.20 | 2,737.77 | 2,376.61 | 0.00 | 0.00 | 0.165 |
| 2.00 | -78.78 | -6.82 | 0.00 | -758.86 | 0.00 | 758.86 | 3,140.17 | 777.55 | 2,691.61 | 2,343.59 | 0.01 | -0.03 | 0.163 |
| 5.00 | -77.04 | -6.80 | 0.00 | -738.41 | 0.00 | 738.41 | 3,114.35 | 767.59 | 2,623.11 | 2,294.24 | 0.03 | -0.06 | 0.134 |
| 10.00 | -74.13 | -6.76 | 0.00 | -704.41 | 0.00 | 704.41 | 3,070.50 | 750.99 | 2,510.89 | 2,212.51 | 0.13 | -0.12 | 0.130 |
| 15.00 | -71.22 | -6.72 | 0.00 | -670.61 | 0.00 | 670.61 | 3,025.61 | 734.39 | 2,401.13 | 2,131.46 | 0.28 | -0.17 | 0.126 |
| 18.00 | -69.48 | -6.69 | 0.00 | -650.45 | 0.00 | 650.45 | 2,998.18 | 724.42 | 2,336.45 | 2,083.18 | 0.40 | -0.20 | 0.123 |
| 18.00 | -69.48 | -6.69 | 0.00 | -650.45 | 0.00 | 650.45 | 2,998.18 | 724.42 | 2,336.45 | 2,083.18 | 0.40 | -0.20 | 0.149 |
| 20.00 | -68.46 | -6.67 | 0.00 | -637.07 | 0.00 | 637.07 | 2,979.68 | 717.78 | 2,293.82 | 2,051.14 | 0.49 | -0.22 | 0.147 |
| 25.00 | -65.95 | -6.63 | 0.00 | -603.71 | 0.00 | 603.71 | 2,932.71 | 701.18 | 2,188.97 | 1,971.59 | 0.76 | -0.29 | 0.142 |
| 30.00 | -63.46 | -6.59 | 0.00 | -570.56 | 0.00 | 570.56 | 2,875.21 | 684.57 | 2,086.57 | 1,886.65 | 1.09 | -0.35 | 0.138 |
| 31.50 | -62.71 | -6.57 | 0.00 | -560.69 | 0.00 | 560.69 | 2,854.29 | 679.59 | 2,056.33 | 1,859.14 | 1.21 | -0.37 | 0.136 |
| 35.00 | -60.51 | -6.53 | 0.00 | -537.70 | 0.00 | 537.70 | 2,805.48 | 667.97 | 1,986.62 | 1,795.73 | 1.50 | -0.41 | 0.131 |
| 35.67 | -60.09 | -6.51 | 0.00 | -533.35 | 0.00 | 533.35 | 2,253.08 | 567.85 | 1,719.88 | 1,471.98 | 1.56 | -0.42 | 0.148 |
| 40.00 | -58.05 | -6.45 | 0.00 | -505.14 | 0.00 | 505.14 | 2,223.50 | 555.84 | 1,647.92 | 1,421.63 | 1.96 | -0.48 | 0.142 |
| 45.00 | -55.71 | -6.38 | 0.00 | -472.88 | 0.00 | 472.88 | 2,188.39 | 541.99 | 1,566.79 | 1,363.95 | 2.50 | -0.54 | 0.135 |
| 50.00 | -53.39 | -6.30 | 0.00 | -440.99 | 0.00 | 440.99 | 2,152.25 | 528.13 | 1,487.72 | 1,306.78 | 3.10 | -0.60 | 0.129 |
| 55.00 | -51.09 | -6.20 | 0.00 | -409.50 | 0.00 | 409.50 | 2,115.06 | 514.27 | 1,410.69 | 1,250.16 | 3.76 | -0.66 | 0.122 |
| 59.00 | -49.19 | -6.12 | 0.00 | -384.71 | 0.00 | 384.71 | 2,084.57 | 503.18 | 1,350.55 | 1,205.28 | 4.34 | -0.71 | 0.114 |
| 59.00 | -49.19 | -6.12 | 0.00 | -384.71 | 0.00 | 384.71 | 2,084.57 | 503.18 | 1,350.55 | 1,205.28 | 4.34 | -0.71 | 0.163 |
| 60.00 | -48.80 | -6.10 | 0.00 | -378.59 | 0.00 | 378.59 | 2,076.84 | 500.41 | 1,335.71 | 1,194.13 | 4.49 | -0.72 | 0.161 |
| 65.00 | -46.89 | -6.00 | 0.00 | -348.11 | 0.00 | 348.11 | 2,037.58 | 486.55 | 1,262.78 | 1,138.75 | 5.29 | -0.80 | 0.152 |
| 70.00 | -44.83 | -5.78 | 0.00 | -318.10 | 0.00 | 318.10 | 1,985.31 | 472.69 | 1,191.90 | 1,077.58 | 6.17 | -0.88 | 0.143 |
| 73.50 | -43.31 | -5.71 | 0.00 | -297.88 | 0.00 | 297.88 | 1,474.00 | 377.76 | 952.88 | 802.36 | 6.84 | -0.94 | 0.159 |
| 75.00 | -42.82 | -5.67 | 0.00 | -289.32 | 0.00 | 289.32 | 1,466.32 | 374.43 | 936.20 | 791.10 | 7.14 | -0.96 | 0.156 |
| 80.00 | -41.22 | -5.56 | 0.00 | -260.97 | 0.00 | 260.97 | 1,440.03 | 363.37 | 881.69 | 753.74 | 8.19 | -1.04 | 0.144 |
| 85.00 | -39.62 | -5.45 | 0.00 | -233.15 | 0.00 | 233.15 | 1,412.71 | 352.30 | 828.81 | 716.70 | 9.31 | -1.11 | 0.132 |
| 90.00 | -38.05 | -5.33 | 0.00 | -205.89 | 0.00 | 205.89 | 1,384.35 | 341.23 | 777.56 | 680.02 | 10.52 | -1.18 | 0.119 |
| 95.00 | -36.49 | -5.21 | 0.00 | -179.21 | 0.00 | 179.21 | 1,354.95 | 330.16 | 727.95 | 643.77 | 11.79 | -1.25 | 0.107 |
| 100.00 | -34.95 | -5.09 | 0.00 | -153.16 | 0.00 | 153.16 | 1,324.51 | 319.09 | 679.97 | 607.99 | 13.13 | -1.31 | 0.094 |
| 103.00 | -29.09 | -4.39 | 0.00 | -137.90 | 0.00 | 137.90 | 1,305.75 | 312.45 | 651.97 | 586.76 | 13.96 | -1.34 | 0.085 |
| 105.00 | -28.49 | -4.32 | 0.00 | -129.11 | 0.00 | 129.11 | 1,293.03 | 308.02 | 633.63 | 572.72 | 14.53 | -1.36 | 0.080 |
| 110.00 | -26.99 | -4.19 | 0.00 | -107.51 | 0.00 | 107.51 | 1,247.19 | 296.95 | 588.93 | 532.34 | 15.98 | -1.41 | 0.070 |
| 110.00 | -26.99 | -4.19 | 0.00 | -107.51 | 0.00 | 107.51 | 856.53 | 223.97 | 445.40 | 367.75 | 15.98 | -1.41 | 0.084 |
| 113.00 | -22.28 | -3.41 | 0.00 | -94.26 | 0.00 | 94.26 | 845.63 | 218.97 | 425.76 | 354.91 | 16.88 | -1.44 | 0.073 |
| 115.00 | -21.74 | -3.33 | 0.00 | -87.44 | 0.00 | 87.44 | 838.16 | 215.64 | 412.92 | 346.37 | 17.48 | -1.45 | 0.069 |
| 119.00 | -20.47 | -3.19 | 0.00 | -74.11 | 0.00 | 74.11 | 822.72 | 208.98 | 387.82 | 329.40 | 18.71 | -1.49 | 0.056 |
| 119.00 | -20.47 | -3.19 | 0.00 | -74.11 | 0.00 | 74.11 | 822.72 | 208.98 | 387.82 | 329.40 | 18.71 | -1.49 | 0.250 |
| 120.00 | -20.23 | -3.16 | 0.00 | -70.92 | 0.00 | 70.92 | 818.76 | 207.32 | 381.66 | 325.17 | 19.03 | -1.49 | 0.243 |
| 122.00 | -19.69 | -3.06 | 0.00 | -64.57 | 0.00 | 64.57 | 810.71 | 203.99 | 369.51 | 316.76 | 19.67 | -1.56 | 0.228 |
| 125.00 | -19.07 | -2.98 | 0.00 | -55.38 | 0.00 | 55.38 | 798.31 | 198.99 | 351.64 | 304.20 | 20.68 | -1.65 | 0.206 |
| 130.00 | -17.45 | -2.70 | 0.00 | -40.31 | 0.00 | 40.31 | 776.83 | 190.67 | 322.85 | 283.51 | 22.48 | -1.79 | 0.165 |
| 131.00 | -16.37 | -2.56 | 0.00 | -37.60 | 0.00 | 37.60 | 772.41 | 189.01 | 317.24 | 279.41 | 22.86 | -1.81 | 0.156 |
| 132.00 | -16.12 | -2.51 | 0.00 | -35.04 | 0.00 | 35.04 | 767.94 | 187.34 | 311.67 | 275.32 | 23.24 | -1.84 | 0.148 |

Load Case: 1.2D + 1.0Di + 1.0Wi 49 mph with 0.85 in Radial Ice 25 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

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 135.00 | -15.59 | -2.42 | 0.00 | -27.52 | 0.00 | 27.52 | 754.30 | 182.35 | 295.28 | 263.15 | 24.42 | -1.90 | 0.125 |
| 140.00 | -8.08 | -1.31 | 0.00 | -15.42 | 0.00 | 15.42 | 730.89 | 174.02 | 268.95 | 243.21 | 26.45 | -1.98 | 0.075 |
| 145.00 | -7.47 | -1.20 | 0.00 | -8.86 | 0.00 | 8.86 | 695.93 | 165.70 | 243.85 | 220.38 | 28.55 | -2.03 | 0.051 |
| 150.00 | 0.00 | -0.94 | 0.00 | -2.85 | 0.00 | 2.85 | 660.97 | 157.37 | 219.97 | 198.67 | 30.70 | -2.06 | 0.014 |

**Load Case:** 1.0D + 1.0W Serviceability 60 mph 24 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
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 | | 29.6 | 0.0 | | | | | 0.0 | 0.0 | 29.6 | 0.0 | 0.0 | 0.0 |
| 2.00 | Reinf Bottom | 73.7 | 302.8 | | | | | 0.0 | 421.7 | 73.7 | 724.5 | 0.0 | 0.0 |
| 5.00 | | 117.0 | 449.4 | | | | | 0.0 | 816.3 | 117.0 | 1,265.7 | 0.0 | 0.0 |
| 10.00 | | 127.7 | 736.1 | | | | | 23.0 | 1,360.5 | 150.6 | 2,096.6 | 0.0 | 0.0 |
| 15.00 | | 87.1 | 720.0 | | | | | 22.8 | 1,360.5 | 109.9 | 2,080.5 | 0.0 | 0.0 |
| 18.00 | Reinf. Top Reinf. | 53.6 | 424.3 | | | | | 13.6 | 816.3 | 67.2 | 1,240.6 | 0.0 | 0.0 |
| 20.00 | | 73.7 | 279.6 | | | | | 9.0 | 421.7 | 82.7 | 701.3 | 0.0 | 0.0 |
| 25.00 | | 103.6 | 687.8 | | | | | 22.4 | 1,054.2 | 126.0 | 1,742.1 | 0.0 | 0.0 |
| 30.00 | | 66.4 | 671.7 | | | | | 22.4 | 1,054.2 | 88.8 | 1,726.0 | 0.0 | 0.0 |
| 31.50 | Bot - Section 2 | 51.9 | 198.4 | | | | | 6.8 | 316.3 | 58.6 | 514.6 | 0.0 | 0.0 |
| 35.00 | | 43.6 | 847.1 | | | | | 16.2 | 738.0 | 59.8 | 1,585.1 | 0.0 | 0.0 |
| 35.67 | Top - Section 1 | 53.0 | 159.7 | | | | | 3.1 | 140.6 | 56.2 | 300.3 | 0.0 | 0.0 |
| 40.00 | | 99.6 | 472.1 | | | | | 20.8 | 913.7 | 120.4 | 1,385.7 | 0.0 | 0.0 |
| 45.00 | | 107.6 | 532.1 | | | | | 24.8 | 1,054.2 | 132.4 | 1,586.4 | 0.0 | 0.0 |
| 50.00 | | 108.1 | 518.7 | | | | | 25.6 | 1,054.2 | 133.7 | 1,573.0 | 0.0 | 0.0 |
| 55.00 | | 97.4 | 505.3 | | | | | 26.3 | 1,054.2 | 123.7 | 1,559.5 | 0.0 | 0.0 |
| 59.00 | Reinf. Top | 54.1 | 394.5 | | | | | 21.6 | 897.8 | 75.7 | 1,292.3 | 0.0 | 0.0 |
| 60.00 | | 64.7 | 97.3 | | | | | 5.5 | 156.4 | 70.2 | 253.7 | 0.0 | 0.0 |
| 65.00 | | 107.5 | 478.4 | | | | | 27.7 | 782.2 | 135.1 | 1,260.7 | 0.0 | 0.0 |
| 70.00 | Bot - Section 3 | 83.6 | 465.0 | | | | | 28.3 | 698.0 | 111.9 | 1,163.0 | 0.0 | 0.0 |
| 73.50 | Top - Section 2 | 42.8 | 576.5 | | | | | 2.0 | 481.9 | 44.8 | 1,058.4 | 0.0 | 0.0 |
| 75.00 | | 55.2 | 109.4 | | | | | 0.9 | 206.6 | 56.1 | 315.9 | 0.0 | 0.0 |
| 80.00 | | 84.3 | 357.6 | | | | | 2.9 | 688.5 | 87.2 | 1,046.1 | 0.0 | 0.0 |
| 85.00 | | 83.2 | 346.9 | | | | | 3.0 | 688.5 | 86.2 | 1,035.4 | 0.0 | 0.0 |
| 90.00 | | 81.9 | 336.2 | | | | | 3.0 | 688.5 | 84.9 | 1,024.7 | 0.0 | 0.0 |
| 95.00 | | 80.5 | 325.4 | | | | | 3.1 | 688.5 | 83.6 | 1,013.9 | 0.0 | 0.0 |
| 100.00 | | 63.4 | 314.7 | | | | | 3.1 | 688.5 | 66.6 | 1,003.2 | 0.0 | 0.0 |
| 103.00 | Appurtenance(s) | 39.1 | 183.7 | 557.6 | 0.0 | 0.0 | 3,132.1 | 1.9 | 413.1 | 598.6 | 3,728.9 | 0.0 | 0.0 |
| 105.00 | | 53.8 | 120.3 | | | | | 1.3 | 270.7 | 55.1 | 391.0 | 0.0 | 0.0 |
| 110.00 | Top - Section 3 | 60.8 | 293.2 | | | | | 3.2 | 676.8 | 64.1 | 970.0 | 0.0 | 0.0 |
| 113.00 | Appurtenance(s) | 37.6 | 128.8 | 647.5 | 0.0 | 792.8 | 2,054.1 | 2.0 | 406.1 | 687.1 | 2,589.0 | 0.0 | 0.0 |
| 115.00 | | 63.0 | 84.3 | | | | | 1.3 | 258.0 | 64.3 | 342.2 | 0.0 | 0.0 |
| 119.00 | Reinf. Top | 59.8 | 164.7 | | | | | 16.1 | 653.1 | 75.8 | 817.7 | 0.0 | 0.0 |
| 120.00 | | 35.3 | 40.4 | | | | | 4.0 | 98.2 | 39.3 | 138.6 | 0.0 | 0.0 |
| 122.00 | Appurtenance(s) | 58.1 | 79.7 | 22.4 | 0.0 | 22.4 | 15.0 | 8.1 | 196.4 | 88.6 | 291.2 | 0.0 | 0.0 |
| 125.00 | | 78.1 | 117.2 | | | | | 12.2 | 252.3 | 90.3 | 369.5 | 0.0 | 0.0 |
| 130.00 | Appurtenance(s) | 51.9 | 188.9 | 175.9 | 0.0 | 194.0 | 274.6 | 34.0 | 422.1 | 261.8 | 885.6 | 0.0 | 0.0 |
| 131.00 | Appurtenance(s) | 17.0 | 36.8 | 77.5 | 0.0 | 0.0 | 560.0 | 6.9 | 98.0 | 101.4 | 694.8 | 0.0 | 0.0 |
| 132.00 | Appurtenance(s) | 33.5 | 36.5 | 8.8 | 0.0 | 0.0 | 10.0 | 6.9 | 98.0 | 49.2 | 144.5 | 0.0 | 0.0 |
| 135.00 | | 65.6 | 107.5 | | | | | 20.8 | 223.9 | 86.5 | 331.5 | 0.0 | 0.0 |
| 140.00 | Appurtenance(s) | 79.7 | 172.7 | 805.1 | 0.0 | -724.6 | 4,104.2 | 28.4 | 333.9 | 913.2 | 4,610.8 | 0.0 | 0.0 |
| 145.00 | | 68.9 | 164.7 | | | | | 29.2 | 232.6 | 98.0 | 397.2 | 0.0 | 0.0 |
| 150.00 | Appurtenance(s) | 29.8 | 156.6 | 8.5 | 0.0 | 0.0 | 10.0 | 0.0 | 161.6 | 38.3 | 328.3 | 0.0 | 0.0 |
| | | | | | | | | | Totals: | 5,744.20 | 47,579.9 | 0.00 | 0.00 |

Load Case: 1.0D + 1.0W Serviceability 60 mph 24 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 | -51.76 | -6.81 | 0.00 | -718.58 | 0.00 | 718.58 | 3,157.17 | 784.20 | 2,737.77 | 2,376.61 | 0.00 | 0.00 | 0.150 |
| 2.00 | -51.03 | -6.76 | 0.00 | -704.96 | 0.00 | 704.96 | 3,140.17 | 777.55 | 2,691.61 | 2,343.59 | 0.01 | -0.02 | 0.148 |
| 5.00 | -49.76 | -6.68 | 0.00 | -684.68 | 0.00 | 684.68 | 3,114.35 | 767.59 | 2,623.11 | 2,294.24 | 0.03 | -0.06 | 0.121 |
| 10.00 | -47.66 | -6.57 | 0.00 | -651.27 | 0.00 | 651.27 | 3,070.50 | 750.99 | 2,510.89 | 2,212.51 | 0.12 | -0.11 | 0.117 |
| 15.00 | -45.58 | -6.48 | 0.00 | -618.43 | 0.00 | 618.43 | 3,025.61 | 734.39 | 2,401.13 | 2,131.46 | 0.26 | -0.16 | 0.113 |
| 18.00 | -44.33 | -6.43 | 0.00 | -598.97 | 0.00 | 598.97 | 2,998.18 | 724.42 | 2,336.45 | 2,083.18 | 0.37 | -0.19 | 0.111 |
| 18.00 | -44.33 | -6.43 | 0.00 | -598.97 | 0.00 | 598.97 | 2,998.18 | 724.42 | 2,336.45 | 2,083.18 | 0.37 | -0.19 | 0.133 |
| 20.00 | -43.63 | -6.38 | 0.00 | -586.11 | 0.00 | 586.11 | 2,979.68 | 717.78 | 2,293.82 | 2,051.14 | 0.45 | -0.21 | 0.132 |
| 25.00 | -41.88 | -6.29 | 0.00 | -554.22 | 0.00 | 554.22 | 2,932.71 | 701.18 | 2,188.97 | 1,971.59 | 0.70 | -0.27 | 0.127 |
| 30.00 | -40.15 | -6.22 | 0.00 | -522.78 | 0.00 | 522.78 | 2,875.21 | 684.57 | 2,086.57 | 1,886.65 | 1.01 | -0.32 | 0.123 |
| 31.50 | -39.63 | -6.17 | 0.00 | -513.46 | 0.00 | 513.46 | 2,854.29 | 679.59 | 2,056.33 | 1,859.14 | 1.12 | -0.34 | 0.121 |
| 35.00 | -38.05 | -6.12 | 0.00 | -491.85 | 0.00 | 491.85 | 2,805.48 | 667.97 | 1,986.62 | 1,795.73 | 1.38 | -0.38 | 0.117 |
| 35.67 | -37.74 | -6.08 | 0.00 | -487.77 | 0.00 | 487.77 | 2,253.08 | 567.85 | 1,719.88 | 1,471.98 | 1.44 | -0.39 | 0.131 |
| 40.00 | -36.35 | -5.98 | 0.00 | -461.42 | 0.00 | 461.42 | 2,223.50 | 555.84 | 1,647.92 | 1,421.63 | 1.81 | -0.44 | 0.126 |
| 45.00 | -34.76 | -5.87 | 0.00 | -431.50 | 0.00 | 431.50 | 2,188.39 | 541.99 | 1,566.79 | 1,363.95 | 2.30 | -0.50 | 0.120 |
| 50.00 | -33.18 | -5.76 | 0.00 | -402.13 | 0.00 | 402.13 | 2,152.25 | 528.13 | 1,487.72 | 1,306.78 | 2.85 | -0.55 | 0.114 |
| 55.00 | -31.62 | -5.65 | 0.00 | -373.34 | 0.00 | 373.34 | 2,115.06 | 514.27 | 1,410.69 | 1,250.16 | 3.46 | -0.61 | 0.108 |
| 59.00 | -30.33 | -5.57 | 0.00 | -350.75 | 0.00 | 350.75 | 2,084.57 | 503.18 | 1,350.55 | 1,205.28 | 3.99 | -0.65 | 0.100 |
| 59.00 | -30.33 | -5.57 | 0.00 | -350.75 | 0.00 | 350.75 | 2,084.57 | 503.18 | 1,350.55 | 1,205.28 | 3.99 | -0.65 | 0.144 |
| 60.00 | -30.07 | -5.52 | 0.00 | -345.18 | 0.00 | 345.18 | 2,076.84 | 500.41 | 1,335.71 | 1,194.13 | 4.13 | -0.66 | 0.142 |
| 65.00 | -28.80 | -5.41 | 0.00 | -317.59 | 0.00 | 317.59 | 2,037.58 | 486.55 | 1,262.78 | 1,138.75 | 4.86 | -0.74 | 0.134 |
| 70.00 | -27.45 | -5.15 | 0.00 | -290.55 | 0.00 | 290.55 | 1,985.31 | 472.69 | 1,191.90 | 1,077.58 | 5.68 | -0.81 | 0.126 |
| 73.50 | -26.39 | -5.10 | 0.00 | -272.54 | 0.00 | 272.54 | 1,474.00 | 377.76 | 952.88 | 802.36 | 6.29 | -0.86 | 0.141 |
| 75.00 | -26.07 | -5.06 | 0.00 | -264.89 | 0.00 | 264.89 | 1,466.32 | 374.43 | 936.20 | 791.10 | 6.56 | -0.88 | 0.138 |
| 80.00 | -25.02 | -4.99 | 0.00 | -239.58 | 0.00 | 239.58 | 1,440.03 | 363.37 | 881.69 | 753.74 | 7.52 | -0.95 | 0.127 |
| 85.00 | -23.98 | -4.91 | 0.00 | -214.64 | 0.00 | 214.64 | 1,412.71 | 352.30 | 828.81 | 716.70 | 8.56 | -1.02 | 0.116 |
| 90.00 | -22.95 | -4.83 | 0.00 | -190.07 | 0.00 | 190.07 | 1,384.35 | 341.23 | 777.56 | 680.02 | 9.66 | -1.08 | 0.105 |
| 95.00 | -21.94 | -4.75 | 0.00 | -165.91 | 0.00 | 165.91 | 1,354.95 | 330.16 | 727.95 | 643.77 | 10.83 | -1.14 | 0.094 |
| 100.00 | -20.93 | -4.68 | 0.00 | -142.14 | 0.00 | 142.14 | 1,324.51 | 319.09 | 679.97 | 607.99 | 12.06 | -1.20 | 0.083 |
| 103.00 | -17.21 | -4.01 | 0.00 | -128.10 | 0.00 | 128.10 | 1,305.75 | 312.45 | 651.97 | 586.76 | 12.82 | -1.23 | 0.075 |
| 105.00 | -16.82 | -3.96 | 0.00 | -120.08 | 0.00 | 120.08 | 1,293.03 | 308.02 | 633.63 | 572.72 | 13.34 | -1.25 | 0.071 |
| 110.00 | -15.85 | -3.88 | 0.00 | -100.29 | 0.00 | 100.29 | 1,247.19 | 296.95 | 588.93 | 532.34 | 14.68 | -1.30 | 0.062 |
| 110.00 | -15.85 | -3.88 | 0.00 | -100.29 | 0.00 | 100.29 | 856.53 | 223.97 | 445.40 | 367.75 | 14.68 | -1.30 | 0.073 |
| 113.00 | -13.28 | -3.14 | 0.00 | -87.86 | 0.00 | 87.86 | 845.63 | 218.97 | 425.76 | 354.91 | 15.50 | -1.32 | 0.064 |
| 115.00 | -12.94 | -3.07 | 0.00 | -81.58 | 0.00 | 81.58 | 838.16 | 215.64 | 412.92 | 346.37 | 16.05 | -1.34 | 0.060 |
| 119.00 | -12.12 | -2.98 | 0.00 | -69.29 | 0.00 | 69.29 | 822.72 | 208.98 | 387.82 | 329.40 | 17.19 | -1.37 | 0.049 |
| 119.00 | -12.12 | -2.98 | 0.00 | -69.29 | 0.00 | 69.29 | 822.72 | 208.98 | 387.82 | 329.40 | 17.19 | -1.37 | 0.225 |
| 120.00 | -11.98 | -2.95 | 0.00 | -66.30 | 0.00 | 66.30 | 818.76 | 207.32 | 381.66 | 325.17 | 17.47 | -1.37 | 0.219 |
| 122.00 | -11.69 | -2.87 | 0.00 | -60.39 | 0.00 | 60.39 | 810.71 | 203.99 | 369.51 | 316.76 | 18.06 | -1.44 | 0.205 |
| 125.00 | -11.31 | -2.79 | 0.00 | -51.79 | 0.00 | 51.79 | 798.31 | 198.99 | 351.64 | 304.20 | 18.99 | -1.52 | 0.185 |
| 130.00 | -10.43 | -2.51 | 0.00 | -37.66 | 0.00 | 37.66 | 776.83 | 190.67 | 322.85 | 283.51 | 20.66 | -1.65 | 0.146 |
| 131.00 | -9.74 | -2.40 | 0.00 | -35.14 | 0.00 | 35.14 | 772.41 | 189.01 | 317.24 | 279.41 | 21.01 | -1.67 | 0.139 |
| 132.00 | -9.60 | -2.35 | 0.00 | -32.75 | 0.00 | 32.75 | 767.94 | 187.34 | 311.67 | 275.32 | 21.36 | -1.69 | 0.132 |

Load Case: 1.0D + 1.0W Serviceability 60 mph 24 Iterations

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

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 135.00 | -9.26 | -2.27 | 0.00 | -25.69 | 0.00 | 25.69 | 754.30 | 182.35 | 295.28 | 263.15 | 22.44 | -1.75 | 0.110 |
| 140.00 | -4.68 | -1.21 | 0.00 | -14.37 | 0.00 | 14.37 | 730.89 | 174.02 | 268.95 | 243.21 | 24.32 | -1.83 | 0.066 |
| 145.00 | -4.29 | -1.11 | 0.00 | -8.30 | 0.00 | 8.30 | 695.93 | 165.70 | 243.85 | 220.38 | 26.26 | -1.87 | 0.044 |
| 150.00 | 0.00 | -0.96 | 0.00 | -2.77 | 0.00 | 2.77 | 660.97 | 157.37 | 219.97 | 198.67 | 28.24 | -1.90 | 0.014 |

## Equivalent Lateral Forces Method Analysis

| | | |
|---|---|---|
| Spectral Response Acceleration for Short Period ($S_s$): | 0.20 | |
| 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 ($S_{ds}$): | 0.22 | |
| 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): | 3.06 | |
| Redundancy Factor (p): | 1.00 | |
| Seismic Force Distribution Exponent (k): | 2.00 | |
| Total Unfactored Dead Load: | 51.76 | k |
| Seismic Base Shear (E): | 1.55 | 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) |
|---|---|---|---|---|---|---|
| 42 | 147.50 | 318 | 6,924 | 0.016 | 25 | 396 |
| 41 | 142.50 | 397 | 8,066 | 0.019 | 29 | 494 |
| 40 | 137.50 | 507 | 9,578 | 0.022 | 35 | 630 |
| 39 | 133.50 | 331 | 5,908 | 0.014 | 22 | 412 |
| 38 | 131.50 | 134 | 2,326 | 0.005 | 8 | 167 |
| 37 | 130.50 | 135 | 2,296 | 0.005 | 8 | 168 |
| 36 | 127.50 | 611 | 9,933 | 0.023 | 36 | 760 |
| 35 | 123.50 | 369 | 5,635 | 0.013 | 21 | 459 |
| 34 | 121.00 | 276 | 4,044 | 0.009 | 15 | 343 |
| 33 | 119.50 | 139 | 1,979 | 0.005 | 7 | 172 |
| 32 | 117.00 | 818 | 11,194 | 0.026 | 41 | 1,017 |
| 31 | 114.00 | 342 | 4,448 | 0.010 | 16 | 425 |
| 30 | 111.50 | 535 | 6,650 | 0.016 | 24 | 665 |
| 29 | 107.50 | 970 | 11,210 | 0.026 | 41 | 1,206 |
| 28 | 104.00 | 391 | 4,229 | 0.010 | 15 | 486 |
| 27 | 101.50 | 597 | 6,148 | 0.014 | 22 | 742 |
| 26 | 97.50 | 1,003 | 9,537 | 0.022 | 35 | 1,247 |
| 25 | 92.50 | 1,014 | 8,676 | 0.020 | 32 | 1,261 |
| 24 | 87.50 | 1,025 | 7,845 | 0.018 | 29 | 1,274 |
| 23 | 82.50 | 1,035 | 7,047 | 0.017 | 26 | 1,287 |
| 22 | 77.50 | 1,046 | 6,283 | 0.015 | 23 | 1,301 |
| 21 | 74.25 | 316 | 1,742 | 0.004 | 6 | 393 |
| 20 | 71.75 | 1,058 | 5,449 | 0.013 | 20 | 1,316 |
| 19 | 67.50 | 1,163 | 5,299 | 0.012 | 19 | 1,446 |
| 18 | 62.50 | 1,261 | 4,924 | 0.012 | 18 | 1,567 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 17 | 59.50 | 254 | 898 | 0.002 | 3 | 315 |
| 16 | 57.00 | 1,292 | 4,199 | 0.010 | 15 | 1,607 |
| 15 | 52.50 | 1,560 | 4,298 | 0.010 | 16 | 1,939 |
| 14 | 47.50 | 1,573 | 3,549 | 0.008 | 13 | 1,956 |
| 13 | 42.50 | 1,586 | 2,865 | 0.007 | 10 | 1,972 |
| 12 | 37.83 | 1,386 | 1,984 | 0.005 | 7 | 1,723 |
| 11 | 35.33 | 300 | 375 | 0.001 | 1 | 373 |
| 10 | 33.25 | 1,585 | 1,752 | 0.004 | 6 | 1,971 |
| 9 | 30.75 | 515 | 487 | 0.001 | 2 | 640 |
| 8 | 27.50 | 1,726 | 1,305 | 0.003 | 5 | 2,146 |
| 7 | 22.50 | 1,742 | 882 | 0.002 | 3 | 2,166 |
| 6 | 19.00 | 701 | 253 | 0.001 | 1 | 872 |
| 5 | 16.50 | 1,241 | 338 | 0.001 | 1 | 1,542 |
| 4 | 12.50 | 2,080 | 325 | 0.001 | 1 | 2,587 |
| 3 | 7.50 | 2,097 | 118 | 0.000 | 0 | 2,607 |
| 2 | 3.50 | 1,266 | 16 | 0.000 | 0 | 1,574 |
| 1 | 1.00 | 725 | 1 | 0.000 | 0 | 901 |
| Generic 11' Dipole | 150.00 | 40 | 900 | 0.002 | 3 | 50 |
| Generic 4' Omni | 150.00 | 10 | 225 | 0.001 | 1 | 12 |
| Powerwave Allgon 702 | 150.00 | 13 | 297 | 0.001 | 1 | 16 |
| Kathrein Scala 782-1 | 150.00 | 19 | 432 | 0.001 | 2 | 24 |
| Powerwave Allgon LGP | 150.00 | 85 | 1,904 | 0.004 | 7 | 105 |
| Raycap DC6-48-60-18- | 150.00 | 32 | 715 | 0.002 | 3 | 40 |
| Ericsson RRUS 8843 B | 150.00 | 216 | 4,860 | 0.011 | 18 | 269 |
| Ericsson RRUS 4449 B | 150.00 | 213 | 4,793 | 0.011 | 17 | 265 |
| Raycap DC6-48-60-18- | 150.00 | 16 | 360 | 0.001 | 1 | 20 |
| Ericsson RRUS 32 B30 | 150.00 | 159 | 3,577 | 0.008 | 13 | 198 |
| Raycap DC6-48-60-18- | 150.00 | 16 | 360 | 0.001 | 1 | 20 |
| Powerwave Allgon 777 | 150.00 | 105 | 2,363 | 0.006 | 9 | 131 |
| CCI HPA65R-BU6A | 150.00 | 126 | 2,828 | 0.007 | 10 | 156 |
| Commscope SBNHH-1D65 | 150.00 | 152 | 3,422 | 0.008 | 12 | 189 |
| Kathrein Scala 80010 | 150.00 | 293 | 6,588 | 0.015 | 24 | 364 |
| Generic Round Platfo | 150.00 | 2,500 | 56,250 | 0.132 | 205 | 3,108 |
| Generic GPS | 150.00 | 10 | 225 | 0.001 | 1 | 12 |
| Ericsson KRY 112 144 | 140.00 | 33 | 647 | 0.002 | 2 | 41 |
| Ericsson Radio 4449 | 140.00 | 222 | 4,351 | 0.010 | 16 | 276 |
| Ericsson AIR 21, 1.3 | 140.00 | 249 | 4,880 | 0.011 | 18 | 310 |
| Ericsson AIR 21, 1.3 | 140.00 | 244 | 4,792 | 0.011 | 17 | 304 |
| RFS APXVAARR24_43-U- | 140.00 | 384 | 7,521 | 0.018 | 27 | 477 |
| PerfectVision PV-RP1 | 140.00 | 2,972 | 58,251 | 0.137 | 212 | 3,695 |
| Generic 12" x 12" Ju | 132.00 | 10 | 174 | 0.000 | 1 | 12 |
| Side Arms | 131.00 | 560 | 9,610 | 0.023 | 35 | 696 |
| DragonWave Horizon C | 130.00 | 21 | 358 | 0.001 | 1 | 26 |
| DragonWave A-ANT-23G | 130.00 | 15 | 254 | 0.001 | 1 | 19 |
| NextNet BTS-2500 | 130.00 | 105 | 1,775 | 0.004 | 6 | 131 |
| Argus LLPX310R | 130.00 | 86 | 1,450 | 0.003 | 5 | 107 |
| DragonWave A-ANT-18G | 130.00 | 48 | 804 | 0.002 | 3 | 59 |
| SWR FMEC/1 | 122.00 | 15 | 223 | 0.001 | 1 | 19 |
| Commscope CBC78-DS-4 | 113.00 | 18 | 230 | 0.001 | 1 | 22 |
| Samsung Outdoor CBRS | 113.00 | 13 | 169 | 0.000 | 1 | 16 |
| Samsung RT4401-48A | 113.00 | 56 | 713 | 0.002 | 3 | 69 |
| Samsung B2/B66A RRH- | 113.00 | 253 | 3,233 | 0.008 | 12 | 315 |
| Samsung B5/B13 RRH-B | 113.00 | 211 | 2,693 | 0.006 | 10 | 262 |
| RFS APL868013-12T0 | 113.00 | 25 | 322 | 0.001 | 1 | 31 |
| RFS APL866513-12T0-0 | 113.00 | 31 | 401 | 0.001 | 1 | 39 |
| Samsung MT6407-77A | 113.00 | 245 | 3,126 | 0.007 | 11 | 304 |
| RFS DB-T1-6Z-8AB-0Z | 113.00 | 88 | 1,124 | 0.003 | 4 | 109 |
| Commscope JAHH-65B-R | 113.00 | 364 | 4,643 | 0.011 | 17 | 452 |
| Round T-Arm | 113.00 | 750 | 9,577 | 0.022 | 35 | 932 |
| Commscope RDIDC-9181 | 103.00 | 22 | 232 | 0.001 | 1 | 27 |
| Fujitsu TA08025-B604 | 103.00 | 192 | 2,034 | 0.005 | 7 | 238 |
| Fujitsu TA08025-B605 | 103.00 | 225 | 2,387 | 0.006 | 9 | 280 |
| JMA Wireless MX08FRO | 103.00 | 193 | 2,053 | 0.005 | 7 | 241 |
| Generic Flat Platfor | 103.00 | 2,500 | 26,523 | 0.062 | 97 | 3,108 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Generic 4' Std. Dish | 70.00 | 188 | 921 | 0.002 | 3 | 234 |
| | | 51,762 | 426,582 | 1.000 | 1,553 | 64,357 |

