PROJECT NARRATIVE

December 13, 2021

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

Re: Request of DISH Wireless LLC for an Order to Approve the Shared Use of an Existing Tower
196 Tolland Turnpike, Willington, CT 06279
Latitude: 41'52'32.4" /Longitude: -72'16'9.7"

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 196 Tolland Turnpike in Willington (the "Property"). The existing 159-foot monopole tower is owned by American Tower Corporation ("ATC"). The underlying property is owned by Holt Mountain LLC. DISH requests that the Council find that the proposed shared use of the ATC tower satisfies the criteria of C.G.S. §16-50aa and issue an order approving the proposed shared use. A copy of this filing is being sent to Erika Wiecenski, First Selectman for the Town of Willington, Jim Rupert, Town of Willington Building Official, and Holt Mountain LLC as the property owner.

Background

This facility was approved by the Council under Docket No. 429 on February 7, 2013. A copy of this approval is included in the filing attachments. The existing ATC facility consists of a 159-foot monopole tower located within an existing leased area. AT&T Mobility currently maintains antennas at the 156-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 196 Tolland Turnpike tower pursuant to mutually acceptable terms and conditions. Likewise, DISH and ATC have agreed to the proposed installation of equipment cabinets 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 135-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 196 Tolland Turnpike 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 proposed shared use.

Sincerely,

David Hoogasian

David Hoogasian
Project Manager

LETTER OF AUTHORIZATION

AMERICAN TOWER®
CORPORATION

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

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

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

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

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

AMERICAN TOWER®
CORPORATION

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

Signature:

Print Name: Margaret Robinson
Senior Counsel
American Tower*

AMERICAN TOWER®
CORPORATION

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

NOTARY BLOCK

Commonwealth of MASSACHUSETTS
County of Middlesex

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

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

NOTARY SEAL

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

Notary Public _____
My Commission Expires: March 14, 2025

ORIGINAL FACILITY APPROVAL

DOCKET NO. 429 - New Cingular Wireless PCS, LLC (AT&T) application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility located at one of two sites: Willington Tax Assessor Parcel ID #M23-P62 Tolland Turnpike, Willington, Connecticut; or Willington Tax Assessor Parcel ID #M18-19 Old South Willington Road, Willington, Connecticut.	} } }	Connecticut Siting Council February 7, 2013

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to New Cingular Wireless PCS, LLC, hereinafter referred to as the Certificate Holder, for a telecommunications facility at the Candidate A Site, located at Willington Tax Assessor Parcel ID #M23-P62 Tolland Turnpike, Willington, Connecticut. The Council denies certification of the Candidate B Site, located at Willington Tax Assessor Parcel ID #M18-19 Old South Willington Road, Willington, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of New Cingular Wireless PCS, LLC (AT&T) and other entities, both public and private, but such tower shall not exceed a height of 160 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Willington for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
    b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

3. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.

7. Any request for extension of the time period referred to in Condition 6 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Willington. Any proposed modifications to this Decision and Order shall likewise be so served.

8. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

9. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.

10. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.

11. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.

12. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

13. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.

14. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Willimantic Chronicle.

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

The parties and intervenors to this proceeding are:

Applicant	**Its Representative**
New Cingular Wireless PCS, LLC	Lucia Chiocchio, Esq. Daniel M. Laub, Esq. Christopher B. Fisher, Esq. Cuddy & Feder LLP 445 Hamilton Avenue, 14th Floor White Plains, NY 10601
Intervenor	**Its Representative**
Robert and Marissa Golden 52 Old South Willington Road Willington, CT	

ENGINEERING DRAWINGS

DISH WIRELESS, LLC. SITE ID:

BOBDL00006A

DISH WIRELESS, LLC. SITE ADDRESS:

196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

CODE COMPLIANCE

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

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

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
LS1	SITE SURVEY (BY OTHERS)
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT CONCRETE PAD AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE, FAULT CALCS, & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES

SCOPE OF WORK

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

TOWER SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (1) PROPOSED ANTENNA PLATFORM MOUNT
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE (LENGTH: 150'-0")

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED CONCRETE PAD
- 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 CIENA BOX (IF REQUIRED)
-

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:	HOLT MOUNTAIN LLC
ADDRESS:	PO BOX 535 WILLINGTON, CT 06279
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	2811416
TOWER APP NUMBER:	13685406
COUNTY:	TOLLAND
LATITUDE (NAD 83):	41° 52' 32.400" N 41.875700 N
LONGITUDE (NAD 83):	72° 16' 9.700" W 72.269400° W
ZONING JURISDICTION:	CITY OF WILLINGTON
ZONING DISTRICT:	R-80
PARCEL NUMBER:	23/062-00
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	FRONTIER COMMUNICATIONS

PROJECT DIRECTORY

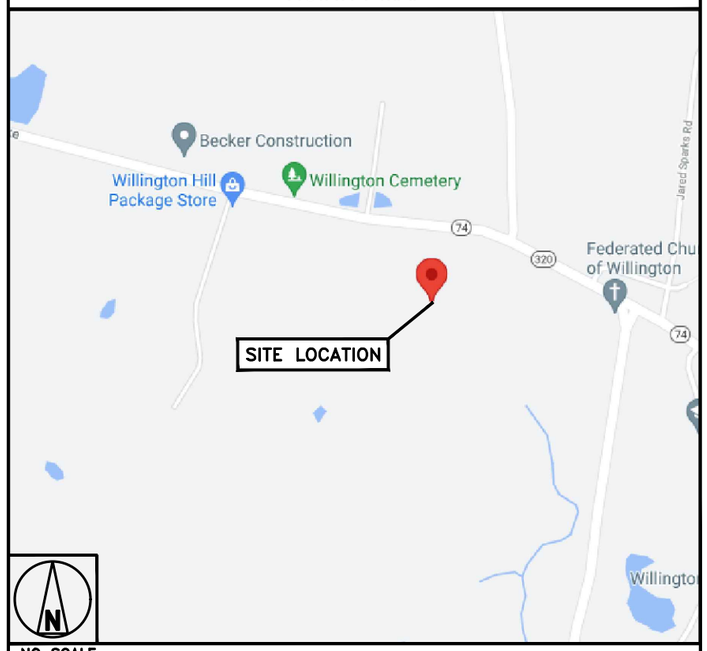
APPLICANT:	DISH WIRELESS, LLC. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120 (306) 706-5008
TOWER OWNER:	AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801
SITE DESIGNER:	FULLERTON ENGINEERING 1100 E WOODFIELD, STE 500 SCHAUMBURG, IL 60173 (847) 908-8400
SITE ACQUISITION:	BONNIE DARRENKAMP bonnie.darrenkamp@dish.com
CONSTRUCTION MANAGER:	AARON CHANDLER aaron.chandler@dish.com
RF ENGINEER:	BOSSENER CHARLES bossener.charles@dish.com

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERCONTINENTAL AIRPORT:

CONTINUE TO BRADLEY INTERNATIONAL AIRPORT CON, HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORTSLIGHT LEFT, TAKE I-91 S, I-291 E AND I-84 E TO CT-74 E IN TOLLAND. TAKE EXIT 69 FROM I-84 E, CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON, USE THE RIGHT 2 LANES TO MERGE WITH I-91 S TOWARD HARTFORD, TAKE EXIT 35A FOR I-291 TOWARD MANCHESTER CONTINUE ONTO I-291 E USE THE LEFT LANE TO MERGE WITH I-84 E TOWARD BOSTON, TAKE EXIT 69 FOR CT-74 TOWARD U.S. 44/WILLINGTON/PUTNAM, TURN RIGHT ONTO CT-74 E

VICINITY MAP



NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FULLERTON

1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

281416-13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

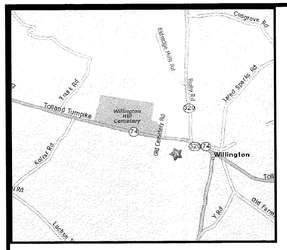
SHEET TITLE

TITLE SHEET

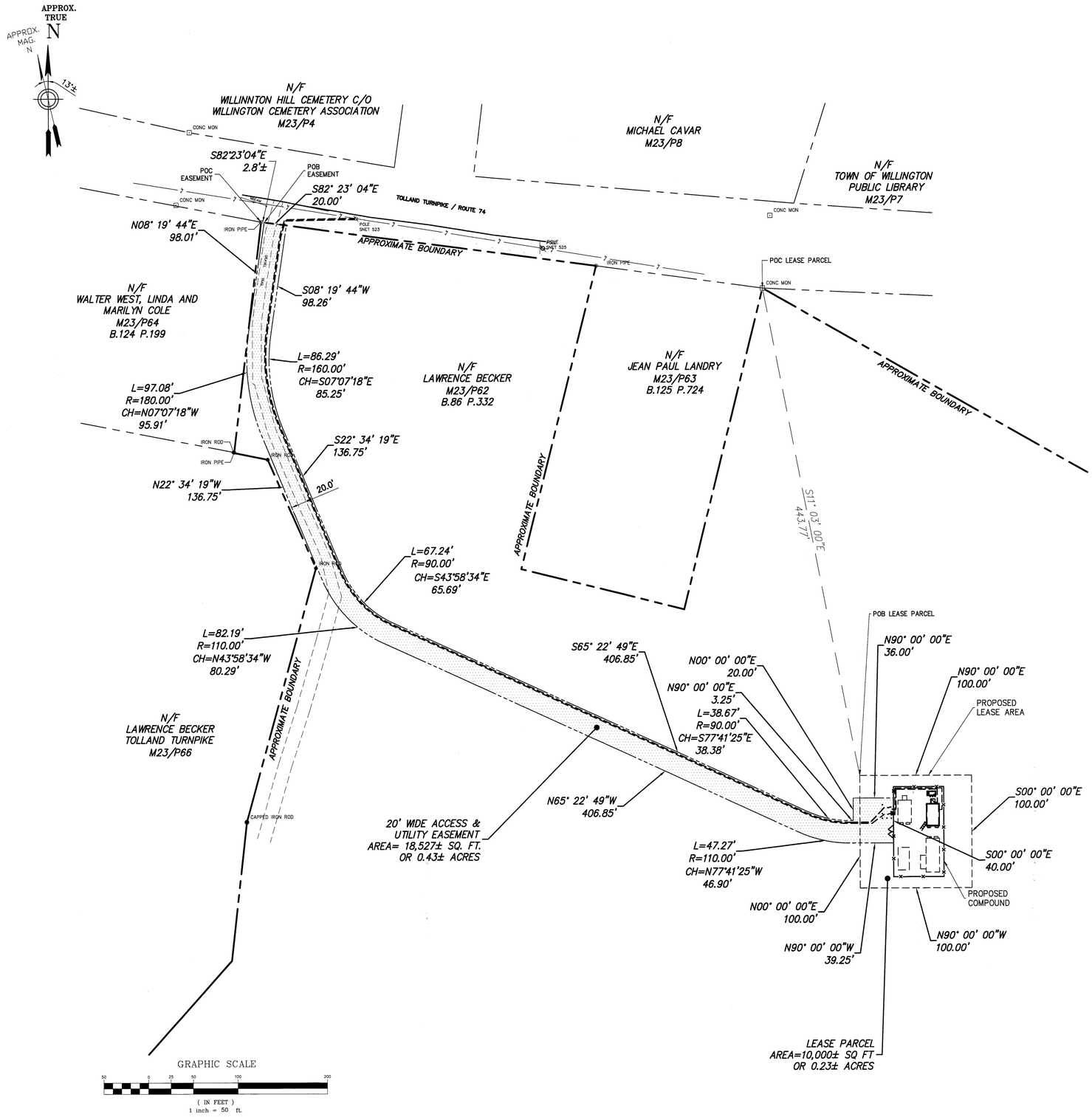
SHEET NUMBER

T-1

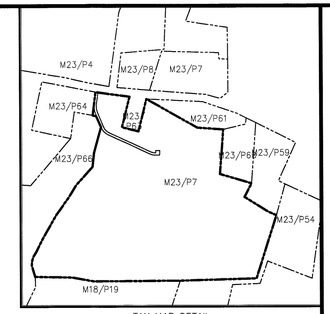
2021.0102.0124



SITE LOCATION MAP
(NOT TO SCALE)



GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.



TAX MAP DETAIL
(SCALE: NONE)

NOTES:

1. THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 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 BOUNDARY LINES SHOWN ON THIS PLAN WERE COMPILED FROM OTHER MAPS, RECORD RESEARCH OR OTHER SOURCES OF INFORMATION. IT IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD SURVEY, AND IS SUBJECT TO SUCH CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE.

TYPE OF SURVEY: EASEMENT PLAN

BOUNDARY DETERMINATION CATEGORY: NONE

CLASS OF ACCURACY: HORIZONTAL CLASS A-2

3. BASE MAPPING PREPARED BY CHA FROM AN OCTOBER 2009 AND MARCH 2013 FIELD SURVEY.

4. NORTH ORIENTATION IS TRUE NORTH BASED ON GPS OBSERVATIONS TAKEN AT THE TIME OF THE FIELD SURVEY.

5. UNDERGROUND UTILITIES, STRUCTURES AND FACILITIES, IF ANY, HAVE BEEN SHOWN FROM SURFACE LOCATIONS AND MEASUREMENTS OBTAINED FROM A FIELD SURVEY, THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHER UTILITIES WHICH THE EXISTENCE OF ARE NOT KNOWN. SIZE, TYPE AND LOCATION OF ALL UTILITIES AND STRUCTURES MUST BE VERIFIED BY PROPER AUTHORITIES PRIOR TO ANY AND ALL CONSTRUCTION. CALL DIG SAFE PRIOR.

6. SUBJECT TO ANY STATEMENT OF FACTS THAT AN UP-TO-DATE ABSTRACT OF TITLE WOULD DISCLOSE.

7. SUBJECT TO ALL RIGHTS, EASEMENTS, COVENANTS OR RESTRICTIONS OF RECORD.

8. REFERENCE IS MADE TO INFORMATION CONTAINED IN COMMITMENT FOR TITLE 01-13095229-01T, EFFECTIVE DATE JUNE 27, 2013 AS PREPARED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY.

MAP REFERENCES:

1. MAP ENTITLED "PLAN OF LAND OWNED BY THOMAS J. OWENS" AS PREPARED BY GILBERT F. PERRY, DATED JULY 12, 1967 AND FILED AS MAP BOOK 5 PAGE 25.

PARENT PARCEL

ALL THAT TRACT OR PARCEL OF LAND SITUATE, LYING AND BEING SOUTHERLY OF TOLLAND TURNPIKE (AKA ROUTE 74), IN THE TOWN OF WILLINGTON, COUNTY OF TOLLAND, STATE OF CONNECTICUT, AND BEING THE SAME PREMISES AS DESCRIBED IN BOOK 86 OF DEEDS ON PAGE 332 AS FILED IN OFFICE OF THE WILLINGTON TOWN CLERK.

ACCESS AND UTILITY EASEMENT

ALL THAT TRACT OR PARCEL OF LAND SITUATE, LYING AND BEING SOUTHERLY OF TOLLAND TURNPIKE (AKA ROUTE 74), IN THE TOWN OF WILLINGTON, COUNTY OF TOLLAND, STATE OF CONNECTICUT, BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

COMMENCING ON AT A IRON ROD ON THE SOUTHERLY HIGHWAY BOUNDARY OF TOLLAND TURNPIKE AT ITS INTERSECTION WITH THE PROPERTY DIVISION LINE BETWEEN LANDS NOW OR FORMERLY OF WALTER WEST, LINDA AND MARILYN COLE AS DESCRIBED IN BOOK 124 OF DEEDS AT PAGE 199 ON THE WEST AND LANDS NOW OR FORMERLY OF LAWRENCE BECKER AS DESCRIBED IN BOOK 86 OF DEEDS AT PAGE 332 ON THE EAST; THENCE SOUTH 82°-23'-04" EAST, ALONG SAID HIGHWAY BOUNDARY A DISTANCE OF 2.8± FEET TO THE POINT OR PLACE OF BEGINNING; THENCE SOUTH 82°-23'-04" EAST, CONTINUING ALONG SAID HIGHWAY BOUNDARY A DISTANCE OF 20.00 FEET TO A POINT; THENCE THROUGH THE SAID LANDS OF LAWRENCE BECKER THE FOLLOWING SEVENTEEN (17) COURSES AND DISTANCE:

1. SOUTH 08°-19'-44" WEST, A DISTANCE OF 98.26 FEET TO A POINT,
2. ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 160.00, LENGTH OF 86.29 AND CHORD OF SOUTH 07°-07'-18" EAST, A DISTANCE OF 85.25 FEET TO A POINT,
3. SOUTH 22°-34'-19" EAST, A DISTANCE OF 136.75 FEET TO A POINT,
4. ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 90.00, LENGTH OF 67.24 AND CHORD OF SOUTH 43°-58'-34" EAST, A DISTANCE OF 65.69 FEET TO A POINT,
5. SOUTH 65°-22'-49" EAST, A DISTANCE OF 406.85 FEET TO POINT,
6. ALONG A CURVE TO THE LEFT HAVING A RADIUS OF 90.00, LENGTH OF 38.67 AND CHORD OF SOUTH 77°-41'-25" EAST, A DISTANCE OF 38.38 FEET TO A POINT,
7. NORTH 90°-00'-00" EAST, A DISTANCE OF 3.25 FEET TO A POINT,
8. NORTH 00°-00'-00" EAST, A DISTANCE OF 20.00 FEET TO A POINT,
9. NORTH 90°-00'-00" EAST, A DISTANCE OF 36.00 FEET TO A POINT ON A COMPOUND,
10. SOUTH 00°-00'-00" EAST, ALONG A PROPOSED COMPOUND, A DISTANCE OF 40.00 FEET TO A POINT,
11. NORTH 90°-00'-00" WEST, A DISTANCE OF 39.25 FEET TO A POINT,
12. ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 110.00, LENGTH OF 47.27 AND CHORD OF NORTH 77°-41'-25" WEST, A DISTANCE OF 46.90 FEET TO A POINT,
13. NORTH 65°-22'-49" WEST, A DISTANCE OF 406.85 FEET TO A POINT,
14. ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 110.00, LENGTH OF 82.19 AND CHORD OF NORTH 43°-58'-34" WEST, A DISTANCE OF 80.29 FEET TO A POINT,
15. NORTH 22°-34'-19" WEST, A DISTANCE OF 136.75 FEET TO A POINT,
16. ALONG A CURVE TO THE RIGHT HAVING A RADIUS OF 180.00, LENGTH OF 97.08 AND CHORD OF NORTH 07°-07'-18" WEST, A DISTANCE OF 95.91 FEET TO A POINT,
17. NORTH 08°-19'-44" EAST, A DISTANCE OF 98.01 FEET TO A POINT

THE POINT OR PLACE OF BEGINNING. BEING 18,527± SQUARE FEET OR 0.43± ACRES OF LAND MORE OF LESS.

LEASE AREA

ALL THAT TRACT OR PARCEL OF LAND SITUATE, LYING AND BEING SOUTHERLY OF TOLLAND TURNPIKE (AKA ROUTE 74), IN THE TOWN OF WILLINGTON, COUNTY OF TOLLAND, STATE OF CONNECTICUT, BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

COMMENCING ON AT A CONCRETE MONUMENT ON THE SOUTHERLY HIGHWAY BOUNDARY OF TOLLAND TURNPIKE AT ITS INTERSECTION WITH THE PROPERTY DIVISION LINE BETWEEN LANDS NOW OR FORMERLY OF JEAN PAUL LANDRY AS DESCRIBED IN BOOK 125 OF DEEDS AT PAGE 724 ON THE WEST AND LANDS NOW OR FORMERLY OF LAWRENCE BECKER AS DESCRIBED IN BOOK 86 OF DEEDS AT PAGE 332 ON THE EAST; THENCE SOUTH 11°-03'-00" EAST, THROUGH THE SAID LANDS OF BECKER, A DISTANCE OF 443.77 FEET TO THE POINT OR PLACE OF BEGINNING; THENCE CONTINUING THROUGH THE SAID LANDS OF LAWRENCE BECKER THE FOLLOWING FOUR COURSES (4) AND DISTANCE:

1. NORTH 90°-00'-00" EAST, A DISTANCE OF 100.00 FEET TO A POINT,
2. SOUTH 00°-00'-00" EAST, A DISTANCE OF 100.00 FEET TO A POINT,
3. NORTH 90°-00'-00" WEST, A DISTANCE OF 100.00 FEET TO A POINT AND
4. NORTH 00°-00'-00" EAST, A DISTANCE OF 100.00 FEET TO A POINT

THE POINT OR PLACE OF BEGINNING. BEING 10,000± SQUARE FEET OR 0.23± ACRES OF LAND MORE OF LESS.

at&t
Your world. Delivered.

NEW CINGULAR WIRELESS PCS, LLC
500 ENTERPRISE DRIVE, ROCKY HILL, CT 06067

Drawing Copyright © 2013 CHA

CHA
2139 Silas Deane Highway, Suite 212 Rocky Hill, CT 06067-2336

CHA PROJECT NO:
18301- 1028 - 43000

NO.	REVISIONS
1	10/28/13 - MISC. REVISIONS

"TO MY KNOWLEDGE AND BELIEF, MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON"

WILLIAM S. LUCARELLI
CT LS 16529

SITE ID:
SR1107
SITE NAME:
WILLINGTON

SITE ADDRESS:
TOLLAND TURNPIKE
WILLINGTON, CT
06279
TOLLAND COUNTY

PLAN SHOWING
SURVEY PREPARED FOR
AMERICAN TOWER CORPORATION

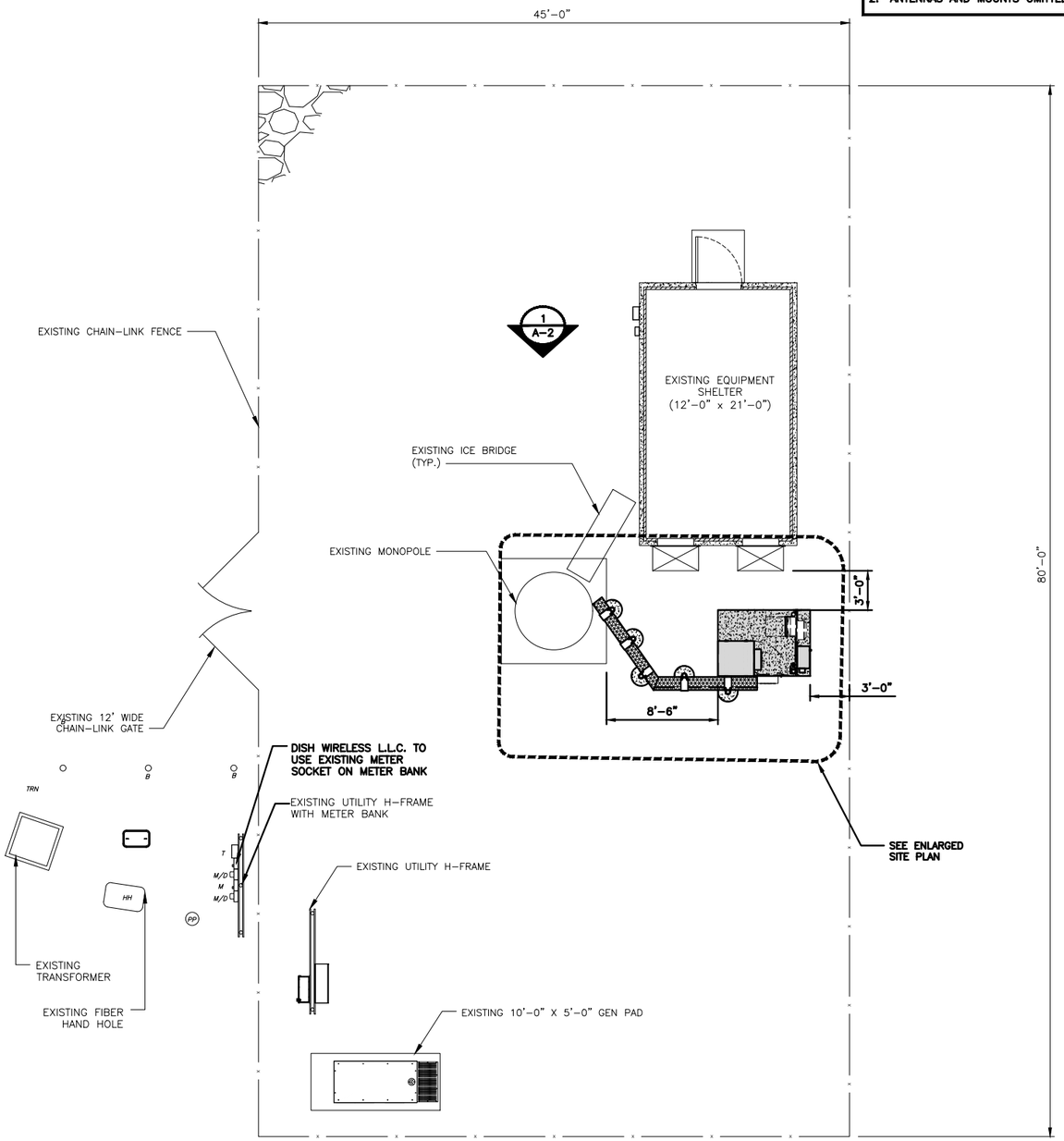
SEPTEMBER 25, 2013

SCALE: 1" = 50'

File: O:\18301\1028\CADD\ACAD_SURVEY\PLAN-18301028-C3D.DWG Saved: 10/28/2013 11:52:14 AM Plotted: 10/30/2013 7:42:45 AM User: Whimple, William

NOTES

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



N

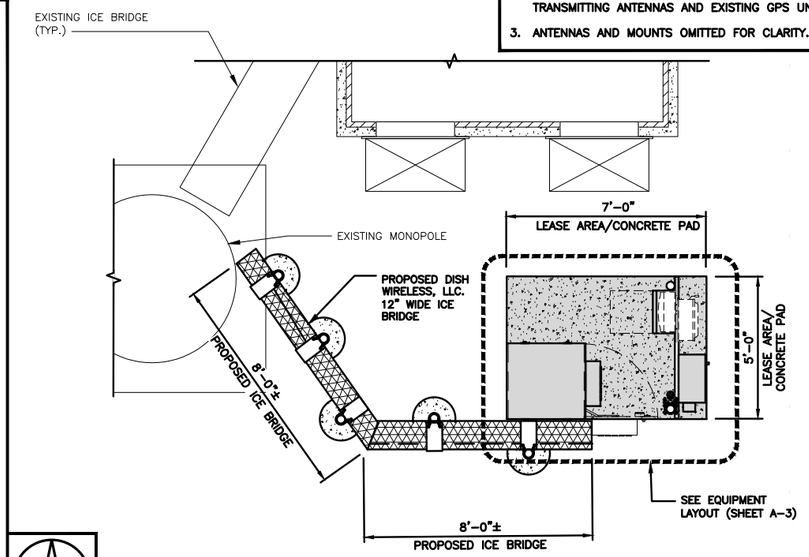
SITE PLAN

6' 4' 2' 0 5' 10'
3/16"=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.

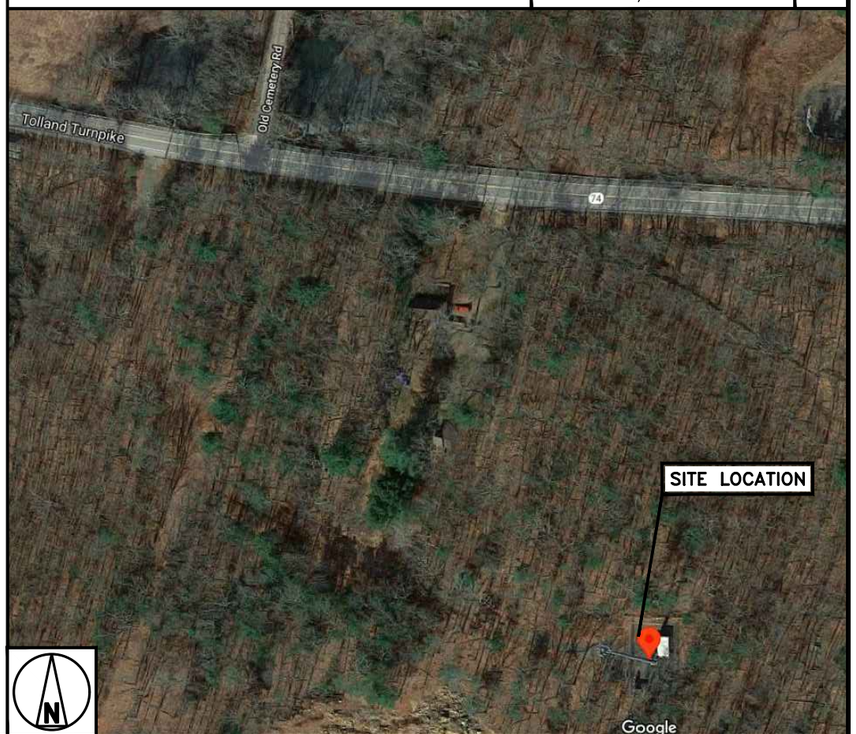


N

ENLARGED SITE PLAN

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

2



N

OVERALL SITE PLAN

NO SCALE

3

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

FULLERTON
1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
281416-13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

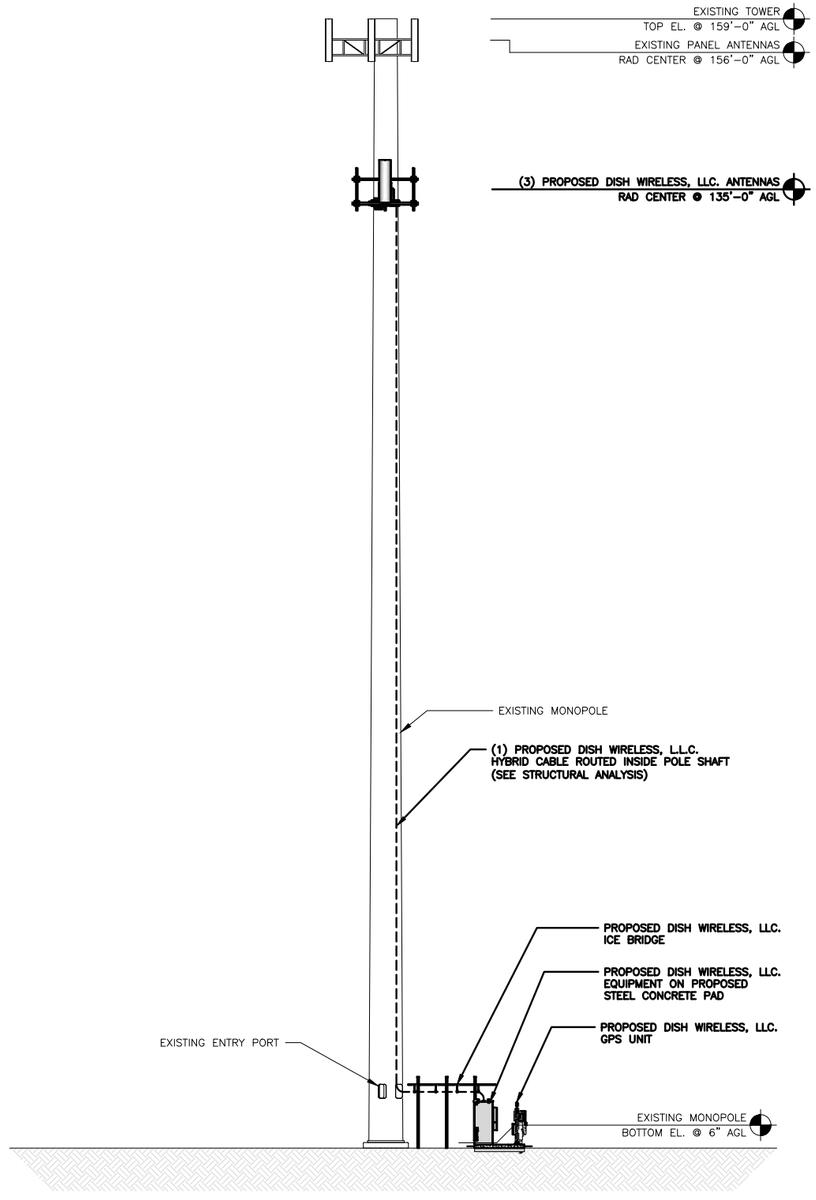
SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

2021.0102.0124

NOTES

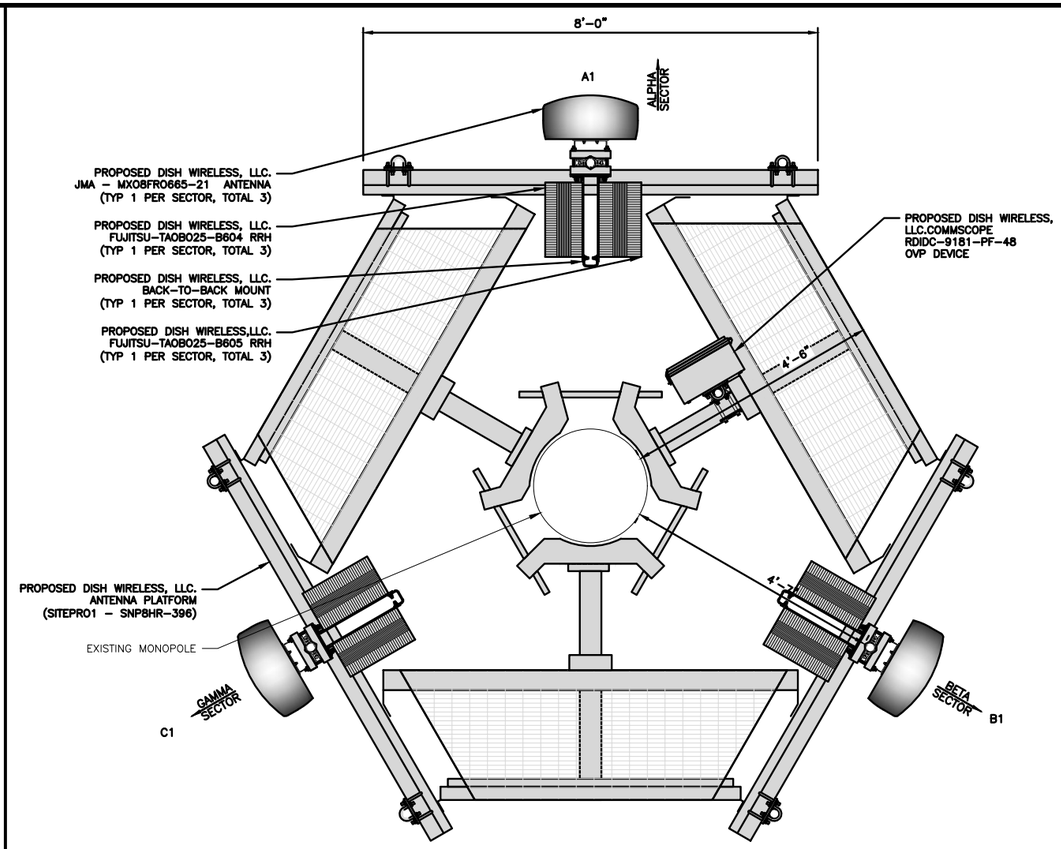
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED NORTH ELEVATION

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

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA – MX08FRO665–21	5G	72.0" x 20.0"	0	135'–0"	(1) HIGH–CAPACITY HYBRID CABLE (150' LONG)
BETA	B1	PROPOSED	JMA – MX08FRO665–21	5G	72.0" x 20.0"	120	135'–0"	
GAMMA	C1	PROPOSED	JMA – MX08FRO665–21	5G	72.0" x 20.0"	240	135'–0"	

SECTOR	POSITION	RRH	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
ALPHA	A1	FUJITSU – TA08025–B604	N66, N70
	A2	FUJITSU – TA08025–B605	N29, N71
BETA	B1	FUJITSU – TA08025–B604	N66, N70
	B2	FUJITSU – TA08025–B605	N29, N71
GAMMA	C1	FUJITSU – TA08025–B604	N66, N70
	C2	FUJITSU – TA08025–B605	N29, N71

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.

OVP		
EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	SIZE (HxWxD)
PROPOSED	RAYCAP–RDIDC–9181–PF–48	16" x 14" x 8"

ANTENNA SCHEDULE

NO SCALE

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FULLERTON

1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
281416–13685406

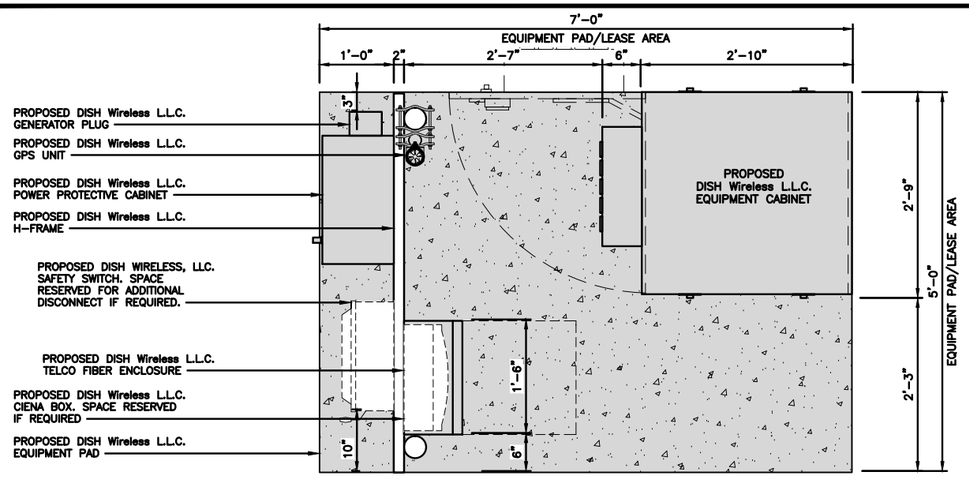
DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2

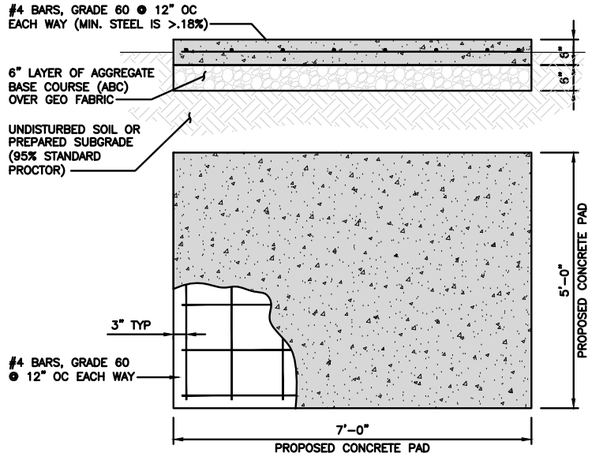
2021.0102.0124



PAD EQUIPMENT PLAN

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

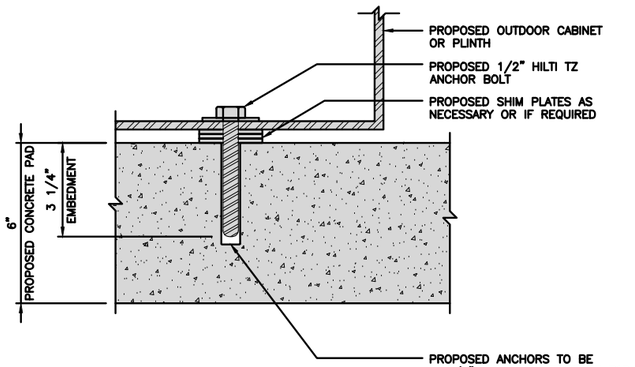
1



TYPICAL CONCRETE PAD DETAIL

NO SCALE

2



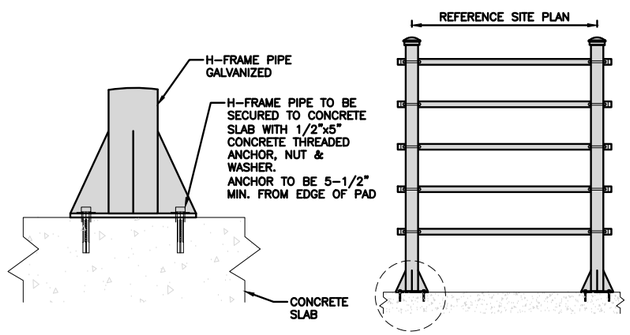
NOTE:
SPECIAL INSPECTIONS ARE TO BE COMPLETED IN ACCORDANCE WITH ICC ESR-1917.

