

PROJECT NARRATIVE

October 25, 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
668 Jones Hill Rd. West Haven, CT 06516
Latitude: 41°15'22.9896" /Longitude: -72°58'20.7156"

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 668 Jones Hill Rd in West Haven (the "Property"). The existing 150 foot monopole tower is owned by American Tower Corporation ("ATC"). The underlying property is owned by American Towers Inc. 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 Nancy R. Rossi, Mayor of the City of West Haven, Frank Gladwin, City of West Haven Building Official and American Towers Inc as the property owner.

Background

The existing ATC facility consists of a 150-foot monopole tower located within an existing leased area. Sprint/Clearwire currently maintains antennas at the 151-foot level. T-Mobile currently maintains antennas at the 143-foot level. Verizon Wireless currently maintains antennas at the 134-foot level. AT&T Mobility currently maintains antennas at the 125-foot level. Metro PCS currently maintains antennas at the 115-foot level and a Computer Hospital currently maintains antennas at the 106-foot level. Equipment associated with these antennas are located at various positions within the tower and compound.

DISH is licensed by the Federal Communications Commission ("FCC") to provide wireless services throughout the State of Connecticut. DISH and Crown Castle have agreed to the proposed shared use of the 668 Jones Hill Rd tower pursuant to mutually acceptable terms and conditions. Likewise, DISH and ATC have agreed to the proposed installation of equipment cabinets on the ground on the south side of the tower within the existing compound. ATC has authorized DISH to apply for all necessary permits and approvals that may be required to share the existing tower. (See attached Letter of Authorization)

DISH proposes to install three (3) antennas, (1) Tower platform mount, (6) Remote radio units at the 105-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 ground work.

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 668 Jones Hill Rd satisfies the criteria stated in C.G.S. §16-50aa and advances the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant, therefore, respectfully requests that the Council issue an order approving the 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.**

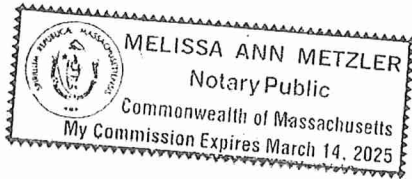
NOTARY BLOCK


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



Notary Public 
My Commission Expires: March 14, 2025

ENGINEERING DRAWINGS



DISH Wireless L.L.C. SITE ID:

BOHVN00132A

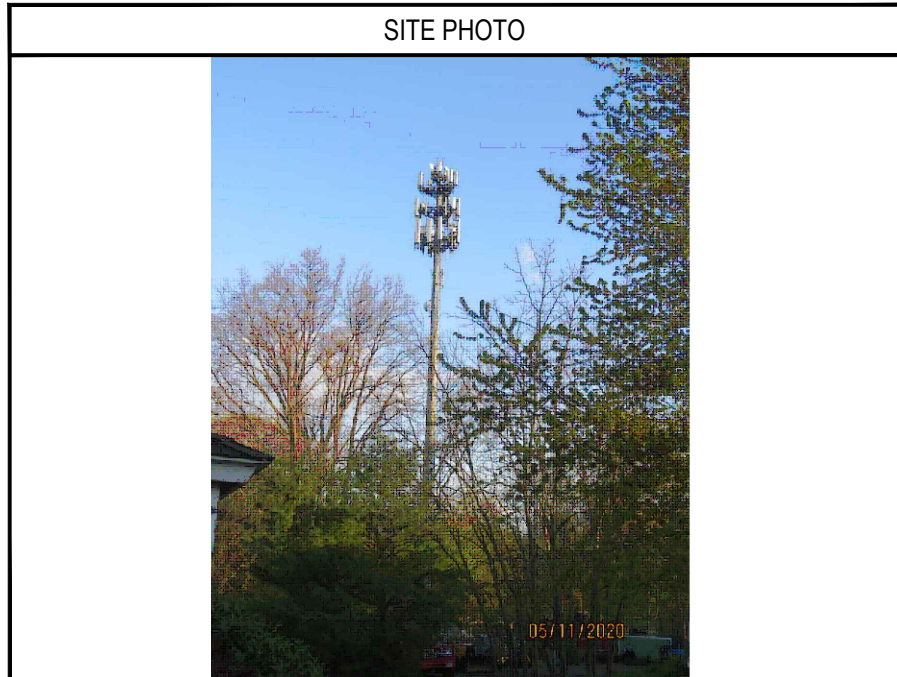
DISH Wireless L.L.C. SITE ADDRESS:

**668 JONES HILL ROAD
WEST HAVEN, CT 06516**

PROJECT NOTES
<ol style="list-style-type: none"> 1. THE FACILITY IS UNMANNED. 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE. 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED. 6. THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION REMOVAL AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR 1.61000 (B)(7).

SCOPE OF WORK
<p>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:</p> <p>TOWER SCOPE OF WORK:</p> <ul style="list-style-type: none"> • INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR) • INSTALL (1) PROPOSED COMMSCOPE MC-PK8-DSH ANTENNA PLATFORM • INSTALL PROPOSED JUMPERS • INSTALL (6) PROPOSED RRHs (2 PER SECTOR) • INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP) • INSTALL (1) PROPOSED HYBRID CABLE • REMOVE (1) MW DISH AT 106' <p>GROUND SCOPE OF WORK:</p> <ul style="list-style-type: none"> • INSTALL (1) PROPOSED METAL PLATFORM • INSTALL (1) PROPOSED ICE BRIDGE • INSTALL (1) PROPOSED PPC CABINET • INSTALL (1) PROPOSED EQUIPMENT CABINET • INSTALL (1) PROPOSED POWER CONDUIT • INSTALL (1) PROPOSED TELCO CONDUIT • INSTALL (1) PROPOSED TELCO-FIBER BOX • INSTALL (1) PROPOSED GPS UNIT • INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED) • INSTALL (1) PROPOSED CIENA BOX (IF REQUIRED) • INSTALL (1) PROPOSED METER DISCONNECT • EXISTING EMPTY METER SOCKET AVAILABLE

SITE INFORMATION	PROJECT DIRECTORY
PROPERTY OWNER: AMERICAN TOWERS INC.	APPLICANT: DISH Wireless L.L.C.
ADDRESS: PO BOX 723597 ATLANTA, GA 31139	5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER TYPE: MONOPOLE	TOWER OWNER: AMERICAN TOWER CORPORATION
TOWER CO SITE ID: 243036	10 PRESIDENTIAL WAY WOBURN, MA 01801 (360) 600-6799
TOWER APP NUMBER: 13693702	SITE DESIGNER: INFINIGY ENGINEERING, PLLC 50 116TH AVE SE, SUITE 210 BELLEVUE, WA 98004 MATT BIRTH 443-567-8791
COUNTY: NEW HAVEN	SITE ACQUISITION: APRIL PARROTT TBD
LATITUDE (NAD 83): 41° 15' 22.9896" N 41.256386 N	CONSTRUCTION MANAGER: JAVIER SOTO JAVIER.SOTO@DISH.COM
LONGITUDE (NAD 83): 72° 58' 20.7156" W -72.972421 W	RF ENGINEER: SYED ZAIDI TBD
ZONING JURISDICTION: CITY OF WEST HAVEN	
ZONING DISTRICT: R1	
PARCEL NUMBER: 019-0001-0-000A-C	
OCCUPANCY GROUP: U	
CONSTRUCTION TYPE: V-B	
POWER COMPANY: TBD	
TELEPHONE COMPANY: TBD	



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

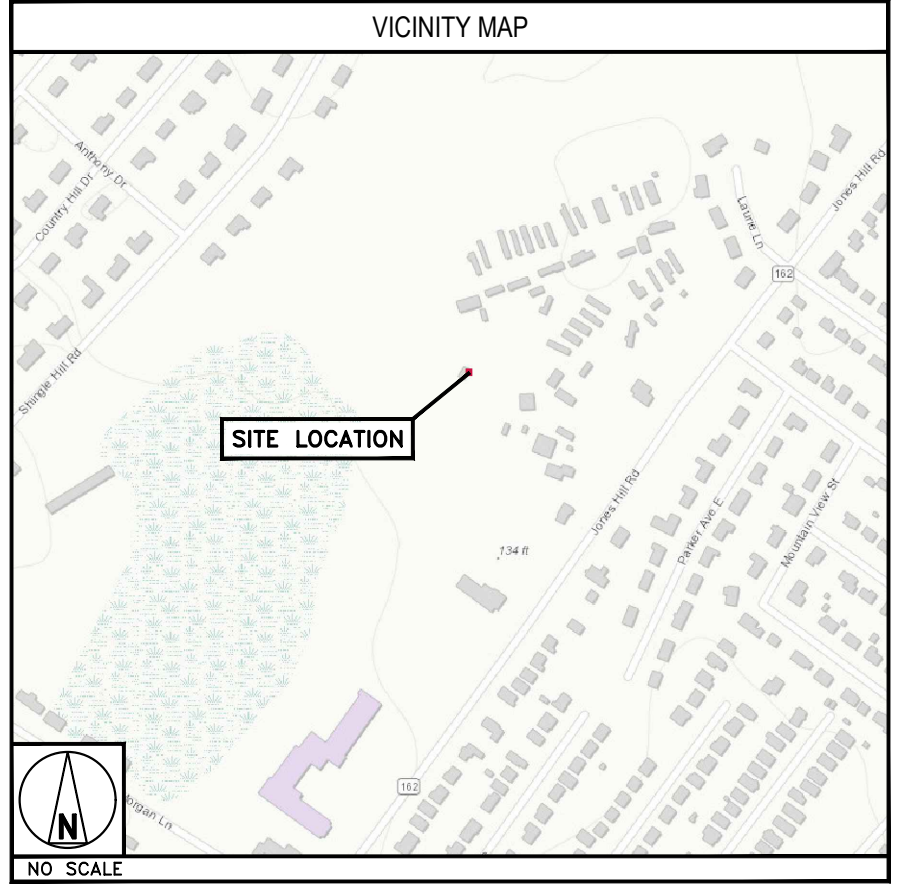
GENERAL NOTES
<p>THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO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

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

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

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:
CONTINUE TO BRADLEY INTERNATIONAL AIRPORT CON (0.9 MI) HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT (351 FT) SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT (0.4 MI) CONTINUE STRAIGHT (0.4 MI) TAKE I-91 S TO SAW MILL RD IN WEST HAVEN. TAKE EXIT 42 FROM I-95 S (56.0 MI) CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON (1.2 MI) CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON (2.6 MI) USE THE RIGHT 2 LANES TO MERGE ONTO I-91 S TOWARD HARTFORD (9.7 MI) KEEP RIGHT TO STAY ON I-91 S (38.1 MI) USE THE MIDDLE 2 LANES TO STAY ON I-91 S (0.2 MI) USE THE LEFT 2 LANES TO MERGE ONTO I-95 S TOWARD N.Y. CITY (1.6 MI) KEEP LEFT TO STAY ON I-95 S (2.1 MI) TAKE EXIT 42 FOR CONNECTICUT 162/SAW MILL RD (0.5 MI) TAKE ALLINGS CROSSING RD AND CHASE LN TO JONES HILL RD (1.6 MI) USE THE LEFT 2 LANES TO TURN LEFT ONTO SAW MILL RD (0.3 MI) TURN LEFT ONTO ALLINGS CROSSING RD (0.5 MI) TURN RIGHT ONTO SHINGLE HILL RD (0.1 MI) TURN LEFT ONTO CHASE LN (0.3 MI) TURN RIGHT ONTO JONES HILL RD (0.4 MI)



CONNECTICUT CODE COMPLIANCE								
<p>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:</p> <table border="1"> <thead> <tr> <th>CODE TYPE</th> <th>CODE</th> </tr> </thead> <tbody> <tr> <td>BUILDING</td> <td>2015 CT STATE BUILDING CODE/2015 IBC W/ CT AMENDMENTS</td> </tr> <tr> <td>MECHANICAL</td> <td>2018 CT STATE BUILDING CODE/2015 IMC W/ CT AMENDMENTS</td> </tr> <tr> <td>ELECTRICAL</td> <td>2018 CT STATE BUILDING CODE/2017 NEC W/ CT AMENDMENTS</td> </tr> </tbody> </table>	CODE TYPE	CODE	BUILDING	2015 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
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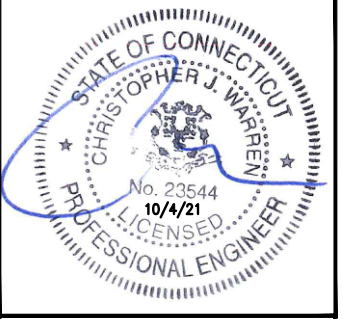
SHEET INDEX	
SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
A-0	EXISTING SURVEY
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE
G-1	GROUNDING PLANS AND NOTES
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
RF-1	RF CABLE COLOR CODE
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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DRAWN BY: AS	CHECKED BY: PP	APPROVED BY: CW
RFDS REV #:	TBD	

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	08/09/21	ISSUED FOR REVIEW
0	10/01/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1009-Z5555-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00132A
WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET TITLE
TITLE SHEET
SHEET NUMBER
T-1

dish wireless

5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120



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FOR REFERENCE ONLY

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Table with columns: DRAWN BY, CHECKED BY, APPROVED BY, AS, PP, CW

RFDS REV #: TBD

CONSTRUCTION DOCUMENTS

Table with columns: REV, DATE, DESCRIPTION

A&E PROJECT NUMBER 1009-Z5555-C

DISH Wireless L.L.C. PROJECT INFORMATION BOHVN00132A WEST HAVEN & RT 162 CT 668 JONES HILL ROAD WEST HAVEN, CT 06516

SHEET TITLE EXISTING SURVEY

SHEET NUMBER A-0

NO SCALE 1

LEGAL DESCRIPTION: LAKE AREA - AS PROVIDED - AS SUBMITTED. LEGAL DESCRIPTION OF THE NORTHWESTLY SIDE OF JONES HILL ROAD (JONES ROUTE 162) IN THE TOWN OF WEST HAVEN AND STATE OF CONNECTICUT...

THE PROPERTY HEREON DESCRIBED IS THE SAME AS THE PERTINENT PROPERTY AS DESCRIBED IN UNITED GENERAL TITLE INSURANCE COMPANY, COMMITMENT NO. 243036B, EFFECTIVE DATE SEPTEMBER 25, 2007, AND LIMITED TITLE REPORT NO. 01-14046075-01S...

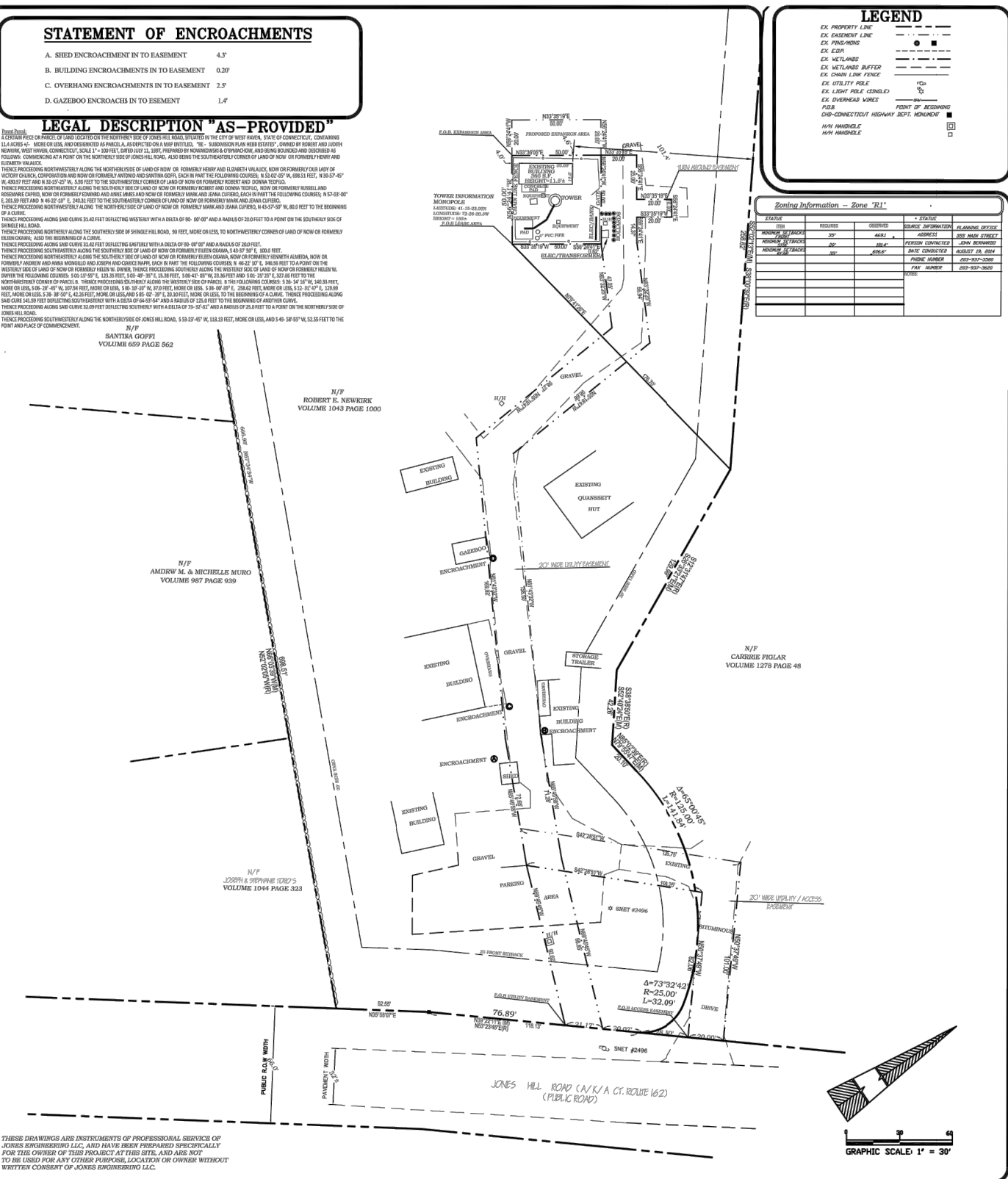
SHOWN BY: JONES ENGINEERING, INC. 100 NORTH SUMMIT STREET, WEST HAVEN, CT 06515

ALTA/ACSM LAND TITLE SURVEY PROJECT #243036 WEST HAVEN, CT #162 CT. 668 JONES HILL ROAD (A/K/A CT. RT. 162) WEST HAVEN, CONNECTICUT, 06516

ALTA/ACSM LAND TITLE SURVEY TO: AMERICAN TOWERS LLC AND UNITED GENERAL TITLE INSURANCE COMPANY

COORDINATED BY: OLD REPUBLIC COMMERCIAL DUE DILIGENCE SERVICES. PRESTON PARK FINANCIAL CENTER EAST 4965 PRESTON PARK BLVD #620 PLANO, TX 75093 P: (972) 943-5300 F: (972) 943-5339

PROJECT NUMBER 141670-S SHEET 1 OF 1



LEGEND table with symbols for EX PROPERTY LINE, EX EASEMENT LINE, EX FINE-NONE, EX E-2IN, EX METLAND, EX METLAND BUFFER, EX CHAIN LINK FENCE, EX UTILITY POLE, EX LIGHT POLE CONDUIT, EX OVERHANG WARES, EX OVERHANG WARES POINT OF BEGINNING, CH-CONNECTICUT HIGHWAY DEPT. MONUMENT, HWY MARKER, HWY MARKER.

Zoning Information - Zone 'R1' table with columns: ZONE, DISTRICT, ADDRESS, ZONE NAME, PERMITTED USES, PERMITTED HEIGHTS, PERMITTED SETBACKS, PERMITTED FLOOR AREA, PERMITTED LOT AREA, PERMITTED LOT WIDTH, PERMITTED LOT DEPTH, PERMITTED LOT AREA, PERMITTED LOT DEPTH.

STATEMENT OF ENCROACHMENTS: A. SHED ENCROACHMENT IN TO EASEMENT 4.3' B. BUILDING ENCROACHMENTS IN TO EASEMENT 0.20' C. OVERHANG ENCROACHMENTS IN TO EASEMENT 2.5' D. GAZEBO ENCROACHMENT IN TO EASEMENT 1.4'

LEGAL DESCRIPTION 'AS-PROVIDED': A CERTAIN PORTION OF THE NORTHWESTLY SIDE OF JONES HILL ROAD, BEING A PORTION OF THE NORTHWESTLY SIDE OF JONES HILL ROAD, BEING A PORTION OF THE NORTHWESTLY SIDE OF JONES HILL ROAD, BEING A PORTION OF THE NORTHWESTLY SIDE OF JONES HILL ROAD...