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) |
|---|---|---|---|---|---|---|
| 42 | 147.50 | 318 | 6,924 | 0.016 | 25 | 273 |
| 41 | 142.50 | 397 | 8,066 | 0.019 | 29 | 340 |
| 40 | 137.50 | 507 | 9,578 | 0.022 | 35 | 434 |
| 39 | 133.50 | 331 | 5,908 | 0.014 | 22 | 284 |
| 38 | 131.50 | 134 | 2,326 | 0.005 | 8 | 115 |
| 37 | 130.50 | 135 | 2,296 | 0.005 | 8 | 115 |
| 36 | 127.50 | 611 | 9,933 | 0.023 | 36 | 523 |
| 35 | 123.50 | 369 | 5,635 | 0.013 | 21 | 317 |
| 34 | 121.00 | 276 | 4,044 | 0.009 | 15 | 237 |
| 33 | 119.50 | 139 | 1,979 | 0.005 | 7 | 119 |
| 32 | 117.00 | 818 | 11,194 | 0.026 | 41 | 701 |
| 31 | 114.00 | 342 | 4,448 | 0.010 | 16 | 293 |
| 30 | 111.50 | 535 | 6,650 | 0.016 | 24 | 458 |
| 29 | 107.50 | 970 | 11,210 | 0.026 | 41 | 831 |
| 28 | 104.00 | 391 | 4,229 | 0.010 | 15 | 335 |
| 27 | 101.50 | 597 | 6,148 | 0.014 | 22 | 511 |
| 26 | 97.50 | 1,003 | 9,537 | 0.022 | 35 | 859 |
| 25 | 92.50 | 1,014 | 8,676 | 0.020 | 32 | 869 |
| 24 | 87.50 | 1,025 | 7,845 | 0.018 | 29 | 878 |
| 23 | 82.50 | 1,035 | 7,047 | 0.017 | 26 | 887 |
| 22 | 77.50 | 1,046 | 6,283 | 0.015 | 23 | 896 |
| 21 | 74.25 | 316 | 1,742 | 0.004 | 6 | 271 |
| 20 | 71.75 | 1,058 | 5,449 | 0.013 | 20 | 907 |
| 19 | 67.50 | 1,163 | 5,299 | 0.012 | 19 | 996 |
| 18 | 62.50 | 1,261 | 4,924 | 0.012 | 18 | 1,080 |
| 17 | 59.50 | 254 | 898 | 0.002 | 3 | 217 |
| 16 | 57.00 | 1,292 | 4,199 | 0.010 | 15 | 1,107 |
| 15 | 52.50 | 1,560 | 4,298 | 0.010 | 16 | 1,336 |
| 14 | 47.50 | 1,573 | 3,549 | 0.008 | 13 | 1,348 |
| 13 | 42.50 | 1,586 | 2,865 | 0.007 | 10 | 1,359 |
| 12 | 37.83 | 1,386 | 1,984 | 0.005 | 7 | 1,187 |
| 11 | 35.33 | 300 | 375 | 0.001 | 1 | 257 |
| 10 | 33.25 | 1,585 | 1,752 | 0.004 | 6 | 1,358 |
| 9 | 30.75 | 515 | 487 | 0.001 | 2 | 441 |
| 8 | 27.50 | 1,726 | 1,305 | 0.003 | 5 | 1,479 |
| 7 | 22.50 | 1,742 | 882 | 0.002 | 3 | 1,492 |
| 6 | 19.00 | 701 | 253 | 0.001 | 1 | 601 |
| 5 | 16.50 | 1,241 | 338 | 0.001 | 1 | 1,063 |
| 4 | 12.50 | 2,080 | 325 | 0.001 | 1 | 1,782 |
| 3 | 7.50 | 2,097 | 118 | 0.000 | 0 | 1,796 |
| 2 | 3.50 | 1,266 | 16 | 0.000 | 0 | 1,084 |
| 1 | 1.00 | 725 | 1 | 0.000 | 0 | 621 |
| Generic 11' Dipole | 150.00 | 40 | 900 | 0.002 | 3 | 34 |
| Generic 4' Omni | 150.00 | 10 | 225 | 0.001 | 1 | 9 |
| Powerwave Allgon 702 | 150.00 | 13 | 297 | 0.001 | 1 | 11 |
| Kathrein Scala 782-1 | 150.00 | 19 | 432 | 0.001 | 2 | 16 |
| Powerwave Allgon LGP | 150.00 | 85 | 1,904 | 0.004 | 7 | 72 |
| Raycap DC6-48-60-18- | 150.00 | 32 | 715 | 0.002 | 3 | 27 |
| Ericsson RRUS 8843 B | 150.00 | 216 | 4,860 | 0.011 | 18 | 185 |
| Ericsson RRUS 4449 B | 150.00 | 213 | 4,793 | 0.011 | 17 | 182 |
| Raycap DC6-48-60-18- | 150.00 | 16 | 360 | 0.001 | 1 | 14 |
| Ericsson RRUS 32 B30 | 150.00 | 159 | 3,577 | 0.008 | 13 | 136 |
| Raycap DC6-48-60-18- | 150.00 | 16 | 360 | 0.001 | 1 | 14 |
| Powerwave Allgon 777 | 150.00 | 105 | 2,363 | 0.006 | 9 | 90 |

| | | | | | | |
|---|---|---|---|---|---|---|
| CCI HPA65R-BU6A | 150.00 | 126 | 2,828 | 0.007 | 10 | 108 |
| Commscope SBNHH-1D65 | 150.00 | 152 | 3,422 | 0.008 | 12 | 130 |
| Kathrein Scala 80010 | 150.00 | 293 | 6,588 | 0.015 | 24 | 251 |
| Generic Round Platfo | 150.00 | 2,500 | 56,250 | 0.132 | 205 | 2,142 |
| Generic GPS | 150.00 | 10 | 225 | 0.001 | 1 | 9 |
| Ericsson KRY 112 144 | 140.00 | 33 | 647 | 0.002 | 2 | 28 |
| Ericsson Radio 4449 | 140.00 | 222 | 4,351 | 0.010 | 16 | 190 |
| Ericsson AIR 21, 1.3 | 140.00 | 249 | 4,880 | 0.011 | 18 | 213 |
| Ericsson AIR 21, 1.3 | 140.00 | 244 | 4,792 | 0.011 | 17 | 209 |
| RFS APXVAARR24_43-U- | 140.00 | 384 | 7,521 | 0.018 | 27 | 329 |
| PerfectVision PV-RP1 | 140.00 | 2,972 | 58,251 | 0.137 | 212 | 2,546 |
| Generic 12" x 12" Ju | 132.00 | 10 | 174 | 0.000 | 1 | 9 |
| Side Arms | 131.00 | 560 | 9,610 | 0.023 | 35 | 480 |
| DragonWave Horizon C | 130.00 | 21 | 358 | 0.001 | 1 | 18 |
| DragonWave A-ANT-23G | 130.00 | 15 | 254 | 0.001 | 1 | 13 |
| NextNet BTS-2500 | 130.00 | 105 | 1,775 | 0.004 | 6 | 90 |
| Argus LLPX310R | 130.00 | 86 | 1,450 | 0.003 | 5 | 74 |
| DragonWave A-ANT-18G | 130.00 | 48 | 804 | 0.002 | 3 | 41 |
| SWR FMEC/1 | 122.00 | 15 | 223 | 0.001 | 1 | 13 |
| Commscope CBC78-DS-4 | 113.00 | 18 | 230 | 0.001 | 1 | 15 |
| Samsung Outdoor CBRS | 113.00 | 13 | 169 | 0.000 | 1 | 11 |
| Samsung RT4401-48A | 113.00 | 56 | 713 | 0.002 | 3 | 48 |
| Samsung B2/B66A RRH- | 113.00 | 253 | 3,233 | 0.008 | 12 | 217 |
| Samsung B5/B13 RRH-B | 113.00 | 211 | 2,693 | 0.006 | 10 | 181 |
| RFS APL868013-12T0 | 113.00 | 25 | 322 | 0.001 | 1 | 22 |
| RFS APL866513-12T0-0 | 113.00 | 31 | 401 | 0.001 | 1 | 27 |
| Samsung MT6407-77A | 113.00 | 245 | 3,126 | 0.007 | 11 | 210 |
| RFS DB-T1-6Z-8AB-0Z | 113.00 | 88 | 1,124 | 0.003 | 4 | 75 |
| Commscope JAHH-65B-R | 113.00 | 364 | 4,643 | 0.011 | 17 | 311 |
| Round T-Arm | 113.00 | 750 | 9,577 | 0.022 | 35 | 643 |
| Commscope RDIDC-9181 | 103.00 | 22 | 232 | 0.001 | 1 | 19 |
| Fujitsu TA08025-B604 | 103.00 | 192 | 2,034 | 0.005 | 7 | 164 |
| Fujitsu TA08025-B605 | 103.00 | 225 | 2,387 | 0.006 | 9 | 193 |
| JMA Wireless MX08FRO | 103.00 | 193 | 2,053 | 0.005 | 7 | 166 |
| Generic Flat Platfor | 103.00 | 2,500 | 26,523 | 0.062 | 97 | 2,142 |
| Generic 4' Std. Dish | 70.00 | 188 | 921 | 0.002 | 3 | 161 |
| | | 51,762 | 426,582 | 1.000 | 1,553 | 44,344 |

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 | -63.46 | -1.56 | 0.00 | -200.71 | 0.00 | 200.71 | 3,157.17 | 784.20 | 2,737.77 | 2,376.61 | 0.00 | 0.00 | 0.051 |
| 2.00 | -61.88 | -1.56 | 0.00 | -197.60 | 0.00 | 197.60 | 3,140.17 | 777.55 | 2,691.61 | 2,343.59 | 0.00 | -0.01 | 0.050 |
| 5.00 | -59.27 | -1.58 | 0.00 | -192.90 | 0.00 | 192.90 | 3,114.35 | 767.59 | 2,623.11 | 2,294.24 | 0.01 | -0.02 | 0.041 |
| 10.00 | -56.69 | -1.59 | 0.00 | -185.02 | 0.00 | 185.02 | 3,070.50 | 750.99 | 2,510.89 | 2,212.51 | 0.03 | -0.03 | 0.040 |
| 15.00 | -55.15 | -1.60 | 0.00 | -177.08 | 0.00 | 177.08 | 3,025.61 | 734.39 | 2,401.13 | 2,131.46 | 0.07 | -0.04 | 0.039 |
| 18.00 | -54.27 | -1.60 | 0.00 | -172.30 | 0.00 | 172.30 | 2,998.18 | 724.42 | 2,336.45 | 2,083.18 | 0.10 | -0.05 | 0.038 |
| 18.00 | -54.27 | -1.60 | 0.00 | -172.30 | 0.00 | 172.30 | 2,998.18 | 724.42 | 2,336.45 | 2,083.18 | 0.10 | -0.05 | 0.046 |
| 20.00 | -52.11 | -1.61 | 0.00 | -169.09 | 0.00 | 169.09 | 2,979.68 | 717.78 | 2,293.82 | 2,051.14 | 0.13 | -0.06 | 0.045 |
| 25.00 | -49.96 | -1.61 | 0.00 | -161.06 | 0.00 | 161.06 | 2,932.71 | 701.18 | 2,188.97 | 1,971.59 | 0.20 | -0.08 | 0.044 |
| 30.00 | -49.32 | -1.62 | 0.00 | -152.99 | 0.00 | 152.99 | 2,875.21 | 684.57 | 2,086.57 | 1,886.65 | 0.29 | -0.09 | 0.043 |
| 31.50 | -47.35 | -1.62 | 0.00 | -150.56 | 0.00 | 150.56 | 2,854.29 | 679.59 | 2,056.33 | 1,859.14 | 0.32 | -0.10 | 0.042 |
| 35.00 | -46.98 | -1.62 | 0.00 | -144.90 | 0.00 | 144.90 | 2,805.48 | 667.97 | 1,986.62 | 1,795.73 | 0.39 | -0.11 | 0.041 |
| 35.67 | -45.25 | -1.62 | 0.00 | -143.82 | 0.00 | 143.82 | 2,253.08 | 567.85 | 1,719.88 | 1,471.98 | 0.41 | -0.11 | 0.046 |
| 40.00 | -43.28 | -1.62 | 0.00 | -136.81 | 0.00 | 136.81 | 2,223.50 | 555.84 | 1,647.92 | 1,421.63 | 0.52 | -0.13 | 0.045 |
| 45.00 | -41.32 | -1.61 | 0.00 | -128.73 | 0.00 | 128.73 | 2,188.39 | 541.99 | 1,566.79 | 1,363.95 | 0.66 | -0.14 | 0.043 |
| 50.00 | -39.38 | -1.60 | 0.00 | -120.68 | 0.00 | 120.68 | 2,152.25 | 528.13 | 1,487.72 | 1,306.78 | 0.82 | -0.16 | 0.041 |
| 55.00 | -37.78 | -1.59 | 0.00 | -112.68 | 0.00 | 112.68 | 2,115.06 | 514.27 | 1,410.69 | 1,250.16 | 1.00 | -0.18 | 0.039 |
| 59.00 | -37.46 | -1.59 | 0.00 | -106.32 | 0.00 | 106.32 | 2,084.57 | 503.18 | 1,350.55 | 1,205.28 | 1.15 | -0.19 | 0.037 |
| 59.00 | -37.46 | -1.59 | 0.00 | -106.32 | 0.00 | 106.32 | 2,084.57 | 503.18 | 1,350.55 | 1,205.28 | 1.15 | -0.19 | 0.052 |
| 60.00 | -35.89 | -1.58 | 0.00 | -104.73 | 0.00 | 104.73 | 2,076.84 | 500.41 | 1,335.71 | 1,194.13 | 1.19 | -0.19 | 0.051 |
| 65.00 | -34.45 | -1.57 | 0.00 | -96.84 | 0.00 | 96.84 | 2,037.58 | 486.55 | 1,262.78 | 1,138.75 | 1.41 | -0.22 | 0.049 |
| 70.00 | -32.90 | -1.55 | 0.00 | -89.01 | 0.00 | 89.01 | 1,985.31 | 472.69 | 1,191.90 | 1,077.58 | 1.64 | -0.24 | 0.046 |
| 73.50 | -32.50 | -1.55 | 0.00 | -83.60 | 0.00 | 83.60 | 1,474.00 | 377.76 | 952.88 | 802.36 | 1.83 | -0.25 | 0.053 |
| 75.00 | -31.20 | -1.52 | 0.00 | -81.28 | 0.00 | 81.28 | 1,466.32 | 374.43 | 936.20 | 791.10 | 1.91 | -0.26 | 0.051 |
| 80.00 | -29.92 | -1.50 | 0.00 | -73.66 | 0.00 | 73.66 | 1,440.03 | 363.37 | 881.69 | 753.74 | 2.19 | -0.28 | 0.048 |
| 85.00 | -28.64 | -1.48 | 0.00 | -66.14 | 0.00 | 66.14 | 1,412.71 | 352.30 | 828.81 | 716.70 | 2.50 | -0.30 | 0.044 |
| 90.00 | -27.38 | -1.45 | 0.00 | -58.75 | 0.00 | 58.75 | 1,384.35 | 341.23 | 777.56 | 680.02 | 2.83 | -0.32 | 0.041 |
| 95.00 | -26.13 | -1.42 | 0.00 | -51.50 | 0.00 | 51.50 | 1,354.95 | 330.16 | 727.95 | 643.77 | 3.17 | -0.34 | 0.037 |
| 100.00 | -25.39 | -1.39 | 0.00 | -44.42 | 0.00 | 44.42 | 1,324.51 | 319.09 | 679.97 | 607.99 | 3.54 | -0.36 | 0.033 |
| 103.00 | -21.01 | -1.23 | 0.00 | -40.24 | 0.00 | 40.24 | 1,305.75 | 312.45 | 651.97 | 586.76 | 3.77 | -0.37 | 0.030 |
| 105.00 | -19.80 | -1.19 | 0.00 | -37.77 | 0.00 | 37.77 | 1,293.03 | 308.02 | 633.63 | 572.72 | 3.93 | -0.37 | 0.028 |
| 110.00 | -19.14 | -1.16 | 0.00 | -31.83 | 0.00 | 31.83 | 1,247.19 | 296.95 | 588.93 | 532.34 | 4.33 | -0.39 | 0.025 |
| 110.00 | -19.14 | -1.16 | 0.00 | -31.83 | 0.00 | 31.83 | 856.53 | 223.97 | 445.40 | 367.75 | 4.33 | -0.39 | 0.031 |
| 113.00 | -16.16 | -1.03 | 0.00 | -28.34 | 0.00 | 28.34 | 845.63 | 218.97 | 425.76 | 354.91 | 4.57 | -0.40 | 0.027 |
| 115.00 | -15.14 | -0.99 | 0.00 | -26.27 | 0.00 | 26.27 | 838.16 | 215.64 | 412.92 | 346.37 | 4.74 | -0.40 | 0.025 |
| 119.00 | -14.97 | -0.98 | 0.00 | -22.32 | 0.00 | 22.32 | 822.72 | 208.98 | 387.82 | 329.40 | 5.08 | -0.41 | 0.021 |
| 119.00 | -14.97 | -0.98 | 0.00 | -22.32 | 0.00 | 22.32 | 822.72 | 208.98 | 387.82 | 329.40 | 5.08 | -0.41 | 0.086 |
| 120.00 | -14.63 | -0.97 | 0.00 | -21.34 | 0.00 | 21.34 | 818.76 | 207.32 | 381.66 | 325.17 | 5.17 | -0.41 | 0.084 |
| 122.00 | -14.15 | -0.95 | 0.00 | -19.41 | 0.00 | 19.41 | 810.71 | 203.99 | 369.51 | 316.76 | 5.35 | -0.43 | 0.079 |
| 125.00 | -13.39 | -0.91 | 0.00 | -16.56 | 0.00 | 16.56 | 798.31 | 198.99 | 351.64 | 304.20 | 5.63 | -0.46 | 0.071 |
| 130.00 | -12.88 | -0.89 | 0.00 | -11.99 | 0.00 | 11.99 | 776.83 | 190.67 | 322.85 | 283.51 | 6.13 | -0.50 | 0.059 |
| 131.00 | -12.02 | -0.84 | 0.00 | -11.11 | 0.00 | 11.11 | 772.41 | 189.01 | 317.24 | 279.41 | 6.24 | -0.51 | 0.055 |
| 132.00 | -11.59 | -0.82 | 0.00 | -10.27 | 0.00 | 10.27 | 767.94 | 187.34 | 311.67 | 275.32 | 6.35 | -0.52 | 0.052 |
| 135.00 | -10.96 | -0.78 | 0.00 | -7.82 | 0.00 | 7.82 | 754.30 | 182.35 | 295.28 | 263.15 | 6.68 | -0.53 | 0.044 |
| 140.00 | -5.37 | -0.41 | 0.00 | -3.92 | 0.00 | 3.92 | 730.89 | 174.02 | 268.95 | 243.21 | 7.25 | -0.56 | 0.023 |
| 145.00 | -4.98 | -0.38 | 0.00 | -1.89 | 0.00 | 1.89 | 695.93 | 165.70 | 243.85 | 220.38 | 7.84 | -0.57 | 0.016 |
| 150.00 | 0.00 | -0.33 | 0.00 | 0.00 | 0.00 | 0.00 | 660.97 | 157.37 | 219.97 | 198.67 | 8.44 | -0.57 | 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 | -43.72 | -1.55 | 0.00 | -195.52 | 0.00 | 195.52 | 3,157.17 | 784.20 | 2,737.77 | 2,376.61 | 0.00 | 0.00 | 0.046 |
| 2.00 | -42.64 | -1.56 | 0.00 | -192.41 | 0.00 | 192.41 | 3,140.17 | 777.55 | 2,691.61 | 2,343.59 | 0.00 | -0.01 | 0.046 |
| 5.00 | -40.84 | -1.57 | 0.00 | -187.73 | 0.00 | 187.73 | 3,114.35 | 767.59 | 2,623.11 | 2,294.24 | 0.01 | -0.02 | 0.037 |
| 10.00 | -39.06 | -1.58 | 0.00 | -179.89 | 0.00 | 179.89 | 3,070.50 | 750.99 | 2,510.89 | 2,212.51 | 0.03 | -0.03 | 0.036 |
| 15.00 | -38.00 | -1.58 | 0.00 | -172.01 | 0.00 | 172.01 | 3,025.61 | 734.39 | 2,401.13 | 2,131.46 | 0.07 | -0.04 | 0.035 |
| 18.00 | -37.40 | -1.58 | 0.00 | -167.27 | 0.00 | 167.27 | 2,998.18 | 724.42 | 2,336.45 | 2,083.18 | 0.10 | -0.05 | 0.035 |
| 18.00 | -37.40 | -1.58 | 0.00 | -167.27 | 0.00 | 167.27 | 2,998.18 | 724.42 | 2,336.45 | 2,083.18 | 0.10 | -0.05 | 0.042 |
| 20.00 | -35.90 | -1.59 | 0.00 | -164.10 | 0.00 | 164.10 | 2,979.68 | 717.78 | 2,293.82 | 2,051.14 | 0.12 | -0.06 | 0.041 |
| 25.00 | -34.42 | -1.59 | 0.00 | -156.17 | 0.00 | 156.17 | 2,932.71 | 701.18 | 2,188.97 | 1,971.59 | 0.19 | -0.07 | 0.040 |
| 30.00 | -33.98 | -1.59 | 0.00 | -148.22 | 0.00 | 148.22 | 2,875.21 | 684.57 | 2,086.57 | 1,886.65 | 0.28 | -0.09 | 0.039 |
| 31.50 | -32.62 | -1.59 | 0.00 | -145.83 | 0.00 | 145.83 | 2,854.29 | 679.59 | 2,056.33 | 1,859.14 | 0.31 | -0.10 | 0.039 |
| 35.00 | -32.37 | -1.59 | 0.00 | -140.27 | 0.00 | 140.27 | 2,805.48 | 667.97 | 1,986.62 | 1,795.73 | 0.38 | -0.11 | 0.037 |
| 35.67 | -31.18 | -1.59 | 0.00 | -139.20 | 0.00 | 139.20 | 2,253.08 | 567.85 | 1,719.88 | 1,471.98 | 0.40 | -0.11 | 0.042 |
| 40.00 | -29.82 | -1.58 | 0.00 | -132.33 | 0.00 | 132.33 | 2,223.50 | 555.84 | 1,647.92 | 1,421.63 | 0.50 | -0.12 | 0.040 |
| 45.00 | -28.47 | -1.57 | 0.00 | -124.42 | 0.00 | 124.42 | 2,188.39 | 541.99 | 1,566.79 | 1,363.95 | 0.64 | -0.14 | 0.039 |
| 50.00 | -27.14 | -1.56 | 0.00 | -116.55 | 0.00 | 116.55 | 2,152.25 | 528.13 | 1,487.72 | 1,306.78 | 0.80 | -0.16 | 0.037 |
| 55.00 | -26.03 | -1.55 | 0.00 | -108.74 | 0.00 | 108.74 | 2,115.06 | 514.27 | 1,410.69 | 1,250.16 | 0.97 | -0.17 | 0.035 |
| 59.00 | -25.81 | -1.55 | 0.00 | -102.54 | 0.00 | 102.54 | 2,084.57 | 503.18 | 1,350.55 | 1,205.28 | 1.12 | -0.18 | 0.033 |
| 59.00 | -25.81 | -1.55 | 0.00 | -102.54 | 0.00 | 102.54 | 2,084.57 | 503.18 | 1,350.55 | 1,205.28 | 1.12 | -0.18 | 0.047 |
| 60.00 | -24.73 | -1.53 | 0.00 | -100.99 | 0.00 | 100.99 | 2,076.84 | 500.41 | 1,335.71 | 1,194.13 | 1.16 | -0.19 | 0.047 |
| 65.00 | -23.73 | -1.52 | 0.00 | -93.32 | 0.00 | 93.32 | 2,037.58 | 486.55 | 1,262.78 | 1,138.75 | 1.36 | -0.21 | 0.044 |
| 70.00 | -22.67 | -1.50 | 0.00 | -85.72 | 0.00 | 85.72 | 1,985.31 | 472.69 | 1,191.90 | 1,077.58 | 1.59 | -0.23 | 0.042 |
| 73.50 | -22.39 | -1.50 | 0.00 | -80.47 | 0.00 | 80.47 | 1,474.00 | 377.76 | 952.88 | 802.36 | 1.77 | -0.25 | 0.047 |
| 75.00 | -21.50 | -1.48 | 0.00 | -78.23 | 0.00 | 78.23 | 1,466.32 | 374.43 | 936.20 | 791.10 | 1.85 | -0.25 | 0.046 |
| 80.00 | -20.61 | -1.45 | 0.00 | -70.85 | 0.00 | 70.85 | 1,440.03 | 363.37 | 881.69 | 753.74 | 2.12 | -0.27 | 0.043 |
| 85.00 | -19.73 | -1.43 | 0.00 | -63.59 | 0.00 | 63.59 | 1,412.71 | 352.30 | 828.81 | 716.70 | 2.42 | -0.29 | 0.039 |
| 90.00 | -18.86 | -1.40 | 0.00 | -56.45 | 0.00 | 56.45 | 1,384.35 | 341.23 | 777.56 | 680.02 | 2.74 | -0.31 | 0.036 |
| 95.00 | -18.00 | -1.36 | 0.00 | -49.47 | 0.00 | 49.47 | 1,354.95 | 330.16 | 727.95 | 643.77 | 3.07 | -0.33 | 0.033 |
| 100.00 | -17.49 | -1.34 | 0.00 | -42.66 | 0.00 | 42.66 | 1,324.51 | 319.09 | 679.97 | 607.99 | 3.43 | -0.35 | 0.029 |
| 103.00 | -14.48 | -1.19 | 0.00 | -38.64 | 0.00 | 38.64 | 1,305.75 | 312.45 | 651.97 | 586.76 | 3.65 | -0.36 | 0.026 |
| 105.00 | -13.64 | -1.14 | 0.00 | -36.26 | 0.00 | 36.26 | 1,293.03 | 308.02 | 633.63 | 572.72 | 3.80 | -0.36 | 0.025 |
| 110.00 | -13.19 | -1.12 | 0.00 | -30.54 | 0.00 | 30.54 | 1,247.19 | 296.95 | 588.93 | 532.34 | 4.19 | -0.38 | 0.022 |
| 110.00 | -13.19 | -1.12 | 0.00 | -30.54 | 0.00 | 30.54 | 856.53 | 223.97 | 445.40 | 367.75 | 4.19 | -0.38 | 0.027 |
| 113.00 | -11.13 | -1.00 | 0.00 | -27.18 | 0.00 | 27.18 | 845.63 | 218.97 | 425.76 | 354.91 | 4.42 | -0.38 | 0.023 |
| 115.00 | -10.43 | -0.95 | 0.00 | -25.19 | 0.00 | 25.19 | 838.16 | 215.64 | 412.92 | 346.37 | 4.59 | -0.39 | 0.022 |
| 119.00 | -10.31 | -0.94 | 0.00 | -21.38 | 0.00 | 21.38 | 822.72 | 208.98 | 387.82 | 329.40 | 4.92 | -0.40 | 0.019 |
| 119.00 | -10.31 | -0.94 | 0.00 | -21.38 | 0.00 | 21.38 | 822.72 | 208.98 | 387.82 | 329.40 | 4.92 | -0.40 | 0.077 |
| 120.00 | -10.08 | -0.93 | 0.00 | -20.44 | 0.00 | 20.44 | 818.76 | 207.32 | 381.66 | 325.17 | 5.00 | -0.40 | 0.075 |
| 122.00 | -9.75 | -0.91 | 0.00 | -18.58 | 0.00 | 18.58 | 810.71 | 203.99 | 369.51 | 316.76 | 5.17 | -0.42 | 0.071 |
| 125.00 | -9.22 | -0.88 | 0.00 | -15.84 | 0.00 | 15.84 | 798.31 | 198.99 | 351.64 | 304.20 | 5.44 | -0.45 | 0.064 |
| 130.00 | -8.87 | -0.85 | 0.00 | -11.46 | 0.00 | 11.46 | 776.83 | 190.67 | 322.85 | 283.51 | 5.93 | -0.48 | 0.052 |
| 131.00 | -8.28 | -0.80 | 0.00 | -10.61 | 0.00 | 10.61 | 772.41 | 189.01 | 317.24 | 279.41 | 6.03 | -0.49 | 0.049 |
| 132.00 | -7.99 | -0.78 | 0.00 | -9.81 | 0.00 | 9.81 | 767.94 | 187.34 | 311.67 | 275.32 | 6.14 | -0.50 | 0.046 |
| 135.00 | -7.55 | -0.74 | 0.00 | -7.47 | 0.00 | 7.47 | 754.30 | 182.35 | 295.28 | 263.15 | 6.45 | -0.51 | 0.038 |
| 140.00 | -3.70 | -0.39 | 0.00 | -3.74 | 0.00 | 3.74 | 730.89 | 174.02 | 268.95 | 243.21 | 7.01 | -0.54 | 0.020 |
| 145.00 | -3.43 | -0.36 | 0.00 | -1.80 | 0.00 | 1.80 | 695.93 | 165.70 | 243.85 | 220.38 | 7.57 | -0.55 | 0.013 |
| 150.00 | 0.00 | -0.33 | 0.00 | 0.00 | 0.00 | 0.00 | 660.97 | 157.37 | 219.97 | 198.67 | 8.15 | -0.55 | 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 | 29.34 | 0.00 | 62.09 | 0.00 | 0.00 | 3127.68 | 119.00 | 0.94 |
| 0.9D + 1.0W | 29.33 | 0.00 | 46.56 | 0.00 | 0.00 | 3065.47 | 119.00 | 0.90 |
| 1.2D + 1.0Di + 1.0Wi | 6.82 | 0.00 | 79.79 | 0.00 | 0.00 | 772.51 | 119.00 | 0.25 |
| 1.2D + 1.0Ev + 1.0Eh | 1.56 | 0.00 | 63.46 | 0.00 | 0.00 | 200.71 | 119.00 | 0.09 |
| 0.9D - 1.0Ev + 1.0Eh | 1.55 | 0.00 | 43.72 | 0.00 | 0.00 | 195.52 | 119.00 | 0.08 |
| 1.0D + 1.0W | 6.81 | 0.00 | 51.76 | 0.00 | 0.00 | 718.58 | 119.00 | 0.23 |

## Additional Steel Summary

| Elev From (ft) | Elev To (ft) | Member | Intermediate Connectors VQ/I (lb/in) | Shear Applied (kips) | Shear phiVn (kips) | Ratio | Max Member Pu (kip) | phiPn (kip) | Ratio |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 119.00 | (4) SOL-#18 All Thread Bar | 391.6 | 11.7 | 16.8 | 0.699 | 241.3 | 249.8 | 0.966 |
| 0.00 | 59.00 | (4) SOL-#18 All Thread Bar | 197.2 | 5.9 | 16.8 | 0.352 | 203.0 | 249.8 | 0.813 |
| 2.00 | 18.00 | (2) PL-PL 4" x 1" | 116.3 | 1.4 | 25.3 | 0.055 | 143.9 | 174.4 | 0.825 |
| 2.00 | 18.00 | (2) PL-PL 5" x 1" | 145.3 | 1.7 | 25.3 | 0.069 | 179.9 | 218.0 | 0.825 |

| Elev From (ft) | Elev To (ft) | Member | Upper Termination Connectors MQ/I (kips) | phiVn (kips) | Num Reqd | Num Actual | Ratio | Lower Termination Connectors MQ/I (kips) | phiVn (kips) | Num Reqd | Num Actual | Ratio |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 119.00 | (4) SOL-#18 All Thread Bar | 85.1 | 12.0 | 8 | 10 | 0.710 | 0.0 | 12.0 | 0 | 0 | 0.000 |
| 0.00 | 59.00 | (4) SOL-#18 All Thread Bar | 149.4 | 12.0 | 13 | 18 | 0.692 | 0.0 | 12.0 | 0 | 0 | 0.000 |
| 2.00 | 18.00 | (2) PL-PL 4" x 1" | 130.8 | 25.3 | 6 | 8 | 0.647 | 141.3 | 25.3 | 6 | 8 | 0.699 |
| 2.00 | 18.00 | (2) PL-PL 5" x 1" | 163.5 | 25.3 | 7 | 8 | 0.809 | 176.6 | 25.3 | 7 | 8 | 0.874 |

# Flange Plate Analysis

| Flange Plate | | | |
|---|---|---|---|
| | Plate Type | ***Flange*** | ***@ 110 ft*** |
| | Pole Diameter | 21.25 | in |
| | Pole Thickness | 0.1875 | in |
| | Plate Diameter | 28.5 | in |
| | Plate Thickness | 1 | in |
| | Plate Fy | 60 | ksi |
| | Weld Length | 0.1875 | in |
| | $f_s$ Resistance | 125.73 | k-in |
| | Applied | 17.32 | k-in |

| | | | |
|---|---|---|---|
| Code Rev. | ***H*** | | |
| Moment | 438.5 k-ft | | |
| Axial | 17.5 k | | |

| | |
|---|---|
| **Date** | 8/3/2021 |
| **Engineer** | JAS |
| **Site #** | 302484 |
| **Carrier** | DISH WIRELESS |

| Stiffeners | | | |
|---|---|---|---|
| | # | ***12*** | ***Show*** |
| | Thickness | 0.5 | in |
| | Length | 3 | in |
| | Height | 3 | in |
| | Chamfer | 0.5 | in |
| | Offset Angle | 0 | ° |
| | Fy | 36 | ksi |

| Bolts | | | |
|---|---|---|---|
| | # | ***12*** | |
| | Bolt Circle | 25.75 | in |
| | (R)adial / (S)quare | R | |
| • | Diameter | 1 | in |
| | Hole Diameter | 1.125 | in |
| | Type | A325 | |
| | Fy | 92 | ksi |
| | Fu | 120 | ksi |
| | $f_s$ Resistance | 54.52 | k |
| | Applied | 11.54 | k |

| Reinforcement | | | |
|---|---|---|---|
| | # | ***4*** | |
| • | DYW. Circle | 34.41 | in |
| | Offset Angle | 45 | ° |
| | Type | #18 | |
| | Diameter | 2.5 | in |
| | Fu | 100 | ksi |
| | $f_s$ Resistance | 392.70 | k |
| | Applied | 87.24 | k |

| Extra Bolts O | | |
|---|---|---|
| # | | |

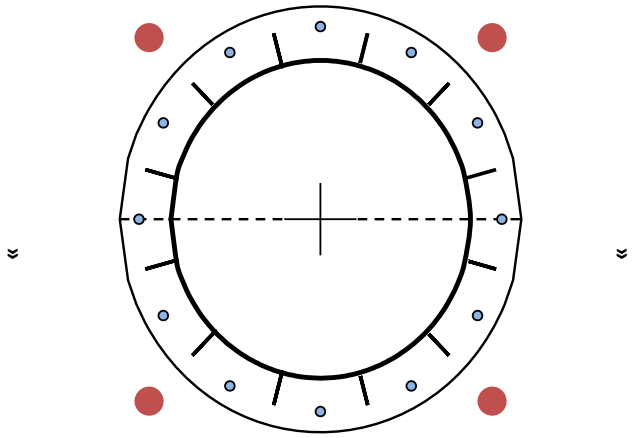


**Plate Stress Ratio:**

14% Pass

**Bolt Stress Ratio:**

21% Pass

**Reinforcement Stress Ratio:**

22% Pass

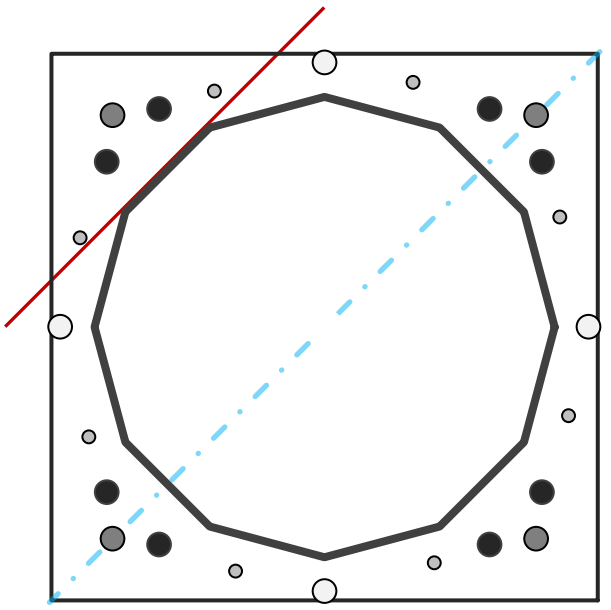
# Base Plate & Anchor Rod Analysis

| Pole Dimensions | | |
|---|---|---|
| Number of Sides | 12 | - |
| Diameter | 35.67 | in |
| Thickness | 3/8 | in |
| Orientation Offset | | ° |

| Base Reactions | | |
|---|---|---|
| Moment, Mu | 3,127.7 | k-ft |
| Axial, Pu | 62.1 | k |
| Shear, Vu | 29.3 | k |
| Neutral Axis | 45 | ° |

| Report Capacities | | |
|---|---|---|
| Component | Capacity | Result |
| Base Plate | 56% | Pass |
| Anchor Rods | 84% | Pass |
| Dwyidag | 53% | Pass |

| Base Plate | | |
|---|---|---|
| Shape | Square | - |
| Width | 44 | in |
| Thickness | 2 1/2 | in |
| Grade | A633 Gr. E | |
| Yield Strength, Fy | 60 | ksi |
| Tensile Strength, Fu | 80 | ksi |
| Clip | 0 | in |
| Orientation Offset | | ° |
| Anchor Rod Detail | c | η=0.55 |
| Clear Distance | N/A | in |
| Applied Moment, Mu | 1255.4 | k |
| Bending Stress, ϕMn | 2230.1 | k |



| Dywidag Reinforcement | | |
|---|---|---|
| Quantity | 4 | - |
| Bar Size | #18 | in |
| Diameter, ø | 2.25 | in |
| Bracket Type | Angle | - |
| Circle | 42.55 | in |
| Orientation Offset | 0 | ° |
| Applied Force, Pu | 157.2 | k |
| Dywidag Bar, ϕPn | 298.2 | k |

| Original Anchor Rods | | |
|---|---|---|
| Arrangement | Cluster | - |
| Quantity | 8 | - |
| Diameter, ø | 2 1/4 | in |
| Bolt Circle | 44 | in |
| Grade | A615-75 | |
| Yield Strength, Fy | 75 | ksi |
| Tensile Strength, Fu | 100 | ksi |
| Spacing | 6.0 | in |
| Orientation Offset | 0 | ° |
| Applied Force, Pu | 146.7 | k |
| Anchor Rods, ϕPn | 243.6 | k |

| Additional Anchor Rods | | |
|---|---|---|
| Quantity | 8 | - |
| Diameter, ø | 1 1/4 | in |
| Bolt Circle | 41.875 | in |
| Grade | A325 | |
| Yield Strength, Fy | 92 | ksi |
| Tensile Strength, Fu | 120 | ksi |
| Bypass Base? | No | |
| Orientation Offset | 25 | ° |
| Applied Force, Pu | 39.5 | k |
| Additional Rod, ϕPn | 87.2 | k |

| Additional Dywidag Reinforcement | | |
|---|---|---|
| Quantity | 4 | - |
| Diameter, ø | 2 1/4 | in |
| Bolt Circle | 48.22 | in |
| Grade | Other | |
| Yield Strength, Fy | 70 | ksi |
| Tensile Strength, Fu | 100 | ksi |
| Bypass Base? | Yes (Dywidag) | |
| Orientation Offset | 45 | ° |
| Applied Force, Pu | 250.8 | k |
| Additional Rod, ϕPn | 298.2 | k |

# Calculations for Monopole Base Plate & Anchor Rod Analysis

**Reaction Distribution**

| Reaction | Shear Vu | Moment Mu | Factor |
|---|---|---|---|
| - | k | k-ft | - |
| Base Forces | 29.3 | 1368.4 | 0.44 |
| Anchor Rod Forces | 25.9 | 1077.4 | 0.34 |
| Additional Bolt (Grp1) Forces | 3.5 | 291.0 | 0.09 |
| Additional Bolt (Grp2) Forces | 0.0 | 989.0 | 0.32 |
| Dywidag Forces | 0.0 | 770.3 | 0.25 |
| 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 | 41.1076 | 3.4256 | 0.1614 | | 6403.09 |
| Bolt | 3.9761 | 3.2477 | 0.8393 | 4.5 | 6294.24 |
| Bolt1 | 1.2272 | 0.9691 | 0.0747 | 7 | 1699.95 |
| Bolt2 | 3.9761 | 3.9761 | 1.2581 | 4.5 | 4627.56 |
| Dywidag | 3.9761 | 3.9761 | 1.2581 | | 3604.38 |
| Stiffener | 0.0000 | 0.0000 | 0.0000 | | 0.00 |

**Base Plate**

| | | |
|---|---|---|
| Shape | Square | - |
| Width, W | 44 | in |
| Thickness, t | 2.5 | in |
| Yield Strength, Fy | 60 | ksi |
| Tensile Strength, Fu | 80 | ksi |
| Base Plate Chord | 25.761 | in |
| Detail Type | c | - |
| Detail Factor | 0.55 | - |
| Clear Distance | N/A | - |

**External Base Plate**

| | | |
|---|---|---|
| Chord Length AA | 26.430 | in |
| Additional AA | 0.000 | in |
| Section Modulus, Z | 41.297 | $in^3$ |
| Applied Moment, Mu | 1255.4 | k-ft |
| Bending Capacity, ϕMn | 2230.1 | k-ft |
| Capacity, Mu/ϕMn | 0.563 | OK |
| | | |
| Chord Length AB | 25.168 | in |
| Additional AB | 0.000 | in |
| Section Modulus, Z | 39.325 | $in^3$ |
| Applied Moment, Mu | 1021.1 | k-ft |
| Bending Capacity, ϕMn | 2123.5 | k-ft |
| Capacity, Mu/ϕMn | 0.481 | 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 | | |

**Anchor Rods**

| | | |
|---|---|---|
| Anchor Rod Quantity, N | 8 | - |
| Rod Diameter, d | 2.25 | in |
| Bolt Circle, BC | 44 | in |
| Yield Strength, Fy | 75 | ksi |
| Tensile Strength, Fu | 100 | ksi |
| Applied Axial, Pu | 146.7 | k |
| Applied Shear, Vu | 0.8 | k |
| Compressive Capacity, ϕPn | 243.6 | k |
| Tensile Capacity, ϕRnt | 0.602 | OK |
| Interaction Capacity | 0.608 | OK |