TYPICAL OUTDOOR EQUIPMENT TO CONCRETE SLAB ANCHORAGE

NO SCALE

3

H-FRAME	
UNISTRUT/SUPPORT RAIL	6



H-FRAME CONCRETE SLAB INSTALLATION DETAIL

NO SCALE

4

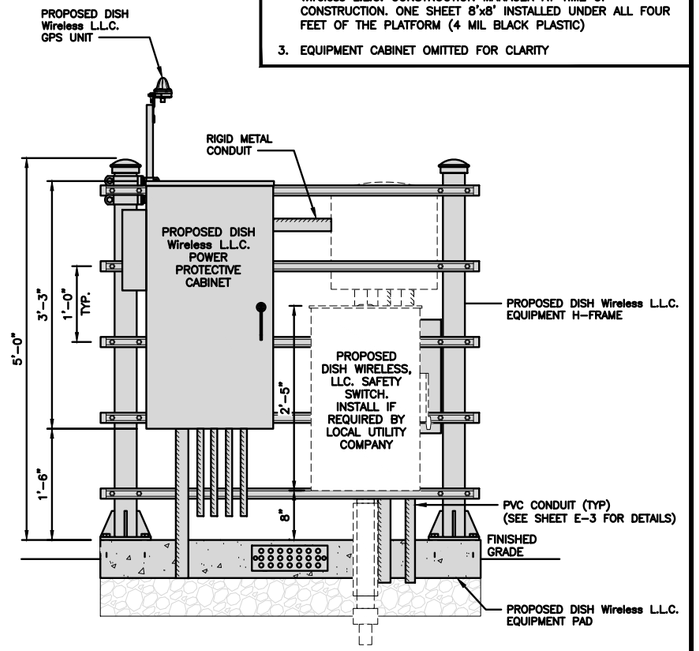
NOT USED

NO SCALE

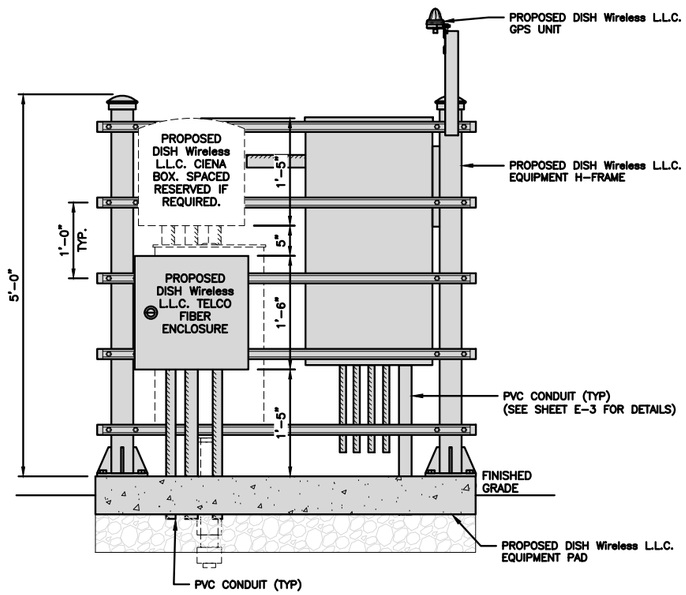
5

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"

6

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

FULLERTON
1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:

RFDS REV #:

SUBMITTALS		
REV	DATE	DESCRIPTION

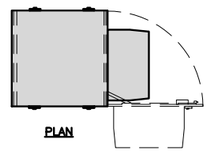
A&E PROJECT NUMBER

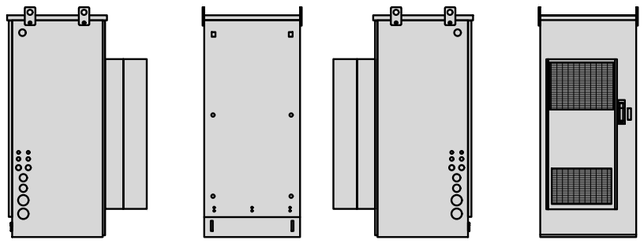
DISH WIRELESS, LLC.
PROJECT INFORMATION

SHEET TITLE
EQUIPMENT CONCRETE PAD AND H-FRAME DETAILS

SHEET NUMBER
A-3

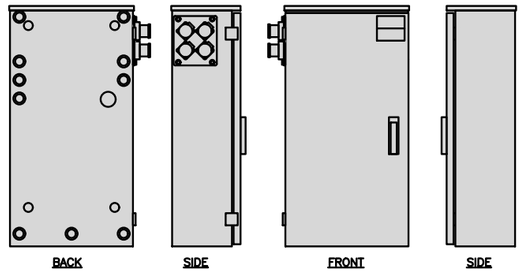
CHARLES INDUSTRY HEX CUBE–PM639155N4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS





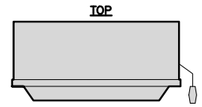
CABINET DETAIL | NO SCALE | 1

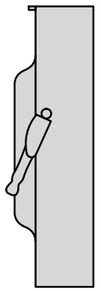
RAYCAP PPC RDIAC–2465–P–240–MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.593
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G

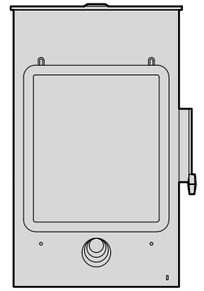


POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

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



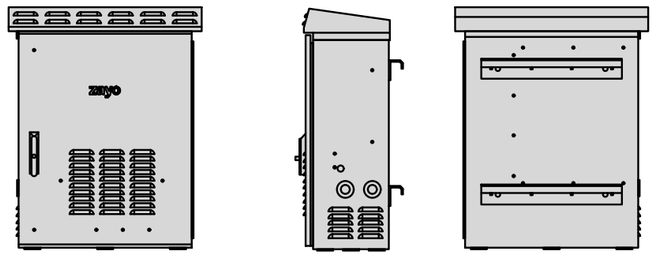




SAFETY SWITCH DETAIL | NO SCALE | 3

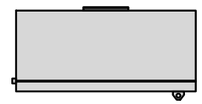
NOT USED | NO SCALE | 4

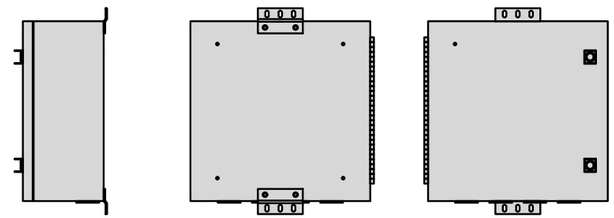
ZAYO 5RU CABINET ("LIT" SITES)	
DIMENSIONS (HxWxD)	36.115"x29"x12.9"
WEIGHT	85 LBS
POWER INPUT	20A, –48VDC



NETWORK INTERFACE UNIT DETAIL | NO SCALE | 5

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

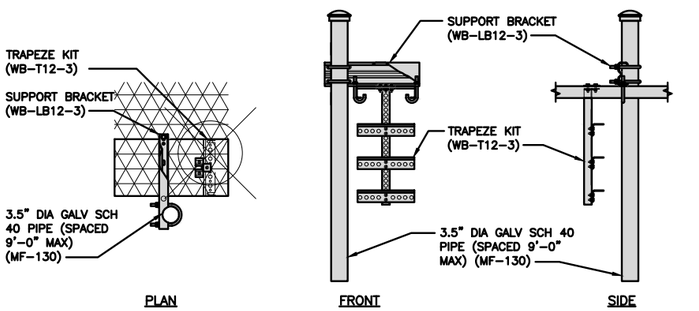




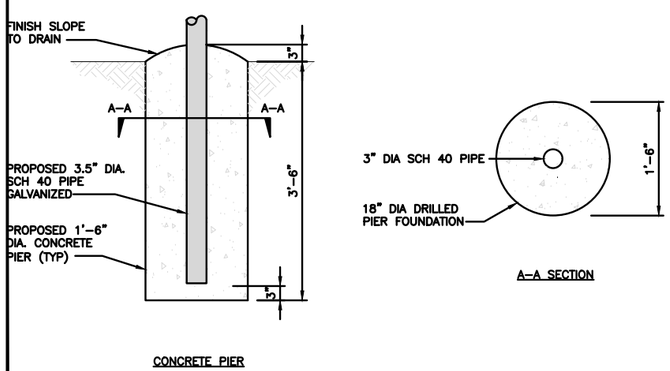
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

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

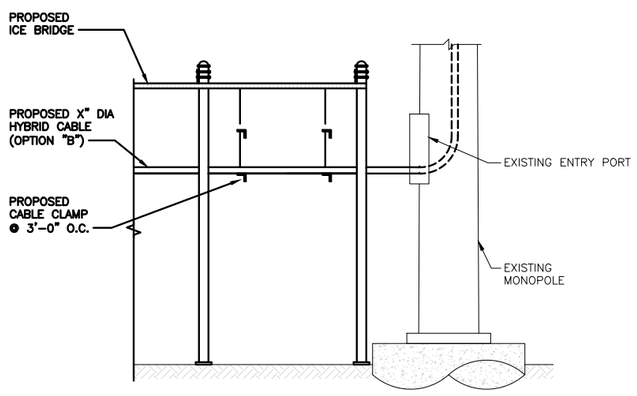
INCLUDED PRODUCTS:	
	WB–T12–3 TRAPEZE KIT, 3 RUNGS
	WB–LB12–3 SUPPORT BRACKET
	MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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

FULLERTON
1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
281416–13685406

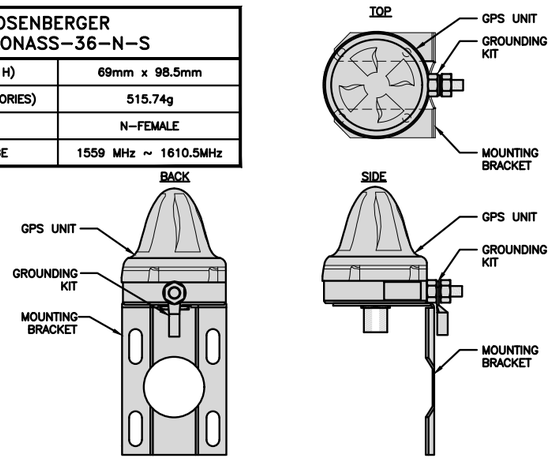
DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

SHEET TITLE
EQUIPMENT DETAILS

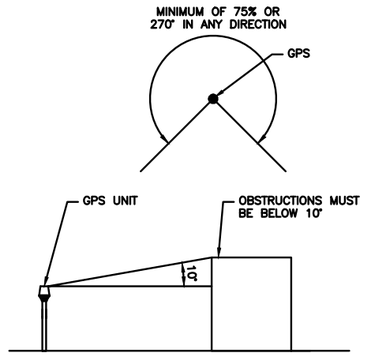
SHEET NUMBER
A-4

2021.0102.0124

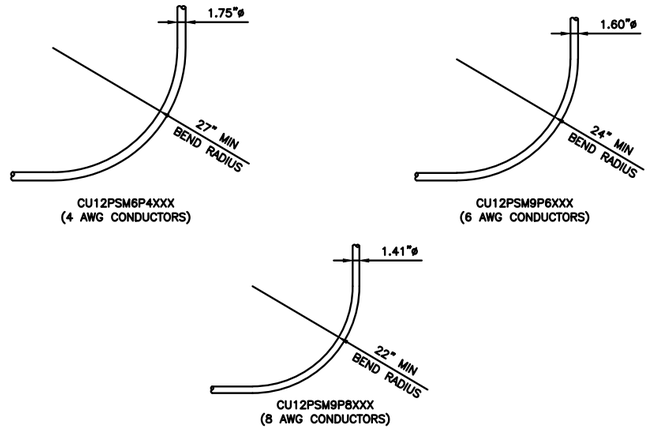
ROSENBERGER GPSGLONASS-36-N-S	
DIMENSION (DIA x H)	69mm x 98.5mm
WEIGHT (WITH ACCESSORIES)	515.74g
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1559 MHz ~ 1610.5MHz



GPS ANTENNA DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FULLERTON

1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

281416-13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

SHEET TITLE

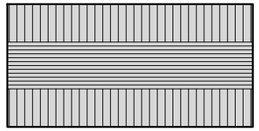
EQUIPMENT DETAILS

SHEET NUMBER

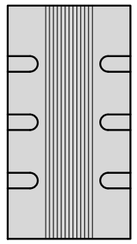
A-5

2021.0102.0124

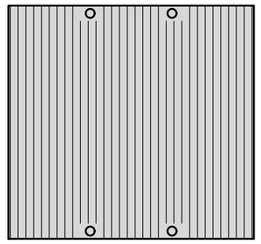
FUJITSU TA08025-B604 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x200/14.9"x15.7"x7.8"
WEIGHT(KG,LB)/ VOLUME	29kg,63.9lb/ 30L
POWER SUPPLY	DC-58~-36V



PLAN



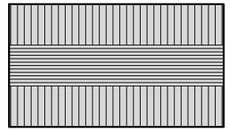
SIDE



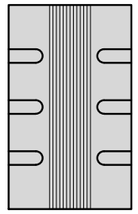
FRONT

REMOTE RADIO HEAD DETAIL | NO SCALE | 1

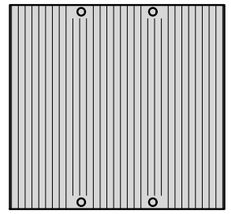
FUJITSU TA08025-B605 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x230/14.9"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~-36V



PLAN



SIDE

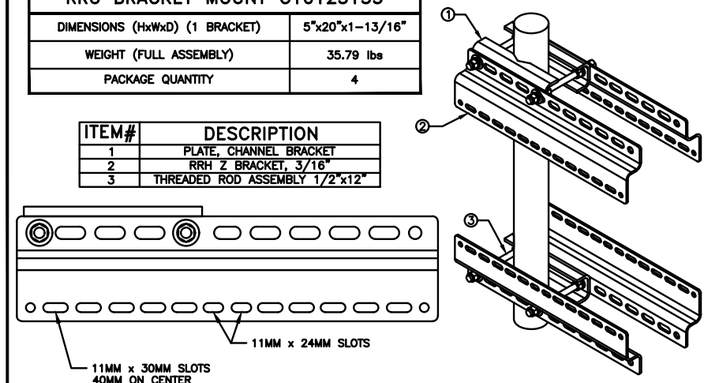


FRONT

REMOTE RADIO HEAD DETAIL | NO SCALE | 2

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

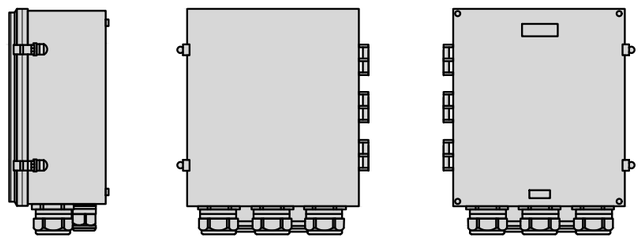
ITEM#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



REMOTE RADIO MOUNT DETAIL | NO SCALE | 3

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

PLAN

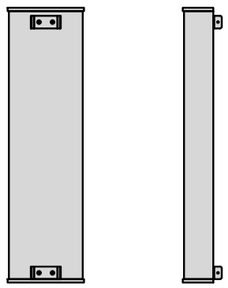


SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 4

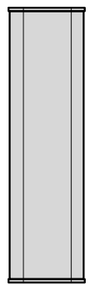
JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE

PLAN



BACK

SIDE



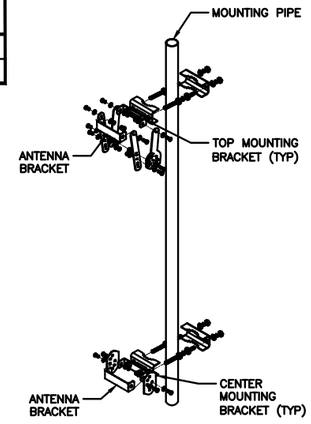
FRONT

ANTENNA DETAIL | NO SCALE | 5

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

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

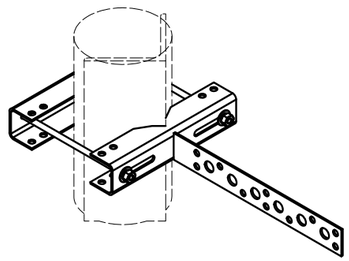
ANTENNA BRACKET NOT PART OF KIT

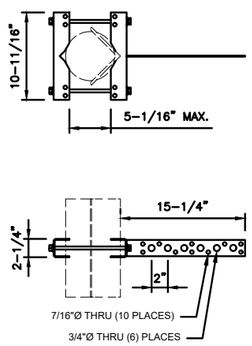


ANTENNA BRACKET DETAIL | NO SCALE | 6

NOT USED | NO SCALE | 7

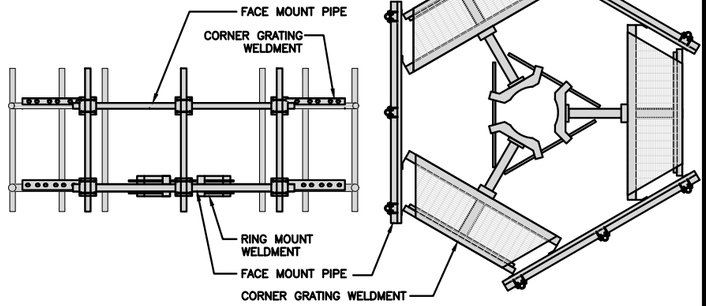
SITE-PRO 1 T600	
90° ANGLE LEG ALLOWANCE	2.5" TO 5"
ROUND MEMBER ALLOWANCE	1.5" TO 6"
WEIGHT	5.6 lbs





UNIVERSAL T-BRACKET DETAIL | NO SCALE | 8

SITEPRO1 SNP8HR-396 SNUB-NOSE CONCRETE PAD	
FACE SIZE	8'-0"
WEIGHT	1786.28 LB
ANTENNA PIPE MOUNTS	(9) 2-3/8" O.D.



ANTENNA CONCRETE PAD DETAIL | NO SCALE | 9

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FULLERTON

1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
281416-13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

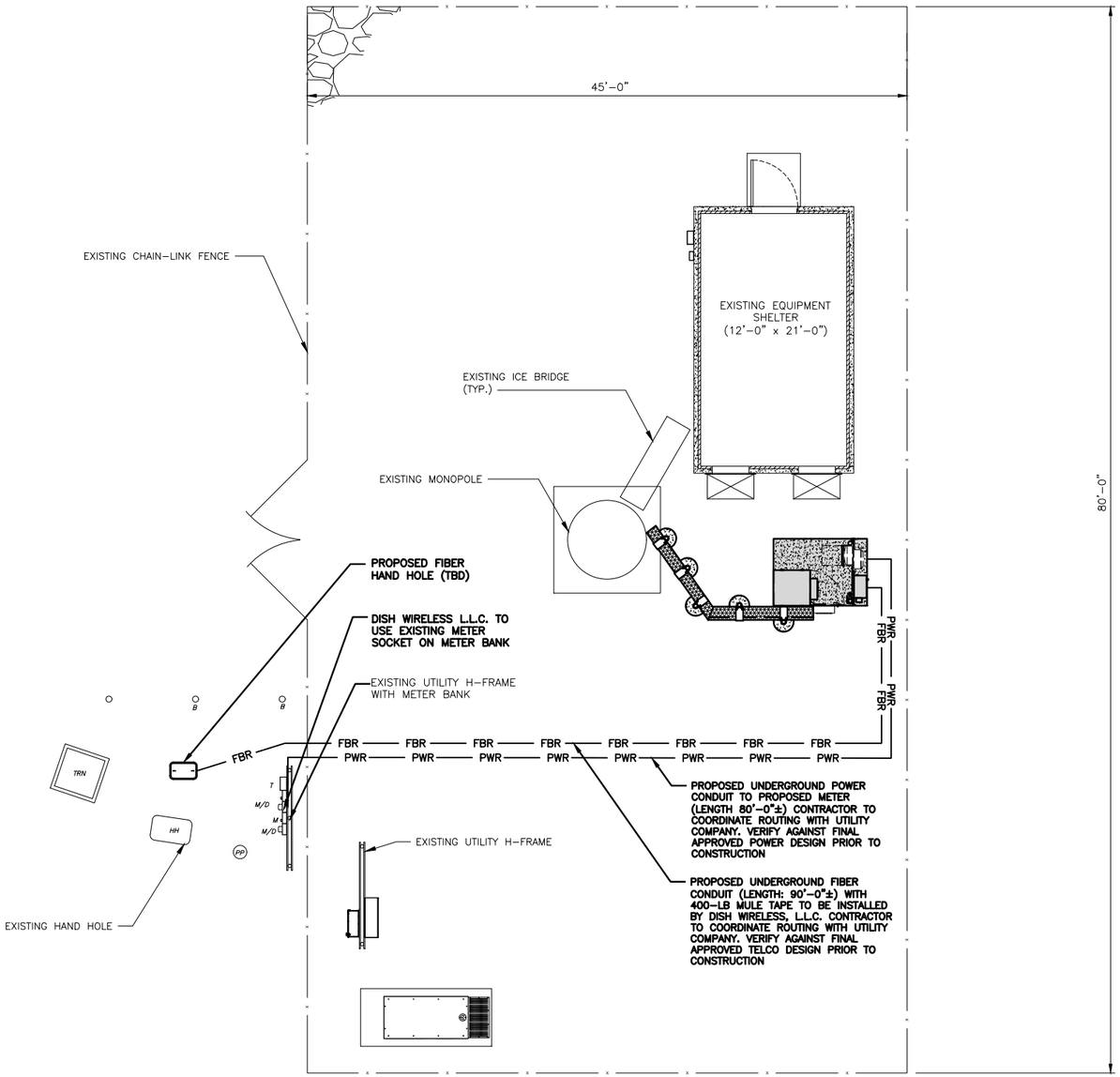
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

2021.0102.0124

NOTES

1. CONTRACTOR MUST VERIFY THAT THE PROPOSED UTILITY ROUTES ARE WITHIN AMERICAN TOWER'S EASEMENT.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. GC TO REFER TO FINAL UTILITY COORDINATION DOCUMENT FOR ALL MEET ME POINTS AND ROUTING DETAILS.



UTILITY ROUTE PLAN

6' 4' 2' 0 5' 10
3/16"=1'-0"

1

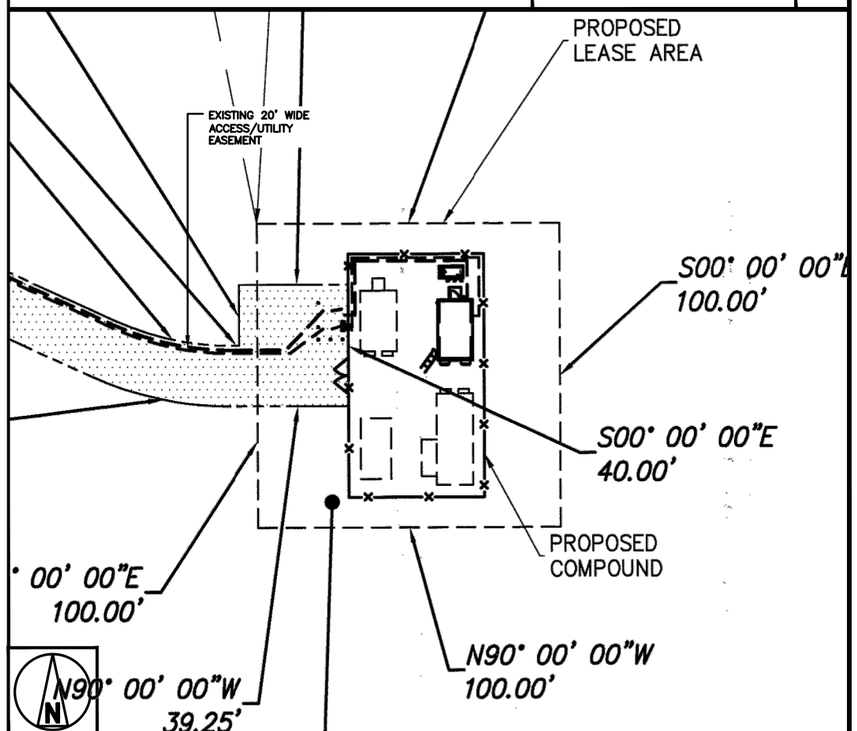
DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND -48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY -48V.

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

ELECTRICAL NOTES

NO SCALE

2



UTILITY ROUTE PLAN (OVERALL)

NO SCALE

3

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

FULLERTON
1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
281416-13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

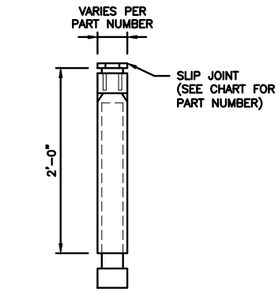
SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

2021.0102.0124

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"

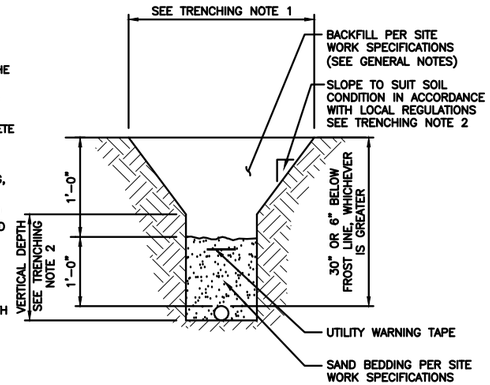


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

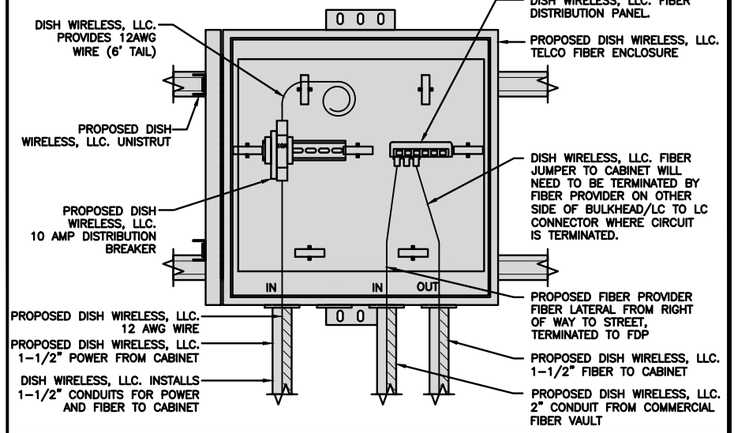
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

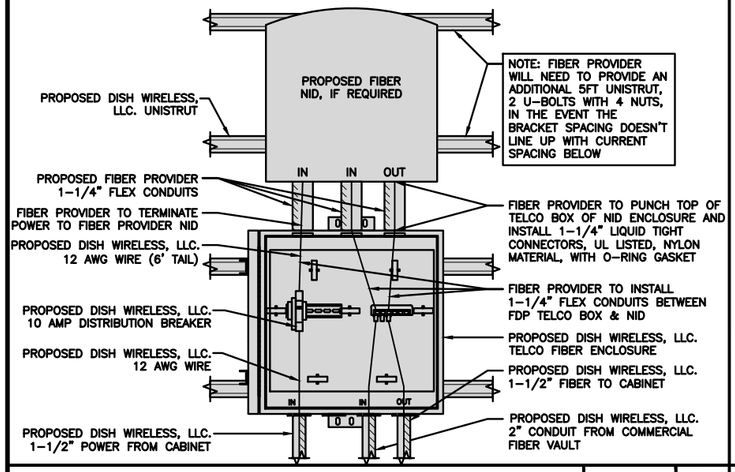
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT 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

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

FULLERTON
1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
281416-13685406

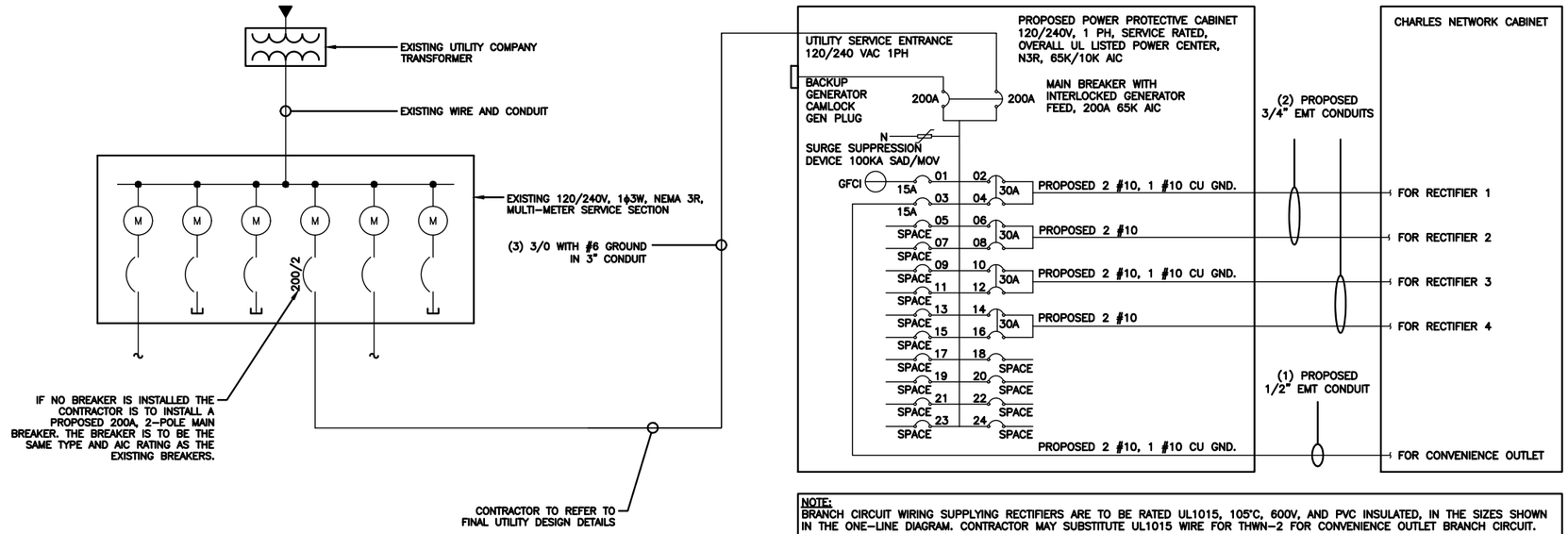
DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2

2021.0102.0124



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
(2) 15A, 1P BREAKER - SQUARE D P/N:QO115

PPC ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE

NO SCALE | 2

NOT USED

NO SCALE | 3

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

FULLERTON
1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

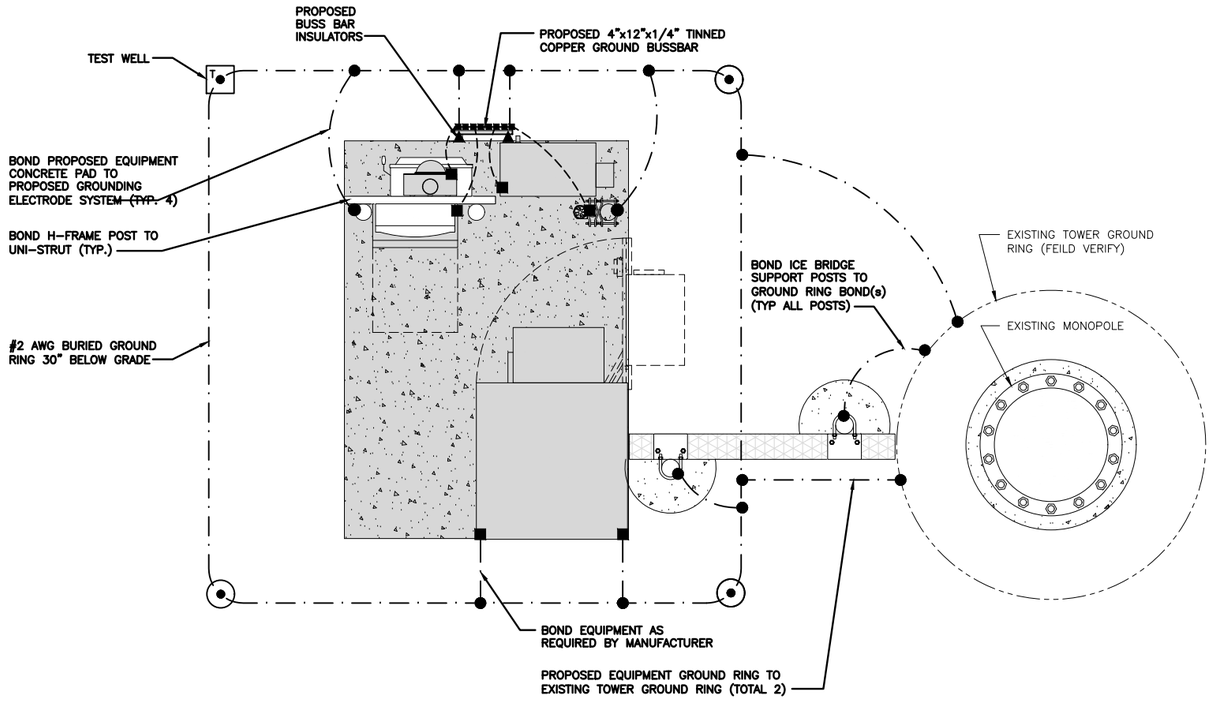
A&E PROJECT NUMBER
281416-13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

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

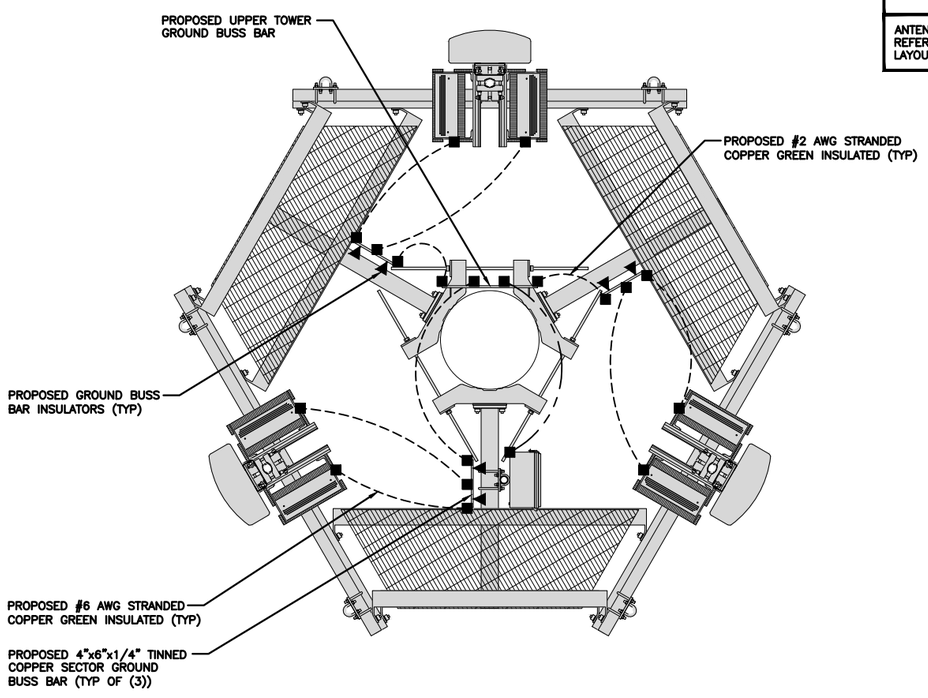
SHEET NUMBER
E-3

2021.0102.0124



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 2

NOTES

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

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

(E) GROUND ROD: UL LISTED COPPER CLAD STEEL. MINIMUM 5/8" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES

NO SCALE | 3

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

FULLERTON
1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
281416-13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

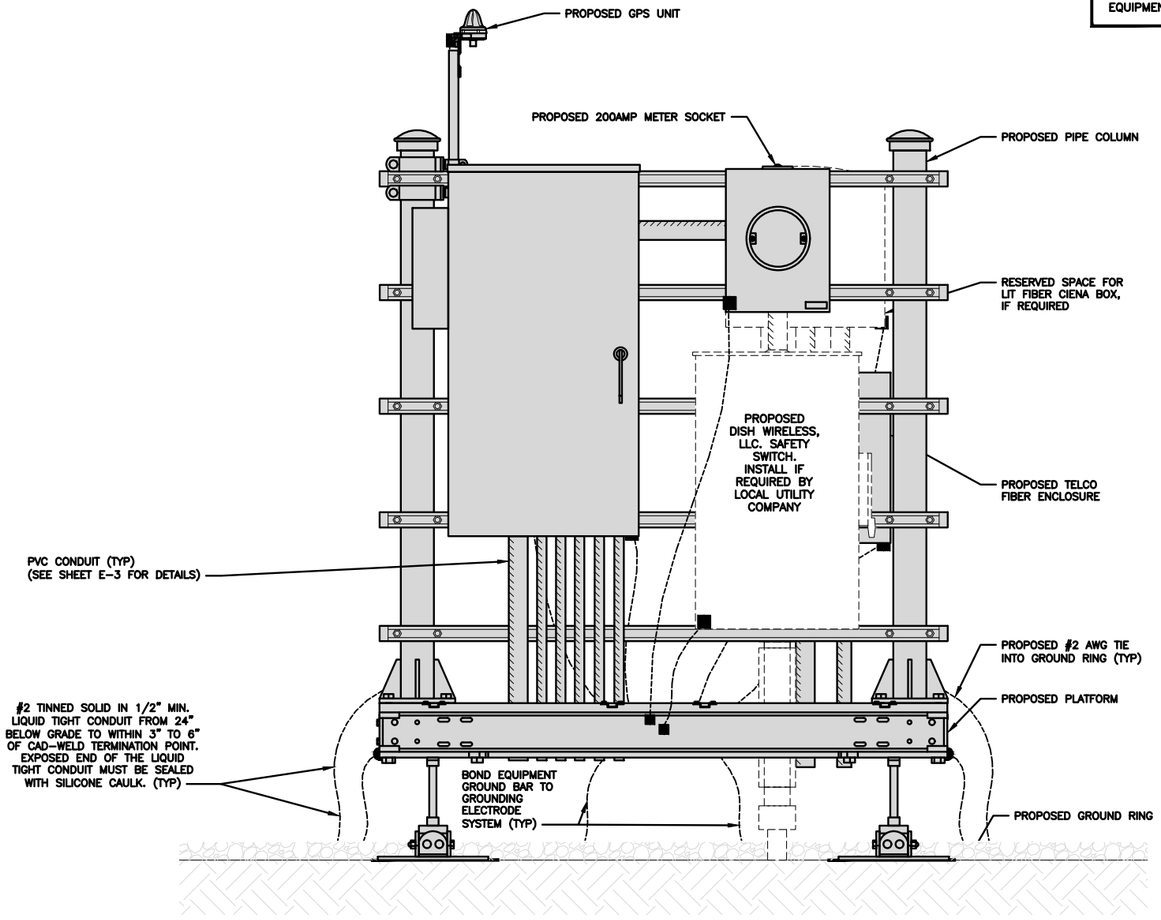
SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

2021.0102.0124

NOTES

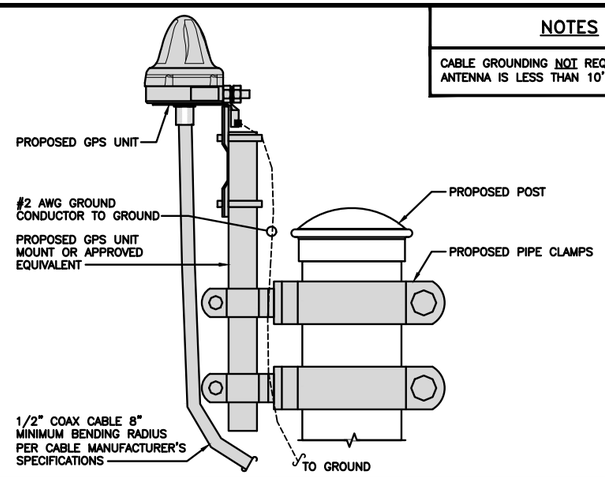
EQUIPMENT CABINET OMITTED FOR CLARITY



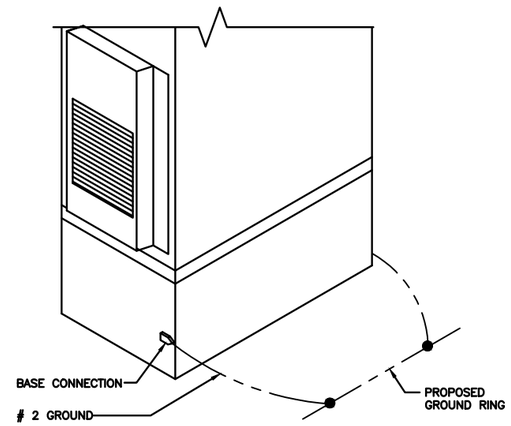
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

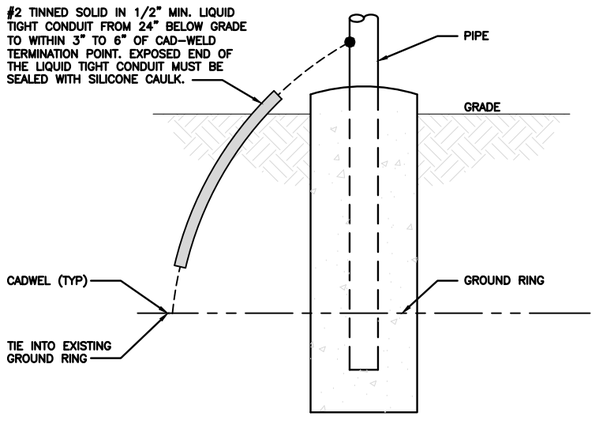
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



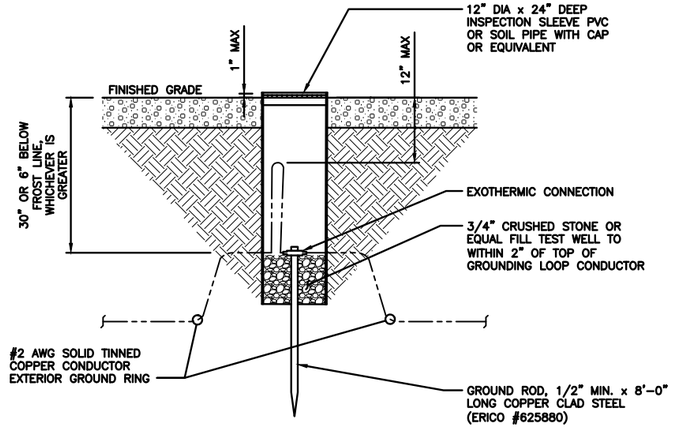
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



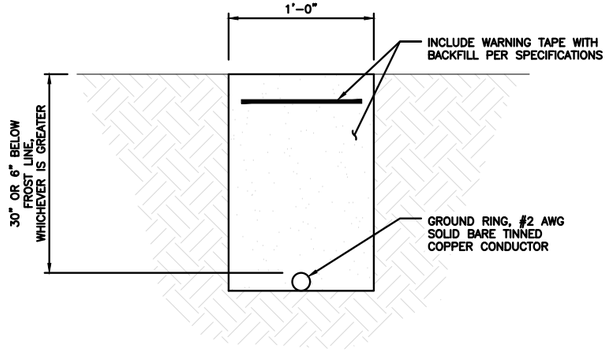
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FULLERTON

1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

281416-13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

SHEET TITLE

GROUNDING DETAILS

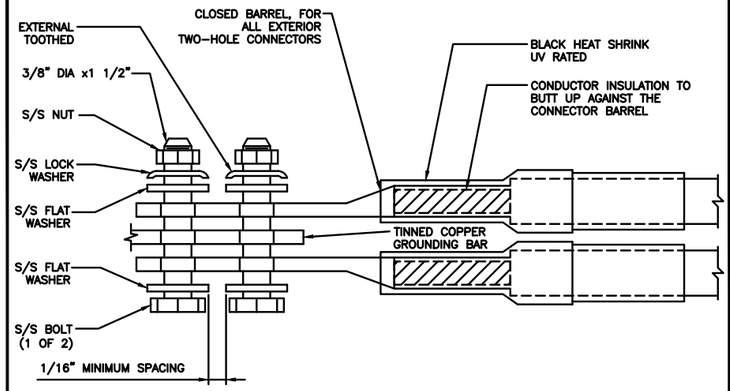
SHEET NUMBER

G-2

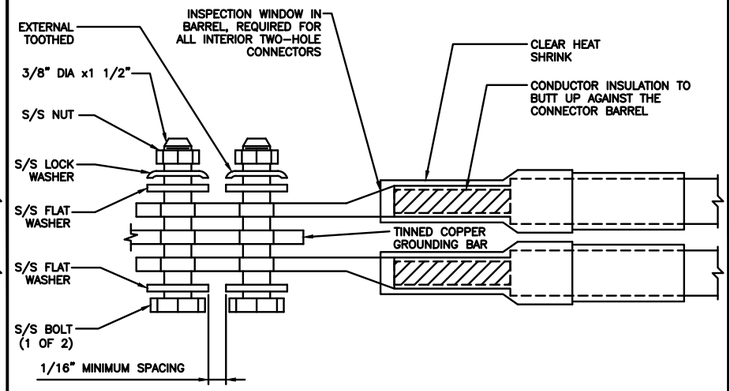
2021.0102.0124

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).

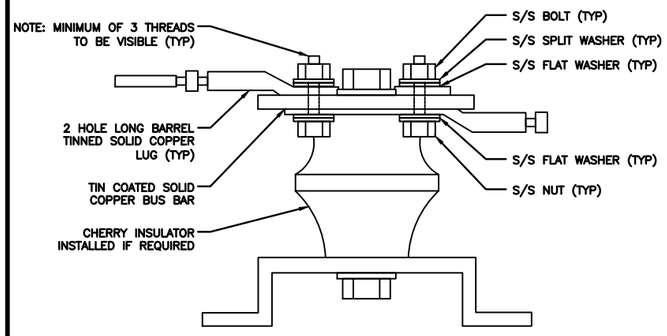
TYPICAL GROUNDING NOTES | NO SCALE | 1



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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FULLERTON

1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

281416-13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

G-3

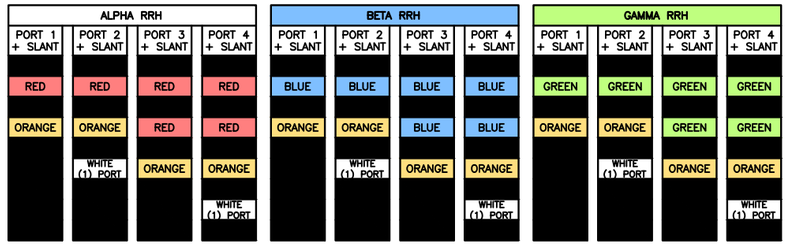
2021.0102.0124

RF JUMPER COLOR CODING

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

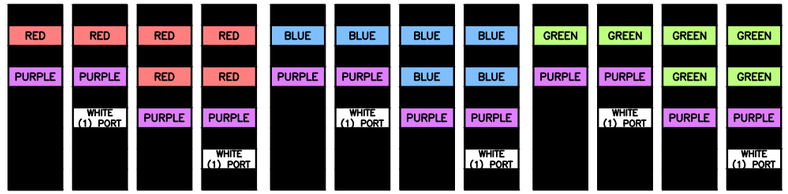
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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

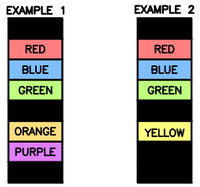


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED AM LONG WITH FREQUENCY BANDS

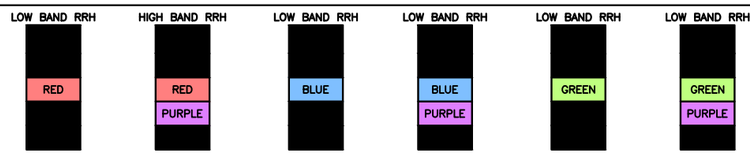
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

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



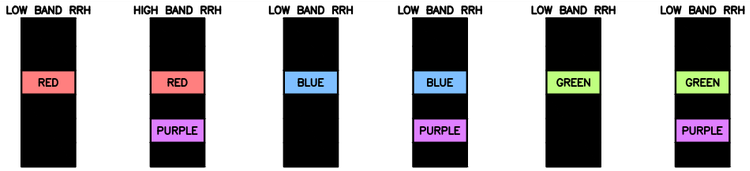
HYBRID/DISCREET CABLES

LOW-BAND RRH FIBER CABLES HAVE SECTOR STRIPE ONLY

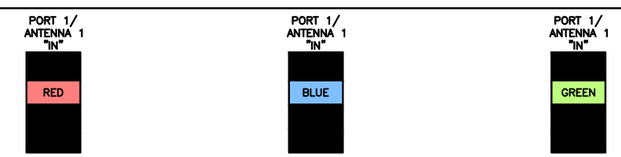


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



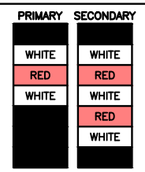
RET MOTORS AT ANTENNAS



MICROWAVE RADIO LINKS

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

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



RF CABLE COLOR CODES | NO SCALE | 1

LOW BANDS (N71–N28)
OPTIONAL – (N29)
ORANGE

AWS
(N65+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANTRRH
WHITE

ALPHA SECTOR
RED

BETA SECTOR
BLUE

GAMMA SECTOR
GREEN

COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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

FULLERTON
1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
281416-13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION
BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

SHEET TITLE
RF
CABLE COLOR CODE

SHEET NUMBER
RF-1

2021.0102.0124

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM — T

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE — T

SINGLE POLE SWITCH — $

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE — GFCI

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

SMOKE DETECTION (DC) — SD

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE — x — x — x — x

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W — W — W — W — W

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

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

OVERHEAD POWER — OHP — OHP — OHP — OHP

OVERHEAD TELCO — OHT — OHT — OHT — OHT

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

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

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

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

WORKPOINT — W.P.