GENERAL NOTES: 1. SUBJECT LEGAL DESCRIPTION FORMS A MATHEMATICALLY CLOSED FIGURE WITH NO GAPS, GORES OR OVERLAPS. 2. THE UTILITY LOCATIONS SHOWN HEREON WERE DETERMINED BY OBSERVED ABOVE GROUND EVIDENCE ONLY...

NOTES CORRESPONDING TO SCHEDULE "B": The property hereon described is the same as the pertinent property as described in United General Title Insurance Company, Commitment No. 243036B, effective date September 25, 2007, and Limited Title Report No. 01-14046075-01S...

COVENANTS, RESTRICTIONS, EASEMENTS AND RIGHT OF WAY AS CONTAINED IN QUIT CLAIM DEED RECORDED AS BOOK 1043, PAGE 1000 OF NEW HAVEN COUNTY RECORDS (NOT SURVEY RELATED). MEMORANDUM OF LEASE AGREEMENT, BY AND BETWEEN ROBERT E. NEWKIRK AND CUMPOINT COMMUNICATIONS, INC., RECORDED 02/22/2008 AS BOOK 1418, PAGE 321 OF NEW HAVEN COUNTY RECORDS (NOT SURVEY RELATED)...

PARKING STALLS: N/A. ZONING NOTES: ZONE R1. FLOOD NOTE: Based on maps prepared by the Federal Emergency Management Agency (FEMA) available online at www.fema.gov...

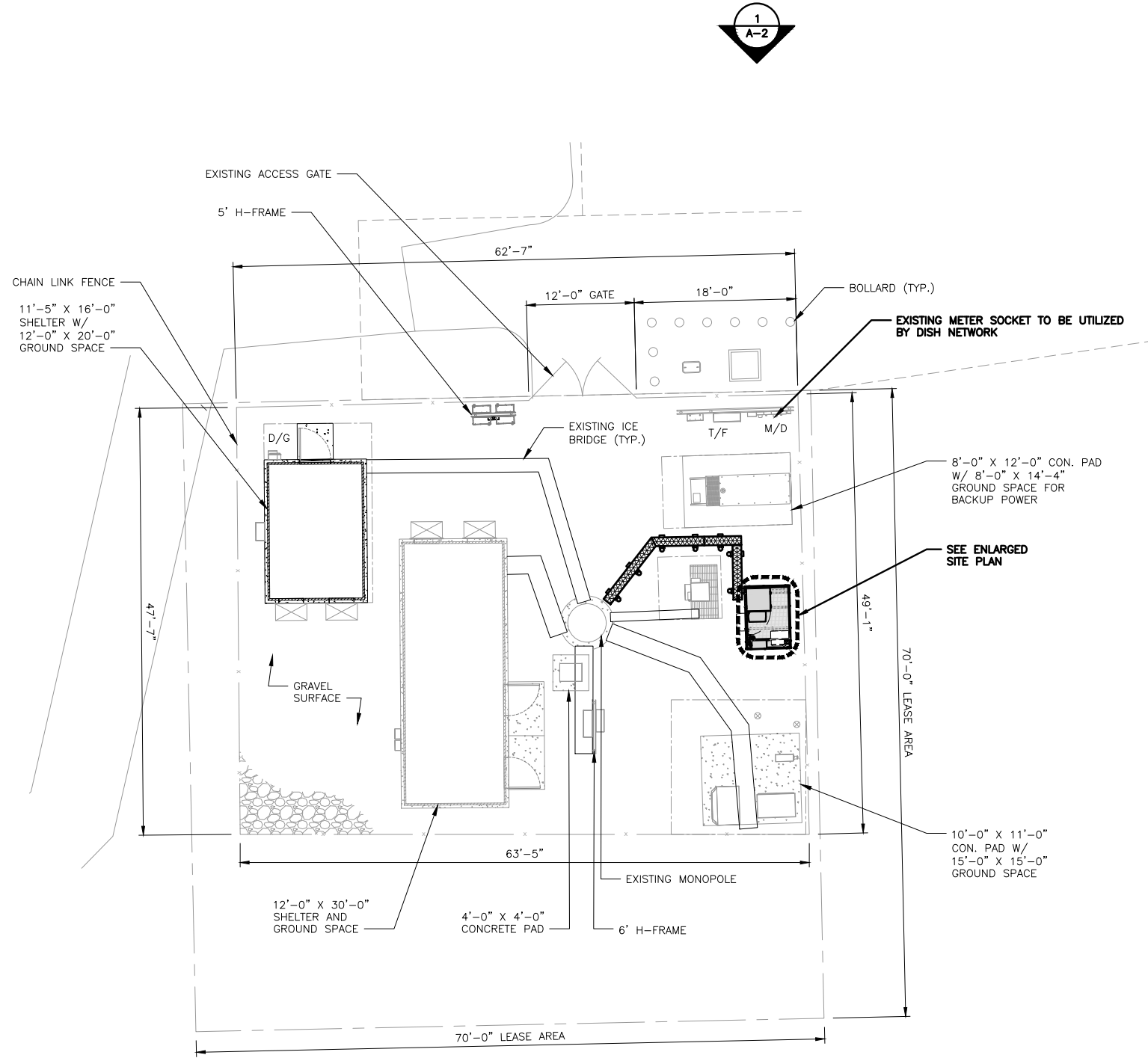
VICINITY MAP: NOT TO SCALE. BASIS OF BEARINGS: NORTH AMERICAN DATUM VERTICAL DATUM (N.G.V.D. - 1988).

LAND AREA: PARENT PARCEL 11.4 ACRES. LEASE AREA 7,500 S.F. TOTAL 0.172 AC.

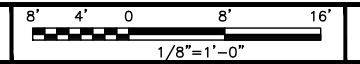
THESE DRAWINGS ARE INSTRUMENTS OF PROFESSIONAL SERVICE OF JONES ENGINEERING, INC. AND HAVE BEEN PREPARED SPECIFICALLY FOR THE OWNER OF THIS PROJECT AT THIS SITE, AND ARE NOT TO BE USED FOR ANY OTHER PURPOSE, LOCATION OR OWNER WITHOUT WRITTEN CONSENT OF JONES ENGINEERING, INC.

NOTES

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



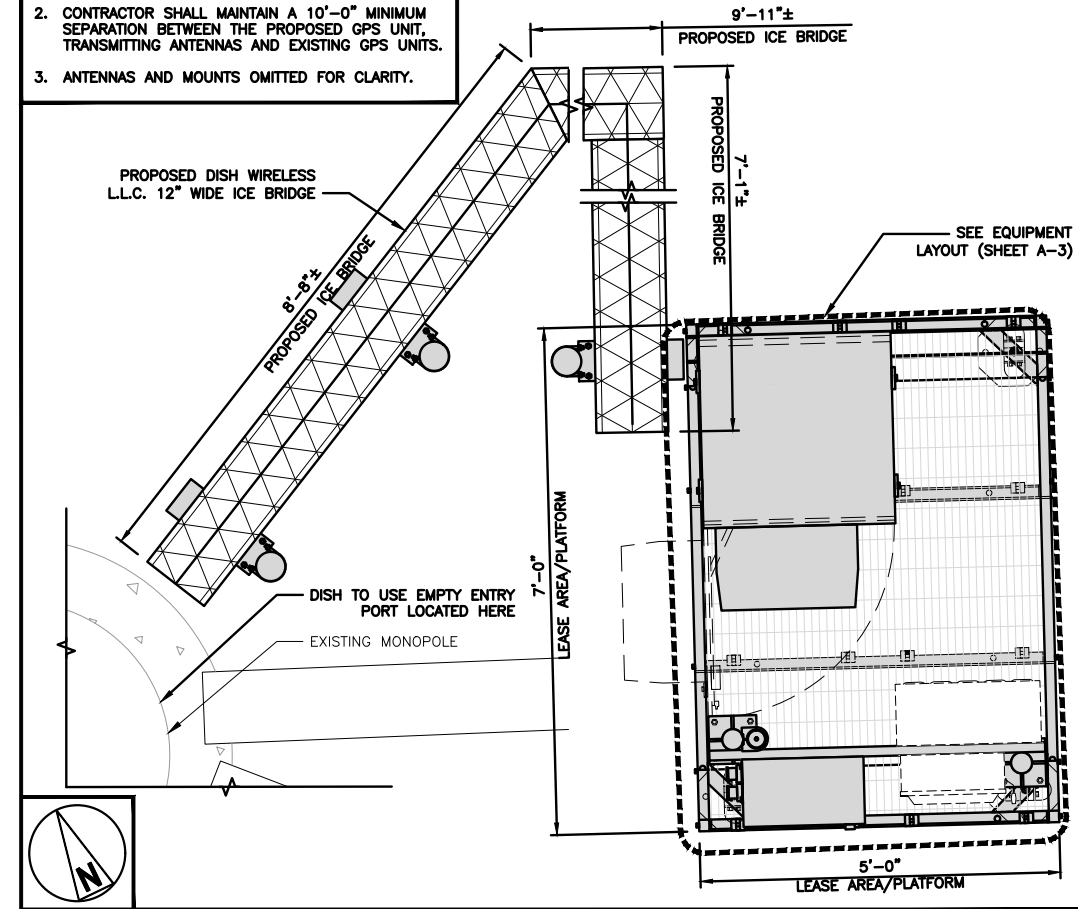
SITE PLAN



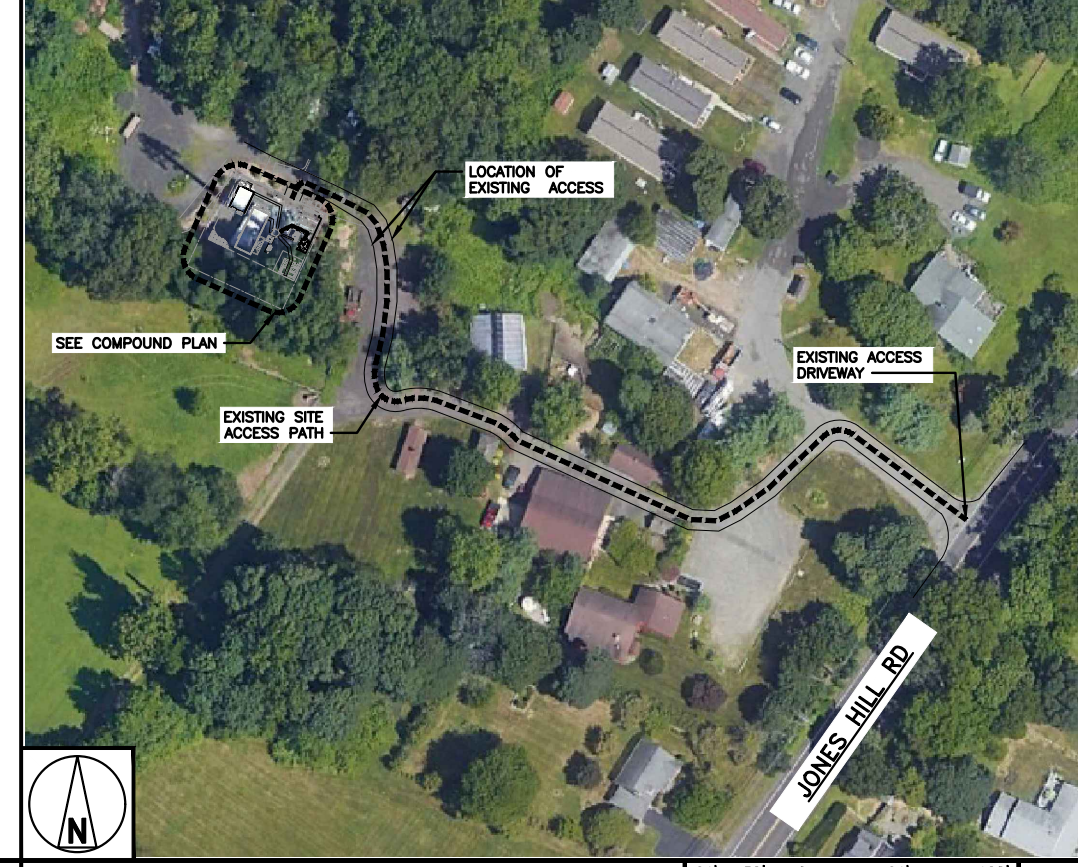
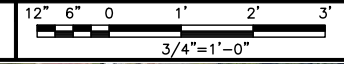
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NOTES

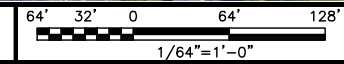
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.
3. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.



ENLARGED SITE PLAN



OVERALL SITE PLAN



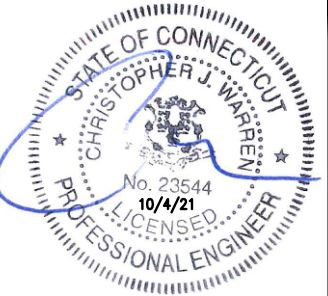
3



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AS	PP	CW
RFDS REV #:	TBD	

CONSTRUCTION DOCUMENTS

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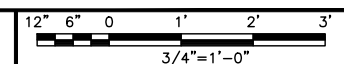
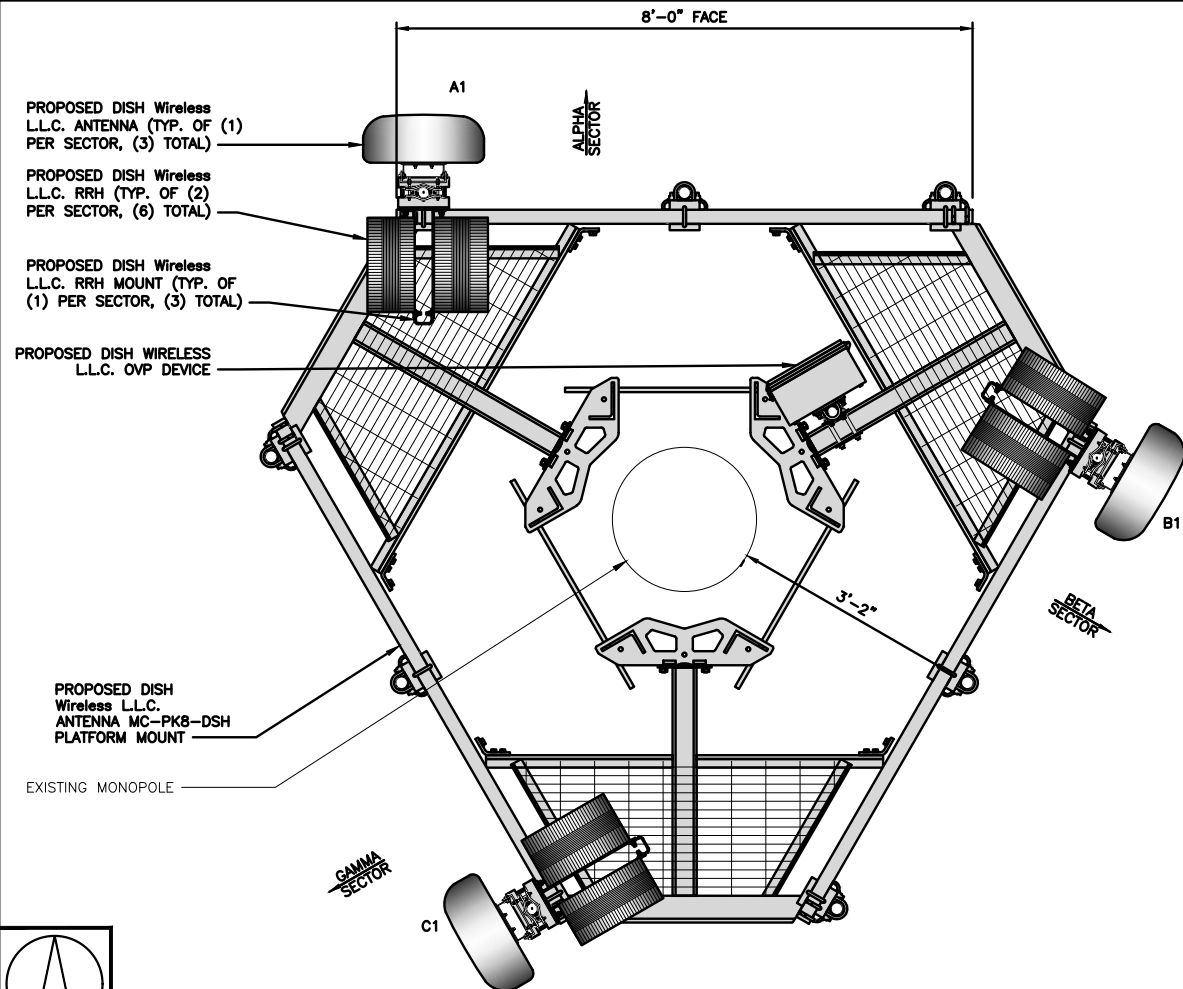
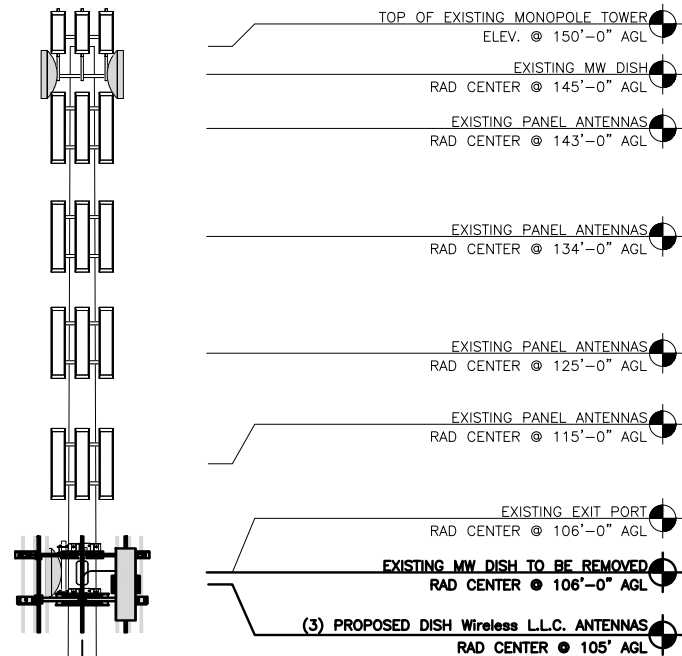
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00132A
WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET TITLE
OVERALL & ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

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



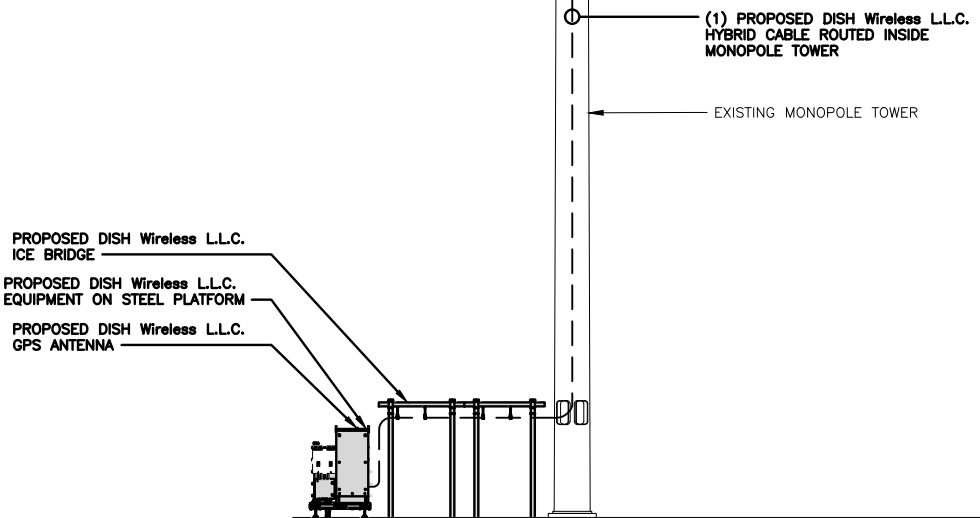
ANTENNA LAYOUT

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°	105'	(1) HIGH-CAPACITY HYBRID CABLE (120' LONG)
	A2	---	---	---	---	---	---	
	A3	---	---	---	---	---	---	
BETA	B1	PROPOSED	JMA - MX08FRO665-21	5G	72.0" x 20.0"	120°	115'	(1) HIGH-CAPACITY HYBRID CABLE (120' LONG)
	B2	---	---	---	---	---	---	
	B3	---	---	---	---	---	---	
GAMMA	C1	PROPOSED	JMA - MX08FRO665-21	5G	72.0" x 20.0"	240°	115'	(1) HIGH-CAPACITY HYBRID CABLE (120' LONG)
	C2	---	---	---	---	---	---	
	C3	---	---	---	---	---	---	