**Additional Bolt Group 1**

| | | |
|---|---|---|
| Bolt Quantity, N | 8 | - |
| Bolt Diameter, d | 1.25 | in |
| Bolt Circle, BC | 41.875 | in |
| Yield Strength, Fy | 92 | ksi |
| Tensile Strength, Fu | 120 | ksi |
| Applied Axial, Pu | 39.5 | k |
| Applied Shear, Vu | 0.5 | k |
| Compressive Capacity, ϕPn | 87.2 | k |
| Compressive Capacity, ϕPn | 0.453 | OK |
| Interaction Capacity | 0.464 | OK |

**Additional Bolt Group 2**

| | | |
|---|---|---|
| Bolt Quantity, N | 4 | - |
| Bolt Diameter, d | 2.25 | in |
| Bolt Circle, BC | 48.22 | in |
| Yield Strength, Fy | 70 | ksi |
| Tensile Strength, Fu | 100 | ksi |
| Applied Axial, Pu | 250.8 | k |
| Applied Shear, Vu | 0.0 | k |
| Compressive Capacity, ϕPn | 298.2 | k |
| Compressive Capacity, ϕPn | 0.841 | OK |
| Interaction Capacity | 0.841 | OK |

**Dywidag Reinforcement**

| | | |
|---|---|---|
| Dywidag Quantity, N | 4 | - |
| Dywidag Diameter, d | 2.25 | in |
| Bolt Circle, BC | 42.55 | in |
| Yield Strength, Fy | 75 | ksi |
| Tensile Strength, Fu | 100 | ksi |
| Applied Axial, Pu | 157.2 | k |
| Compressive Capacity, ϕPn | 298.2 | k |
| Capacity, Pu/ϕPn | 0.527 | OK |

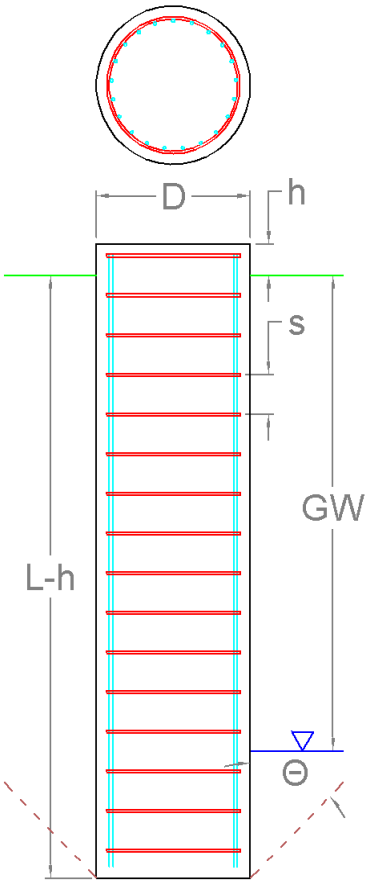
# Pier Foundation Analysis (ANSI/TIA-222-H)

| Foundation Analysis Parameters | | | |
|---|---|---|---|
| Pier Diameter | *D* | 5.00 | ft |
| Pier Embedment | *L-h* | 22.2 | ft |
| Pier Height above Ground | *H* | 0.50 | ft |
| Water Table Depth [BGL] | *GW* | 5 | ft |
| Pullout Angle | Θ | 30 | ° |
| Unit Weight of Concrete | | 150 | pcf |
| Uplift Skin Friction Factor | | 0.890 | |

| Reactions | | |
|---|---|---|
| Moment, $M_u$ | 3,127.7 | k-ft |
| Shear, $V_u$ | 29.3 | k |
| Axial, $P_u$ | 62.1 | k |
| Uplift, $T_u$ | 0.0 | k |

## Soil Properties

| Layer Depth (ft) | | Unit Weight | Cohesion | Friction Angle | Ultimate Skin Friction | Ultimate Bearing Pressure |
|---|---|---|---|---|---|---|
| TOP | BTM | pcf | psf | ° | psf | psf |
| 0.0 | 1.0 | 116 | 0 | 0 | 0 | 0 |
| 1.0 | 3.0 | 115 | 0 | 30 | 0 | 0 |
| 3.0 | 4.5 | 106 | 0 | 29 | 0 | 0 |
| 4.5 | 7.0 | 117 | 0 | 31 | 731 | 0 |
| 7.0 | 8.0 | 126 | 0 | 34 | 788 | 0 |
| 8.0 | 10.0 | 126 | 0 | 34 | 892 | 0 |
| 10.0 | 23.3 | 135 | 5,112 | 0 | 2,300 | 46,007 |



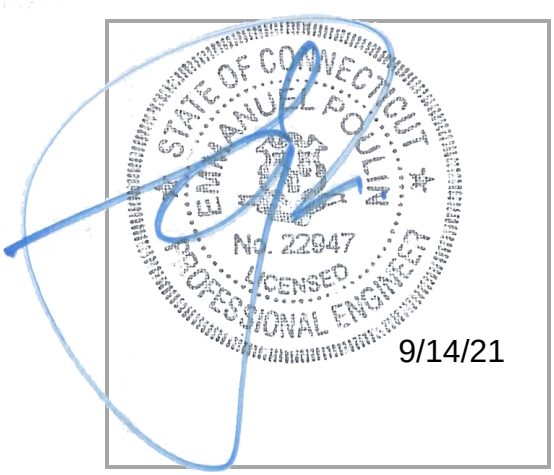

| Soil Strength Capacities | | |
|---|---|---|
| Volume of Concrete | 446.7 | $ft^3$ |
| Weight of Concrete [Buoyancy Considered] | 45.9 | k |
| Average Soil Unit Weight | 78.8 | pcf |
| Skin Friction Resistance | 511.7 | k |
| Compressive Bearing Resistance | 903.4 | k |
| Pullout Weight [Minus Concrete Weight] | 479.8 | k |
| Compressive Force, $P_u$ | 74.1 | k |
| Nominal Compressive Capacity, $\phi_s P_n$ | 1,061.3 | k |
| $P_u / \phi_s P_n$ | 7.0% | |
| Total Lateral Resistance | 2,496.9 | k |
| Inflection Point [BGL] | 15.6 | ft |
| Moment at Inflection Point, $M_D$ | 3,598.6 | k-ft |
| Nominal Moment Capacity, $\phi_s M_n$ | 6,566.4 | k-ft |
| $M_D / \phi_s M_n$ | 54.8% | |

# MOUNT ANALYSIS REPORT

September 14, 2021

| | |
|---|---|
| Dish Wireless Site Name | BOHVN00142A |
| Dish Wireless Site Number | BOHVN00142A |
| ATC Site Name | Branford CT 6, CT |
| ATC Site Number | 302484 |
| Infinigy Job Number | 1197-F0001-B |
| Client | ATC |
| Carrier | Dish Wireless |
| Site Location | 405 Brushy Plain Rd<br>Branford, CT 06405-2308<br>New Haven County<br>41.316800 N NAD83<br>72.819700 W NAD83 |
| Mount Type | 8.0 ft Platform |
| Mount Elevation | 103.0 ft AGL |
| Structural Usage Ratio | **28.2%** |
| **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 121 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 | 121 mph (3-Second Gust) |
| Wind Speed w/ ice | 50 mph (3-Second Gust) w/ 1" ice |
| Code / Standard | TIA-222-H |
| Adopted Code | 2018 Connecticut State Building Code (2015 IBC) |
| Risk Category | II |
| Exposure Category | B |
| Topographic Category | 1 |
| Seismic Spectral Response | $S_s$ = 0.203 g / $S_1$ = 0.054 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 - 103.0 ft. AGL Platform

| Antenna Centerline (ft) | Qty. | Appurtenance Manufacturers | Appurtenance Models |
|---|---|---|---|
| 103.0 | 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-302484 Rev 1, Site #BOHVN00142A, dated July 09, 2021 |
| Mount Manufacturer Drawings | Commscope Document # MC-PK8-DSH, dated March 08, 2021 |
| Structural Analysis Report | ATC, Asset #302484, dated August 3, 2021 |

## 5. RESULTS

| Components | Capacity | Pass/Fail |
|---|---|---|
| Mount Pipes | 17.5% | Pass |
| Horizontals | 10.5% | Pass |
| Standoffs | 26.8% | Pass |
| Handrails | 20.9% | Pass |
| Connections | 28.2% | Pass |
| **MOUNT RATING =** | **28.2 %** | **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 103.0 ft. The installation shall be performed in accordance with the construction documents issued for this site.

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

## 7. ASSUMPTIONS

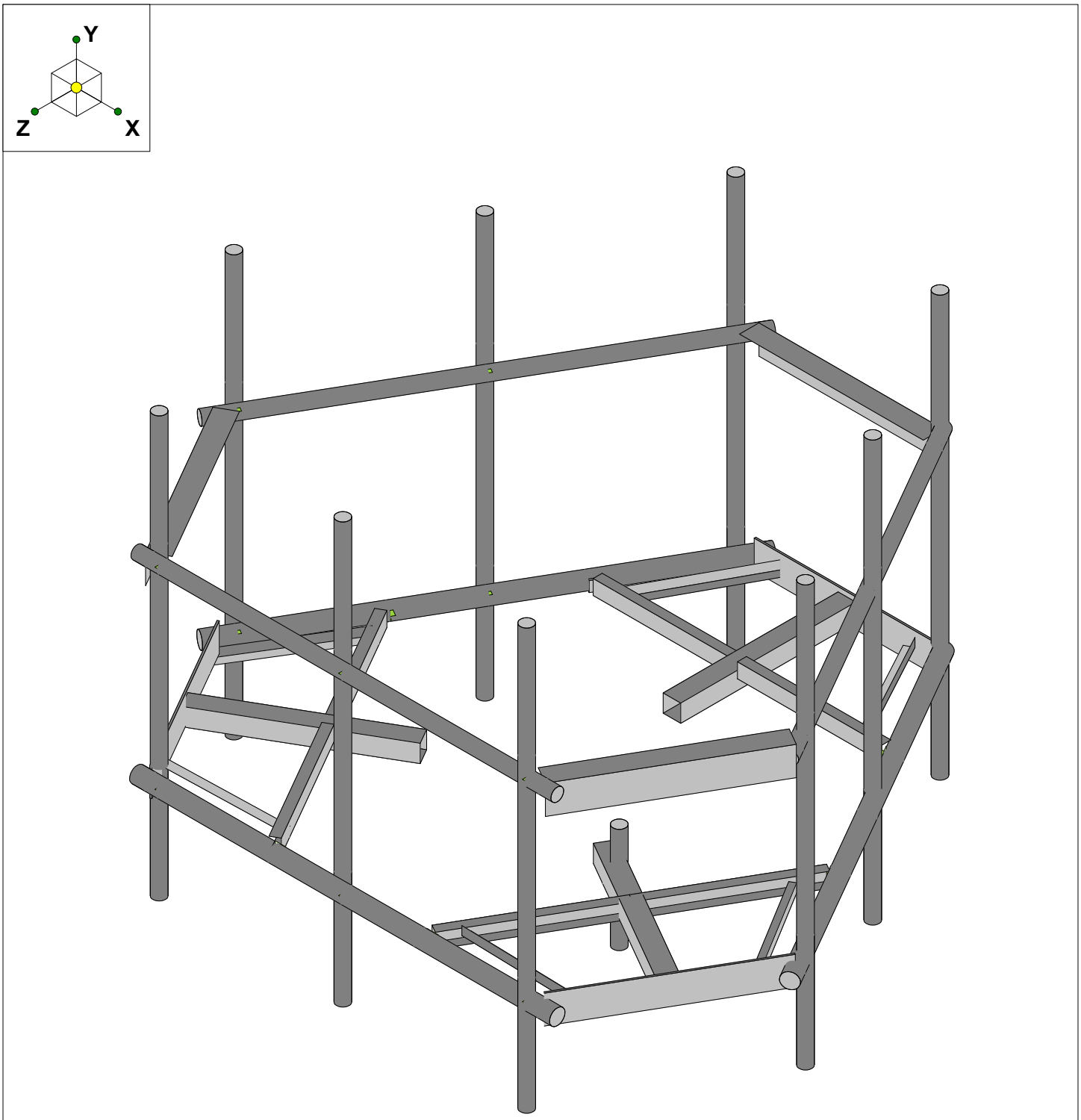
| |
|---|
| The antenna mounting system was properly fabricated, installed and maintained in accordance with its original design and manufacturer's specifications. |
| The configuration of antennas, mounts, and other appurtenances are as specified in the proposed loading configuration table. |
| All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report. |
| The analysis will require revisions if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members. |
| Steel grades have been assumed as follows, unless noted otherwise:<br>Channel, Solid Round, Plate, Built-up Angle — ASTM A1011 36 KSI<br>Structural Angle — ASTM A529 Gr. 50<br>HSS (Rectangular) — ASTM A500-B GR 46<br>HSS (Circular) — ASTM A500-B GR 42<br>Pipe — ASTM A500 Gr C<br>Connection Bolts — ASTM A325<br>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.

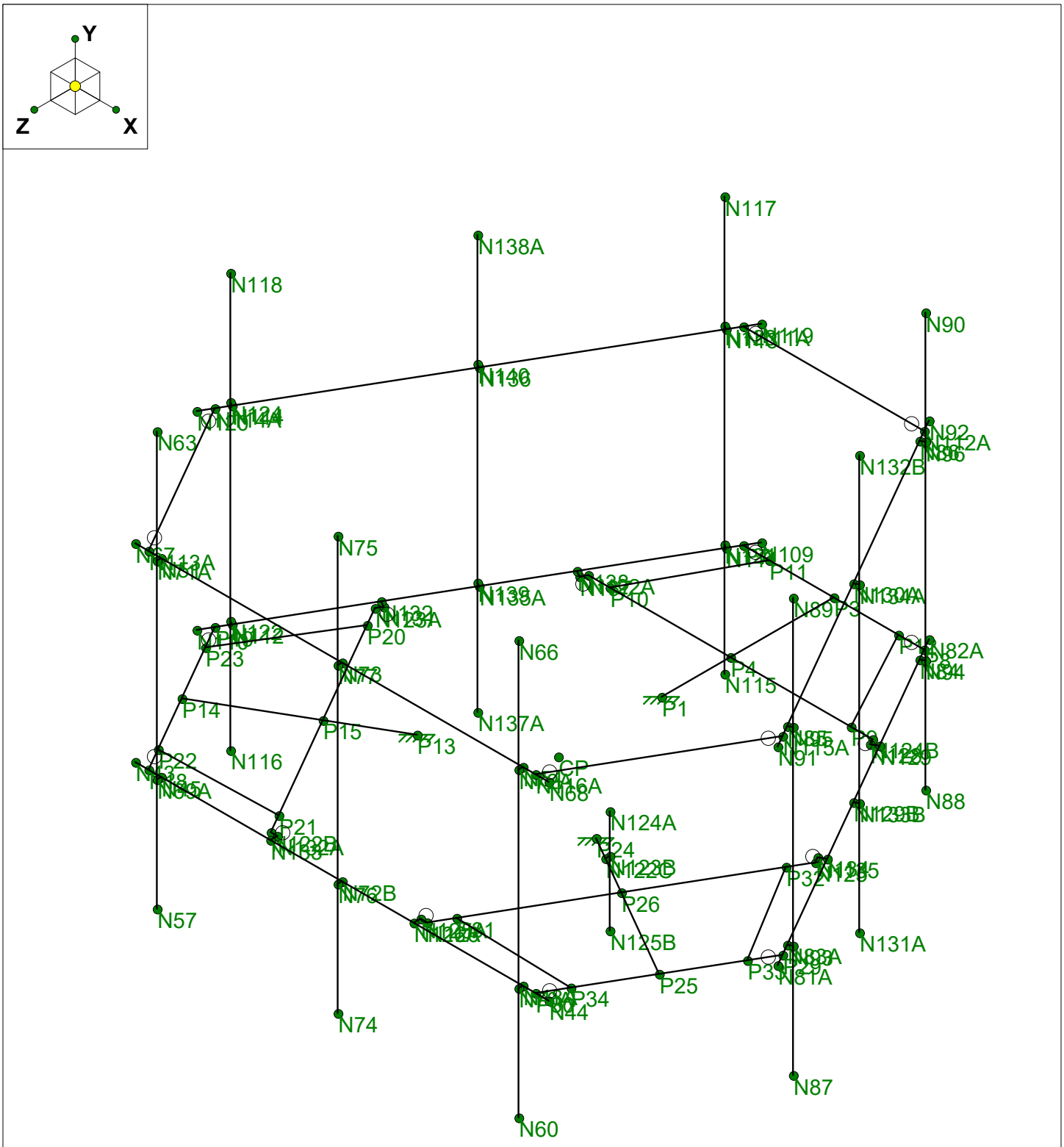
Our evaluation is completed using industry standard methods and procedures. The structural results, conclusions and recommendations contained in this report are proprietary and should not be used by others as their own. Infinigy is not responsible for decisions made by others that are or are not based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



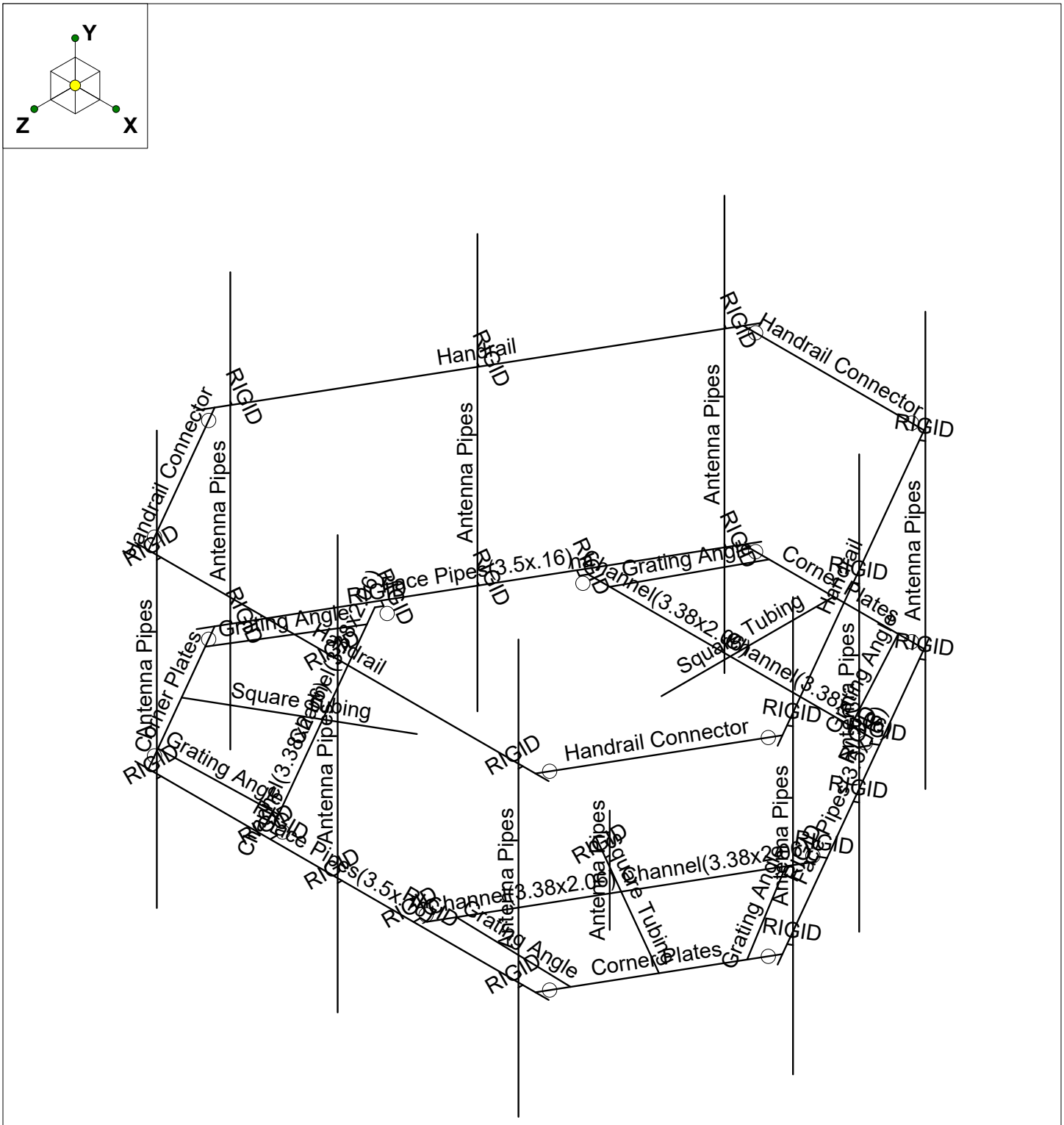

Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Rendered |
| BY | | Sept 14, 2021 at 9:55 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |




Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Wire Frame |
| BY | | Sept 14, 2021 at 9:55 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |




Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Section Sets |
| BY | | Sept 14, 2021 at 9:56 AM |
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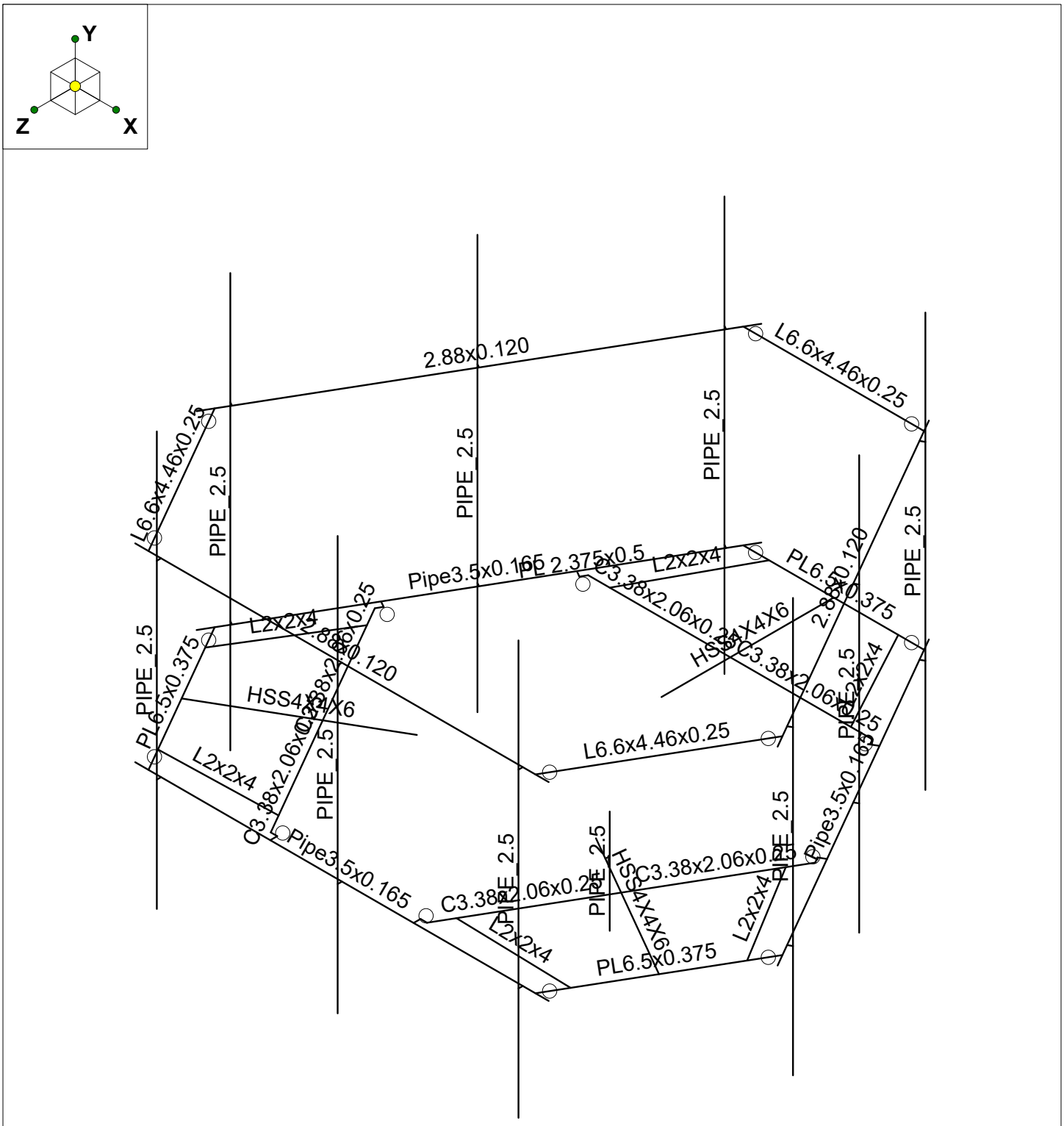
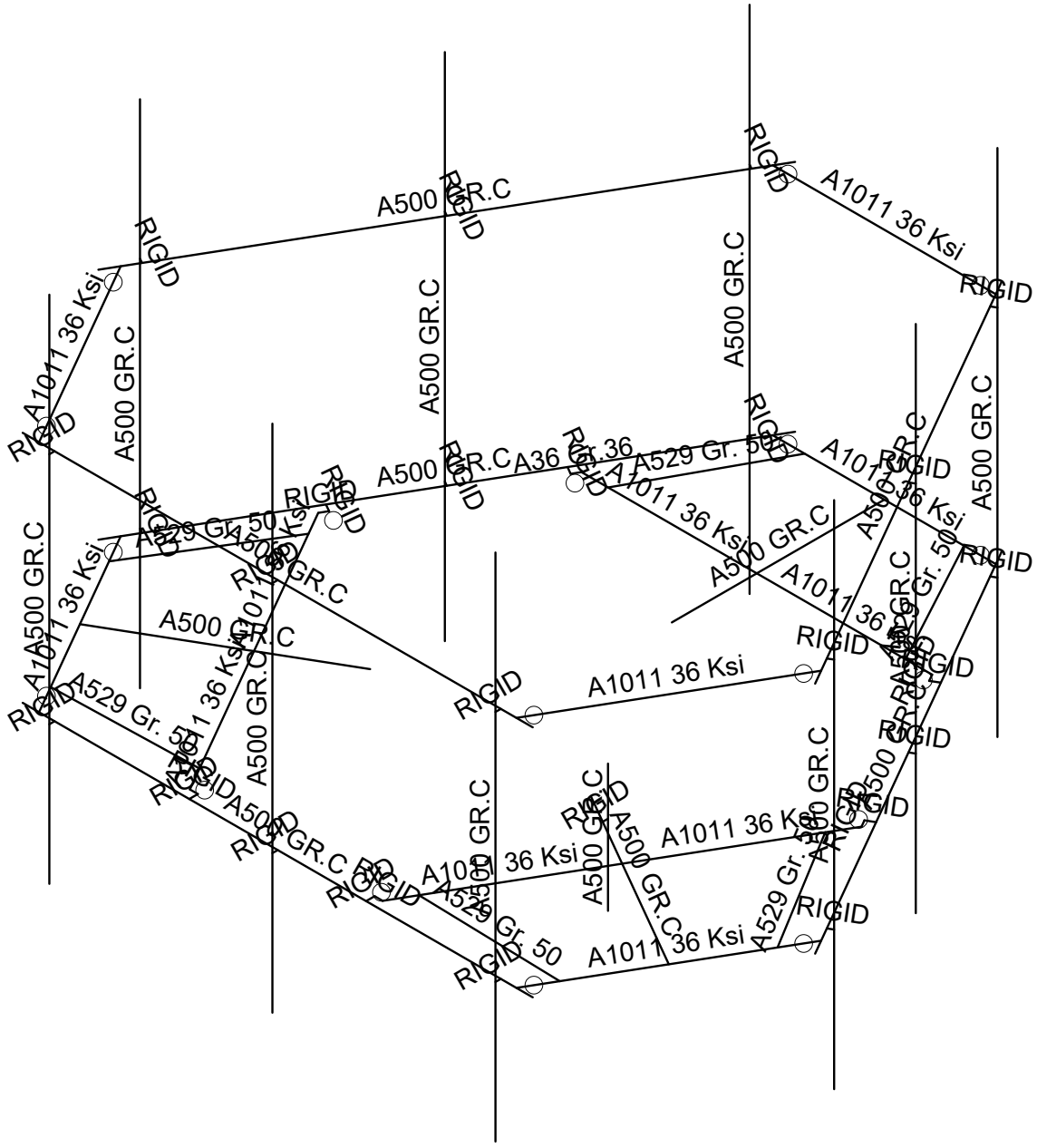



Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Member Shapes |
| BY | | Sept 14, 2021 at 9:57 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |




Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Material Sets |
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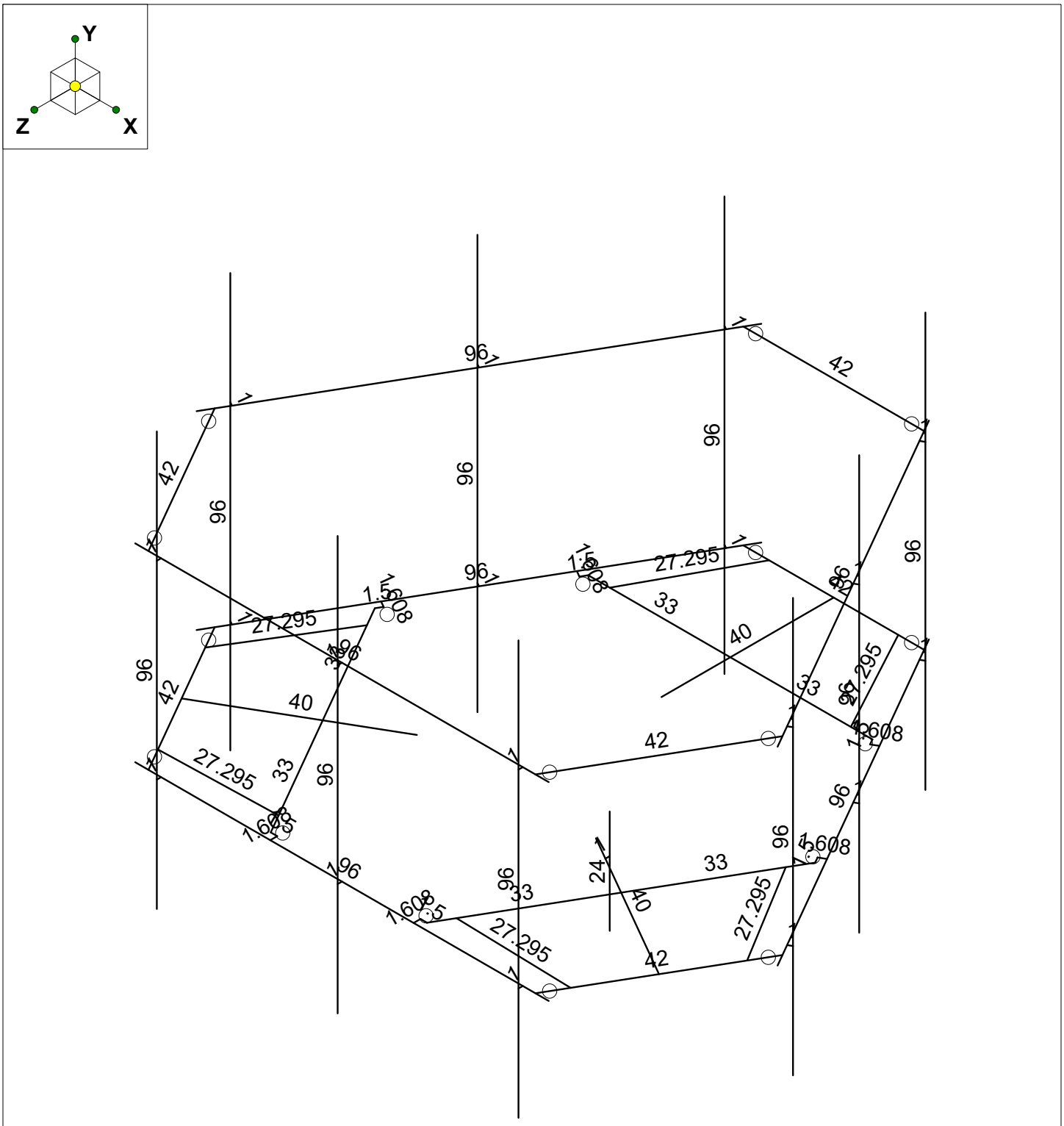
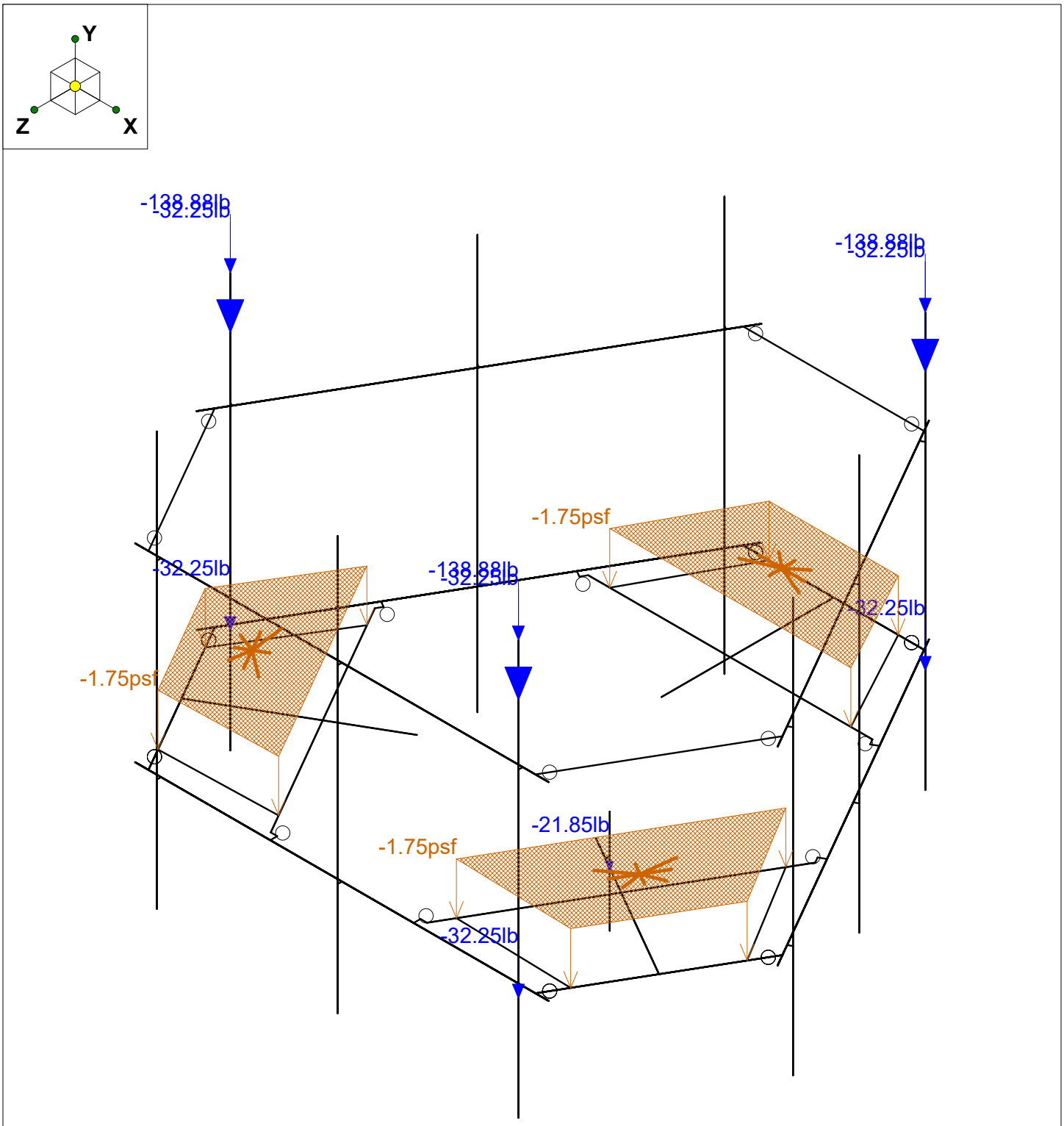


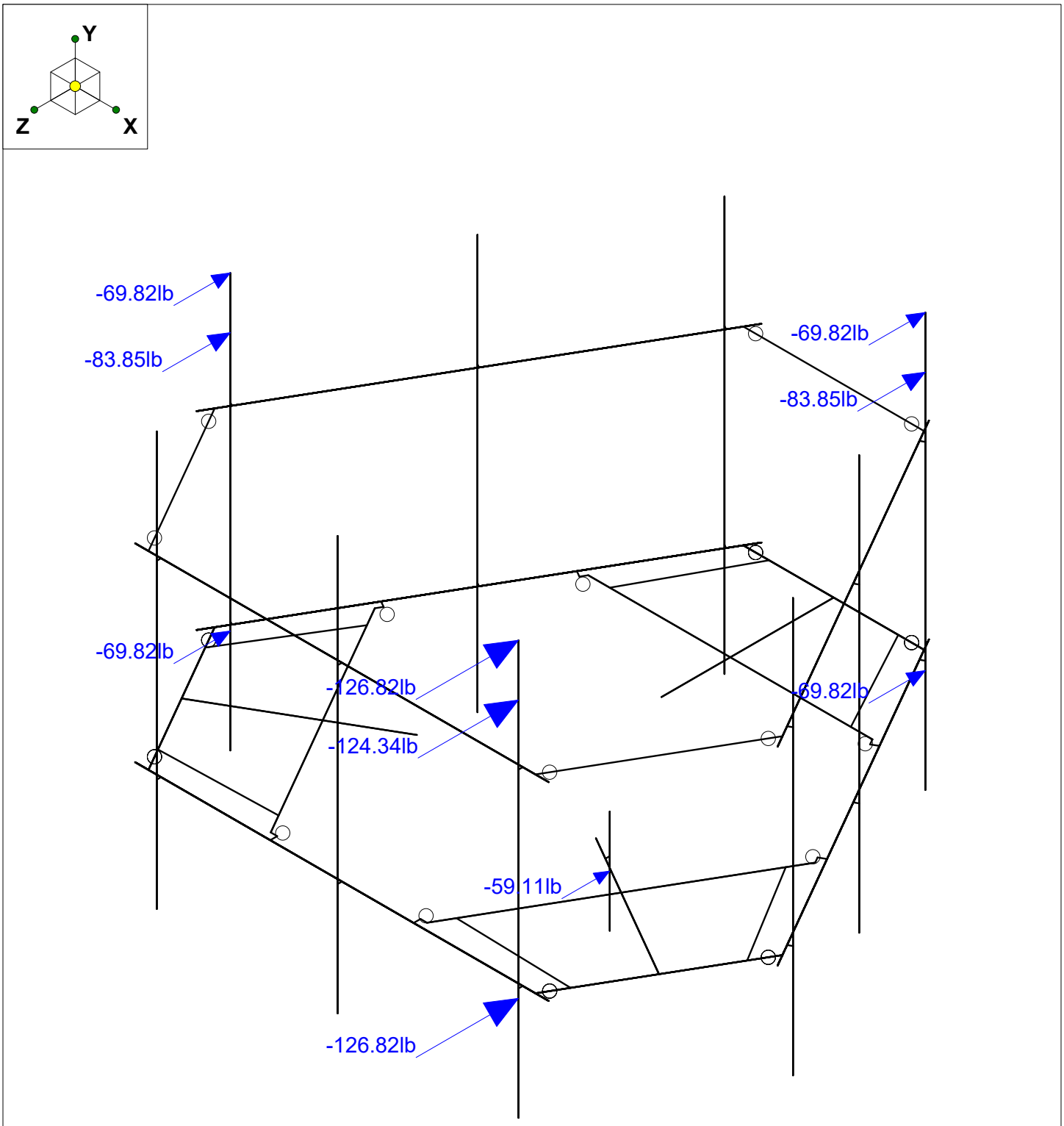

Member Length (in) Displayed
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Member Lengths |
| BY | | Sept 14, 2021 at 9:58 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