SECTION REFERENCE — XX / X–X

DETAIL REFERENCE — XX / X–X

ABBREVIATIONS

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FULLERTON

1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

281416–13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

2021.0102.0124

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, LLC. AND TOWER OWNER NOC & THE DISH WIRELESS, LLC. AND TOWER OWNER CONSTRUCTION MANAGER.

2. "LOOK UP" – DISH WIRELESS, LLC. 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, LLC. AND DISH WIRELESS, LLC. 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, LLC. 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, LLC. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH WIRELESS, LLC. 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, LLC. 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, LLC. 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, LLC.

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, LLC. AND TOWER OWNER

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FULLERTON

1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

281416–13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

2021.0102.0124

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, LLC. 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, LLC.".

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
LITTLETON, CO 80120

FULLERTON
1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

281416-13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

2021.0102.0124

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.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

FULLERTON

1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001899
www.FullertonEngineering.com

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
HK	KR	DL

RFDS REV #: ---

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	07/20/2021	ISSUED FOR REVIEW
0	08/09/2021	ISSUED FOR CONSTRUCTION
1	11/18/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

281416-13685406

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00006A
196 TOLLAND TURNPIKE
WILLINGTON, CT 06279

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

2021.0102.0124

ENGINEERING:

STRUCTURAL ANALYSIS

MOUNT ANALYSIS

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

TOWER ENGINEERING PROFESSIONALS

Structural Analysis Report

Structure	:	**159 ft Monopole**
ATC Site Name	:	**WILLINGTON CT, CT**
ATC Asset Number	:	**281416**
Engineering Number	:	**13685406_C3_03**
Proposed Carrier	:	**DISH WIRELESS L.L.C.**
Carrier Site Name	:	**BOBDL00006A**
Carrier Site Number	:	**BOBDL00006A**
Site Location	:	**196 Tolland Turnpike** **WILLINGTON, CT 06279-1318** **41.875700,-72.269400**
County	:	**Tolland**
Date	:	**June 25, 2021**
Max Usage	:	**67%**
Result	:	**Pass**

Prepared By:
Siddharth Yadav
TEP

Reviewed By:

STATE OF CONNECTICUT
AARON THOMAS RUCKER
32608
LICENSED
PROFESSIONAL ENGINEER

06/29/2021

COA: PEC.0001553

Table of Contents

Introduction 1

Supporting Documents 1

Analysis 1

Conclusion 1

Existing and Reserved Equipment 2

Equipment to be Removed 2

Proposed Equipment 2

Structure Usages 3

Foundations 3

Deflection, Twist, and Sway 3

Standard Conditions 4

Calculations ..... Attached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 159 ft monopole to reflect the change in loading by DISH WIRELESS L.L.C..

Supporting Documents

Tower Drawings	Valmont Dwg #226762, dated August 5, 2013
Foundation Drawing	ATC # 54066971, dated August 7, 2013
Geotechnical Report	Clarence Welti Association, Inc., dated May 7, 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:	119 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1 1/2" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Spectral Response:	Ss = 0.18, S_1 = 0.05
Site Class:	D - Stiff Soil

Conclusion

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

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

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
156.0	6	Raycap DC6-48-60-18-8F ("Squid")	Platform with Handrails	(3) 0.39" (10mm) Fiber Trunk (8) 0.78" (19.7mm) 8 AWG 6 (18) 1 5/8" Coax	AT&T MOBILITY
	3	Ericsson RRUS 8843 B2, B66A			
	3	Ericsson RRUS 4415 B25			
	3	Ericsson RRUS 4449 B5, B12			
	3	Andrew SBNH-1D6565C (60.8 lbs)			
	3	CCI HPA65R-BU8A			
	3	Andrew SBNH-1D6565C (60.8 lbs)			
	6	Kathrein Scala 80010966			
	6	Ericsson RRUS-11			

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
135.0	1	Commscope RDIDC-9181-PF-48	Platform with Handrails	(1) 1.60" (40.6mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B605			
	3	Fujitsu TA08025-B604			
	3	JMA Wireless MX08FRO665-21			

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

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	67%	Pass
Shaft	61%	Pass
Base Plate	18%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	4,805.8	2,935.7	61%
Shear (Kips)	39.5	25.8	65%

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
135.0	Commscope RDIDC-9181-PF-48	DISH WIRELESS L.L.C.	1.514	1.331
	Fujitsu TA08025-B605			
	Fujitsu TA08025-B604			
	JMA Wireless MX08FRO665-21			

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

Standard Conditions

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

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

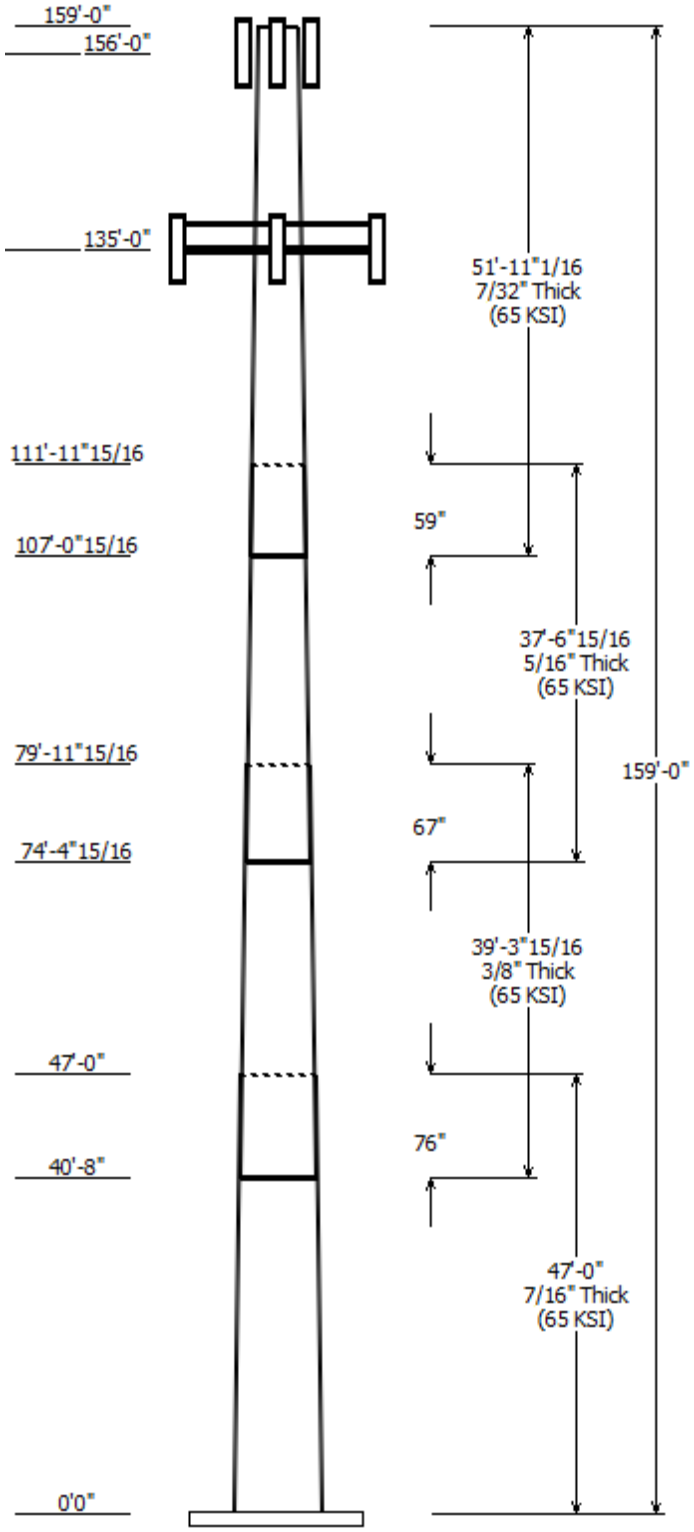
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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

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

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

© 2007 - 2021 by ATC IP LLC. All rights reserved.



Job Information

Client :	DISH WIRELESS L.L.C.		
Pole :	281416	Code:	ANSI/TIA-222-H
Location :	WILLINGTON CT, CT		
Description :	Monopole	Risk Category :	II
Shape :	18 Sides	Exposure :	C
Height :	159.00 (ft)	Topo Method :	Method 1
Base Elev (ft):	0.00	Topographic Category :	1
Taper:	0.187500 (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	47.000	41.43	50.25	0.438		0.000	18 Sides	65
2	39.330	36.00	43.37	0.375	Slip Joint	76.000	18 Sides	65
3	37.580	30.62	37.67	0.313	Slip Joint	67.000	18 Sides	65
4	51.923	22.25	31.98	0.219	Slip Joint	59.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
156.000	156.000	1	Low Profile Platform w/ New
156.000	156.000	3	Andrew SBNH-1D6565C (60.8
156.000	156.000	6	Kathrein Scala 80010966
156.000	156.000	3	Andrew SBNH-1D6565C (60.8
156.000	156.000	3	CCI HPA65R-BU8A
156.000	156.000	6	Ericsson RRUS-11
156.000	156.000	3	Ericsson RRUS 4449 B5, B12
156.000	156.000	3	Ericsson RRUS 4415 B25
156.000	156.000	3	Ericsson RRUS 8843 B2, B66A
156.000	156.000	6	Raycap DC6-48-60-18-8F
135.000	135.000	1	Generic Flat Platform with Han
135.000	135.000	3	JMA Wireless MX08FRO665-21
135.000	135.000	3	Fujitsu TA08025-B604
135.000	135.000	3	Fujitsu TA08025-B605
135.000	135.000	1	Commscope RDIDC-9181-PF-48

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	135.0	1.60" (40.6mm)	No
0.000	156.0	0.39" (10mm)	No
0.000	156.0	0.78" (19.7mm) 8	No
0.000	156.0	1 5/8" Coax	No

Load Cases

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

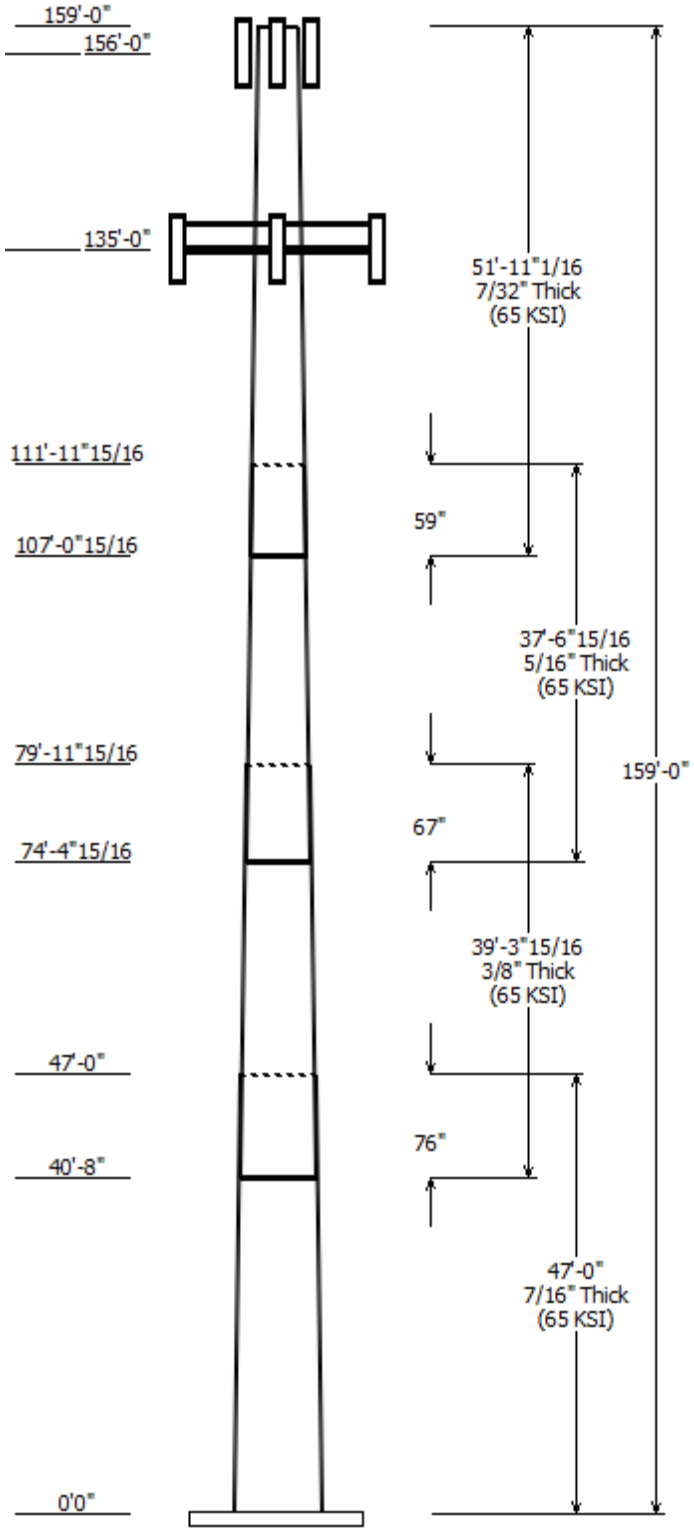
Reactions

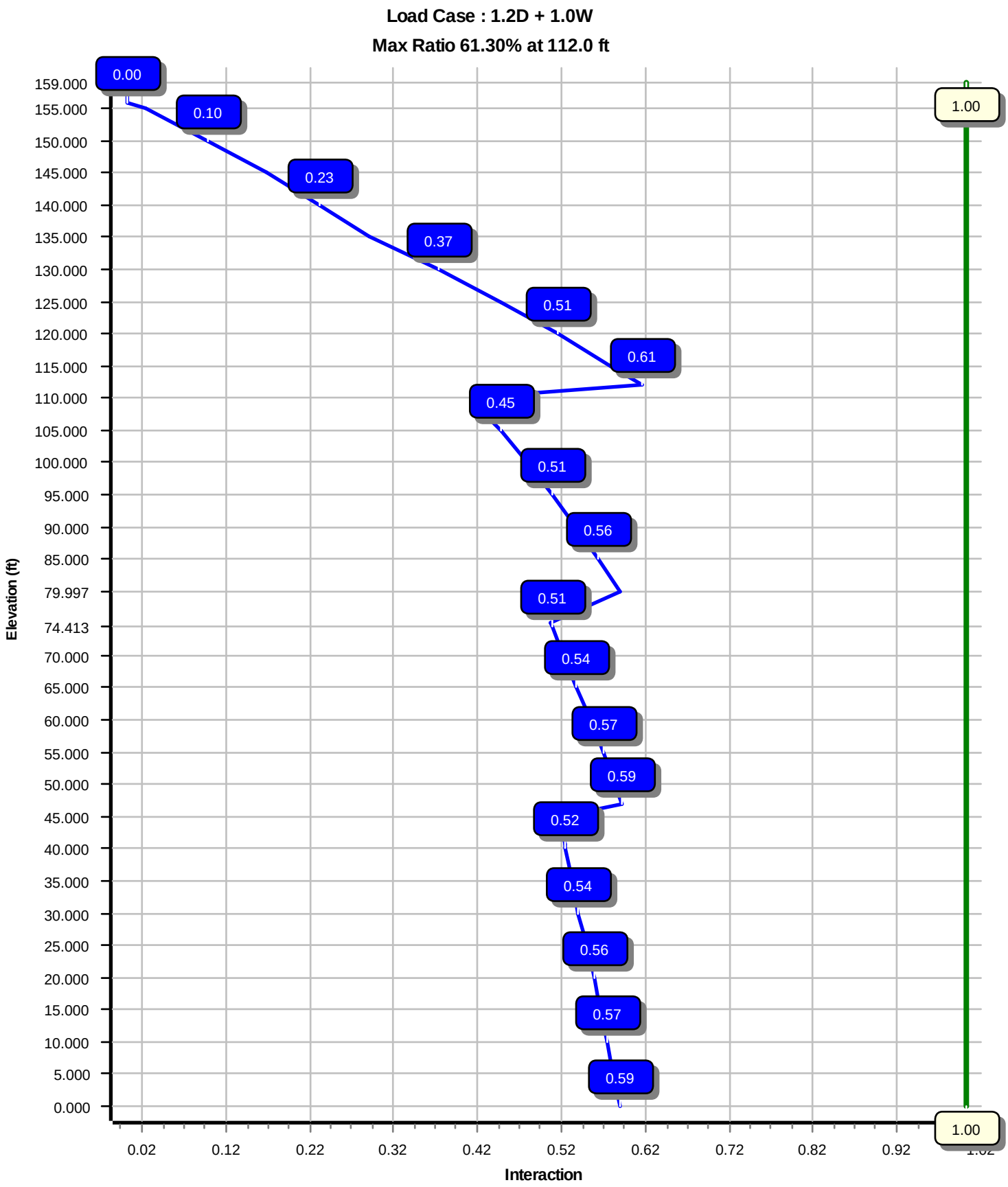
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.0W	2935.66	25.83	41.66
0.9D + 1.0W	2899.10	25.82	31.24
1.2D + 1.0Di + 1.0Wi	836.51	7.36	61.84

1.2D + 1.0Ev + 1.0Eh	139.15	1.05	41.47
0.9D - 1.0Ev + 1.0Eh	136.90	1.04	28.84
1.0D + 1.0W	663.20	5.87	34.75

Dish Deflections

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




Load Case : 1.2D + 1.0W
Max Ratio 61.30% at 112.0 ft
0.00
0.10
0.23
0.37
0.51
0.61
0.45
0.51
0.56
0.51
0.54
0.57
0.59
0.52
0.54
0.56
0.57
0.59
1.00
1.00
159.000
155.000
150.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
79.997
74.413
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 281416 | Code: ANSI/TIA-222-H | © 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: WILLINGTON CT, CT | Engineering Number:13685406_C3_03 | 6/25/2021 5:55:28 AM

Customer: DISH WIRELESS L.L.C.

Analysis Parameters

Location :	Tolland County, CT	Height (ft) :	159
Code :	ANSI/TIA-222-H	Base Diameter (in) :	50.25
Shape :	18 Sides	Top Diameter (in) :	22.25
Pole Type :	Taper	Taper (in/ft) :	0.188
Pole Manfacturer :	Valmont	Rotation (deg) :	0.00
Kd (non-service) :	0.95	Ke :	0.97

Ice & Wind Parameters

Exposure Category:	C	Design Wind Speed Without Ice:	119 mph
Risk Category:	II	Design Wind Speed With Ice:	50 mph
Topographic Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.50 in
Crest Height:	0 ft	HMSL:	768.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	2.53				
T_L (sec):	6	p:	1	C_s:	0.030
S_s:	0.181	S_1:	0.055	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.193	S_{d1}:	0.088		

Load Cases

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

Site Number: 281416 Code: ANSI/TIA-222-H © 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: WILLINGTON CT, CT Engineering Number:13685406_C3_03 6/25/2021 5:55:28 AM

Customer: DISH WIRELESS L.L.C.

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)
1-18	47.000	0.4375	65		0.00	10,084	50.25	0.00	69.17	21683.9	18.49	114.86	41.43	47.00	56.93	12091.3	14.94	94.71	0.187500
2-18	39.330	0.3750	65	Slip	76.00	6,262	43.37	40.67	51.18	11955.9	18.63	115.67	36.00	80.00	42.40	6799.3	15.16	96.00	0.187500
3-18	37.580	0.3125	65	Slip	67.00	4,292	37.67	74.41	37.06	6534.5	19.49	120.55	30.62	111.99	30.07	3490.7	15.52	98.00	0.187500
4-18	51.923	0.2188	65	Slip	59.00	3,300	31.98	107.08	22.06	2812.0	24.02	146.22	22.25	159.00	15.30	938.0	16.17	101.71	0.187500
				Shaft Weight		23,937													

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
156.00	Raycap DC6-48-60-18-8F	6	0.75	0.000	31.80	1.470	1.00	93.85	2.172	1.00
156.00	Ericsson RRUS 8843 B2, B66A	3	0.75	0.000	72.00	1.639	0.50	133.64	2.489	0.50
156.00	Ericsson RRUS 4415 B25	3	0.75	0.000	46.00	1.842	0.50	95.31	2.744	0.50
156.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	135.82	2.907	0.50
156.00	Ericsson RRUS-11	6	0.75	0.000	55.00	3.792	0.61	145.28	5.083	0.61
156.00	CCI HPA65R-BU8A	3	0.75	0.000	54.00	11.230	0.71	287.62	14.472	0.71
156.00	Andrew SBNH-1D6565C (60.8 lbs)	3	0.75	0.000	60.80	11.440	0.70	291.55	14.694	0.70
156.00	Andrew SBNH-1D6565C (60.8 lbs)	3	0.75	0.000	60.80	11.440	0.70	291.55	14.694	0.70
156.00	Kathrein Scala 80010966	6	0.75	0.000	114.60	17.363	0.63	437.52	21.073	0.63
156.00	Low Profile Platform w/ New Site	1	1.00	0.000	2,000.00	27.200	1.00	3,401.21	46.256	1.00
135.00	Commscope RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	78.22	2.758	1.00
135.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	137.00	2.872	0.50
135.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	121.62	2.872	0.50
135.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	318.88	15.270	0.64
135.00	Generic Flat Platform with	1	1.00	0.000	2,500.00	42.400	1.00	4,258.17	63.156	1.00
Totals	Num Loadings:15	48			7,434.30			17,236.44		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	156.00	3	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	156.00	8	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	156.00	18	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	135.00	1	1.60" (40.6mm) Hybrid	1.60	2.34	N	0	0.00	0.00	0	0.00	N	DISH WIRELESS

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.4375	50.250	69.168	21,683.9	18.49	114.86	79.7	849.9	0.0	0.0
5.00		0.4375	49.313	67.867	20,482.5	18.11	112.71	80.1	818.1	0.0	1,165.7
10.00		0.4375	48.375	66.565	19,326.3	17.73	110.57	80.5	786.9	0.0	1,143.6
15.00		0.4375	47.438	65.263	18,214.4	17.36	108.43	81.0	756.3	0.0	1,121.5
20.00		0.4375	46.500	63.961	17,146.1	16.98	106.29	81.4	726.3	0.0	1,099.3
25.00		0.4375	45.563	62.659	16,120.3	16.60	104.14	81.9	696.9	0.0	1,077.2
30.00		0.4375	44.625	61.358	15,136.3	16.22	102.00	82.3	668.1	0.0	1,055.0
35.00		0.4375	43.688	60.056	14,193.2	15.84	99.86	82.6	639.9	0.0	1,032.9
40.00		0.4375	42.750	58.754	13,290.1	15.47	97.71	82.6	612.3	0.0	1,010.7
40.67	Bot - Section 2	0.4375	42.625	58.581	13,172.7	15.42	97.43	82.6	608.7	0.0	133.1
45.00		0.4375	41.813	57.452	12,426.1	15.09	95.57	82.6	585.3	0.0	1,603.0
47.00	Top - Section 1	0.3750	42.188	49.766	10,992.4	18.07	112.50	80.1	513.2	0.0	729.4
50.00		0.3750	41.625	49.096	10,554.7	17.81	111.00	80.5	499.4	0.0	504.6
55.00		0.3750	40.688	47.980	9,851.3	17.37	108.50	81.0	476.9	0.0	825.8
60.00		0.3750	39.750	46.864	9,179.9	16.93	106.00	81.5	454.9	0.0	806.8
65.00		0.3750	38.813	45.749	8,539.7	16.49	103.50	82.0	433.4	0.0	787.9
70.00		0.3750	37.875	44.633	7,929.9	16.05	101.00	82.5	412.4	0.0	768.9
74.41	Bot - Section 3	0.3750	37.048	43.648	7,416.5	15.66	98.79	82.6	394.3	0.0	662.9
75.00		0.3750	36.938	43.517	7,349.9	15.60	98.50	82.6	391.9	0.0	160.9
80.00	Top - Section 2	0.3125	36.626	36.017	6,000.5	18.90	117.20	79.2	322.7	0.0	1,350.7
80.00		0.3125	36.625	36.016	6,000.2	18.90	117.20	79.2	322.7	0.0	0.4
85.00		0.3125	35.688	35.086	5,547.3	18.37	114.20	79.8	306.2	0.0	604.9
90.00		0.3125	34.750	34.156	5,117.9	17.84	111.20	80.4	290.1	0.0	589.0
95.00		0.3125	33.813	33.227	4,711.2	17.32	108.20	81.0	274.4	0.0	573.2
100.0		0.3125	32.875	32.297	4,326.6	16.79	105.20	81.7	259.2	0.0	557.4
105.0		0.3125	31.938	31.367	3,963.6	16.26	102.20	82.3	244.4	0.0	541.6
107.0	Bot - Section 4	0.3125	31.548	30.981	3,819.0	16.04	100.95	82.5	238.4	0.0	220.3
110.0		0.3125	31.000	30.437	3,621.4	15.73	99.20	82.6	230.1	0.0	523.0
111.9	Top - Section 3	0.2188	31.064	21.415	2,574.2	23.28	142.01	74.0	163.2	0.0	351.3
115.0		0.2188	30.500	21.024	2,435.6	22.82	139.43	74.6	157.3	0.0	217.1
120.0		0.2188	29.562	20.373	2,216.4	22.07	135.14	75.4	147.7	0.0	352.2
125.0		0.2188	28.625	19.722	2,010.6	21.31	130.86	76.3	138.3	0.0	341.1
130.0		0.2188	27.687	19.071	1,818.1	20.55	126.57	77.2	129.3	0.0	330.0
135.0		0.2188	26.750	18.420	1,638.2	19.80	122.29	78.1	120.6	0.0	318.9
140.0		0.2188	25.812	17.769	1,470.6	19.04	118.00	79.0	112.2	0.0	307.9
145.0		0.2188	24.875	17.119	1,314.8	18.29	113.71	79.9	104.1	0.0	296.8
150.0		0.2188	23.937	16.468	1,170.5	17.53	109.43	80.8	96.3	0.0	285.7
155.0		0.2188	23.000	15.817	1,037.1	16.78	105.14	81.7	88.8	0.0	274.6
156.0		0.2188	22.812	15.687	1,011.7	16.63	104.29	81.8	87.4	0.0	53.6
159.0		0.2188	22.250	15.296	938.0	16.17	101.71	82.4	83.0	0.0	158.1
											23,936.9

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Load Case: 1.2D + 1.0W — 119 mph with No Ice — 25 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
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		240.8	0.0					0.0	0.0	240.8	0.0	0.0	0.0
5.00		477.0	1,398.9					0.0	132.0	477.0	1,530.9	0.0	0.0
10.00		467.9	1,372.3					0.0	132.0	467.9	1,504.3	0.0	0.0
15.00		466.0	1,345.7					0.0	132.0	466.0	1,477.7	0.0	0.0
20.00		476.5	1,319.2					0.0	132.0	476.5	1,451.2	0.0	0.0
25.00		489.6	1,292.6					0.0	132.0	489.6	1,424.6	0.0	0.0
30.00		498.4	1,266.0					0.0	132.0	498.4	1,398.0	0.0	0.0
35.00		504.1	1,239.4					0.0	132.0	504.1	1,371.4	0.0	0.0
40.00		287.0	1,212.9					0.0	132.0	287.0	1,344.9	0.0	0.0
40.67	Bot - Section 2	258.2	159.7					0.0	17.6	258.2	177.3	0.0	0.0
45.00		328.0	1,923.6					0.0	114.4	328.0	2,038.0	0.0	0.0
47.00	Top - Section 1	259.1	875.3					0.0	52.8	259.1	928.1	0.0	0.0
50.00		414.3	605.5					0.0	79.2	414.3	684.7	0.0	0.0
55.00		516.6	991.0					0.0	132.0	516.6	1,123.0	0.0	0.0
60.00		514.0	968.2					0.0	132.0	514.0	1,100.2	0.0	0.0
65.00		510.4	945.4					0.0	132.0	510.4	1,077.4	0.0	0.0
70.00		476.5	922.6					0.0	132.0	476.5	1,054.6	0.0	0.0
74.41	Bot - Section 3	252.2	795.5					0.0	116.5	252.2	912.0	0.0	0.0
75.00		282.9	193.0					0.0	15.5	282.9	208.5	0.0	0.0
80.00	Top - Section 2	253.2	1,620.8					0.0	131.9	253.2	1,752.7	0.0	0.0
80.00		250.2	0.5					0.0	0.1	250.2	0.6	0.0	0.0
85.00		496.6	725.8					0.0	132.0	496.6	857.8	0.0	0.0
90.00		489.4	706.9					0.0	132.0	489.4	838.9	0.0	0.0
95.00		481.7	687.9					0.0	132.0	481.7	819.9	0.0	0.0
100.00		473.4	668.9					0.0	132.0	473.4	800.9	0.0	0.0
105.00		330.7	649.9					0.0	132.0	330.7	781.9	0.0	0.0
107.08	Bot - Section 4	232.0	264.3					0.0	54.8	232.0	319.2	0.0	0.0
110.00		227.5	627.6					0.0	77.2	227.5	704.8	0.0	0.0
111.99	Top - Section 3	228.6	421.6					0.0	52.6	228.6	474.2	0.0	0.0
115.00		360.6	260.5					0.0	79.4	360.6	339.9	0.0	0.0
120.00		442.4	422.6					0.0	132.0	442.4	554.6	0.0	0.0
125.00		432.1	409.3					0.0	132.0	432.1	541.3	0.0	0.0
130.00		421.4	396.0					0.0	132.0	421.4	528.0	0.0	0.0
135.00	Appurtenance(s)	410.4	382.7	3,288.3	0.0	0.0	3,758.5	0.0	132.0	3,698.6	4,273.2	0.0	0.0
140.00		399.0	369.4					0.0	118.0	399.0	487.4	0.0	0.0
145.00		387.4	356.1					0.0	118.0	387.4	474.1	0.0	0.0
150.00		375.4	342.9					0.0	118.0	375.4	460.8	0.0	0.0
155.00		220.9	329.6					0.0	118.0	220.9	447.5	0.0	0.0
156.00	Appurtenance(s)	128.7	64.3	7,863.2	0.0	0.0	5,162.6	0.0	23.6	7,991.9	5,250.6	0.0	0.0
159.00		92.4	189.8					0.0	0.0	92.4	189.8	0.0	0.0
								Totals:		26,005.1	41,704.9	0.00	0.00

Site Number: 281416 Code: ANSI/TIA-222-H © 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: WILLINGTON CT, CT Engineering Number:13685406_C3_03 6/25/2021 5:55:30 AM

Customer: DISH WIRELESS L.L.C.

Load Case: 1.2D + 1.0W 119 mph with No Ice 25 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	-41.66	-25.83	0.00	-2,935.66	0.00	2,935.66	4,958.59	1,213.91	5,461.75	5,077.52	0.00	0.00	0.587
5.00	-40.05	-25.49	0.00	-2,806.50	0.00	2,806.50	4,892.41	1,191.06	5,258.12	4,914.65	0.10	-0.19	0.580
10.00	-38.46	-25.14	0.00	-2,679.07	0.00	2,679.07	4,825.19	1,168.21	5,058.37	4,753.32	0.40	-0.38	0.572
15.00	-36.90	-24.79	0.00	-2,553.37	0.00	2,553.37	4,756.92	1,145.37	4,862.48	4,593.60	0.90	-0.57	0.564
20.00	-35.38	-24.41	0.00	-2,429.44	0.00	2,429.44	4,687.62	1,122.52	4,670.46	4,435.55	1.60	-0.77	0.556
25.00	-33.88	-24.02	0.00	-2,307.37	0.00	2,307.37	4,617.28	1,099.67	4,482.31	4,279.23	2.51	-0.96	0.547
30.00	-32.41	-23.61	0.00	-2,187.28	0.00	2,187.28	4,545.89	1,076.83	4,298.02	4,124.71	3.62	-1.16	0.538
35.00	-30.96	-23.18	0.00	-2,069.24	0.00	2,069.24	4,461.85	1,053.98	4,117.61	3,961.72	4.95	-1.36	0.530
40.00	-29.58	-22.92	0.00	-1,953.33	0.00	1,953.33	4,365.13	1,031.13	3,941.06	3,790.99	6.48	-1.56	0.523
40.67	-29.37	-22.71	0.00	-1,938.05	0.00	1,938.05	4,352.24	1,028.09	3,917.81	3,768.51	6.70	-1.59	0.522
45.00	-27.29	-22.38	0.00	-1,839.64	0.00	1,839.64	4,268.42	1,008.29	3,768.38	3,624.02	8.23	-1.77	0.515
47.00	-26.33	-22.14	0.00	-1,794.87	0.00	1,794.87	3,589.52	873.39	3,298.55	3,084.74	8.98	-1.85	0.590
50.00	-25.60	-21.79	0.00	-1,728.44	0.00	1,728.44	3,554.97	861.64	3,210.41	3,013.58	10.19	-1.97	0.581
55.00	-24.41	-21.32	0.00	-1,619.52	0.00	1,619.52	3,496.57	842.05	3,066.16	2,896.10	12.37	-2.20	0.567
60.00	-23.25	-20.86	0.00	-1,512.89	0.00	1,512.89	3,437.12	822.47	2,925.22	2,780.05	14.80	-2.43	0.552
65.00	-22.11	-20.39	0.00	-1,408.60	0.00	1,408.60	3,376.63	802.89	2,787.61	2,665.48	17.46	-2.65	0.536
70.00	-21.01	-19.94	0.00	-1,306.66	0.00	1,306.66	3,315.10	783.30	2,653.30	2,552.47	20.36	-2.88	0.519
74.41	-20.07	-19.68	0.00	-1,218.66	0.00	1,218.66	3,242.82	766.02	2,537.51	2,441.17	23.11	-3.08	0.506
75.00	-19.84	-19.43	0.00	-1,207.12	0.00	1,207.12	3,233.09	763.72	2,522.32	2,426.47	23.49	-3.11	0.504
80.00	-18.06	-19.11	0.00	-1,110.03	0.00	1,110.03	2,566.23	632.09	2,073.25	1,915.98	26.86	-3.33	0.587
80.00	-18.04	-18.90	0.00	-1,109.97	0.00	1,109.97	2,566.20	632.08	2,073.18	1,915.93	26.87	-3.33	0.587
85.00	-17.13	-18.43	0.00	-1,015.45	0.00	1,015.45	2,519.59	615.76	1,967.53	1,832.15	30.49	-3.58	0.562
90.00	-16.25	-17.96	0.00	-923.29	0.00	923.29	2,471.95	599.45	1,864.64	1,749.45	34.37	-3.83	0.535
95.00	-15.39	-17.49	0.00	-833.49	0.00	833.49	2,423.26	583.13	1,764.51	1,667.88	38.51	-4.07	0.507
100.00	-14.56	-17.02	0.00	-746.06	0.00	746.06	2,373.53	566.81	1,667.14	1,587.51	42.90	-4.31	0.477
105.00	-13.75	-16.67	0.00	-660.98	0.00	660.98	2,322.75	550.49	1,572.54	1,508.40	47.54	-4.54	0.445
107.08	-13.42	-16.44	0.00	-626.37	0.00	626.37	2,301.36	543.71	1,534.06	1,475.93	49.54	-4.64	0.431
110.00	-12.71	-16.17	0.00	-578.33	0.00	578.33	2,261.32	534.17	1,480.71	1,424.55	52.42	-4.77	0.413
111.99	-12.22	-15.93	0.00	-546.08	0.00	546.08	1,426.72	375.84	1,047.06	906.16	54.43	-4.86	0.613
115.00	-11.86	-15.58	0.00	-498.19	0.00	498.19	1,410.75	368.97	1,009.14	879.53	57.53	-4.99	0.577
120.00	-11.28	-15.14	0.00	-420.27	0.00	420.27	1,383.37	357.55	947.63	835.57	62.89	-5.26	0.513
125.00	-10.72	-14.71	0.00	-344.55	0.00	344.55	1,354.95	346.12	888.05	792.06	68.52	-5.50	0.445
130.00	-10.19	-14.27	0.00	-271.02	0.00	271.02	1,325.49	334.70	830.41	749.07	74.39	-5.72	0.371
135.00	-6.28	-10.18	0.00	-199.66	0.00	199.66	1,294.99	323.28	774.70	706.66	80.48	-5.90	0.288
140.00	-5.82	-9.74	0.00	-148.77	0.00	148.77	1,263.44	311.85	720.92	664.88	86.73	-6.05	0.229
145.00	-5.37	-9.32	0.00	-100.05	0.00	100.05	1,230.86	300.43	669.08	623.81	93.13	-6.17	0.166
150.00	-4.94	-8.90	0.00	-53.47	0.00	53.47	1,197.23	289.01	619.18	583.49	99.63	-6.26	0.097
155.00	-4.52	-8.63	0.00	-8.97	0.00	8.97	1,162.56	277.58	571.20	544.00	106.20	-6.30	0.021
156.00	-0.18	-0.11	0.00	-0.34	0.00	0.34	1,155.50	275.30	561.84	536.20	107.52	-6.30	0.001
159.00	0.00	-0.09	0.00	0.00	0.00	0.00	1,134.07	268.45	534.22	513.03	111.47	-6.30	0.000

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Load Case: 0.9D + 1.0W — 119 mph with No Ice (Reduced DL) — 25 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		240.8	0.0					0.0	0.0	240.8	0.0	0.0	0.0
5.00		477.0	1,049.2					0.0	99.0	477.0	1,148.2	0.0	0.0
10.00		467.9	1,029.2					0.0	99.0	467.9	1,128.2	0.0	0.0
15.00		466.0	1,009.3					0.0	99.0	466.0	1,108.3	0.0	0.0
20.00		476.5	989.4					0.0	99.0	476.5	1,088.4	0.0	0.0
25.00		489.6	969.4					0.0	99.0	489.6	1,068.4	0.0	0.0
30.00		498.4	949.5					0.0	99.0	498.4	1,048.5	0.0	0.0
35.00		504.1	929.6					0.0	99.0	504.1	1,028.6	0.0	0.0
40.00		287.0	909.6					0.0	99.0	287.0	1,008.6	0.0	0.0
40.67	Bot - Section 2	258.2	119.8					0.0	13.2	258.2	133.0	0.0	0.0
45.00		328.0	1,442.7					0.0	85.8	328.0	1,528.5	0.0	0.0
47.00	Top - Section 1	259.1	656.5					0.0	39.6	259.1	696.1	0.0	0.0
50.00		414.3	454.1					0.0	59.4	414.3	513.5	0.0	0.0
55.00		516.6	743.2					0.0	99.0	516.6	842.2	0.0	0.0
60.00		514.0	726.2					0.0	99.0	514.0	825.2	0.0	0.0
65.00		510.4	709.1					0.0	99.0	510.4	808.1	0.0	0.0
70.00		476.5	692.0					0.0	99.0	476.5	791.0	0.0	0.0
74.41	Bot - Section 3	252.2	596.6					0.0	87.4	252.2	684.0	0.0	0.0
75.00		282.9	144.8					0.0	11.6	282.9	156.4	0.0	0.0
80.00	Top - Section 2	253.2	1,215.6					0.0	98.9	253.2	1,314.6	0.0	0.0
80.00		250.2	0.4					0.0	0.1	250.2	0.4	0.0	0.0
85.00		496.6	544.4					0.0	99.0	496.6	643.4	0.0	0.0
90.00		489.4	530.1					0.0	99.0	489.4	629.1	0.0	0.0
95.00		481.7	515.9					0.0	99.0	481.7	614.9	0.0	0.0
100.00		473.4	501.7					0.0	99.0	473.4	600.7	0.0	0.0
105.00		330.7	487.4					0.0	99.0	330.7	586.4	0.0	0.0
107.08	Bot - Section 4	232.0	198.3					0.0	41.1	232.0	239.4	0.0	0.0
110.00		227.5	470.7					0.0	57.9	227.5	528.6	0.0	0.0
111.99	Top - Section 3	228.6	316.2					0.0	39.5	228.6	355.7	0.0	0.0
115.00		360.6	195.4					0.0	59.5	360.6	254.9	0.0	0.0
120.00		442.4	316.9					0.0	99.0	442.4	415.9	0.0	0.0
125.00		432.1	307.0					0.0	99.0	432.1	406.0	0.0	0.0
130.00		421.4	297.0					0.0	99.0	421.4	396.0	0.0	0.0
135.00	Appurtenance(s)	410.4	287.0	3,288.3	0.0	0.0	2,818.9	0.0	99.0	3,698.6	3,204.9	0.0	0.0
140.00		399.0	277.1					0.0	88.5	399.0	365.5	0.0	0.0
145.00		387.4	267.1					0.0	88.5	387.4	355.6	0.0	0.0
150.00		375.4	257.1					0.0	88.5	375.4	345.6	0.0	0.0
155.00		220.9	247.2					0.0	88.5	220.9	335.6	0.0	0.0
156.00	Appurtenance(s)	128.7	48.2	7,863.2	0.0	0.0	3,872.0	0.0	17.7	7,991.9	3,937.9	0.0	0.0
159.00		92.4	142.3					0.0	0.0	92.4	142.3	0.0	0.0
								Totals:		26,005.1	31,278.7	0.00	0.00