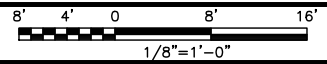
SECTOR	POSITION	RRH		NOTES
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	
ALPHA	A1	FUJITSU - TA08025-B605	5G	1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS. 2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.
	A2	FUJITSU - TA08025-B604	5G	
	---	---	---	
BETA	B1	FUJITSU - TA08025-B605	5G	
	B2	FUJITSU - TA08025-B604	5G	
GAMMA	C1	FUJITSU - TA08025-B605	5G	
	C2	FUJITSU - TA08025-B604	5G	

NOTES

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



PROPOSED NORTH ELEVATION



1

ANTENNA SCHEDULE

NO SCALE

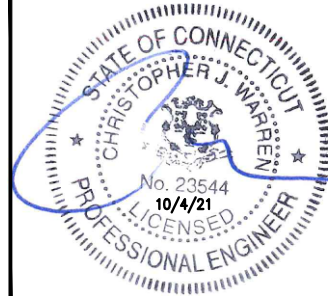
3



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DISH Wireless L.L.C. PROJECT INFORMATION
BOHVN00132A
WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

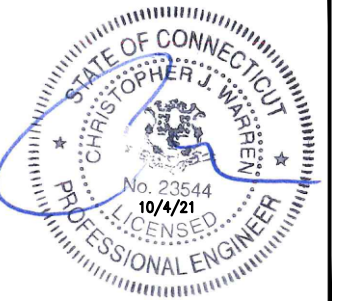
SHEET NUMBER
A-2



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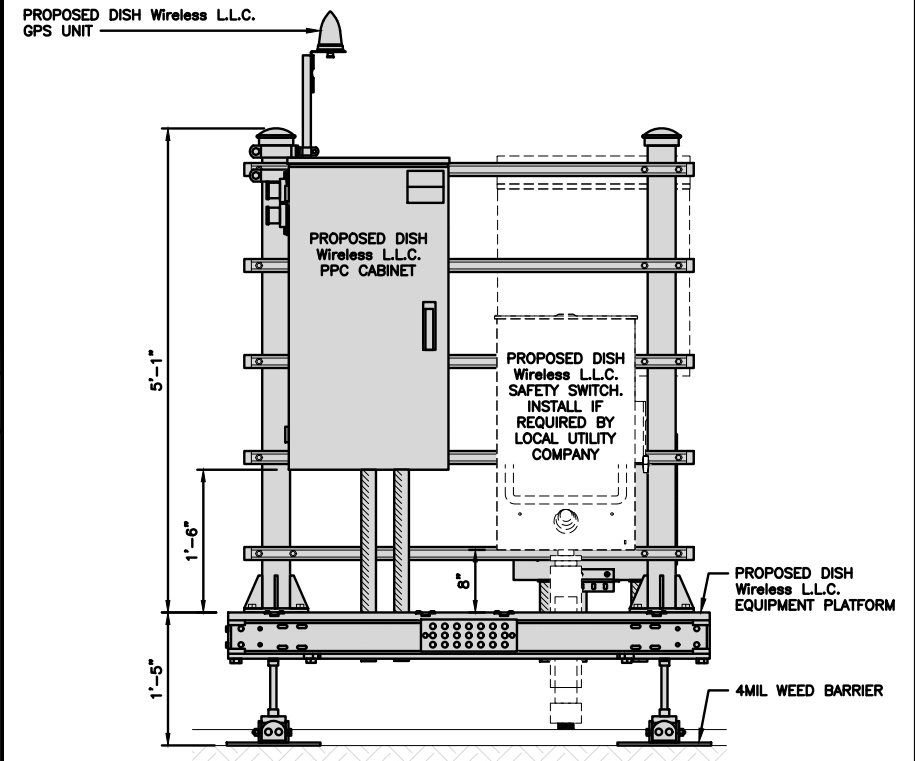
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00132A
WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

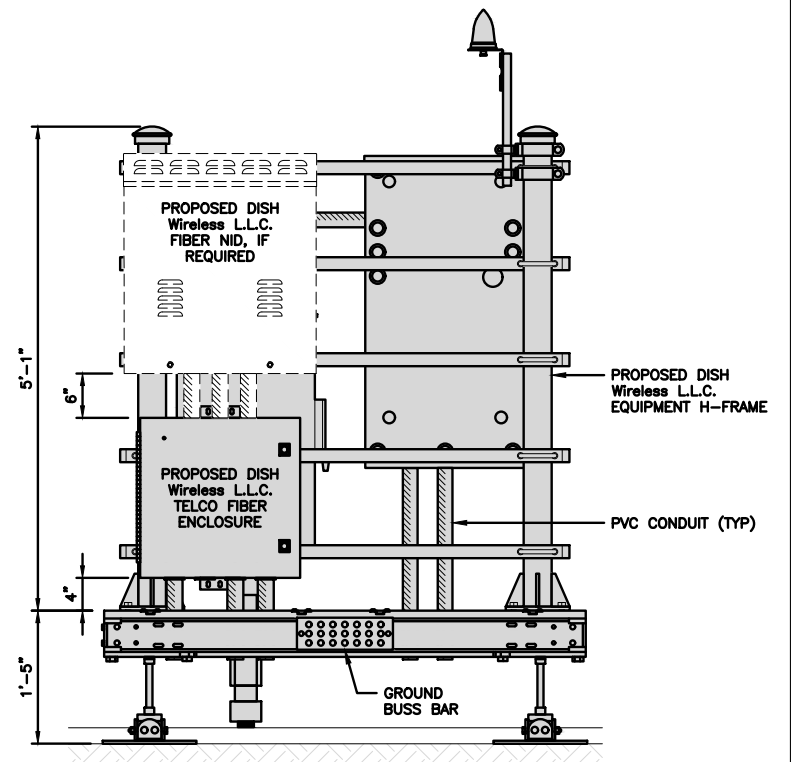
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A-3

NOTES

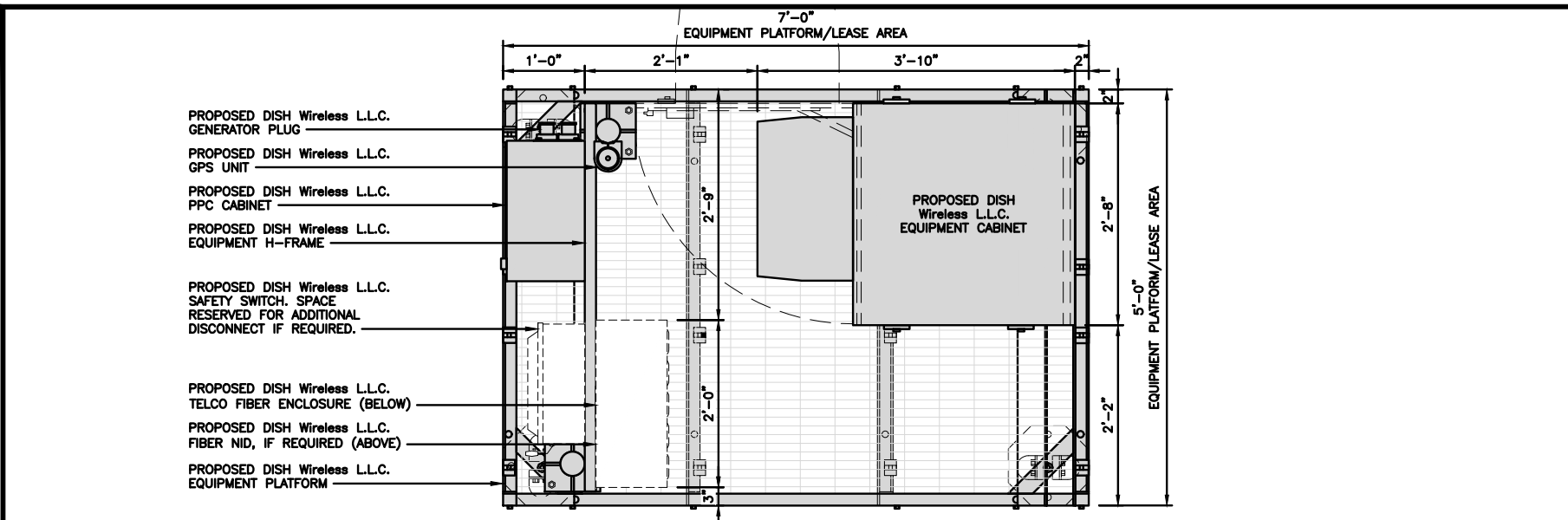
1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH Wireless L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
3. EQUIPMENT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