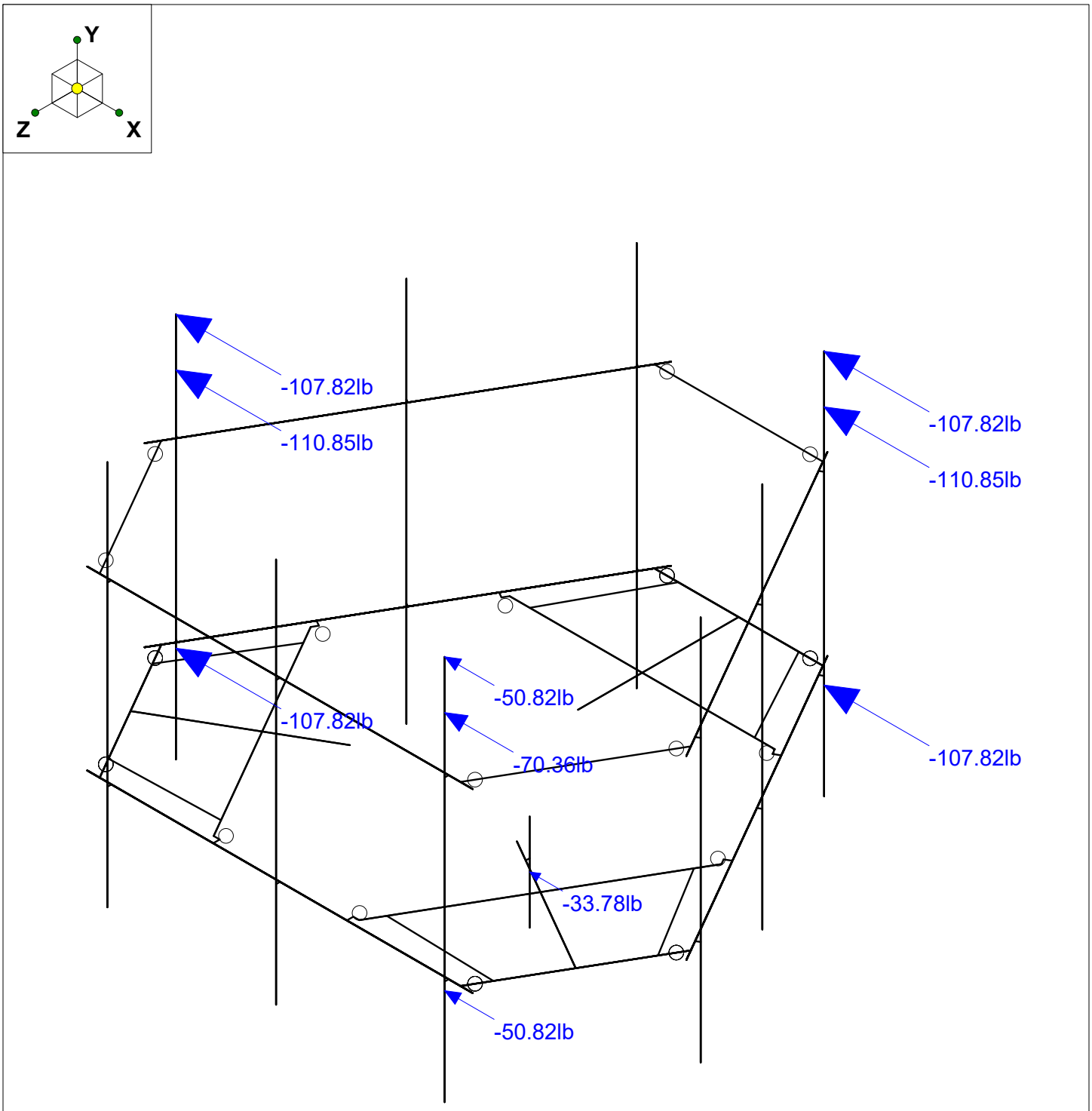

Loads: BLC 1, Self Weight
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Self Weights |
| BY | | Sept 14, 2021 at 9:59 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



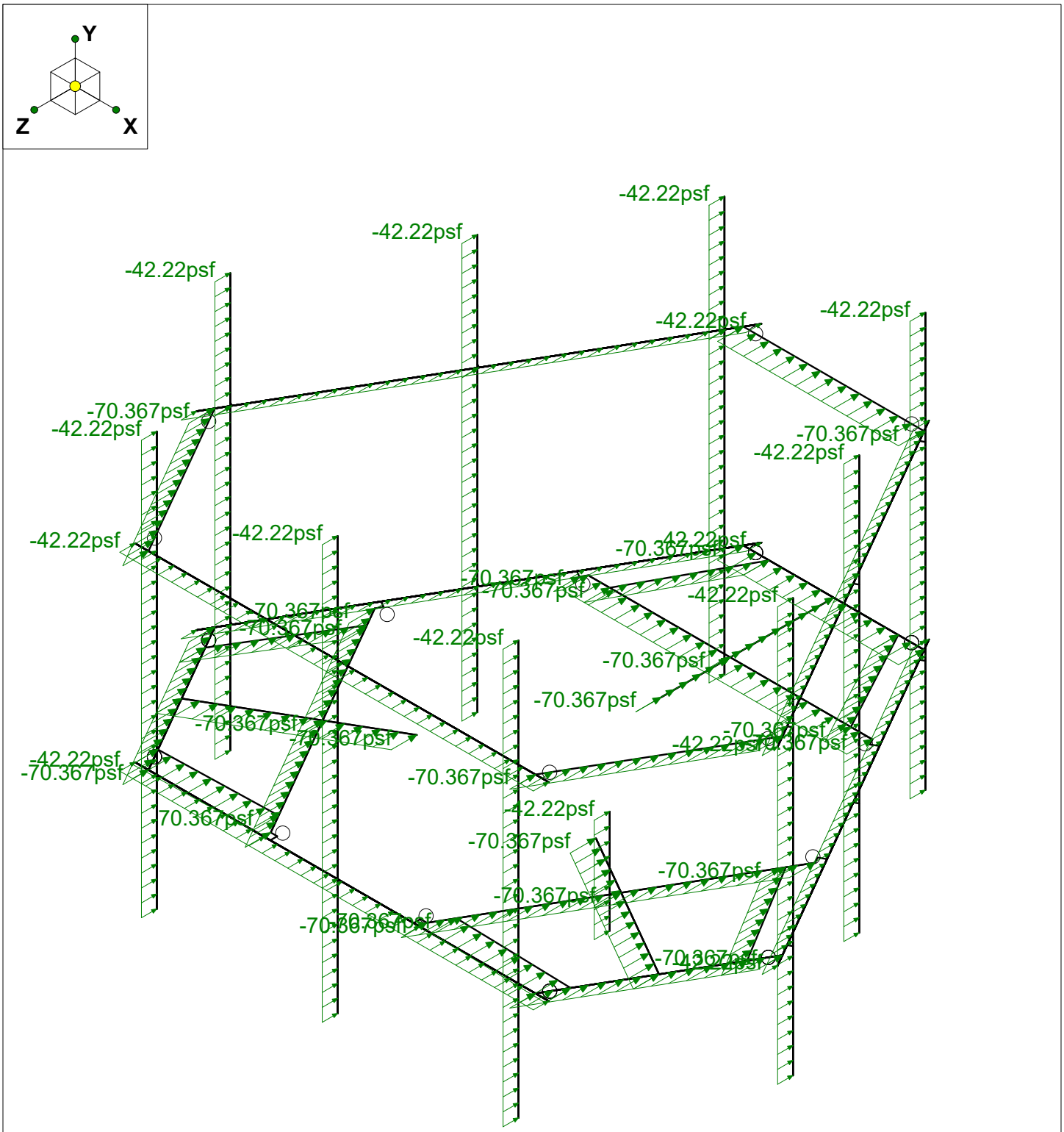

Loads: BLC 2, Wind Load AZI 0
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Wind Load AZI 0 |
| BY | | Sept 14, 2021 at 10:00 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



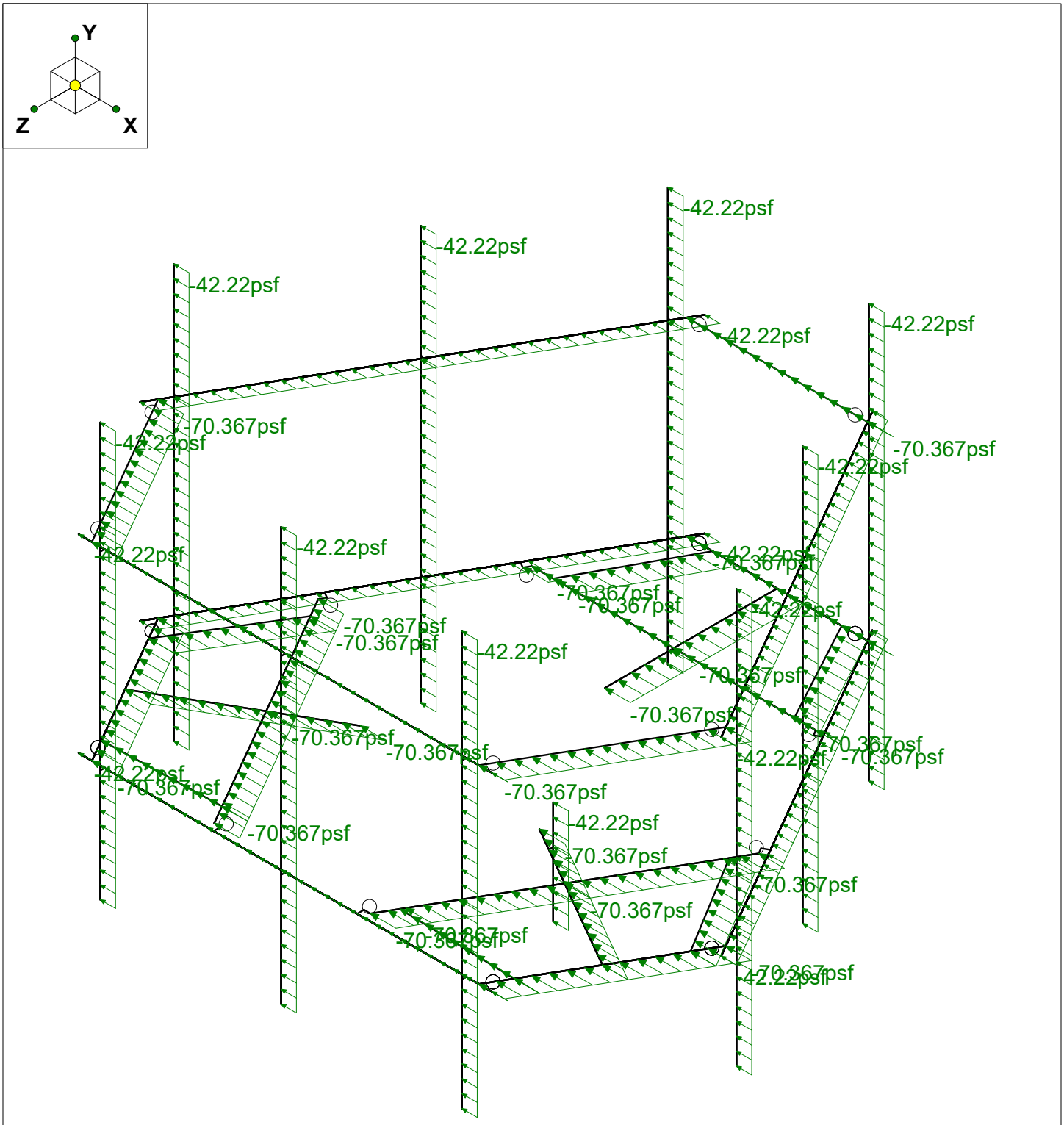

Loads: BLC 5, Wind Load AZI 90
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Wind Load AZI 90 |
| BY | | Sept 14, 2021 at 10:01 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



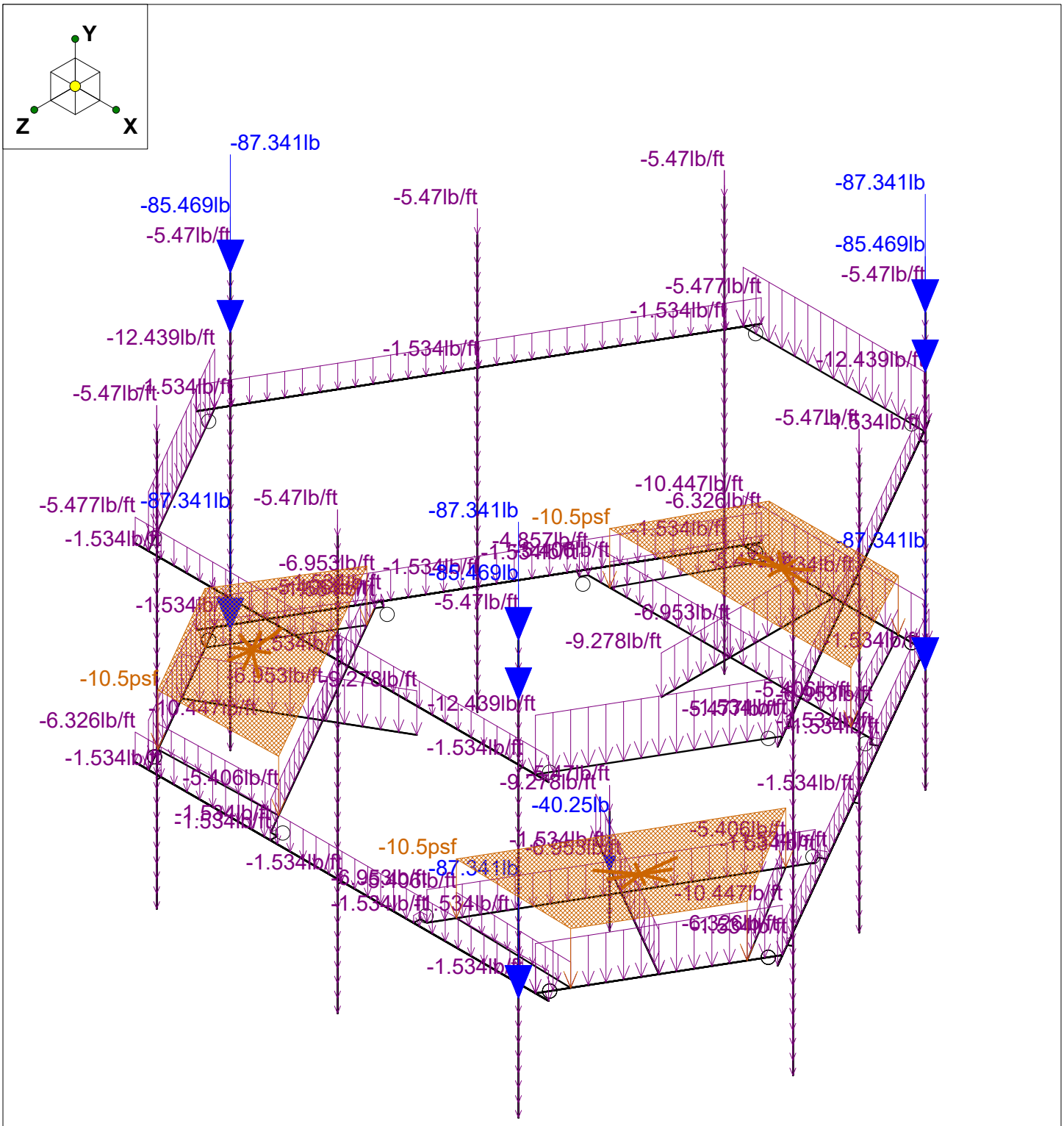

Loads: BLC 14, Distr. Wind Load Z
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | | Distr. Wind Load AZI 000 |
| BY | BOHVN00142A | Sept 14, 2021 at 10:02 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



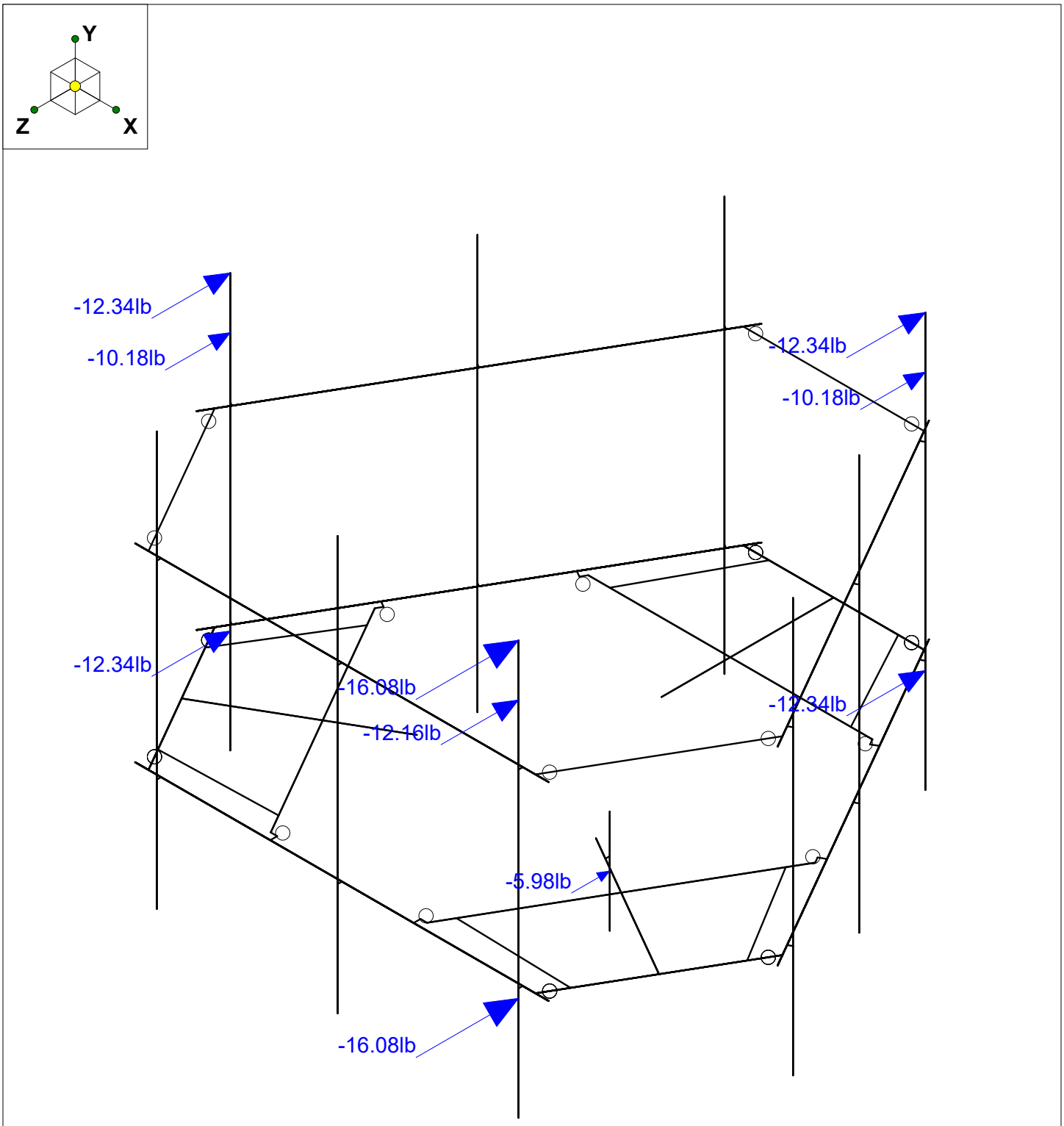

Loads: BLC 15, Distr. Wind Load X
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Distr. Wind Load AZI 090 |
| BY | | Sept 14, 2021 at 10:03 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



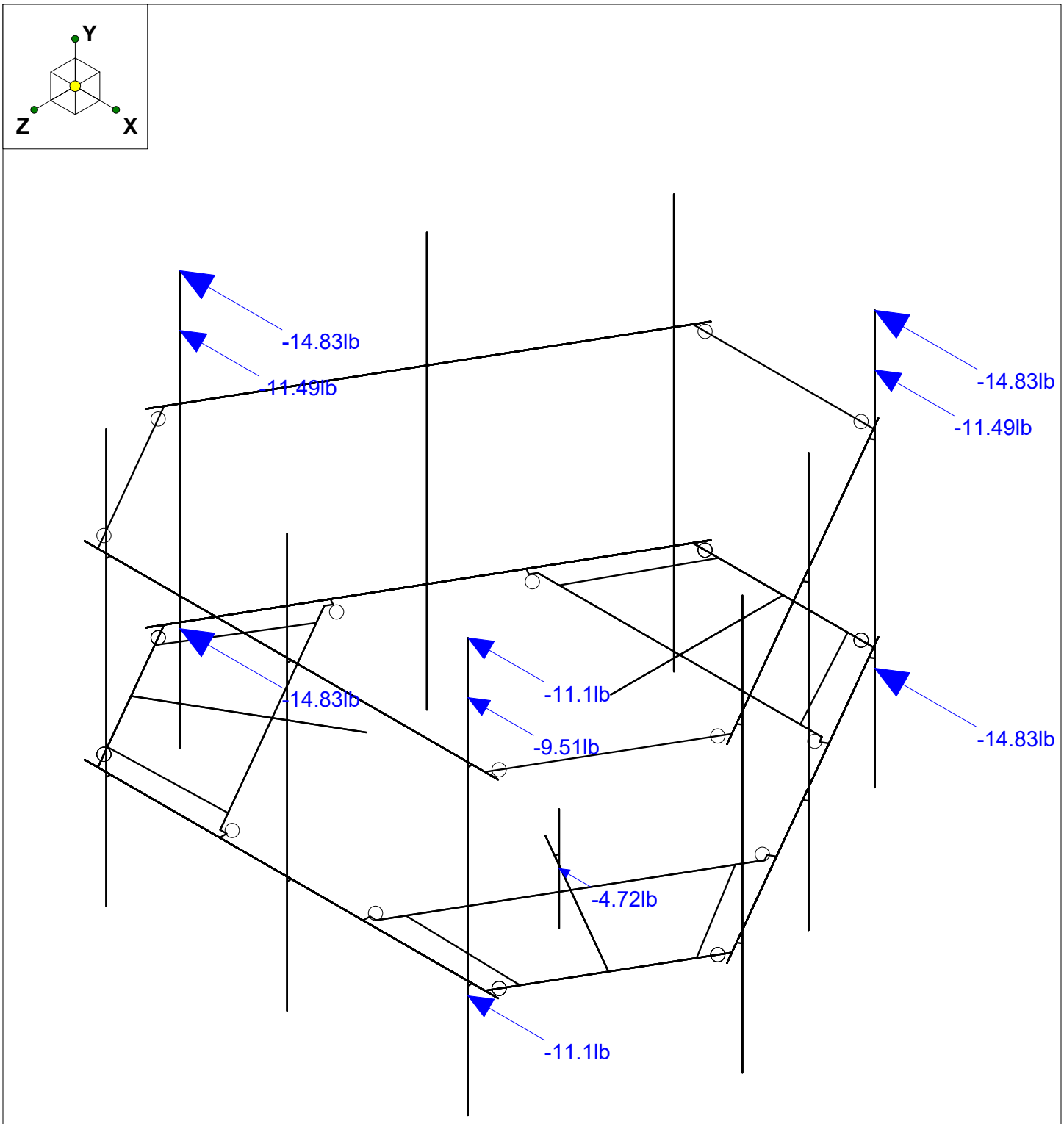

Loads: BLC 16, Ice Weight
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Ice Weight |
| BY | | Sept 14, 2021 at 10:04 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



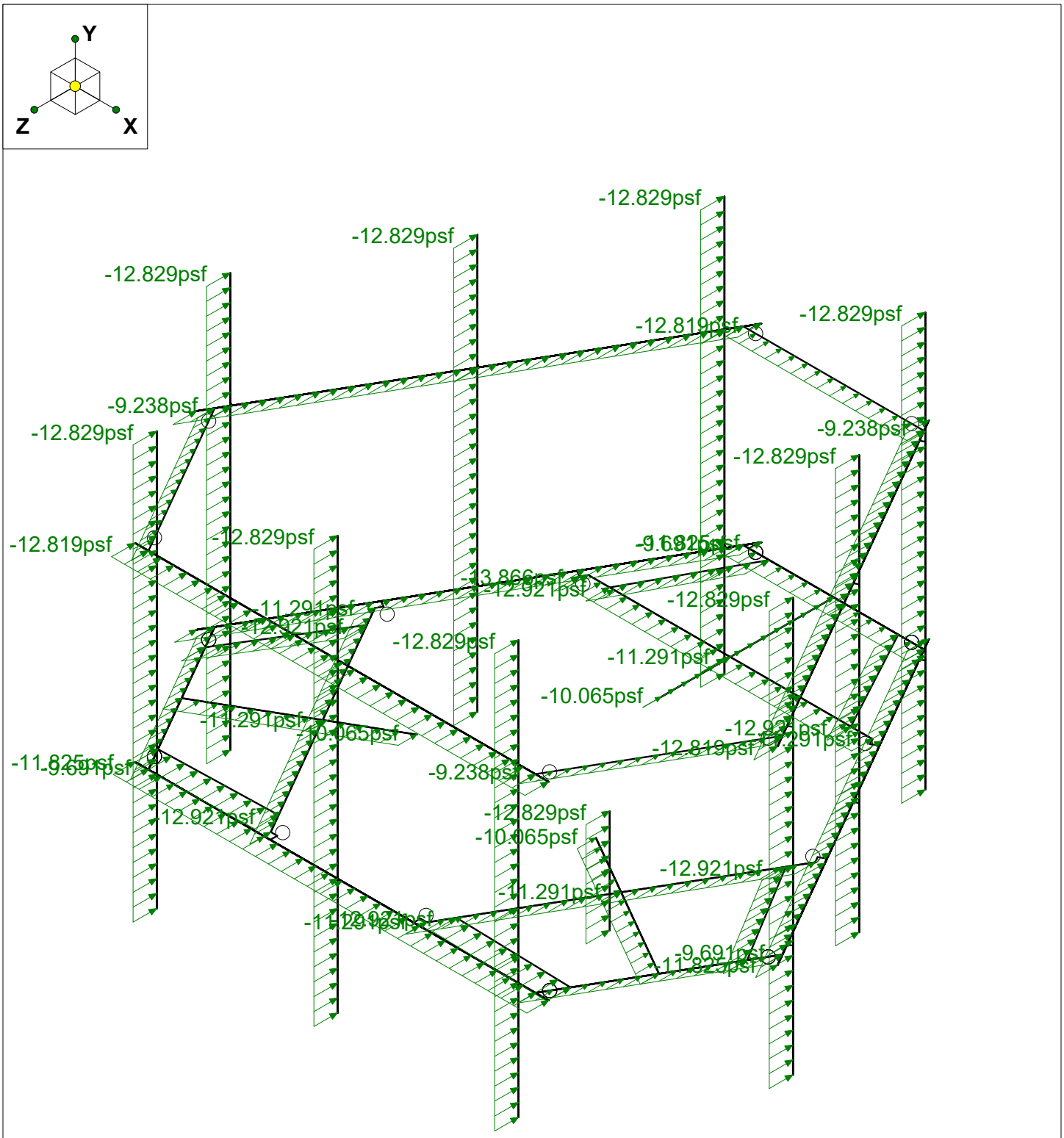

Loads: BLC 17, Ice Wind Load AZI 0
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Ice Wind Load AZI 0 |
| BY | | Sept 14, 2021 at 10:05 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



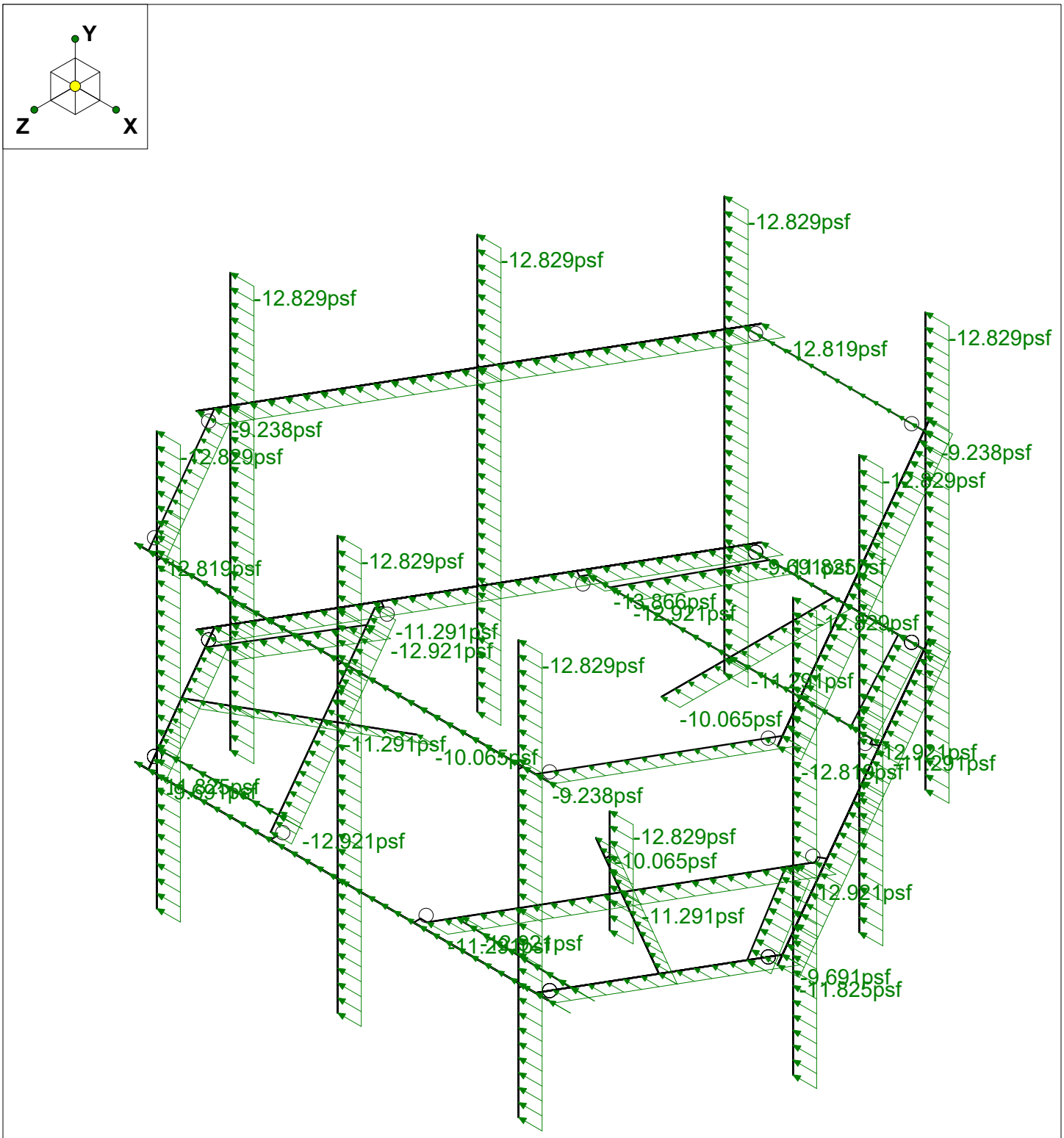

Loads: BLC 20, Ice Wind Load AZI 90
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Ice Wind Load AZI 90 |
| BY | | Sept 14, 2021 at 10:05 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



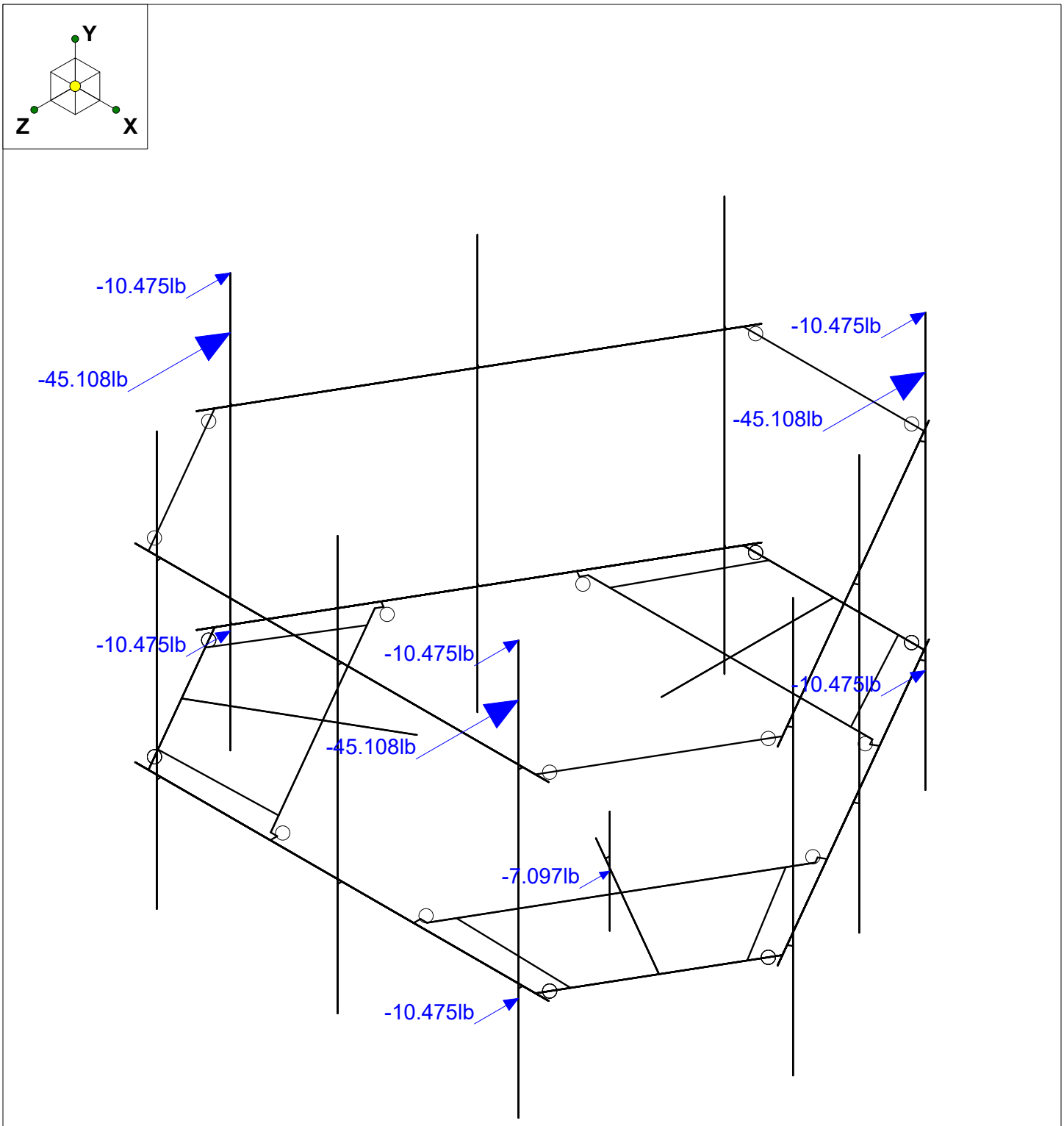

Loads: BLC 29, Distr. Ice Wind Load Z
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Distr.Ice Wind Load AZI 000 |
| BY | | Sept 14, 2021 at 10:06 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



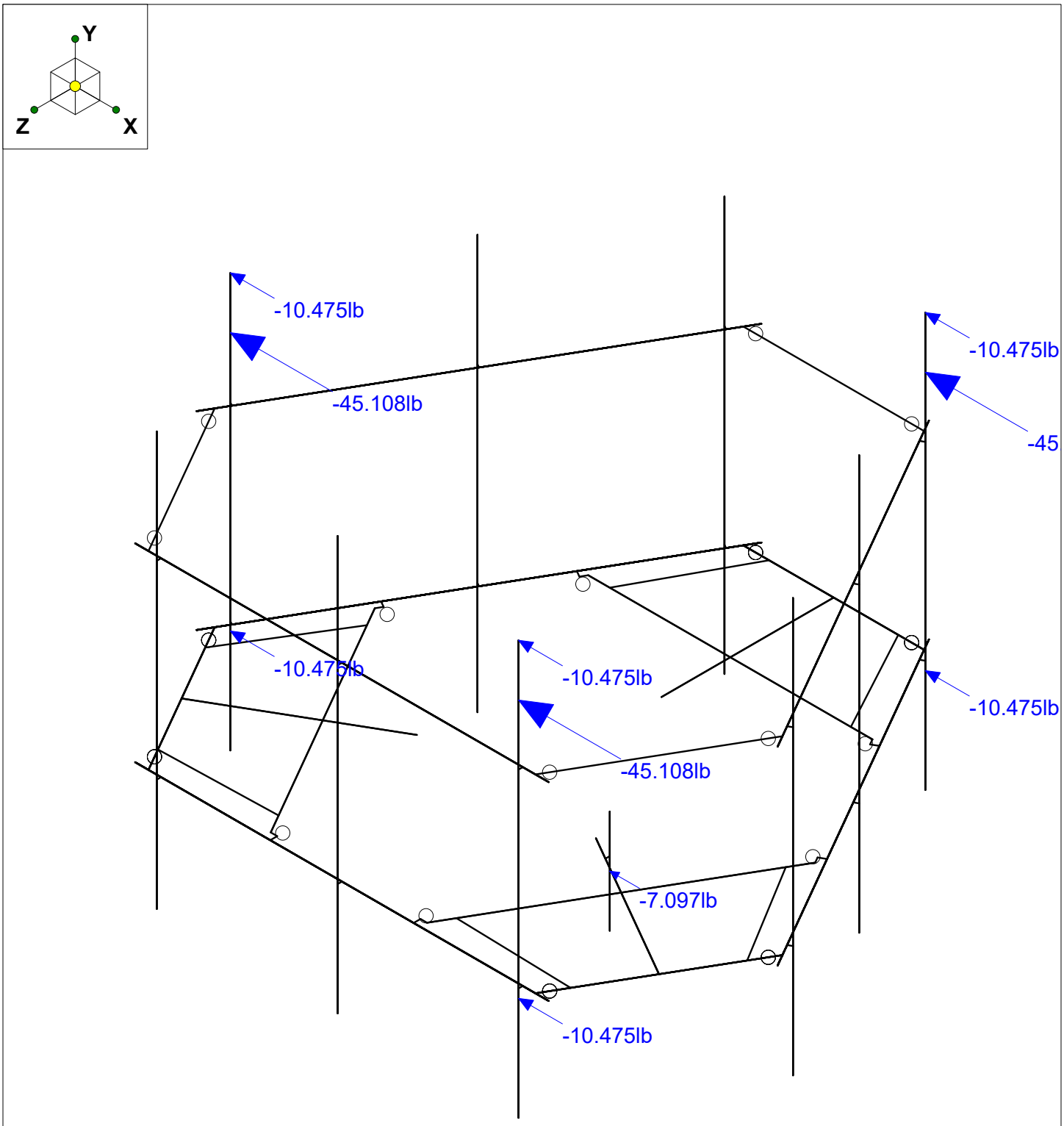

Loads: BLC 30, Distr. Ice Wind Load X
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Distr.Ice Wind Load AZI 090 |
| BY | | Sept 14, 2021 at 10:07 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