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Load Case: 0.9D + 1.0W 119 mph with No Ice (Reduced DL) 25 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	-31.24	-25.82	0.00	-2,899.10	0.00	2,899.10	4,958.59	1,213.91	5,461.75	5,077.52	0.00	0.00	0.578
5.00	-30.01	-25.43	0.00	-2,770.02	0.00	2,770.02	4,892.41	1,191.06	5,258.12	4,914.65	0.10	-0.19	0.570
10.00	-28.80	-25.06	0.00	-2,642.85	0.00	2,642.85	4,825.19	1,168.21	5,058.37	4,753.32	0.40	-0.37	0.562
15.00	-27.61	-24.67	0.00	-2,517.57	0.00	2,517.57	4,756.92	1,145.37	4,862.48	4,593.60	0.89	-0.56	0.554
20.00	-26.45	-24.27	0.00	-2,394.20	0.00	2,394.20	4,687.62	1,122.52	4,670.46	4,435.55	1.58	-0.76	0.546
25.00	-25.30	-23.85	0.00	-2,272.84	0.00	2,272.84	4,617.28	1,099.67	4,482.31	4,279.23	2.48	-0.95	0.537
30.00	-24.19	-23.42	0.00	-2,153.57	0.00	2,153.57	4,545.89	1,076.83	4,298.02	4,124.71	3.58	-1.14	0.528
35.00	-23.09	-22.97	0.00	-2,036.48	0.00	2,036.48	4,461.85	1,053.98	4,117.61	3,961.72	4.88	-1.34	0.520
40.00	-22.04	-22.70	0.00	-1,921.61	0.00	1,921.61	4,365.13	1,031.13	3,941.06	3,790.99	6.39	-1.54	0.512
40.67	-21.88	-22.48	0.00	-1,906.48	0.00	1,906.48	4,352.24	1,028.09	3,917.81	3,768.51	6.61	-1.57	0.511
45.00	-20.31	-22.15	0.00	-1,809.06	0.00	1,809.06	4,268.42	1,008.29	3,768.38	3,624.02	8.11	-1.74	0.504
47.00	-19.58	-21.91	0.00	-1,764.76	0.00	1,764.76	3,589.52	873.39	3,298.55	3,084.74	8.86	-1.82	0.578
50.00	-19.02	-21.53	0.00	-1,699.03	0.00	1,699.03	3,554.97	861.64	3,210.41	3,013.58	10.04	-1.95	0.570
55.00	-18.11	-21.06	0.00	-1,591.36	0.00	1,591.36	3,496.57	842.05	3,066.16	2,896.10	12.20	-2.17	0.555
60.00	-17.23	-20.58	0.00	-1,486.07	0.00	1,486.07	3,437.12	822.47	2,925.22	2,780.05	14.59	-2.39	0.540
65.00	-16.37	-20.10	0.00	-1,383.18	0.00	1,383.18	3,376.63	802.89	2,787.61	2,665.48	17.21	-2.61	0.524
70.00	-15.53	-19.64	0.00	-1,282.69	0.00	1,282.69	3,315.10	783.30	2,653.30	2,552.47	20.06	-2.83	0.508
74.41	-14.82	-19.38	0.00	-1,196.01	0.00	1,196.01	3,242.82	766.02	2,537.51	2,441.17	22.77	-3.03	0.495
75.00	-14.64	-19.12	0.00	-1,184.64	0.00	1,184.64	3,233.09	763.72	2,522.32	2,426.47	23.14	-3.06	0.493
80.00	-13.30	-18.82	0.00	-1,089.09	0.00	1,089.09	2,566.23	632.09	2,073.25	1,915.98	26.46	-3.28	0.574
80.00	-13.28	-18.60	0.00	-1,089.03	0.00	1,089.03	2,566.20	632.08	2,073.18	1,915.93	26.46	-3.28	0.574
85.00	-12.59	-18.12	0.00	-996.01	0.00	996.01	2,519.59	615.76	1,967.53	1,832.15	30.02	-3.52	0.549
90.00	-11.92	-17.64	0.00	-905.40	0.00	905.40	2,471.95	599.45	1,864.64	1,749.45	33.84	-3.77	0.523
95.00	-11.26	-17.17	0.00	-817.18	0.00	817.18	2,423.26	583.13	1,764.51	1,667.88	37.91	-4.01	0.495
100.00	-10.63	-16.70	0.00	-731.33	0.00	731.33	2,373.53	566.81	1,667.14	1,587.51	42.23	-4.24	0.466
105.00	-10.03	-16.35	0.00	-647.85	0.00	647.85	2,322.75	550.49	1,572.54	1,508.40	46.79	-4.47	0.435
107.08	-9.78	-16.12	0.00	-613.90	0.00	613.90	2,301.36	543.71	1,534.06	1,475.93	48.76	-4.56	0.421
110.00	-9.24	-15.87	0.00	-566.77	0.00	566.77	2,261.32	534.17	1,480.71	1,424.55	51.59	-4.69	0.403
111.99	-8.87	-15.63	0.00	-535.15	0.00	535.15	1,426.72	375.84	1,047.06	906.16	53.56	-4.78	0.599
115.00	-8.60	-15.28	0.00	-488.16	0.00	488.16	1,410.75	368.97	1,009.14	879.53	56.61	-4.90	0.563
120.00	-8.16	-14.83	0.00	-411.79	0.00	411.79	1,383.37	357.55	947.63	835.57	61.88	-5.16	0.500
125.00	-7.73	-14.40	0.00	-337.62	0.00	337.62	1,354.95	346.12	888.05	792.06	67.41	-5.40	0.434
130.00	-7.33	-13.97	0.00	-265.63	0.00	265.63	1,325.49	334.70	830.41	749.07	73.18	-5.62	0.362
135.00	-4.48	-9.98	0.00	-195.81	0.00	195.81	1,294.99	323.28	774.70	706.66	79.16	-5.80	0.282
140.00	-4.14	-9.55	0.00	-145.92	0.00	145.92	1,263.44	311.85	720.92	664.88	85.30	-5.95	0.224
145.00	-3.81	-9.14	0.00	-98.15	0.00	98.15	1,230.86	300.43	669.08	623.81	91.58	-6.07	0.161
150.00	-3.50	-8.73	0.00	-52.46	0.00	52.46	1,197.23	289.01	619.18	583.49	97.97	-6.15	0.094
155.00	-3.19	-8.48	0.00	-8.80	0.00	8.80	1,162.56	277.58	571.20	544.00	104.42	-6.18	0.020
156.00	-0.13	-0.11	0.00	-0.32	0.00	0.32	1,155.50	275.30	561.84	536.20	105.72	-6.19	0.001
159.00	0.00	-0.09	0.00	0.00	0.00	0.00	1,134.07	268.45	534.22	513.03	109.60	-6.19	0.000

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.50 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		73.1	0.0					0.0	0.0	73.1	0.0	0.0	0.0
5.00		145.2	1,765.3					0.0	132.0	145.2	1,897.3	0.0	0.0
10.00		143.1	1,774.8					0.0	132.0	143.1	1,906.8	0.0	0.0
15.00		143.0	1,761.8					0.0	132.0	143.0	1,893.8	0.0	0.0
20.00		146.6	1,741.6					0.0	132.0	146.6	1,873.6	0.0	0.0
25.00		151.0	1,717.6					0.0	132.0	151.0	1,849.6	0.0	0.0
30.00		154.1	1,691.3					0.0	132.0	154.1	1,823.3	0.0	0.0
35.00		156.3	1,663.3					0.0	132.0	156.3	1,795.3	0.0	0.0
40.00		89.1	1,634.1					0.0	132.0	89.1	1,766.1	0.0	0.0
40.67	Bot - Section 2	80.2	216.1					0.0	17.6	80.2	233.7	0.0	0.0
45.00		101.9	2,292.2					0.0	114.4	101.9	2,406.6	0.0	0.0
47.00	Top - Section 1	80.7	1,045.2					0.0	52.8	80.7	1,098.0	0.0	0.0
50.00		129.2	858.5					0.0	79.2	129.2	937.7	0.0	0.0
55.00		161.4	1,406.9					0.0	132.0	161.4	1,538.9	0.0	0.0
60.00		160.9	1,378.7					0.0	132.0	160.9	1,510.7	0.0	0.0
65.00		160.2	1,350.1					0.0	132.0	160.2	1,482.1	0.0	0.0
70.00		149.9	1,321.1					0.0	132.0	149.9	1,453.1	0.0	0.0
74.41	Bot - Section 3	79.4	1,142.2					0.0	116.5	79.4	1,258.7	0.0	0.0
75.00		89.2	239.9					0.0	15.5	89.2	255.4	0.0	0.0
80.00	Top - Section 2	79.8	2,012.0					0.0	131.9	79.8	2,143.9	0.0	0.0
80.00		79.1	0.8					0.0	0.1	79.1	0.8	0.0	0.0
85.00		157.2	1,110.2					0.0	132.0	157.2	1,242.2	0.0	0.0
90.00		155.4	1,083.8					0.0	132.0	155.4	1,215.8	0.0	0.0
95.00		153.4	1,057.3					0.0	132.0	153.4	1,189.3	0.0	0.0
100.00		151.2	1,030.5					0.0	132.0	151.2	1,162.5	0.0	0.0
105.00		105.8	1,003.6					0.0	132.0	105.8	1,135.6	0.0	0.0
107.08	Bot - Section 4	74.4	410.0					0.0	54.8	74.4	464.9	0.0	0.0
110.00		73.0	832.5					0.0	77.2	73.0	909.7	0.0	0.0
111.99	Top - Section 3	73.5	560.1					0.0	52.6	73.5	612.7	0.0	0.0
115.00		116.2	466.3					0.0	79.4	116.2	545.7	0.0	0.0
120.00		143.0	756.0					0.0	132.0	143.0	888.0	0.0	0.0
125.00		140.2	734.1					0.0	132.0	140.2	866.1	0.0	0.0
130.00		137.3	712.1					0.0	132.0	137.3	844.1	0.0	0.0
135.00	Appurtenance(s)	134.2	690.0	821.5	0.0	0.0	6,269.4	0.0	132.0	955.7	7,091.4	0.0	0.0
140.00		131.1	667.8					0.0	118.0	131.1	785.7	0.0	0.0
145.00		127.9	645.4					0.0	118.0	127.9	763.4	0.0	0.0
150.00		124.6	622.9					0.0	118.0	124.6	740.9	0.0	0.0
155.00		73.6	600.4					0.0	118.0	73.6	718.3	0.0	0.0
156.00	Appurtenance(s)	45.0	118.2	1,883.0	0.0	0.0	11,048.1	0.0	23.6	1,928.0	11,189.9	0.0	0.0
159.00		32.9	347.9					0.0	0.0	32.9	347.9	0.0	0.0
								Totals:		7,407.83	61,839.5	0.00	0.00

Site Number: 281416 Code: ANSI/TIA-222-H © 2007 - 2021 by ATC IP LLC. All rights reserved.

Site Name: WILLINGTON CT, CT Engineering Number:13685406_C3_03 6/25/2021 5:55:33 AM

Customer: DISH WIRELESS L.L.C.

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.50 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	-61.84	-7.36	0.00	-836.51	0.00	836.51	4,958.59	1,213.91	5,461.75	5,077.52	0.00	0.00	0.177
5.00	-59.93	-7.27	0.00	-799.69	0.00	799.69	4,892.41	1,191.06	5,258.12	4,914.65	0.03	-0.05	0.175
10.00	-58.02	-7.18	0.00	-763.32	0.00	763.32	4,825.19	1,168.21	5,058.37	4,753.32	0.11	-0.11	0.173
15.00	-56.12	-7.09	0.00	-727.40	0.00	727.40	4,756.92	1,145.37	4,862.48	4,593.60	0.26	-0.16	0.170
20.00	-54.24	-6.99	0.00	-691.95	0.00	691.95	4,687.62	1,122.52	4,670.46	4,435.55	0.46	-0.22	0.168
25.00	-52.38	-6.88	0.00	-657.00	0.00	657.00	4,617.28	1,099.67	4,482.31	4,279.23	0.72	-0.27	0.165
30.00	-50.55	-6.77	0.00	-622.59	0.00	622.59	4,545.89	1,076.83	4,298.02	4,124.71	1.03	-0.33	0.162
35.00	-48.75	-6.65	0.00	-588.75	0.00	588.75	4,461.85	1,053.98	4,117.61	3,961.72	1.41	-0.39	0.160
40.00	-46.98	-6.57	0.00	-555.50	0.00	555.50	4,365.13	1,031.13	3,941.06	3,790.99	1.85	-0.44	0.157
40.67	-46.75	-6.52	0.00	-551.11	0.00	551.11	4,352.24	1,028.09	3,917.81	3,768.51	1.91	-0.45	0.157
45.00	-44.34	-6.42	0.00	-522.88	0.00	522.88	4,268.42	1,008.29	3,768.38	3,624.02	2.34	-0.50	0.155
47.00	-43.24	-6.35	0.00	-510.03	0.00	510.03	3,589.52	873.39	3,298.55	3,084.74	2.56	-0.53	0.177
50.00	-42.29	-6.25	0.00	-490.97	0.00	490.97	3,554.97	861.64	3,210.41	3,013.58	2.90	-0.56	0.175
55.00	-40.75	-6.12	0.00	-459.70	0.00	459.70	3,496.57	842.05	3,066.16	2,896.10	3.52	-0.63	0.170
60.00	-39.24	-5.99	0.00	-429.09	0.00	429.09	3,437.12	822.47	2,925.22	2,780.05	4.21	-0.69	0.166
65.00	-37.75	-5.85	0.00	-399.16	0.00	399.16	3,376.63	802.89	2,787.61	2,665.48	4.97	-0.75	0.161
70.00	-36.29	-5.72	0.00	-369.91	0.00	369.91	3,315.10	783.30	2,653.30	2,552.47	5.80	-0.82	0.156
74.41	-35.03	-5.64	0.00	-344.67	0.00	344.67	3,242.82	766.02	2,537.51	2,441.17	6.58	-0.88	0.152
75.00	-34.77	-5.57	0.00	-341.36	0.00	341.36	3,233.09	763.72	2,522.32	2,426.47	6.69	-0.88	0.151
80.00	-32.63	-5.47	0.00	-313.53	0.00	313.53	2,566.23	632.09	2,073.25	1,915.98	7.65	-0.95	0.176
80.00	-32.63	-5.41	0.00	-313.51	0.00	313.51	2,566.20	632.08	2,073.18	1,915.93	7.65	-0.95	0.176
85.00	-31.38	-5.27	0.00	-286.44	0.00	286.44	2,519.59	615.76	1,967.53	1,832.15	8.68	-1.02	0.169
90.00	-30.16	-5.13	0.00	-260.07	0.00	260.07	2,471.95	599.45	1,864.64	1,749.45	9.78	-1.09	0.161
95.00	-28.97	-4.99	0.00	-234.40	0.00	234.40	2,423.26	583.13	1,764.51	1,667.88	10.95	-1.16	0.153
100.00	-27.80	-4.85	0.00	-209.45	0.00	209.45	2,373.53	566.81	1,667.14	1,587.51	12.20	-1.22	0.144
105.00	-26.67	-4.74	0.00	-185.21	0.00	185.21	2,322.75	550.49	1,572.54	1,508.40	13.52	-1.29	0.134
107.08	-26.20	-4.67	0.00	-175.37	0.00	175.37	2,301.36	543.71	1,534.06	1,475.93	14.08	-1.31	0.130
110.00	-25.29	-4.59	0.00	-161.72	0.00	161.72	2,261.32	534.17	1,480.71	1,424.55	14.90	-1.35	0.125
111.99	-24.68	-4.51	0.00	-152.58	0.00	152.58	1,426.72	375.84	1,047.06	906.16	15.47	-1.38	0.186
115.00	-24.13	-4.41	0.00	-139.01	0.00	139.01	1,410.75	368.97	1,009.14	879.53	16.35	-1.41	0.175
120.00	-23.24	-4.27	0.00	-116.98	0.00	116.98	1,383.37	357.55	947.63	835.57	17.87	-1.49	0.157
125.00	-22.38	-4.13	0.00	-95.63	0.00	95.63	1,354.95	346.12	888.05	792.06	19.46	-1.55	0.137
130.00	-21.53	-3.99	0.00	-74.97	0.00	74.97	1,325.49	334.70	830.41	749.07	21.12	-1.62	0.116
135.00	-14.47	-2.85	0.00	-55.01	0.00	55.01	1,294.99	323.28	774.70	706.66	22.84	-1.67	0.089
140.00	-13.69	-2.70	0.00	-40.79	0.00	40.79	1,263.44	311.85	720.92	664.88	24.61	-1.71	0.072
145.00	-12.92	-2.56	0.00	-27.29	0.00	27.29	1,230.86	300.43	669.08	623.81	26.42	-1.74	0.054
150.00	-12.19	-2.41	0.00	-14.51	0.00	14.51	1,197.23	289.01	619.18	583.49	28.25	-1.76	0.035
155.00	-11.47	-2.32	0.00	-2.45	0.00	2.45	1,162.56	277.58	571.20	544.00	30.11	-1.77	0.014
156.00	-0.35	-0.04	0.00	-0.13	0.00	0.13	1,155.50	275.30	561.84	536.20	30.48	-1.77	0.001
159.00	0.00	-0.03	0.00	0.00	0.00	0.00	1,134.07	268.45	534.22	513.03	31.59	-1.77	0.000

© 2007 - 2021 by ATC IP LLC. All rights reserved.

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		54.8	0.0					0.0	0.0	54.8	0.0	0.0	0.0
5.00		108.5	1,165.7					0.0	110.0	108.5	1,275.7	0.0	0.0
10.00		106.4	1,143.6					0.0	110.0	106.4	1,253.6	0.0	0.0
15.00		106.0	1,121.5					0.0	110.0	106.0	1,231.5	0.0	0.0
20.00		108.4	1,099.3					0.0	110.0	108.4	1,209.3	0.0	0.0
25.00		111.4	1,077.2					0.0	110.0	111.4	1,187.2	0.0	0.0
30.00		113.4	1,055.0					0.0	110.0	113.4	1,165.0	0.0	0.0
35.00		114.7	1,032.9					0.0	110.0	114.7	1,142.9	0.0	0.0
40.00		65.3	1,010.7					0.0	110.0	65.3	1,120.7	0.0	0.0
40.67	Bot - Section 2	58.7	133.1					0.0	14.7	58.7	147.8	0.0	0.0
45.00		74.6	1,603.0					0.0	95.3	74.6	1,698.3	0.0	0.0
47.00	Top - Section 1	58.9	729.4					0.0	44.0	58.9	773.4	0.0	0.0
50.00		94.2	504.6					0.0	66.0	94.2	570.6	0.0	0.0
55.00		117.5	825.8					0.0	110.0	117.5	935.8	0.0	0.0
60.00		116.9	806.8					0.0	110.0	116.9	916.8	0.0	0.0
65.00		116.1	787.9					0.0	110.0	116.1	897.9	0.0	0.0
70.00		108.4	768.9					0.0	110.0	108.4	878.9	0.0	0.0
74.41	Bot - Section 3	57.4	662.9					0.0	97.1	57.4	760.0	0.0	0.0
75.00		64.3	160.9					0.0	12.9	64.3	173.8	0.0	0.0
80.00	Top - Section 2	57.6	1,350.7					0.0	109.9	57.6	1,460.6	0.0	0.0
80.00		56.9	0.4					0.0	0.1	56.9	0.5	0.0	0.0
85.00		113.0	604.9					0.0	110.0	113.0	714.9	0.0	0.0
90.00		111.3	589.0					0.0	110.0	111.3	699.0	0.0	0.0
95.00		109.6	573.2					0.0	110.0	109.6	683.2	0.0	0.0
100.00		107.7	557.4					0.0	110.0	107.7	667.4	0.0	0.0
105.00		75.2	541.6					0.0	110.0	75.2	651.6	0.0	0.0
107.08	Bot - Section 4	52.8	220.3					0.0	45.7	52.8	266.0	0.0	0.0
110.00		51.8	523.0					0.0	64.3	51.8	587.3	0.0	0.0
111.99	Top - Section 3	52.0	351.3					0.0	43.9	52.0	395.2	0.0	0.0
115.00		82.0	217.1					0.0	66.1	82.0	283.2	0.0	0.0
120.00		100.6	352.2					0.0	110.0	100.6	462.2	0.0	0.0
125.00		98.3	341.1					0.0	110.0	98.3	451.1	0.0	0.0
130.00		95.8	330.0					0.0	110.0	95.8	440.0	0.0	0.0
135.00	Appurtenance(s)	93.3	318.9	747.9	0.0	0.0	3,132.1	0.0	110.0	841.3	3,561.0	0.0	0.0
140.00		90.8	307.9					0.0	98.3	90.8	406.2	0.0	0.0
145.00		88.1	296.8					0.0	98.3	88.1	395.1	0.0	0.0
150.00		85.4	285.7					0.0	98.3	85.4	384.0	0.0	0.0
155.00		50.2	274.6					0.0	98.3	50.2	372.9	0.0	0.0
156.00	Appurtenance(s)	29.3	53.6	1,788.6	0.0	0.0	4,302.2	0.0	19.7	1,817.8	4,375.5	0.0	0.0
159.00		21.0	158.1					0.0	0.0	21.0	158.1	0.0	0.0
								Totals:		5,915.12	34,754.1	0.00	0.00

© 2007 - 2021 by ATC IP LLC. All rights reserved.

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	-34.75	-5.87	0.00	-663.20	0.00	663.20	4,958.59	1,213.91	5,461.75	5,077.52	0.00	0.00	0.138
5.00	-33.47	-5.79	0.00	-633.84	0.00	633.84	4,892.41	1,191.06	5,258.12	4,914.65	0.02	-0.04	0.136
10.00	-32.21	-5.71	0.00	-604.89	0.00	604.89	4,825.19	1,168.21	5,058.37	4,753.32	0.09	-0.09	0.134
15.00	-30.98	-5.62	0.00	-576.37	0.00	576.37	4,756.92	1,145.37	4,862.48	4,593.60	0.20	-0.13	0.132
20.00	-29.77	-5.53	0.00	-548.26	0.00	548.26	4,687.62	1,122.52	4,670.46	4,435.55	0.36	-0.17	0.130
25.00	-28.57	-5.44	0.00	-520.60	0.00	520.60	4,617.28	1,099.67	4,482.31	4,279.23	0.57	-0.22	0.128
30.00	-27.41	-5.34	0.00	-493.41	0.00	493.41	4,545.89	1,076.83	4,298.02	4,124.71	0.82	-0.26	0.126
35.00	-26.26	-5.24	0.00	-466.70	0.00	466.70	4,461.85	1,053.98	4,117.61	3,961.72	1.12	-0.31	0.124
40.00	-25.14	-5.18	0.00	-440.48	0.00	440.48	4,365.13	1,031.13	3,941.06	3,790.99	1.46	-0.35	0.122
40.67	-24.99	-5.13	0.00	-437.03	0.00	437.03	4,352.24	1,028.09	3,917.81	3,768.51	1.51	-0.36	0.122
45.00	-23.29	-5.06	0.00	-414.79	0.00	414.79	4,268.42	1,008.29	3,768.38	3,624.02	1.86	-0.40	0.120
47.00	-22.51	-5.00	0.00	-404.67	0.00	404.67	3,589.52	873.39	3,298.55	3,084.74	2.03	-0.42	0.137
50.00	-21.94	-4.92	0.00	-389.66	0.00	389.66	3,554.97	861.64	3,210.41	3,013.58	2.30	-0.45	0.136
55.00	-21.00	-4.81	0.00	-365.06	0.00	365.06	3,496.57	842.05	3,066.16	2,896.10	2.79	-0.50	0.132
60.00	-20.08	-4.71	0.00	-341.00	0.00	341.00	3,437.12	822.47	2,925.22	2,780.05	3.34	-0.55	0.129
65.00	-19.18	-4.60	0.00	-317.47	0.00	317.47	3,376.63	802.89	2,787.61	2,665.48	3.94	-0.60	0.125
70.00	-18.30	-4.50	0.00	-294.47	0.00	294.47	3,315.10	783.30	2,653.30	2,552.47	4.60	-0.65	0.121
74.41	-17.54	-4.44	0.00	-274.64	0.00	274.64	3,242.82	766.02	2,537.51	2,441.17	5.22	-0.69	0.118
75.00	-17.36	-4.38	0.00	-272.03	0.00	272.03	3,233.09	763.72	2,522.32	2,426.47	5.30	-0.70	0.118
80.00	-15.90	-4.31	0.00	-250.15	0.00	250.15	2,566.23	632.09	2,073.25	1,915.98	6.06	-0.75	0.137
80.00	-15.90	-4.26	0.00	-250.14	0.00	250.14	2,566.20	632.08	2,073.18	1,915.93	6.06	-0.75	0.137
85.00	-15.18	-4.15	0.00	-228.83	0.00	228.83	2,519.59	615.76	1,967.53	1,832.15	6.88	-0.81	0.131
90.00	-14.48	-4.05	0.00	-208.06	0.00	208.06	2,471.95	599.45	1,864.64	1,749.45	7.76	-0.86	0.125
95.00	-13.79	-3.94	0.00	-187.83	0.00	187.83	2,423.26	583.13	1,764.51	1,667.88	8.69	-0.92	0.118
100.00	-13.12	-3.83	0.00	-168.14	0.00	168.14	2,373.53	566.81	1,667.14	1,587.51	9.68	-0.97	0.111
105.00	-12.47	-3.75	0.00	-148.98	0.00	148.98	2,322.75	550.49	1,572.54	1,508.40	10.73	-1.02	0.104
107.08	-12.21	-3.70	0.00	-141.18	0.00	141.18	2,301.36	543.71	1,534.06	1,475.93	11.18	-1.05	0.101
110.00	-11.62	-3.64	0.00	-130.36	0.00	130.36	2,261.32	534.17	1,480.71	1,424.55	11.83	-1.08	0.097
111.99	-11.22	-3.59	0.00	-123.10	0.00	123.10	1,426.72	375.84	1,047.06	906.16	12.28	-1.10	0.144
115.00	-10.94	-3.51	0.00	-112.31	0.00	112.31	1,410.75	368.97	1,009.14	879.53	12.98	-1.12	0.136
120.00	-10.47	-3.41	0.00	-94.76	0.00	94.76	1,383.37	357.55	947.63	835.57	14.19	-1.19	0.121
125.00	-10.02	-3.31	0.00	-77.70	0.00	77.70	1,354.95	346.12	888.05	792.06	15.47	-1.24	0.106
130.00	-9.58	-3.21	0.00	-61.14	0.00	61.14	1,325.49	334.70	830.41	749.07	16.79	-1.29	0.089
135.00	-6.04	-2.30	0.00	-45.06	0.00	45.06	1,294.99	323.28	774.70	706.66	18.17	-1.33	0.068
140.00	-5.63	-2.20	0.00	-33.58	0.00	33.58	1,263.44	311.85	720.92	664.88	19.58	-1.37	0.055
145.00	-5.24	-2.10	0.00	-22.59	0.00	22.59	1,230.86	300.43	669.08	623.81	21.02	-1.39	0.041
150.00	-4.86	-2.01	0.00	-12.07	0.00	12.07	1,197.23	289.01	619.18	583.49	22.49	-1.41	0.025
155.00	-4.49	-1.95	0.00	-2.03	0.00	2.03	1,162.56	277.58	571.20	544.00	23.98	-1.42	0.008
156.00	-0.16	-0.02	0.00	-0.07	0.00	0.07	1,155.50	275.30	561.84	536.20	24.27	-1.42	0.000
159.00	0.00	-0.02	0.00	0.00	0.00	0.00	1,134.07	268.45	534.22	513.03	25.17	-1.42	0.000

© 2007 - 2021 by ATC IP LLC. All rights reserved.

Equivalent Lateral Forces Method Analysis

Spectral Response Acceleration for Short Period (S_s):	0.18
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}):	0.19
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):	2.53
Redundancy Factor (p):	1.00
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	34.75 k
Seismic Base Shear (E):	1.04 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)
39	157.50	158	3,923	0.013	13	196
38	155.50	73	1,771	0.006	6	91
37	152.50	373	8,673	0.028	29	462
36	147.50	384	8,355	0.027	28	476
35	142.50	395	8,023	0.026	27	489
34	137.50	406	7,679	0.024	26	503
33	132.50	429	7,531	0.024	25	531
32	127.50	440	7,153	0.023	24	545
31	122.50	451	6,769	0.022	22	559
30	117.50	462	6,381	0.020	21	572
29	113.50	283	3,649	0.012	12	351
28	111.00	395	4,869	0.016	16	489
27	108.54	587	6,919	0.022	23	727
26	106.04	266	2,991	0.010	10	329
25	102.50	652	6,846	0.022	23	807
24	97.50	667	6,345	0.020	21	827
23	92.50	683	5,846	0.019	19	846
22	87.50	699	5,352	0.017	18	866
21	82.50	715	4,866	0.016	16	885
20	80.00	0	3	0.000	0	1
19	77.50	1,461	8,772	0.028	29	1,809
18	74.71	174	970	0.003	3	215
17	72.21	760	3,962	0.013	13	941
16	67.50	879	4,004	0.013	13	1,089
15	62.50	898	3,507	0.011	12	1,112

© 2007 - 2021 by ATC IP LLC. All rights reserved.

14	57.50	917	3,031	0.010	10	1,136
13	52.50	936	2,579	0.008	9	1,159
12	48.50	571	1,342	0.004	4	707
11	46.00	773	1,637	0.005	5	958
10	42.83	1,698	3,116	0.010	10	2,104
9	40.33	148	240	0.001	1	183
8	37.50	1,121	1,576	0.005	5	1,388
7	32.50	1,143	1,207	0.004	4	1,416
6	27.50	1,165	881	0.003	3	1,443
5	22.50	1,187	601	0.002	2	1,470
4	17.50	1,209	370	0.001	1	1,498
3	12.50	1,231	192	0.001	1	1,525
2	7.50	1,254	71	0.000	0	1,553
1	2.50	1,276	8	0.000	0	1,580
Raycap DC6-48-60-18-	156.00	191	4,643	0.015	15	236
Ericsson RRUS 8843 B	156.00	216	5,257	0.017	17	268
Ericsson RRUS 4415 B	156.00	138	3,358	0.011	11	171
Ericsson RRUS 4449 B	156.00	213	5,184	0.017	17	264
Ericsson RRUS-11	156.00	330	8,031	0.026	27	409
CCI HPA65R-BU8A	156.00	162	3,942	0.013	13	201
Andrew SBNH-1D6565C	156.00	182	4,439	0.014	15	226
Andrew SBNH-1D6565C	156.00	182	4,439	0.014	15	226
Kathrein Scala 80010	156.00	688	16,733	0.053	56	852
Low Profile Platform	156.00	2,000	48,672	0.155	162	2,477
Commscope RDIDC-9181	135.00	22	399	0.001	1	27
Fujitsu TA08025-B605	135.00	225	4,101	0.013	14	279
Fujitsu TA08025-B604	135.00	192	3,494	0.011	12	237
JMA Wireless MX08FRO	135.00	193	3,527	0.011	12	240
Generic Flat Platfor	135.00	2,500	45,563	0.145	151	3,097
		34,754	313,790	1.000	1,043	43,047

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)
39	157.50	158	3,923	0.013	13	136
38	155.50	73	1,771	0.006	6	63
37	152.50	373	8,673	0.028	29	321
36	147.50	384	8,355	0.027	28	331
35	142.50	395	8,023	0.026	27	340
34	137.50	406	7,679	0.024	26	350
33	132.50	429	7,531	0.024	25	369
32	127.50	440	7,153	0.023	24	379
31	122.50	451	6,769	0.022	22	389
30	117.50	462	6,381	0.020	21	398
29	113.50	283	3,649	0.012	12	244
28	111.00	395	4,869	0.016	16	340
27	108.54	587	6,919	0.022	23	506
26	106.04	266	2,991	0.010	10	229
25	102.50	652	6,846	0.022	23	561
24	97.50	667	6,345	0.020	21	575
23	92.50	683	5,846	0.019	19	589
22	87.50	699	5,352	0.017	18	602
21	82.50	715	4,866	0.016	16	616
20	80.00	0	3	0.000	0	0
19	77.50	1,461	8,772	0.028	29	1,258
18	74.71	174	970	0.003	3	150
17	72.21	760	3,962	0.013	13	655
16	67.50	879	4,004	0.013	13	757
15	62.50	898	3,507	0.011	12	773
14	57.50	917	3,031	0.010	10	790

© 2007 - 2021 by ATC IP LLC. All rights reserved.

13	52.50	936	2,579	0.008	9	806
12	48.50	571	1,342	0.004	4	492
11	46.00	773	1,637	0.005	5	666
10	42.83	1,698	3,116	0.010	10	1,463
9	40.33	148	240	0.001	1	127
8	37.50	1,121	1,576	0.005	5	965
7	32.50	1,143	1,207	0.004	4	984
6	27.50	1,165	881	0.003	3	1,004
5	22.50	1,187	601	0.002	2	1,023
4	17.50	1,209	370	0.001	1	1,042
3	12.50	1,231	192	0.001	1	1,061
2	7.50	1,254	71	0.000	0	1,080
1	2.50	1,276	8	0.000	0	1,099
Raycap DC6-48-60-18-	156.00	191	4,643	0.015	15	164
Ericsson RRUS 8843 B	156.00	216	5,257	0.017	17	186
Ericsson RRUS 4415 B	156.00	138	3,358	0.011	11	119
Ericsson RRUS 4449 B	156.00	213	5,184	0.017	17	183
Ericsson RRUS-11	156.00	330	8,031	0.026	27	284
CCI HPA65R-BU8A	156.00	162	3,942	0.013	13	140
Andrew SBNH-1D6565C	156.00	182	4,439	0.014	15	157
Andrew SBNH-1D6565C	156.00	182	4,439	0.014	15	157
Kathrein Scala 80010	156.00	688	16,733	0.053	56	592
Low Profile Platform	156.00	2,000	48,672	0.155	162	1,723
Commscope RDIDC-9181	135.00	22	399	0.001	1	19
Fujitsu TA08025-B605	135.00	225	4,101	0.013	14	194
Fujitsu TA08025-B604	135.00	192	3,494	0.011	12	165
JMA Wireless MX08FRO	135.00	193	3,527	0.011	12	167
Generic Flat Platfor	135.00	2,500	45,563	0.145	151	2,153
		34,754	313,790	1.000	1,043	29,937

© 2007 - 2021 by ATC IP LLC. All rights reserved.

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	-41.47	-1.05	0.00	-139.15	0.00	139.15	4,958.59	1,213.91	5,461.75	5,077.52	0.00	0.00	0.036
5.00	-39.91	-1.05	0.00	-133.92	0.00	133.92	4,892.41	1,191.06	5,258.12	4,914.65	0.00	-0.01	0.035
10.00	-38.39	-1.06	0.00	-128.66	0.00	128.66	4,825.19	1,168.21	5,058.37	4,753.32	0.02	-0.02	0.035
15.00	-36.89	-1.06	0.00	-123.38	0.00	123.38	4,756.92	1,145.37	4,862.48	4,593.60	0.04	-0.03	0.035
20.00	-35.42	-1.06	0.00	-118.07	0.00	118.07	4,687.62	1,122.52	4,670.46	4,435.55	0.08	-0.04	0.034
25.00	-33.98	-1.07	0.00	-112.76	0.00	112.76	4,617.28	1,099.67	4,482.31	4,279.23	0.12	-0.05	0.034
30.00	-32.56	-1.07	0.00	-107.43	0.00	107.43	4,545.89	1,076.83	4,298.02	4,124.71	0.17	-0.06	0.033
35.00	-31.17	-1.06	0.00	-102.10	0.00	102.10	4,461.85	1,053.98	4,117.61	3,961.72	0.24	-0.07	0.033
40.00	-30.99	-1.07	0.00	-96.78	0.00	96.78	4,365.13	1,031.13	3,941.06	3,790.99	0.31	-0.08	0.033
40.67	-28.89	-1.06	0.00	-96.06	0.00	96.06	4,352.24	1,028.09	3,917.81	3,768.51	0.32	-0.08	0.032
45.00	-27.93	-1.05	0.00	-91.49	0.00	91.49	4,268.42	1,008.29	3,768.38	3,624.02	0.40	-0.09	0.032
47.00	-27.22	-1.05	0.00	-89.38	0.00	89.38	3,589.52	873.39	3,298.55	3,084.74	0.43	-0.09	0.037
50.00	-26.06	-1.04	0.00	-86.24	0.00	86.24	3,554.97	861.64	3,210.41	3,013.58	0.49	-0.10	0.036
55.00	-24.93	-1.04	0.00	-81.02	0.00	81.02	3,496.57	842.05	3,066.16	2,896.10	0.60	-0.11	0.035
60.00	-23.81	-1.03	0.00	-75.85	0.00	75.85	3,437.12	822.47	2,925.22	2,780.05	0.72	-0.12	0.034
65.00	-22.72	-1.02	0.00	-70.71	0.00	70.71	3,376.63	802.89	2,787.61	2,665.48	0.85	-0.13	0.033
70.00	-21.78	-1.00	0.00	-65.64	0.00	65.64	3,315.10	783.30	2,653.30	2,552.47	0.99	-0.14	0.032
74.41	-21.57	-1.00	0.00	-61.21	0.00	61.21	3,242.82	766.02	2,537.51	2,441.17	1.13	-0.15	0.032
75.00	-19.76	-0.97	0.00	-60.62	0.00	60.62	3,233.09	763.72	2,522.32	2,426.47	1.15	-0.15	0.031
80.00	-19.76	-0.97	0.00	-55.77	0.00	55.77	2,566.23	632.09	2,073.25	1,915.98	1.31	-0.16	0.037
80.00	-18.87	-0.96	0.00	-55.77	0.00	55.77	2,566.20	632.08	2,073.18	1,915.93	1.31	-0.16	0.036
85.00	-18.01	-0.94	0.00	-50.99	0.00	50.99	2,519.59	615.76	1,967.53	1,832.15	1.49	-0.18	0.035
90.00	-17.16	-0.92	0.00	-46.29	0.00	46.29	2,471.95	599.45	1,864.64	1,749.45	1.68	-0.19	0.033
95.00	-16.33	-0.90	0.00	-41.68	0.00	41.68	2,423.26	583.13	1,764.51	1,667.88	1.89	-0.20	0.032
100.00	-15.53	-0.88	0.00	-37.18	0.00	37.18	2,373.53	566.81	1,667.14	1,587.51	2.11	-0.21	0.030
105.00	-15.20	-0.87	0.00	-32.79	0.00	32.79	2,322.75	550.49	1,572.54	1,508.40	2.34	-0.23	0.028
107.08	-14.47	-0.84	0.00	-30.98	0.00	30.98	2,301.36	543.71	1,534.06	1,475.93	2.44	-0.23	0.027
110.00	-13.98	-0.83	0.00	-28.52	0.00	28.52	2,261.32	534.17	1,480.71	1,424.55	2.58	-0.24	0.026
111.99	-13.63	-0.82	0.00	-26.87	0.00	26.87	1,426.72	375.84	1,047.06	906.16	2.68	-0.24	0.039
115.00	-13.06	-0.79	0.00	-24.41	0.00	24.41	1,410.75	368.97	1,009.14	879.53	2.83	-0.25	0.037
120.00	-12.50	-0.77	0.00	-20.44	0.00	20.44	1,383.37	357.55	947.63	835.57	3.10	-0.26	0.034
125.00	-11.95	-0.75	0.00	-16.58	0.00	16.58	1,354.95	346.12	888.05	792.06	3.38	-0.27	0.030
130.00	-11.42	-0.72	0.00	-12.84	0.00	12.84	1,325.49	334.70	830.41	749.07	3.67	-0.28	0.026
135.00	-7.04	-0.49	0.00	-9.23	0.00	9.23	1,294.99	323.28	774.70	706.66	3.97	-0.29	0.019
140.00	-6.55	-0.46	0.00	-6.80	0.00	6.80	1,263.44	311.85	720.92	664.88	4.28	-0.30	0.015
145.00	-6.08	-0.43	0.00	-4.51	0.00	4.51	1,230.86	300.43	669.08	623.81	4.59	-0.30	0.012
150.00	-5.61	-0.40	0.00	-2.38	0.00	2.38	1,197.23	289.01	619.18	583.49	4.91	-0.31	0.009
155.00	-5.52	-0.39	0.00	-0.39	0.00	0.39	1,162.56	277.58	571.20	544.00	5.23	-0.31	0.005
156.00	0.00	0.00	0.00	0.00	0.00	0.00	1,155.50	275.30	561.84	536.20	5.30	-0.31	0.000
159.00	0.00	0.00	0.00	0.00	0.00	0.00	1,134.07	268.45	534.22	513.03	5.49	-0.31	0.000

© 2007 - 2021 by ATC IP LLC. All rights reserved.

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	-28.84	-1.04	0.00	-136.90	0.00	136.90	4,958.59	1,213.91	5,461.75	5,077.52	0.00	0.00	0.033
5.00	-27.76	-1.05	0.00	-131.68	0.00	131.68	4,892.41	1,191.06	5,258.12	4,914.65	0.00	-0.01	0.032
10.00	-26.70	-1.05	0.00	-126.45	0.00	126.45	4,825.19	1,168.21	5,058.37	4,753.32	0.02	-0.02	0.032
15.00	-25.65	-1.05	0.00	-121.19	0.00	121.19	4,756.92	1,145.37	4,862.48	4,593.60	0.04	-0.03	0.032
20.00	-24.63	-1.06	0.00	-115.92	0.00	115.92	4,687.62	1,122.52	4,670.46	4,435.55	0.08	-0.04	0.031
25.00	-23.63	-1.06	0.00	-110.65	0.00	110.65	4,617.28	1,099.67	4,482.31	4,279.23	0.12	-0.05	0.031
30.00	-22.64	-1.05	0.00	-105.37	0.00	105.37	4,545.89	1,076.83	4,298.02	4,124.71	0.17	-0.06	0.031
35.00	-21.68	-1.05	0.00	-100.10	0.00	100.10	4,461.85	1,053.98	4,117.61	3,961.72	0.23	-0.06	0.030
40.00	-21.55	-1.05	0.00	-94.84	0.00	94.84	4,365.13	1,031.13	3,941.06	3,790.99	0.31	-0.07	0.030
40.67	-20.09	-1.04	0.00	-94.14	0.00	94.14	4,352.24	1,028.09	3,917.81	3,768.51	0.32	-0.08	0.030
45.00	-19.42	-1.04	0.00	-89.63	0.00	89.63	4,268.42	1,008.29	3,768.38	3,624.02	0.39	-0.08	0.029
47.00	-18.93	-1.03	0.00	-87.55	0.00	87.55	3,589.52	873.39	3,298.55	3,084.74	0.43	-0.09	0.034
50.00	-18.12	-1.03	0.00	-84.45	0.00	84.45	3,554.97	861.64	3,210.41	3,013.58	0.48	-0.09	0.033
55.00	-17.33	-1.02	0.00	-79.31	0.00	79.31	3,496.57	842.05	3,066.16	2,896.10	0.59	-0.11	0.032
60.00	-16.56	-1.01	0.00	-74.21	0.00	74.21	3,437.12	822.47	2,925.22	2,780.05	0.71	-0.12	0.032
65.00	-15.80	-1.00	0.00	-69.17	0.00	69.17	3,376.63	802.89	2,787.61	2,665.48	0.83	-0.13	0.031
70.00	-15.15	-0.99	0.00	-64.18	0.00	64.18	3,315.10	783.30	2,653.30	2,552.47	0.97	-0.14	0.030
74.41	-15.00	-0.98	0.00	-59.83	0.00	59.83	3,242.82	766.02	2,537.51	2,441.17	1.11	-0.15	0.029
75.00	-13.74	-0.95	0.00	-59.25	0.00	59.25	3,233.09	763.72	2,522.32	2,426.47	1.12	-0.15	0.029
80.00	-13.74	-0.95	0.00	-54.49	0.00	54.49	2,566.23	632.09	2,073.25	1,915.98	1.29	-0.16	0.034
80.00	-13.12	-0.94	0.00	-54.49	0.00	54.49	2,566.20	632.08	2,073.18	1,915.93	1.29	-0.16	0.034
85.00	-12.52	-0.92	0.00	-49.80	0.00	49.80	2,519.59	615.76	1,967.53	1,832.15	1.46	-0.17	0.032
90.00	-11.93	-0.90	0.00	-45.20	0.00	45.20	2,471.95	599.45	1,864.64	1,749.45	1.65	-0.19	0.031
95.00	-11.36	-0.88	0.00	-40.69	0.00	40.69	2,423.26	583.13	1,764.51	1,667.88	1.85	-0.20	0.029
100.00	-10.80	-0.86	0.00	-36.29	0.00	36.29	2,373.53	566.81	1,667.14	1,587.51	2.07	-0.21	0.027
105.00	-10.57	-0.85	0.00	-31.99	0.00	31.99	2,322.75	550.49	1,572.54	1,508.40	2.29	-0.22	0.026
107.08	-10.06	-0.83	0.00	-30.23	0.00	30.23	2,301.36	543.71	1,534.06	1,475.93	2.39	-0.23	0.025
110.00	-9.72	-0.81	0.00	-27.82	0.00	27.82	2,261.32	534.17	1,480.71	1,424.55	2.53	-0.23	0.024
111.99	-9.48	-0.80	0.00	-26.21	0.00	26.21	1,426.72	375.84	1,047.06	906.16	2.63	-0.24	0.036
115.00	-9.08	-0.78	0.00	-23.81	0.00	23.81	1,410.75	368.97	1,009.14	879.53	2.78	-0.24	0.034
120.00	-8.69	-0.75	0.00	-19.93	0.00	19.93	1,383.37	357.55	947.63	835.57	3.04	-0.25	0.030
125.00	-8.31	-0.73	0.00	-16.17	0.00	16.17	1,354.95	346.12	888.05	792.06	3.31	-0.27	0.027
130.00	-7.94	-0.70	0.00	-12.52	0.00	12.52	1,325.49	334.70	830.41	749.07	3.59	-0.28	0.023
135.00	-4.90	-0.47	0.00	-9.01	0.00	9.01	1,294.99	323.28	774.70	706.66	3.89	-0.28	0.017
140.00	-4.55	-0.45	0.00	-6.64	0.00	6.64	1,263.44	311.85	720.92	664.88	4.19	-0.29	0.014
145.00	-4.22	-0.42	0.00	-4.40	0.00	4.40	1,230.86	300.43	669.08	623.81	4.50	-0.30	0.010
150.00	-3.90	-0.39	0.00	-2.32	0.00	2.32	1,197.23	289.01	619.18	583.49	4.81	-0.30	0.007
155.00	-3.84	-0.38	0.00	-0.38	0.00	0.38	1,162.56	277.58	571.20	544.00	5.13	-0.30	0.004
156.00	0.00	0.00	0.00	0.00	0.00	0.00	1,155.50	275.30	561.84	536.20	5.19	-0.30	0.000
159.00	0.00	0.00	0.00	0.00	0.00	0.00	1,134.07	268.45	534.22	513.03	5.38	-0.30	0.000

© 2007 - 2021 by ATC IP LLC. All rights reserved.