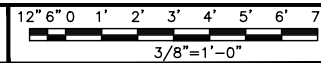
FRONT ELEVATION



BACK ELEVATION

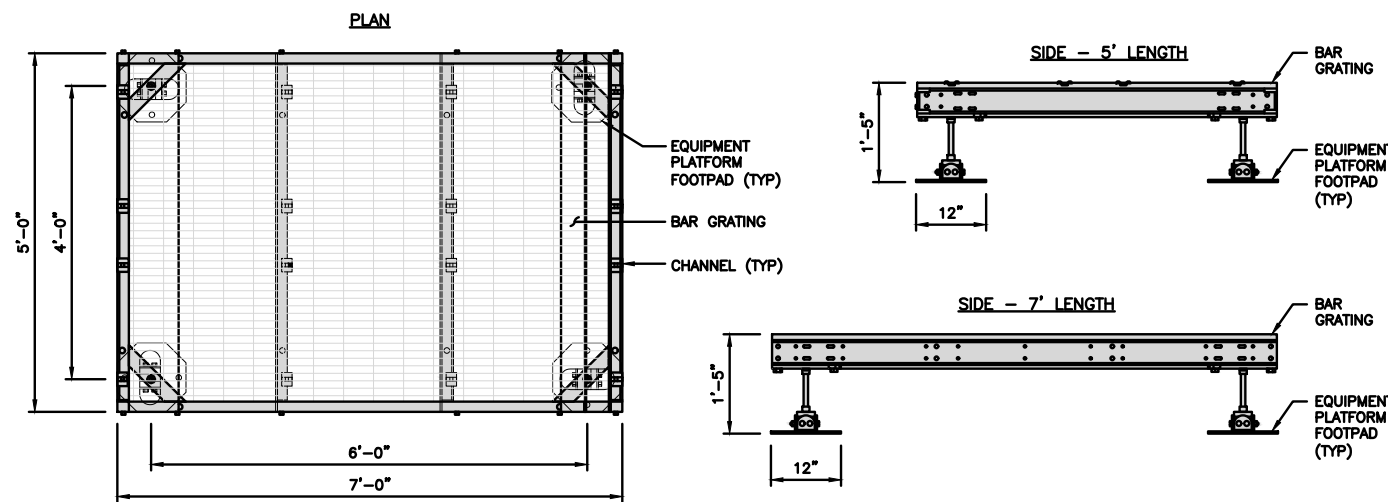


PLATFORM EQUIPMENT PLAN



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

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

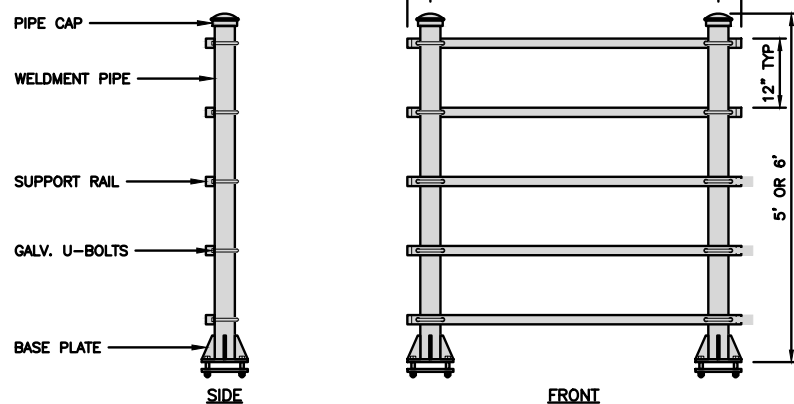


PLATFORM DETAIL

NO SCALE

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

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

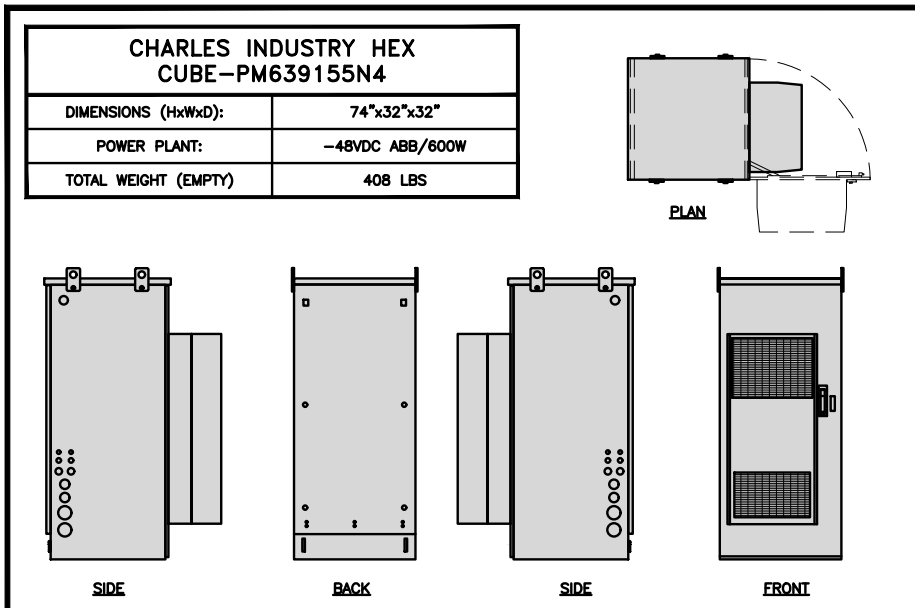


H-FRAME DETAIL

NO SCALE

NOT USED

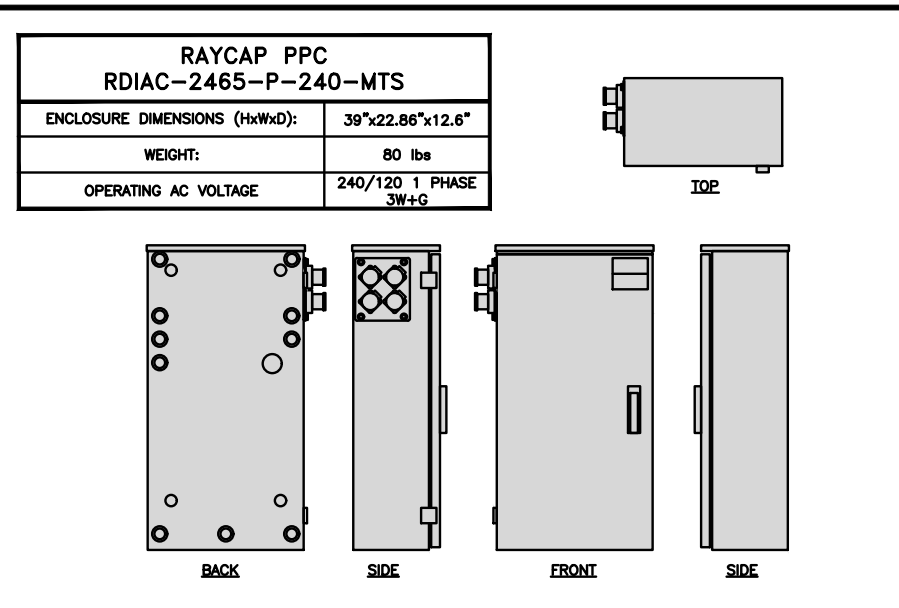
NO SCALE



CABINET DETAIL

NO SCALE

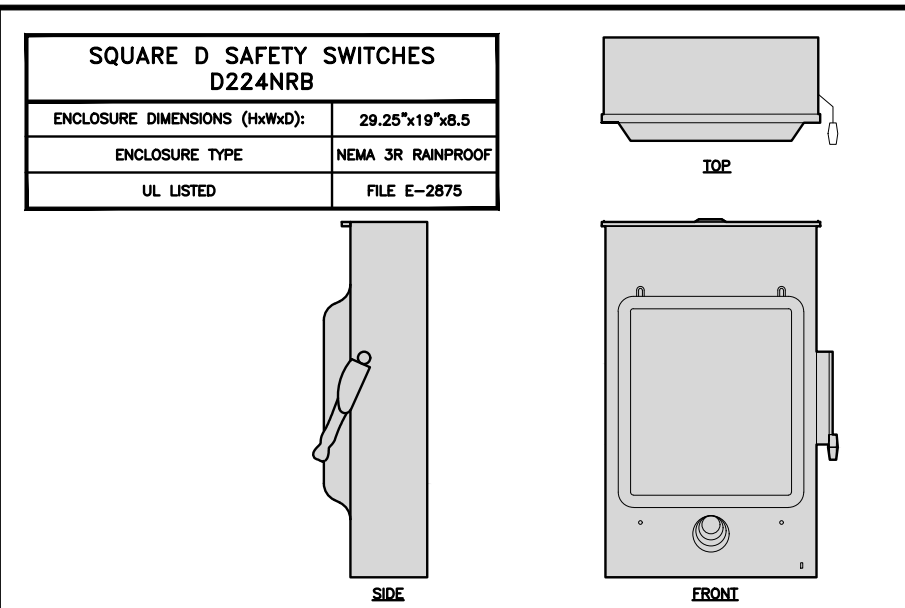
1



PPC DETAIL

NO SCALE

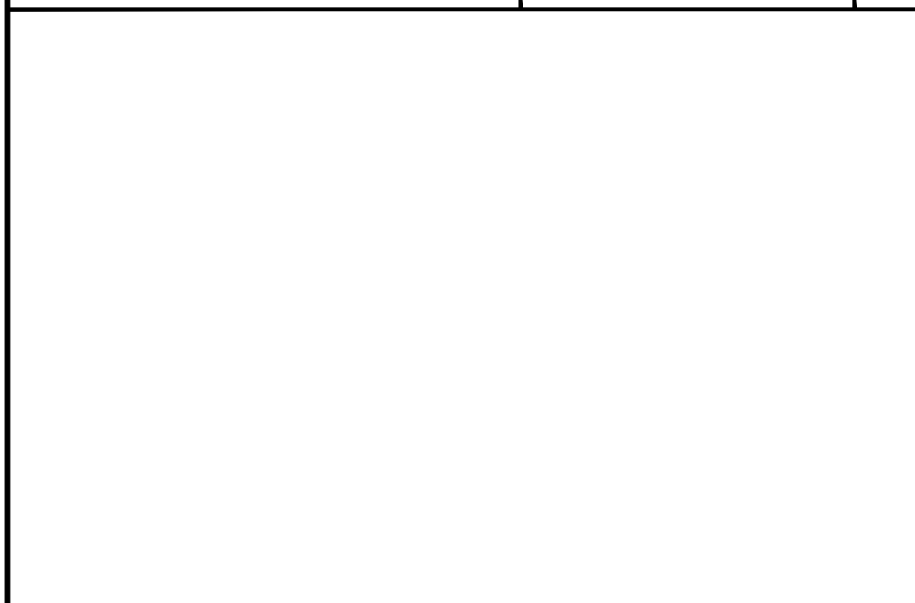
2



SAFETY SWITCH DETAIL

NO SCALE

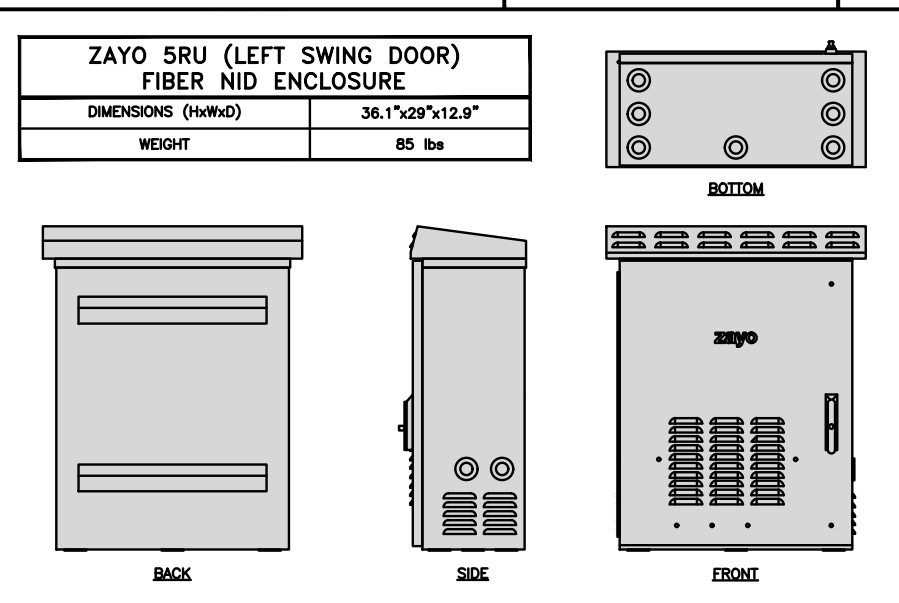
3



NOT USED

NO SCALE

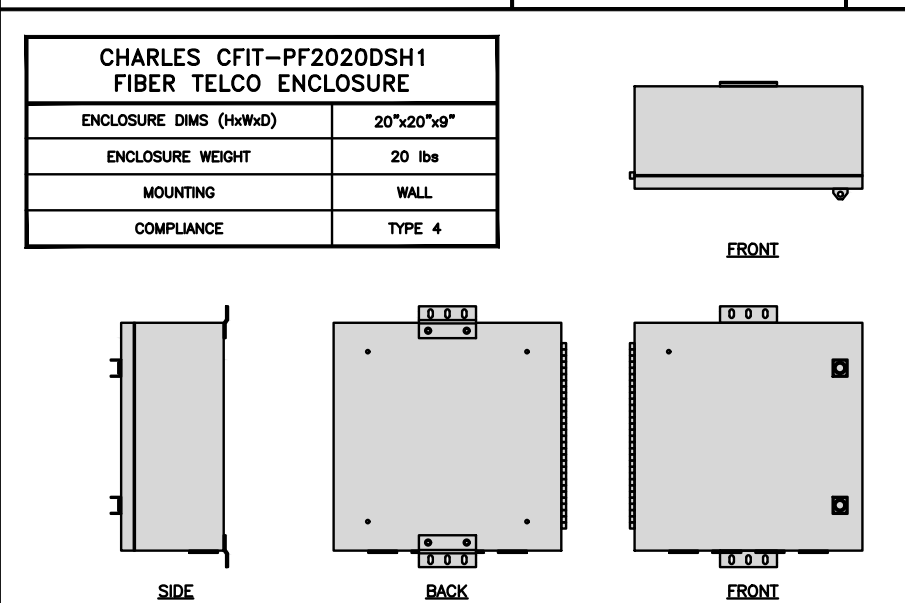
4



FIBER NID ENCLOSURE DETAIL

NO SCALE

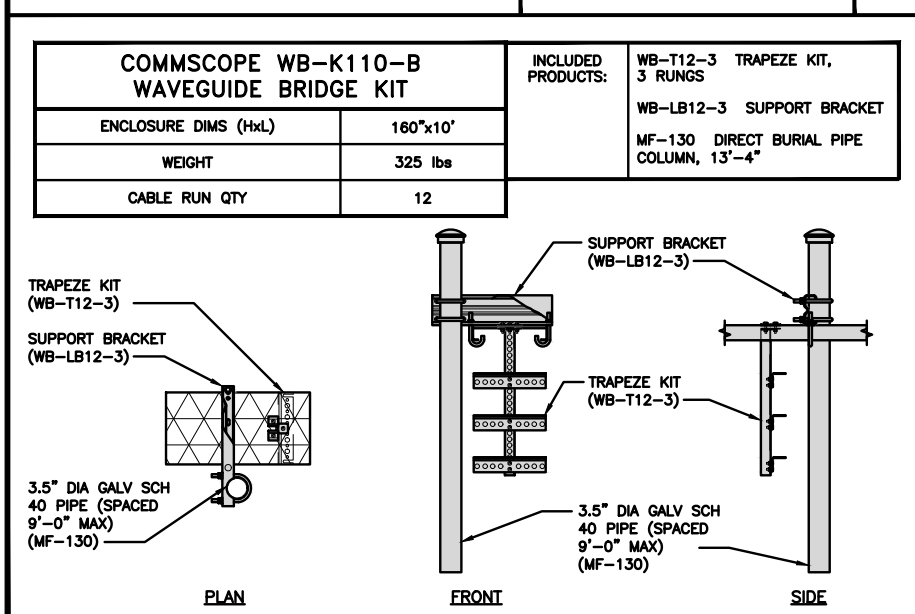
5



FIBER DISTRIBUTION BOX DETAIL

NO SCALE

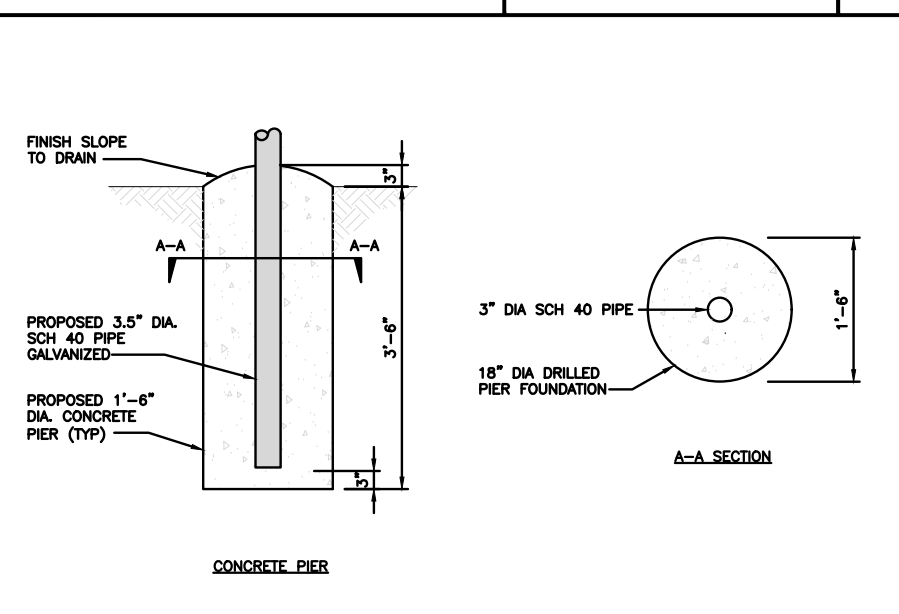
6



ICE BRIDGE DETAIL

NO SCALE

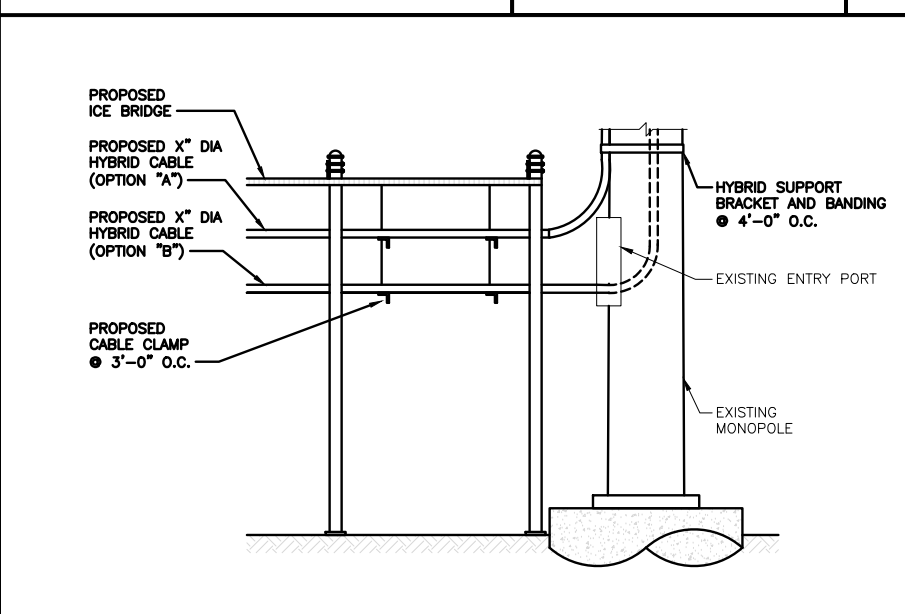
7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL

NO SCALE

8



HYBRID CABLE RUN

NO SCALE

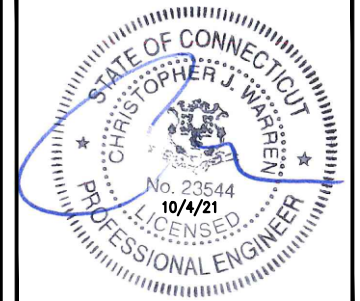
9

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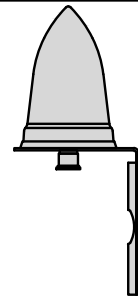
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00132A
WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET TITLE
EQUIPMENT
DETAILS

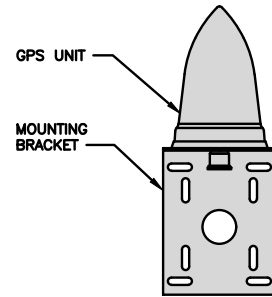
SHEET NUMBER

A-4

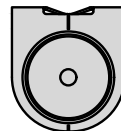
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DiaxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



BACK



SIDE

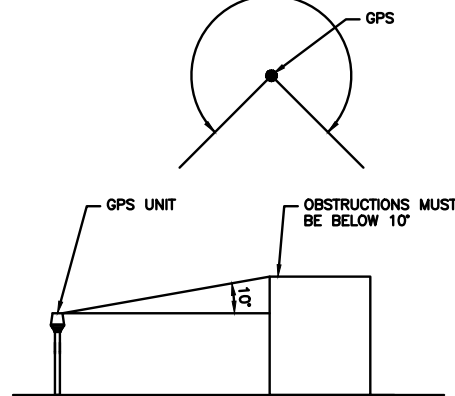


TOP

GPS UNIT

MOUNTING BRACKET

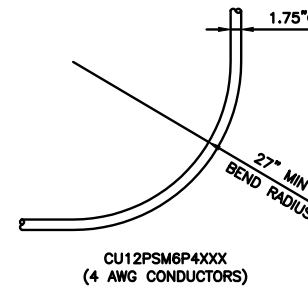
MINIMUM OF 75% OR 270° IN ANY DIRECTION



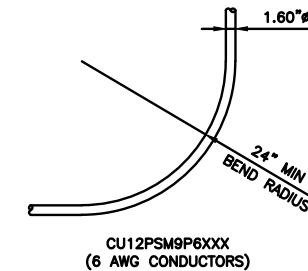
GPS UNIT

OBSTRUCTIONS MUST BE BELOW 10°

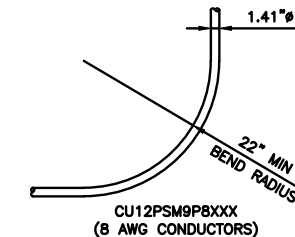
10°



CU12PSM6P4XXX
(4 AWG CONDUCTORS)



CU12PSM9P6XXX
(6 AWG CONDUCTORS)



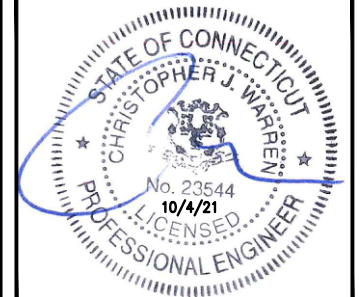
CU12PSM9P8XXX
(8 AWG CONDUCTORS)

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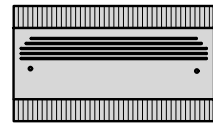
SHEET TITLE
EQUIPMENT
DETAILS

SHEET NUMBER

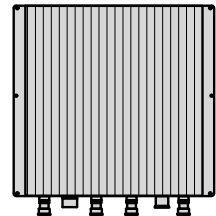
A-5

GPS DETAIL	NO SCALE	1	GPS MINIMUM SKY VIEW REQUIREMENTS	NO SCALE	2	CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUS	NO SCALE	3
	NO SCALE	4		NO SCALE	5		NO SCALE	6
	NO SCALE	7		NO SCALE	8		NO SCALE	9

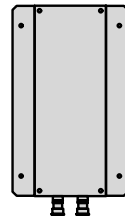
FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



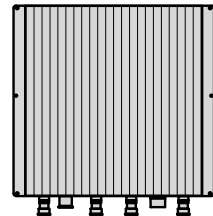
PLAN



BACK

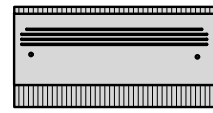


SIDE

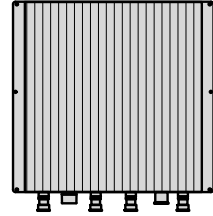


FRONT

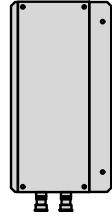
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



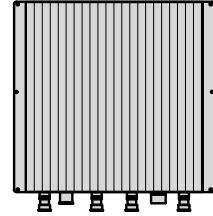
PLAN



BACK

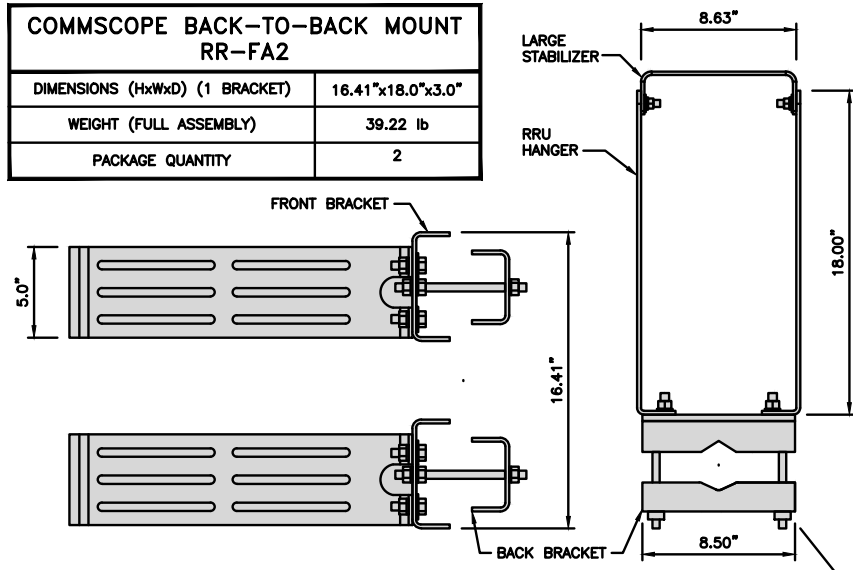


SIDE



FRONT

COMMSCOPE BACK-TO-BACK MOUNT RR-FA2	
DIMENSIONS (HxWxD) (1 BRACKET)	16.41"x18.0"x3.0"
WEIGHT (FULL ASSEMBLY)	39.22 lb
PACKAGE QUANTITY	2



RRH DETAIL

NO SCALE

1

RRH DETAIL

NO SCALE

2

RRH MOUNT DETAIL

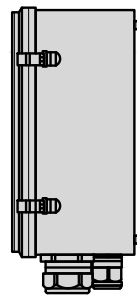
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3

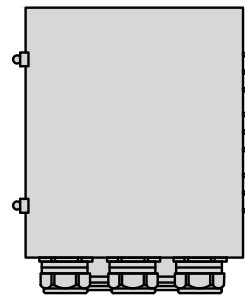
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 lbs



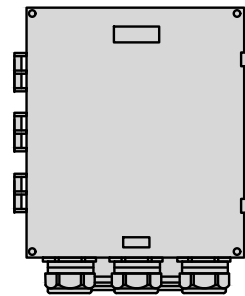
PLAN



SIDE

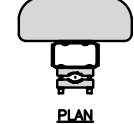


BACK

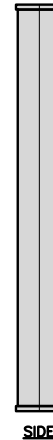


FRONT

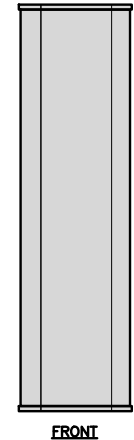
JMA MX08FRO665-21	
DIMENSIONS (HxWxD)	72"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	64.5 lbs
WEIGHT WITH BRACKETS	82.5 lbs



PLAN



SIDE

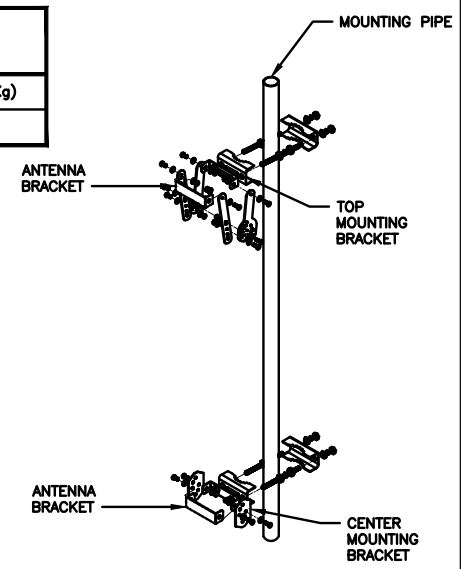


FRONT

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

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS
FOR 4-, 6-, AND 8-FOOT ANTENNAS
ANTENNA BRACKET NOT PART OF KIT

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



SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

4

ANTENNA DETAIL

NO SCALE

5

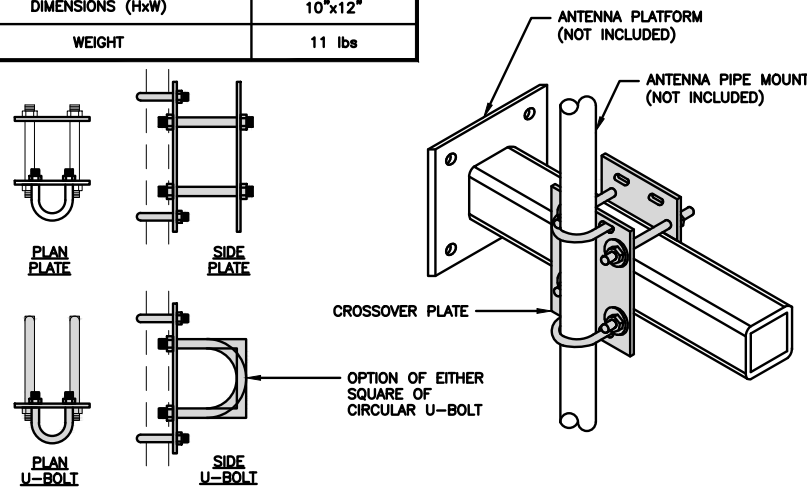
ANTENNA MOUNTING DETAIL

NO SCALE

6

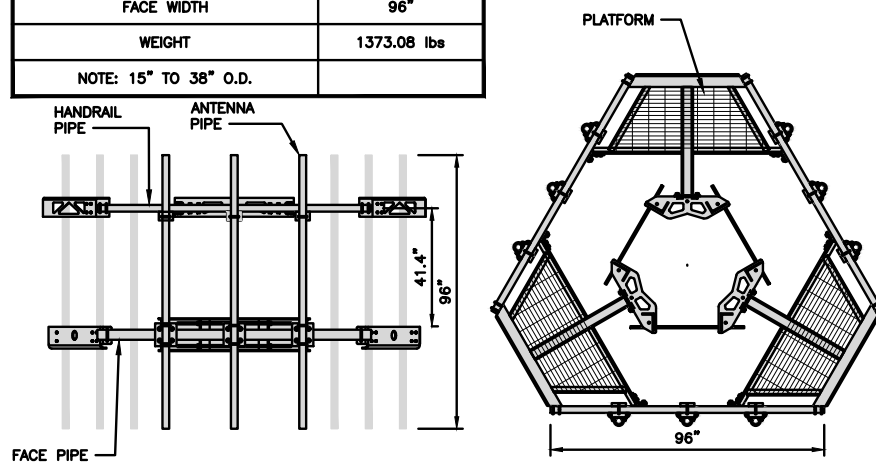
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

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



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

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



RRH/OVP MOUNT DETAIL

NO SCALE

7

ANTENNA PLATFORM DETAIL

NO SCALE

8

NOT USED

NO SCALE

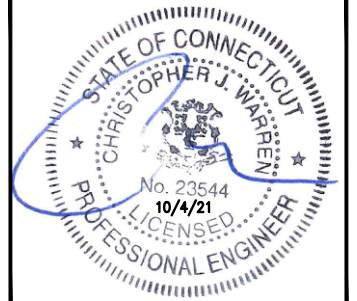
9

dish
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RFDS REV #: TBD

**CONSTRUCTION
DOCUMENTS**

SUBMITTALS		
REV	DATE	DESCRIPTION
A	08/09/21	ISSUED FOR REVIEW
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A&E PROJECT NUMBER
1009-Z5555-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00132A
WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET TITLE
EQUIPMENT
DETAILS