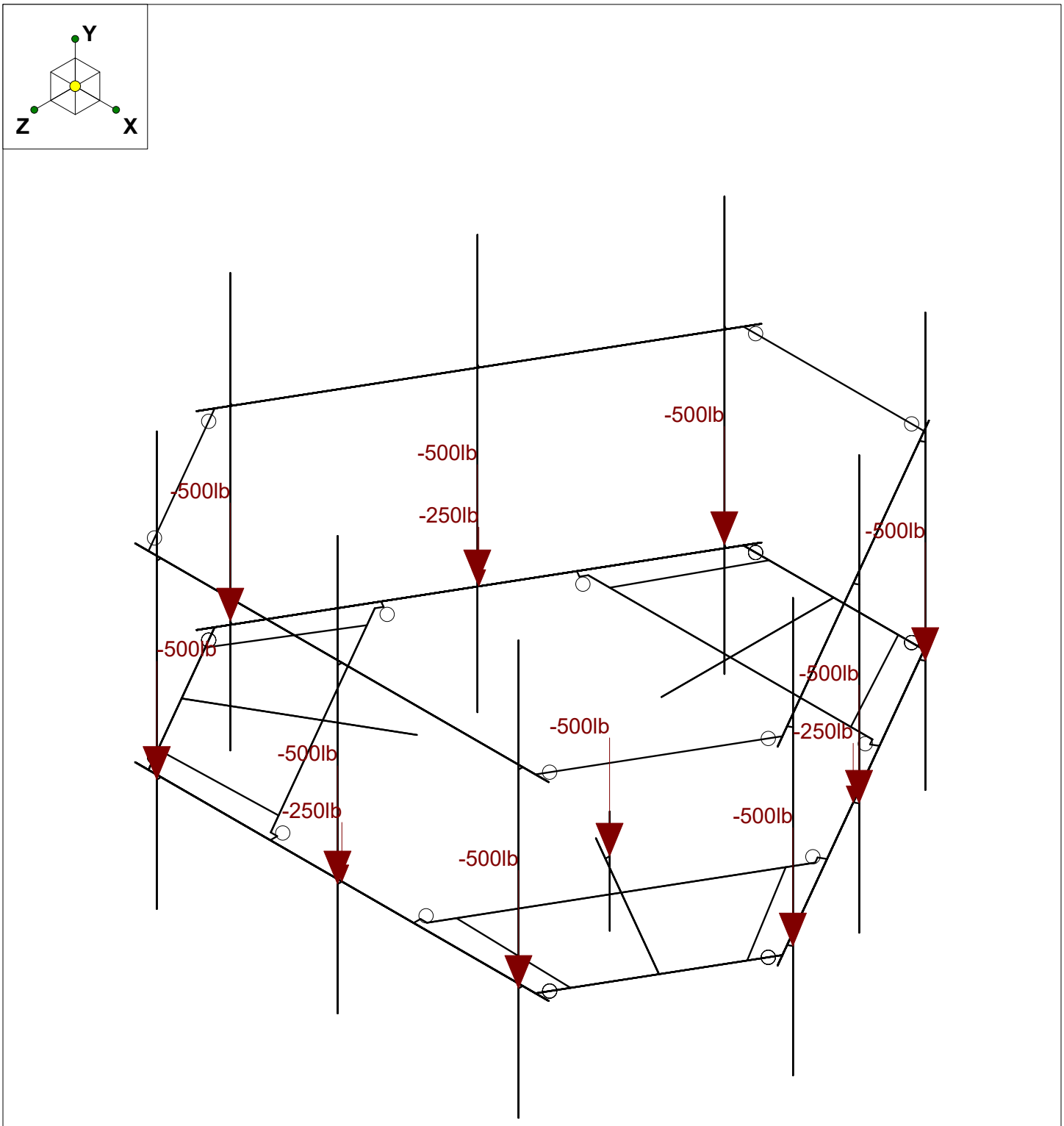

Loads: BLC 31, Seismic Load Z
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Seismic Load AZI 000 |
| BY | | Sept 14, 2021 at 10:07 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



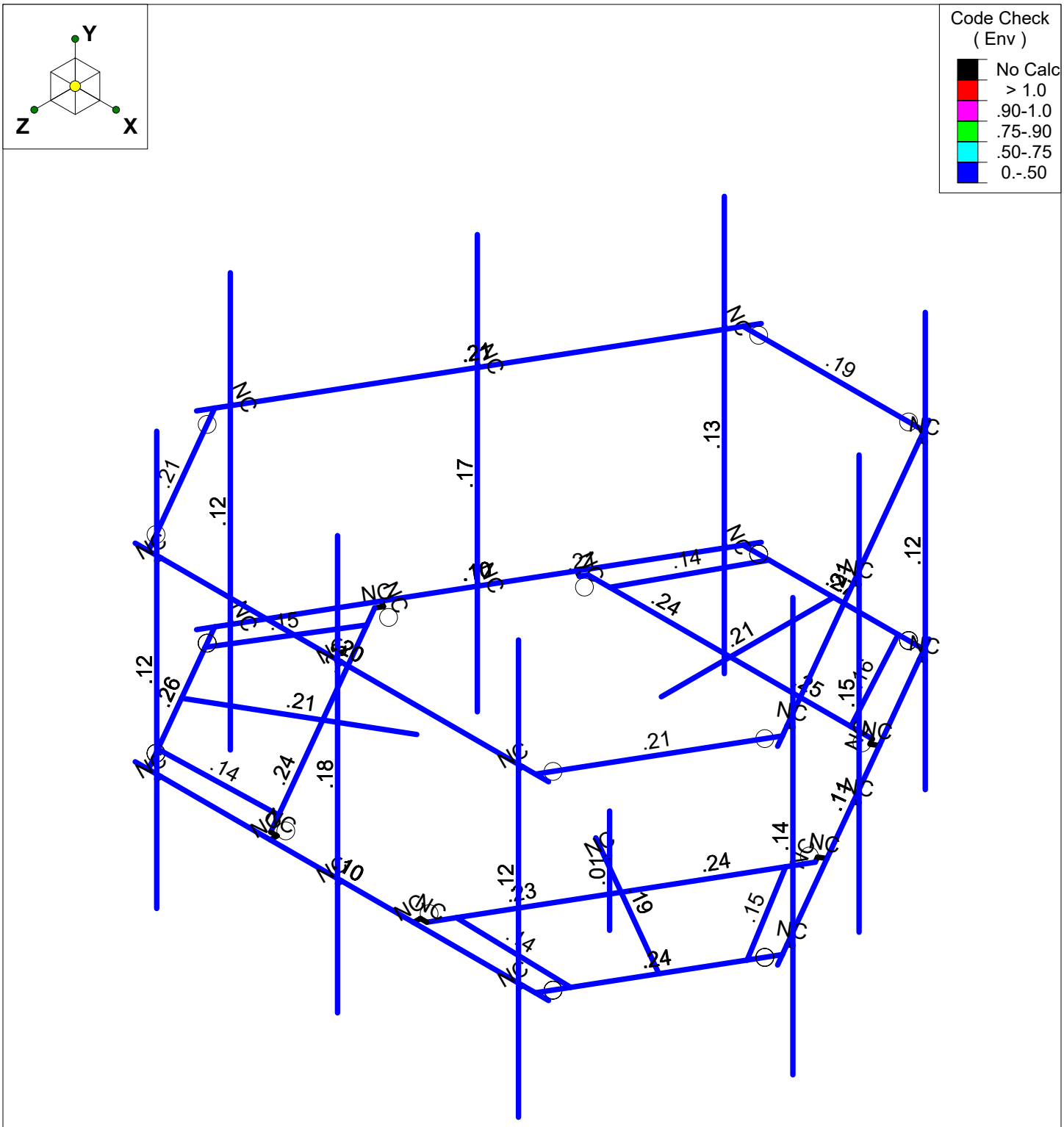

Loads: BLC 32, Seismic Load X
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Seismic Load AZI 090 |
| BY | | Sept 14, 2021 at 10:08 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |



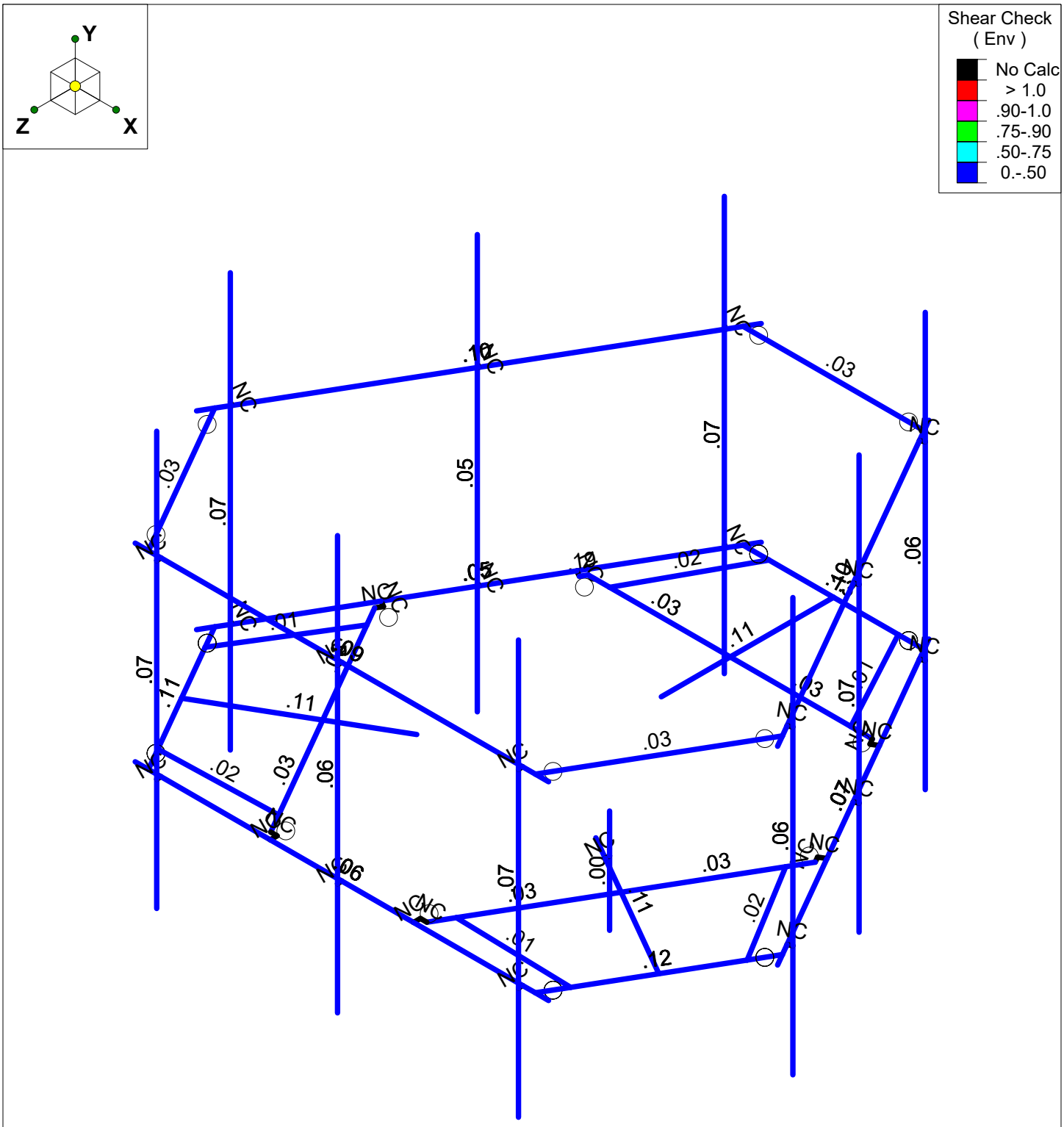

Loads: LL - Live Load
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Non-Concurrent Live Loads |
| BY | | Sept 14, 2021 at 10:10 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |




Member Code Checks Displayed (Enveloped)
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Bending Check |
| BY | | Sept 14, 2021 at 10:11 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |




Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

| | | |
|---|---|---|
| Infinigy Engineering, PLLC | BOHVN00142A | Shear Check |
| BY | | Sept 14, 2021 at 10:11 AM |
| 1197-F0001-B | | BOHVN00142A_loaded.r3d |

# Program Inputs

| PROJECT INFORMATION | |
|---|---|
| Client: | ATC |
| Carrier: | Dish Wireless |
| Engineer: | Binita Yadav |

| SITE INFORMATION | | |
|---|---|---|
| Risk Category: | II | |
| Exposure Category: | B | |
| Topo Factor Procedure: | Method 1, Category 1 | |
| Site Class: | D - Stiff Soil (Assumed) | |
| Ground Elevation: | 236.76 | ft *Rev H |

| MOUNT INFORMATION | | |
|---|---|---|
| Mount Type: | Platform | |
| Num Sectors: | 3 | |
| Centerline AGL: | 103.00 | ft |
| Tower Height AGL: | 150.00 | ft |

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

| FACTORS | | |
|---|---|---|
| Directionality Fact. ($K_d$): | 0.950 | |
| Ground Ele. Factor ($K_e$): | 0.991 | *Rev H Only |
| Rooftop Speed-Up ($K_s$): | 1.000 | *Rev H Only |
| Topographic Factor ($K_{zt}$): | 1.000 | |
| Gust Effect Factor ($G_h$): | 1.000 | |

| CODE STANDARDS | | |
|---|---|---|
| Building Code: | 2015 IBC | |
| TIA Standard: | TIA-222-H | |
| ASCE Standard: | ASCE 7-16 | |

| WIND AND ICE DATA | | |
|---|---|---|
| Ultimate Wind ($V_{ult}$): | 121 | mph |
| Design Wind (V): | N/A | mph |
| Ice Wind ($V_{ice}$): | 50 | mph |
| Base Ice Thickness ($t_i$): | 1 | in |
| Flat Pressure: | 70.367 | psf |
| Round Pressure: | 42.220 | psf |
| Ice Wind Pressure: | 7.209 | psf |

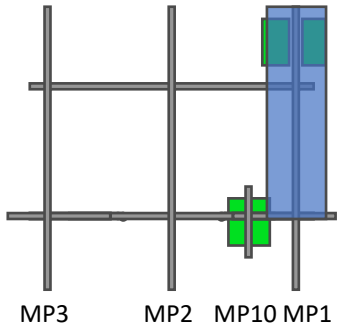
| SEISMIC DATA | | |
|---|---|---|
| Short-Period Accel. ($S_s$): | 0.203 | g |
| 1-Second Accel. ($S_1$): | 0.054 | g |
| Short-Period Design ($S_{DS}$): | 0.216 | |
| 1-Second Design ($S_{D1}$): | 0.086 | |
| Short-Period Coeff. ($F_a$): | 1.600 | |
| 1-Second Coeff. ($F_v$): | 2.400 | |
| Amplification Factor ($A_s$): | 3.000 | |
| Response Mod. Coeff. (R): | 2.000 | |

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

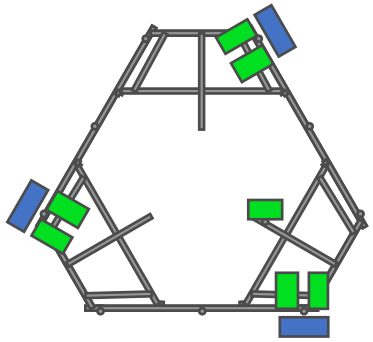
Infinigy Load Calculator V2.1.7

# Program Inputs

**ELEVATION VIEW**




**PLAN VIEW**



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.7

**APPURTENANCE INFORMATION**

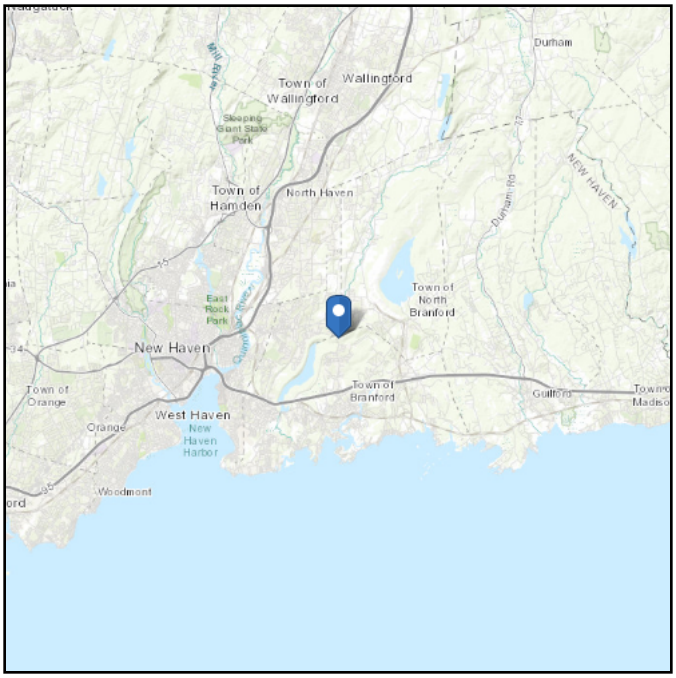
| Appurtenance Name | Elevation | Qty. | $K_a$ | $q_z$ (psf) | $EPA_N$ ($ft^2$) | $EPA_T$ ($ft^2$) | Wind $F_z$ (lbs) | Wind $F_x$ (lbs) | Weight (lbs) | Seismic F (lbs) | Member (α sector) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| JMA WIRELESS MX08FRO665-21 | 103.0 | 3 | 0.90 | 35.18 | 8.01 | 3.21 | 253.64 | 101.64 | 64.50 | 20.95 | MP1 |
| FUJITSU TA08025-B605 | 103.0 | 3 | 0.90 | 35.18 | 1.96 | 1.19 | 62.17 | 37.65 | 74.95 | 24.34 | MP1 |
| FUJITSU TA08025-B604 | 103.0 | 3 | 0.90 | 35.18 | 1.96 | 1.03 | 62.17 | 32.71 | 63.93 | 20.76 | MP1 |
| RAYCAP RDIDC-9181-PF-48 | 103.0 | 1 | 0.90 | 35.18 | 1.87 | 1.07 | 59.11 | 33.78 | 21.85 | 7.10 | MP10 |

# ASCE 7 Hazards Report

**Address:**
No Address at This Location

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

**Elevation:** 236.76 ft (NAVD 88)
**Latitude:** 41.3168
**Longitude:** -72.8197


## Wind

**Results:**

| | |
|---|---|
| Wind Speed: | 121 Vmph |
| 10-year MRI | 75 Vmph |
| 25-year MRI | 85 Vmph |
| 50-year MRI | 92 Vmph |
| 100-year MRI | 99 Vmph |

| | |
|---|---|
| Data Source: | ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2 |
| Date Accessed: | Mon Sep 13 2021 |

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

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

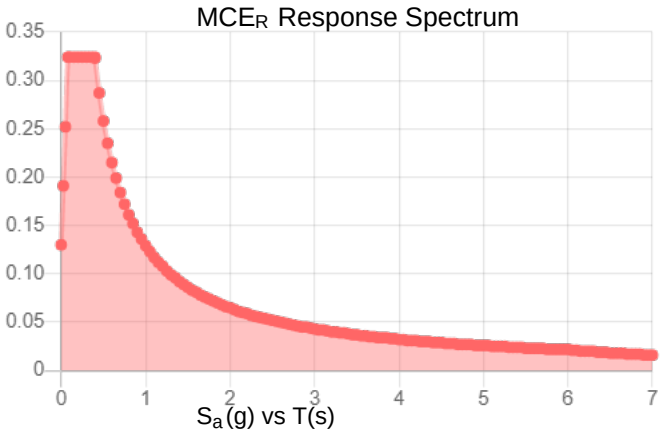
# Seismic

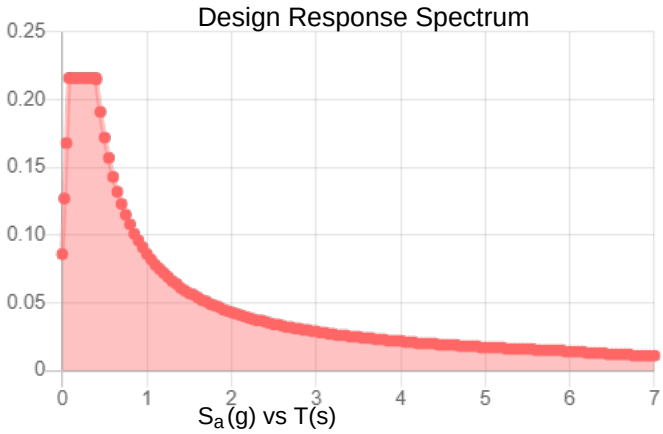
**Site Soil Class:** D - Default (see Section 11.4.3)

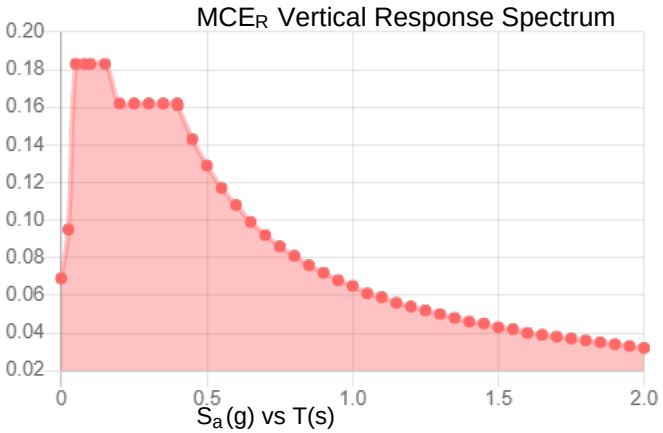
**Results:**

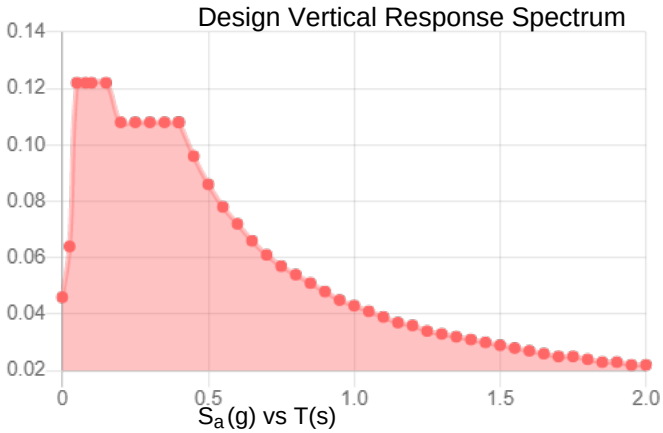
| | | | |
|---|---|---|---|
| $S_S$ : | 0.203 | $S_{D1}$ : | 0.086 |
| $S_1$ : | 0.054 | $T_L$ : | 6 |
| $F_a$ : | 1.6 | PGA : | 0.113 |
| $F_v$ : | 2.4 | $PGA_M$ : | 0.178 |
| $S_{MS}$ : | 0.324 | $F_{PGA}$ : | 1.574 |
| $S_{M1}$ : | 0.129 | $I_e$ : | 1 |
| $S_{DS}$ : | 0.216 | $C_v$ : | 0.705 |

**Seismic Design Category** B




**Data Accessed:** Mon Sep 13 2021

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

# Ice

**Results:**

| | |
|---|---|
| Ice Thickness: | 1.00 in. |
| Concurrent Temperature: | 15 F |
| Gust Speed: | 50 mph |
| **Data Source:** | Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8 |
| **Date Accessed:** | Mon Sep 13 2021 |

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

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

## 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(3.5... | Beam | None | A500 GR.C | Typical |
| 14 | MP1 | N66 | N60 | | | Antenna Pipes | Column | Wide Flange | A500 GR.C | Typical |
| 15 | MP3 | N63 | N57 | | | Antenna Pipes | Column | Wide Flange | 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 | Column | Wide Flange | 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(3.5... | Beam | None | A500 GR.C | Typical |
| 46 | MP7 | N90 | N88 | | | Antenna Pipes | Column | Wide Flange | A500 GR.C | Typical |
| 47 | MP9 | N89 | N87 | | | Antenna Pipes | Column | Wide Flange | 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 |

## Member Primary Data (Continued)

| | Label | I Joint | J Joint | K Joint | Rotate(deg) | Section/Shape | Type | Design List | Material | Design Rules |
|---|---|---|---|---|---|---|---|---|---|---|
| 52 | M55 | N86 | N96 | | | RIGID | None | None | RIGID | Typical |
| 53 | H2 | N109 | N110 | | | Face Pipes(3.5... | Beam | None | A500 GR.C | Typical |
| 54 | MP4 | N118 | N116 | | | Antenna Pipes | Column | Wide Flange | A500 GR.C | Typical |
| 55 | MP6 | N117 | N115 | | | Antenna Pipes | Column | Wide Flange | A500 GR.C | Typical |
| 56 | HR2 | N119 | N120 | | | Handrail | Beam | None | A500 GR.C | Typical |
| 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 | Column | Wide Flange | 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 | Column | Wide Flange | A500 GR.C | Typical |
| 65 | M71B | N135A | N139 | | | RIGID | None | None | RIGID | Typical |
| 66 | M72B | N136 | N140 | | | RIGID | None | None | RIGID | Typical |
| 67 | MP10 | N124A | N125B | | | Antenna Pipes | Column | Wide Flange | A500 GR.C | Typical |
| 68 | M68D | N122C | N123B | | | RIGID | None | None | RIGID | 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 |

## Hot Rolled Steel Design Parameters (Continued)

| | Label | Shape | Length[in] | Lbyy[in] | Lbzz[in] | Lcomp top[in] | Lcomp bot[in] | L-torqu... | Kyy | Kzz | Cb | Function |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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... | 24 | | | 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 | | | | None |
| 14 | MP1 | | | | | | Yes | ** NA ** | +y+3 | | None |
| 15 | MP3 | | | | | | Yes | ** NA ** | +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 |

## Member Advanced Data (Continued)

| | Label | I Release | J Release | I Offset[in] | J Offset[in] | T/C Only | Physical | Defl Rat... | Analysis ... | Inactive | Seismic... |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | M74 | BenPIN | | | | | Yes | ** NA ** | | | None |
| 41 | M75 | | | | | | Yes | ** NA ** | | | None |
| 42 | MP2 | | | | | | Yes | ** NA ** | +y+3 | | None |
| 43 | M43 | | | | | | Yes | ** NA ** | | | None |
| 44 | M44 | | | | | | Yes | ** NA ** | | | None |
| 45 | H3 | | | | | | Yes | | | | None |
| 46 | MP7 | | | | | | Yes | ** NA ** | +y+3 | | None |
| 47 | MP9 | | | | | | Yes | ** NA ** | +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 | ** NA ** | +y+3 | | None |
| 55 | MP6 | | | | | | Yes | ** NA ** | +y+3 | | None |
| 56 | HR2 | | | | | | Yes | | | | None |
| 57 | M66A | | | | | | Yes | ** NA ** | | | None |
| 58 | M67A | | | | | | Yes | ** NA ** | | | None |
| 59 | M68A | | | | | | Yes | ** NA ** | | | None |
| 60 | M69A | | | | | | Yes | ** NA ** | | | None |
| 61 | MP8 | | | | | | Yes | ** NA ** | +y+3 | | None |
| 62 | M68B | | | | | | Yes | ** NA ** | | | None |
| 63 | M69B | | | | | | Yes | ** NA ** | | | None |
| 64 | MP5 | | | | | | Yes | ** NA ** | +y+3 | | None |
| 65 | M71B | | | | | | Yes | ** NA ** | | | None |
| 66 | M72B | | | | | | Yes | ** NA ** | | | None |
| 67 | MP10 | | | | | | Yes | ** NA ** | | | None |
| 68 | M68D | | | | | | Yes | ** NA ** | | | 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 | 888 | 405.407 |
| 14 | A529 Gr. 50 | L2x2x4 | 6 | 163.8 | 43.838 |
| 15 | Total HR Steel | | 38 | 2199.3 | 1120.482 |

## Hot Rolled Steel Section Sets

| | Label | Shape | Type | Design List | Material | Design Rules | A [in2] | Iyy [in4] | Izz [in4] | J [in4] |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Corner Plates | PL6.5x0.375 | Beam | None | A1011 36 Ksi | Typical | 2.438 | .029 | 8.582 | .11 |
| 2 | 6"x0.37" Plate | Plate 6x.37 | Beam | None | A1011 36 Ksi | Typical | 2.22 | .025 | 6.66 | .097 |
| 3 | Grating Angle | L2x2x4 | Beam | None | A529 Gr. 50 | Typical | .944 | .346 | .346 | .021 |
| 4 | Face Pipes(... | Pipe3.5x0.165 | Beam | None | A500 GR.C | Typical | 1.729 | 2.409 | 2.409 | 4.819 |
| 5 | Antenna Pipes | PIPE 2.5 | Column | Wide Flange | A500 GR.C | Typical | 1.61 | 1.45 | 1.45 | 2.89 |
| 6 | Channel(3.3... | C3.38x2.06x... | Beam | None | A1011 36 Ksi | Typical | 1.75 | .715 | 3.026 | .034 |
| 7 | Square Tubing | HSS4X4X6 | Beam | None | A500 GR.C | Typical | 4.78 | 10.3 | 10.3 | 17.5 |
| 8 | Handrail Con... | L6.6x4.46x0.... | Beam | None | A1011 36 Ksi | Typical | 2.703 | 4.759 | 12.473 | .055 |
| 9 | Handrail | 2.88x0.120 | 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(... |
|---|---|---|---|---|---|---|---|---|---|---|
| 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 | | | |
| 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 | | | -.325 | | 13 | | | |
| 32 | Seismic Load X | ELX | -.325 | | | | 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 | | | | |

## Basic Load Cases (Continued)

| | BLC Description | Category | X Gravity | Y Gravity | Z Gravity | Joint | Point | Distributed | Area(Me... | Surface(... |
|---|---|---|---|---|---|---|---|---|---|---|
| 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 Loads | None | | | | | | 9 | | |
| 45 | BLC 16 Transient Area Loads | None | | | | | | 9 | | |

## Load Combinations

| | Description | S... | P... | S... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.4DL | Yes | Y | | 1 | 1.4 | | | | | | | | | | | | | | | | | | |
| 2 | 1.2DL + 1WL AZI 0 | Yes | Y | | 1 | 1.2 | 2 | 1 | 14 | 1 | 15 | | | | | | | | | | | | | |
| 3 | 1.2DL + 1WL AZI 30 | Yes | Y | | 1 | 1.2 | 3 | 1 | 14 | .866 | 15 | .5 | | | | | | | | | | | | |
| 4 | 1.2DL + 1WL AZI 60 | Yes | Y | | 1 | 1.2 | 4 | 1 | 14 | .5 | 15 | .866 | | | | | | | | | | | | |
| 5 | 1.2DL + 1WL AZI 90 | Yes | Y | | 1 | 1.2 | 5 | 1 | 14 | | 15 | 1 | | | | | | | | | | | | |
| 6 | 1.2DL + 1WL AZI 120 | Yes | Y | | 1 | 1.2 | 6 | 1 | 14 | -.5 | 15 | .866 | | | | | | | | | | | | |
| 7 | 1.2DL + 1WL AZI 150 | Yes | Y | | 1 | 1.2 | 7 | 1 | 14 | -.866 | 15 | .5 | | | | | | | | | | | | |
| 8 | 1.2DL + 1WL AZI 180 | Yes | Y | | 1 | 1.2 | 8 | 1 | 14 | -1 | 15 | | | | | | | | | | | | | |
| 9 | 1.2DL + 1WL AZI 210 | Yes | Y | | 1 | 1.2 | 9 | 1 | 14 | -.866 | 15 | -.5 | | | | | | | | | | | | |
| 10 | 1.2DL + 1WL AZI 240 | Yes | Y | | 1 | 1.2 | 10 | 1 | 14 | -.5 | 15 | -.866 | | | | | | | | | | | | |
| 11 | 1.2DL + 1WL AZI 270 | Yes | Y | | 1 | 1.2 | 11 | 1 | 14 | | 15 | -1 | | | | | | | | | | | | |
| 12 | 1.2DL + 1WL AZI 300 | Yes | Y | | 1 | 1.2 | 12 | 1 | 14 | .5 | 15 | -.866 | | | | | | | | | | | | |
| 13 | 1.2DL + 1WL AZI 330 | Yes | Y | | 1 | 1.2 | 13 | 1 | 14 | .866 | 15 | -.5 | | | | | | | | | | | | |
| 14 | 0.9DL + 1WL AZI 0 | Yes | Y | | 1 | .9 | 2 | 1 | 14 | 1 | 15 | | | | | | | | | | | | | |
| 15 | 0.9DL + 1WL AZI 30 | Yes | Y | | 1 | .9 | 3 | 1 | 14 | .866 | 15 | .5 | | | | | | | | | | | | |
| 16 | 0.9DL + 1WL AZI 60 | Yes | Y | | 1 | .9 | 4 | 1 | 14 | .5 | 15 | .866 | | | | | | | | | | | | |
| 17 | 0.9DL + 1WL AZI 90 | Yes | Y | | 1 | .9 | 5 | 1 | 14 | | 15 | 1 | | | | | | | | | | | | |
| 18 | 0.9DL + 1WL AZI 120 | Yes | Y | | 1 | .9 | 6 | 1 | 14 | -.5 | 15 | .866 | | | | | | | | | | | | |
| 19 | 0.9DL + 1WL AZI 150 | Yes | Y | | 1 | .9 | 7 | 1 | 14 | -.866 | 15 | .5 | | | | | | | | | | | | |
| 20 | 0.9DL + 1WL AZI 180 | Yes | Y | | 1 | .9 | 8 | 1 | 14 | -1 | 15 | | | | | | | | | | | | | |
| 21 | 0.9DL + 1WL AZI 210 | Yes | Y | | 1 | .9 | 9 | 1 | 14 | -.866 | 15 | -.5 | | | | | | | | | | | | |
| 22 | 0.9DL + 1WL AZI 240 | Yes | Y | | 1 | .9 | 10 | 1 | 14 | -.5 | 15 | -.866 | | | | | | | | | | | | |
| 23 | 0.9DL + 1WL AZI 270 | Yes | Y | | 1 | .9 | 11 | 1 | 14 | | 15 | -1 | | | | | | | | | | | | |
| 24 | 0.9DL + 1WL AZI 300 | Yes | Y | | 1 | .9 | 12 | 1 | 14 | .5 | 15 | -.866 | | | | | | | | | | | | |
| 25 | 0.9DL + 1WL AZI 330 | Yes | Y | | 1 | .9 | 13 | 1 | 14 | .866 | 15 | -.5 | | | | | | | | | | | | |
| 26 | 1.2D + 1.0Di | Yes | Y | | 1 | 1.2 | 16 | 1 | | | | | | | | | | | | | | | | |
| 27 | 1.2D + 1.0Di +1.0Wi AZI 0 | Yes | Y | | 1 | 1.2 | 16 | 1 | 17 | 1 | 29 | 1 | 30 | | | | | | | | | | | |
| 28 | 1.2D + 1.0Di +1.0Wi AZI 30 | Yes | Y | | 1 | 1.2 | 16 | 1 | 18 | 1 | 29 | .866 | 30 | .5 | | | | | | | | | | |
| 29 | 1.2D + 1.0Di +1.0Wi AZI 60 | Yes | Y | | 1 | 1.2 | 16 | 1 | 19 | 1 | 29 | .5 | 30 | .866 | | | | | | | | | | |
| 30 | 1.2D + 1.0Di +1.0Wi AZI 90 | Yes | Y | | 1 | 1.2 | 16 | 1 | 20 | 1 | 29 | | 30 | 1 | | | | | | | | | | |
| 31 | 1.2D + 1.0Di +1.0Wi AZI 120 | Yes | Y | | 1 | 1.2 | 16 | 1 | 21 | 1 | 29 | -.5 | 30 | .866 | | | | | | | | | | |
| 32 | 1.2D + 1.0Di +1.0Wi AZI 150 | Yes | Y | | 1 | 1.2 | 16 | 1 | 22 | 1 | 29 | -.866 | 30 | .5 | | | | | | | | | | |
| 33 | 1.2D + 1.0Di +1.0Wi AZI 180 | Yes | Y | | 1 | 1.2 | 16 | 1 | 23 | 1 | 29 | -1 | 30 | | | | | | | | | | | |
| 34 | 1.2D + 1.0Di +1.0Wi AZI 210 | Yes | Y | | 1 | 1.2 | 16 | 1 | 24 | 1 | 29 | -.866 | 30 | -.5 | | | | | | | | | | |
| 35 | 1.2D + 1.0Di +1.0Wi AZI 240 | Yes | Y | | 1 | 1.2 | 16 | 1 | 25 | 1 | 29 | -.5 | 30 | -.866 | | | | | | | | | | |
| 36 | 1.2D + 1.0Di +1.0Wi AZI 270 | Yes | Y | | 1 | 1.2 | 16 | 1 | 26 | 1 | 29 | | 30 | -1 | | | | | | | | | | |
| 37 | 1.2D + 1.0Di +1.0Wi AZI 300 | Yes | Y | | 1 | 1.2 | 16 | 1 | 27 | 1 | 29 | .5 | 30 | -.866 | | | | | | | | | | |
| 38 | 1.2D + 1.0Di +1.0Wi AZI 330 | Yes | Y | | 1 | 1.2 | 16 | 1 | 28 | 1 | 29 | .866 | 30 | -.5 | | | | | | | | | | |
| 39 | (1.2 + 0.2Sds)DL + 1.0E A... | Yes | Y | | 1 | 1.2... | 31 | 1 | 32 | | | | | | | | | | | | | | | |