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	25.83	0.00	41.66	0.00	0.00	2935.66	111.99	0.61
0.9D + 1.0W	25.82	0.00	31.24	0.00	0.00	2899.10	111.99	0.60
1.2D + 1.0Di + 1.0Wi	7.36	0.00	61.84	0.00	0.00	836.51	111.99	0.19
1.2D + 1.0Ev + 1.0Eh	1.05	0.00	41.47	0.00	0.00	139.15	111.99	0.04
0.9D - 1.0Ev + 1.0Eh	1.04	0.00	28.84	0.00	0.00	136.90	111.99	0.04
1.0D + 1.0W	5.87	0.00	34.75	0.00	0.00	663.20	111.99	0.14

Base Plate & Anchor Rod Analysis

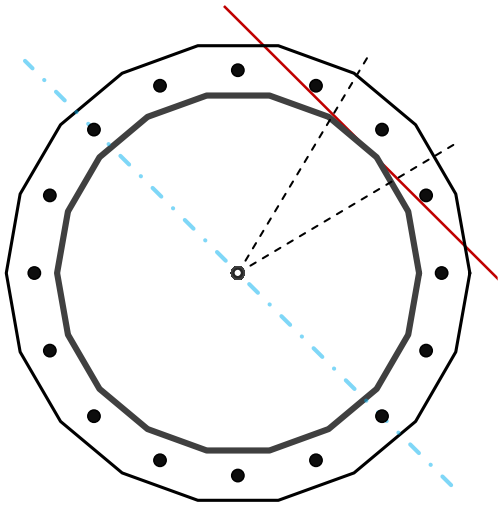
Pole Dimensions		
Number of Sides	18	-
Diameter	50.25	in
Thickness	7/16	in
Orientation Offset		°

Base Reactions		
Moment, Mu	2,936.7	k-ft
Axial, Pu	41.7	k
Shear, Vu	25.8	k
Neutral Axis	315	°

Report Capacities		
Component	Capacity	Result
Base Plate	18%	Pass
Anchor Rods	67%	Pass
Dwyidag	-	-

Base Plate		
Number of Sides	18	-
Diameter, ø	64.51	in
Thickness	3 1/4	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	387.7	k
Bending Stress, ϕMn	2104.3	k

Original Anchor Rods		
Arrangement	Radial	-
Quantity	16	-
Diameter, ø	2 1/4	in
Bolt Circle	57.53	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	11.3	in
Orientation Offset		°
Applied Force, Pu	162.2	k
Anchor Rods, ϕPn	243.6	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	25.8	2936.7	1.00
Anchor Rod Forces	25.8	2936.7	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	68.1176	3.7843	0.2425		21131.75
Bolt	3.9761	3.2477	0.8393	4.5	19772.85
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	18	-
Width, W	64.51	in
Thickness, t	3.25	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	40.453	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	57.53	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	162.2	k
Applied Shear, Vu	1.0	k
Compressive Capacity, ϕPn	243.6	k
Tensile Capacity, ϕRnt	0.666	OK
Interaction Capacity	0.674	OK

External Base Plate		
Chord Length AA	40.856	in
Additional AA	6.500	in
Section Modulus, Z	125.049	in^3
Applied Moment, Mu	475.0	k-ft
Bending Capacity, ϕMn	5627.2	k-ft
Capacity, Mu/ϕMn	0.084	OK
Chord Length AB	40.079	in
Additional AB	6.500	in
Section Modulus, Z	122.997	in^3
Applied Moment, Mu	324.7	k-ft
Bending Capacity, ϕMn	5534.9	k-ft
Capacity, Mu/ϕMn	0.059	OK
Bend Line Length	17.709	in
Additional Bend Line	0.000	in
Section Modulus, Z	46.763	in^3
Applied Moment, Mu	387.7	k-ft
Bending Capacity, ϕMn	2104.3	k-ft
Capacity, Mu/ϕMn	0.184	OK

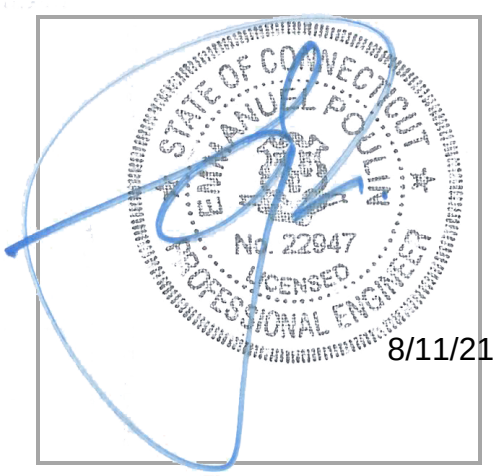
Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

MOUNT ANALYSIS REPORT

August 10, 2021

Dish Wireless Site Name	BOBDL00006A
Dish Wireless Site Number	BOBDL00006A
ATC Site Name	Willington CT, CT
ATC Site Number	281416
Infinigy Job Number	1197-F0001-C
Client	ATC
Carrier	Dish Wireless
Site Location	196 Tolland Turnpike Willington, CT 06279 Tolland County 41.875700 N NAD83 72.269400 W NAD83
Mount Type	8.0 ft Platform
Mount Elevation	135.0 ft AGL
Structural Usage Ratio	**44.6**
Overall Result	**Pass**

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



CONTENTS

1. Introduction
2. Design/Analysis Parameters
3. Proposed Loading Configuration
4. Supporting Documentation
5. Results
6. Recommendations
7. Assumptions
8. Liability Waiver and Limitations
9. Calculations

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	125 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 2.0" ice
Code / Standard	TIA-222-H
Adopted Code	2018 Connecticut State Building Code (2015 IBC)
Risk Category	II
Exposure Category	C
Topographic Category	1
Calculated Crest Height	0 ft.
Seismic Spectral Response	S_s = 0.174 g / S_1 = 0.063 g
Live Load Wind Speed	60 mph
Man Live Load at Mid/End Points	250 lbs
Man Live Load at Mount Pipes	500 lbs

3. PROPOSED LOADING CONFIGURATION - 135.0 ft. AGL Platform

Antenna Centerline (ft)	Qty.	Appurtenance Manufacturers	Appurtenance Models
135.0	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-281416 Rev 1, Site # BOBDL00006A, dated June 14, 2021
Mount Manufacturer Drawings	Commscope Document # MC-PK8-DSH, dated March 11, 2021
Structural Analysis Report	American Tower Corporation, Site # 281416, dated June 25, 2021

5. RESULTS

Components	Capacity	Pass/Fail
Mount Pipes	24.7 %	Pass
Standoffs	36.2 %	Pass
Handrails	30.3 %	Pass
Connections	44.6 %	Pass
MOUNT RATING =	**44.6 %**	**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 135.0 ft. The installation shall be performed in accordance with the construction documents issued for this site.

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

7. ASSUMPTIONS

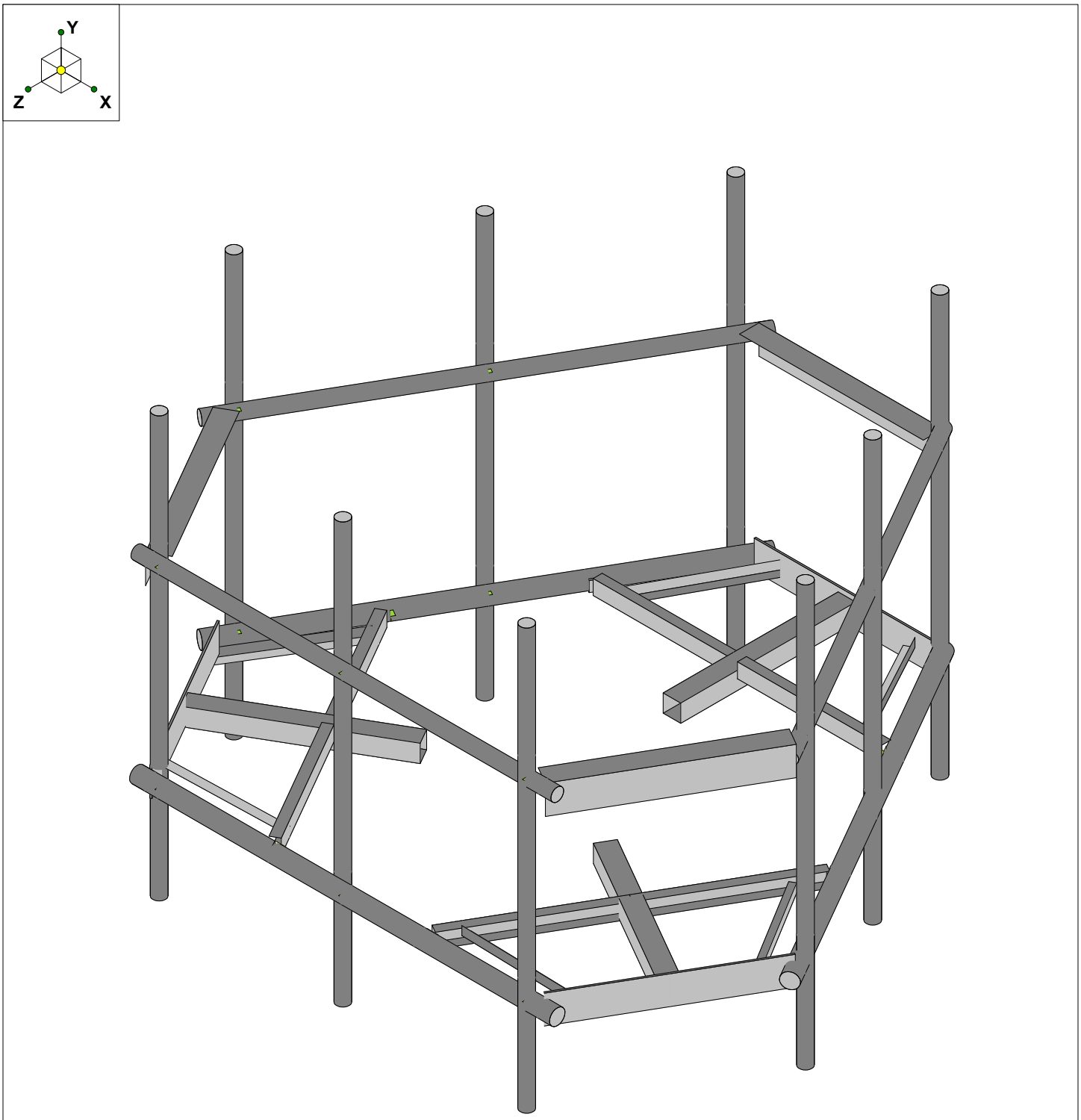
The antenna mounting system was properly fabricated, installed and maintained in accordance with its original design and manufacturer's specifications.
The configuration of antennas, mounts, and other appurtenances are as specified in the proposed loading configuration table.
All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
The analysis will require revisions if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
Steel grades have been assumed as follows, unless noted otherwise: Channel, Solid Round, Plate, Built-up Angle — ASTM A1011 36 KSI Structural Angle — ASTM A529 Gr. 50 HSS (Rectangular) — ASTM A500-B GR 46 HSS (Circular) — ASTM A500-B GR 42 Pipe — ASTM A500 Gr C Connection Bolts — ASTM A325 U-Bolts — ASTM A307
All bolted connections are pretensioned in accordance with Table 8.2 of the RCSC 2014 Standard

8. LIABILITY WAIVER AND LIMITATIONS

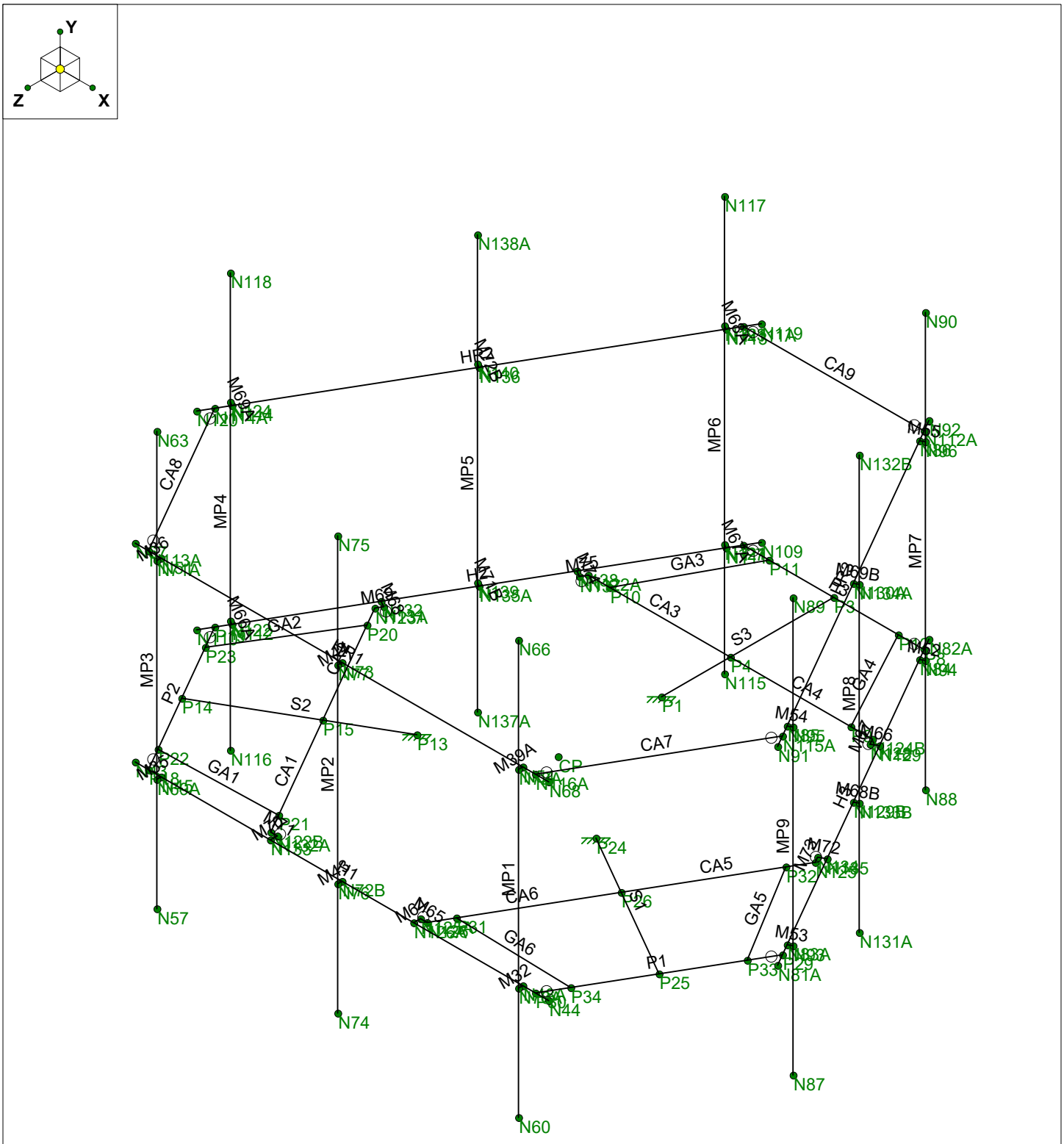
Our structural calculations are completed assuming all information provided to Infinigy is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition as erected and all members and connections to be free of corrosion and/or structural defects. The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

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

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

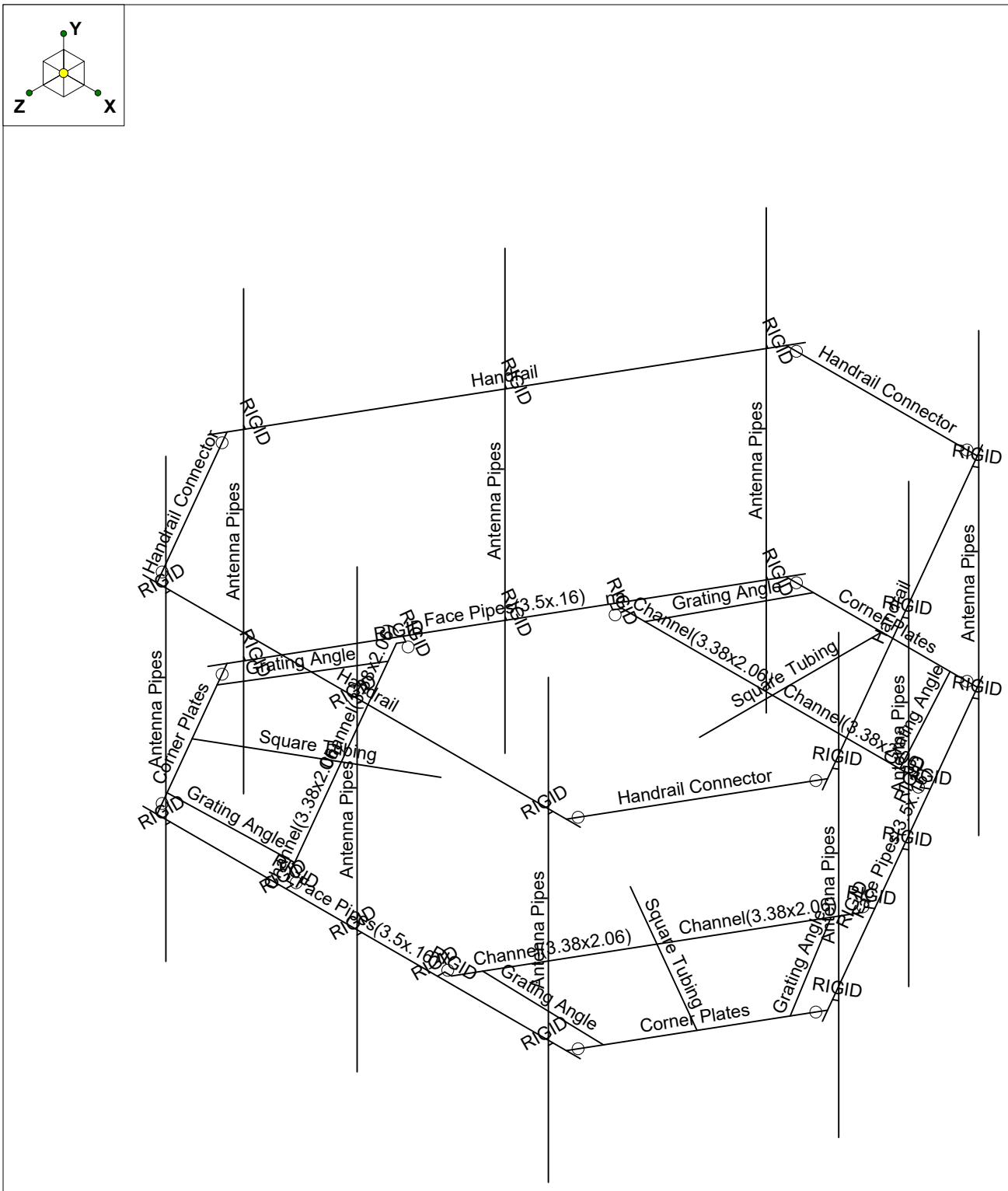


Infinigy Engineering, PLLC	BOBDL00006A	Rendered
PSM		Aug 10, 2021 at 12:35 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



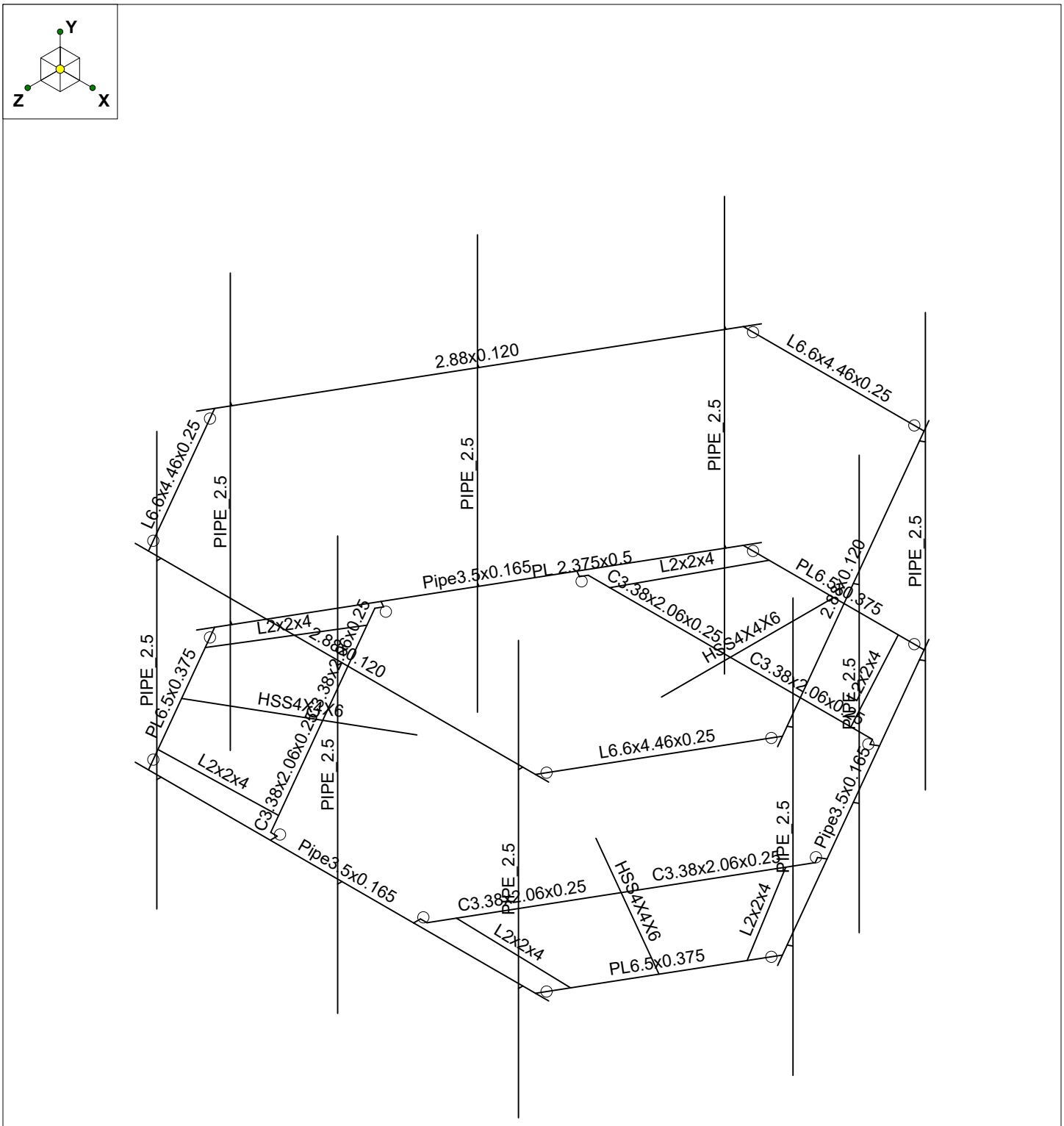
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	WireFrame
PSM		Aug 10, 2021 at 12:16 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



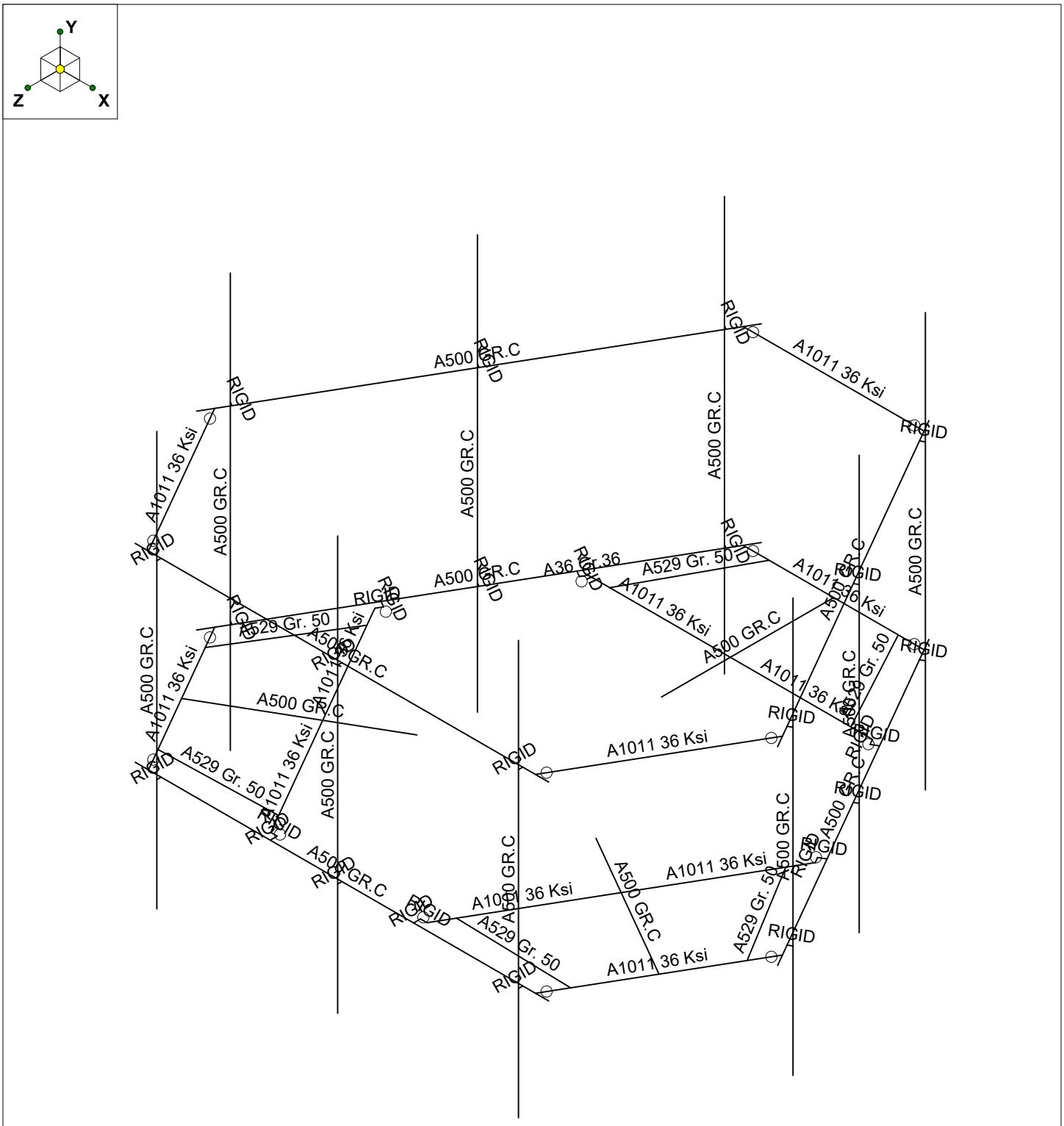
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Section Sets
PSM		Aug 10, 2021 at 12:17 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



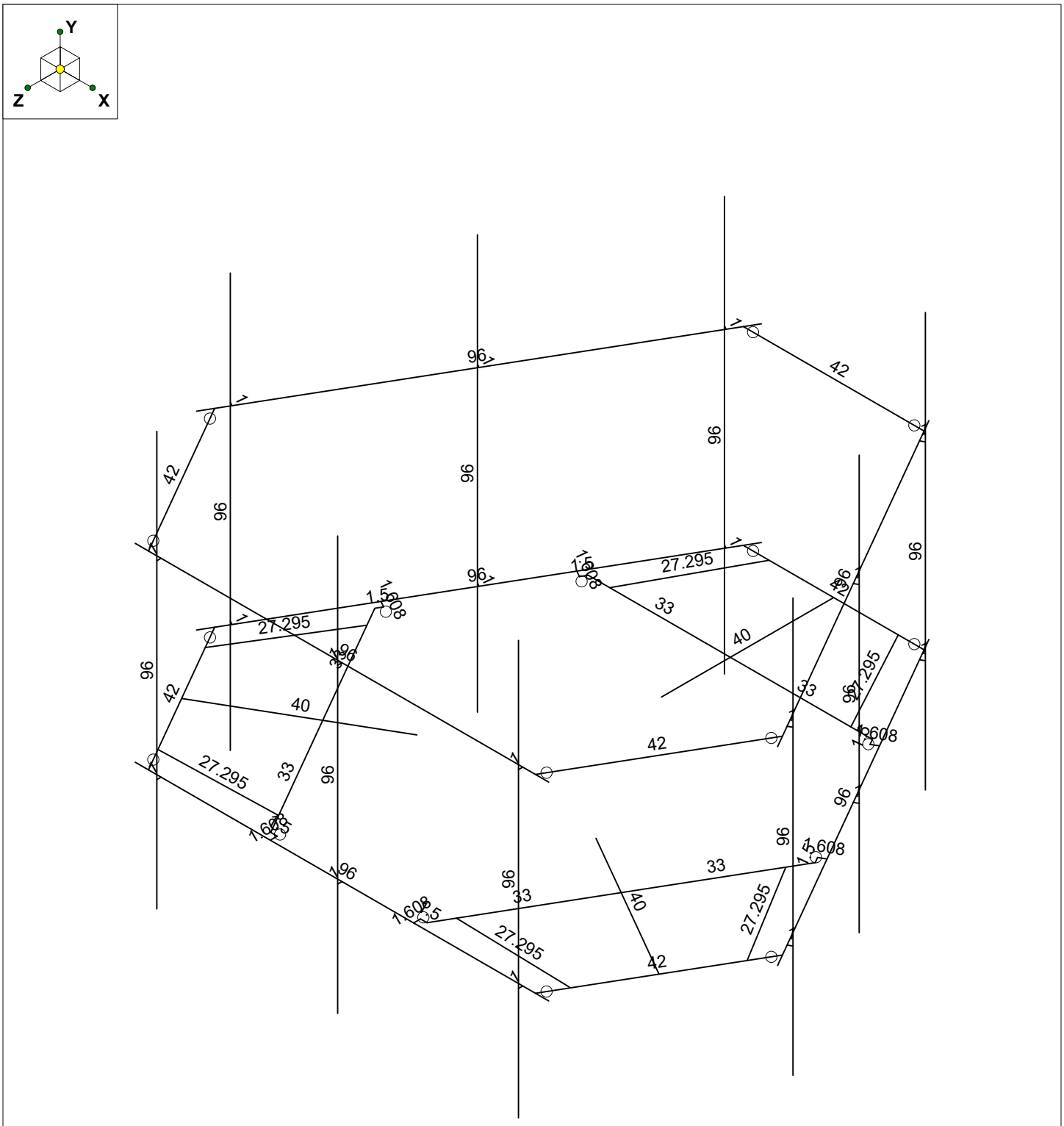
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Member Shapes
PSM		Aug 10, 2021 at 12:17 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



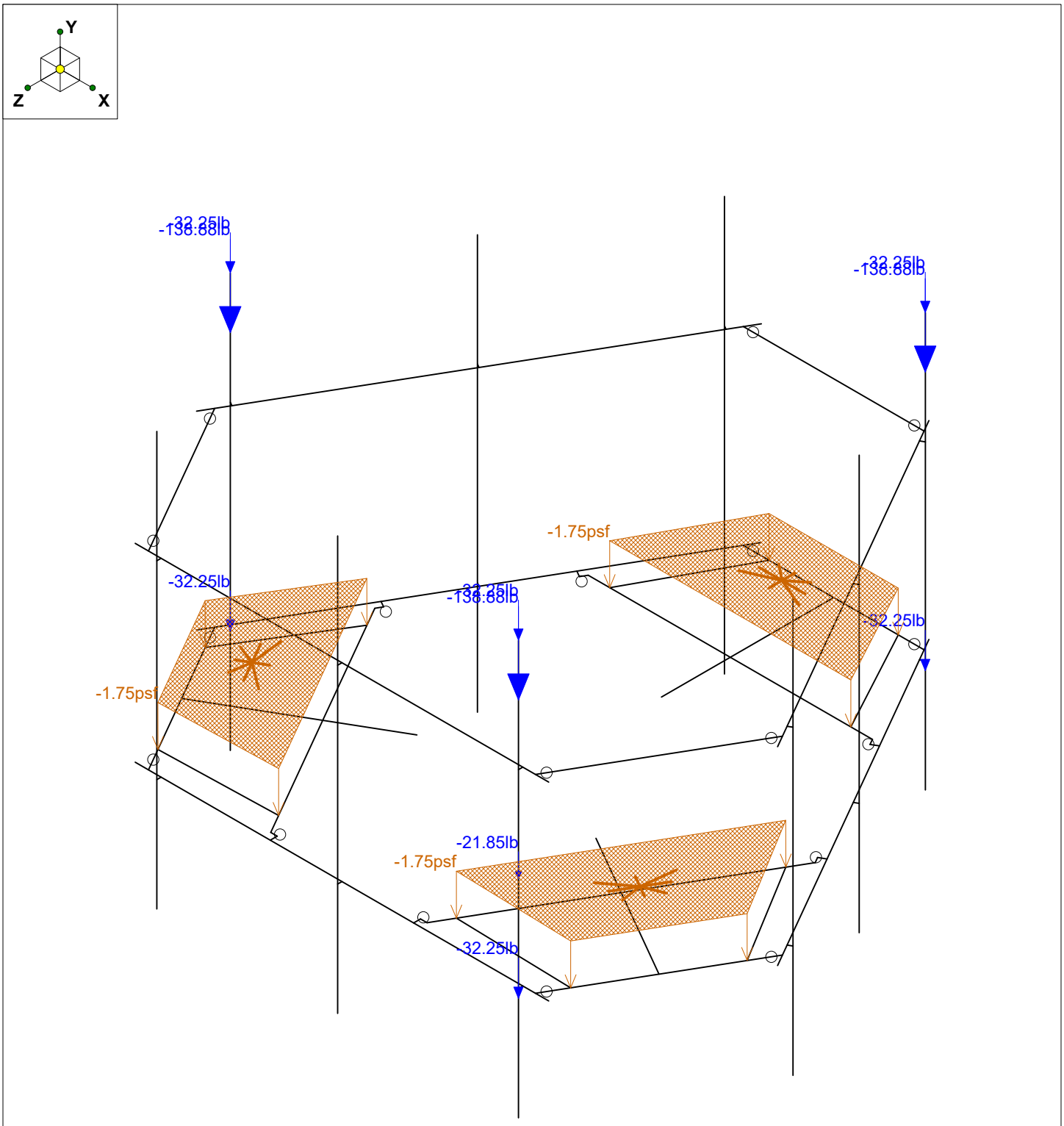
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Material Sets
PSM		Aug 10, 2021 at 12:17 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



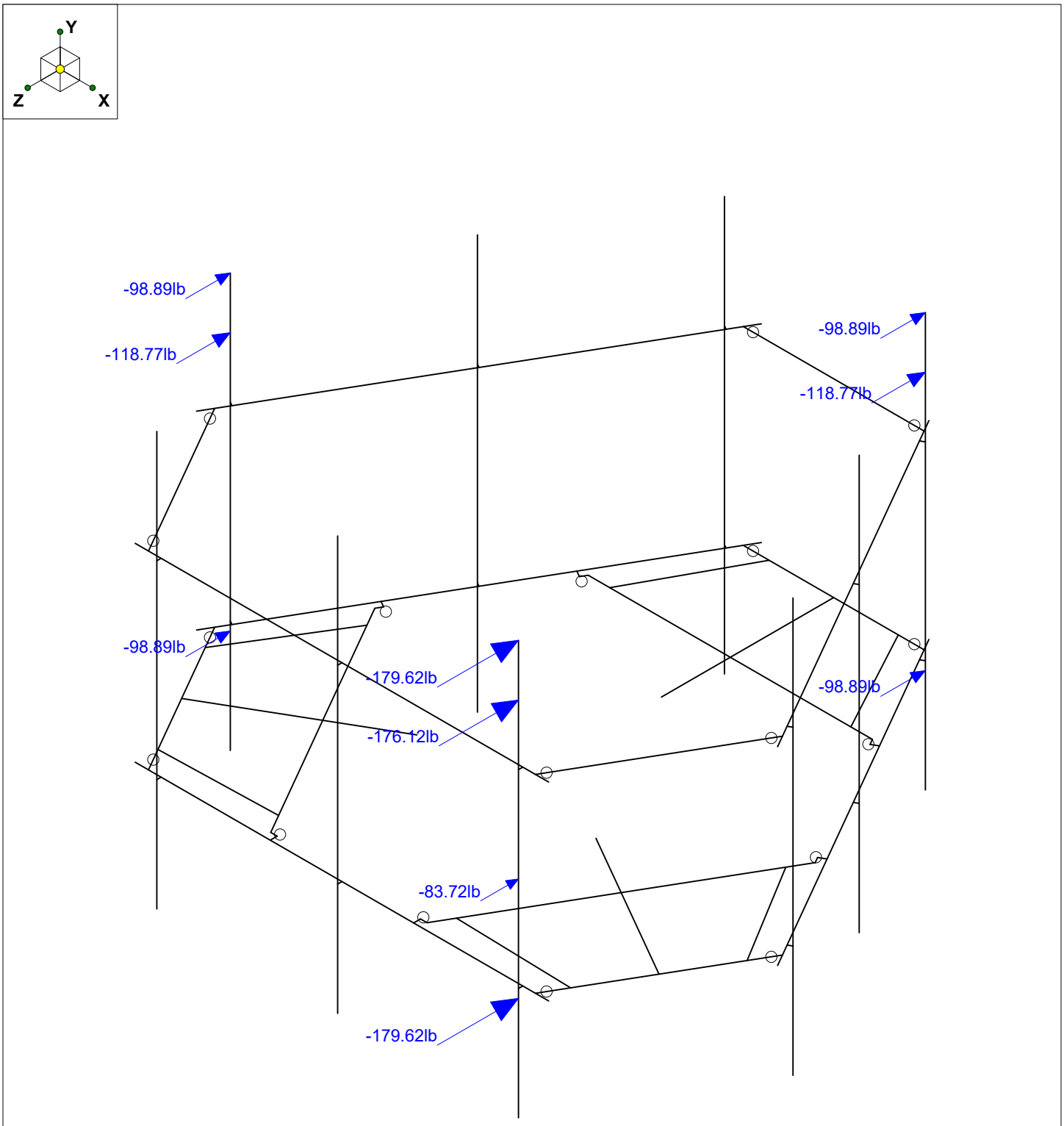
Member Length (in) Displayed
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Member Lengths
PSM		Aug 10, 2021 at 12:17 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



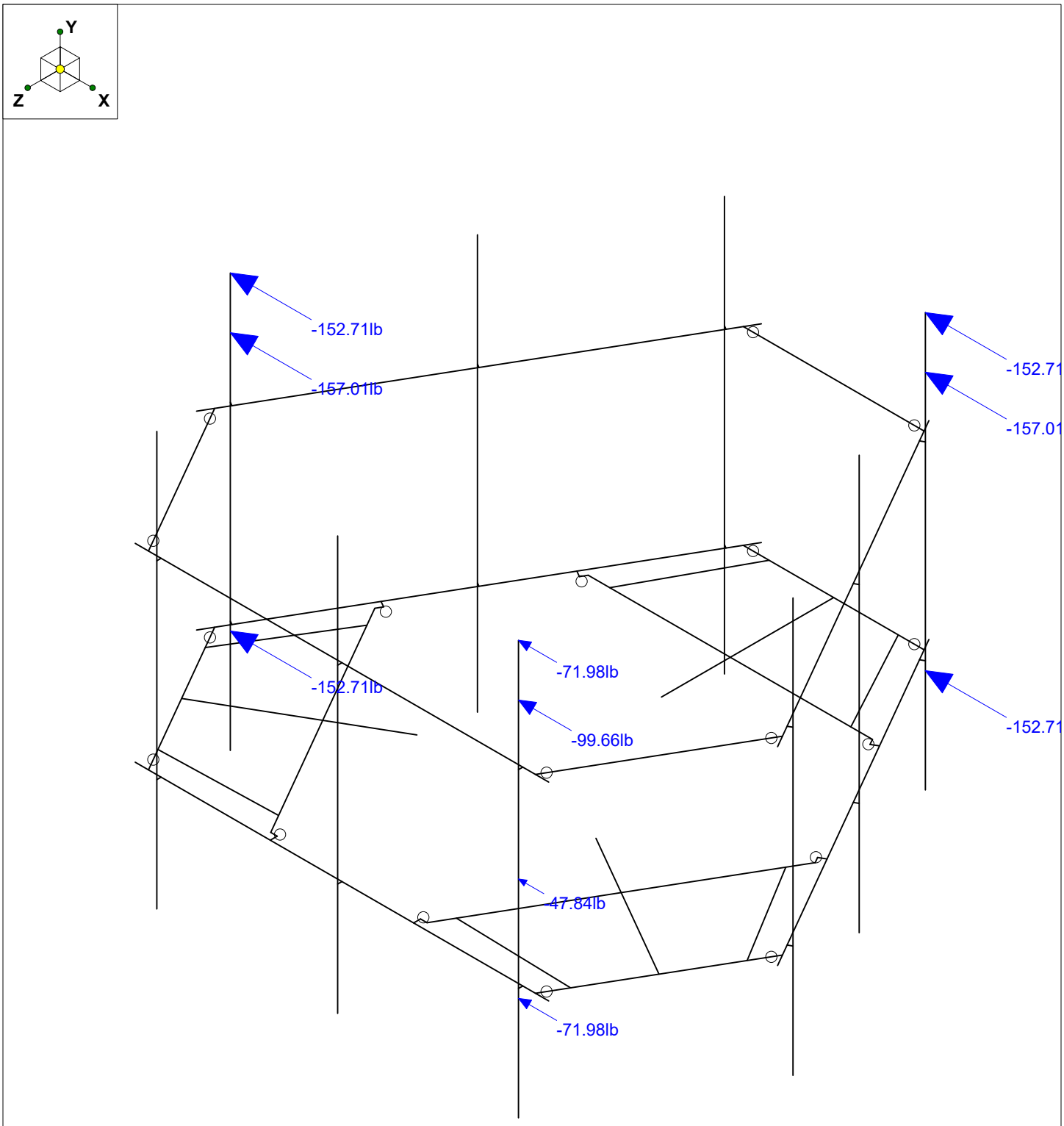
Loads: BLC 1, Self Weight
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Self Weight
PSM		Aug 10, 2021 at 12:18 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