SHEET NUMBER

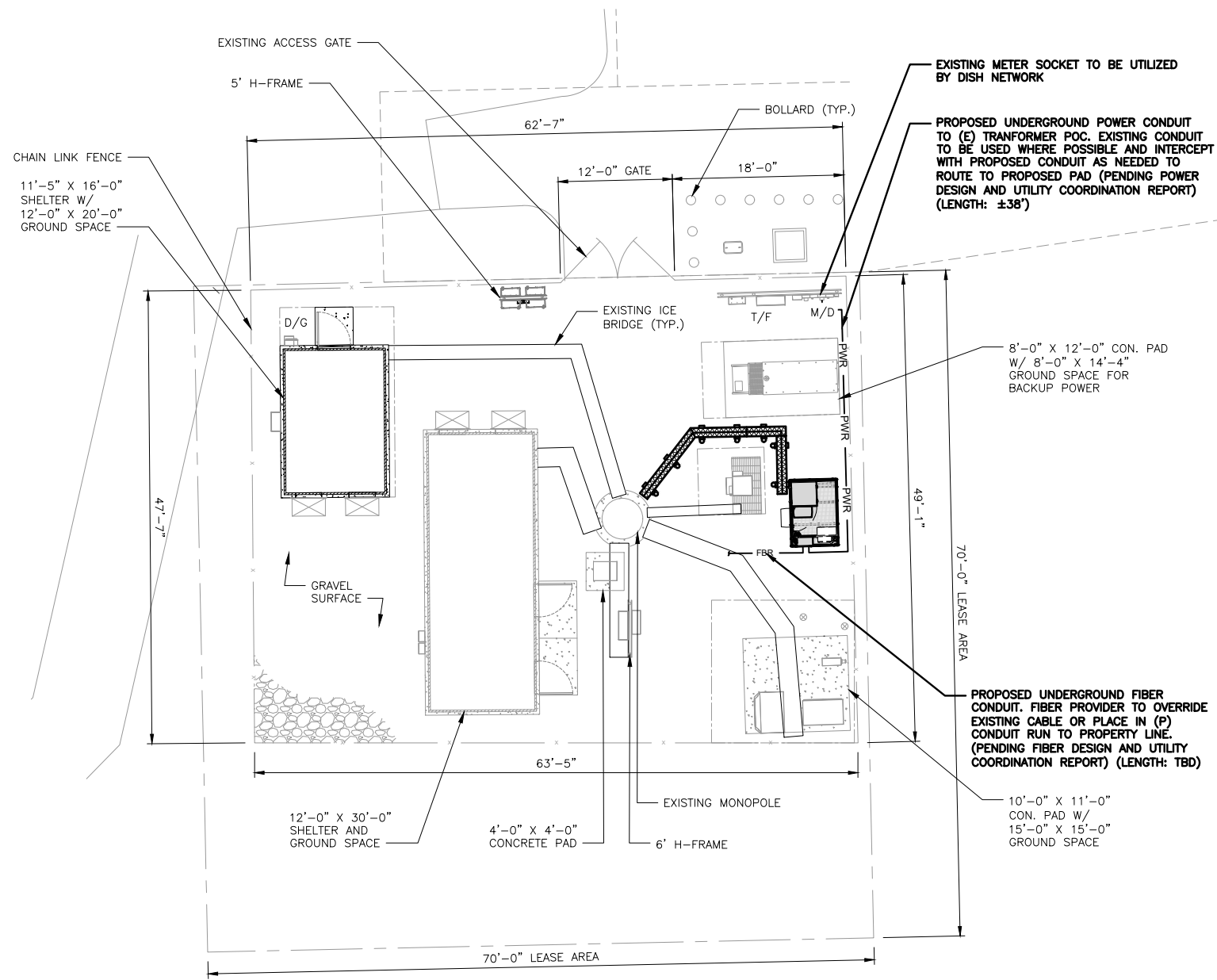
A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. THE GROUND LEASE PROVIDES BROAD/BLANKET UTILITY RIGHTS. PWR AND FBR PATH DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS NOT AN OPTION, PLEASE NOTIFY AMERICAN TOWER REAL ESTATE AS FURTHER COORDINATION MAY BE NEEDED.

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

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

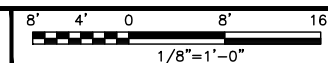


ELECTRICAL NOTES

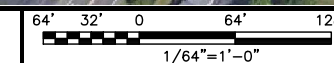
2



UTILITY ROUTE PLAN



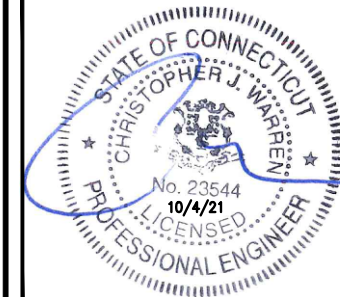
OVERALL UTILITY PLAN



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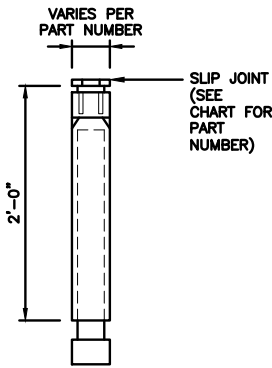
A&E PROJECT NUMBER
1009-Z5555-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00132A
WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER
E-1

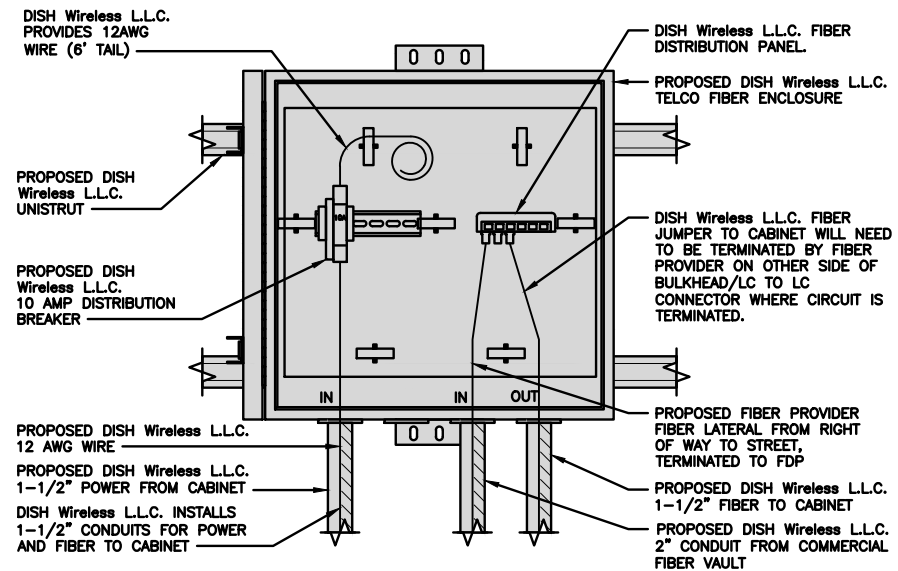
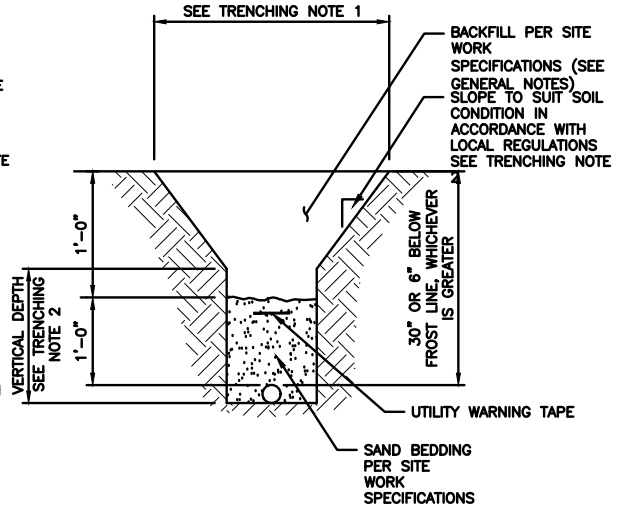
CARLON EXPANSION FITTINGS				
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"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



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

TRENCHING NOTES

- 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.
- TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
- 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.



EXPANSION JOINT DETAIL

NO SCALE

1

TYPICAL UNDERGROUND TRENCH DETAIL

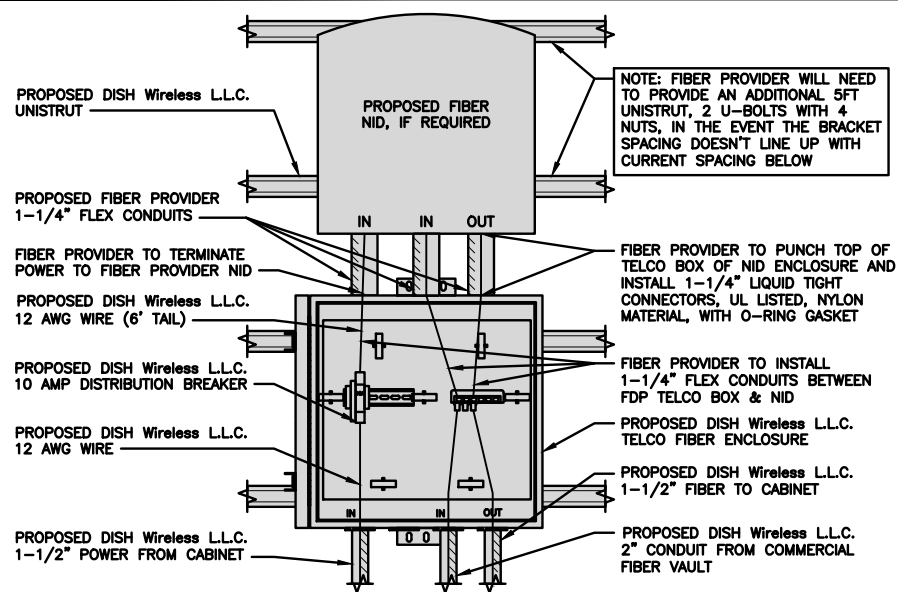
NO SCALE

2

DARK TELCO BOX - INTERIOR WIRING LAYOUT

NO SCALE

3



NOTE: FIBER PROVIDER WILL NEED TO PROVIDE AN ADDITIONAL 5FT UNISTRUT, 2 U-BOLTS WITH 4 NUTS. IN THE EVENT THE BRACKET SPACING DOESN'T LINE UP WITH CURRENT SPACING BELOW

LIT TELCO BOX - INTERIOR WIRING LAYOUT (OPTIONAL)

NO SCALE

4

NO SCALE

5

NO SCALE

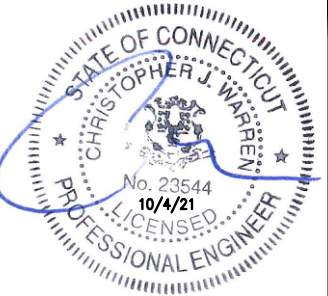
6



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DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00132A
WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER
E-2

NO SCALE

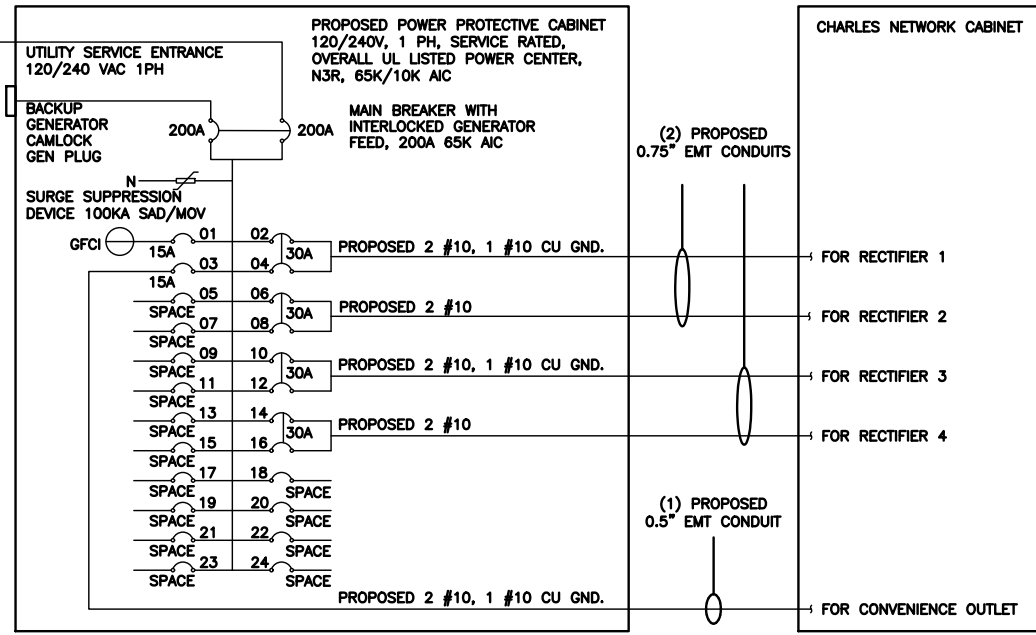
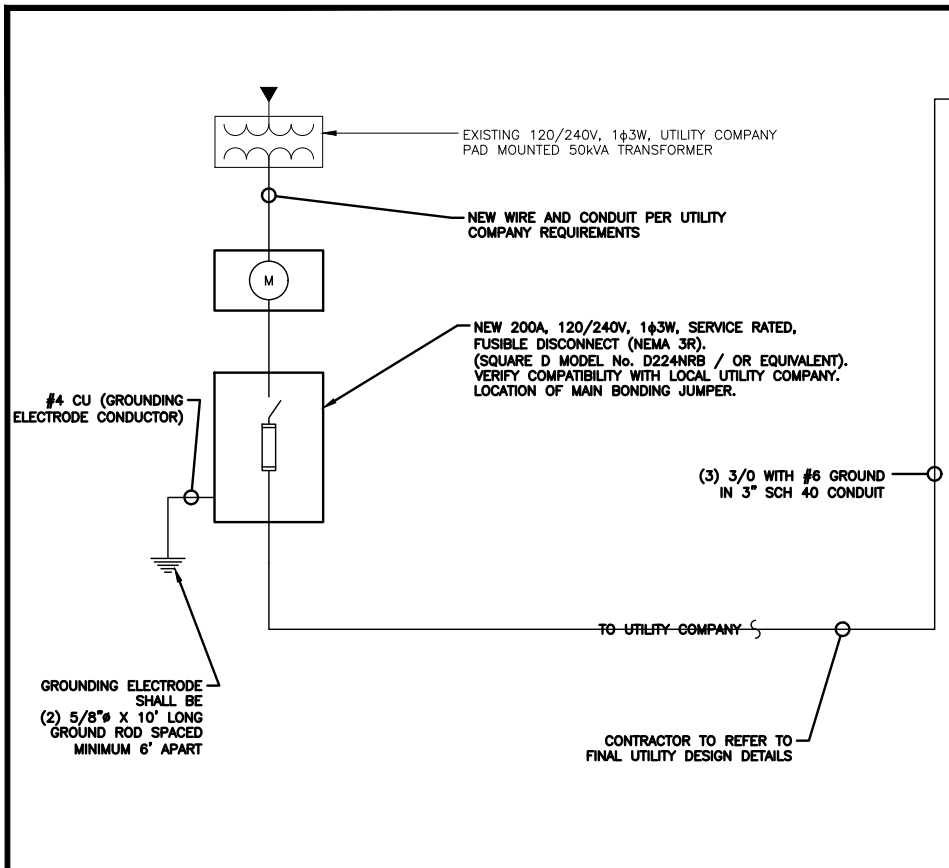
7

NO SCALE

8

NO SCALE

9



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:Q0230
 (1) 15A, 1P BREAKER - SQUARE D P/N:Q0115

NOTES

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

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

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

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.
 #10 - 0.0211 SQ. IN X 2 = 0.0422 SQ. IN
 #10 - 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
TOTAL = 0.0633 SQ. IN

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

RECTIFIER CONDUCTORS (2 CONDUITS): USING UL1015, CU.
 #10 - 0.0266 SQ. IN X 4 = 0.1064 SQ. IN
 #10 - 0.0082 SQ. IN X 1 = 0.0082 SQ. IN <BARE GROUND
TOTAL = 0.1146 SQ. IN

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

PPC FEED CONDUCTORS (1 CONDUIT): USING THWN, CU.
 3/0 - 0.2679 SQ. IN X 3 = 0.8037 SQ. IN
 #6 - 0.0507 SQ. IN X 1 = 0.0507 SQ. IN <GROUND
TOTAL = 0.8544 SQ. IN

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

PPC ONE-LINE DIAGRAM

NO SCALE 1

PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE

NO SCALE 2

NOT USED

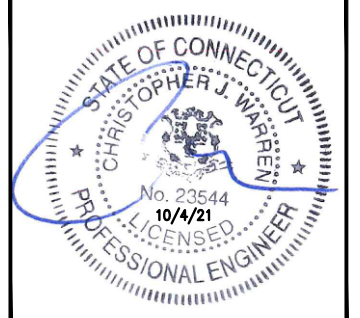
NO SCALE 3



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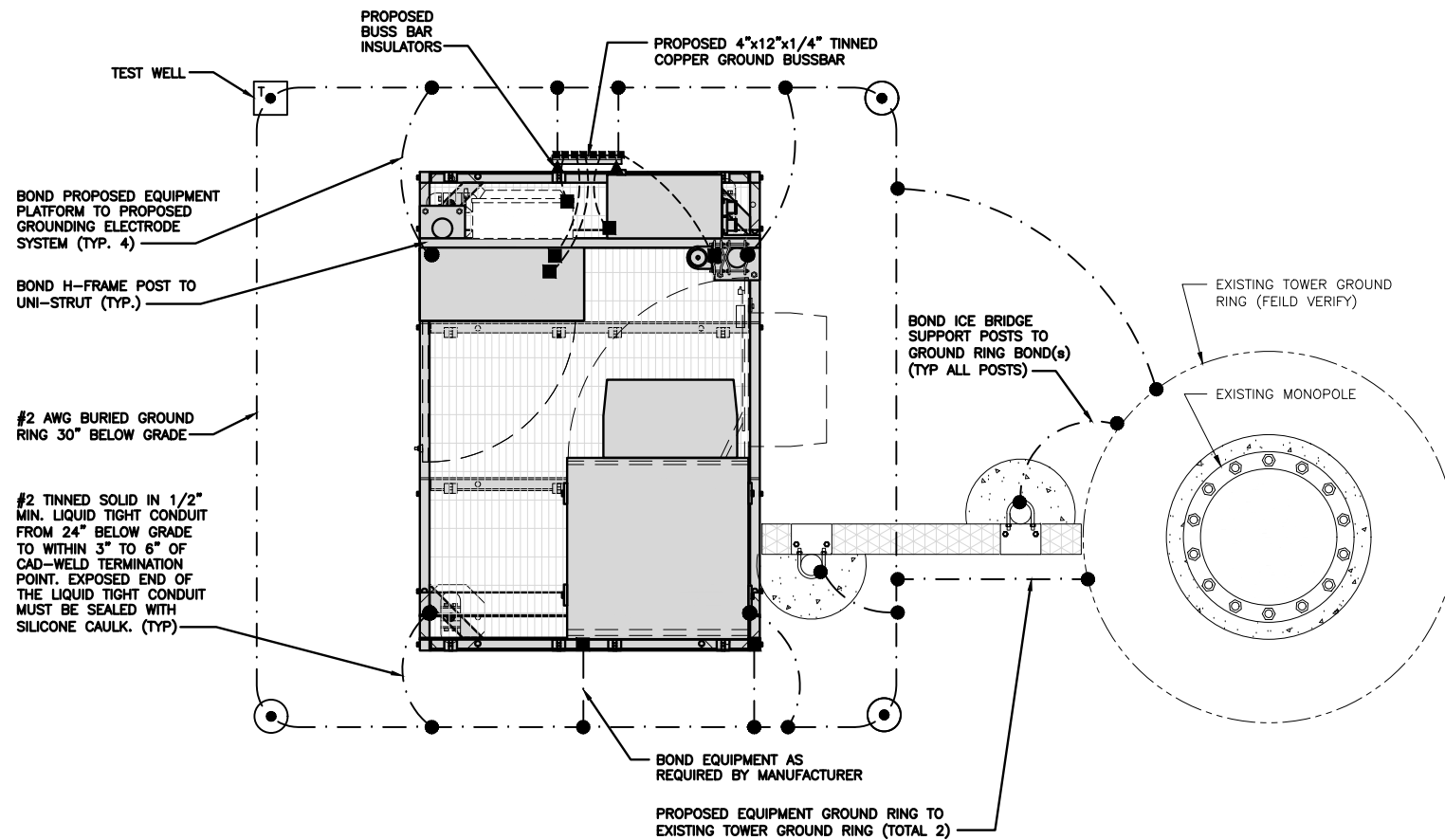
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PROJECT INFORMATION
BOHVN00132A
WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