## Load Combinations (Continued)

| | Description | S... | P... | S... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 40 | (1.2 + 0.2Sds)DL + 1.0E A... | Yes | Y | | 1 | 1.2... | 31 | .866 | 32 | .5 | | | | | | | | | | | | | | | | |
| 41 | (1.2 + 0.2Sds)DL + 1.0E A... | Yes | Y | | 1 | 1.2... | 31 | .5 | 32 | .866 | | | | | | | | | | | | | | | | |
| 42 | (1.2 + 0.2Sds)DL + 1.0E A... | Yes | Y | | 1 | 1.2... | 31 | | 32 | 1 | | | | | | | | | | | | | | | | |
| 43 | (1.2 + 0.2Sds)DL + 1.0E A... | Yes | Y | | 1 | 1.2... | 31 | -.5 | 32 | .866 | | | | | | | | | | | | | | | | |
| 44 | (1.2 + 0.2Sds)DL + 1.0E A... | Yes | Y | | 1 | 1.2... | 31 | -.866 | 32 | .5 | | | | | | | | | | | | | | | | |
| 45 | (1.2 + 0.2Sds)DL + 1.0E A... | Yes | Y | | 1 | 1.2... | 31 | -1 | 32 | | | | | | | | | | | | | | | | | |
| 46 | (1.2 + 0.2Sds)DL + 1.0E A... | Yes | Y | | 1 | 1.2... | 31 | -.866 | 32 | -.5 | | | | | | | | | | | | | | | | |
| 47 | (1.2 + 0.2Sds)DL + 1.0E A... | Yes | Y | | 1 | 1.2... | 31 | -.5 | 32 | -.866 | | | | | | | | | | | | | | | | |
| 48 | (1.2 + 0.2Sds)DL + 1.0E A... | Yes | Y | | 1 | 1.2... | 31 | | 32 | -1 | | | | | | | | | | | | | | | | |
| 49 | (1.2 + 0.2Sds)DL + 1.0E A... | Yes | Y | | 1 | 1.2... | 31 | .5 | 32 | -.866 | | | | | | | | | | | | | | | | |
| 50 | (1.2 + 0.2Sds)DL + 1.0E A... | Yes | Y | | 1 | 1.2... | 31 | .866 | 32 | -.5 | | | | | | | | | | | | | | | | |
| 51 | (0.9 - 0.2Sds)DL + 1.0E AZ... | Yes | Y | | 1 | .857 | 31 | 1 | 32 | | | | | | | | | | | | | | | | | |
| 52 | (0.9 - 0.2Sds)DL + 1.0E AZ... | Yes | Y | | 1 | .857 | 31 | .866 | 32 | .5 | | | | | | | | | | | | | | | | |
| 53 | (0.9 - 0.2Sds)DL + 1.0E AZ... | Yes | Y | | 1 | .857 | 31 | .5 | 32 | .866 | | | | | | | | | | | | | | | | |
| 54 | (0.9 - 0.2Sds)DL + 1.0E AZ... | Yes | Y | | 1 | .857 | 31 | | 32 | 1 | | | | | | | | | | | | | | | | |
| 55 | (0.9 - 0.2Sds)DL + 1.0E AZ... | Yes | Y | | 1 | .857 | 31 | -.5 | 32 | .866 | | | | | | | | | | | | | | | | |
| 56 | (0.9 - 0.2Sds)DL + 1.0E AZ... | Yes | Y | | 1 | .857 | 31 | -.866 | 32 | .5 | | | | | | | | | | | | | | | | |
| 57 | (0.9 - 0.2Sds)DL + 1.0E AZ... | Yes | Y | | 1 | .857 | 31 | -1 | 32 | | | | | | | | | | | | | | | | | |
| 58 | (0.9 - 0.2Sds)DL + 1.0E AZ... | Yes | Y | | 1 | .857 | 31 | -.866 | 32 | -.5 | | | | | | | | | | | | | | | | |
| 59 | (0.9 - 0.2Sds)DL + 1.0E AZ... | Yes | Y | | 1 | .857 | 31 | -.5 | 32 | -.866 | | | | | | | | | | | | | | | | |
| 60 | (0.9 - 0.2Sds)DL + 1.0E AZ... | Yes | Y | | 1 | .857 | 31 | | 32 | -1 | | | | | | | | | | | | | | | | |
| 61 | (0.9 - 0.2Sds)DL + 1.0E AZ... | Yes | Y | | 1 | .857 | 31 | .5 | 32 | -.866 | | | | | | | | | | | | | | | | |
| 62 | (0.9 - 0.2Sds)DL + 1.0E AZ... | Yes | Y | | 1 | .857 | 31 | .866 | 32 | -.5 | | | | | | | | | | | | | | | | |
| 63 | 1.0DL + 1.5LL + 1.0SWL (6... | Yes | Y | | 1 | 1 | 2 | .246 | 14 | .246 | 15 | | 33 | 1.5 | | | | | | | | | | | | |
| 64 | 1.0DL + 1.5LL + 1.0SWL (6... | Yes | Y | | 1 | 1 | 3 | .246 | 14 | .213 | 15 | .123 | 33 | 1.5 | | | | | | | | | | | | |
| 65 | 1.0DL + 1.5LL + 1.0SWL (6... | Yes | Y | | 1 | 1 | 4 | .246 | 14 | .123 | 15 | .213 | 33 | 1.5 | | | | | | | | | | | | |
| 66 | 1.0DL + 1.5LL + 1.0SWL (6... | Yes | Y | | 1 | 1 | 5 | .246 | 14 | | 15 | .246 | 33 | 1.5 | | | | | | | | | | | | |
| 67 | 1.0DL + 1.5LL + 1.0SWL (6... | Yes | Y | | 1 | 1 | 6 | .246 | 14 | -.123 | 15 | .213 | 33 | 1.5 | | | | | | | | | | | | |
| 68 | 1.0DL + 1.5LL + 1.0SWL (6... | Yes | Y | | 1 | 1 | 7 | .246 | 14 | -.213 | 15 | .123 | 33 | 1.5 | | | | | | | | | | | | |
| 69 | 1.0DL + 1.5LL + 1.0SWL (6... | Yes | Y | | 1 | 1 | 8 | .246 | 14 | -.246 | 15 | | 33 | 1.5 | | | | | | | | | | | | |
| 70 | 1.0DL + 1.5LL + 1.0SWL (6... | Yes | Y | | 1 | 1 | 9 | .246 | 14 | -.213 | 15 | -.123 | 33 | 1.5 | | | | | | | | | | | | |
| 71 | 1.0DL + 1.5LL + 1.0SWL (6... | Yes | Y | | 1 | 1 | 10 | .246 | 14 | -.123 | 15 | -.213 | 33 | 1.5 | | | | | | | | | | | | |
| 72 | 1.0DL + 1.5LL + 1.0SWL (6... | Yes | Y | | 1 | 1 | 11 | .246 | 14 | | 15 | -.246 | 33 | 1.5 | | | | | | | | | | | | |
| 73 | 1.0DL + 1.5LL + 1.0SWL (6... | Yes | Y | | 1 | 1 | 12 | .246 | 14 | .123 | 15 | -.213 | 33 | 1.5 | | | | | | | | | | | | |
| 74 | 1.0DL + 1.5LL + 1.0SWL (6... | Yes | Y | | 1 | 1 | 13 | .246 | 14 | .213 | 15 | -.123 | 33 | 1.5 | | | | | | | | | | | | |
| 75 | 1.2DL + 1.5LL | Yes | Y | | 1 | 1.2 | 33 | 1.5 | | | | | | | | | | | | | | | | | | |
| 76 | 1.2DL + 1.5LM-MP1 + 1S... | Yes | Y | | 1 | 1.2 | 34 | 1.5 | 2 | .061 | 14 | .061 | 15 | | | | | | | | | | | | | |
| 77 | 1.2DL + 1.5LM-MP1 + 1S... | Yes | Y | | 1 | 1.2 | 34 | 1.5 | 3 | .061 | 14 | .053 | 15 | .031 | | | | | | | | | | | | |
| 78 | 1.2DL + 1.5LM-MP1 + 1S... | Yes | Y | | 1 | 1.2 | 34 | 1.5 | 4 | .061 | 14 | .031 | 15 | .053 | | | | | | | | | | | | |
| 79 | 1.2DL + 1.5LM-MP1 + 1S... | Yes | Y | | 1 | 1.2 | 34 | 1.5 | 5 | .061 | 14 | | 15 | .061 | | | | | | | | | | | | |
| 80 | 1.2DL + 1.5LM-MP1 + 1S... | Yes | Y | | 1 | 1.2 | 34 | 1.5 | 6 | .061 | 14 | -.031 | 15 | .053 | | | | | | | | | | | | |
| 81 | 1.2DL + 1.5LM-MP1 + 1S... | Yes | Y | | 1 | 1.2 | 34 | 1.5 | 7 | .061 | 14 | -.053 | 15 | .031 | | | | | | | | | | | | |
| 82 | 1.2DL + 1.5LM-MP1 + 1S... | Yes | Y | | 1 | 1.2 | 34 | 1.5 | 8 | .061 | 14 | -.061 | 15 | | | | | | | | | | | | | |
| 83 | 1.2DL + 1.5LM-MP1 + 1S... | Yes | Y | | 1 | 1.2 | 34 | 1.5 | 9 | .061 | 14 | -.053 | 15 | -.031 | | | | | | | | | | | | |
| 84 | 1.2DL + 1.5LM-MP1 + 1S... | Yes | Y | | 1 | 1.2 | 34 | 1.5 | 10 | .061 | 14 | -.031 | 15 | -.053 | | | | | | | | | | | | |
| 85 | 1.2DL + 1.5LM-MP1 + 1S... | Yes | Y | | 1 | 1.2 | 34 | 1.5 | 11 | .061 | 14 | | 15 | -.061 | | | | | | | | | | | | |
| 86 | 1.2DL + 1.5LM-MP1 + 1S... | Yes | Y | | 1 | 1.2 | 34 | 1.5 | 12 | .061 | 14 | .031 | 15 | -.053 | | | | | | | | | | | | |
| 87 | 1.2DL + 1.5LM-MP1 + 1S... | Yes | Y | | 1 | 1.2 | 34 | 1.5 | 13 | .061 | 14 | .053 | 15 | -.031 | | | | | | | | | | | | |
| 88 | 1.2DL + 1.5LM-MP2 + 1S... | Yes | Y | | 1 | 1.2 | 35 | 1.5 | 2 | .061 | 14 | .061 | 15 | | | | | | | | | | | | | |
| 89 | 1.2DL + 1.5LM-MP2 + 1S... | Yes | Y | | 1 | 1.2 | 35 | 1.5 | 3 | .061 | 14 | .053 | 15 | .031 | | | | | | | | | | | | |
| 90 | 1.2DL + 1.5LM-MP2 + 1S... | Yes | Y | | 1 | 1.2 | 35 | 1.5 | 4 | .061 | 14 | .031 | 15 | .053 | | | | | | | | | | | | |
| 91 | 1.2DL + 1.5LM-MP2 + 1S... | Yes | Y | | 1 | 1.2 | 35 | 1.5 | 5 | .061 | 14 | | 15 | .061 | | | | | | | | | | | | |

## Load Combinations (Continued)

| | Description | S... | P... | S... | B... | Fac.. | B... | Fac.. | B... | Fac.. | B... | Fac.. | B... | Fac.. | B... | Fac.. | B... | Fac.. | B... | Fac.. | B... | Fac.. | B... | Fac.. | B... | Fac... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 92 | 1.2DL + 1.5LM-MP2 + 1S... | Yes | Y | | 1 | 1.2 | 35 | 1.5 | 6 | .061 | 14 | -.031 | 15 | .053 | | | | | | | | | | | | |
| 93 | 1.2DL + 1.5LM-MP2 + 1S... | Yes | Y | | 1 | 1.2 | 35 | 1.5 | 7 | .061 | 14 | -.053 | 15 | .031 | | | | | | | | | | | | |
| 94 | 1.2DL + 1.5LM-MP2 + 1S... | Yes | Y | | 1 | 1.2 | 35 | 1.5 | 8 | .061 | 14 | -.061 | 15 | | | | | | | | | | | | | |
| 95 | 1.2DL + 1.5LM-MP2 + 1S... | Yes | Y | | 1 | 1.2 | 35 | 1.5 | 9 | .061 | 14 | -.053 | 15 | -.031 | | | | | | | | | | | | |
| 96 | 1.2DL + 1.5LM-MP2 + 1S... | Yes | Y | | 1 | 1.2 | 35 | 1.5 | 10 | .061 | 14 | -.031 | 15 | -.053 | | | | | | | | | | | | |
| 97 | 1.2DL + 1.5LM-MP2 + 1S... | Yes | Y | | 1 | 1.2 | 35 | 1.5 | 11 | .061 | 14 | | 15 | -.061 | | | | | | | | | | | | |
| 98 | 1.2DL + 1.5LM-MP2 + 1S... | Yes | Y | | 1 | 1.2 | 35 | 1.5 | 12 | .061 | 14 | .031 | 15 | -.053 | | | | | | | | | | | | |
| 99 | 1.2DL + 1.5LM-MP2 + 1S... | Yes | Y | | 1 | 1.2 | 35 | 1.5 | 13 | .061 | 14 | .053 | 15 | -.031 | | | | | | | | | | | | |
| 100 | 1.2DL + 1.5LM-MP3 + 1S... | Yes | Y | | 1 | 1.2 | 36 | 1.5 | 2 | .061 | 14 | .061 | 15 | | | | | | | | | | | | | |
| 101 | 1.2DL + 1.5LM-MP3 + 1S... | Yes | Y | | 1 | 1.2 | 36 | 1.5 | 3 | .061 | 14 | .053 | 15 | .031 | | | | | | | | | | | | |
| 102 | 1.2DL + 1.5LM-MP3 + 1S... | Yes | Y | | 1 | 1.2 | 36 | 1.5 | 4 | .061 | 14 | .031 | 15 | .053 | | | | | | | | | | | | |
| 103 | 1.2DL + 1.5LM-MP3 + 1S... | Yes | Y | | 1 | 1.2 | 36 | 1.5 | 5 | .061 | 14 | | 15 | .061 | | | | | | | | | | | | |
| 104 | 1.2DL + 1.5LM-MP3 + 1S... | Yes | Y | | 1 | 1.2 | 36 | 1.5 | 6 | .061 | 14 | -.031 | 15 | .053 | | | | | | | | | | | | |
| 105 | 1.2DL + 1.5LM-MP3 + 1S... | Yes | Y | | 1 | 1.2 | 36 | 1.5 | 7 | .061 | 14 | -.053 | 15 | .031 | | | | | | | | | | | | |
| 106 | 1.2DL + 1.5LM-MP3 + 1S... | Yes | Y | | 1 | 1.2 | 36 | 1.5 | 8 | .061 | 14 | -.061 | 15 | | | | | | | | | | | | | |
| 107 | 1.2DL + 1.5LM-MP3 + 1S... | Yes | Y | | 1 | 1.2 | 36 | 1.5 | 9 | .061 | 14 | -.053 | 15 | -.031 | | | | | | | | | | | | |
| 108 | 1.2DL + 1.5LM-MP3 + 1S... | Yes | Y | | 1 | 1.2 | 36 | 1.5 | 10 | .061 | 14 | -.031 | 15 | -.053 | | | | | | | | | | | | |
| 109 | 1.2DL + 1.5LM-MP3 + 1S... | Yes | Y | | 1 | 1.2 | 36 | 1.5 | 11 | .061 | 14 | | 15 | -.061 | | | | | | | | | | | | |
| 110 | 1.2DL + 1.5LM-MP3 + 1S... | Yes | Y | | 1 | 1.2 | 36 | 1.5 | 12 | .061 | 14 | .031 | 15 | -.053 | | | | | | | | | | | | |
| 111 | 1.2DL + 1.5LM-MP3 + 1S... | Yes | Y | | 1 | 1.2 | 36 | 1.5 | 13 | .061 | 14 | .053 | 15 | -.031 | | | | | | | | | | | | |
| 112 | 1.2DL + 1.5LM-MP4 + 1S... | Yes | Y | | 1 | 1.2 | 37 | 1.5 | 2 | .061 | 14 | .061 | 15 | | | | | | | | | | | | | |
| 113 | 1.2DL + 1.5LM-MP4 + 1S... | Yes | Y | | 1 | 1.2 | 37 | 1.5 | 3 | .061 | 14 | .053 | 15 | .031 | | | | | | | | | | | | |
| 114 | 1.2DL + 1.5LM-MP4 + 1S... | Yes | Y | | 1 | 1.2 | 37 | 1.5 | 4 | .061 | 14 | .031 | 15 | .053 | | | | | | | | | | | | |
| 115 | 1.2DL + 1.5LM-MP4 + 1S... | Yes | Y | | 1 | 1.2 | 37 | 1.5 | 5 | .061 | 14 | | 15 | .061 | | | | | | | | | | | | |
| 116 | 1.2DL + 1.5LM-MP4 + 1S... | Yes | Y | | 1 | 1.2 | 37 | 1.5 | 6 | .061 | 14 | -.031 | 15 | .053 | | | | | | | | | | | | |
| 117 | 1.2DL + 1.5LM-MP4 + 1S... | Yes | Y | | 1 | 1.2 | 37 | 1.5 | 7 | .061 | 14 | -.053 | 15 | .031 | | | | | | | | | | | | |
| 118 | 1.2DL + 1.5LM-MP4 + 1S... | Yes | Y | | 1 | 1.2 | 37 | 1.5 | 8 | .061 | 14 | -.061 | 15 | | | | | | | | | | | | | |
| 119 | 1.2DL + 1.5LM-MP4 + 1S... | Yes | Y | | 1 | 1.2 | 37 | 1.5 | 9 | .061 | 14 | -.053 | 15 | -.031 | | | | | | | | | | | | |
| 120 | 1.2DL + 1.5LM-MP4 + 1S... | Yes | Y | | 1 | 1.2 | 37 | 1.5 | 10 | .061 | 14 | -.031 | 15 | -.053 | | | | | | | | | | | | |
| 121 | 1.2DL + 1.5LM-MP4 + 1S... | Yes | Y | | 1 | 1.2 | 37 | 1.5 | 11 | .061 | 14 | | 15 | -.061 | | | | | | | | | | | | |
| 122 | 1.2DL + 1.5LM-MP4 + 1S... | Yes | Y | | 1 | 1.2 | 37 | 1.5 | 12 | .061 | 14 | .031 | 15 | -.053 | | | | | | | | | | | | |
| 123 | 1.2DL + 1.5LM-MP4 + 1S... | Yes | Y | | 1 | 1.2 | 37 | 1.5 | 13 | .061 | 14 | .053 | 15 | -.031 | | | | | | | | | | | | |
| 124 | 1.2DL + 1.5LM-MP5 + 1S... | Yes | Y | | 1 | 1.2 | 38 | 1.5 | 2 | .061 | 14 | .061 | 15 | | | | | | | | | | | | | |
| 125 | 1.2DL + 1.5LM-MP5 + 1S... | Yes | Y | | 1 | 1.2 | 38 | 1.5 | 3 | .061 | 14 | .053 | 15 | .031 | | | | | | | | | | | | |
| 126 | 1.2DL + 1.5LM-MP5 + 1S... | Yes | Y | | 1 | 1.2 | 38 | 1.5 | 4 | .061 | 14 | .031 | 15 | .053 | | | | | | | | | | | | |
| 127 | 1.2DL + 1.5LM-MP5 + 1S... | Yes | Y | | 1 | 1.2 | 38 | 1.5 | 5 | .061 | 14 | | 15 | .061 | | | | | | | | | | | | |
| 128 | 1.2DL + 1.5LM-MP5 + 1S... | Yes | Y | | 1 | 1.2 | 38 | 1.5 | 6 | .061 | 14 | -.031 | 15 | .053 | | | | | | | | | | | | |
| 129 | 1.2DL + 1.5LM-MP5 + 1S... | Yes | Y | | 1 | 1.2 | 38 | 1.5 | 7 | .061 | 14 | -.053 | 15 | .031 | | | | | | | | | | | | |
| 130 | 1.2DL + 1.5LM-MP5 + 1S... | Yes | Y | | 1 | 1.2 | 38 | 1.5 | 8 | .061 | 14 | -.061 | 15 | | | | | | | | | | | | | |
| 131 | 1.2DL + 1.5LM-MP5 + 1S... | Yes | Y | | 1 | 1.2 | 38 | 1.5 | 9 | .061 | 14 | -.053 | 15 | -.031 | | | | | | | | | | | | |
| 132 | 1.2DL + 1.5LM-MP5 + 1S... | Yes | Y | | 1 | 1.2 | 38 | 1.5 | 10 | .061 | 14 | -.031 | 15 | -.053 | | | | | | | | | | | | |
| 133 | 1.2DL + 1.5LM-MP5 + 1S... | Yes | Y | | 1 | 1.2 | 38 | 1.5 | 11 | .061 | 14 | | 15 | -.061 | | | | | | | | | | | | |
| 134 | 1.2DL + 1.5LM-MP5 + 1S... | Yes | Y | | 1 | 1.2 | 38 | 1.5 | 12 | .061 | 14 | .031 | 15 | -.053 | | | | | | | | | | | | |
| 135 | 1.2DL + 1.5LM-MP5 + 1S... | Yes | Y | | 1 | 1.2 | 38 | 1.5 | 13 | .061 | 14 | .053 | 15 | -.031 | | | | | | | | | | | | |
| 136 | 1.2DL + 1.5LM-MP6 + 1S... | Yes | Y | | 1 | 1.2 | 39 | 1.5 | 2 | .061 | 14 | .061 | 15 | | | | | | | | | | | | | |
| 137 | 1.2DL + 1.5LM-MP6 + 1S... | Yes | Y | | 1 | 1.2 | 39 | 1.5 | 3 | .061 | 14 | .053 | 15 | .031 | | | | | | | | | | | | |
| 138 | 1.2DL + 1.5LM-MP6 + 1S... | Yes | Y | | 1 | 1.2 | 39 | 1.5 | 4 | .061 | 14 | .031 | 15 | .053 | | | | | | | | | | | | |
| 139 | 1.2DL + 1.5LM-MP6 + 1S... | Yes | Y | | 1 | 1.2 | 39 | 1.5 | 5 | .061 | 14 | | 15 | .061 | | | | | | | | | | | | |
| 140 | 1.2DL + 1.5LM-MP6 + 1S... | Yes | Y | | 1 | 1.2 | 39 | 1.5 | 6 | .061 | 14 | -.031 | 15 | .053 | | | | | | | | | | | | |
| 141 | 1.2DL + 1.5LM-MP6 + 1S... | Yes | Y | | 1 | 1.2 | 39 | 1.5 | 7 | .061 | 14 | -.053 | 15 | .031 | | | | | | | | | | | | |
| 142 | 1.2DL + 1.5LM-MP6 + 1S... | Yes | Y | | 1 | 1.2 | 39 | 1.5 | 8 | .061 | 14 | -.061 | 15 | | | | | | | | | | | | | |
| 143 | 1.2DL + 1.5LM-MP6 + 1S... | Yes | Y | | 1 | 1.2 | 39 | 1.5 | 9 | .061 | 14 | -.053 | 15 | -.031 | | | | | | | | | | | | |

## Load Combinations (Continued)

| | Description | S... | P... | S... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... | B... | Fac... |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 144 | 1.2DL + 1.5LM-MP6 + 1S... | Yes | Y | | 1 | 1.2 | 39 | 1.5 | 10 | .061 | 14 | -.031 | 15 | -.053 | | | | | | | | | | | | |
| 145 | 1.2DL + 1.5LM-MP6 + 1S... | Yes | Y | | 1 | 1.2 | 39 | 1.5 | 11 | .061 | 14 | | 15 | -.061 | | | | | | | | | | | | |
| 146 | 1.2DL + 1.5LM-MP6 + 1S... | Yes | Y | | 1 | 1.2 | 39 | 1.5 | 12 | .061 | 14 | .031 | 15 | -.053 | | | | | | | | | | | | |
| 147 | 1.2DL + 1.5LM-MP6 + 1S... | Yes | Y | | 1 | 1.2 | 39 | 1.5 | 13 | .061 | 14 | .053 | 15 | -.031 | | | | | | | | | | | | |
| 148 | 1.2DL + 1.5LM-MP7 + 1S... | Yes | Y | | 1 | 1.2 | 40 | 1.5 | 2 | .061 | 14 | .061 | 15 | | | | | | | | | | | | | |
| 149 | 1.2DL + 1.5LM-MP7 + 1S... | Yes | Y | | 1 | 1.2 | 40 | 1.5 | 3 | .061 | 14 | .053 | 15 | .031 | | | | | | | | | | | | |
| 150 | 1.2DL + 1.5LM-MP7 + 1S... | Yes | Y | | 1 | 1.2 | 40 | 1.5 | 4 | .061 | 14 | .031 | 15 | .053 | | | | | | | | | | | | |
| 151 | 1.2DL + 1.5LM-MP7 + 1S... | Yes | Y | | 1 | 1.2 | 40 | 1.5 | 5 | .061 | 14 | | 15 | .061 | | | | | | | | | | | | |
| 152 | 1.2DL + 1.5LM-MP7 + 1S... | Yes | Y | | 1 | 1.2 | 40 | 1.5 | 6 | .061 | 14 | -.031 | 15 | .053 | | | | | | | | | | | | |
| 153 | 1.2DL + 1.5LM-MP7 + 1S... | Yes | Y | | 1 | 1.2 | 40 | 1.5 | 7 | .061 | 14 | -.053 | 15 | .031 | | | | | | | | | | | | |
| 154 | 1.2DL + 1.5LM-MP7 + 1S... | Yes | Y | | 1 | 1.2 | 40 | 1.5 | 8 | .061 | 14 | -.061 | 15 | | | | | | | | | | | | | |
| 155 | 1.2DL + 1.5LM-MP7 + 1S... | Yes | Y | | 1 | 1.2 | 40 | 1.5 | 9 | .061 | 14 | -.053 | 15 | -.031 | | | | | | | | | | | | |
| 156 | 1.2DL + 1.5LM-MP7 + 1S... | Yes | Y | | 1 | 1.2 | 40 | 1.5 | 10 | .061 | 14 | -.031 | 15 | -.053 | | | | | | | | | | | | |
| 157 | 1.2DL + 1.5LM-MP7 + 1S... | Yes | Y | | 1 | 1.2 | 40 | 1.5 | 11 | .061 | 14 | | 15 | -.061 | | | | | | | | | | | | |
| 158 | 1.2DL + 1.5LM-MP7 + 1S... | Yes | Y | | 1 | 1.2 | 40 | 1.5 | 12 | .061 | 14 | .031 | 15 | -.053 | | | | | | | | | | | | |
| 159 | 1.2DL + 1.5LM-MP7 + 1S... | Yes | Y | | 1 | 1.2 | 40 | 1.5 | 13 | .061 | 14 | .053 | 15 | -.031 | | | | | | | | | | | | |
| 160 | 1.2DL + 1.5LM-MP8 + 1S... | Yes | Y | | 1 | 1.2 | 41 | 1.5 | 2 | .061 | 14 | .061 | 15 | | | | | | | | | | | | | |
| 161 | 1.2DL + 1.5LM-MP8 + 1S... | Yes | Y | | 1 | 1.2 | 41 | 1.5 | 3 | .061 | 14 | .053 | 15 | .031 | | | | | | | | | | | | |
| 162 | 1.2DL + 1.5LM-MP8 + 1S... | Yes | Y | | 1 | 1.2 | 41 | 1.5 | 4 | .061 | 14 | .031 | 15 | .053 | | | | | | | | | | | | |
| 163 | 1.2DL + 1.5LM-MP8 + 1S... | Yes | Y | | 1 | 1.2 | 41 | 1.5 | 5 | .061 | 14 | | 15 | .061 | | | | | | | | | | | | |
| 164 | 1.2DL + 1.5LM-MP8 + 1S... | Yes | Y | | 1 | 1.2 | 41 | 1.5 | 6 | .061 | 14 | -.031 | 15 | .053 | | | | | | | | | | | | |
| 165 | 1.2DL + 1.5LM-MP8 + 1S... | Yes | Y | | 1 | 1.2 | 41 | 1.5 | 7 | .061 | 14 | -.053 | 15 | .031 | | | | | | | | | | | | |
| 166 | 1.2DL + 1.5LM-MP8 + 1S... | Yes | Y | | 1 | 1.2 | 41 | 1.5 | 8 | .061 | 14 | -.061 | 15 | | | | | | | | | | | | | |
| 167 | 1.2DL + 1.5LM-MP8 + 1S... | Yes | Y | | 1 | 1.2 | 41 | 1.5 | 9 | .061 | 14 | -.053 | 15 | -.031 | | | | | | | | | | | | |
| 168 | 1.2DL + 1.5LM-MP8 + 1S... | Yes | Y | | 1 | 1.2 | 41 | 1.5 | 10 | .061 | 14 | -.031 | 15 | -.053 | | | | | | | | | | | | |
| 169 | 1.2DL + 1.5LM-MP8 + 1S... | Yes | Y | | 1 | 1.2 | 41 | 1.5 | 11 | .061 | 14 | | 15 | -.061 | | | | | | | | | | | | |
| 170 | 1.2DL + 1.5LM-MP8 + 1S... | Yes | Y | | 1 | 1.2 | 41 | 1.5 | 12 | .061 | 14 | .031 | 15 | -.053 | | | | | | | | | | | | |
| 171 | 1.2DL + 1.5LM-MP8 + 1S... | Yes | Y | | 1 | 1.2 | 41 | 1.5 | 13 | .061 | 14 | .053 | 15 | -.031 | | | | | | | | | | | | |
| 172 | 1.2DL + 1.5LM-MP9 + 1S... | Yes | Y | | 1 | 1.2 | 42 | 1.5 | 2 | .061 | 14 | .061 | 15 | | | | | | | | | | | | | |
| 173 | 1.2DL + 1.5LM-MP9 + 1S... | Yes | Y | | 1 | 1.2 | 42 | 1.5 | 3 | .061 | 14 | .053 | 15 | .031 | | | | | | | | | | | | |
| 174 | 1.2DL + 1.5LM-MP9 + 1S... | Yes | Y | | 1 | 1.2 | 42 | 1.5 | 4 | .061 | 14 | .031 | 15 | .053 | | | | | | | | | | | | |
| 175 | 1.2DL + 1.5LM-MP9 + 1S... | Yes | Y | | 1 | 1.2 | 42 | 1.5 | 5 | .061 | 14 | | 15 | .061 | | | | | | | | | | | | |
| 176 | 1.2DL + 1.5LM-MP9 + 1S... | Yes | Y | | 1 | 1.2 | 42 | 1.5 | 6 | .061 | 14 | -.031 | 15 | .053 | | | | | | | | | | | | |
| 177 | 1.2DL + 1.5LM-MP9 + 1S... | Yes | Y | | 1 | 1.2 | 42 | 1.5 | 7 | .061 | 14 | -.053 | 15 | .031 | | | | | | | | | | | | |
| 178 | 1.2DL + 1.5LM-MP9 + 1S... | Yes | Y | | 1 | 1.2 | 42 | 1.5 | 8 | .061 | 14 | -.061 | 15 | | | | | | | | | | | | | |
| 179 | 1.2DL + 1.5LM-MP9 + 1S... | Yes | Y | | 1 | 1.2 | 42 | 1.5 | 9 | .061 | 14 | -.053 | 15 | -.031 | | | | | | | | | | | | |
| 180 | 1.2DL + 1.5LM-MP9 + 1S... | Yes | Y | | 1 | 1.2 | 42 | 1.5 | 10 | .061 | 14 | -.031 | 15 | -.053 | | | | | | | | | | | | |
| 181 | 1.2DL + 1.5LM-MP9 + 1S... | Yes | Y | | 1 | 1.2 | 42 | 1.5 | 11 | .061 | 14 | | 15 | -.061 | | | | | | | | | | | | |
| 182 | 1.2DL + 1.5LM-MP9 + 1S... | Yes | Y | | 1 | 1.2 | 42 | 1.5 | 12 | .061 | 14 | .031 | 15 | -.053 | | | | | | | | | | | | |
| 183 | 1.2DL + 1.5LM-MP9 + 1S... | Yes | Y | | 1 | 1.2 | 42 | 1.5 | 13 | .061 | 14 | .053 | 15 | -.031 | | | | | | | | | | | | |
| 184 | 1.2DL + 1.5LM-MP10 + 1S... | Yes | Y | | 1 | 1.2 | 43 | 1.5 | 2 | .061 | 14 | .061 | 15 | | | | | | | | | | | | | |
| 185 | 1.2DL + 1.5LM-MP10 + 1S... | Yes | Y | | 1 | 1.2 | 43 | 1.5 | 3 | .061 | 14 | .053 | 15 | .031 | | | | | | | | | | | | |
| 186 | 1.2DL + 1.5LM-MP10 + 1S... | Yes | Y | | 1 | 1.2 | 43 | 1.5 | 4 | .061 | 14 | .031 | 15 | .053 | | | | | | | | | | | | |
| 187 | 1.2DL + 1.5LM-MP10 + 1S... | Yes | Y | | 1 | 1.2 | 43 | 1.5 | 5 | .061 | 14 | | 15 | .061 | | | | | | | | | | | | |
| 188 | 1.2DL + 1.5LM-MP10 + 1S... | Yes | Y | | 1 | 1.2 | 43 | 1.5 | 6 | .061 | 14 | -.031 | 15 | .053 | | | | | | | | | | | | |
| 189 | 1.2DL + 1.5LM-MP10 + 1S... | Yes | Y | | 1 | 1.2 | 43 | 1.5 | 7 | .061 | 14 | -.053 | 15 | .031 | | | | | | | | | | | | |
| 190 | 1.2DL + 1.5LM-MP10 + 1S... | Yes | Y | | 1 | 1.2 | 43 | 1.5 | 8 | .061 | 14 | -.061 | 15 | | | | | | | | | | | | | |
| 191 | 1.2DL + 1.5LM-MP10 + 1S... | Yes | Y | | 1 | 1.2 | 43 | 1.5 | 9 | .061 | 14 | -.053 | 15 | -.031 | | | | | | | | | | | | |
| 192 | 1.2DL + 1.5LM-MP10 + 1S... | Yes | Y | | 1 | 1.2 | 43 | 1.5 | 10 | .061 | 14 | -.031 | 15 | -.053 | | | | | | | | | | | | |
| 193 | 1.2DL + 1.5LM-MP10 + 1S... | Yes | Y | | 1 | 1.2 | 43 | 1.5 | 11 | .061 | 14 | | 15 | -.061 | | | | | | | | | | | | |
| 194 | 1.2DL + 1.5LM-MP10 + 1S... | Yes | Y | | 1 | 1.2 | 43 | 1.5 | 12 | .061 | 14 | .031 | 15 | -.053 | | | | | | | | | | | | |

## 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 | 829.591 | 6 | 1580.379 | 35 | 1262.389 | 2 | 629.317 | 16 | 1525.329 | 19 | 3681.695 | 132 |
| 2 | | min | -813.955 | 24 | -302.728 | 16 | -1252.365 | 20 | -3181.17 | 84 | -1543.359 | 13 | -1198.374 | 16 |
| 3 | P13 | max | 914.208 | 4 | 1707.41 | 31 | 1205.438 | 15 | 659.181 | 24 | 1633.075 | 15 | 991.704 | 24 |
| 4 | | min | -911.655 | 22 | -256.705 | 24 | -1213.594 | 9 | -2793.29 | 92 | -1680.423 | 9 | -4294.12 | 140 |
| 5 | P1 | max | 1219.152 | 17 | 1594.866 | 27 | 630.916 | 2 | 4183.559 | 2 | 1392.94 | 11 | 1578.354 | 115 |
| 6 | | min | -1237.429 | 11 | -318.179 | 20 | -634.121 | 20 | -1344.773 | 20 | -1341.807 | 17 | -856.335 | 157 |
| 7 | Totals: | max | 2824.355 | 17 | 4409.366 | 35 | 2990.568 | 2 | | | | | | |
| 8 | | min | -2824.371 | 11 | 1533.532 | 53 | -2990.562 | 20 | | | | | | |

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

| | Joint Label | L,D,M | Direction | Magnitude[(lb,lb-ft), (in,rad), (lb*s^... |
|---|---|---|---|---|
| 1 | N72B | L | Y | -250 |
| 2 | N129B | L | Y | -250 |
| 3 | N135A | 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^... |
|---|---|---|---|---|
| 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^... |
|---|---|---|---|---|
| 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^... |
|---|---|---|---|---|
| 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^... |
|---|---|---|---|---|
| 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^... |
|---|---|---|---|---|
| 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^... |
|---|---|---|---|---|
| 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^... |
|---|---|---|---|---|
| 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^... |
|---|---|---|---|---|
| 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^... |
|---|---|---|---|---|
| 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^... |
|---|---|---|---|---|
| 1 | N123B | L | Y | -500 |