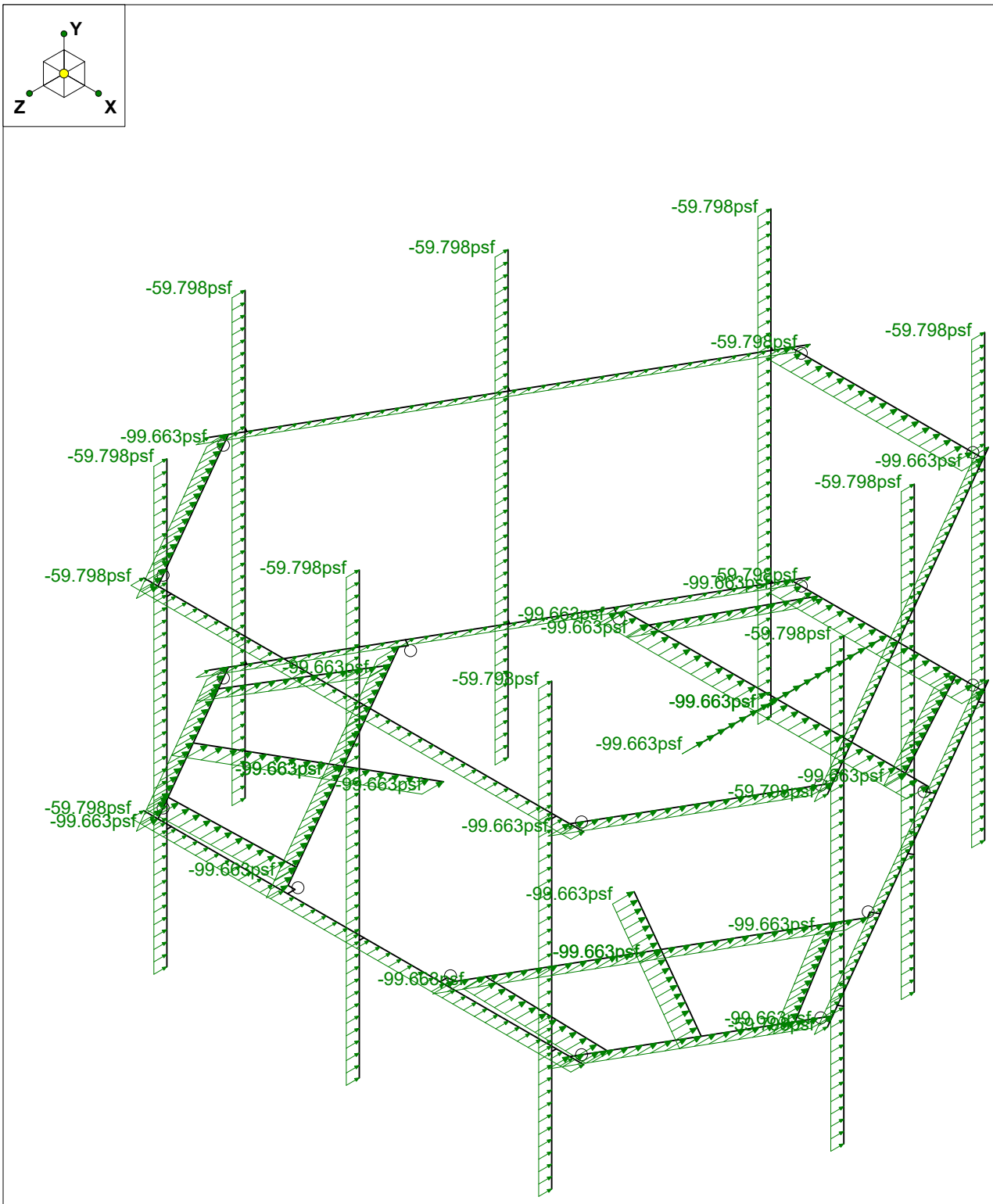
Loads: BLC 2, Wind Load AZI 0
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Wind Load AZI 000
PSM		Aug 10, 2021 at 12:18 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



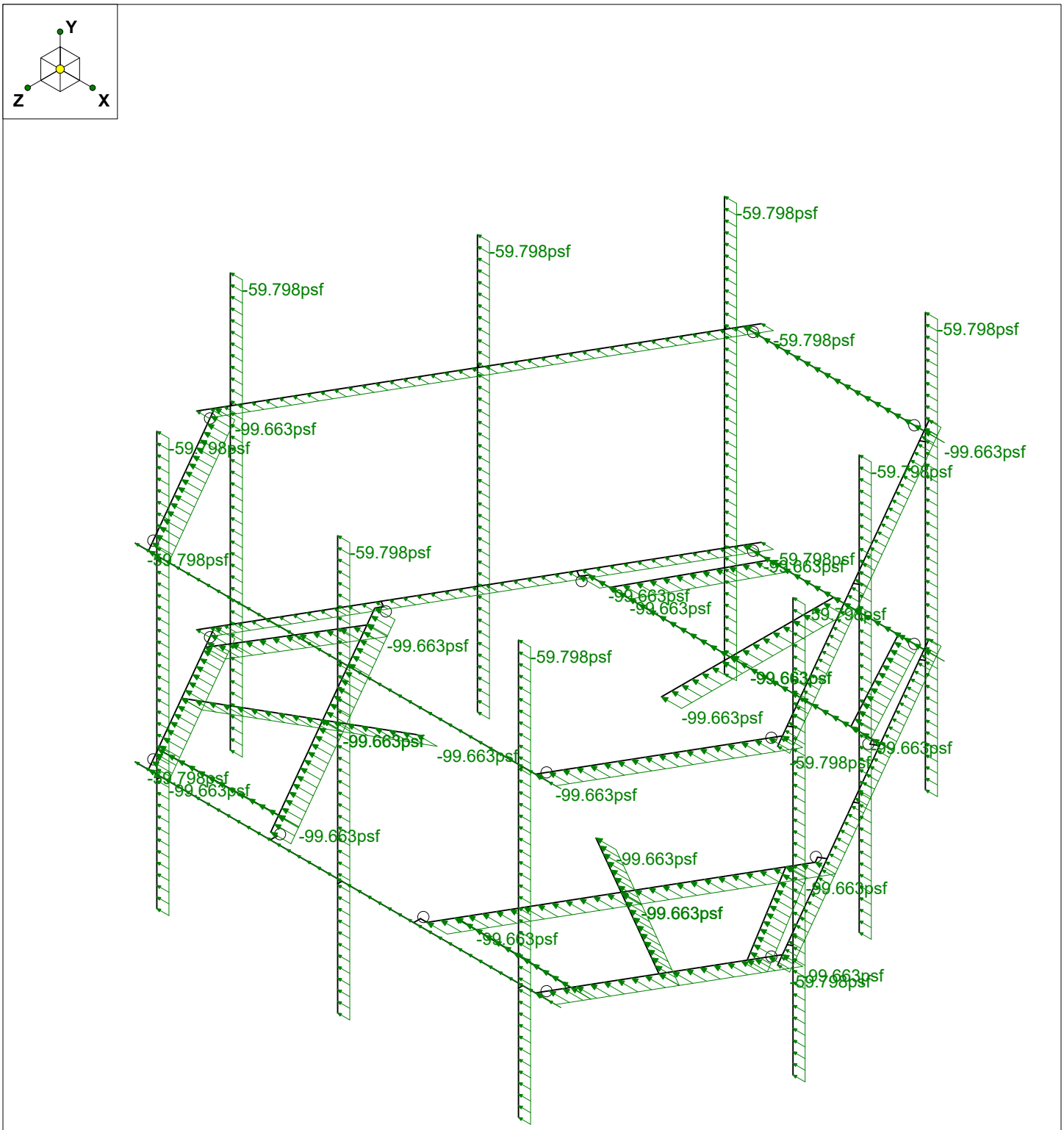
Loads: BLC 5, Wind Load AZI 90
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Wind Load AZI 090
PSM		Aug 10, 2021 at 12:18 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



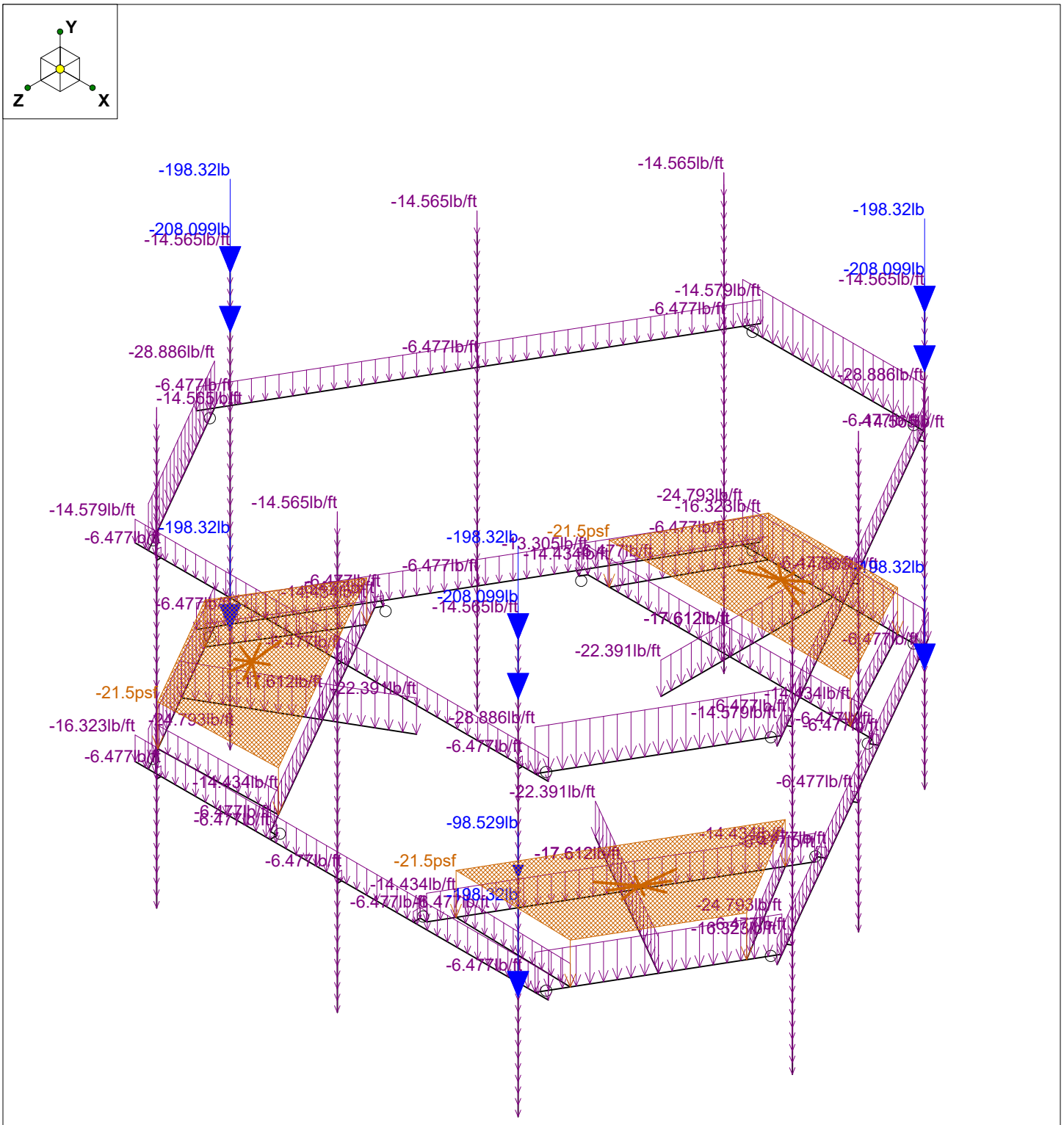
Loads: BLC 14, Distr. Wind Load Z
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Distr Wind Load AZI 000
PSM		Aug 10, 2021 at 12:18 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



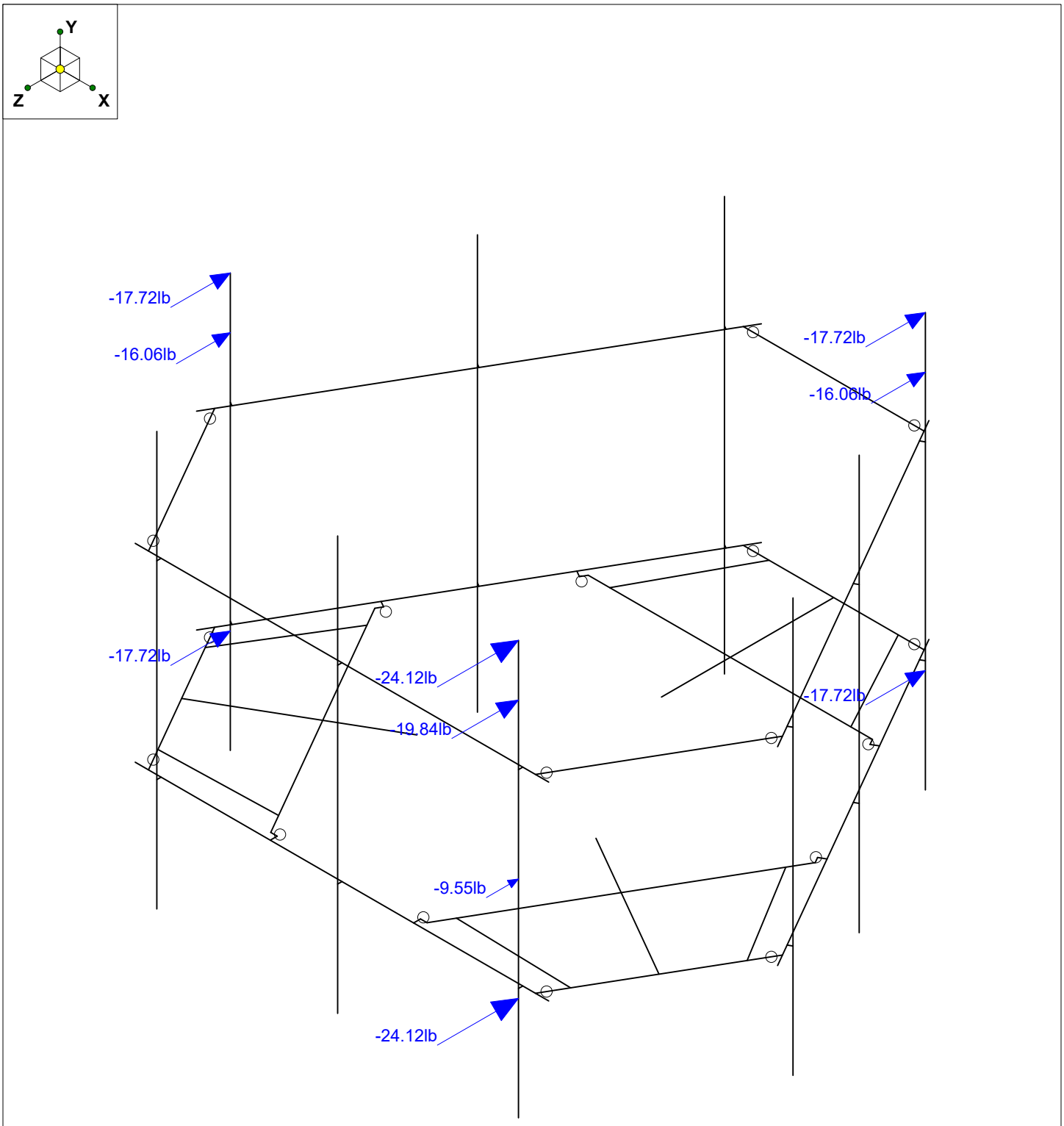
Loads: BLC 15, Distr. Wind Load X
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Distr Wind Load AZI 090
PSM		Aug 10, 2021 at 12:19 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



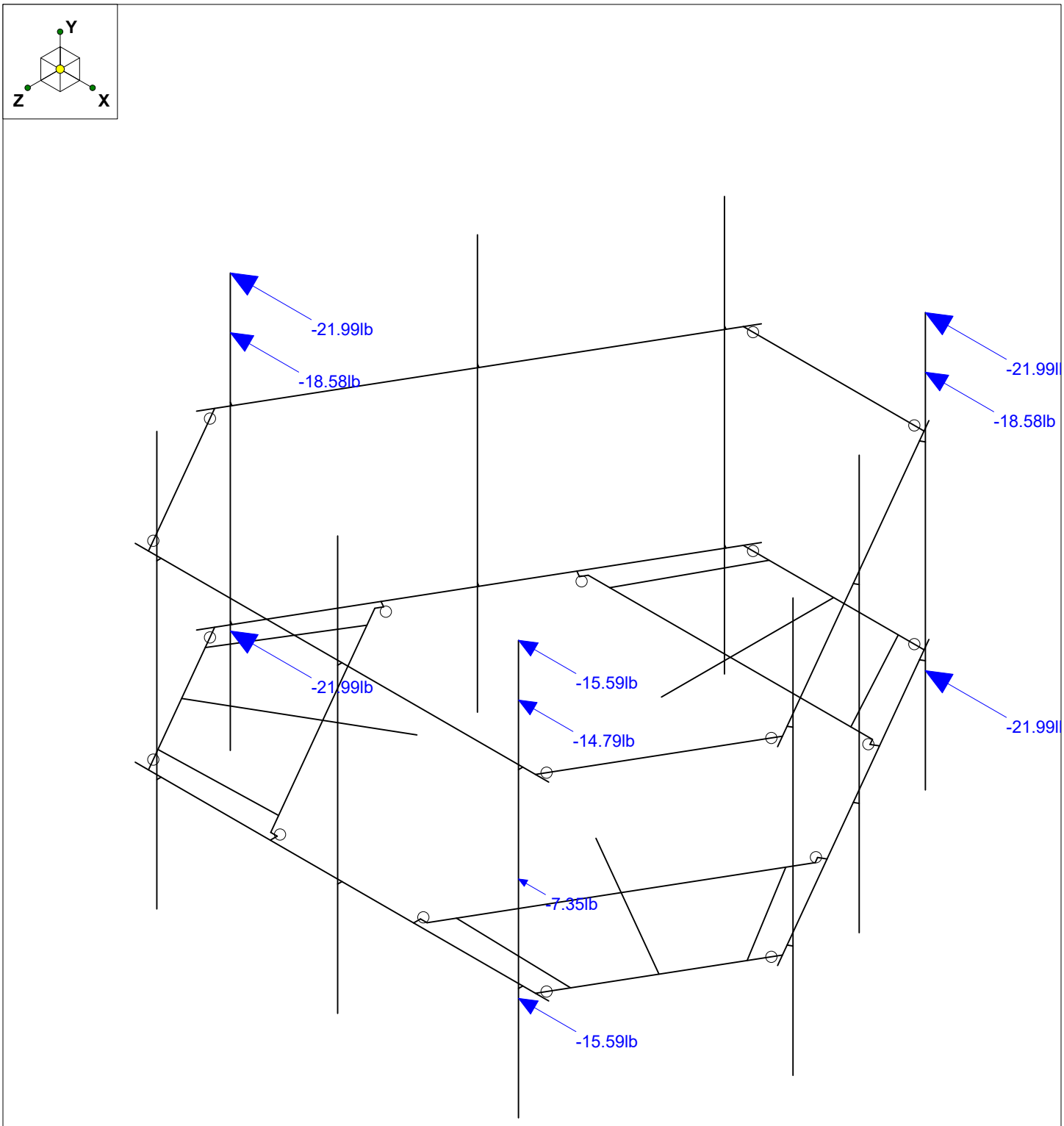
Loads: BLC 16, Ice Weight
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Ice Weight
PSM		Aug 10, 2021 at 12:19 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



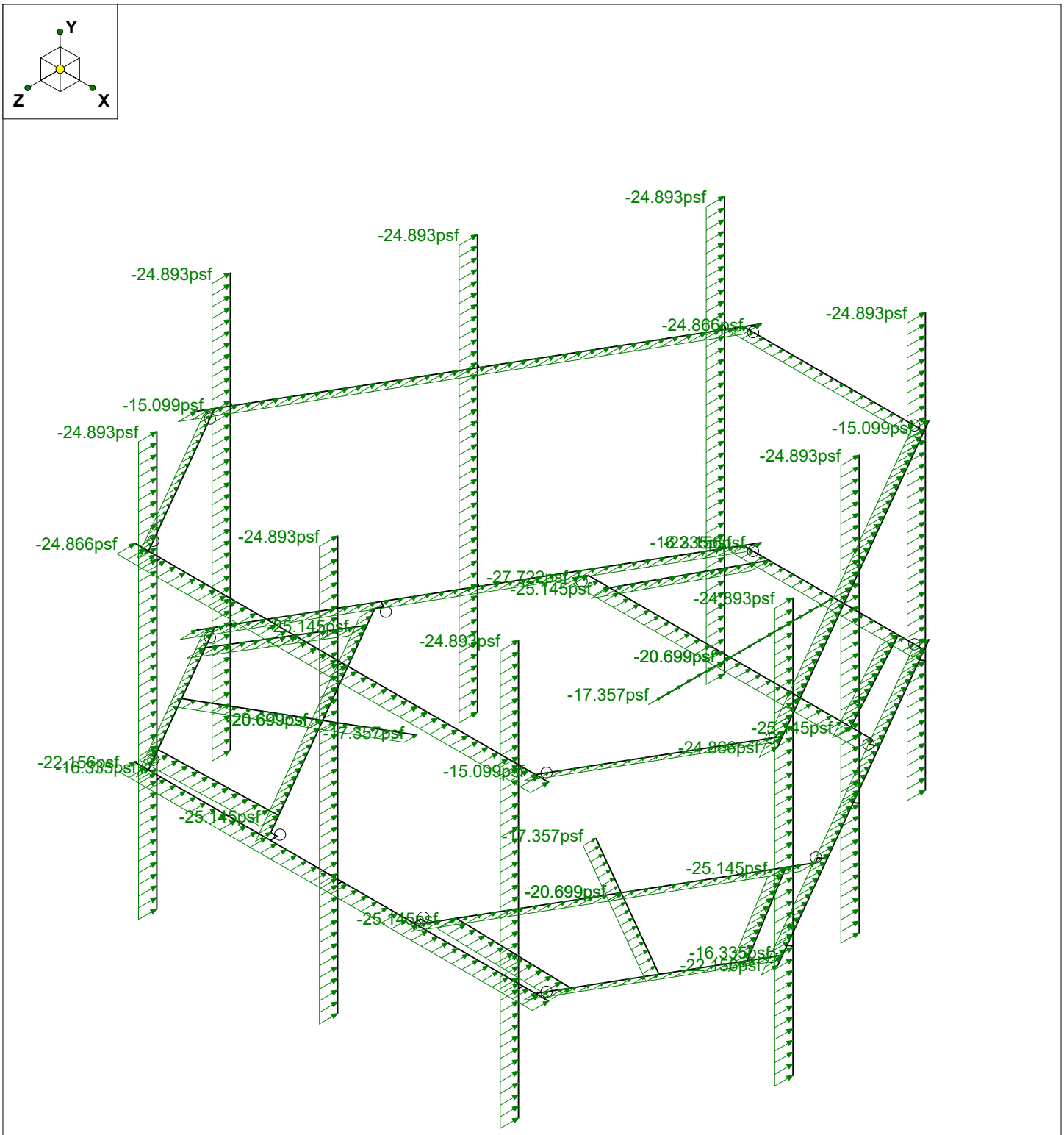
Loads: BLC 17, Ice Wind Load AZI 0
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Ice + Wind Load AZI 000
PSM		Aug 10, 2021 at 12:19 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



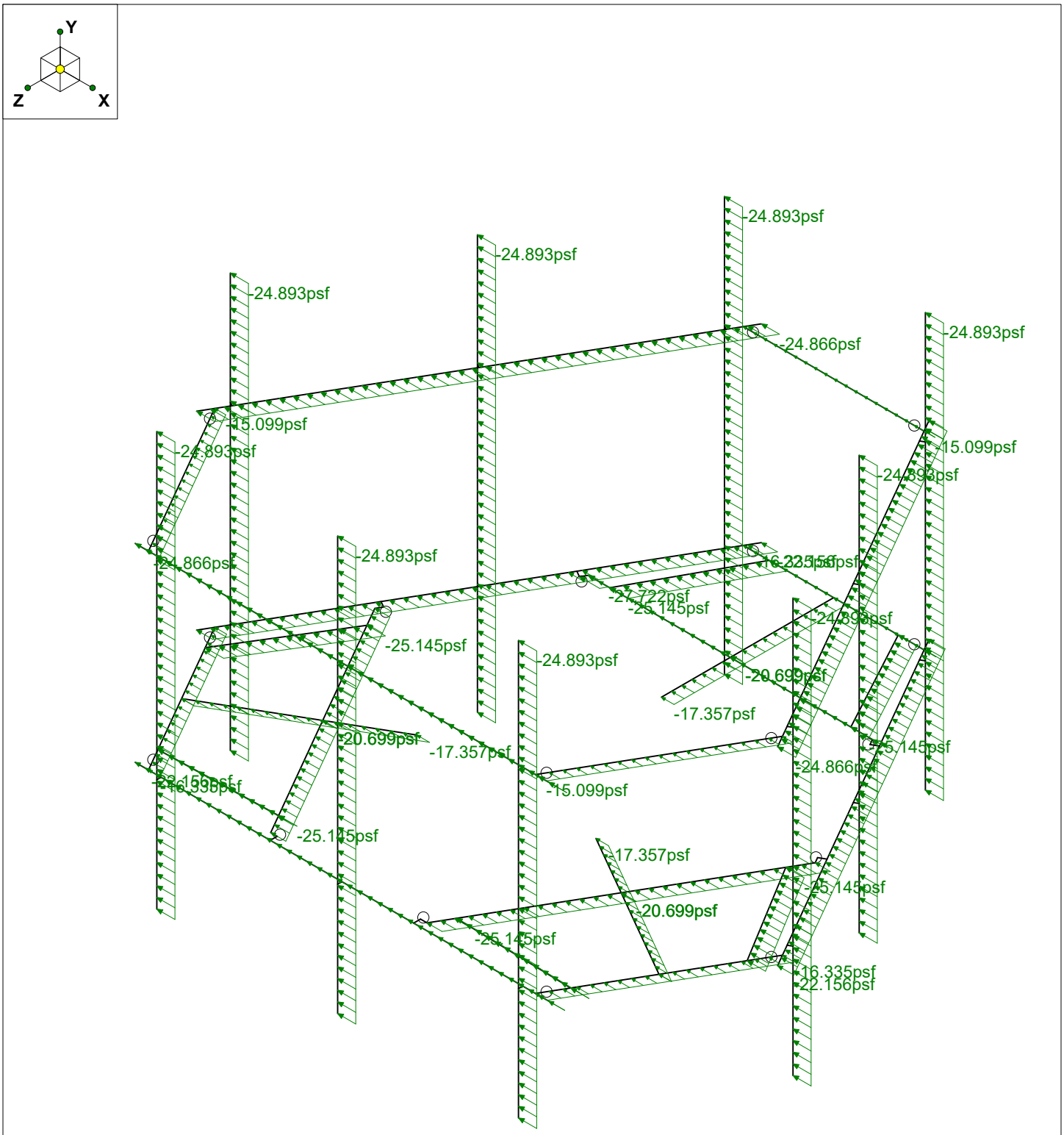
Loads: BLC 20, Ice Wind Load AZI 90
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Ice + Wind Load AZI 090
PSM		Aug 10, 2021 at 12:19 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



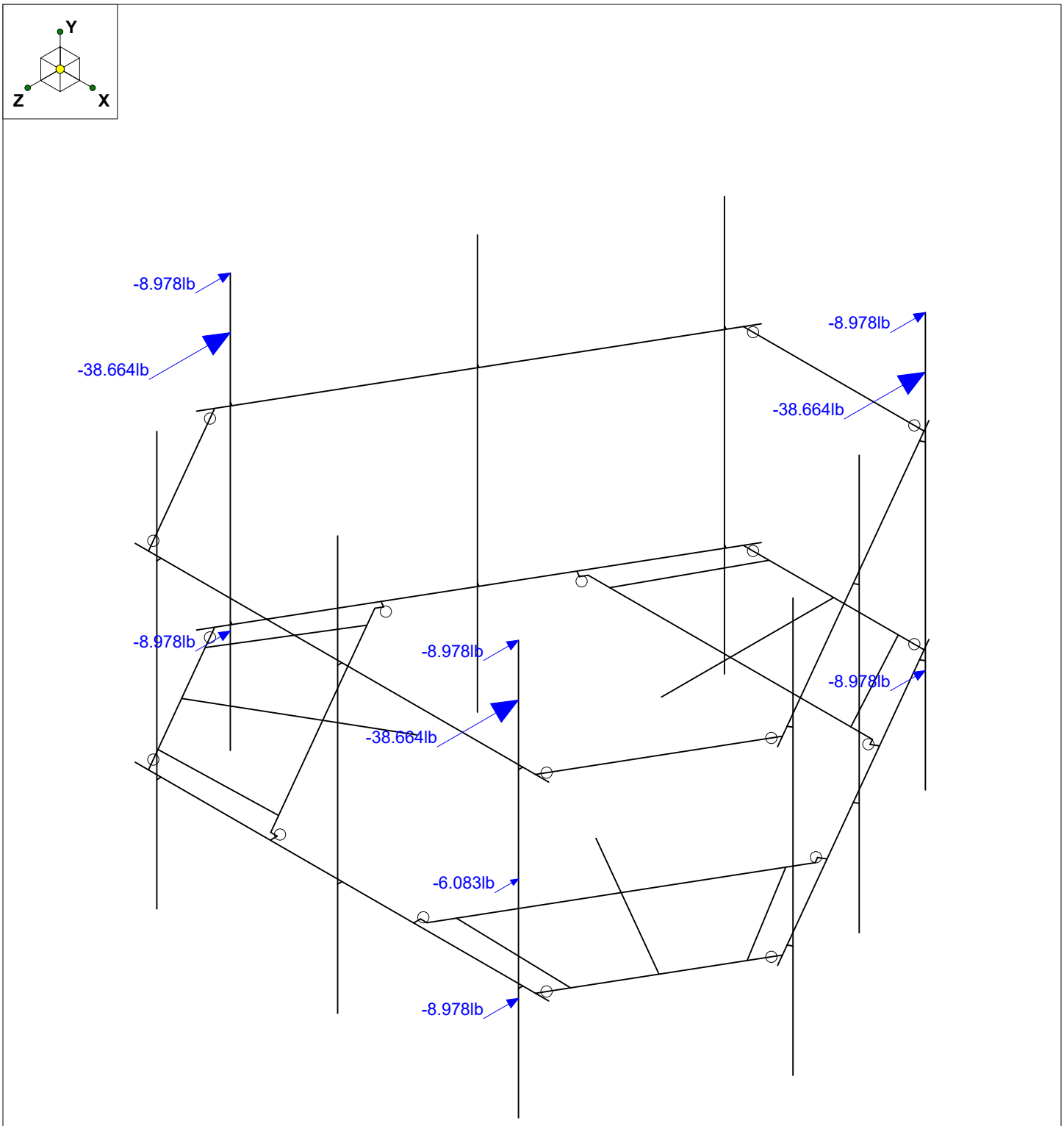
Loads: BLC 29, Distr. Ice Wind Load Z
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Distr Ice + Wind Load AZI 000
PSM		Aug 10, 2021 at 12:20 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



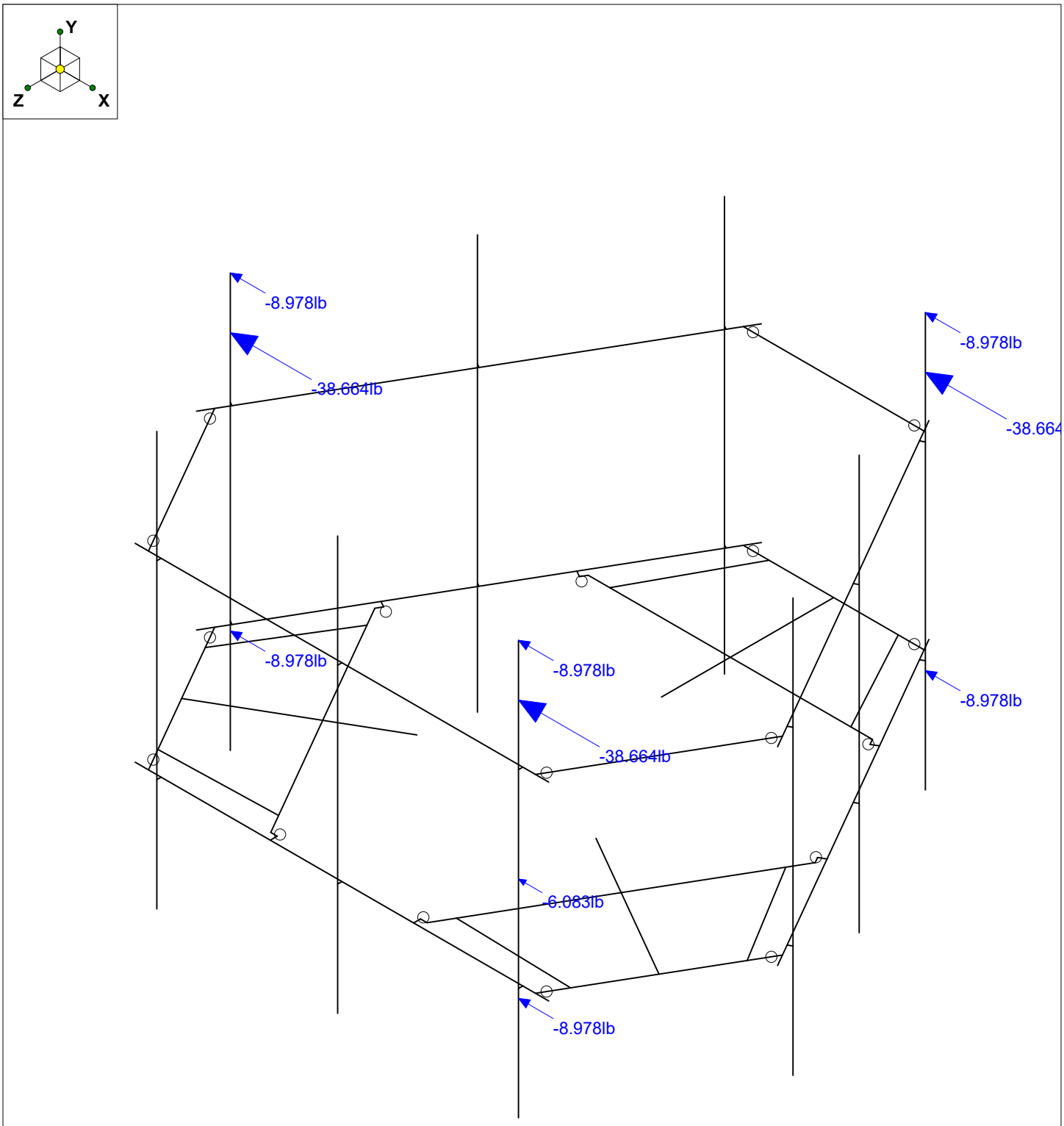
Loads: BLC 30, Distr. Ice Wind Load X
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Distr Ice + Wind Load AZI 090
PSM		Aug 10, 2021 at 12:20 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



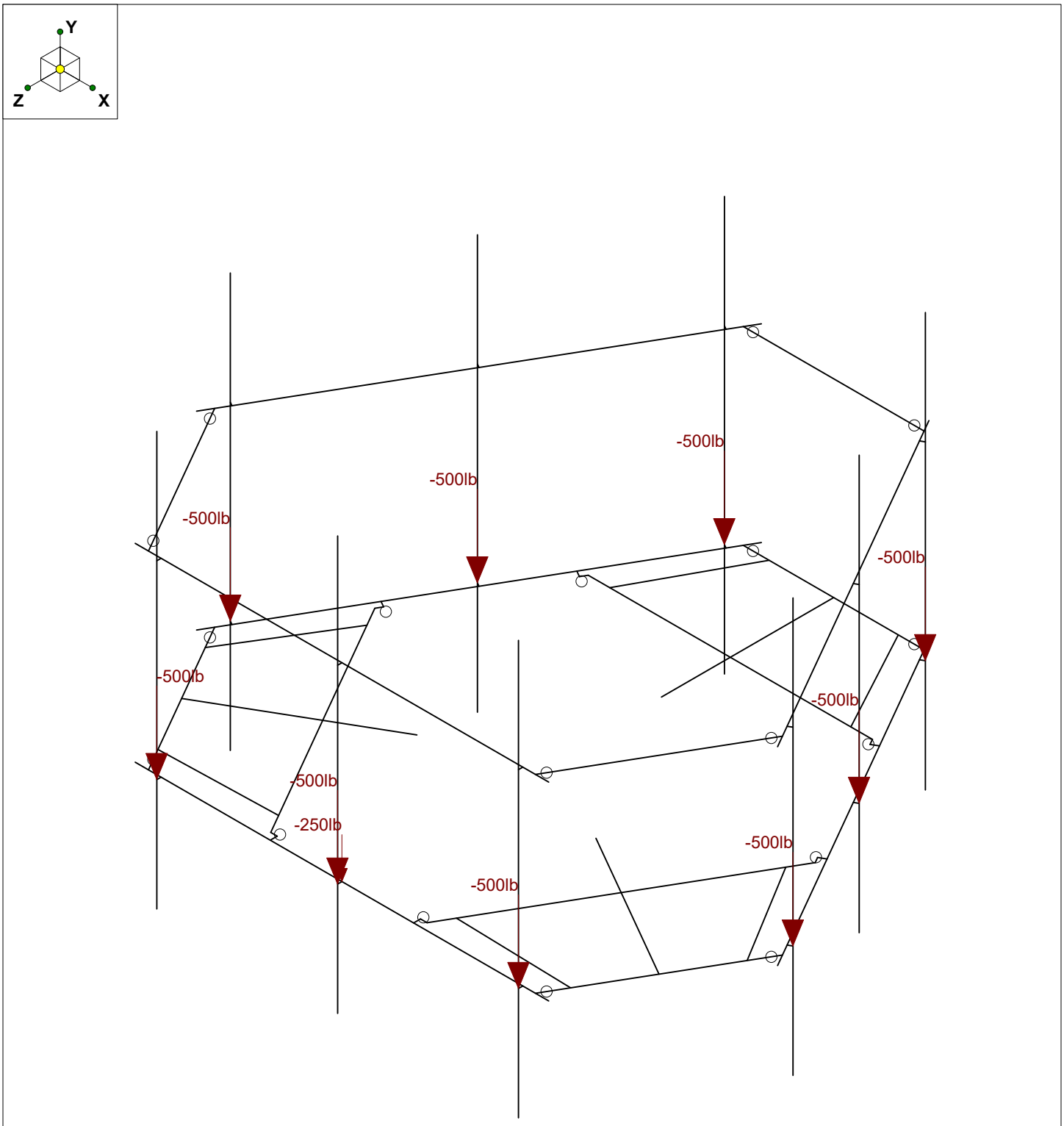
Loads: BLC 31, Seismic Load Z
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Seismic Load AZI 000
PSM		Aug 10, 2021 at 12:21 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



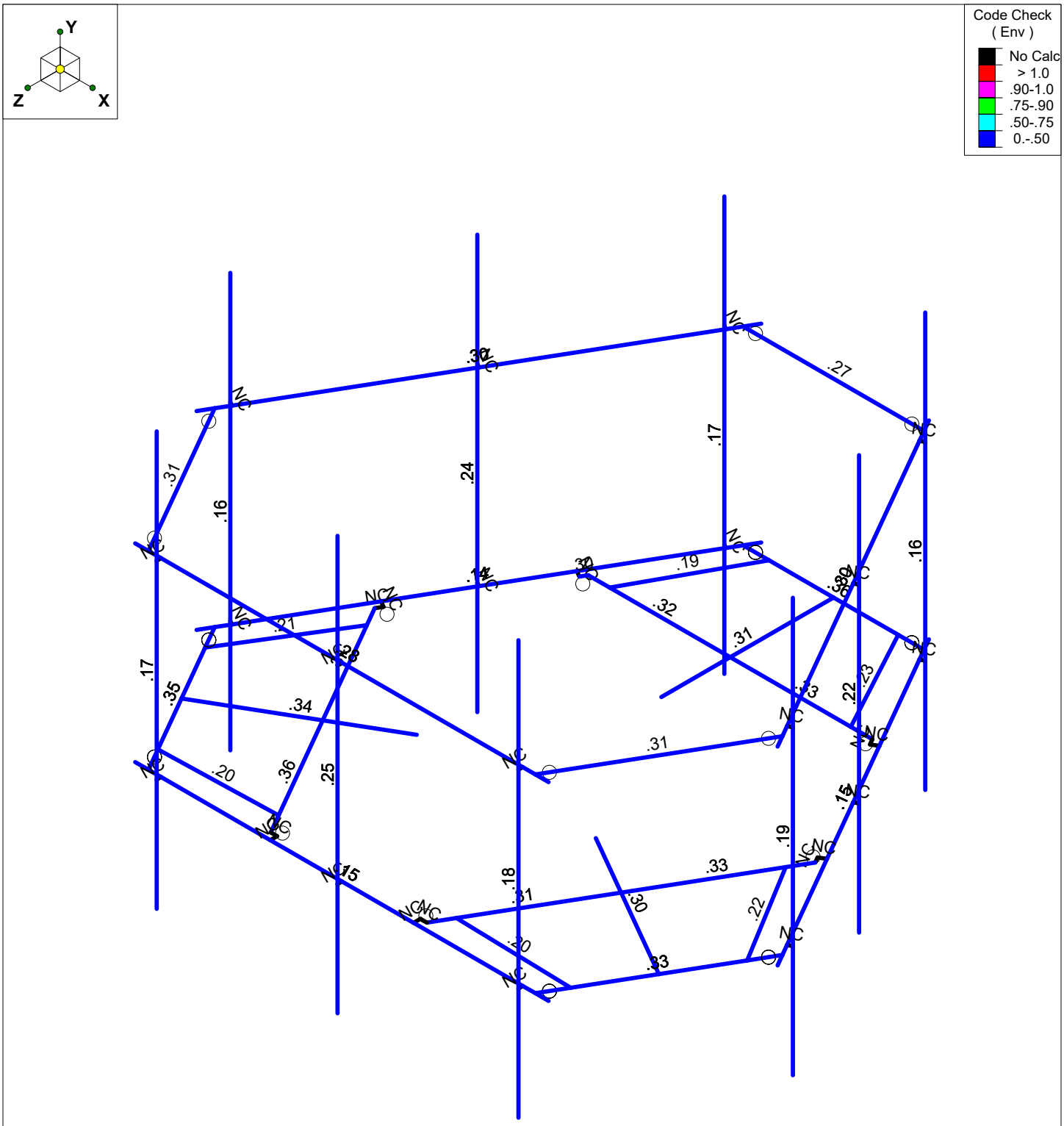
Loads: BLC 32, Seismic Load X
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Seismic Load AZI 090
PSM		Aug 10, 2021 at 12:21 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



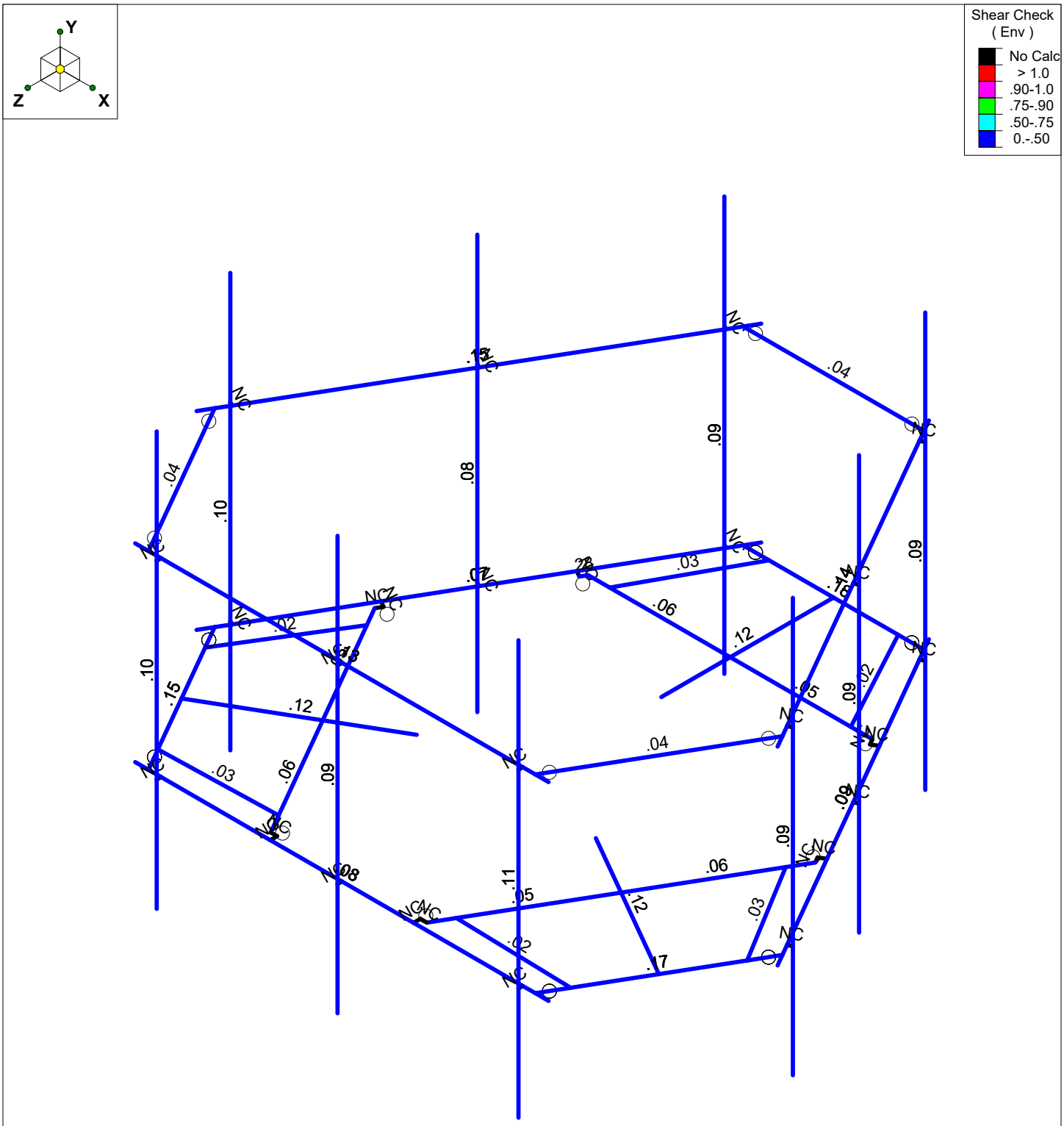
Loads: LL - Live Load
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Non-concurrent Live Loads
PSM		Aug 10, 2021 at 12:21 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Bending Check
PSM		Aug 10, 2021 at 12:22 PM
1197-F0001-C		BOBDL00006A_loaded.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering, PLLC	BOBDL00006A	Shear Check
PSM		Aug 10, 2021 at 12:22 PM
1197-F0001-C		BOBDL00006A_loaded.r3d

Program Inputs

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

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	764.53	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	135.00	ft
Tower Height AGL:	159.00	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):	0.973	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_h):	1.000	

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

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	125	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	2	in
Flat Pressure:	99.663	psf
Round Pressure:	59.798	psf
Ice Wind Pressure:	9.568	psf

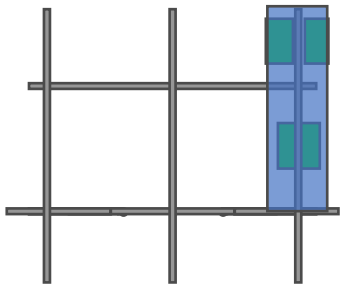
SEISMIC DATA		
Short-Period Accel. (S_s):	0.174	g
1-Second Accel. (S_1):	0.063	g
Short-Period Design (S_{DS}):	0.186	
1-Second Design (S_{D1}):	0.101	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

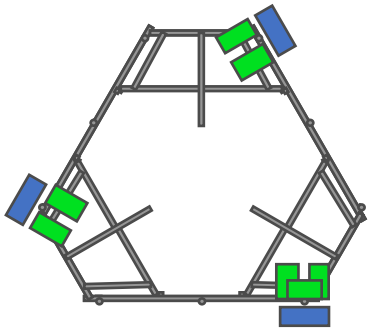
Infinigy Load Calculator V2.1.7

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.7

APPURTENANCE INFORMATION

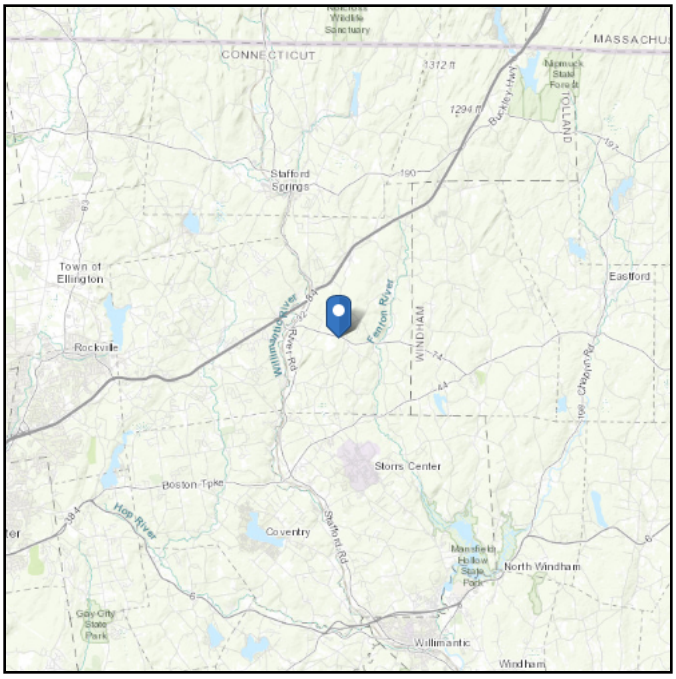
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
JMA WIRELESS MX08FRO665-21	135.0	3	0.90	49.83	8.01	3.21	359.24	143.96	64.50	17.96	MP1
FUJITSU TA08025-B605	135.0	3	0.90	49.83	1.96	1.19	88.06	53.33	74.95	20.87	MP1
FUJITSU TA08025-B604	135.0	3	0.90	49.83	1.96	1.03	88.06	46.33	63.93	17.80	MP1
RAYCAP RDIDC-9181-PF-48	135.0	1	0.90	49.83	1.87	1.07	83.72	47.84	21.85	6.08	MP1

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 764.53 ft (NAVD 88)
Latitude: 41.8757
Longitude: -72.2694



Wind

Results:

Wind Speed:	125 mph per Willington CIty Requirements
10-year MRI	77 Vmph
25-year MRI	87 Vmph
50-year MRI	95 Vmph
100-year MRI	102 Vmph

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

Date Accessed: Tue Aug 10 2021

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 15% probability of exceedance in 50 years (annual exceedance probability = 0.00333, MRI = 300 years).