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

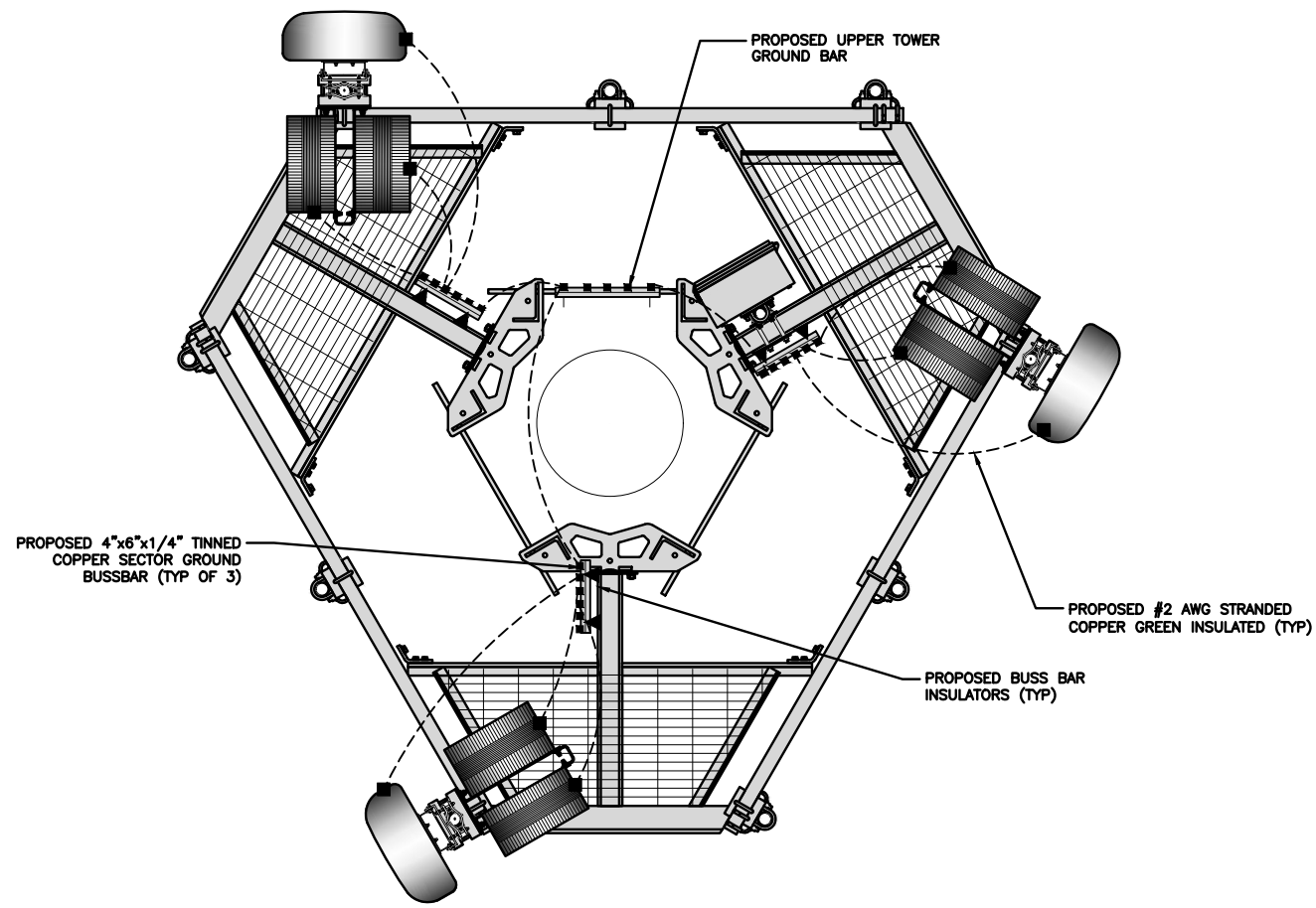
SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE

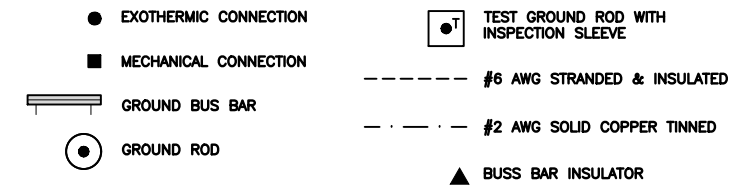
1



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE

2



GROUNDING LEGEND

- GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
- 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.
- ALL GROUND CONDUCTORS SHALL BE COPPER; NO ALUMINUM CONDUCTORS SHALL BE USED.

GROUNDING KEY NOTES

- (A) **EXTERIOR GROUND RING:** #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- (B) **TOWER GROUND RING:** THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- (C) **INTERIOR GROUND RING:** #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- (D) **BOND TO INTERIOR GROUND RING:** #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.
- (E) **GROUND ROD:** UL LISTED COPPER CLAD STEEL, MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- (F) **CELL REFERENCE GROUND BAR:** POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- (G) **HATCH PLATE GROUND BAR:** BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) **EXTERIOR CABLE ENTRY PORT GROUND BARS:** LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.
- (I) **TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- (J) **FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- (K) **INTERIOR UNIT BONDS:** METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
- (L) **FENCE AND GATE GROUNDING:** METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
- (M) **EXTERIOR UNIT BONDS:** METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE
- (N) **ICE BRIDGE SUPPORTS:** EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.
- (O) **DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR**
- (P) **TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO PROPOSED ANTENNA MOUNT COLLAR.**

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

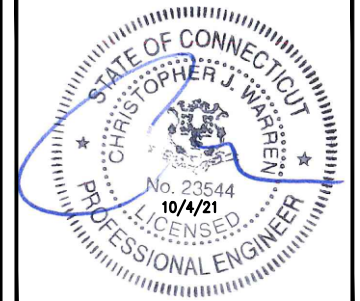
GROUNDING KEY NOTES

NO SCALE

3



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CONSTRUCTION DOCUMENTS

SUBMITTALS		
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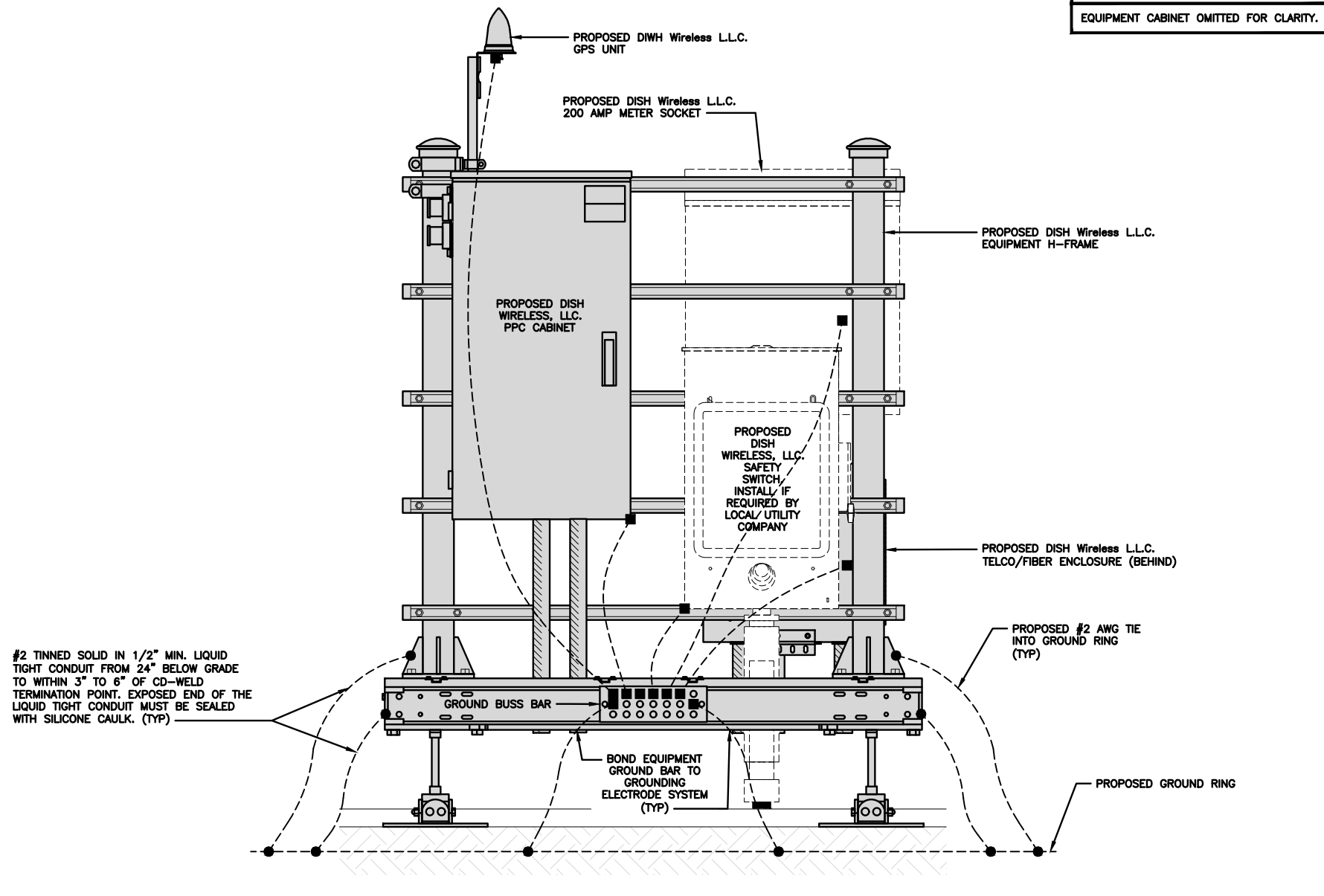
A&E PROJECT NUMBER
1009-Z5555-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00132A
WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

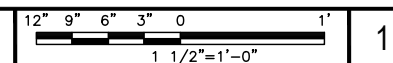
SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER
G-1

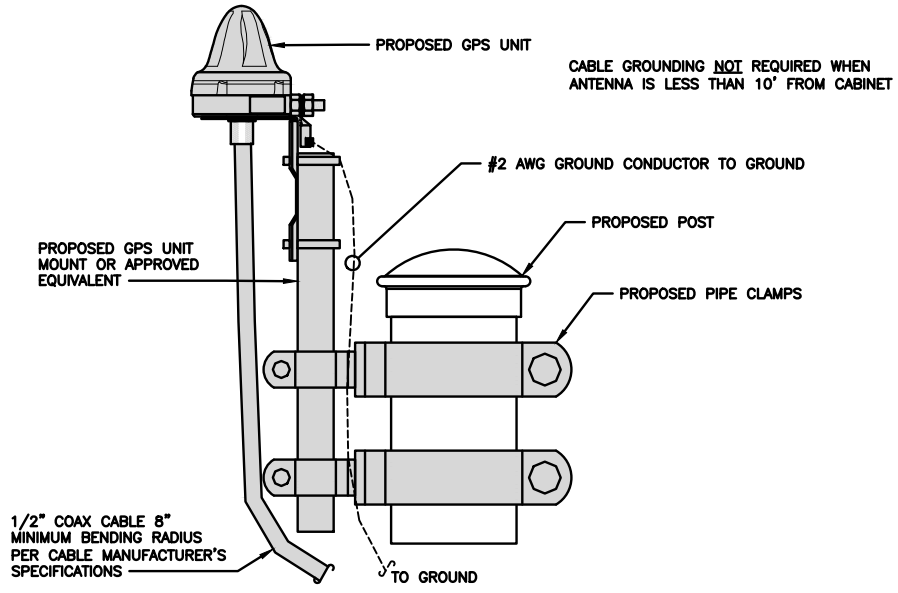
NOTES
EQUIPMENT CABINET OMITTED FOR CLARITY.



H-FRAME GROUNDING DETAIL



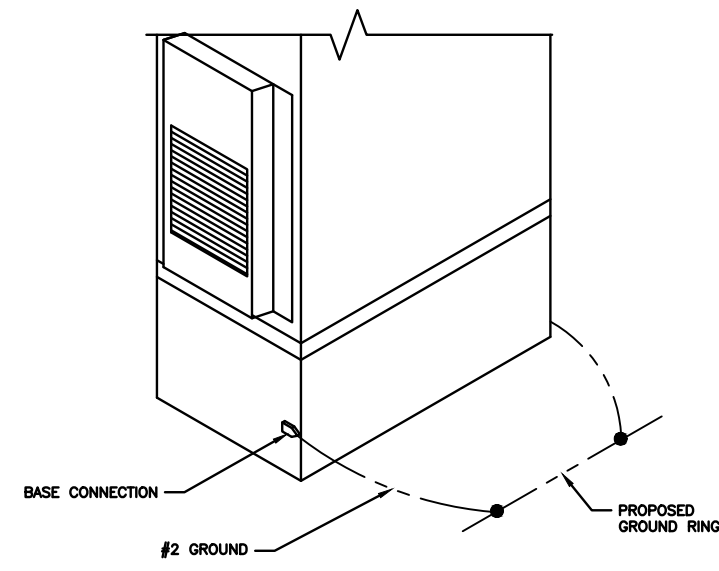
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TYPICAL GPS UNIT GROUNDING

NO SCALE

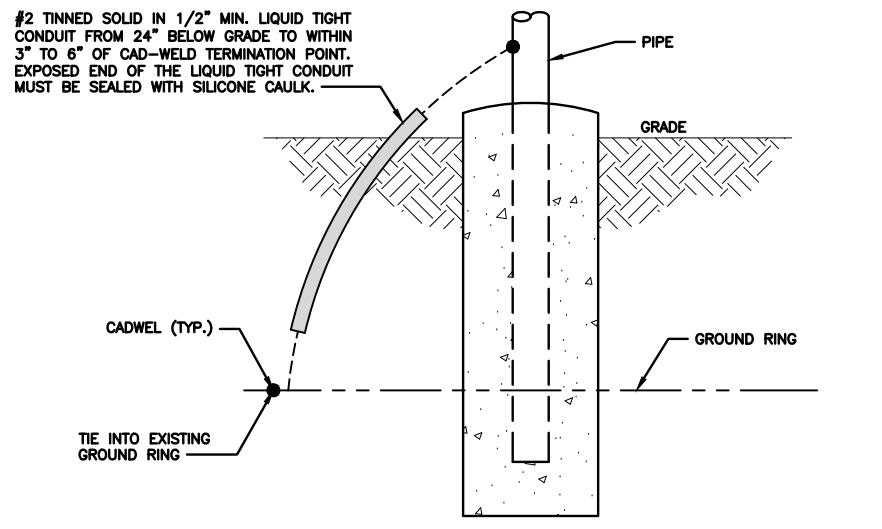
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OUTDOOR CABINET GROUNDING

NO SCALE

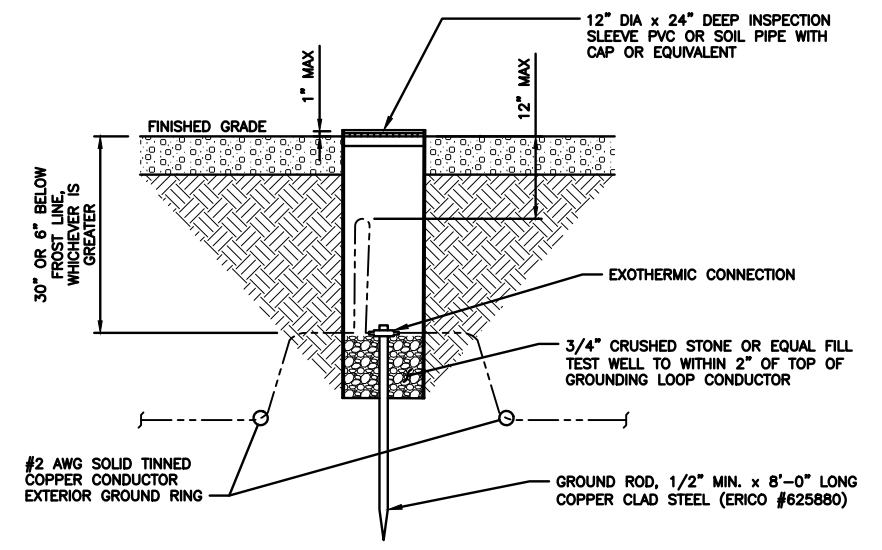
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TRANSITIONING GROUND DETAIL

NO SCALE

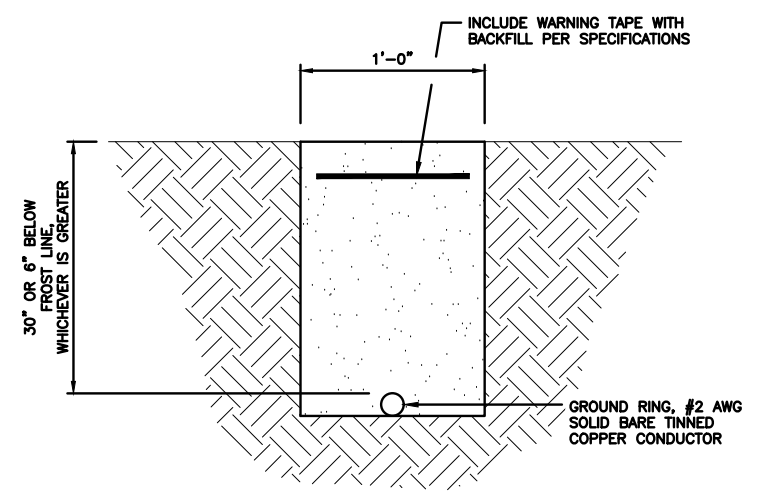
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TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE

5



TYPICAL GROUND RING TRENCH

NO SCALE

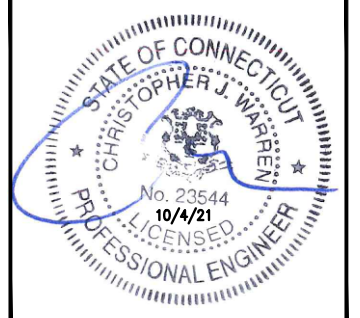
6



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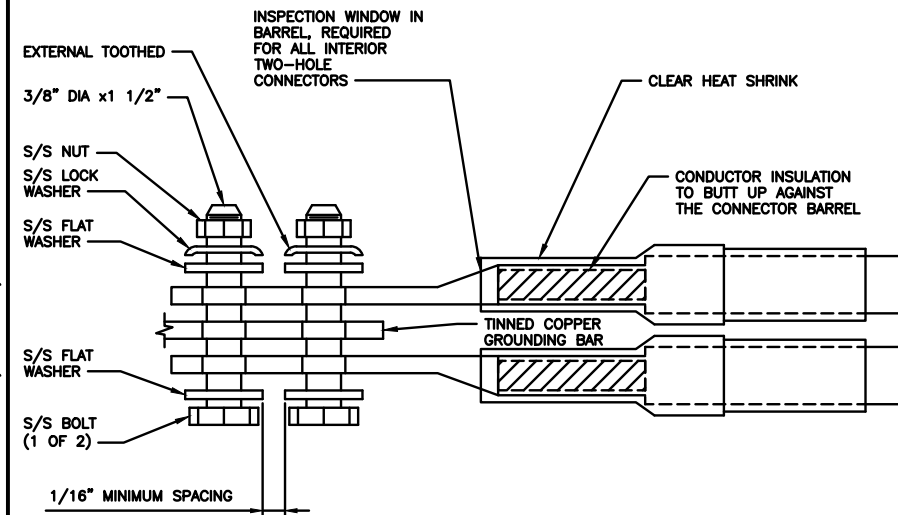
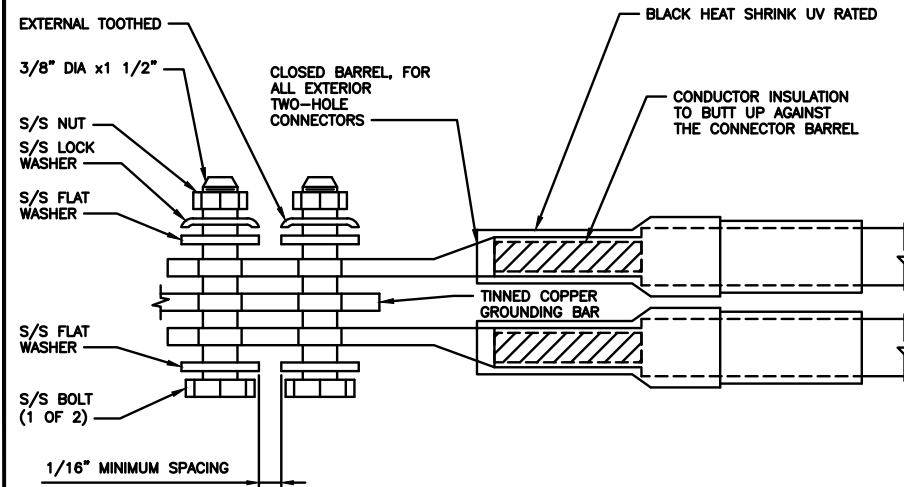
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SHEET TITLE
GROUNDING
DETAILS