## 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 | 12 |
| 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 | -126.82 | 0 |
| 3 | MP1 | X | 0 | 72 |
| 4 | MP1 | Z | -126.82 | 72 |
| 5 | MP1 | X | 0 | 12 |
| 6 | MP1 | Z | -62.17 | 12 |
| 7 | MP1 | X | 0 | 12 |
| 8 | MP1 | Z | -62.17 | 12 |
| 9 | MP10 | X | 0 | 12 |
| 10 | MP10 | Z | -59.11 | 12 |
| 11 | MP4 | X | 0 | 0 |
| 12 | MP4 | Z | -69.82 | 0 |
| 13 | MP4 | X | 0 | 72 |
| 14 | MP4 | Z | -69.82 | 72 |
| 15 | MP4 | X | 0 | 12 |
| 16 | MP4 | Z | -43.78 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 17 | MP4 | X | 0 | 12 |
| 18 | MP4 | Z | -40.07 | 12 |
| 19 | MP7 | X | 0 | 0 |
| 20 | MP7 | Z | -69.82 | 0 |
| 21 | MP7 | X | 0 | 72 |
| 22 | MP7 | Z | -69.82 | 72 |
| 23 | MP7 | X | 0 | 12 |
| 24 | MP7 | Z | -43.78 | 12 |
| 25 | MP7 | X | 0 | 12 |
| 26 | MP7 | Z | -40.07 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | -53.91 | 0 |
| 2 | MP1 | Z | -93.37 | 0 |
| 3 | MP1 | X | -53.91 | 72 |
| 4 | MP1 | Z | -93.37 | 72 |
| 5 | MP1 | X | -28.02 | 12 |
| 6 | MP1 | Z | -48.54 | 12 |
| 7 | MP1 | X | -27.4 | 12 |
| 8 | MP1 | Z | -47.46 | 12 |
| 9 | MP10 | X | -26.39 | 12 |
| 10 | MP10 | Z | -45.7 | 12 |
| 11 | MP4 | X | -53.91 | 0 |
| 12 | MP4 | Z | -93.37 | 0 |
| 13 | MP4 | X | -53.91 | 72 |
| 14 | MP4 | Z | -93.37 | 72 |
| 15 | MP4 | X | -28.02 | 12 |
| 16 | MP4 | Z | -48.54 | 12 |
| 17 | MP4 | X | -27.4 | 12 |
| 18 | MP4 | Z | -47.46 | 12 |
| 19 | MP7 | X | -25.41 | 0 |
| 20 | MP7 | Z | -44.01 | 0 |
| 21 | MP7 | X | -25.41 | 72 |
| 22 | MP7 | Z | -44.01 | 72 |
| 23 | MP7 | X | -18.83 | 12 |
| 24 | MP7 | Z | -32.61 | 12 |
| 25 | MP7 | X | -16.35 | 12 |
| 26 | MP7 | Z | -28.33 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | -60.47 | 0 |
| 2 | MP1 | Z | -34.91 | 0 |
| 3 | MP1 | X | -60.47 | 72 |
| 4 | MP1 | Z | -34.91 | 72 |
| 5 | MP1 | X | -37.92 | 12 |
| 6 | MP1 | Z | -21.89 | 12 |
| 7 | MP1 | X | -34.71 | 12 |
| 8 | MP1 | Z | -20.04 | 12 |
| 9 | MP10 | X | -34.74 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 10 | MP10 | Z | -20.05 | 12 |
| 11 | MP4 | X | -109.83 | 0 |
| 12 | MP4 | Z | -63.41 | 0 |
| 13 | MP4 | X | -109.83 | 72 |
| 14 | MP4 | Z | -63.41 | 72 |
| 15 | MP4 | X | -53.84 | 12 |
| 16 | MP4 | Z | -31.09 | 12 |
| 17 | MP4 | X | -53.84 | 12 |
| 18 | MP4 | Z | -31.09 | 12 |
| 19 | MP7 | X | -60.47 | 0 |
| 20 | MP7 | Z | -34.91 | 0 |
| 21 | MP7 | X | -60.47 | 72 |
| 22 | MP7 | Z | -34.91 | 72 |
| 23 | MP7 | X | -37.92 | 12 |
| 24 | MP7 | Z | -21.89 | 12 |
| 25 | MP7 | X | -34.71 | 12 |
| 26 | MP7 | Z | -20.04 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | -50.82 | 0 |
| 2 | MP1 | Z | 0 | 0 |
| 3 | MP1 | X | -50.82 | 72 |
| 4 | MP1 | Z | 0 | 72 |
| 5 | MP1 | X | -37.65 | 12 |
| 6 | MP1 | Z | 0 | 12 |
| 7 | MP1 | X | -32.71 | 12 |
| 8 | MP1 | Z | 0 | 12 |
| 9 | MP10 | X | -33.78 | 12 |
| 10 | MP10 | Z | 0 | 12 |
| 11 | MP4 | X | -107.82 | 0 |
| 12 | MP4 | Z | 0 | 0 |
| 13 | MP4 | X | -107.82 | 72 |
| 14 | MP4 | Z | 0 | 72 |
| 15 | MP4 | X | -56.04 | 12 |
| 16 | MP4 | Z | 0 | 12 |
| 17 | MP4 | X | -54.81 | 12 |
| 18 | MP4 | Z | 0 | 12 |
| 19 | MP7 | X | -107.82 | 0 |
| 20 | MP7 | Z | 0 | 0 |
| 21 | MP7 | X | -107.82 | 72 |
| 22 | MP7 | Z | 0 | 72 |
| 23 | MP7 | X | -56.04 | 12 |
| 24 | MP7 | Z | 0 | 12 |
| 25 | MP7 | X | -54.81 | 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 | -60.47 | 0 |
| 2 | MP1 | Z | 34.91 | 0 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 3 | MP1 | X | -60.47 | 72 |
| 4 | MP1 | Z | 34.91 | 72 |
| 5 | MP1 | X | -37.92 | 12 |
| 6 | MP1 | Z | 21.89 | 12 |
| 7 | MP1 | X | -34.71 | 12 |
| 8 | MP1 | Z | 20.04 | 12 |
| 9 | MP10 | X | -34.74 | 12 |
| 10 | MP10 | Z | 20.05 | 12 |
| 11 | MP4 | X | -60.47 | 0 |
| 12 | MP4 | Z | 34.91 | 0 |
| 13 | MP4 | X | -60.47 | 72 |
| 14 | MP4 | Z | 34.91 | 72 |
| 15 | MP4 | X | -37.92 | 12 |
| 16 | MP4 | Z | 21.89 | 12 |
| 17 | MP4 | X | -34.71 | 12 |
| 18 | MP4 | Z | 20.04 | 12 |
| 19 | MP7 | X | -109.83 | 0 |
| 20 | MP7 | Z | 63.41 | 0 |
| 21 | MP7 | X | -109.83 | 72 |
| 22 | MP7 | Z | 63.41 | 72 |
| 23 | MP7 | X | -53.84 | 12 |
| 24 | MP7 | Z | 31.09 | 12 |
| 25 | MP7 | X | -53.84 | 12 |
| 26 | MP7 | Z | 31.09 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | -53.91 | 0 |
| 2 | MP1 | Z | 93.37 | 0 |
| 3 | MP1 | X | -53.91 | 72 |
| 4 | MP1 | Z | 93.37 | 72 |
| 5 | MP1 | X | -28.02 | 12 |
| 6 | MP1 | Z | 48.54 | 12 |
| 7 | MP1 | X | -27.4 | 12 |
| 8 | MP1 | Z | 47.46 | 12 |
| 9 | MP10 | X | -26.39 | 12 |
| 10 | MP10 | Z | 45.7 | 12 |
| 11 | MP4 | X | -25.41 | 0 |
| 12 | MP4 | Z | 44.01 | 0 |
| 13 | MP4 | X | -25.41 | 72 |
| 14 | MP4 | Z | 44.01 | 72 |
| 15 | MP4 | X | -18.83 | 12 |
| 16 | MP4 | Z | 32.61 | 12 |
| 17 | MP4 | X | -16.35 | 12 |
| 18 | MP4 | Z | 28.33 | 12 |
| 19 | MP7 | X | -53.91 | 0 |
| 20 | MP7 | Z | 93.37 | 0 |
| 21 | MP7 | X | -53.91 | 72 |
| 22 | MP7 | Z | 93.37 | 72 |
| 23 | MP7 | X | -28.02 | 12 |
| 24 | MP7 | Z | 48.54 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 25 | MP7 | X | -27.4 | 12 |
| 26 | MP7 | Z | 47.46 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | 0 | 0 |
| 2 | MP1 | Z | 126.82 | 0 |
| 3 | MP1 | X | 0 | 72 |
| 4 | MP1 | Z | 126.82 | 72 |
| 5 | MP1 | X | 0 | 12 |
| 6 | MP1 | Z | 62.17 | 12 |
| 7 | MP1 | X | 0 | 12 |
| 8 | MP1 | Z | 62.17 | 12 |
| 9 | MP10 | X | 0 | 12 |
| 10 | MP10 | Z | 59.11 | 12 |
| 11 | MP4 | X | 0 | 0 |
| 12 | MP4 | Z | 69.82 | 0 |
| 13 | MP4 | X | 0 | 72 |
| 14 | MP4 | Z | 69.82 | 72 |
| 15 | MP4 | X | 0 | 12 |
| 16 | MP4 | Z | 43.78 | 12 |
| 17 | MP4 | X | 0 | 12 |
| 18 | MP4 | Z | 40.07 | 12 |
| 19 | MP7 | X | 0 | 0 |
| 20 | MP7 | Z | 69.82 | 0 |
| 21 | MP7 | X | 0 | 72 |
| 22 | MP7 | Z | 69.82 | 72 |
| 23 | MP7 | X | 0 | 12 |
| 24 | MP7 | Z | 43.78 | 12 |
| 25 | MP7 | X | 0 | 12 |
| 26 | MP7 | Z | 40.07 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | 53.91 | 0 |
| 2 | MP1 | Z | 93.37 | 0 |
| 3 | MP1 | X | 53.91 | 72 |
| 4 | MP1 | Z | 93.37 | 72 |
| 5 | MP1 | X | 28.02 | 12 |
| 6 | MP1 | Z | 48.54 | 12 |
| 7 | MP1 | X | 27.4 | 12 |
| 8 | MP1 | Z | 47.46 | 12 |
| 9 | MP10 | X | 26.39 | 12 |
| 10 | MP10 | Z | 45.7 | 12 |
| 11 | MP4 | X | 53.91 | 0 |
| 12 | MP4 | Z | 93.37 | 0 |
| 13 | MP4 | X | 53.91 | 72 |
| 14 | MP4 | Z | 93.37 | 72 |
| 15 | MP4 | X | 28.02 | 12 |
| 16 | MP4 | Z | 48.54 | 12 |
| 17 | MP4 | X | 27.4 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 18 | MP4 | Z | 47.46 | 12 |
| 19 | MP7 | X | 25.41 | 0 |
| 20 | MP7 | Z | 44.01 | 0 |
| 21 | MP7 | X | 25.41 | 72 |
| 22 | MP7 | Z | 44.01 | 72 |
| 23 | MP7 | X | 18.83 | 12 |
| 24 | MP7 | Z | 32.61 | 12 |
| 25 | MP7 | X | 16.35 | 12 |
| 26 | MP7 | Z | 28.33 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | 60.47 | 0 |
| 2 | MP1 | Z | 34.91 | 0 |
| 3 | MP1 | X | 60.47 | 72 |
| 4 | MP1 | Z | 34.91 | 72 |
| 5 | MP1 | X | 37.92 | 12 |
| 6 | MP1 | Z | 21.89 | 12 |
| 7 | MP1 | X | 34.71 | 12 |
| 8 | MP1 | Z | 20.04 | 12 |
| 9 | MP10 | X | 34.74 | 12 |
| 10 | MP10 | Z | 20.05 | 12 |
| 11 | MP4 | X | 109.83 | 0 |
| 12 | MP4 | Z | 63.41 | 0 |
| 13 | MP4 | X | 109.83 | 72 |
| 14 | MP4 | Z | 63.41 | 72 |
| 15 | MP4 | X | 53.84 | 12 |
| 16 | MP4 | Z | 31.09 | 12 |
| 17 | MP4 | X | 53.84 | 12 |
| 18 | MP4 | Z | 31.09 | 12 |
| 19 | MP7 | X | 60.47 | 0 |
| 20 | MP7 | Z | 34.91 | 0 |
| 21 | MP7 | X | 60.47 | 72 |
| 22 | MP7 | Z | 34.91 | 72 |
| 23 | MP7 | X | 37.92 | 12 |
| 24 | MP7 | Z | 21.89 | 12 |
| 25 | MP7 | X | 34.71 | 12 |
| 26 | MP7 | Z | 20.04 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | 50.82 | 0 |
| 2 | MP1 | Z | 0 | 0 |
| 3 | MP1 | X | 50.82 | 72 |
| 4 | MP1 | Z | 0 | 72 |
| 5 | MP1 | X | 37.65 | 12 |
| 6 | MP1 | Z | 0 | 12 |
| 7 | MP1 | X | 32.71 | 12 |
| 8 | MP1 | Z | 0 | 12 |
| 9 | MP10 | X | 33.78 | 12 |
| 10 | MP10 | Z | 0 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 11 | MP4 | X | 107.82 | 0 |
| 12 | MP4 | Z | 0 | 0 |
| 13 | MP4 | X | 107.82 | 72 |
| 14 | MP4 | Z | 0 | 72 |
| 15 | MP4 | X | 56.04 | 12 |
| 16 | MP4 | Z | 0 | 12 |
| 17 | MP4 | X | 54.81 | 12 |
| 18 | MP4 | Z | 0 | 12 |
| 19 | MP7 | X | 107.82 | 0 |
| 20 | MP7 | Z | 0 | 0 |
| 21 | MP7 | X | 107.82 | 72 |
| 22 | MP7 | Z | 0 | 72 |
| 23 | MP7 | X | 56.04 | 12 |
| 24 | MP7 | Z | 0 | 12 |
| 25 | MP7 | X | 54.81 | 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 | 60.47 | 0 |
| 2 | MP1 | Z | -34.91 | 0 |
| 3 | MP1 | X | 60.47 | 72 |
| 4 | MP1 | Z | -34.91 | 72 |
| 5 | MP1 | X | 37.92 | 12 |
| 6 | MP1 | Z | -21.89 | 12 |
| 7 | MP1 | X | 34.71 | 12 |
| 8 | MP1 | Z | -20.04 | 12 |
| 9 | MP10 | X | 34.74 | 12 |
| 10 | MP10 | Z | -20.05 | 12 |
| 11 | MP4 | X | 60.47 | 0 |
| 12 | MP4 | Z | -34.91 | 0 |
| 13 | MP4 | X | 60.47 | 72 |
| 14 | MP4 | Z | -34.91 | 72 |
| 15 | MP4 | X | 37.92 | 12 |
| 16 | MP4 | Z | -21.89 | 12 |
| 17 | MP4 | X | 34.71 | 12 |
| 18 | MP4 | Z | -20.04 | 12 |
| 19 | MP7 | X | 109.83 | 0 |
| 20 | MP7 | Z | -63.41 | 0 |
| 21 | MP7 | X | 109.83 | 72 |
| 22 | MP7 | Z | -63.41 | 72 |
| 23 | MP7 | X | 53.84 | 12 |
| 24 | MP7 | Z | -31.09 | 12 |
| 25 | MP7 | X | 53.84 | 12 |
| 26 | MP7 | Z | -31.09 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | 53.91 | 0 |
| 2 | MP1 | Z | -93.37 | 0 |
| 3 | MP1 | X | 53.91 | 72 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 4 | MP1 | Z | -93.37 | 72 |
| 5 | MP1 | X | 28.02 | 12 |
| 6 | MP1 | Z | -48.54 | 12 |
| 7 | MP1 | X | 27.4 | 12 |
| 8 | MP1 | Z | -47.46 | 12 |
| 9 | MP10 | X | 26.39 | 12 |
| 10 | MP10 | Z | -45.7 | 12 |
| 11 | MP4 | X | 25.41 | 0 |
| 12 | MP4 | Z | -44.01 | 0 |
| 13 | MP4 | X | 25.41 | 72 |
| 14 | MP4 | Z | -44.01 | 72 |
| 15 | MP4 | X | 18.83 | 12 |
| 16 | MP4 | Z | -32.61 | 12 |
| 17 | MP4 | X | 16.35 | 12 |
| 18 | MP4 | Z | -28.33 | 12 |
| 19 | MP7 | X | 53.91 | 0 |
| 20 | MP7 | Z | -93.37 | 0 |
| 21 | MP7 | X | 53.91 | 72 |
| 22 | MP7 | Z | -93.37 | 72 |
| 23 | MP7 | X | 28.02 | 12 |
| 24 | MP7 | Z | -48.54 | 12 |
| 25 | MP7 | X | 27.4 | 12 |
| 26 | MP7 | Z | -47.46 | 12 |

## Member Point Loads (BLC 16 : Ice Weight)

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | Y | -87.341 | 0 |
| 2 | MP1 | Y | -87.341 | 72 |
| 3 | MP1 | Y | -44.158 | 12 |
| 4 | MP1 | Y | -41.31 | 12 |
| 5 | MP10 | Y | -40.25 | 12 |
| 6 | MP4 | Y | -87.341 | 0 |
| 7 | MP4 | Y | -87.341 | 72 |
| 8 | MP4 | Y | -44.158 | 12 |
| 9 | MP4 | Y | -41.31 | 12 |
| 10 | MP7 | Y | -87.341 | 0 |
| 11 | MP7 | Y | -87.341 | 72 |
| 12 | MP7 | Y | -44.158 | 12 |
| 13 | MP7 | Y | -41.31 | 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 | -16.08 | 0 |
| 3 | MP1 | X | 0 | 72 |
| 4 | MP1 | Z | -16.08 | 72 |
| 5 | MP1 | X | 0 | 12 |
| 6 | MP1 | Z | -6.08 | 12 |
| 7 | MP1 | X | 0 | 12 |
| 8 | MP1 | Z | -6.08 | 12 |
| 9 | MP10 | X | 0 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 10 | MP10 | Z | -5.98 | 12 |
| 11 | MP4 | X | 0 | 0 |
| 12 | MP4 | Z | -12.34 | 0 |
| 13 | MP4 | X | 0 | 72 |
| 14 | MP4 | Z | -12.34 | 72 |
| 15 | MP4 | X | 0 | 12 |
| 16 | MP4 | Z | -5.19 | 12 |
| 17 | MP4 | X | 0 | 12 |
| 18 | MP4 | Z | -4.99 | 12 |
| 19 | MP7 | X | 0 | 0 |
| 20 | MP7 | Z | -12.34 | 0 |
| 21 | MP7 | X | 0 | 72 |
| 22 | MP7 | Z | -12.34 | 72 |
| 23 | MP7 | X | 0 | 12 |
| 24 | MP7 | Z | -5.19 | 12 |
| 25 | MP7 | X | 0 | 12 |
| 26 | MP7 | Z | -4.99 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | -7.42 | 0 |
| 2 | MP1 | Z | -12.84 | 0 |
| 3 | MP1 | X | -7.42 | 72 |
| 4 | MP1 | Z | -12.84 | 72 |
| 5 | MP1 | X | -2.89 | 12 |
| 6 | MP1 | Z | -5.01 | 12 |
| 7 | MP1 | X | -2.86 | 12 |
| 8 | MP1 | Z | -4.95 | 12 |
| 9 | MP10 | X | -2.83 | 12 |
| 10 | MP10 | Z | -4.91 | 12 |
| 11 | MP4 | X | -7.42 | 0 |
| 12 | MP4 | Z | -12.84 | 0 |
| 13 | MP4 | X | -7.42 | 72 |
| 14 | MP4 | Z | -12.84 | 72 |
| 15 | MP4 | X | -2.89 | 12 |
| 16 | MP4 | Z | -5.01 | 12 |
| 17 | MP4 | X | -2.86 | 12 |
| 18 | MP4 | Z | -4.95 | 12 |
| 19 | MP7 | X | -5.55 | 0 |
| 20 | MP7 | Z | -9.61 | 0 |
| 21 | MP7 | X | -5.55 | 72 |
| 22 | MP7 | Z | -9.61 | 72 |
| 23 | MP7 | X | -2.45 | 12 |
| 24 | MP7 | Z | -4.24 | 12 |
| 25 | MP7 | X | -2.31 | 12 |
| 26 | MP7 | Z | -4 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | -10.69 | 0 |
| 2 | MP1 | Z | -6.17 | 0 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 3 | MP1 | X | -10.69 | 72 |
| 4 | MP1 | Z | -6.17 | 72 |
| 5 | MP1 | X | -4.49 | 12 |
| 6 | MP1 | Z | -2.59 | 12 |
| 7 | MP1 | X | -4.32 | 12 |
| 8 | MP1 | Z | -2.49 | 12 |
| 9 | MP10 | X | -4.36 | 12 |
| 10 | MP10 | Z | -2.52 | 12 |
| 11 | MP4 | X | -13.92 | 0 |
| 12 | MP4 | Z | -8.04 | 0 |
| 13 | MP4 | X | -13.92 | 72 |
| 14 | MP4 | Z | -8.04 | 72 |
| 15 | MP4 | X | -5.26 | 12 |
| 16 | MP4 | Z | -3.04 | 12 |
| 17 | MP4 | X | -5.26 | 12 |
| 18 | MP4 | Z | -3.04 | 12 |
| 19 | MP7 | X | -10.69 | 0 |
| 20 | MP7 | Z | -6.17 | 0 |
| 21 | MP7 | X | -10.69 | 72 |
| 22 | MP7 | Z | -6.17 | 72 |
| 23 | MP7 | X | -4.49 | 12 |
| 24 | MP7 | Z | -2.59 | 12 |
| 25 | MP7 | X | -4.32 | 12 |
| 26 | MP7 | Z | -2.49 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | -11.1 | 0 |
| 2 | MP1 | Z | 0 | 0 |
| 3 | MP1 | X | -11.1 | 72 |
| 4 | MP1 | Z | 0 | 72 |
| 5 | MP1 | X | -4.89 | 12 |
| 6 | MP1 | Z | 0 | 12 |
| 7 | MP1 | X | -4.62 | 12 |
| 8 | MP1 | Z | 0 | 12 |
| 9 | MP10 | X | -4.72 | 12 |
| 10 | MP10 | Z | 0 | 12 |
| 11 | MP4 | X | -14.83 | 0 |
| 12 | MP4 | Z | 0 | 0 |
| 13 | MP4 | X | -14.83 | 72 |
| 14 | MP4 | Z | 0 | 72 |
| 15 | MP4 | X | -5.78 | 12 |
| 16 | MP4 | Z | 0 | 12 |
| 17 | MP4 | X | -5.71 | 12 |
| 18 | MP4 | Z | 0 | 12 |
| 19 | MP7 | X | -14.83 | 0 |
| 20 | MP7 | Z | 0 | 0 |
| 21 | MP7 | X | -14.83 | 72 |
| 22 | MP7 | Z | 0 | 72 |
| 23 | MP7 | X | -5.78 | 12 |
| 24 | MP7 | Z | 0 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 25 | MP7 | X | -5.71 | 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 | -10.69 | 0 |
| 2 | MP1 | Z | 6.17 | 0 |
| 3 | MP1 | X | -10.69 | 72 |
| 4 | MP1 | Z | 6.17 | 72 |
| 5 | MP1 | X | -4.49 | 12 |
| 6 | MP1 | Z | 2.59 | 12 |
| 7 | MP1 | X | -4.32 | 12 |
| 8 | MP1 | Z | 2.49 | 12 |
| 9 | MP10 | X | -4.36 | 12 |
| 10 | MP10 | Z | 2.52 | 12 |
| 11 | MP4 | X | -10.69 | 0 |
| 12 | MP4 | Z | 6.17 | 0 |
| 13 | MP4 | X | -10.69 | 72 |
| 14 | MP4 | Z | 6.17 | 72 |
| 15 | MP4 | X | -4.49 | 12 |
| 16 | MP4 | Z | 2.59 | 12 |
| 17 | MP4 | X | -4.32 | 12 |
| 18 | MP4 | Z | 2.49 | 12 |
| 19 | MP7 | X | -13.92 | 0 |
| 20 | MP7 | Z | 8.04 | 0 |
| 21 | MP7 | X | -13.92 | 72 |
| 22 | MP7 | Z | 8.04 | 72 |
| 23 | MP7 | X | -5.26 | 12 |
| 24 | MP7 | Z | 3.04 | 12 |
| 25 | MP7 | X | -5.26 | 12 |
| 26 | MP7 | Z | 3.04 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | -7.42 | 0 |
| 2 | MP1 | Z | 12.84 | 0 |
| 3 | MP1 | X | -7.42 | 72 |
| 4 | MP1 | Z | 12.84 | 72 |
| 5 | MP1 | X | -2.89 | 12 |
| 6 | MP1 | Z | 5.01 | 12 |
| 7 | MP1 | X | -2.86 | 12 |
| 8 | MP1 | Z | 4.95 | 12 |
| 9 | MP10 | X | -2.83 | 12 |
| 10 | MP10 | Z | 4.91 | 12 |
| 11 | MP4 | X | -5.55 | 0 |
| 12 | MP4 | Z | 9.61 | 0 |
| 13 | MP4 | X | -5.55 | 72 |
| 14 | MP4 | Z | 9.61 | 72 |
| 15 | MP4 | X | -2.45 | 12 |
| 16 | MP4 | Z | 4.24 | 12 |
| 17 | MP4 | X | -2.31 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 18 | MP4 | Z | 4 | 12 |
| 19 | MP7 | X | -7.42 | 0 |
| 20 | MP7 | Z | 12.84 | 0 |
| 21 | MP7 | X | -7.42 | 72 |
| 22 | MP7 | Z | 12.84 | 72 |
| 23 | MP7 | X | -2.89 | 12 |
| 24 | MP7 | Z | 5.01 | 12 |
| 25 | MP7 | X | -2.86 | 12 |
| 26 | MP7 | Z | 4.95 | 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 | 16.08 | 0 |
| 3 | MP1 | X | 0 | 72 |
| 4 | MP1 | Z | 16.08 | 72 |
| 5 | MP1 | X | 0 | 12 |
| 6 | MP1 | Z | 6.08 | 12 |
| 7 | MP1 | X | 0 | 12 |
| 8 | MP1 | Z | 6.08 | 12 |
| 9 | MP10 | X | 0 | 12 |
| 10 | MP10 | Z | 5.98 | 12 |
| 11 | MP4 | X | 0 | 0 |
| 12 | MP4 | Z | 12.34 | 0 |
| 13 | MP4 | X | 0 | 72 |
| 14 | MP4 | Z | 12.34 | 72 |
| 15 | MP4 | X | 0 | 12 |
| 16 | MP4 | Z | 5.19 | 12 |
| 17 | MP4 | X | 0 | 12 |
| 18 | MP4 | Z | 4.99 | 12 |
| 19 | MP7 | X | 0 | 0 |
| 20 | MP7 | Z | 12.34 | 0 |
| 21 | MP7 | X | 0 | 72 |
| 22 | MP7 | Z | 12.34 | 72 |
| 23 | MP7 | X | 0 | 12 |
| 24 | MP7 | Z | 5.19 | 12 |
| 25 | MP7 | X | 0 | 12 |
| 26 | MP7 | Z | 4.99 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | 7.42 | 0 |
| 2 | MP1 | Z | 12.84 | 0 |
| 3 | MP1 | X | 7.42 | 72 |
| 4 | MP1 | Z | 12.84 | 72 |
| 5 | MP1 | X | 2.89 | 12 |
| 6 | MP1 | Z | 5.01 | 12 |
| 7 | MP1 | X | 2.86 | 12 |
| 8 | MP1 | Z | 4.95 | 12 |
| 9 | MP10 | X | 2.83 | 12 |
| 10 | MP10 | Z | 4.91 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 11 | MP4 | X | 7.42 | 0 |
| 12 | MP4 | Z | 12.84 | 0 |
| 13 | MP4 | X | 7.42 | 72 |
| 14 | MP4 | Z | 12.84 | 72 |
| 15 | MP4 | X | 2.89 | 12 |
| 16 | MP4 | Z | 5.01 | 12 |
| 17 | MP4 | X | 2.86 | 12 |
| 18 | MP4 | Z | 4.95 | 12 |
| 19 | MP7 | X | 5.55 | 0 |
| 20 | MP7 | Z | 9.61 | 0 |
| 21 | MP7 | X | 5.55 | 72 |
| 22 | MP7 | Z | 9.61 | 72 |
| 23 | MP7 | X | 2.45 | 12 |
| 24 | MP7 | Z | 4.24 | 12 |
| 25 | MP7 | X | 2.31 | 12 |
| 26 | MP7 | Z | 4 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | 10.69 | 0 |
| 2 | MP1 | Z | 6.17 | 0 |
| 3 | MP1 | X | 10.69 | 72 |
| 4 | MP1 | Z | 6.17 | 72 |
| 5 | MP1 | X | 4.49 | 12 |
| 6 | MP1 | Z | 2.59 | 12 |
| 7 | MP1 | X | 4.32 | 12 |
| 8 | MP1 | Z | 2.49 | 12 |
| 9 | MP10 | X | 4.36 | 12 |
| 10 | MP10 | Z | 2.52 | 12 |
| 11 | MP4 | X | 13.92 | 0 |
| 12 | MP4 | Z | 8.04 | 0 |
| 13 | MP4 | X | 13.92 | 72 |
| 14 | MP4 | Z | 8.04 | 72 |
| 15 | MP4 | X | 5.26 | 12 |
| 16 | MP4 | Z | 3.04 | 12 |
| 17 | MP4 | X | 5.26 | 12 |
| 18 | MP4 | Z | 3.04 | 12 |
| 19 | MP7 | X | 10.69 | 0 |
| 20 | MP7 | Z | 6.17 | 0 |
| 21 | MP7 | X | 10.69 | 72 |
| 22 | MP7 | Z | 6.17 | 72 |
| 23 | MP7 | X | 4.49 | 12 |
| 24 | MP7 | Z | 2.59 | 12 |
| 25 | MP7 | X | 4.32 | 12 |
| 26 | MP7 | Z | 2.49 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | 11.1 | 0 |
| 2 | MP1 | Z | 0 | 0 |
| 3 | MP1 | X | 11.1 | 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 | 4.89 | 12 |
| 6 | MP1 | Z | 0 | 12 |
| 7 | MP1 | X | 4.62 | 12 |
| 8 | MP1 | Z | 0 | 12 |
| 9 | MP10 | X | 4.72 | 12 |
| 10 | MP10 | Z | 0 | 12 |
| 11 | MP4 | X | 14.83 | 0 |
| 12 | MP4 | Z | 0 | 0 |
| 13 | MP4 | X | 14.83 | 72 |
| 14 | MP4 | Z | 0 | 72 |
| 15 | MP4 | X | 5.78 | 12 |
| 16 | MP4 | Z | 0 | 12 |
| 17 | MP4 | X | 5.71 | 12 |
| 18 | MP4 | Z | 0 | 12 |
| 19 | MP7 | X | 14.83 | 0 |
| 20 | MP7 | Z | 0 | 0 |
| 21 | MP7 | X | 14.83 | 72 |
| 22 | MP7 | Z | 0 | 72 |
| 23 | MP7 | X | 5.78 | 12 |
| 24 | MP7 | Z | 0 | 12 |
| 25 | MP7 | X | 5.71 | 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 | 10.69 | 0 |
| 2 | MP1 | Z | -6.17 | 0 |
| 3 | MP1 | X | 10.69 | 72 |
| 4 | MP1 | Z | -6.17 | 72 |
| 5 | MP1 | X | 4.49 | 12 |
| 6 | MP1 | Z | -2.59 | 12 |
| 7 | MP1 | X | 4.32 | 12 |
| 8 | MP1 | Z | -2.49 | 12 |
| 9 | MP10 | X | 4.36 | 12 |
| 10 | MP10 | Z | -2.52 | 12 |
| 11 | MP4 | X | 10.69 | 0 |
| 12 | MP4 | Z | -6.17 | 0 |
| 13 | MP4 | X | 10.69 | 72 |
| 14 | MP4 | Z | -6.17 | 72 |
| 15 | MP4 | X | 4.49 | 12 |
| 16 | MP4 | Z | -2.59 | 12 |
| 17 | MP4 | X | 4.32 | 12 |
| 18 | MP4 | Z | -2.49 | 12 |
| 19 | MP7 | X | 13.92 | 0 |
| 20 | MP7 | Z | -8.04 | 0 |
| 21 | MP7 | X | 13.92 | 72 |
| 22 | MP7 | Z | -8.04 | 72 |
| 23 | MP7 | X | 5.26 | 12 |
| 24 | MP7 | Z | -3.04 | 12 |
| 25 | MP7 | X | 5.26 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 26 | MP7 | Z | -3.04 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | 7.42 | 0 |
| 2 | MP1 | Z | -12.84 | 0 |
| 3 | MP1 | X | 7.42 | 72 |
| 4 | MP1 | Z | -12.84 | 72 |
| 5 | MP1 | X | 2.89 | 12 |
| 6 | MP1 | Z | -5.01 | 12 |
| 7 | MP1 | X | 2.86 | 12 |
| 8 | MP1 | Z | -4.95 | 12 |
| 9 | MP10 | X | 2.83 | 12 |
| 10 | MP10 | Z | -4.91 | 12 |
| 11 | MP4 | X | 5.55 | 0 |
| 12 | MP4 | Z | -9.61 | 0 |
| 13 | MP4 | X | 5.55 | 72 |
| 14 | MP4 | Z | -9.61 | 72 |
| 15 | MP4 | X | 2.45 | 12 |
| 16 | MP4 | Z | -4.24 | 12 |
| 17 | MP4 | X | 2.31 | 12 |
| 18 | MP4 | Z | -4 | 12 |
| 19 | MP7 | X | 7.42 | 0 |
| 20 | MP7 | Z | -12.84 | 0 |
| 21 | MP7 | X | 7.42 | 72 |
| 22 | MP7 | Z | -12.84 | 72 |
| 23 | MP7 | X | 2.89 | 12 |
| 24 | MP7 | Z | -5.01 | 12 |
| 25 | MP7 | X | 2.86 | 12 |
| 26 | MP7 | Z | -4.95 | 12 |

## Member Point Loads (BLC 31 : Seismic Load Z)

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | Z | -10.475 | 0 |
| 2 | MP1 | Z | -10.475 | 72 |
| 3 | MP1 | Z | -24.344 | 12 |
| 4 | MP1 | Z | -20.764 | 12 |
| 5 | MP10 | Z | -7.097 | 12 |
| 6 | MP4 | Z | -10.475 | 0 |
| 7 | MP4 | Z | -10.475 | 72 |
| 8 | MP4 | Z | -24.344 | 12 |
| 9 | MP4 | Z | -20.764 | 12 |
| 10 | MP7 | Z | -10.475 | 0 |
| 11 | MP7 | Z | -10.475 | 72 |
| 12 | MP7 | Z | -24.344 | 12 |
| 13 | MP7 | Z | -20.764 | 12 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 1 | MP1 | X | -10.475 | 0 |

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

| | Member Label | Direction | Magnitude[lb,lb-ft] | Location[in,%] |
|---|---|---|---|---|
| 2 | MP1 | X | -10.475 | 72 |
| 3 | MP1 | X | -24.344 | 12 |
| 4 | MP1 | X | -20.764 | 12 |
| 5 | MP10 | X | -7.097 | 12 |
| 6 | MP4 | X | -10.475 | 0 |
| 7 | MP4 | X | -10.475 | 72 |
| 8 | MP4 | X | -24.344 | 12 |
| 9 | MP4 | X | -20.764 | 12 |
| 10 | MP7 | X | -10.475 | 0 |
| 11 | MP7 | X | -10.475 | 72 |
| 12 | MP7 | X | -24.344 | 12 |
| 13 | MP7 | X | -20.764 | 12 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 1 | S3 | SZ | -70.367 | -70.367 | 0 | %100 |
| 2 | GA4 | SZ | -70.367 | -70.367 | 0 | %100 |
| 3 | GA3 | SZ | -70.367 | -70.367 | 0 | %100 |
| 4 | P3 | SZ | -70.367 | -70.367 | 0 | %100 |
| 5 | S2 | SZ | -70.367 | -70.367 | 0 | %100 |
| 6 | GA2 | SZ | -70.367 | -70.367 | 0 | %100 |
| 7 | GA1 | SZ | -70.367 | -70.367 | 0 | %100 |
| 8 | P2 | SZ | -70.367 | -70.367 | 0 | %100 |
| 9 | S1 | SZ | -70.367 | -70.367 | 0 | %100 |
| 10 | GA6 | SZ | -70.367 | -70.367 | 0 | %100 |
| 11 | GA5 | SZ | -70.367 | -70.367 | 0 | %100 |
| 12 | P1 | SZ | -70.367 | -70.367 | 0 | %100 |
| 13 | H1 | SZ | -42.22 | -42.22 | 0 | %100 |
| 14 | MP1 | SZ | -42.22 | -42.22 | 0 | %100 |
| 15 | MP3 | SZ | -42.22 | -42.22 | 0 | %100 |
| 16 | HR1 | SZ | -42.22 | -42.22 | 0 | %100 |
| 17 | CA8 | SZ | -70.367 | -70.367 | 0 | %100 |
| 18 | CA9 | SZ | -70.367 | -70.367 | 0 | %100 |
| 19 | CA7 | SZ | -70.367 | -70.367 | 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 | -70.367 | -70.367 | 0 | %100 |
| 25 | CA4 | SZ | -70.367 | -70.367 | 0 | %100 |
| 26 | CA1 | SZ | -70.367 | -70.367 | 0 | %100 |
| 27 | CA2 | SZ | -70.367 | -70.367 | 0 | %100 |
| 28 | CA5 | SZ | -70.367 | -70.367 | 0 | %100 |
| 29 | CA6 | SZ | -70.367 | -70.367 | 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 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 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 | -70.367 | -70.367 | 0 | %100 |
| 42 | MP2 | SZ | -42.22 | -42.22 | 0 | %100 |
| 43 | M43 | SZ | 0 | 0 | 0 | %100 |
| 44 | M44 | SZ | 0 | 0 | 0 | %100 |
| 45 | H3 | SZ | -42.22 | -42.22 | 0 | %100 |
| 46 | MP7 | SZ | -42.22 | -42.22 | 0 | %100 |
| 47 | MP9 | SZ | -42.22 | -42.22 | 0 | %100 |
| 48 | HR3 | SZ | -42.22 | -42.22 | 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 | -42.22 | -42.22 | 0 | %100 |
| 54 | MP4 | SZ | -42.22 | -42.22 | 0 | %100 |
| 55 | MP6 | SZ | -42.22 | -42.22 | 0 | %100 |
| 56 | HR2 | SZ | -42.22 | -42.22 | 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 | -42.22 | -42.22 | 0 | %100 |
| 62 | M68B | SZ | 0 | 0 | 0 | %100 |
| 63 | M69B | SZ | 0 | 0 | 0 | %100 |
| 64 | MP5 | SZ | -42.22 | -42.22 | 0 | %100 |
| 65 | M71B | SZ | 0 | 0 | 0 | %100 |
| 66 | M72B | SZ | 0 | 0 | 0 | %100 |
| 67 | MP10 | SZ | -42.22 | -42.22 | 0 | %100 |
| 68 | M68D | SZ | 0 | 0 | 0 | %100 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 1 | S3 | SX | -70.367 | -70.367 | 0 | %100 |
| 2 | GA4 | SX | -70.367 | -70.367 | 0 | %100 |
| 3 | GA3 | SX | -70.367 | -70.367 | 0 | %100 |
| 4 | P3 | SX | -70.367 | -70.367 | 0 | %100 |
| 5 | S2 | SX | -70.367 | -70.367 | 0 | %100 |
| 6 | GA2 | SX | -70.367 | -70.367 | 0 | %100 |
| 7 | GA1 | SX | -70.367 | -70.367 | 0 | %100 |
| 8 | P2 | SX | -70.367 | -70.367 | 0 | %100 |
| 9 | S1 | SX | -70.367 | -70.367 | 0 | %100 |
| 10 | GA6 | SX | -70.367 | -70.367 | 0 | %100 |
| 11 | GA5 | SX | -70.367 | -70.367 | 0 | %100 |
| 12 | P1 | SX | -70.367 | -70.367 | 0 | %100 |
| 13 | H1 | SX | -42.22 | -42.22 | 0 | %100 |
| 14 | MP1 | SX | -42.22 | -42.22 | 0 | %100 |
| 15 | MP3 | SX | -42.22 | -42.22 | 0 | %100 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 16 | HR1 | SX | -42.22 | -42.22 | 0 | %100 |
| 17 | CA8 | SX | -70.367 | -70.367 | 0 | %100 |
| 18 | CA9 | SX | -70.367 | -70.367 | 0 | %100 |
| 19 | CA7 | SX | -70.367 | -70.367 | 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 | -70.367 | -70.367 | 0 | %100 |
| 25 | CA4 | SX | -70.367 | -70.367 | 0 | %100 |
| 26 | CA1 | SX | -70.367 | -70.367 | 0 | %100 |
| 27 | CA2 | SX | -70.367 | -70.367 | 0 | %100 |
| 28 | CA5 | SX | -70.367 | -70.367 | 0 | %100 |
| 29 | CA6 | SX | -70.367 | -70.367 | 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 | -70.367 | -70.367 | 0 | %100 |
| 42 | MP2 | SX | -42.22 | -42.22 | 0 | %100 |
| 43 | M43 | SX | 0 | 0 | 0 | %100 |
| 44 | M44 | SX | 0 | 0 | 0 | %100 |
| 45 | H3 | SX | -42.22 | -42.22 | 0 | %100 |
| 46 | MP7 | SX | -42.22 | -42.22 | 0 | %100 |
| 47 | MP9 | SX | -42.22 | -42.22 | 0 | %100 |
| 48 | HR3 | SX | -42.22 | -42.22 | 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 | -42.22 | -42.22 | 0 | %100 |
| 54 | MP4 | SX | -42.22 | -42.22 | 0 | %100 |
| 55 | MP6 | SX | -42.22 | -42.22 | 0 | %100 |
| 56 | HR2 | SX | -42.22 | -42.22 | 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 | -42.22 | -42.22 | 0 | %100 |
| 62 | M68B | SX | 0 | 0 | 0 | %100 |
| 63 | M69B | SX | 0 | 0 | 0 | %100 |
| 64 | MP5 | SX | -42.22 | -42.22 | 0 | %100 |
| 65 | M71B | SX | 0 | 0 | 0 | %100 |
| 66 | M72B | SX | 0 | 0 | 0 | %100 |
| 67 | MP10 | SX | -42.22 | -42.22 | 0 | %100 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 68 | M68D | SX | 0 | 0 | 0 | %100 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 1 | S3 | Y | -9.278 | -9.278 | 0 | %100 |
| 2 | GA4 | Y | -5.406 | -5.406 | 0 | %100 |
| 3 | GA3 | Y | -5.406 | -5.406 | 0 | %100 |
| 4 | P3 | Y | -10.447 | -10.447 | 0 | %100 |
| 5 | S2 | Y | -9.278 | -9.278 | 0 | %100 |
| 6 | GA2 | Y | -5.406 | -5.406 | 0 | %100 |
| 7 | GA1 | Y | -5.406 | -5.406 | 0 | %100 |
| 8 | P2 | Y | -10.447 | -10.447 | 0 | %100 |
| 9 | S1 | Y | -9.278 | -9.278 | 0 | %100 |
| 10 | GA6 | Y | -5.406 | -5.406 | 0 | %100 |
| 11 | GA5 | Y | -5.406 | -5.406 | 0 | %100 |
| 12 | P1 | Y | -10.447 | -10.447 | 0 | %100 |
| 13 | H1 | Y | -6.326 | -6.326 | 0 | %100 |
| 14 | MP1 | Y | -5.47 | -5.47 | 0 | %100 |
| 15 | MP3 | Y | -5.47 | -5.47 | 0 | %100 |
| 16 | HR1 | Y | -5.477 | -5.477 | 0 | %100 |
| 17 | CA8 | Y | -12.439 | -12.439 | 0 | %100 |
| 18 | CA9 | Y | -12.439 | -12.439 | 0 | %100 |
| 19 | CA7 | Y | -12.439 | -12.439 | 0 | %100 |
| 20 | M32 | Y | -1.534 | -1.534 | 0 | %100 |
| 21 | M35 | Y | -1.534 | -1.534 | 0 | %100 |
| 22 | M36 | Y | -1.534 | -1.534 | 0 | %100 |
| 23 | M39A | Y | -1.534 | -1.534 | 0 | %100 |
| 24 | CA3 | Y | -6.953 | -6.953 | 0 | %100 |
| 25 | CA4 | Y | -6.953 | -6.953 | 0 | %100 |
| 26 | CA1 | Y | -6.953 | -6.953 | 0 | %100 |
| 27 | CA2 | Y | -6.953 | -6.953 | 0 | %100 |
| 28 | CA5 | Y | -6.953 | -6.953 | 0 | %100 |
| 29 | CA6 | Y | -6.953 | -6.953 | 0 | %100 |
| 30 | M64 | Y | -1.534 | -1.534 | 0 | %100 |
| 31 | M65 | Y | -1.534 | -1.534 | 0 | %100 |
| 32 | M66 | Y | -1.534 | -1.534 | 0 | %100 |
| 33 | M67 | Y | -1.534 | -1.534 | 0 | %100 |
| 34 | M68 | Y | -1.534 | -1.534 | 0 | %100 |
| 35 | M69 | Y | -1.534 | -1.534 | 0 | %100 |
| 36 | M70 | Y | -1.534 | -1.534 | 0 | %100 |
| 37 | M71 | Y | -1.534 | -1.534 | 0 | %100 |
| 38 | M72 | Y | -1.534 | -1.534 | 0 | %100 |
| 39 | M73 | Y | -1.534 | -1.534 | 0 | %100 |
| 40 | M74 | Y | -1.534 | -1.534 | 0 | %100 |
| 41 | M75 | Y | -4.857 | -4.857 | 0 | %100 |
| 42 | MP2 | Y | -5.47 | -5.47 | 0 | %100 |
| 43 | M43 | Y | -1.534 | -1.534 | 0 | %100 |
| 44 | M44 | Y | -1.534 | -1.534 | 0 | %100 |
| 45 | H3 | Y | -6.326 | -6.326 | 0 | %100 |
| 46 | MP7 | Y | -5.47 | -5.47 | 0 | %100 |
| 47 | MP9 | Y | -5.47 | -5.47 | 0 | %100 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 48 | HR3 | Y | -5.477 | -5.477 | 0 | %100 |
| 49 | M52 | Y | -1.534 | -1.534 | 0 | %100 |
| 50 | M53 | Y | -1.534 | -1.534 | 0 | %100 |
| 51 | M54 | Y | -1.534 | -1.534 | 0 | %100 |
| 52 | M55 | Y | -1.534 | -1.534 | 0 | %100 |
| 53 | H2 | Y | -6.326 | -6.326 | 0 | %100 |
| 54 | MP4 | Y | -5.47 | -5.47 | 0 | %100 |
| 55 | MP6 | Y | -5.47 | -5.47 | 0 | %100 |
| 56 | HR2 | Y | -5.477 | -5.477 | 0 | %100 |
| 57 | M66A | Y | -1.534 | -1.534 | 0 | %100 |
| 58 | M67A | Y | -1.534 | -1.534 | 0 | %100 |
| 59 | M68A | Y | -1.534 | -1.534 | 0 | %100 |
| 60 | M69A | Y | -1.534 | -1.534 | 0 | %100 |
| 61 | MP8 | Y | -5.47 | -5.47 | 0 | %100 |
| 62 | M68B | Y | -1.534 | -1.534 | 0 | %100 |
| 63 | M69B | Y | -1.534 | -1.534 | 0 | %100 |
| 64 | MP5 | Y | -5.47 | -5.47 | 0 | %100 |
| 65 | M71B | Y | -1.534 | -1.534 | 0 | %100 |
| 66 | M72B | Y | -1.534 | -1.534 | 0 | %100 |
| 67 | MP10 | Y | -5.47 | -5.47 | 0 | %100 |
| 68 | M68D | Y | -1.534 | -1.534 | 0 | %100 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 1 | S3 | SZ | -10.065 | -10.065 | 0 | %100 |
| 2 | GA4 | SZ | -12.921 | -12.921 | 0 | %100 |
| 3 | GA3 | SZ | -12.921 | -12.921 | 0 | %100 |
| 4 | P3 | SZ | -9.691 | -9.691 | 0 | %100 |
| 5 | S2 | SZ | -10.065 | -10.065 | 0 | %100 |
| 6 | GA2 | SZ | -12.921 | -12.921 | 0 | %100 |
| 7 | GA1 | SZ | -12.921 | -12.921 | 0 | %100 |
| 8 | P2 | SZ | -9.691 | -9.691 | 0 | %100 |
| 9 | S1 | SZ | -10.065 | -10.065 | 0 | %100 |
| 10 | GA6 | SZ | -12.921 | -12.921 | 0 | %100 |
| 11 | GA5 | SZ | -12.921 | -12.921 | 0 | %100 |
| 12 | P1 | SZ | -9.691 | -9.691 | 0 | %100 |
| 13 | H1 | SZ | -11.825 | -11.825 | 0 | %100 |
| 14 | MP1 | SZ | -12.829 | -12.829 | 0 | %100 |
| 15 | MP3 | SZ | -12.829 | -12.829 | 0 | %100 |
| 16 | HR1 | SZ | -12.819 | -12.819 | 0 | %100 |
| 17 | CA8 | SZ | -9.238 | -9.238 | 0 | %100 |
| 18 | CA9 | SZ | -9.238 | -9.238 | 0 | %100 |
| 19 | CA7 | SZ | -9.238 | -9.238 | 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 | -11.291 | -11.291 | 0 | %100 |
| 25 | CA4 | SZ | -11.291 | -11.291 | 0 | %100 |
| 26 | CA1 | SZ | -11.291 | -11.291 | 0 | %100 |
| 27 | CA2 | SZ | -11.291 | -11.291 | 0 | %100 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 28 | CA5 | SZ | -11.291 | -11.291 | 0 | %100 |
| 29 | CA6 | SZ | -11.291 | -11.291 | 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 | -13.866 | -13.866 | 0 | %100 |
| 42 | MP2 | SZ | -12.829 | -12.829 | 0 | %100 |
| 43 | M43 | SZ | 0 | 0 | 0 | %100 |
| 44 | M44 | SZ | 0 | 0 | 0 | %100 |
| 45 | H3 | SZ | -11.825 | -11.825 | 0 | %100 |
| 46 | MP7 | SZ | -12.829 | -12.829 | 0 | %100 |
| 47 | MP9 | SZ | -12.829 | -12.829 | 0 | %100 |
| 48 | HR3 | SZ | -12.819 | -12.819 | 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 | -11.825 | -11.825 | 0 | %100 |
| 54 | MP4 | SZ | -12.829 | -12.829 | 0 | %100 |
| 55 | MP6 | SZ | -12.829 | -12.829 | 0 | %100 |
| 56 | HR2 | SZ | -12.819 | -12.819 | 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 | -12.829 | -12.829 | 0 | %100 |
| 62 | M68B | SZ | 0 | 0 | 0 | %100 |
| 63 | M69B | SZ | 0 | 0 | 0 | %100 |
| 64 | MP5 | SZ | -12.829 | -12.829 | 0 | %100 |
| 65 | M71B | SZ | 0 | 0 | 0 | %100 |
| 66 | M72B | SZ | 0 | 0 | 0 | %100 |
| 67 | MP10 | SZ | -12.829 | -12.829 | 0 | %100 |
| 68 | M68D | SZ | 0 | 0 | 0 | %100 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 1 | S3 | SX | -10.065 | -10.065 | 0 | %100 |
| 2 | GA4 | SX | -12.921 | -12.921 | 0 | %100 |
| 3 | GA3 | SX | -12.921 | -12.921 | 0 | %100 |
| 4 | P3 | SX | -9.691 | -9.691 | 0 | %100 |
| 5 | S2 | SX | -10.065 | -10.065 | 0 | %100 |
| 6 | GA2 | SX | -12.921 | -12.921 | 0 | %100 |
| 7 | GA1 | SX | -12.921 | -12.921 | 0 | %100 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 8 | P2 | SX | -9.691 | -9.691 | 0 | %100 |
| 9 | S1 | SX | -10.065 | -10.065 | 0 | %100 |
| 10 | GA6 | SX | -12.921 | -12.921 | 0 | %100 |
| 11 | GA5 | SX | -12.921 | -12.921 | 0 | %100 |
| 12 | P1 | SX | -9.691 | -9.691 | 0 | %100 |
| 13 | H1 | SX | -11.825 | -11.825 | 0 | %100 |
| 14 | MP1 | SX | -12.829 | -12.829 | 0 | %100 |
| 15 | MP3 | SX | -12.829 | -12.829 | 0 | %100 |
| 16 | HR1 | SX | -12.819 | -12.819 | 0 | %100 |
| 17 | CA8 | SX | -9.238 | -9.238 | 0 | %100 |
| 18 | CA9 | SX | -9.238 | -9.238 | 0 | %100 |
| 19 | CA7 | SX | -9.238 | -9.238 | 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 | -11.291 | -11.291 | 0 | %100 |
| 25 | CA4 | SX | -11.291 | -11.291 | 0 | %100 |
| 26 | CA1 | SX | -11.291 | -11.291 | 0 | %100 |
| 27 | CA2 | SX | -11.291 | -11.291 | 0 | %100 |
| 28 | CA5 | SX | -11.291 | -11.291 | 0 | %100 |
| 29 | CA6 | SX | -11.291 | -11.291 | 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 | -13.866 | -13.866 | 0 | %100 |
| 42 | MP2 | SX | -12.829 | -12.829 | 0 | %100 |
| 43 | M43 | SX | 0 | 0 | 0 | %100 |
| 44 | M44 | SX | 0 | 0 | 0 | %100 |
| 45 | H3 | SX | -11.825 | -11.825 | 0 | %100 |
| 46 | MP7 | SX | -12.829 | -12.829 | 0 | %100 |
| 47 | MP9 | SX | -12.829 | -12.829 | 0 | %100 |
| 48 | HR3 | SX | -12.819 | -12.819 | 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 | -11.825 | -11.825 | 0 | %100 |
| 54 | MP4 | SX | -12.829 | -12.829 | 0 | %100 |
| 55 | MP6 | SX | -12.829 | -12.829 | 0 | %100 |
| 56 | HR2 | SX | -12.819 | -12.819 | 0 | %100 |
| 57 | M66A | SX | 0 | 0 | 0 | %100 |
| 58 | M67A | SX | 0 | 0 | 0 | %100 |
| 59 | M68A | SX | 0 | 0 | 0 | %100 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 60 | M69A | SX | 0 | 0 | 0 | %100 |
| 61 | MP8 | SX | -12.829 | -12.829 | 0 | %100 |
| 62 | M68B | SX | 0 | 0 | 0 | %100 |
| 63 | M69B | SX | 0 | 0 | 0 | %100 |
| 64 | MP5 | SX | -12.829 | -12.829 | 0 | %100 |
| 65 | M71B | SX | 0 | 0 | 0 | %100 |
| 66 | M72B | SX | 0 | 0 | 0 | %100 |
| 67 | MP10 | SX | -12.829 | -12.829 | 0 | %100 |
| 68 | M68D | SX | 0 | 0 | 0 | %100 |