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

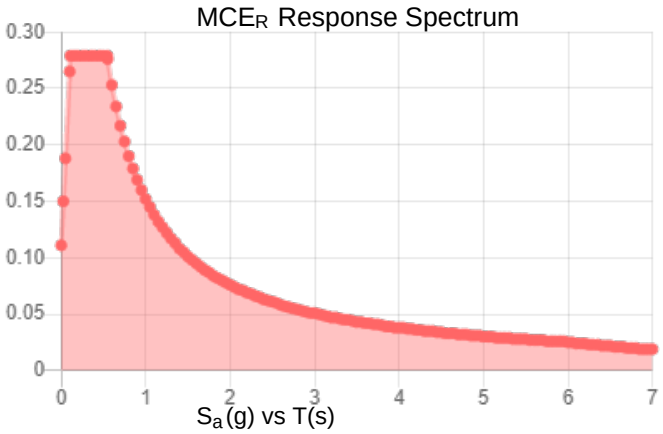
Seismic

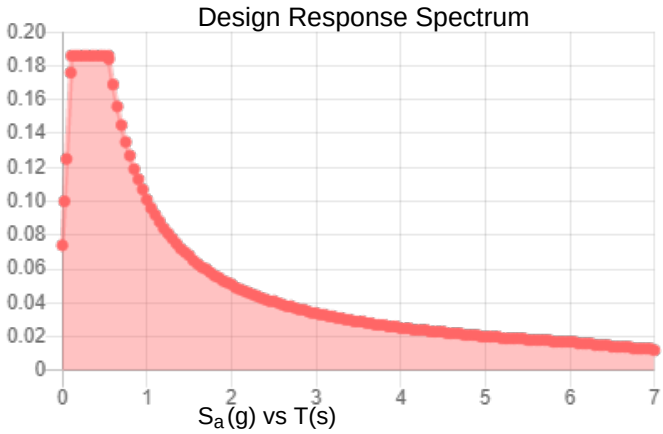
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.174	S_{DS} :	0.186
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.086
S_{MS} :	0.279	PGA_M :	0.138
S_{M1} :	0.152	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Tue Aug 10 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Aug 10 2021

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

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

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	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 Ksi	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 Ksi	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 Ksi	Typical
13	H1	N43	N44			Face Pipes(3.5x.16)	Beam	None	A500 GR.C	Typical
14	MP1	N66	N60			Antenna Pipes	Beam	None	A500 GR.C	Typical
15	MP3	N63	N57			Antenna Pipes	Beam	None	A500 GR.C	Typical
16	HR1	N67	N68			Handrail	Beam	None	A500 GR.C	Typical
17	CA8	N114A	N113A		180	Handrail Connector	Beam	None	A1011 36 Ksi	Typical
18	CA9	N112A	N111A		180	Handrail Connector	Beam	None	A1011 36 Ksi	Typical
19	CA7	N116A	N115A		180	Handrail Connector	Beam	None	A1011 36 Ksi	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(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
25	CA4	N124B	P4			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
26	CA1	P15	N122B			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
27	CA2	N123A	P15			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
28	CA5	P26	N125			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	Typical
29	CA6	N126	P26			Channel(3.38x2.06)	Beam	None	A1011 36 Ksi	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

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design Rules
42	MP2	N75	N74			Antenna Pipes	Beam	None	A500 GR.C	Typical
43	M43	N72B	N76			RIGID	None	None	RIGID	Typical
44	M44	N73	N77			RIGID	None	None	RIGID	Typical
45	H3	N81A	N82A			Face Pipes(3.5x.16)	Beam	None	A500 GR.C	Typical
46	MP7	N90	N88			Antenna Pipes	Beam	None	A500 GR.C	Typical
47	MP9	N89	N87			Antenna Pipes	Beam	None	A500 GR.C	Typical
48	HR3	N91	N92			Handrail	Beam	None	A500 GR.C	Typical
49	M52	N84	N94			RIGID	None	None	RIGID	Typical
50	M53	N83A	N93			RIGID	None	None	RIGID	Typical
51	M54	N85	N95			RIGID	None	None	RIGID	Typical
52	M55	N86	N96			RIGID	None	None	RIGID	Typical
53	H2	N109	N110			Face Pipes(3.5x.16)	Beam	None	A500 GR.C	Typical
54	MP4	N118	N116			Antenna Pipes	Beam	None	A500 GR.C	Typical
55	MP6	N117	N115			Antenna Pipes	Beam	None	A500 GR.C	Typical
56	HR2	N119	N120			Handrail	Beam	None	A500 GR.C	Typical
57	M66A	N112	N122			RIGID	None	None	RIGID	Typical
58	M67A	N111	N121			RIGID	None	None	RIGID	Typical
59	M68A	N113	N123			RIGID	None	None	RIGID	Typical
60	M69A	N114	N124			RIGID	None	None	RIGID	Typical
61	MP8	N132B	N131A			Antenna Pipes	Beam	None	A500 GR.C	Typical
62	M68B	N129B	N133B			RIGID	None	None	RIGID	Typical
63	M69B	N130A	N134A			RIGID	None	None	RIGID	Typical
64	MP5	N138A	N137A			Antenna Pipes	Beam	None	A500 GR.C	Typical
65	M71B	N135A	N139			RIGID	None	None	RIGID	Typical
66	M72B	N136	N140			RIGID	None	None	RIGID	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Lengt...	Lbyy[in]	Lbzz[in]	Lcomp t...	Lcomp b...	L-tor...	Kyy	Kzz	Cb	Func...
1	S3	Square Tubing	40			Lbyy						Late...
2	GA4	Grating Angle	27.295			Lbyy						Late...
3	GA3	Grating Angle	27.295			Lbyy						Late...
4	P3	Corner Plates	42			Lbyy						Late...
5	S2	Square Tubing	40			Lbyy						Late...
6	GA2	Grating Angle	27.295			Lbyy						Late...
7	GA1	Grating Angle	27.295			Lbyy						Late...
8	P2	Corner Plates	42			Lbyy						Late...
9	S1	Square Tubing	40			Lbyy						Late...
10	GA6	Grating Angle	27.295			Lbyy						Late...
11	GA5	Grating Angle	27.295			Lbyy						Late...
12	P1	Corner Plates	42			Lbyy						Late...
13	H1	Face Pipes(3.5x.16)	96			Lbyy						Late...

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Lengt...	Lbyy[in]	Lbzz[in]	Lcomp t...	Lcomp b...	L-tor...	Kyy	Kzz	Cb	Func...
14	MP1	Antenna Pipes	96			Lbyy						Late...
15	MP3	Antenna Pipes	96			Lbyy						Late...
16	HR1	Handrail	96			Lbyy						Late...
17	CA8	Handrail Connector	42			Lbyy						Late...
18	CA9	Handrail Connector	42			Lbyy						Late...
19	CA7	Handrail Connector	42			Lbyy						Late...
20	CA3	Channel(3.38x2.06)	33			Lbyy						Late...
21	CA4	Channel(3.38x2.06)	33			Lbyy						Late...
22	CA1	Channel(3.38x2.06)	33			Lbyy						Late...
23	CA2	Channel(3.38x2.06)	33			Lbyy						Late...
24	CA5	Channel(3.38x2.06)	33			Lbyy						Late...
25	CA6	Channel(3.38x2.06)	33			Lbyy						Late...
26	M75	PL 2.375x0.5	1.5			Lbyy						Late...
27	MP2	Antenna Pipes	96			Lbyy						Late...
28	H3	Face Pipes(3.5x.16)	96			Lbyy						Late...
29	MP7	Antenna Pipes	96			Lbyy						Late...
30	MP9	Antenna Pipes	96			Lbyy						Late...
31	HR3	Handrail	96			Lbyy						Late...
32	H2	Face Pipes(3.5x.16)	96			Lbyy						Late...
33	MP4	Antenna Pipes	96			Lbyy						Late...
34	MP6	Antenna Pipes	96			Lbyy						Late...
35	HR2	Handrail	96			Lbyy						Late...
36	MP8	Antenna Pipes	96			Lbyy						Late...
37	MP5	Antenna Pipes	96			Lbyy						Late...

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra...	Analysis ...	Inactive	Seismi...
1	S3						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		+y+3		None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Ra..	Analysis ...	Inactive	Seismi...
15	MP3						Yes		+y+3		None
16	HR1						Yes				None
17	CA8	OOOOOX	OOOOOX				Yes				None
18	CA9	OOOOOX	OOOOOX				Yes				None
19	CA7	OOOOOX	OOOOOX				Yes	Default			None
20	M32						Yes	** NA **			None
21	M35						Yes	** NA **			None
22	M36						Yes	** NA **			None
23	M39A						Yes	** NA **			None
24	CA3						Yes	Default			None
25	CA4						Yes	Default			None
26	CA1						Yes	Default			None
27	CA2						Yes	Default			None
28	CA5						Yes	Default			None
29	CA6						Yes	Default			None
30	M64	BenPIN					Yes	** NA **			None
31	M65						Yes	** NA **			None
32	M66	BenPIN					Yes	** NA **			None
33	M67						Yes	** NA **			None
34	M68	BenPIN					Yes	** NA **			None
35	M69						Yes	** NA **			None
36	M70	BenPIN					Yes	** NA **			None
37	M71						Yes	** NA **			None
38	M72	BenPIN					Yes	** NA **			None
39	M73						Yes	** NA **			None
40	M74	BenPIN					Yes	** NA **			None
41	M75						Yes	** NA **			None
42	MP2						Yes		+y+3		None
43	M43						Yes	** NA **			None
44	M44						Yes	** NA **			None
45	H3						Yes				None
46	MP7						Yes		+y+3		None
47	MP9						Yes		+y+3		None
48	HR3						Yes				None
49	M52						Yes	** NA **			None
50	M53						Yes	** NA **			None
51	M54						Yes	** NA **			None
52	M55						Yes	** NA **			None
53	H2						Yes				None
54	MP4						Yes		+y+3		None
55	MP6						Yes		+y+3		None
56	HR2						Yes				None

Member Advanced Data (Continued)

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

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		29	35.1	0
3	Total General		29	35.1	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	9	864	394.45
14	A529 Gr. 50	L2x2x4	6	163.8	43.838
15	Total HR Steel		37	2175.3	1109.525

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in...	Izz [in...	J [in4]
1	Corner Plates	PL6.5x0.375	Beam	None	A1011 ...	Typical	2.438	.029	8.582	.11
2	6"x0.37" Plate	Plate 6x.37	Beam	None	A1011 ...	Typical	2.22	.025	6.66	.097
3	Grating Angle	L2x2x4	Beam	None	A529 G...	Typical	.944	.346	.346	.021
4	Face Pipes(3.5x.1...	Pipe3.5x0.165	Beam	None	A500 G...	Typical	1.729	2.409	2.409	4.819
5	Antenna Pipes	PIPE 2.5	Beam	None	A500 G...	Typical	1.61	1.45	1.45	2.89
6	Channel(3.38x2.06)	C3.38x2.06x0.25	Beam	None	A1011 ...	Typical	1.75	.715	3.026	.034
7	Square Tubing	HSS4X4X6	Beam	None	A500 G...	Typical	4.78	10.3	10.3	17.5
8	Handrail Connector	L6.6x4.46x0.25	Beam	None	A1011 ...	Typical	2.703	4.759	12.473	.055

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design...	A [in2]	Iyy [in...	Izz [in...	J [in4]
9	Handrail	2.88x0.120	Beam	None	A500 G...	Typical	1.04	.993	.993	1.985

Basic Load Cases

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Memb...	Surface(Plate/Wall)
1	Self Weight	DL		-1			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 1...	None					26			
7	Wind Load AZI 1...	None					26			
8	Wind Load AZI 1...	None					26			
9	Wind Load AZI 2...	None					26			
10	Wind Load AZI 2...	None					26			
11	Wind Load AZI 2...	None					26			
12	Wind Load AZI 3...	None					26			
13	Wind Load AZI 3...	None					26			
14	Distr. Wind Load Z	WLZ						66		
15	Distr. Wind Load X	WLX						66		
16	Ice Weight	OL1					13	66	3	
17	Ice Wind Load A...	OL2					26			
18	Ice Wind Load A...	None					26			
19	Ice Wind Load A...	None					26			
20	Ice Wind Load A...	OL3					26			
21	Ice Wind Load A...	None					26			
22	Ice Wind Load A...	None					26			
23	Ice Wind Load A...	None					26			
24	Ice Wind Load A...	None					26			
25	Ice Wind Load A...	None					26			
26	Ice Wind Load A...	None					26			
27	Ice Wind Load A...	None					26			
28	Ice Wind Load A...	None					26			
29	Distr. Ice Wind L...	OL2						66		
30	Distr. Ice Wind L...	OL3						66		
31	Seismic Load Z	ELZ			-.278		13			
32	Seismic Load X	ELX	-.278				13			
33	Service Live Loa...	LL				1				
34	Maintenance Loa...	LL				1				
35	Maintenance Loa...	LL				1				
36	Maintenance Loa...	LL				1				
37	Maintenance Loa...	LL				1				

Basic Load Cases (Continued)

	BLC Description	Category	X Gr...	Y Gr...	Z Gr...	Joint	Point	Distributed	Area(Memb...	Surface(Plate/Wall)
38	Maintenance Loa...	LL				1				
39	Maintenance Loa...	LL				1				
40	Maintenance Loa...	LL				1				
41	Maintenance Loa...	LL				1				
42	Maintenance Loa...	LL				1				
43	BLC 1 Transient ...	None						9		
44	BLC 16 Transien...	None						9		

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Y...	Y		1	1.4																				
2	1.2DL + 1WL AZI 0	Y...	Y		1	1.2	2	1	14	1	15															
3	1.2DL + 1WL AZI 30	Y...	Y		1	1.2	3	1	14	.866	15	.5														
4	1.2DL + 1WL AZI 60	Y...	Y		1	1.2	4	1	14	.5	15	.866														
5	1.2DL + 1WL AZI 90	Y...	Y		1	1.2	5	1	14		15	1														
6	1.2DL + 1WL AZI 120	Y...	Y		1	1.2	6	1	14	-.5	15	.866														
7	1.2DL + 1WL AZI 150	Y...	Y		1	1.2	7	1	14	-.8...	15	.5														
8	1.2DL + 1WL AZI 180	Y...	Y		1	1.2	8	1	14	-1	15															
9	1.2DL + 1WL AZI 210	Y...	Y		1	1.2	9	1	14	-.8...	15	-.5														
10	1.2DL + 1WL AZI 240	Y...	Y		1	1.2	10	1	14	-.5	15	-.8...														
11	1.2DL + 1WL AZI 270	Y...	Y		1	1.2	11	1	14		15	-1														
12	1.2DL + 1WL AZI 300	Y...	Y		1	1.2	12	1	14	.5	15	-.8...														
13	1.2DL + 1WL AZI 330	Y...	Y		1	1.2	13	1	14	.866	15	-.5														
14	0.9DL + 1WL AZI 0	Y...	Y		1	.9	2	1	14	1	15															
15	0.9DL + 1WL AZI 30	Y...	Y		1	.9	3	1	14	.866	15	.5														
16	0.9DL + 1WL AZI 60	Y...	Y		1	.9	4	1	14	.5	15	.866														
17	0.9DL + 1WL AZI 90	Y...	Y		1	.9	5	1	14		15	1														
18	0.9DL + 1WL AZI 120	Y...	Y		1	.9	6	1	14	-.5	15	.866														
19	0.9DL + 1WL AZI 150	Y...	Y		1	.9	7	1	14	-.8...	15	.5														
20	0.9DL + 1WL AZI 180	Y...	Y		1	.9	8	1	14	-1	15															
21	0.9DL + 1WL AZI 210	Y...	Y		1	.9	9	1	14	-.8...	15	-.5														
22	0.9DL + 1WL AZI 240	Y...	Y		1	.9	10	1	14	-.5	15	-.8...														
23	0.9DL + 1WL AZI 270	Y...	Y		1	.9	11	1	14		15	-1														
24	0.9DL + 1WL AZI 300	Y...	Y		1	.9	12	1	14	.5	15	-.8...														
25	0.9DL + 1WL AZI 330	Y...	Y		1	.9	13	1	14	.866	15	-.5														
26	1.2D + 1.0Di	Y...	Y		1	1.2	16	1																		
27	1.2D + 1.0Di +1.0Wi AZI 0	Y...	Y		1	1.2	16	1	17	1	29	1	30													
28	1.2D + 1.0Di +1.0Wi AZI 30	Y...	Y		1	1.2	16	1	18	1	29	.866	30	.5													
29	1.2D + 1.0Di +1.0Wi AZI 60	Y...	Y		1	1.2	16	1	19	1	29	.5	30	.866													
30	1.2D + 1.0Di +1.0Wi AZI 90	Y...	Y		1	1.2	16	1	20	1	29		30	1													
31	1.2D + 1.0Di +1.0Wi AZI 120	Y...	Y		1	1.2	16	1	21	1	29	-.5	30	.866													

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
32	1.2D + 1.0Di +1.0Wi AZI 150	Y...	Y		1	1.2	16	1	22	1	29	-.8...	30	.5												
33	1.2D + 1.0Di +1.0Wi AZI 180	Y...	Y		1	1.2	16	1	23	1	29	-1	30													
34	1.2D + 1.0Di +1.0Wi AZI 210	Y...	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5												
35	1.2D + 1.0Di +1.0Wi AZI 240	Y...	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...												
36	1.2D + 1.0Di +1.0Wi AZI 270	Y...	Y		1	1.2	16	1	26	1	29		30	-1												
37	1.2D + 1.0Di +1.0Wi AZI 300	Y...	Y		1	1.2	16	1	27	1	29	.5	30	-.8...												
38	1.2D + 1.0Di +1.0Wi AZI 330	Y...	Y		1	1.2	16	1	28	1	29	.866	30	-.5												
39	(1.2 + 0.2Sds)DL + 1.0E AZI 0	Y...	Y		1	1.2...	31	1	32																	
40	(1.2 + 0.2Sds)DL + 1.0E AZI 30	Y...	Y		1	1.2...	31	.866	32	.5																
41	(1.2 + 0.2Sds)DL + 1.0E AZI 60	Y...	Y		1	1.2...	31	.5	32	.866																
42	(1.2 + 0.2Sds)DL + 1.0E AZI 90	Y...	Y		1	1.2...	31		32	1																
43	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-.5	32	.866																
44	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-.8...	32	.5																
45	(1.2 + 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	1.2...	31	-1	32																	
46	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31	-.8...	32	-.5																
47	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31	-.5	32	-.8...																
48	(1.2 + 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	1.2...	31		32	-1																
49	(1.2 + 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	1.2...	31	.5	32	-.8...																
50	(1.2 + 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	1.2...	31	.866	32	-.5																
51	(0.9 - 0.2Sds)DL + 1.0E AZI 0	Y...	Y		1	.863	31	1	32																	
52	(0.9 - 0.2Sds)DL + 1.0E AZI 30	Y...	Y		1	.863	31	.866	32	.5																
53	(0.9 - 0.2Sds)DL + 1.0E AZI 60	Y...	Y		1	.863	31	.5	32	.866																
54	(0.9 - 0.2Sds)DL + 1.0E AZI 90	Y...	Y		1	.863	31		32	1																
55	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.863	31	-.5	32	.866																
56	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.863	31	-.8...	32	.5																
57	(0.9 - 0.2Sds)DL + 1.0E AZI 1...	Y...	Y		1	.863	31	-1	32																	
58	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.863	31	-.8...	32	-.5																
59	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.863	31	-.5	32	-.8...																
60	(0.9 - 0.2Sds)DL + 1.0E AZI 2...	Y...	Y		1	.863	31		32	-1																
61	(0.9 - 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	.863	31	.5	32	-.8...																
62	(0.9 - 0.2Sds)DL + 1.0E AZI 3...	Y...	Y		1	.863	31	.866	32	-.5																
63	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	2	.23	14	.23	15		33	1.5												
64	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	3	.23	14	.2	15	.115	33	1.5												
65	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	4	.23	14	.115	15	.2	33	1.5												
66	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	5	.23	14		15	.23	33	1.5												
67	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	6	.23	14	-.1...	15	.2	33	1.5												
68	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	7	.23	14	-.2	15	.115	33	1.5												
69	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	8	.23	14	-.23	15		33	1.5												
70	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	9	.23	14	-.2	15	-.1...	33	1.5												
71	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	10	.23	14	-.1...	15	-.2	33	1.5												
72	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	11	.23	14		15	-.23	33	1.5												
73	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	12	.23	14	.115	15	-.2	33	1.5												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
74	1.0DL + 1.5LL + 1.0SWL (60 ...	Y...	Y		1	1	13	.23	14	.2	15	-.1...	33	1.5												
75	1.2DL + 1.5LL	Y...	Y		1	1.2	33	1.5																		
76	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	2	.058	14	.058	15													
77	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	3	.058	14	.05	15	.029												
78	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	4	.058	14	.029	15	.05												
79	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	5	.058	14		15	.058												
80	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	6	.058	14	-.0...	15	.05												
81	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	7	.058	14	-.05	15	.029												
82	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	8	.058	14	-.0...	15													
83	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	9	.058	14	-.05	15	-.0...												
84	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	10	.058	14	-.0...	15	-.05												
85	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	11	.058	14		15	-.0...												
86	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	12	.058	14	.029	15	-.05												
87	1.2DL + 1.5LM-MP1 + 1SWL (...	Y...	Y		1	1.2	34	1.5	13	.058	14	.05	15	-.0...												
88	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	2	.058	14	.058	15													
89	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	3	.058	14	.05	15	.029												
90	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	4	.058	14	.029	15	.05												
91	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	5	.058	14		15	.058												
92	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	6	.058	14	-.0...	15	.05												
93	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	7	.058	14	-.05	15	.029												
94	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	8	.058	14	-.0...	15													
95	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	9	.058	14	-.05	15	-.0...												
96	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	10	.058	14	-.0...	15	-.05												
97	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	11	.058	14		15	-.0...												
98	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	12	.058	14	.029	15	-.05												
99	1.2DL + 1.5LM-MP2 + 1SWL (...	Y...	Y		1	1.2	35	1.5	13	.058	14	.05	15	-.0...												
100	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	2	.058	14	.058	15													
101	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	3	.058	14	.05	15	.029												
102	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	4	.058	14	.029	15	.05												
103	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	5	.058	14		15	.058												
104	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	6	.058	14	-.0...	15	.05												
105	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	7	.058	14	-.05	15	.029												
106	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	8	.058	14	-.0...	15													
107	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	9	.058	14	-.05	15	-.0...												
108	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	10	.058	14	-.0...	15	-.05												
109	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	11	.058	14		15	-.0...												
110	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	12	.058	14	.029	15	-.05												
111	1.2DL + 1.5LM-MP3 + 1SWL (...	Y...	Y		1	1.2	36	1.5	13	.058	14	.05	15	-.0...												
112	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	2	.058	14	.058	15													
113	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	3	.058	14	.05	15	.029												
114	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	4	.058	14	.029	15	.05												
115	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	5	.058	14		15	.058												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
116	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	6	.058	14	-.0...	15	.05												
117	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	7	.058	14	-.05	15	.029												
118	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	8	.058	14	-.0...	15													
119	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	9	.058	14	-.05	15	-.0...												
120	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	10	.058	14	-.0...	15	-.05												
121	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	11	.058	14		15	-.0...												
122	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	12	.058	14	.029	15	-.05												
123	1.2DL + 1.5LM-MP4 + 1SWL (...	Y...	Y		1	1.2	37	1.5	13	.058	14	.05	15	-.0...												
124	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	2	.058	14	.058	15													
125	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	3	.058	14	.05	15	.029												
126	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	4	.058	14	.029	15	.05												
127	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	5	.058	14		15	.058												
128	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	6	.058	14	-.0...	15	.05												
129	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	7	.058	14	-.05	15	.029												
130	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	8	.058	14	-.0...	15													
131	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	9	.058	14	-.05	15	-.0...												
132	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	10	.058	14	-.0...	15	-.05												
133	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	11	.058	14		15	-.0...												
134	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	12	.058	14	.029	15	-.05												
135	1.2DL + 1.5LM-MP5 + 1SWL (...	Y...	Y		1	1.2	38	1.5	13	.058	14	.05	15	-.0...												
136	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	2	.058	14	.058	15													
137	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	3	.058	14	.05	15	.029												
138	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	4	.058	14	.029	15	.05												
139	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	5	.058	14		15	.058												
140	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	6	.058	14	-.0...	15	.05												
141	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	7	.058	14	-.05	15	.029												
142	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	8	.058	14	-.0...	15													
143	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	9	.058	14	-.05	15	-.0...												
144	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	10	.058	14	-.0...	15	-.05												
145	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	11	.058	14		15	-.0...												
146	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	12	.058	14	.029	15	-.05												
147	1.2DL + 1.5LM-MP6 + 1SWL (...	Y...	Y		1	1.2	39	1.5	13	.058	14	.05	15	-.0...												
148	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	2	.058	14	.058	15													
149	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	3	.058	14	.05	15	.029												
150	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	4	.058	14	.029	15	.05												
151	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	5	.058	14		15	.058												
152	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	6	.058	14	-.0...	15	.05												
153	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	7	.058	14	-.05	15	.029												
154	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	8	.058	14	-.0...	15													
155	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	9	.058	14	-.05	15	-.0...												
156	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	10	.058	14	-.0...	15	-.05												
157	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	11	.058	14		15	-.0...												

Load Combinations (Continued)

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
158	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	12	.058	14	.029	15	-.05												
159	1.2DL + 1.5LM-MP7 + 1SWL (...	Y...	Y		1	1.2	40	1.5	13	.058	14	.05	15	-.0...												
160	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	2	.058	14	.058	15													
161	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	3	.058	14	.05	15	.029												
162	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	4	.058	14	.029	15	.05												
163	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	5	.058	14		15	.058												
164	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	6	.058	14	-.0...	15	.05												
165	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	7	.058	14	-.05	15	.029												
166	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	8	.058	14	-.0...	15													
167	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	9	.058	14	-.05	15	-.0...												
168	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	10	.058	14	-.0...	15	-.05												
169	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	11	.058	14		15	-.0...												
170	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	12	.058	14	.029	15	-.05												
171	1.2DL + 1.5LM-MP8 + 1SWL (...	Y...	Y		1	1.2	41	1.5	13	.058	14	.05	15	-.0...												
172	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	2	.058	14	.058	15													
173	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	3	.058	14	.05	15	.029												
174	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	4	.058	14	.029	15	.05												
175	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	5	.058	14		15	.058												
176	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	6	.058	14	-.0...	15	.05												
177	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	7	.058	14	-.05	15	.029												
178	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	8	.058	14	-.0...	15													
179	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	9	.058	14	-.05	15	-.0...												
180	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	10	.058	14	-.0...	15	-.05												
181	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	11	.058	14		15	-.0...												
182	1.2DL + 1.5LM-MP9 + 1SWL (...	Y...	Y		1	1.2	42	1.5	12	.058	14	.029	15	-.05												

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	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	...	1132.981	6	2708.0...	35	1742.0...	2	1208.0...	16	2226.527	19	4852.323	35
2		...	-1114.266	24	-669.9...	16	-1734.2...	19	-4308.8...	35	-2242.07	13	-2082.755	16
3	P13	...	1322.129	4	2971.28	31	1731.0...	15	1159.9...	24	2358.27	15	1972.97	24
4		...	-1321.718	22	-613.57	24	-1737.1...	9	-2823.5...	92	-2403.095	9	-6813.376	31
5	P1	...	1727.678	17	2756.6...	27	899.475	2	6650.1...	27	1955.524	11	1584.594	115

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
6		...	-1746.973	11	-691.4...	20	-907.84	8	-2475.4...	20	-1903.731	17	-866.376	157
7	Totals:	...	3971.941	5	7595.8...	34	4206.9...	14						
8		...	-3971.933	23	1535.14	53	-4206.9...	8						

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-32.25	0
2	MP1	Y	-32.25	72
3	MP1	Y	-74.95	12
4	MP1	Y	-63.93	12
5	MP1	Y	-21.85	48
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	-179.62	0
3	MP1	X	0	72
4	MP1	Z	-179.62	72
5	MP1	X	0	12
6	MP1	Z	-88.06	12
7	MP1	X	0	12
8	MP1	Z	-88.06	12
9	MP1	X	0	48
10	MP1	Z	-83.72	48
11	MP4	X	0	0
12	MP4	Z	-98.89	0
13	MP4	X	0	72
14	MP4	Z	-98.89	72
15	MP4	X	0	12
16	MP4	Z	-62.01	12
17	MP4	X	0	12
18	MP4	Z	-56.76	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
19	MP7	X	0	0
20	MP7	Z	-98.89	0
21	MP7	X	0	72
22	MP7	Z	-98.89	72
23	MP7	X	0	12
24	MP7	Z	-62.01	12
25	MP7	X	0	12
26	MP7	Z	-56.76	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-76.35	0
2	MP1	Z	-132.25	0
3	MP1	X	-76.35	72
4	MP1	Z	-132.25	72
5	MP1	X	-39.69	12
6	MP1	Z	-68.74	12
7	MP1	X	-38.81	12
8	MP1	Z	-67.23	12
9	MP1	X	-37.37	48
10	MP1	Z	-64.73	48
11	MP4	X	-76.35	0
12	MP4	Z	-132.25	0
13	MP4	X	-76.35	72
14	MP4	Z	-132.25	72
15	MP4	X	-39.69	12
16	MP4	Z	-68.74	12
17	MP4	X	-38.81	12
18	MP4	Z	-67.23	12
19	MP7	X	-35.99	0
20	MP7	Z	-62.34	0
21	MP7	X	-35.99	72
22	MP7	Z	-62.34	72
23	MP7	X	-26.67	12
24	MP7	Z	-46.19	12
25	MP7	X	-23.16	12
26	MP7	Z	-40.12	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-85.64	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP1	Z	-49.45	0
3	MP1	X	-85.64	72
4	MP1	Z	-49.45	72
5	MP1	X	-53.7	12
6	MP1	Z	-31.01	12
7	MP1	X	-49.16	12
8	MP1	Z	-28.38	12
9	MP1	X	-49.2	48
10	MP1	Z	-28.4	48
11	MP4	X	-155.55	0
12	MP4	Z	-89.81	0
13	MP4	X	-155.55	72
14	MP4	Z	-89.81	72
15	MP4	X	-76.26	12
16	MP4	Z	-44.03	12
17	MP4	X	-76.26	12
18	MP4	Z	-44.03	12
19	MP7	X	-85.64	0
20	MP7	Z	-49.45	0
21	MP7	X	-85.64	72
22	MP7	Z	-49.45	72
23	MP7	X	-53.7	12
24	MP7	Z	-31.01	12
25	MP7	X	-49.16	12
26	MP7	Z	-28.38	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-71.98	0
2	MP1	Z	0	0
3	MP1	X	-71.98	72
4	MP1	Z	0	72
5	MP1	X	-53.33	12
6	MP1	Z	0	12
7	MP1	X	-46.33	12
8	MP1	Z	0	12
9	MP1	X	-47.84	48
10	MP1	Z	0	48
11	MP4	X	-152.71	0
12	MP4	Z	0	0
13	MP4	X	-152.71	72
14	MP4	Z	0	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
15	MP4	X	-79.38	12
16	MP4	Z	0	12
17	MP4	X	-77.63	12
18	MP4	Z	0	12
19	MP7	X	-152.71	0
20	MP7	Z	0	0
21	MP7	X	-152.71	72
22	MP7	Z	0	72
23	MP7	X	-79.38	12
24	MP7	Z	0	12
25	MP7	X	-77.63	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	-85.64	0
2	MP1	Z	49.45	0
3	MP1	X	-85.64	72
4	MP1	Z	49.45	72
5	MP1	X	-53.7	12
6	MP1	Z	31.01	12
7	MP1	X	-49.16	12
8	MP1	Z	28.38	12
9	MP1	X	-49.2	48
10	MP1	Z	28.4	48
11	MP4	X	-85.64	0
12	MP4	Z	49.45	0
13	MP4	X	-85.64	72
14	MP4	Z	49.45	72
15	MP4	X	-53.7	12
16	MP4	Z	31.01	12
17	MP4	X	-49.16	12
18	MP4	Z	28.38	12
19	MP7	X	-155.55	0
20	MP7	Z	89.81	0
21	MP7	X	-155.55	72
22	MP7	Z	89.81	72
23	MP7	X	-76.26	12
24	MP7	Z	44.03	12
25	MP7	X	-76.26	12
26	MP7	Z	44.03	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-76.35	0
2	MP1	Z	132.25	0
3	MP1	X	-76.35	72
4	MP1	Z	132.25	72
5	MP1	X	-39.69	12
6	MP1	Z	68.74	12
7	MP1	X	-38.81	12
8	MP1	Z	67.23	12
9	MP1	X	-37.37	48
10	MP1	Z	64.73	48
11	MP4	X	-35.99	0
12	MP4	Z	62.34	0
13	MP4	X	-35.99	72
14	MP4	Z	62.34	72
15	MP4	X	-26.67	12
16	MP4	Z	46.19	12
17	MP4	X	-23.16	12
18	MP4	Z	40.12	12
19	MP7	X	-76.35	0
20	MP7	Z	132.25	0
21	MP7	X	-76.35	72
22	MP7	Z	132.25	72
23	MP7	X	-39.69	12
24	MP7	Z	68.74	12
25	MP7	X	-38.81	12
26	MP7	Z	67.23	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	179.62	0
3	MP1	X	0	72
4	MP1	Z	179.62	72
5	MP1	X	0	12
6	MP1	Z	88.06	12
7	MP1	X	0	12
8	MP1	Z	88.06	12
9	MP1	X	0	48
10	MP1	Z	83.72	48
11	MP4	X	0	0
12	MP4	Z	98.89	0
13	MP4	X	0	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	98.89	72
15	MP4	X	0	12
16	MP4	Z	62.01	12
17	MP4	X	0	12
18	MP4	Z	56.76	12
19	MP7	X	0	0
20	MP7	Z	98.89	0
21	MP7	X	0	72
22	MP7	Z	98.89	72
23	MP7	X	0	12
24	MP7	Z	62.01	12
25	MP7	X	0	12
26	MP7	Z	56.76	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	76.35	0
2	MP1	Z	132.25	0
3	MP1	X	76.35	72
4	MP1	Z	132.25	72
5	MP1	X	39.69	12
6	MP1	Z	68.74	12
7	MP1	X	38.81	12
8	MP1	Z	67.23	12
9	MP1	X	37.37	48
10	MP1	Z	64.73	48
11	MP4	X	76.35	0
12	MP4	Z	132.25	0
13	MP4	X	76.35	72
14	MP4	Z	132.25	72
15	MP4	X	39.69	12
16	MP4	Z	68.74	12
17	MP4	X	38.81	12
18	MP4	Z	67.23	12
19	MP7	X	35.99	0
20	MP7	Z	62.34	0
21	MP7	X	35.99	72
22	MP7	Z	62.34	72
23	MP7	X	26.67	12
24	MP7	Z	46.19	12
25	MP7	X	23.16	12
26	MP7	Z	40.12	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	85.64	0
2	MP1	Z	49.45	0
3	MP1	X	85.64	72
4	MP1	Z	49.45	72
5	MP1	X	53.7	12
6	MP1	Z	31.01	12
7	MP1	X	49.16	12
8	MP1	Z	28.38	12
9	MP1	X	49.2	48
10	MP1	Z	28.4	48
11	MP4	X	155.55	0
12	MP4	Z	89.81	0
13	MP4	X	155.55	72
14	MP4	Z	89.81	72
15	MP4	X	76.26	12
16	MP4	Z	44.03	12
17	MP4	X	76.26	12
18	MP4	Z	44.03	12
19	MP7	X	85.64	0
20	MP7	Z	49.45	0
21	MP7	X	85.64	72
22	MP7	Z	49.45	72
23	MP7	X	53.7	12
24	MP7	Z	31.01	12
25	MP7	X	49.16	12
26	MP7	Z	28.38	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	71.98	0
2	MP1	Z	0	0
3	MP1	X	71.98	72
4	MP1	Z	0	72
5	MP1	X	53.33	12
6	MP1	Z	0	12
7	MP1	X	46.33	12
8	MP1	Z	0	12
9	MP1	X	47.84	48
10	MP1	Z	0	48
11	MP4	X	152.71	0
12	MP4	Z	0	0
13	MP4	X	152.71	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	0	72
15	MP4	X	79.38	12
16	MP4	Z	0	12
17	MP4	X	77.63	12
18	MP4	Z	0	12
19	MP7	X	152.71	0
20	MP7	Z	0	0
21	MP7	X	152.71	72
22	MP7	Z	0	72
23	MP7	X	79.38	12
24	MP7	Z	0	12
25	MP7	X	77.63	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	85.64	0
2	MP1	Z	-49.45	0
3	MP1	X	85.64	72
4	MP1	Z	-49.45	72
5	MP1	X	53.7	12
6	MP1	Z	-31.01	12
7	MP1	X	49.16	12
8	MP1	Z	-28.38	12
9	MP1	X	49.2	48
10	MP1	Z	-28.4	48
11	MP4	X	85.64	0
12	MP4	Z	-49.45	0
13	MP4	X	85.64	72
14	MP4	Z	-49.45	72
15	MP4	X	53.7	12
16	MP4	Z	-31.01	12
17	MP4	X	49.16	12
18	MP4	Z	-28.38	12
19	MP7	X	155.55	0
20	MP7	Z	-89.81	0
21	MP7	X	155.55	72
22	MP7	Z	-89.81	72
23	MP7	X	76.26	12
24	MP7	Z	-44.03	12
25	MP7	X	76.26	12
26	MP7	Z	-44.03	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	76.35	0
2	MP1	Z	-132.25	0
3	MP1	X	76.35	72
4	MP1	Z	-132.25	72
5	MP1	X	39.69	12
6	MP1	Z	-68.74	12
7	MP1	X	38.81	12
8	MP1	Z	-67.23	12
9	MP1	X	37.37	48
10	MP1	Z	-64.73	48
11	MP4	X	35.99	0
12	MP4	Z	-62.34	0
13	MP4	X	35.99	72
14	MP4	Z	-62.34	72
15	MP4	X	26.67	12
16	MP4	Z	-46.19	12
17	MP4	X	23.16	12
18	MP4	Z	-40.12	12
19	MP7	X	76.35	0
20	MP7	Z	-132.25	0
21	MP7	X	76.35	72
22	MP7	Z	-132.25	72
23	MP7	X	39.69	12
24	MP7	Z	-68.74	12
25	MP7	X	38.81	12
26	MP7	Z	-67.23	12