SHEET NUMBER

G-2

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



TYPICAL GROUNDING NOTES

NO SCALE

1

TYPICAL EXTERIOR TWO HOLE LUG

NO SCALE

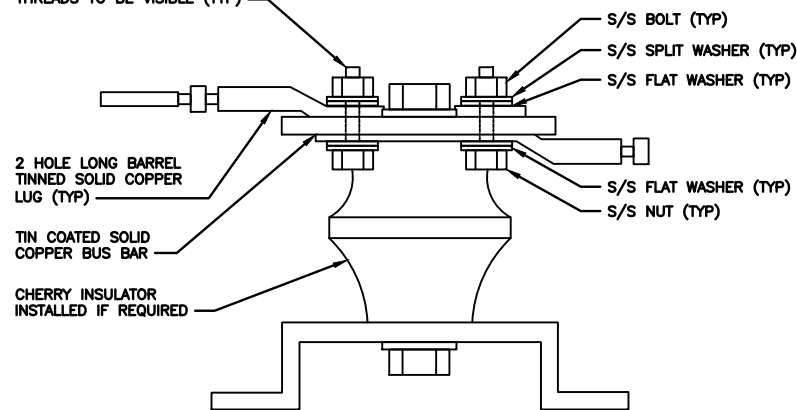
2

TYPICAL INTERIOR TWO HOLE LUG

NO SCALE

3

NOTE: MINIMUM OF 3 THREADS TO BE VISIBLE (TYP)



LUG DETAIL

NO SCALE

4

NO SCALE

5

NO SCALE

6

NO SCALE

7

NO SCALE

8

NO SCALE

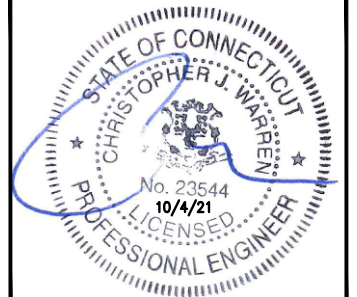
9

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WEST HAVEN, CT 06516

SHEET TITLE
GROUNDING
DETAILS

SHEET NUMBER

G-3

RF JUMPER COLOR CODING

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

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

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

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

MID-BAND RRH -
(AWS BANDS N66+N70)

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

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

HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

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

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

EXAMPLE 1	EXAMPLE 2
RED	RED
BLUE	BLUE
GREEN	GREEN
ORANGE	YELLOW
PURPLE	

FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

RET MOTORS AT ANTENNAS

ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "OUT"	ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "OUT"
RED	BLUE	BLUE	GREEN	
		PURPLE		

MICROWAVE RADIO LINKS

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

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

FORWARD AZIMUTH OF 0-120 DEGREES		FORWARD AZIMUTH OF 120-240 DEGREES		FORWARD AZIMUTH OF 240-360 DEGREES	
PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
RED	RED	BLUE	BLUE	GREEN	GREEN
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	RED		BLUE		GREEN
	WHITE		WHITE		WHITE

RF CABLE COLOR CODES

1

NOT USED

4

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

AWS
(N66+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH
WHITE

ALPHA SECTOR

RED

BETA SECTOR

BLUE

GAMMA SECTOR

GREEN

COLOR IDENTIFIER

2

NOT USED

3

NOT USED

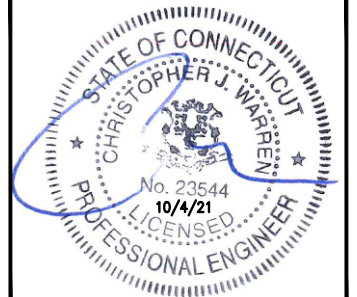
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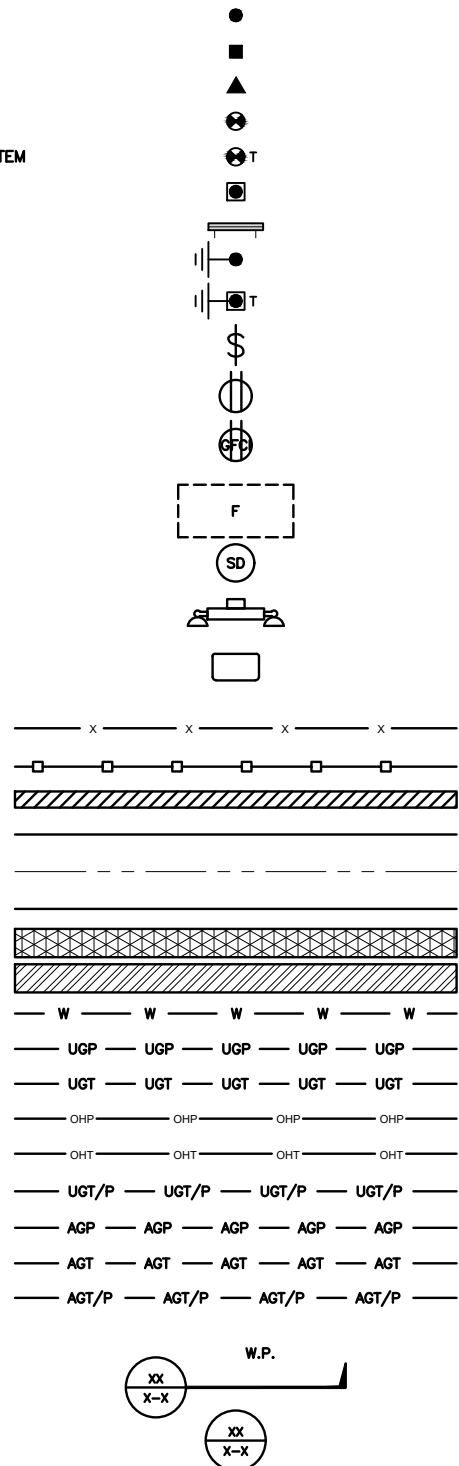
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DISH Wireless L.L.C.
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WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

EXOTHERMIC CONNECTION
 MECHANICAL CONNECTION
 BUSS BAR INSULATOR
 CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 EXOTHERMIC WITH INSPECTION SLEEVE
 GROUNDING BAR
 GROUND ROD
 TEST GROUND ROD WITH INSPECTION SLEEVE
 SINGLE POLE SWITCH
 DUPLEX RECEPTACLE
 DUPLEX GFCI RECEPTACLE
 FLUORESCENT LIGHTING FIXTURE
 (2) TWO LAMPS 48-T8
 SMOKE DETECTION (DC)
 EMERGENCY LIGHTING (DC)
 SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
 LED-1-25A400/51K-SR4-120-PE-DBBTXD



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

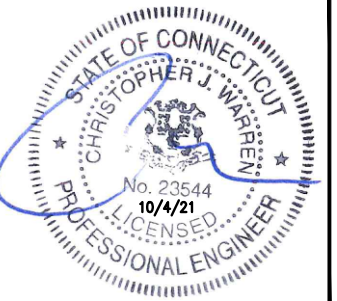
IN INCH
 INT INTERIOR
 LB(S) POUND(S)
 LF LINEAR FEET
 LTE LONG TERM EVOLUTION
 MAS MASONRY
 MAX MAXIMUM
 MB MACHINE BOLT
 MECH MECHANICAL
 MFR MANUFACTURER
 MGB MASTER GROUND BAR
 MIN MINIMUM
 MISC MISCELLANEOUS
 MTL METAL
 MTS MANUAL TRANSFER SWITCH
 MW MICROWAVE
 NEC NATIONAL ELECTRIC CODE
 NM NEWTON 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 UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
 VIF VERIFIED IN FIELD
 W WIDE
 W/ WITH
 WD WOOD
 WP WEATHERPROOF
 WT WEIGHT



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 WEST HAVEN, CT 06516

SHEET TITLE
 LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

LEGEND

NO SCALE

ABBREVIATIONS

NO SCALE

SITE ACTIVITY REQUIREMENTS:

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

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

GENERAL NOTES:

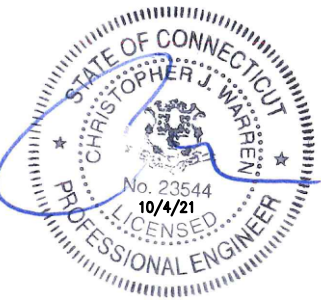
1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER: DISH Wireless L.L.C.
TOWER OWNER: TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED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

RFDS REV #: TBD

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	08/09/21	ISSUED FOR REVIEW
0	10/01/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1009-Z5555-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00132A
WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

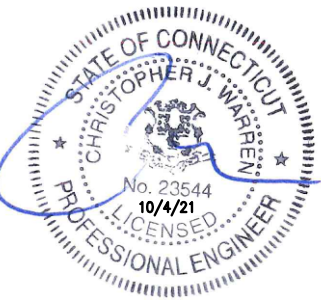
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
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.
- 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.
- 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).
- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
- TIE WRAPS ARE NOT ALLOWED.
- 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.
- 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.
- POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
- 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.
- 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).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
- ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED

FOR EXPOSED INDOOR LOCATIONS.

- ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
- WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
- SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- 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.
- 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.
- 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.
- 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.
- THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- 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.
- INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".
- ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



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LITTLETON, CO 80120



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DRAWN BY:	CHECKED BY:	APPROVED BY:
AS	PP	CW

RFDS REV #: TBD

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	08/09/21	ISSUED FOR REVIEW
0	10/01/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
1009-Z5555-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00132A
WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3

GROUNDING NOTES:

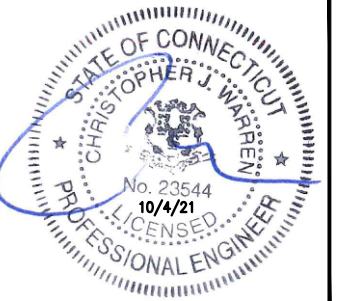
1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING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



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DISH Wireless L.L.C.
PROJECT INFORMATION
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WEST HAVEN & RT 162 CT
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

ENGINEERING:
STRUCTURAL ANALYSIS
MOUNT ANALYSIS



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 149 ft Monopole
ATC Site Name : WEST HAVEN & RT 162 CT, CT
ATC Site Number : 243036
Engineering Number : 13693702_C3_03
Proposed Carrier : DISH WIRELESS L.L.C.
Carrier Site Name : BOHVN00132A
Carrier Site Number : BOHVN00132A
Site Location : 668 Jones Hill Road
West Haven, CT 06516-6311
41.2564, -72.9724
County : New Haven
Date : August 10, 2021
Max Usage : 99%
Result : Pass

Prepared By:

Sarah D. Kramer
Structural Engineer

Sarah D. Kramer

Reviewed By:



COA : PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 149 ft Monopole to reflect the change in loading by DISH WIRELESS L.L.C.

Supporting Documents

Tower Drawings	Sabre Job #06-08204, dated August 19, 2005
Foundation Drawing	Sabre Job #06-10095, dated October 12, 2005
Geotechnical Report	EBI Project #61051509, dated July 12, 2005

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:	116.96 mph (3-second gust)
Basic Wind Speed w/ Ice:	48.73 mph (3-second gust) w/ 0.85" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	$S_s = 0.20, S_i = 0.05$
Site Class:	D - Stiff Soil - Default

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

Conclusion

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

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

Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
151.0	2	DragonWave A-ANT-11G-2-C	Collar	(4) 1/2" Coax (1) 2" conduit (3) 1 1/4" Hybriflex Cable (1) 1.7" (43.2mm) Hybrid	CLEARWIRE CORPORATION
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
	3	RFS APXVFRR12X-C-I20			
	3	Nokia 2.5G MAA - AAHC(64T64R)			
	3	DragonWave Horizon Compact			
	1	DragonWave A-ANT-23G-1-C			
	6	Alcatel-Lucent RRH2x50-08			
143.0	3	Ericsson Air6449 B41	Triangular Platform with Handrails	(5) 1 1/4" (1.25"-31.8mm) Fiber (3) 1 5/8" (1.63"-41.3mm) Fiber (12) 1 5/8" Coax	T-MOBILE
	3	Ericsson Air 3246 B66			
	3	Ericsson AIR32 B66Aa/B2a			
	3	Ericsson RRUS 4415 B25			
	3	Ericsson Radio 4449 B71 B85A			
	3	RFS APXVAARR24_43-U-NA20			
134.0	3	Samsung B2/B66A RRH-BR049	Triangular Low Profile Platform	(2) 1 5/8" (1.63"-41.3mm) Fiber (11) 1 5/8" Coax	VERIZON WIRELESS
	1	Raycap RCMD-6627-PF-48			
	6	RFS FD9R6004/2C-3L			
	3	Samsung MT6407-77A			
	6	JMA Wireless MX06FRO660-03			
	3	Andrew DB854DG65ESX			
	3	Samsung B5/B13 RRH-BR04C			
125.0	3	Ericsson RRUS 8843 B2, B66A	Triangular Platform with Handrails	(6) 0.78" (19.7mm) 8 AWG 6 (3) 3" conduit (2) 0.39" (10mm) Fiber Trunk (3) 0.39" (9.8mm) Cable (2) 2" conduit	AT&T MOBILITY
	3	CCI CCI-HPA-65R-BUU-H8			
	3	Ericsson Radio 4415 B30			
	3	Ericsson RRUS 4449 B5, B12			
	6	Kathrein Scala 80010966			
	1	Commscope WCS-IMFQ-AMT			
	1	Raycap DC6-48-60-0-8F			
	3	Ericsson RRUS 4478 B14			
2	Raycap DC6-48-60-0-8F (24" Height)				
115.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax	METRO PCS INC

Equipment to be Removed

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
106.0	1	Generic 3' Dish w/Radome	Side Arm	(1) 0.28" (7mm) RG-6	OTHER
	1	Proxim 5054-R-LR			



Proposed Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
105.0	1	Commscope RDIDC-9181-PF-48	Triangular 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 lines outside the pole shaft. Stacking lines is not allowed.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	66%	Pass
Shaft	99%	Pass
Base Plate	51%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3085.2	86%
Axial (Kips)	54.5	61%
Shear (Kips)	26.4	74%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
151.0	DragonWave A-ANT-23G-1-C	CLEARWIRE CORPORATION	2.396	1.840
	DragonWave A-ANT-11G-2-C			
105.0	JMA Wireless MX08FRO665-21	DISH WIRELESS L.L.C.	1.116	1.330
	Fujitsu TA08025-B605			
	Commscope RDIDC-9181-PF-48			
	Fujitsu TA08025-B604			

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

Standard Conditions

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

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

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

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

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

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

JOB INFORMATION

Asset : 243036, WEST HAVEN & RT 162 CT
 Client : DISH WIRELESS L.L.C.
 Code : ANSI/TIA-222-H

Height : 149 ft
 Base Width : 52.01
 Shape : 18 Sides

SITE PARAMETERS

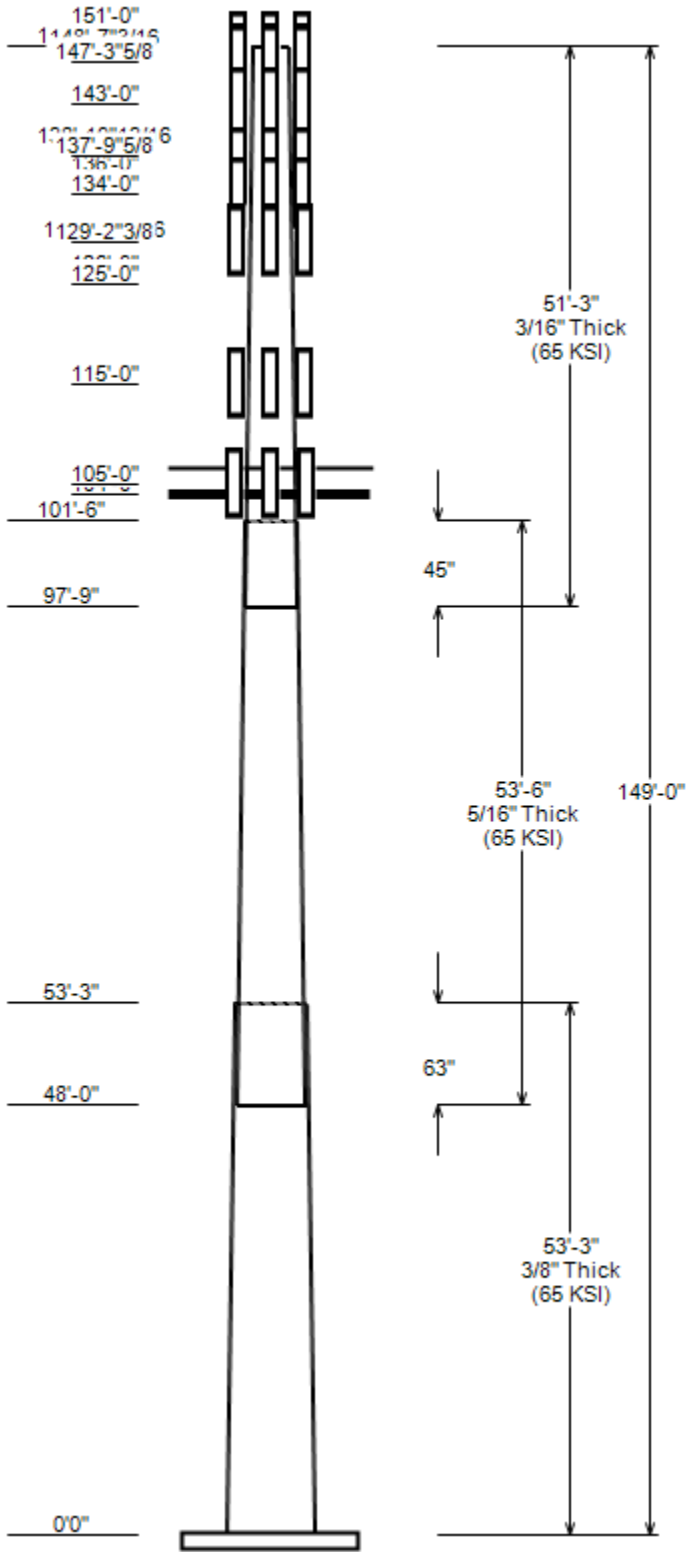
Description : -
 Base Elev (ft): 0.00 Structure Class: II
 Taper : 0.23500 (In/ft) Exposure : B
 Topographic Category : 1 Topographic Feature:
 Topo Method : Method 1

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Overlap Length (in)	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom			
1	53.250	39.50	52.01	0.375	0.000	65
2	53.500	28.79	41.36	0.312	63.000	65
3	51.250	18.00	30.04	0.188	45.000	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
151.0	148.0	3	DragonWave Horizon Compact
151.0	148.0	1	DragonWave A-ANT-23G-1-C
151.0	151.0	6	Alcatel-Lucent RRH2x50-08
151.0	151.0	3	Alcatel-Lucent 1900 MHz 4X45 R
151.0	151.0	3	Nokia 2.5G MAA - AAHC(64T64R)
151.0	148.0	2	DragonWave A-ANT-11G-2-C
151.0	151.0	3	RFS APXVFRR12X-C-I20
151.0	151.0	1	Clearwire Side Arm
148.6	148.6	3	Ericsson Air6449 B41
147.5	147.5	3	Ericsson Air 3246 B66
147.3	147.3	3	Ericsson Radio 4449 B71 B85A
147.3	147.3	3	Ericsson RRU5 4415 B25
147.3	147.3	3	Ericsson AIR32 B66Aa/B2a
143.0	143.0	3	RFS APXVAARR24_43-U-NA20
143.0	143.0	1	Platform with SitePro1 HRK12-3
139.2	139.2	3	Samsung B2/B66A RRH-BR049
138.9	138.9	1	Raycap RCMDC-6627-PF-48
137.8	137.8	6	RFS FD9R6004/2C-3L
136.0	136.0	1	Round Low Profile Platform
134.0	134.0	3	Samsung B5/B13 RRH-BR04C
134.0	134.0	3	Samsung MT6407-77A
134.0	137.0	3	Andrew DB854DG65ESX
134.0	134.0	6	JMA Wireless MX06FRO660-03
129.7	129.7	3	Ericsson RRU5 8843 B2, B66A
129.5	129.5	3	CCI CCI-HPA-65R-BUU-H8
129.4	129.4	3	Ericsson Radio 4415 B30
129.4	129.4	3	Ericsson RRU5 4449 B5, B12
129.2	129.2	6	Kathrein Scala 80010966
126.0	126.0	1	Flat Platform with Handrails
125.0	125.0	1	Commscope WCS-IMFQ-AMT
125.0	125.0	1	Raycap DC6-48-60-0-8F
125.0	125.0	2	Raycap DC6-48-60-0-8F (24" Hei
125.0	125.0	3	Ericsson RRU5 4478 B14
125.0	125.0	1	Mount Reinforcement SitePro1
115.0	115.0	3	RFS APXV18-206517S-C
105.0	105.0	1	Commscope RDIDC-9181-PF-48
105.0	105.0	3	Fujitsu TA08025-B605
105.0	105.0	3	Fujitsu TA08025-B604
105.0	105.0	3	JMA Wireless MX08FRO665-21
104.0	104.0	1	Generic Flat Platform with Han