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

| | Member Label | Direction | Start Magnitude[lb/ft,F,psf] | End Magnitude[lb/ft,F,psf] | 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,F,psf] | End Magnitude[lb/ft,F,psf] | Start Location[in,.. | End Location[in,... |
|---|---|---|---|---|---|---|
| 1 | S2 | Y | -19.112 | -19.112 | 16.404 | 40 |
| 2 | GA2 | Y | -9.631 | -9.631 | 3.828 | 27.295 |
| 3 | GA1 | Y | -9.631 | -9.631 | 3.828 | 27.295 |
| 4 | S3 | Y | -19.112 | -19.112 | 16.404 | 40 |
| 5 | GA4 | Y | -9.631 | -9.631 | 3.828 | 27.295 |
| 6 | GA3 | Y | -9.631 | -9.631 | 3.828 | 27.295 |
| 7 | S1 | Y | -19.112 | -19.112 | 16.404 | 40 |
| 8 | GA6 | Y | -9.631 | -9.631 | 3.828 | 27.295 |
| 9 | GA5 | Y | -9.631 | -9.631 | 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 | -10.5 |
| 2 | P10 | P11 | P12 | P9 | Y | Two Way | -10.5 |
| 3 | P31 | P34 | P33 | P32 | Y | Two Way | -10.5 |

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

| | Member | Shape | Code Check | Loc[in] | LC | Shear ... | Loc[in] | Dir | LC | phi*Pnc ... | phi*Pnt [lb] | phi*Mn y-y ... | phi*Mn z-z [l... | Cb | Eqn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | P3 | PL6.5x... | .268 | 21 | 2 | .125 | 36.312 | y | 5 | 3658.14 | 78975 | 616.993 | 8003.823 | 1.424 | H1-1b |
| 2 | P2 | PL6.5x... | .262 | 21 | 6 | .113 | 36.312 | y | 10 | 3658.14 | 78975 | 616.993 | 7978.664 | 1.419 | H1-1b |
| 3 | CA4 | C3.38x... | .247 | 33 | 2 | .033 | 33 | y | 115 | 47760.0... | 56700 | 2202.821 | 5751.945 | 1.636 | H1-1b |
| 4 | P1 | PL6.5x... | .245 | 21 | 10 | .124 | 36.312 | y | 2 | 3658.14 | 78975 | 616.993 | 8002.759 | 1.424 | H1-1b |
| 5 | CA5 | C3.38x... | .244 | 0 | 10 | .032 | 28.187 | y | 28 | 47760.0... | 56700 | 2202.821 | 5751.945 | 1.625 | H1-1b |
| 6 | CA1 | C3.38x... | .240 | 0 | 6 | .034 | 28.188 | y | 36 | 47760.0... | 56700 | 2202.821 | 5751.945 | 1.624 | H1-1b |
| 7 | CA3 | C3.38x... | .239 | 0 | 2 | .033 | 28.188 | y | 32 | 47760.0... | 56700 | 2202.821 | 5751.945 | 1.62 | H1-1b |
| 8 | CA2 | C3.38x... | .234 | 33 | 6 | .033 | 33 | y | 143 | 47760.0... | 56700 | 2202.821 | 5751.945 | 1.628 | H1-1b |
| 9 | CA6 | C3.38x... | .230 | 33 | 10 | .032 | 33 | y | 87 | 47760.0... | 56700 | 2202.821 | 5751.945 | 1.63 | H1-1b |
| 10 | S2 | HSS4X... | .213 | 0 | 7 | .110 | 0 | y | 142 | 188250.... | 197892 | 22045.5 | 22045.5 | 1.816 | H1-1b |
| 11 | CA8 | L6.6x4... | .213 | 41.562 | 22 | .031 | 42 | z | 4 | 51170.9... | 87561 | 2464.809 | 7125.374 | 1.136 | H2-1 |
| 12 | M75 | PL 2.3... | .212 | 1.5 | 12 | .185 | 0 | y | 173 | 38256.8... | 38475 | 400.783 | 1903.711 | 2.201 | H1-1b |
| 13 | HR2 | 2.88x0... | .209 | 90 | 3 | .104 | 92 | | 4 | 22491.6... | 43076.493 | 3155.674 | 3155.674 | 1.668 | H1-1b |
| 14 | S3 | HSS4X... | .209 | 0 | 13 | .111 | 0 | y | 114 | 188250.... | 197892 | 22045.5 | 22045.5 | 1.818 | H1-1b |
| 15 | CA7 | L6.6x4... | .208 | 41.562 | 3 | .029 | 42 | z | 8 | 51170.9... | 87561 | 2464.809 | 7125.374 | 1.136 | H2-1 |
| 16 | HR3 | 2.88x0... | .206 | 6 | 2 | .097 | 92 | | 6 | 22491.6... | 43076.493 | 3155.674 | 3155.674 | 1.774 | H1-1b |
| 17 | HR1 | 2.88x0... | .201 | 6 | 4 | .092 | 6 | | 4 | 22491.6... | 43076.493 | 3155.674 | 3155.674 | 1.915 | H1-1b |
| 18 | S1 | HSS4X... | .193 | 0 | 9 | .108 | 0 | y | 86 | 188250.... | 197892 | 22045.5 | 22045.5 | 1.83 | H1-1b |
| 19 | CA9 | L6.6x4... | .190 | 41.562 | 18 | .027 | 42 | z | 12 | 51170.9... | 87561 | 2464.809 | 7125.374 | 1.136 | H2-1 |
| 20 | MP2 | PIPE_... | .175 | 70 | 5 | .062 | 70 | | 5 | 33487.3... | 66654 | 4726.5 | 4726.5 | 4.425 | H1-1b |
| 21 | MP5 | PIPE_... | .170 | 70 | 7 | .053 | 70 | | 7 | 33487.3... | 66654 | 4726.5 | 4726.5 | 4.471 | H1-1b |
| 22 | GA4 | L2x2x4 | .162 | 0 | 2 | .011 | 27.295 | y | 9 | 29527.5... | 42480 | 959.63 | 2190.068 | 2.195 | H2-1 |
| 23 | MP8 | PIPE_... | .152 | 70 | 9 | .066 | 70 | | 3 | 33487.3... | 66654 | 4726.5 | 4726.5 | 4.044 | H1-1b |
| 24 | GA5 | L2x2x4 | .152 | 0 | 9 | .015 | 27.295 | z | 2 | 29527.5... | 42480 | 959.63 | 2190.068 | 2.189 | H2-1 |
| 25 | GA2 | L2x2x4 | .147 | 0 | 12 | .012 | 0 | y | 12 | 29527.5... | 42480 | 959.63 | 2190.068 | 2.341 | H2-1 |
| 26 | GA1 | L2x2x4 | .138 | 0 | 6 | .015 | 27.295 | y | 34 | 29527.5... | 42480 | 959.63 | 2190.068 | 2.287 | H2-1 |
| 27 | MP9 | PIPE_... | .137 | 70 | 2 | .062 | 70 | | 7 | 33487.3... | 66654 | 4726.5 | 4726.5 | 3.333 | H1-1b |
| 28 | GA3 | L2x2x4 | .137 | 0 | 7 | .016 | 27.295 | y | 30 | 29527.5... | 42480 | 959.63 | 2190.068 | 2.197 | H2-1 |
| 29 | GA6 | L2x2x4 | .136 | 0 | 4 | .012 | 0 | y | 4 | 29527.5... | 42480 | 959.63 | 2190.068 | 2.287 | H2-1 |
| 30 | MP6 | PIPE_... | .125 | 70 | 7 | .067 | 70 | | 6 | 33487.3... | 66654 | 4726.5 | 4726.5 | 4.626 | H1-1b |
| 31 | MP1 | PIPE_... | .121 | 70 | 11 | .075 | 26 | | 8 | 33487.3... | 66654 | 4726.5 | 4726.5 | 2.626 | H1-1b |
| 32 | MP3 | PIPE_... | .119 | 70 | 5 | .068 | 70 | | 3 | 33487.3... | 66654 | 4726.5 | 4726.5 | 4.421 | H1-1b |
| 33 | MP4 | PIPE_... | .118 | 70 | 7 | .068 | 26 | | 4 | 33487.3... | 66654 | 4726.5 | 4726.5 | 1.719 | H1-1b |
| 34 | MP7 | PIPE_... | .116 | 70 | 9 | .061 | 26 | | 6 | 33487.3... | 66654 | 4726.5 | 4726.5 | 3.376 | H1-1b |
| 35 | H3 | Pipe3.5... | .105 | 31 | 2 | .067 | 90 | | 2 | 45873.0... | 71580.6 | 6337.65 | 6337.65 | 1.942 | H1-1b |
| 36 | H1 | Pipe3.5... | .100 | 31 | 10 | .059 | 48 | | 4 | 45873.0... | 71580.6 | 6337.65 | 6337.65 | 2.102 | H1-1b |
| 37 | H2 | Pipe3.5... | .100 | 31 | 6 | .050 | 90 | | 143 | 45873.0... | 71580.6 | 6337.65 | 6337.65 | 1.782 | H1-1b |
| 38 | MP10 | PIPE_... | .005 | 9 | 8 | .004 | 9 | | 8 | 63847.2... | 66654 | 4726.5 | 4726.5 | 1.768 | H1-1b |

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

**Bolt Calculation Tool, V1.5.1**

| PROJECT DATA | |
|---|---|
| Site Name: | BOHVN00142A |
| Site Number: | BOHVN00142A |
| Connection Description: | Platform to Monopole |

| MAXIMUM BOLT LOADS | | |
|---|---|---|
| Bolt Tension: | 5742.12 | lbs |
| Bolt Shear: | 1628.95 | lbs |

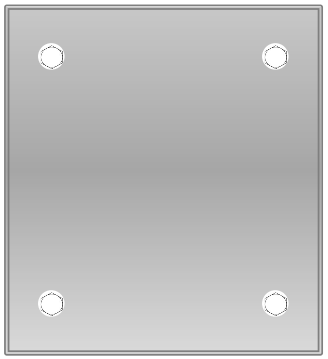
| WORST CASE BOLT LOADS[1] | | |
|---|---|---|
| Bolt Tension: | 5742.12 | lbs |
| Bolt Shear: | 394.56 | lbs |

| 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 #5 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 | 28.2% | |
| Max Shear Usage | 11.8% | |
| Interaction Check (Worst Case) | 0.08 | ***≤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: BOHVN00142A

BOHVN00142A
405 Brushy Plain Road
Branford, Connecticut 06405

**October 12, 2021**

**EBI Project Number: 6221004008**

| **Site Compliance Summary** | |
|---|---|
| Compliance Status: | **COMPLIANT** |
| Site total MPE% of FCC general population allowable limit: | **14.14%** |

October 12, 2021

Dish Wireless

Emissions Analysis for Site: BOHVN00142A - BOHVN00142A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **405 Brushy Plain Road** in **Branford, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

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

Additional details can be found in FCC OET 65.

## CALCULATIONS

Calculations were done for the proposed Dish Wireless antenna facility located at 405 Brushy Plain Road in Branford, 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 103 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): | 103 feet | Height (AGL): | 103 feet | Height (AGL): | 103 feet |
| Channel Count: | 12 | Channel Count: | 12 | Channel Count: | 12 |
| Total TX Power (W): | 440 Watts | Total TX Power (W): | 440 Watts | Total TX Power (W): | 440 Watts |
| ERP (W): | 5,236.31 | ERP (W): | 5,236.31 | ERP (W): | 5,236.31 |
| Antenna A1 MPE %: | **2.51%** | Antenna B1 MPE %: | **2.51%** | Antenna C1 MPE %: | **2.51%** |

| Site Composite MPE % | |
|---|---|
| **Carrier** | **MPE %** |
| Dish Wireless (Max at Sector A): | 2.51% |
| AT&T | 3.26% |
| Clearwire | 0.12% |
| Verizon | 3.55% |
| Branford FD | 0.06% |
| PageNet | 1.02% |
| T-Mobile | 3.62% |
| **Site Total MPE % :** | 14.14% |

| Dish Wireless MPE % Per Sector | |
|---|---|
| Dish Wireless Sector A Total: | 2.51% |
| Dish Wireless Sector B Total: | 2.51% |
| Dish Wireless Sector C Total: | 2.51% |
| | |
| Site Total MPE % : | 14.14% |

## 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 | 103.0 | 3.42 | 600 MHz n71 | 400 | 0.85% |
| Dish Wireless 1900 MHz n70 | 4 | 542.70 | 103.0 | 8.29 | 1900 MHz n70 | 1000 | 0.83% |
| Dish Wireless 2190 MHz n66 | 4 | 542.70 | 103.0 | 8.29 | 2190 MHz n66 | 1000 | 0.83% |
| | | | | | | **Total:** | **2.51%** |

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

## Summary

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

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

| Dish Wireless Sector | Power Density Value (%) |
|---|---|
| Sector A: | 2.51% |
| Sector B: | 2.51% |
| Sector C: | 2.51% |
| Dish Wireless Maximum MPE % (Sector A): | 2.51% |
| | |
| Site Total: | 14.14% |
| | |
| Site Compliance Status: | **COMPLIANT** |

The anticipated composite MPE value for this site assuming all carriers present is **14.14%** 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

# Town of Branford, CT

## Property Listing Report

| Map Block Lot | D02/000/003/ | Bldg # | 1 | Sec # | 1 | PID | 695 | Account | 004475 |
|---|---|---|---|---|---|---|---|---|---|

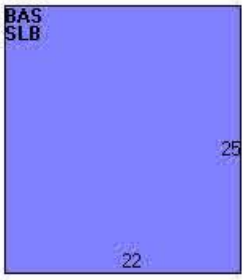
## Property Information

| | |
|---|---|
| Property Location | 405 BRUSHY PLAIN RD |
| Owner | JACONETTE EDWARD F JR |
| Co-Owner | JACONETTE KRISTIN L (SUR) |
| Mailing Address | 405 BRUSHY PLAIN RD<br>BRANFORD CT 06405 |
| Land Use | 0431 TEL REL TW MDL96 |
| Land Class | I |
| Zoning Code | R-4 |
| Census Tract | |

| | |
|---|---|
| Neighborhood | 0050 |
| Acreage | 4.5 |
| Utilities | Well,Public Sewer |
| Lot Setting/Desc | Suburban Rolling |
| Book / Page | 0788/1038 |
| | |

## Photo

## Sketch




## Primary Construction Details

| | |
|---|---|
| Year Built | 1992 |
| Building Desc. | TEL REL TW MDL96 |
| Building Style | Warehouse |
| Building Grade | C |
| Stories | 1 |
| Occupancy | 1.00 |
| Exterior Walls | Precast Panel |
| Exterior Walls 2 | NA |
| Roof Style | Shed |
| Roof Cover | T&G/Rubber |
| Interior Walls | Minim/Masonry |
| Interior Walls 2 | NA |
| Interior Floors 1 | Concr-Finished |
| Interior Floors 2 | NA |

| | |
|---|---|
| Heating Fuel | Electric |
| Heating Type | Hot Air-no Duc |
| AC Type | Heat Pump |
| Bedrooms | 0 |
| Full Bathrooms | 0 |
| Half Bathrooms | 0 |
| Extra Fixtures | 0 |
| Total Rooms | 0 |
| Bath Style | NA |
| Kitchen Style | NA |
| Fin Bsmt Area | |
| Fin Bsmt Quality | |
| Bsmt Gar | |
| Fireplaces | |

(*Industrial / Commercial Details)

| | |
|---|---|
| Building Use | Ind/Comm |
| Building Condition | A |
| Sprinkler % | NA |
| Heat / AC | HEAT/AC PKGS |
| Frame Type | MASONRY |
| Baths / Plumbing | NONE |
| Ceiling / Wall | CEILING ONLY |
| Rooms / Prtns | AVERAGE |
| Wall Height | 9.00 |
| First Floor Use | NA |
| Foundation | NA |

Report Created On 4/21/2022

# Town of Branford, CT

**Property Listing Report**

| Map Block Lot | D02/000/003/ | Bldg # | 1 | Sec # | 1 | PID | 695 | Account | 004475 |
|---|---|---|---|---|---|---|---|---|---|

## Valuation Summary

(Assessed value = 70% of Appraised Value)

| Item | Appraised | Assessed |
|---|---|---|
| Buildings | 169300 | 118500 |
| Extras | 8100 | 5700 |
| Improvements | | |
| Outbuildings | 1800 | 1300 |
| Land | 362200 | 253500 |
| Total | 541400 | 379000 |

## Outbuilding and Extra Features

| Type | Description |
|---|---|
| FENCE-6' CHAIN | 260 L.F. |
| PAVING-CONC | 137 S.F. |
| GEN 15-30KW PRMT BKP | 1 UNITS |
| FIREPLACE 1.5 | 1 UNITS |
| EXTRA FPL OPEN | 1 UNITS |
| | |
| | |
| | |
| | |
| | |

## Sub Areas

| Subarea Type | Gross Area (sq ft) | Living Area (sq ft) |
|---|---|---|
| First Floor | 550 | 550 |
| Slab | 550 | 0 |
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| | | |
| | | |
| | | |
| Total Area | 1100 | 550 |

## Sales History

| Owner of Record | Book/ Page | Sale Date | Sale Price |
|---|---|---|---|
| JACONETTE EDWARD F JR | 0788/1038 | 2002-11-18 | 0 |
| ADAMS MARSHA | 0442/0252 | 1987-12-22 | 0 |
| ADAMS MARSHA | | 1987-12-22 | 0 |

Report Created On 4/21/2022

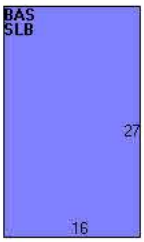
# Town of Branford, CT

**Property Listing Report**

| Map Block Lot | D02/000/003/000001 | Bldg # | 2 | Sec # | 1 | PID | 695 | Account | 004475 |
|---|---|---|---|---|---|---|---|---|---|

**Photo**

**Sketch**




## Primary Construction Details

| | |
|---|---|
| Year Built | 2001 |
| Building Desc. | Ind/Comm |
| Building Style | Warehouse |
| Building Grade | C |
| Stories | 1 |
| Occupancy | 4.00 |
| Exterior Walls | Precast Panel |
| Exterior Walls 2 | NA |
| Roof Style | Shed |
| Roof Cover | T&G/Rubber |
| Interior Walls | Minim/Masonry |
| Interior Walls 2 | NA |
| Interior Floors 1 | Concr-Finished |
| Interior Floors 2 | NA |

| | |
|---|---|
| Heating Fuel | Electric |
| Heating Type | Hot Air-no Duc |
| AC Type | Heat Pump |
| Bedrooms | 0 |
| Full Bathrooms | 0 |
| Half Bathrooms | 0 |
| Extra Fixtures | 0 |
| Total Rooms | 0 |
| Bath Style | NA |
| Kitchen Style | NA |
| Fin Bsmt Area | |
| Fin Bsmt Quality | |
| Bsmt Gar | |
| Fireplaces | |

(*Industrial / Commercial Details)

| | |
|---|---|
| Building Use | TEL REL TW MDL96 |
| Building Condition | A |
| Sprinkler % | NA |
| Heat / AC | HEAT/AC PKGS |
| Frame Type | MASONRY |
| Baths / Plumbing | NONE |
| Ceiling / Wall | CEILING ONLY |
| Rooms / Prtns | AVERAGE |
| Wall Height | 9.00 |
| First Floor Use | NA |
| Foundation | NA |

## Sub Areas

| Subarea Type | Gross Area (sq ft) | Living Area (sq ft) |
|---|---|---|
| First Floor | 432 | 432 |
| Slab | 432 | 0 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| Subarea Type | Gross Area (sq ft) | Living Area (sq ft) |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Total Area | 864 | 432 |

Report Created On 4/21/2022

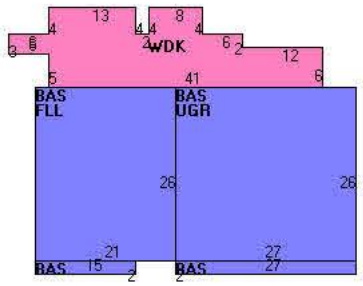
# Town of Branford, CT

**Property Listing Report**

| Map Block Lot | D02/000/003/000001 | Bldg # | 3 | Sec # | 1 | PID | 695 | Account | 004475 |
|---|---|---|---|---|---|---|---|---|---|

**Photo**

**Sketch**




## Primary Construction Details

| | |
|---|---|
| Year Built | 1975 |
| Building Desc. | Residential |
| Building Style | Raised Ranch |
| Building Grade | C + |
| Stories | 1 |
| Occupancy | 1.00 |
| Exterior Walls | Wood Shingle |
| Exterior Walls 2 | NA |
| Roof Style | Gable/Hip |
| Roof Cover | Asphalt |
| Interior Walls | Drywall |
| Interior Walls 2 | NA |
| Interior Floors 1 | Carpet |
| Interior Floors 2 | NA |

| | |
|---|---|
| Heating Fuel | Oil |
| Heating Type | Hot Water |
| AC Type | Central |
| Bedrooms | 3 Bedrooms |
| Full Bathrooms | 2 |
| Half Bathrooms | 0 |
| Extra Fixtures | 0 |
| Total Rooms | 7 |
| Bath Style | Average |
| Kitchen Style | Average |
| Fin Bsmt Area | |
| Fin Bsmt Quality | |
| Bsmt Gar | |
| Fireplaces | |

(*Industrial / Commercial Details)

| | |
|---|---|
| Building Use | TEL REL TW MDL01 |
| Building Condition | A |
| Sprinkler % | NA |
| Heat / AC | NA |
| Frame Type | NA |
| Baths / Plumbing | NA |
| Ceiling / Wall | NA |
| Rooms / Prtns | NA |
| Wall Height | NA |
| First Floor Use | NA |
| Foundation | NA |

## Sub Areas

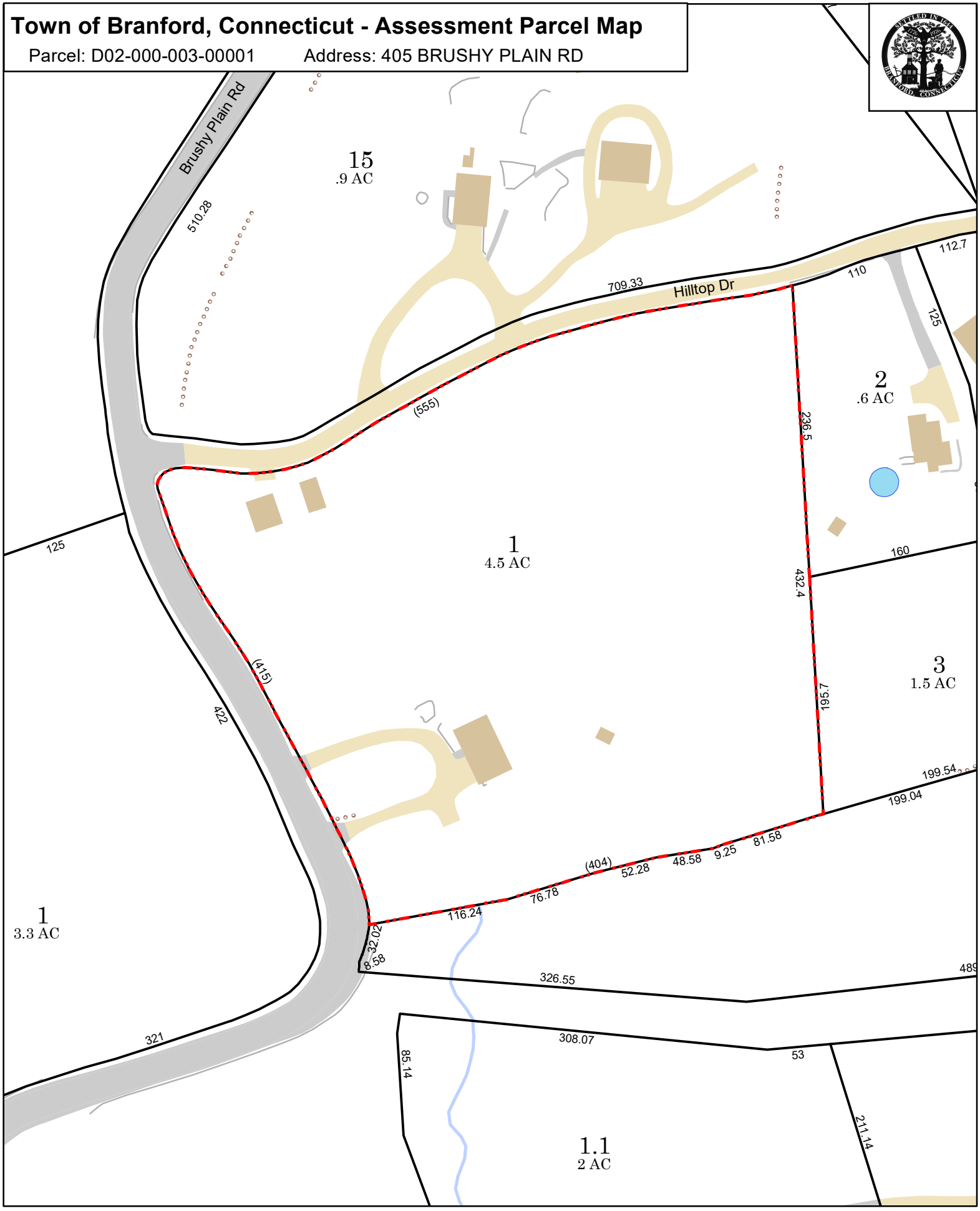
| Subarea Type | Gross Area (sq ft) | Living Area (sq ft) |
|---|---|---|
| First Floor | 1332 | 1332 |
| Finished Lower Level | 546 | 410 |
| Garage Under | 702 | 0 |
| Deck, Wood | 406 | 0 |
| | | |
| | | |
| | | |
| | | |
| | | |

| Subarea Type | Gross Area (sq ft) | Living Area (sq ft) |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Total Area | 2986 | 1742 |

Report Created On 4/21/2022

# Town of Branford, Connecticut - Assessment Parcel Map

Parcel: D02-000-003-00001 Address: 405 BRUSHY PLAIN RD




**Approximate Scale: 1 inch : 100 feet**

**Grand List Date June 2021**

Disclaimer:
This map is for informational purposes only.
All information is subject to verification by any user. The Town of Branford and its mapping contractors assume no legal responsibility for the information contained herein.

May 11, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 776705719220

**Delivery Information:**

| | | | |
|---|---|---|---|
| **Status:** | Delivered | **Delivered To:** | Shipping/Receiving |
| **Signed for by:** | T.MILLICCI | **Delivery Location:** | 1019 Main Street |
| **Service type:** | FedEx 2Day | | P.O. Box 150 |
| **Special Handling:** | Deliver Weekday | | BRANFORD, CT, 06405 |
| | | **Delivery date:** | Apr 29, 2022 13:23 |

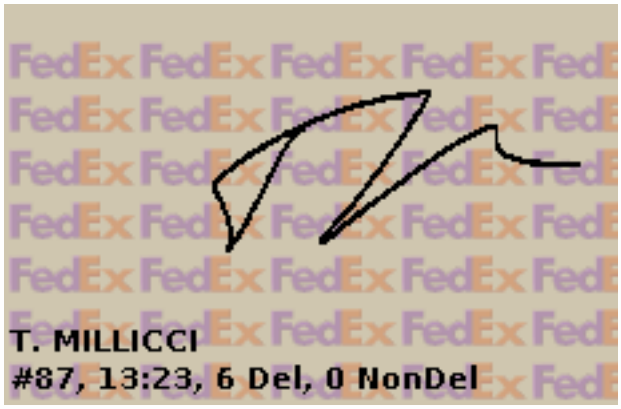
**Shipping Information:**

| | | | |
|---|---|---|---|
| **Tracking number:** | 776705719220 | **Ship Date:** | Apr 27, 2022 |
| | | **Weight:** | 1.0 LB/0.45 KG |

**Recipient:**
James Cosgrove - First Selectman,
1019 Main Street
P.O. Box 150
BRANFORD, CT, US, 06405

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

**Reference** 100814




Thank you for choosing FedEx

May 11, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 776706783095

**Delivery Information:**

| | | | |
|---|---|---|---|
| **Status:** | Delivered | **Delivered To:** | Shipping/Receiving |
| **Signed for by:** | T.MILLICCI | **Delivery Location:** | 1019 Main Street |
| **Service type:** | FedEx 2Day | | |
| **Special Handling:** | Deliver Weekday | | BRANFORD, CT, 06405 |
| | | **Delivery date:** | Apr 29, 2022 13:23 |

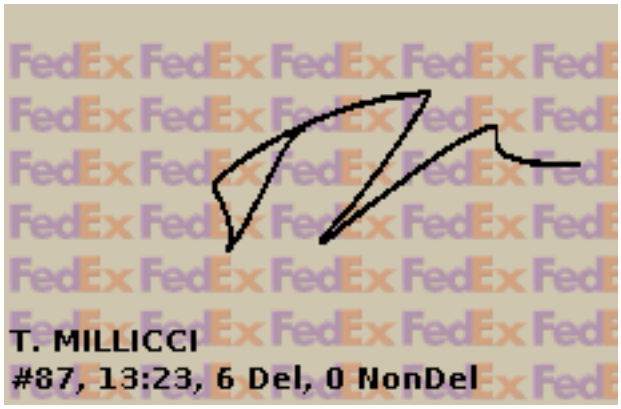
**Shipping Information:**

| | | | |
|---|---|---|---|
| **Tracking number:** | 776706783095 | **Ship Date:** | Apr 27, 2022 |
| | | **Weight:** | 1.0 LB/0.45 KG |

**Recipient:**
Anthony Cinicola - Bldg Official,
1019 Main Street
BRANFORD, CT, US, 06405

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

**Reference** 100814




Thank you for choosing FedEx

May 11, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 776705692804

**Delivery Information:**

| | | | |
|---|---|---|---|
| **Status:** | Delivered | **Delivered To:** | Shipping/Receiving |
| **Signed for by:** | Signature not required | **Delivery Location:** | 405 BRUSHY PLAIN RD |
| **Service type:** | FedEx 2Day | | |
| **Special Handling:** | Deliver Weekday | | BRANFORD, CT, 06405 |
| | | **Delivery date:** | Apr 29, 2022 09:57 |

**Shipping Information:**

| | | | |
|---|---|---|---|
| **Tracking number:** | 776705692804 | **Ship Date:** | Apr 27, 2022 |
| | | **Weight:** | 1.0 LB/0.45 KG |

**Recipient:**
Edward F. Jaconette, Jr.,
405 Brushy Plain Road
BRANFORD, CT, US, 06405

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

**Reference** 100814

Thank you for choosing FedEx