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-198.32	0
2	MP1	Y	-198.32	72
3	MP1	Y	-107.185	12
4	MP1	Y	-100.913	12
5	MP1	Y	-98.529	48
6	MP4	Y	-198.32	0
7	MP4	Y	-198.32	72
8	MP4	Y	-107.185	12
9	MP4	Y	-100.913	12
10	MP7	Y	-198.32	0
11	MP7	Y	-198.32	72
12	MP7	Y	-107.185	12
13	MP7	Y	-100.913	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	-24.12	0
3	MP1	X	0	72
4	MP1	Z	-24.12	72
5	MP1	X	0	12
6	MP1	Z	-9.92	12
7	MP1	X	0	12
8	MP1	Z	-9.92	12
9	MP1	X	0	48
10	MP1	Z	-9.55	48
11	MP4	X	0	0
12	MP4	Z	-17.72	0
13	MP4	X	0	72
14	MP4	Z	-17.72	72
15	MP4	X	0	12
16	MP4	Z	-8.16	12
17	MP4	X	0	12
18	MP4	Z	-7.9	12
19	MP7	X	0	0
20	MP7	Z	-17.72	0
21	MP7	X	0	72
22	MP7	Z	-17.72	72
23	MP7	X	0	12
24	MP7	Z	-8.16	12
25	MP7	X	0	12
26	MP7	Z	-7.9	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-10.99	0
2	MP1	Z	-19.04	0
3	MP1	X	-10.99	72
4	MP1	Z	-19.04	72
5	MP1	X	-4.67	12
6	MP1	Z	-8.08	12
7	MP1	X	-4.62	12
8	MP1	Z	-8.01	12
9	MP1	X	-4.5	48
10	MP1	Z	-7.79	48
11	MP4	X	-10.99	0
12	MP4	Z	-19.04	0
13	MP4	X	-10.99	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	-19.04	72
15	MP4	X	-4.67	12
16	MP4	Z	-8.08	12
17	MP4	X	-4.62	12
18	MP4	Z	-8.01	12
19	MP7	X	-7.79	0
20	MP7	Z	-13.5	0
21	MP7	X	-7.79	72
22	MP7	Z	-13.5	72
23	MP7	X	-3.78	12
24	MP7	Z	-6.55	12
25	MP7	X	-3.61	12
26	MP7	Z	-6.25	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-15.35	0
2	MP1	Z	-8.86	0
3	MP1	X	-15.35	72
4	MP1	Z	-8.86	72
5	MP1	X	-7.06	12
6	MP1	Z	-4.08	12
7	MP1	X	-6.84	12
8	MP1	Z	-3.95	12
9	MP1	X	-6.84	48
10	MP1	Z	-3.95	48
11	MP4	X	-20.89	0
12	MP4	Z	-12.06	0
13	MP4	X	-20.89	72
14	MP4	Z	-12.06	72
15	MP4	X	-8.59	12
16	MP4	Z	-4.96	12
17	MP4	X	-8.59	12
18	MP4	Z	-4.96	12
19	MP7	X	-15.35	0
20	MP7	Z	-8.86	0
21	MP7	X	-15.35	72
22	MP7	Z	-8.86	72
23	MP7	X	-7.06	12
24	MP7	Z	-4.08	12
25	MP7	X	-6.84	12
26	MP7	Z	-3.95	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-15.59	0
2	MP1	Z	0	0
3	MP1	X	-15.59	72
4	MP1	Z	0	72
5	MP1	X	-7.57	12
6	MP1	Z	0	12
7	MP1	X	-7.22	12
8	MP1	Z	0	12
9	MP1	X	-7.35	48
10	MP1	Z	0	48
11	MP4	X	-21.99	0
12	MP4	Z	0	0
13	MP4	X	-21.99	72
14	MP4	Z	0	72
15	MP4	X	-9.33	12
16	MP4	Z	0	12
17	MP4	X	-9.25	12
18	MP4	Z	0	12
19	MP7	X	-21.99	0
20	MP7	Z	0	0
21	MP7	X	-21.99	72
22	MP7	Z	0	72
23	MP7	X	-9.33	12
24	MP7	Z	0	12
25	MP7	X	-9.25	12
26	MP7	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-15.35	0
2	MP1	Z	8.86	0
3	MP1	X	-15.35	72
4	MP1	Z	8.86	72
5	MP1	X	-7.06	12
6	MP1	Z	4.08	12
7	MP1	X	-6.84	12
8	MP1	Z	3.95	12
9	MP1	X	-6.84	48
10	MP1	Z	3.95	48
11	MP4	X	-15.35	0
12	MP4	Z	8.86	0
13	MP4	X	-15.35	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	8.86	72
15	MP4	X	-7.06	12
16	MP4	Z	4.08	12
17	MP4	X	-6.84	12
18	MP4	Z	3.95	12
19	MP7	X	-20.89	0
20	MP7	Z	12.06	0
21	MP7	X	-20.89	72
22	MP7	Z	12.06	72
23	MP7	X	-8.59	12
24	MP7	Z	4.96	12
25	MP7	X	-8.59	12
26	MP7	Z	4.96	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-10.99	0
2	MP1	Z	19.04	0
3	MP1	X	-10.99	72
4	MP1	Z	19.04	72
5	MP1	X	-4.67	12
6	MP1	Z	8.08	12
7	MP1	X	-4.62	12
8	MP1	Z	8.01	12
9	MP1	X	-4.5	48
10	MP1	Z	7.79	48
11	MP4	X	-7.79	0
12	MP4	Z	13.5	0
13	MP4	X	-7.79	72
14	MP4	Z	13.5	72
15	MP4	X	-3.78	12
16	MP4	Z	6.55	12
17	MP4	X	-3.61	12
18	MP4	Z	6.25	12
19	MP7	X	-10.99	0
20	MP7	Z	19.04	0
21	MP7	X	-10.99	72
22	MP7	Z	19.04	72
23	MP7	X	-4.67	12
24	MP7	Z	8.08	12
25	MP7	X	-4.62	12
26	MP7	Z	8.01	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	24.12	0
3	MP1	X	0	72
4	MP1	Z	24.12	72
5	MP1	X	0	12
6	MP1	Z	9.92	12
7	MP1	X	0	12
8	MP1	Z	9.92	12
9	MP1	X	0	48
10	MP1	Z	9.55	48
11	MP4	X	0	0
12	MP4	Z	17.72	0
13	MP4	X	0	72
14	MP4	Z	17.72	72
15	MP4	X	0	12
16	MP4	Z	8.16	12
17	MP4	X	0	12
18	MP4	Z	7.9	12
19	MP7	X	0	0
20	MP7	Z	17.72	0
21	MP7	X	0	72
22	MP7	Z	17.72	72
23	MP7	X	0	12
24	MP7	Z	8.16	12
25	MP7	X	0	12
26	MP7	Z	7.9	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	10.99	0
2	MP1	Z	19.04	0
3	MP1	X	10.99	72
4	MP1	Z	19.04	72
5	MP1	X	4.67	12
6	MP1	Z	8.08	12
7	MP1	X	4.62	12
8	MP1	Z	8.01	12
9	MP1	X	4.5	48
10	MP1	Z	7.79	48
11	MP4	X	10.99	0
12	MP4	Z	19.04	0
13	MP4	X	10.99	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	19.04	72
15	MP4	X	4.67	12
16	MP4	Z	8.08	12
17	MP4	X	4.62	12
18	MP4	Z	8.01	12
19	MP7	X	7.79	0
20	MP7	Z	13.5	0
21	MP7	X	7.79	72
22	MP7	Z	13.5	72
23	MP7	X	3.78	12
24	MP7	Z	6.55	12
25	MP7	X	3.61	12
26	MP7	Z	6.25	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	15.35	0
2	MP1	Z	8.86	0
3	MP1	X	15.35	72
4	MP1	Z	8.86	72
5	MP1	X	7.06	12
6	MP1	Z	4.08	12
7	MP1	X	6.84	12
8	MP1	Z	3.95	12
9	MP1	X	6.84	48
10	MP1	Z	3.95	48
11	MP4	X	20.89	0
12	MP4	Z	12.06	0
13	MP4	X	20.89	72
14	MP4	Z	12.06	72
15	MP4	X	8.59	12
16	MP4	Z	4.96	12
17	MP4	X	8.59	12
18	MP4	Z	4.96	12
19	MP7	X	15.35	0
20	MP7	Z	8.86	0
21	MP7	X	15.35	72
22	MP7	Z	8.86	72
23	MP7	X	7.06	12
24	MP7	Z	4.08	12
25	MP7	X	6.84	12
26	MP7	Z	3.95	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	15.59	0
2	MP1	Z	0	0
3	MP1	X	15.59	72
4	MP1	Z	0	72
5	MP1	X	7.57	12
6	MP1	Z	0	12
7	MP1	X	7.22	12
8	MP1	Z	0	12
9	MP1	X	7.35	48
10	MP1	Z	0	48
11	MP4	X	21.99	0
12	MP4	Z	0	0
13	MP4	X	21.99	72
14	MP4	Z	0	72
15	MP4	X	9.33	12
16	MP4	Z	0	12
17	MP4	X	9.25	12
18	MP4	Z	0	12
19	MP7	X	21.99	0
20	MP7	Z	0	0
21	MP7	X	21.99	72
22	MP7	Z	0	72
23	MP7	X	9.33	12
24	MP7	Z	0	12
25	MP7	X	9.25	12
26	MP7	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	15.35	0
2	MP1	Z	-8.86	0
3	MP1	X	15.35	72
4	MP1	Z	-8.86	72
5	MP1	X	7.06	12
6	MP1	Z	-4.08	12
7	MP1	X	6.84	12
8	MP1	Z	-3.95	12
9	MP1	X	6.84	48
10	MP1	Z	-3.95	48
11	MP4	X	15.35	0
12	MP4	Z	-8.86	0
13	MP4	X	15.35	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	-8.86	72
15	MP4	X	7.06	12
16	MP4	Z	-4.08	12
17	MP4	X	6.84	12
18	MP4	Z	-3.95	12
19	MP7	X	20.89	0
20	MP7	Z	-12.06	0
21	MP7	X	20.89	72
22	MP7	Z	-12.06	72
23	MP7	X	8.59	12
24	MP7	Z	-4.96	12
25	MP7	X	8.59	12
26	MP7	Z	-4.96	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	10.99	0
2	MP1	Z	-19.04	0
3	MP1	X	10.99	72
4	MP1	Z	-19.04	72
5	MP1	X	4.67	12
6	MP1	Z	-8.08	12
7	MP1	X	4.62	12
8	MP1	Z	-8.01	12
9	MP1	X	4.5	48
10	MP1	Z	-7.79	48
11	MP4	X	7.79	0
12	MP4	Z	-13.5	0
13	MP4	X	7.79	72
14	MP4	Z	-13.5	72
15	MP4	X	3.78	12
16	MP4	Z	-6.55	12
17	MP4	X	3.61	12
18	MP4	Z	-6.25	12
19	MP7	X	10.99	0
20	MP7	Z	-19.04	0
21	MP7	X	10.99	72
22	MP7	Z	-19.04	72
23	MP7	X	4.67	12
24	MP7	Z	-8.08	12
25	MP7	X	4.62	12
26	MP7	Z	-8.01	12

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-8.978	0
2	MP1	Z	-8.978	72
3	MP1	Z	-20.866	12
4	MP1	Z	-17.798	12
5	MP1	Z	-6.083	48
6	MP4	Z	-8.978	0
7	MP4	Z	-8.978	72
8	MP4	Z	-20.866	12
9	MP4	Z	-17.798	12
10	MP7	Z	-8.978	0
11	MP7	Z	-8.978	72
12	MP7	Z	-20.866	12
13	MP7	Z	-17.798	12

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-8.978	0
2	MP1	X	-8.978	72
3	MP1	X	-20.866	12
4	MP1	X	-17.798	12
5	MP1	X	-6.083	48
6	MP4	X	-8.978	0
7	MP4	X	-8.978	72
8	MP4	X	-20.866	12
9	MP4	X	-17.798	12
10	MP7	X	-8.978	0
11	MP7	X	-8.978	72
12	MP7	X	-20.866	12
13	MP7	X	-17.798	12

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N72B	L	Y	-250

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N70A	L	Y	-500

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

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

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N69A	L	Y	-500

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

	Joint Label	L,D,M	Direction	Magnitude[(lb,lb-ft), (in,rad), (lb*s^2/in, lb*s^2*in)]
1	N76	L	Y	-500

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

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

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

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

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

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

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

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

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

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

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

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

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	SZ	-99.663	-99.663	0	%100
2	GA4	SZ	-99.663	-99.663	0	%100
3	GA3	SZ	-99.663	-99.663	0	%100
4	P3	SZ	-99.663	-99.663	0	%100
5	S2	SZ	-99.663	-99.663	0	%100
6	GA2	SZ	-99.663	-99.663	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
7	GA1	SZ	-99.663	-99.663	0	%100
8	P2	SZ	-99.663	-99.663	0	%100
9	S1	SZ	-99.663	-99.663	0	%100
10	GA6	SZ	-99.663	-99.663	0	%100
11	GA5	SZ	-99.663	-99.663	0	%100
12	P1	SZ	-99.663	-99.663	0	%100
13	H1	SZ	-59.798	-59.798	0	%100
14	MP1	SZ	-59.798	-59.798	0	%100
15	MP3	SZ	-59.798	-59.798	0	%100
16	HR1	SZ	-59.798	-59.798	0	%100
17	CA8	SZ	-99.663	-99.663	0	%100
18	CA9	SZ	-99.663	-99.663	0	%100
19	CA7	SZ	-99.663	-99.663	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	-99.663	-99.663	0	%100
25	CA4	SZ	-99.663	-99.663	0	%100
26	CA1	SZ	-99.663	-99.663	0	%100
27	CA2	SZ	-99.663	-99.663	0	%100
28	CA5	SZ	-99.663	-99.663	0	%100
29	CA6	SZ	-99.663	-99.663	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	-99.663	-99.663	0	%100
42	MP2	SZ	-59.798	-59.798	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	H3	SZ	-59.798	-59.798	0	%100
46	MP7	SZ	-59.798	-59.798	0	%100
47	MP9	SZ	-59.798	-59.798	0	%100
48	HR3	SZ	-59.798	-59.798	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
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	-59.798	-59.798	0	%100
54	MP4	SZ	-59.798	-59.798	0	%100
55	MP6	SZ	-59.798	-59.798	0	%100
56	HR2	SZ	-59.798	-59.798	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	-59.798	-59.798	0	%100
62	M68B	SZ	0	0	0	%100
63	M69B	SZ	0	0	0	%100
64	MP5	SZ	-59.798	-59.798	0	%100
65	M71B	SZ	0	0	0	%100
66	M72B	SZ	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	SX	-99.663	-99.663	0	%100
2	GA4	SX	-99.663	-99.663	0	%100
3	GA3	SX	-99.663	-99.663	0	%100
4	P3	SX	-99.663	-99.663	0	%100
5	S2	SX	-99.663	-99.663	0	%100
6	GA2	SX	-99.663	-99.663	0	%100
7	GA1	SX	-99.663	-99.663	0	%100
8	P2	SX	-99.663	-99.663	0	%100
9	S1	SX	-99.663	-99.663	0	%100
10	GA6	SX	-99.663	-99.663	0	%100
11	GA5	SX	-99.663	-99.663	0	%100
12	P1	SX	-99.663	-99.663	0	%100
13	H1	SX	-59.798	-59.798	0	%100
14	MP1	SX	-59.798	-59.798	0	%100
15	MP3	SX	-59.798	-59.798	0	%100
16	HR1	SX	-59.798	-59.798	0	%100
17	CA8	SX	-99.663	-99.663	0	%100
18	CA9	SX	-99.663	-99.663	0	%100
19	CA7	SX	-99.663	-99.663	0	%100
20	M32	SX	0	0	0	%100
21	M35	SX	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
22	M36	SX	0	0	0	%100
23	M39A	SX	0	0	0	%100
24	CA3	SX	-99.663	-99.663	0	%100
25	CA4	SX	-99.663	-99.663	0	%100
26	CA1	SX	-99.663	-99.663	0	%100
27	CA2	SX	-99.663	-99.663	0	%100
28	CA5	SX	-99.663	-99.663	0	%100
29	CA6	SX	-99.663	-99.663	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	-99.663	-99.663	0	%100
42	MP2	SX	-59.798	-59.798	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	H3	SX	-59.798	-59.798	0	%100
46	MP7	SX	-59.798	-59.798	0	%100
47	MP9	SX	-59.798	-59.798	0	%100
48	HR3	SX	-59.798	-59.798	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	-59.798	-59.798	0	%100
54	MP4	SX	-59.798	-59.798	0	%100
55	MP6	SX	-59.798	-59.798	0	%100
56	HR2	SX	-59.798	-59.798	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	-59.798	-59.798	0	%100
62	M68B	SX	0	0	0	%100
63	M69B	SX	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
64	MP5	SX	-59.798	-59.798	0	%100
65	M71B	SX	0	0	0	%100
66	M72B	SX	0	0	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	Y	-22.391	-22.391	0	%100
2	GA4	Y	-14.434	-14.434	0	%100
3	GA3	Y	-14.434	-14.434	0	%100
4	P3	Y	-24.793	-24.793	0	%100
5	S2	Y	-22.391	-22.391	0	%100
6	GA2	Y	-14.434	-14.434	0	%100
7	GA1	Y	-14.434	-14.434	0	%100
8	P2	Y	-24.793	-24.793	0	%100
9	S1	Y	-22.391	-22.391	0	%100
10	GA6	Y	-14.434	-14.434	0	%100
11	GA5	Y	-14.434	-14.434	0	%100
12	P1	Y	-24.793	-24.793	0	%100
13	H1	Y	-16.323	-16.323	0	%100
14	MP1	Y	-14.565	-14.565	0	%100
15	MP3	Y	-14.565	-14.565	0	%100
16	HR1	Y	-14.579	-14.579	0	%100
17	CA8	Y	-28.886	-28.886	0	%100
18	CA9	Y	-28.886	-28.886	0	%100
19	CA7	Y	-28.886	-28.886	0	%100
20	M32	Y	-6.477	-6.477	0	%100
21	M35	Y	-6.477	-6.477	0	%100
22	M36	Y	-6.477	-6.477	0	%100
23	M39A	Y	-6.477	-6.477	0	%100
24	CA3	Y	-17.612	-17.612	0	%100
25	CA4	Y	-17.612	-17.612	0	%100
26	CA1	Y	-17.612	-17.612	0	%100
27	CA2	Y	-17.612	-17.612	0	%100
28	CA5	Y	-17.612	-17.612	0	%100
29	CA6	Y	-17.612	-17.612	0	%100
30	M64	Y	-6.477	-6.477	0	%100
31	M65	Y	-6.477	-6.477	0	%100
32	M66	Y	-6.477	-6.477	0	%100
33	M67	Y	-6.477	-6.477	0	%100
34	M68	Y	-6.477	-6.477	0	%100
35	M69	Y	-6.477	-6.477	0	%100
36	M70	Y	-6.477	-6.477	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
37	M71	Y	-6.477	-6.477	0	%100
38	M72	Y	-6.477	-6.477	0	%100
39	M73	Y	-6.477	-6.477	0	%100
40	M74	Y	-6.477	-6.477	0	%100
41	M75	Y	-13.305	-13.305	0	%100
42	MP2	Y	-14.565	-14.565	0	%100
43	M43	Y	-6.477	-6.477	0	%100
44	M44	Y	-6.477	-6.477	0	%100
45	H3	Y	-16.323	-16.323	0	%100
46	MP7	Y	-14.565	-14.565	0	%100
47	MP9	Y	-14.565	-14.565	0	%100
48	HR3	Y	-14.579	-14.579	0	%100
49	M52	Y	-6.477	-6.477	0	%100
50	M53	Y	-6.477	-6.477	0	%100
51	M54	Y	-6.477	-6.477	0	%100
52	M55	Y	-6.477	-6.477	0	%100
53	H2	Y	-16.323	-16.323	0	%100
54	MP4	Y	-14.565	-14.565	0	%100
55	MP6	Y	-14.565	-14.565	0	%100
56	HR2	Y	-14.579	-14.579	0	%100
57	M66A	Y	-6.477	-6.477	0	%100
58	M67A	Y	-6.477	-6.477	0	%100
59	M68A	Y	-6.477	-6.477	0	%100
60	M69A	Y	-6.477	-6.477	0	%100
61	MP8	Y	-14.565	-14.565	0	%100
62	M68B	Y	-6.477	-6.477	0	%100
63	M69B	Y	-6.477	-6.477	0	%100
64	MP5	Y	-14.565	-14.565	0	%100
65	M71B	Y	-6.477	-6.477	0	%100
66	M72B	Y	-6.477	-6.477	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	SZ	-17.357	-17.357	0	%100
2	GA4	SZ	-25.145	-25.145	0	%100
3	GA3	SZ	-25.145	-25.145	0	%100
4	P3	SZ	-16.335	-16.335	0	%100
5	S2	SZ	-17.357	-17.357	0	%100
6	GA2	SZ	-25.145	-25.145	0	%100
7	GA1	SZ	-25.145	-25.145	0	%100
8	P2	SZ	-16.335	-16.335	0	%100
9	S1	SZ	-17.357	-17.357	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
10	GA6	SZ	-25.145	-25.145	0	%100
11	GA5	SZ	-25.145	-25.145	0	%100
12	P1	SZ	-16.335	-16.335	0	%100
13	H1	SZ	-22.156	-22.156	0	%100
14	MP1	SZ	-24.893	-24.893	0	%100
15	MP3	SZ	-24.893	-24.893	0	%100
16	HR1	SZ	-24.866	-24.866	0	%100
17	CA8	SZ	-15.099	-15.099	0	%100
18	CA9	SZ	-15.099	-15.099	0	%100
19	CA7	SZ	-15.099	-15.099	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	-20.699	-20.699	0	%100
25	CA4	SZ	-20.699	-20.699	0	%100
26	CA1	SZ	-20.699	-20.699	0	%100
27	CA2	SZ	-20.699	-20.699	0	%100
28	CA5	SZ	-20.699	-20.699	0	%100
29	CA6	SZ	-20.699	-20.699	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	-27.722	-27.722	0	%100
42	MP2	SZ	-24.893	-24.893	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	H3	SZ	-22.156	-22.156	0	%100
46	MP7	SZ	-24.893	-24.893	0	%100
47	MP9	SZ	-24.893	-24.893	0	%100
48	HR3	SZ	-24.866	-24.866	0	%100
49	M52	SZ	0	0	0	%100
50	M53	SZ	0	0	0	%100
51	M54	SZ	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
52	M55	SZ	0	0	0	%100
53	H2	SZ	-22.156	-22.156	0	%100
54	MP4	SZ	-24.893	-24.893	0	%100
55	MP6	SZ	-24.893	-24.893	0	%100
56	HR2	SZ	-24.866	-24.866	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	-24.893	-24.893	0	%100
62	M68B	SZ	0	0	0	%100
63	M69B	SZ	0	0	0	%100
64	MP5	SZ	-24.893	-24.893	0	%100
65	M71B	SZ	0	0	0	%100
66	M72B	SZ	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S3	SX	-17.357	-17.357	0	%100
2	GA4	SX	-25.145	-25.145	0	%100
3	GA3	SX	-25.145	-25.145	0	%100
4	P3	SX	-16.335	-16.335	0	%100
5	S2	SX	-17.357	-17.357	0	%100
6	GA2	SX	-25.145	-25.145	0	%100
7	GA1	SX	-25.145	-25.145	0	%100
8	P2	SX	-16.335	-16.335	0	%100
9	S1	SX	-17.357	-17.357	0	%100
10	GA6	SX	-25.145	-25.145	0	%100
11	GA5	SX	-25.145	-25.145	0	%100
12	P1	SX	-16.335	-16.335	0	%100
13	H1	SX	-22.156	-22.156	0	%100
14	MP1	SX	-24.893	-24.893	0	%100
15	MP3	SX	-24.893	-24.893	0	%100
16	HR1	SX	-24.866	-24.866	0	%100
17	CA8	SX	-15.099	-15.099	0	%100
18	CA9	SX	-15.099	-15.099	0	%100
19	CA7	SX	-15.099	-15.099	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	-20.699	-20.699	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
25	CA4	SX	-20.699	-20.699	0	%100
26	CA1	SX	-20.699	-20.699	0	%100
27	CA2	SX	-20.699	-20.699	0	%100
28	CA5	SX	-20.699	-20.699	0	%100
29	CA6	SX	-20.699	-20.699	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	-27.722	-27.722	0	%100
42	MP2	SX	-24.893	-24.893	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	H3	SX	-22.156	-22.156	0	%100
46	MP7	SX	-24.893	-24.893	0	%100
47	MP9	SX	-24.893	-24.893	0	%100
48	HR3	SX	-24.866	-24.866	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	-22.156	-22.156	0	%100
54	MP4	SX	-24.893	-24.893	0	%100
55	MP6	SX	-24.893	-24.893	0	%100
56	HR2	SX	-24.866	-24.866	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	-24.893	-24.893	0	%100
62	M68B	SX	0	0	0	%100
63	M69B	SX	0	0	0	%100
64	MP5	SX	-24.893	-24.893	0	%100
65	M71B	SX	0	0	0	%100
66	M72B	SX	0	0	0	%100

Member Distributed Loads (BLC 43 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	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 44 : BLC 16 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magn...	Start Location...	End Location[in,%]
1	S2	Y	-39.134	-39.134	16.404	40
2	GA2	Y	-19.721	-19.721	3.828	27.295
3	GA1	Y	-19.721	-19.721	3.828	27.295
4	S3	Y	-39.134	-39.134	16.404	40
5	GA4	Y	-19.721	-19.721	3.828	27.295
6	GA3	Y	-19.721	-19.721	3.828	27.295
7	S1	Y	-39.134	-39.134	16.404	40
8	GA6	Y	-19.721	-19.721	3.828	27.295
9	GA5	Y	-19.721	-19.721	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	-21.5
2	P10	P11	P12	P9	Y	Two Way	-21.5
3	P31	P34	P33	P32	Y	Two Way	-21.5

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

	Member	Shape	Code Check	Loc[in]	LC	She...	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*Mn z-z [lb...	Cb	Eqn
1	CA1	C3.38x2.06...	.362	0	31	.061	28.188	y	36	4776...	56700	2202....	5751.945	1....	H1-1b
2	P3	PL6.5x0.375	.359	21	2	.177	36.312	y	30	3658....	78975	616.9...	7923.777	1.41	H1-1b
3	P2	PL6.5x0.375	.348	21	6	.154	36.312	y	10	3658....	78975	616.9...	7900.267	1....	H1-1b

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

	Member	Shape	Code Check	Loc[in]	LC	She...	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*Mn z-z [lb...	Cb	Eqn
4	S2	HSS4X4X6	.341	0	32	.117	0	y	32	1882...	1978...	2204...	22045.5	1....	H1-1b
5	P1	PL6.5x0.375	.334	21	10	.172	36.312	y	2	3658...	78975	616.9...	7958.79	1....	H1-1b
6	CA5	C3.38x2.06...	.330	0	35	.058	28.187	y	28	4776...	56700	2202....	5751.945	1....	H1-1b
7	CA4	C3.38x2.06...	.326	33	2	.048	33	y	31	4776...	56700	2202....	5751.945	1....	H1-1b
8	CA3	C3.38x2.06...	.322	0	27	.058	28.188	y	32	4776...	56700	2202....	5751.945	1....	H1-1b
9	S3	HSS4X4X6	.315	0	38	.121	0	y	29	1882...	1978...	2204...	22045.5	1....	H1-1b
10	CA6	C3.38x2.06...	.309	33	10	.051	33	y	38	4776...	56700	2202....	5751.945	1....	H1-1b
11	CA7	L6.6x4.46x0...	.309	41.562	3	.041	42	z	8	5117...	87561	2464....	7125.374	1....	H2-1
12	CA2	C3.38x2.06...	.307	33	6	.049	33	y	34	4776...	56700	2202....	5751.945	1....	H1-1b
13	CA8	L6.6x4.46x0...	.306	41.562	22	.042	42	z	4	5117...	87561	2464....	7125.374	1....	H2-1
14	HR3	2.88x0.120	.303	6	2	.137	92		6	2249...	4307...	3155....	3155.674	1....	H1-1b
15	M75	PL 2.375x0.5	.302	1.5	12	.277	0	y	28	3825...	38475	400.7...	1903.711	2....	H1-1b
16	HR2	2.88x0.120	.296	90	3	.146	92		4	2249...	4307...	3155....	3155.674	1....	H1-1b
17	S1	HSS4X4X6	.296	0	36	.122	0	y	37	1882...	1978...	2204...	22045.5	1.96	H1-1b
18	HR1	2.88x0.120	.282	6	4	.127	6		4	2249...	4307...	3155....	3155.674	1....	H1-1b
19	CA9	L6.6x4.46x0...	.271	41.562	6	.038	42	z	12	5117...	87561	2464....	7125.374	1....	H2-1
20	MP2	PIPE_2.5	.247	70	5	.088	70		5	3348...	66654	4726.5	4726.5	4....	H1-1b
21	MP5	PIPE_2.5	.242	70	7	.075	70		7	3348...	66654	4726.5	4726.5	4....	H1-1b
22	GA4	L2x2x4	.228	0	2	.016	27.295	y	9	2952...	42480	959.63	2190.068	2....	H2-1
23	MP8	PIPE_2.5	.219	70	9	.094	70		3	3348...	66654	4726.5	4726.5	4....	H1-1b
24	GA5	L2x2x4	.215	0	9	.027	27.295	y	38	2952...	42480	959.63	2190.068	2....	H2-1
25	GA2	L2x2x4	.210	0	12	.017	0	y	12	2952...	42480	959.63	2190.068	2....	H2-1
26	GA6	L2x2x4	.201	0	4	.016	0	y	4	2952...	42480	959.63	2190.068	2....	H2-1
27	GA1	L2x2x4	.199	0	5	.027	27.295	y	34	2952...	42480	959.63	2190.068	2....	H2-1
28	MP9	PIPE_2.5	.194	70	2	.088	70		7	3348...	66654	4726.5	4726.5	3....	H1-1b
29	GA3	L2x2x4	.194	0	7	.027	27.295	y	30	2952...	42480	959.63	2190.068	2....	H2-1
30	MP1	PIPE_2.5	.178	70	11	.108	26		8	3348...	66654	4726.5	4726.5	2....	H1-1b
31	MP6	PIPE_2.5	.175	70	7	.094	70		6	3348...	66654	4726.5	4726.5	4....	H1-1b
32	MP3	PIPE_2.5	.171	70	5	.097	70		3	3348...	66654	4726.5	4726.5	4....	H1-1b
33	MP4	PIPE_2.5	.165	70	7	.095	26		4	3348...	66654	4726.5	4726.5	1....	H1-1b
34	MP7	PIPE_2.5	.163	70	9	.087	26		6	3348...	66654	4726.5	4726.5	3....	H1-1b
35	H3	Pipe3.5x0.1...	.151	31	2	.091	90		2	4587...	7158...	6337....	6337.65	1....	H1-1b
36	H1	Pipe3.5x0.1...	.146	31	10	.081	48		4	4587...	7158...	6337....	6337.65	2....	H1-1b
37	H2	Pipe3.5x0.1...	.141	31	6	.065	48		12	4587...	7158...	6337....	6337.65	1....	H1-1b

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	BOBDL00006A
Site Number:	BOBDL00006A
Connection Description:	Platform to Monopole

MAXIMUM BOLT LOADS		
Bolt Tension:	9064.55	lbs
Bolt Shear:	1746.87	lbs

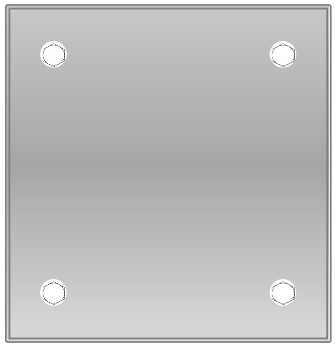
WORST CASE BOLT LOADS[1]		
Bolt Tension:	9064.55	lbs
Bolt Shear:	1559.18	lbs

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

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

Member Information
I nodes of S3, S2, S1

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	44.6%	
Max Shear Usage	12.7%	
Interaction Check (Worst Case)	0.21	***≤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: BOBDL00006A

196 Tolland Turnpike
Willington, Connecticut 06279

September 23, 2021

EBI Project Number: 6221003968

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**6.79%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

September 23, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00006A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **196 Tolland Turnpike** in **Willington, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless Wireless antenna facility located at 196 Tolland Turnpike in Willington, 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 135 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):	135 feet	Height (AGL):	135 feet	Height (AGL):	135 feet
Channel Count:	12	Channel Count:	12	Channel Count:	12
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	5,236.31	ERP (W):	5,236.31	ERP (W):	5,236.31
Antenna A1 MPE %:	**1.42%**	Antenna B1 MPE %:	**1.42%**	Antenna C1 MPE %:	**1.42%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	1.42%
AT&T	5.37%
Site Total MPE % :	6.79%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	1.42%
Dish Wireless Sector B Total:	1.42%
Dish Wireless Sector C Total:	1.42%
Site Total MPE % :	6.79%

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	135.0	1.93	600 MHz n71	400	0.48%
Dish Wireless 1900 MHz n70	4	542.70	135.0	4.69	1900 MHz n70	1000	0.47%
Dish Wireless 2190 MHz n66	4	542.70	135.0	4.69	2190 MHz n66	1000	0.47%
						Total:	**1.42%**

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

Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	1.42%
Sector B:	1.42%
Sector C:	1.42%
Dish Wireless Maximum MPE % (Sector A):	1.42%
Site Total:	6.79%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **6.79%** 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

196 TOLLAND TPKE

Location	196 TOLLAND TPKE	**Mblu**	23/ / 062-0C/ /
Acct#	0001100C	**Owner**	HOLT MOUNTAIN LLC
Assessment	$289,510	**Appraisal**	$413,580
PID	6217	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$213,580	$200,000	$413,580
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$149,510	$140,000	$289,510

Owner of Record

Owner	HOLT MOUNTAIN LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	PO BOX 535	**Book & Page**	205/891
	WILLINGTON, CT 06279	**Sale Date**	03/13/2015

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	
Stories:	

Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Fireplaces	
Bsmt Garage	

Building Photo

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

Building Layout


Building Layout (ParcelSketch.ashx?pid=6217&bid=20222)

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

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	4340
Description	Cell Tower
Zone	
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.00
Frontage	
Depth	
Assessed Value	$140,000
Appraised Value	$200,000

Outbuildings

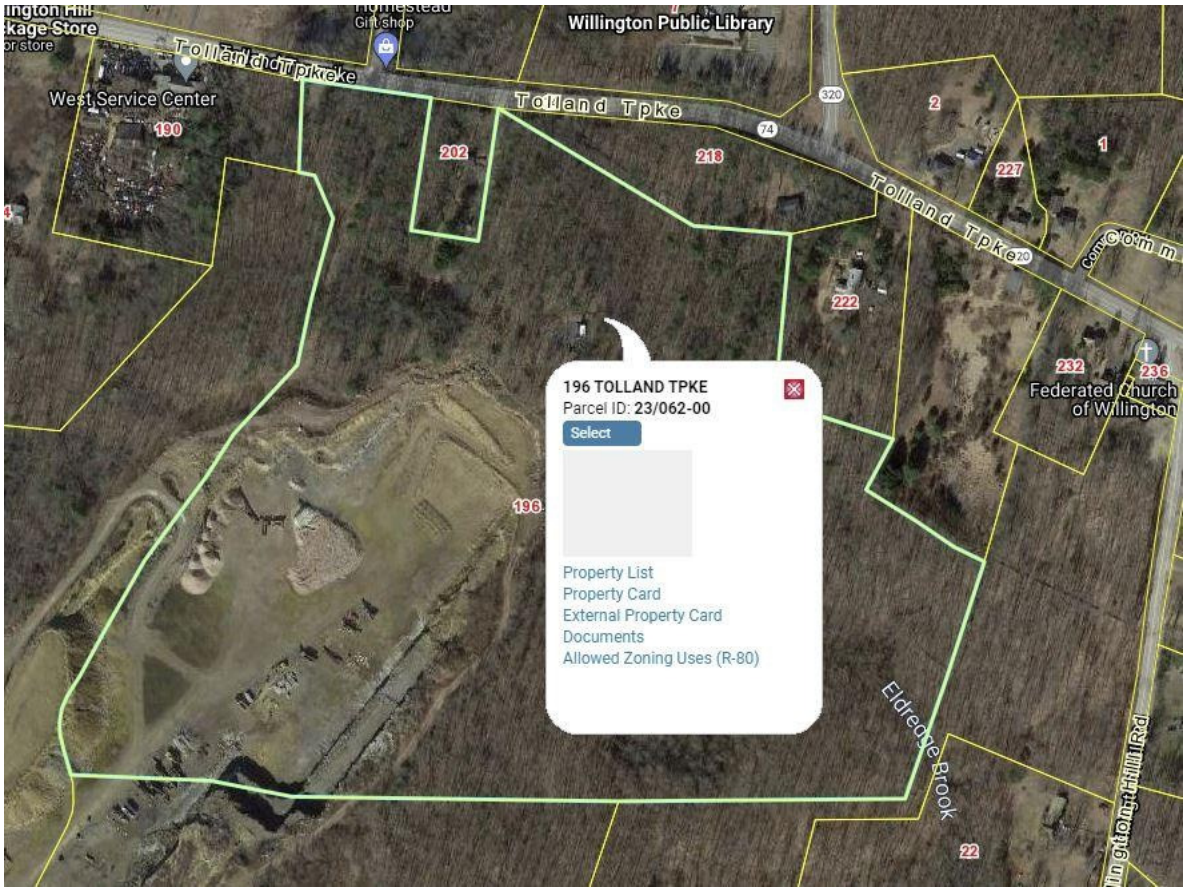
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FN5	FENCE-10'CHAIN			250.00 L.F.	$3,580	1
CELL	CELL TENENT			2.00 EA	$210,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$213,580	$200,000	$413,580

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$149,510	$140,000	$289,510

(c) 2021 Vision Government Solutions, Inc. All rights reserved.


Willington Public Library
Tolland Tpke
West Service Center
190
202
218
227
222
232
236
Federated Church of Willington
196
196 TOLLAND TPKE
Parcel ID: 23/062-00
Select
Property List
Property Card
External Property Card
Documents
Allowed Zoning Uses (R-80)
Eldredge Brook

NOTIFICATIONS

FedEx

TRACK ANOTHER SHIPMENT

775150223078

ADD NICKNAME

Delivered
Thursday, 12/2/2021 at 2:18 pm

DELIVERED

Signed for by: K.KELSEY

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

Travel History

TIME ZONE
Local Scan Time

Thursday, December 2, 2021		
2:18 PM		Delivered
9:07 AM	NORWICH, CT	At local FedEx facility
7:24 AM	EAST GRANBY, CT	At destination sort facility
4:09 AM	MEMPHIS, TN	Departed FedEx hub
Wednesday, December 1, 2021		
11:18 AM	MEMPHIS, TN	Arrived at FedEx hub
Tuesday, November 30, 2021		
8:05 PM	WILMINGTON, MA	Left FedEx origin facility
6:12 PM	WILMINGTON, MA	Picked up

Expand History

Shipment Facts

TRACKING NUMBER	SERVICE	WEIGHT

775150223078

FedEx 2Day

2 lbs / 0.91 kgs

DELIVERED TO
Receptionist/Front Desk

TOTAL SHIPMENT WEIGHT
2 lbs / 0.91 kgs

PACKAGING
FedEx Pak

SPECIAL HANDLING SECTION
Deliver Weekday

SHIP DATE
11/30/21

STANDARD TRANSIT
12/2/21 before 4:30 pm

ACTUAL DELIVERY
12/2/21 at 2:18 pm

ORIGIN ID:FOXA (360) 561-3311
COREY MILAN
NB+C
100 APOLLO DR.
SUITE 303
CHELMSFORD, MA 01824
UNITED STATES US

SHIP DATE: 08NOV21
ACTWGT: 1.00 LB
CAD: 108980334/INET4400

BILL SENDER

TO **ERIKA WIECENSKI - FIRST SELECTMAN**

40 OLD FARMS ROAD

WILLINGTON CT 06279

(860) 487-3100 REF: 100814
INV:
PO: DEPT:

56DJ29A7E/FE4A

FedEx Express

J21222110181luv

WED - 10 NOV 4:30P

**** 2DAY ****

TRK# 0201 **7751 5022 3078**

SE GONA

06279
CT-US **BDL**

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

FedEx

TRACK ANOTHER SHIPMENT

775150247580

ADD NICKNAME

Delivered
Thursday, 12/2/2021 at 2:18 pm

DELIVERED

Signed for by: K.KELSEY

GET STATUS UPDATES

OBTAIN PROOF OF DELIVERY

Travel History

TIME ZONE
Local Scan Time

Thursday, December 2, 2021		
2:18 PM		Delivered
9:06 AM	NORWICH, CT	At local FedEx facility
7:24 AM	EAST GRANBY, CT	At destination sort facility
4:09 AM	MEMPHIS, TN	Departed FedEx hub
Wednesday, December 1, 2021		
11:18 AM	MEMPHIS, TN	Arrived at FedEx hub
Tuesday, November 30, 2021		
8:05 PM	WILMINGTON, MA	Left FedEx origin facility
6:12 PM	WILMINGTON, MA	Picked up

Collapse History

Shipment Facts

TRACKING NUMBER	SERVICE	WEIGHT

775150247580

FedEx 2Day

1 lbs / 0.45 kgs

DELIVERY ATTEMPTS

1

DELIVERED TO

Receptionist/Front Desk

TOTAL SHIPMENT WEIGHT

1 lbs / 0.45 kgs

PACKAGING

FedEx Pak

SPECIAL HANDLING SECTION

Deliver Weekday

SHIP DATE

11/30/21

STANDARD TRANSIT

12/2/21 before 4:30 pm

ACTUAL DELIVERY

12/2/21 at 2:18 pm

ORIGIN ID:FOXA (360) 561-3311
COREY MILAN
NB+C
100 APOLLO DR.
SUITE 303
CHELMSFORD, MA 01824
UNITED STATES US

SHIP DATE: 08NOV21
ACTWGT: 1.00 LB
CAD: 108980334/INET4400

BILL SENDER

TO **JIM RUPERT - BUILDING OFFICIAL**

40 OLD FARMS ROAD

WILLINGTON CT 06279

(860) 487-3123 REF: 100814
INV:
PO: DEPT:

56DJ29A7E/FE4A

FedEx Express

J212221101801uv

WED - 10 NOV 4:30P

**** 2DAY ****

TRK# 0201 **7751 5024 7580**

SE GONA

06279
BDL

CT-US

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

USPS Tracking®

FAQs >

Track Another Package +

Tracking Number: 9505511588611335444550

Remove ×

Your item has been delivered and is available at a PO Box at 12:19 pm on December 4, 2021 in WILLINGTON, CT 06279.

USPS Tracking Plus™ Available ⌄

Delivered, PO Box

December 4, 2021 at 12:19 pm
WILLINGTON, CT 06279

Get Updates ⌄

Feedback

Text & Email Updates ⌄

Tracking History ⌄

USPS Tracking Plus™ ⌄

Product Information ⌄

See Less ⌃

Can’t find what you’re looking for?

Go to our FAQs section to find answers to your tracking questions.

FAQs

Feedback