JOB INFORMATION

Asset : 243036, WEST HAVEN & RT 162 CT
 Client : DISH WIRELESS L.L.C.
 Code : ANSI/TIA-222-H

Height : 149 ft
 Base Width : 52.01
 Shape : 18 Sides

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
4.0	152.0	1/2" Coax	No
0.0	152.0	2" conduit	No
4.0	151.0	1/2" Coax	No
4.0	151.0	1.7" (43.2mm) Hybrid	No
0.0	151.0	1 1/4" Hybriflex Cable	No
0.0	147.0	1 1/4" (1.25"- 31.8mm) Fiber	Yes
4.0	143.0	1 5/8" Coax	No
0.0	143.0	1 5/8" (1.63"-41.3mm) Fiber	No
0.0	143.0	1 1/4" (1.25"- 31.8mm) Fiber	Yes
4.0	134.0	1 5/8" Coax	No
4.0	134.0	1 5/8" (1.63"-41.3mm) Fiber	No
4.0	127.0	3" conduit	No
4.0	127.0	0.78" (19.7mm) 8 AWG 6	No
4.0	125.0	0.78" (19.7mm) 8 AWG 6	No
4.0	125.0	0.39" (9.8mm) Cable	No
4.0	125.0	0.39" (10mm) Fiber Trunk	No
0.0	125.0	2" conduit	No
4.0	115.0	1 5/8" Coax	No
0.0	105.0	1.60" (40.6mm) Hybrid	Yes

LOAD CASES

1.2D + 1.0W	116.96 mph wind with no ice
0.9D + 1.0W	116.96 mph wind with no ice
1.2D + 1.0Di + 1.0Wi	48.73 mph wind with 0.850" radial
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W	3085.20	26.37	54.48
0.9D + 1.0W	3022.37	26.34	40.85
1.2D + 1.0Di + 1.0Wi	785.01	6.70	72.76
1.2D + 1.0Ev + 1.0Eh	179.29	1.37	54.95
0.9D - 1.0Ev + 1.0Eh	174.63	1.37	37.91
1.0D + 1.0W	718.11	6.20	45.44

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	149.00	28.752	1.837
1.0D + 1.0W	149.00	28.752	1.837

ASSET: 243036, WEST HAVEN & RT 162 CT
CUSTOMER: DISH WIRELESS L.L.C.

CODE: ANSI/TIA-222-H
ENG NO: 13693702_C3_03

ANALYSIS PARAMETERS

Location:	New Haven County,CT	Height:	149 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	52.01 in
Manufacturer:	Sabre	Top Diameter:	18.00 in
K_d (non-service):	0.95	Taper:	0.2350 in/ft
K_e :	1.00	Rotation:	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	Design Wind Speed w/o Ice:	117 mph
Risk Category:	II	Design Wind Speed w/Ice:	49 mph
Topo Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	0.85 in
Crest Height:	0 ft	HMSL:	135.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil	Period Based on Rayleigh Method (sec):	3.08		
T_L (sec):	6	P:	1	C_s :	0.030
S_s :	0.200	S_1 :	0.053	C_s Max:	0.030
F_a :	1.600	F_v :	2.400	C_s Min:	0.030
S_{ds} :	0.213	S_{d1} :	0.085		

LOAD CASES

1.2D + 1.0W	116.96 mph wind with no ice
0.9D + 1.0W	116.96 mph wind with no ice
1.2D + 1.0Di + 1.0Wi	48.73 mph wind with 0.850" radial ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

ASSET: 243036, WEST HAVEN & RT 162 CT
 CUSTOMER: DISH WIRELESS L.L.C.

CODE: ANSI/TIA-222-H
 ENG NO: 13693702_C3_03

SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Bottom							Top						
						Weight (lb)	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	53.25	0.3750	65		0.00	9,787	52.01	0.000	61.46	20,701.8	22.69	138.69	39.50	53.25	46.56	9,004.8	16.81	105.33	0.2350
2-18	53.50	0.3125	65	Slip	63.00	6,276	41.36	48.000	40.71	8,664.6	21.57	132.34	28.79	101.50	28.24	2,892.8	14.48	92.12	0.2350
3-18	51.25	0.1875	65	Slip	45.00	2,473	30.04	97.750	17.77	2,000.7	26.49	160.22	18.00	149.00	10.60	424.9	15.16	96.00	0.2350

Shaft Weight 18,536

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAa (sf)	Orientation Factor	Weight (lb)	EPAa (sf)	Orientation Factor
151.00	Nokia 2.5G MAA - AAHC(64T64R)	3	0.80	0.000	103.60	4.203	0.64	167.56	4.964	0.64
151.00	RFS APXVFR12X-C-I20	3	0.80	0.000	46.00	4.994	0.71	116.93	6.054	0.71
151.00	DragonWave Horizon Compact	3	0.80	-3.000	10.60	0.721	0.50	23.36	1.044	0.50
151.00	DragonWave A-ANT-23G-1-C	1	1.00	-3.000	15.00	1.610	0.79	35.05	2.040	0.79
151.00	Alcatel-Lucent RRH2x50-08	6	0.80	0.000	52.90	1.701	0.50	86.52	2.190	0.50
151.00	Alcatel-Lucent 1900 MHz 4X45 R	3	0.80	0.000	60.00	2.322	0.50	105.72	2.935	0.50
151.00	Clearwire Side Arm	1	1.00	0.000	560.00	8.500	1.00	781.35	11.860	1.00
151.00	DragonWave A-ANT-11G-2-C	2	1.00	-3.000	27.00	4.688	0.99	82.29	5.411	0.99
148.60	Ericsson Air6449 B41	3	0.75	0.000	104.00	5.682	0.63	181.28	6.582	0.63
147.50	Ericsson Air 3246 B66	3	0.75	0.000	180.00	7.939	0.69	1712.78	9.224	0.69
147.30	Ericsson AIR32 B66Aa/B2a	3	0.75	0.000	132.20	6.510	0.71	222.59	7.751	0.71
147.30	Ericsson RRUS 4415 B25	3	0.75	0.000	46.00	1.842	0.50	73.77	2.350	0.50
147.30	Ericsson Radio 4449 B71 B85A	3	0.75	0.000	75.00	1.650	0.50	109.06	2.131	0.50
143.00	Platform with SitePro1 HRK12-3	1	1.00	0.000	2350.00	34.800	1.00	3274.21	48.486	1.00
143.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.243	0.63	349.52	22.337	0.63
139.20	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	120.35	2.384	0.50
138.90	Raycap RCMDC-6627-PF-48	1	0.80	0.000	32.00	4.056	0.50	103.59	4.825	0.50
137.80	RFS FD9R6004/2C-3L	6	0.80	0.000	2.60	0.314	0.50	7.11	0.531	0.50
136.00	Round Low Profile Platform	1	1.00	0.000	1500.00	21.700	1.00	2087.37	30.197	1.00
134.00	JMA Wireless MX06FRO660-03	6	0.80	0.000	60.00	9.872	0.71	194.41	11.410	0.71
134.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	138.74	5.561	0.61
134.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	102.37	2.381	0.50
134.00	Andrew DB854DG65ESX	3	0.80	3.000	18.50	5.248	0.65	85.93	5.788	0.65
129.70	Ericsson RRUS 8843 B2, B66A	3	0.75	0.000	72.00	1.639	0.50	106.30	2.112	0.50
129.50	CCI CCI-HPA-65R-BUU-H8	3	0.75	0.000	68.00	12.976	0.67	211.77	14.979	0.67
129.40	Ericsson Radio 4415 B30	3	0.75	0.000	43.00	1.650	0.50	66.58	2.125	0.50
129.40	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	107.06	2.491	0.50
129.20	Kathrein Scala 80010966	6	0.75	0.000	114.60	17.363	0.63	294.01	19.424	0.63
126.00	Flat Platform with Handrails	1	1.00	0.000	2000.00	42.400	1.00	2777.18	58.876	1.00
125.00	Commscope WCS-IMFQ-AMT	1	0.75	0.000	29.50	0.989	0.50	48.24	1.357	0.50
125.00	Raycap DC6-48-60-0-8F (24" Hei	2	0.75	0.000	32.80	1.470	0.50	92.40	1.859	0.50
125.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	90.67	2.341	0.50
125.00	Mount Reinforcement SitePro1	1	1.00	0.000	587.70	7.500	1.00	815.52	10.407	1.00
125.00	Raycap DC6-48-60-0-8F	1	0.75	0.000	32.80	1.360	0.50	65.15	1.729	0.50
115.00	RFS APXV18-206517S-C	3	1.00	0.000	26.40	5.160	0.68	77.52	6.465	0.68
105.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	205.27	14.028	0.64
105.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	95.84	2.466	0.50
105.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	109.31	2.466	0.50
105.00	Commscope RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	0.50	53.07	2.360	0.50
104.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3471.28	53.866	1.00

Totals Num Loadings: 40 108 16,180.50 31,094.53

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : _

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	152.00	1	2" conduit	2.38	3.65	N	0	0	0	0	N	CLEARWIRE COR
4.00	152.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	N	CLEARWIRE COR
0.00	151.00	3	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	N	CLEARWIRE COR
4.00	151.00	3	1/2" Coax	0.63	0.15	N	0	0	0	0	N	CLEARWIRE COR
4.00	151.00	1	1.7" (43.2mm) Hybrid	1.7	1.78	N	0	0	0	0	N	CLEARWIRE COR
0.00	147.00	4	1 1/4" (1.25"- 31.8mm	1.25	1.05	N	1	0.5	0.5	140	Y	T-MOBILE
4.00	143.00	12	1 5/8" Coax	1.98	0.82	N	0	0	0	0	N	T-MOBILE

ASSET: 243036, WEST HAVEN & RT 162 CT
 CUSTOMER: DISH WIRELESS L.L.C.

CODE: ANSI/TIA-222-H
 ENG NO: 13693702_C3_03

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	143.00	3	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0	0	0	0	N	T-MOBILE
0.00	143.00	1	1 1/4" (1.25" - 31.8mm)	1.25	1.05	N	1	0.5	0.5	140	0.5	Y	T-MOBILE
4.00	134.00	11	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
4.00	134.00	2	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0	0	0	0	0	N	VERIZON WIREL
4.00	127.00	3	3" conduit	3.5	7.58	N	0	0	0	0	0	N	AT&T MOBILITY
4.00	127.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
4.00	125.00	4	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
4.00	125.00	3	0.39" (9.8mm) Cable	0.39	0.07	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	125.00	2	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
4.00	125.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
4.00	115.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	METRO PCS INC
0.00	105.00	1	1.60" (40.6mm) Hybrid	1.6	2.34	N	1	0.5	0.5	270	0.5	Y	DISH WIRELESS

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		0.3750	52.010	61.456	20,701.80	22.69	138.69	74.7	784.0	0.0	0.0
5.00		0.3750	50.835	60.058	19,320.60	22.14	135.56	75.4	748.6	0.0	1,033.7
10.00		0.3750	49.660	58.660	18,002.30	21.59	132.43	76	714.0	0.0	1,009.9
15.00		0.3750	48.486	57.261	16,745.40	21.03	129.29	76.7	680.2	0.0	986.1
20.00		0.3750	47.311	55.863	15,548.40	20.48	126.16	77.3	647.3	0.0	962.3
25.00		0.3750	46.136	54.465	14,409.80	19.93	123.03	78	615.2	0.0	938.6
30.00		0.3750	44.961	53.067	13,328.20	19.38	119.90	78.6	583.9	0.0	914.8
35.00		0.3750	43.786	51.668	12,302.10	18.83	116.76	79.3	553.4	0.0	891.0
40.00		0.3750	42.611	50.270	11,330.10	18.27	113.63	79.9	523.7	0.0	867.2
45.00		0.3750	41.437	48.872	10,410.70	17.72	110.50	80.6	494.9	0.0	843.4
48.00	Bot - Section 2	0.3750	40.732	48.033	9,883.70	17.39	108.62	80.9	477.9	0.0	494.6
50.00		0.3750	40.262	47.473	9,542.40	17.17	107.36	81.2	466.8	0.0	600.4
53.25	Top - Section 1	0.3125	40.123	39.486	7,906.60	20.88	128.39	76.8	388.1	0.0	960.8
55.00		0.3125	39.712	39.078	7,664.10	20.64	127.08	77.1	380.1	0.0	233.9
60.00		0.3125	38.537	37.913	6,998.70	19.98	123.32	77.9	357.7	0.0	655.0
65.00		0.3125	37.362	36.747	6,373.10	19.32	119.56	78.7	336.0	0.0	635.1
70.00		0.3125	36.187	35.582	5,785.80	18.66	115.80	79.5	314.9	0.0	615.3
75.00		0.3125	35.013	34.417	5,235.80	17.99	112.04	80.2	294.5	0.0	595.5
80.00		0.3125	33.838	33.252	4,721.80	17.33	108.28	81	274.8	0.0	575.7
85.00		0.3125	32.663	32.086	4,242.60	16.67	104.52	81.8	255.8	0.0	555.8
90.00		0.3125	31.488	30.921	3,797.00	16.00	100.76	82.6	237.5	0.0	536.0
95.00		0.3125	30.313	29.756	3,383.70	15.34	97.00	82.6	219.9	0.0	516.2
97.75	Bot - Section 3	0.3125	29.667	29.115	3,169.70	14.98	94.93	82.6	210.4	0.0	275.4
100.00		0.3125	29.138	28.591	3,001.50	14.68	93.24	82.6	202.9	0.0	355.7
101.50	Top - Section 2	0.1875	29.161	17.242	1,828.70	25.66	155.52	71.2	123.5	0.0	233.6
104.00		0.1875	28.573	16.893	1,719.70	25.11	152.39	71.9	118.5	0.0	145.2
105.00		0.1875	28.339	16.753	1,677.40	24.89	151.14	72.1	116.6	0.0	57.2
110.00		0.1875	27.164	16.054	1,476.00	23.78	144.87	73.4	107.0	0.0	279.1
115.00		0.1875	25.989	15.354	1,291.40	22.68	138.61	74.7	97.9	0.0	267.2
120.00		0.1875	24.814	14.655	1,122.90	21.57	132.34	76	89.1	0.0	255.3
125.00		0.1875	23.639	13.956	969.80	20.47	126.08	77.3	80.8	0.0	243.4
126.00		0.1875	23.404	13.816	940.90	20.25	124.82	77.6	79.2	0.0	47.3
129.20		0.1875	22.652	13.369	852.40	19.54	120.81	78.4	74.1	0.0	148.0
129.40		0.1875	22.605	13.341	847.10	19.50	120.56	78.5	73.8	0.0	9.1
129.50		0.1875	22.582	13.327	844.40	19.47	120.44	78.5	73.7	0.0	4.5
129.70		0.1875	22.535	13.299	839.10	19.43	120.19	78.5	73.3	0.0	9.1
130.00		0.1875	22.464	13.257	831.20	19.36	119.81	78.6	72.9	0.0	13.6
134.00		0.1875	21.524	12.698	730.40	18.48	114.80	79.7	66.8	0.0	176.6
135.00		0.1875	21.290	12.558	706.50	18.26	113.54	79.9	65.4	0.0	43.0
136.00		0.1875	21.055	12.418	683.20	18.04	112.29	80.2	63.9	0.0	42.5
137.80		0.1875	20.632	12.166	642.50	17.64	110.04	80.7	61.3	0.0	75.3
138.90		0.1875	20.373	12.013	618.40	17.40	108.66	80.9	59.8	0.0	45.3
139.20		0.1875	20.303	11.971	612.00	17.33	108.28	81	59.4	0.0	12.2
140.00		0.1875	20.115	11.859	595.00	17.15	107.28	81.2	58.3	0.0	32.4
143.00		0.1875	19.410	11.439	534.00	16.49	103.52	82	54.2	0.0	118.9
145.00		0.1875	18.940	11.160	495.80	16.05	101.01	82.5	51.6	0.0	76.9
147.30		0.1875	18.399	10.838	454.20	15.54	98.13	82.6	48.6	0.0	86.1
147.50		0.1875	18.352	10.810	450.70	15.50	97.88	82.6	48.4	0.0	7.4
148.60		0.1875	18.094	10.656	431.70	15.25	96.50	82.6	47.0	0.0	40.2
149.00		0.1875	18.000	10.600	424.90	15.16	96.00	82.6	46.5	0.0	14.5

Totals: 18,536.3

Load Case: 1.2D + 1.0W	116.96 mph wind with no ice	29 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	-54.48	-26.37	0.00	-3,085.2	0.00	3,085.20	4,132.30	1,078.56	5,030.10	4,392.86	0.00	0	0.716
5.00	-52.92	-26.16	0.00	-2,953.4	0.00	2,953.38	4,073.40	1,054.02	4,803.83	4,231.01	0.11	-0.21	0.712
10.00	-51.12	-25.95	0.00	-2,822.6	0.00	2,822.60	4,012.86	1,029.48	4,582.77	4,070.37	0.44	-0.42	0.707
15.00	-49.35	-25.74	0.00	-2,692.9	0.00	2,692.86	3,950.69	1,004.94	4,366.92	3,911.06	1.00	-0.64	0.702
20.00	-47.60	-25.54	0.00	-2,564.2	0.00	2,564.15	3,886.88	980.40	4,156.27	3,753.20	1.79	-0.86	0.696
25.00	-45.89	-25.33	0.00	-2,436.5	0.00	2,436.47	3,821.44	955.86	3,950.83	3,596.91	2.81	-1.09	0.690
30.00	-44.20	-25.12	0.00	-2,309.8	0.00	2,309.82	3,754.36	931.32	3,750.60	3,442.32	4.08	-1.32	0.684
35.00	-42.54	-24.90	0.00	-2,184.2	0.00	2,184.22	3,685.65	906.78	3,555.57	3,289.53	5.59	-1.56	0.676
40.00	-40.91	-24.67	0.00	-2,059.7	0.00	2,059.71	3,615.30	882.24	3,365.75	3,138.66	7.36	-1.81	0.668
45.00	-39.33	-24.47	0.00	-1,936.4	0.00	1,936.35	3,543.31	857.70	3,181.14	2,989.85	9.39	-2.06	0.660
48.00	-38.39	-24.34	0.00	-1,863.0	0.00	1,862.96	3,499.34	842.97	3,072.87	2,901.60	10.74	-2.22	0.654
50.00	-37.42	-24.20	0.00	-1,814.3	0.00	1,814.29	3,469.70	833.16	3,001.73	2,843.21	11.69	-2.32	0.650
53.25	-35.90	-24.03	0.00	-1,735.6	0.00	1,735.65	2,730.91	692.97	2,491.79	2,236.98	13.33	-2.49	0.790
55.00	-35.38	-23.88	0.00	-1,693.6	0.00	1,693.60	2,712.30	685.82	2,440.58	2,198.61	14.26	-2.59	0.785
60.00	-33.99	-23.64	0.00	-1,574.2	0.00	1,574.18	2,658.03	665.37	2,297.22	2,089.87	17.13	-2.89	0.767
65.00	-32.63	-23.38	0.00	-1,456.0	0.00	1,456.01	2,602.12	644.92	2,158.20	1,982.52	20.33	-3.2	0.748
70.00	-31.29	-23.12	0.00	-1,339.1	0.00	1,339.12	2,544.57	624.47	2,023.51	1,876.69	23.84	-3.51	0.727
75.00	-29.98	-22.85	0.00	-1,223.6	0.00	1,223.55	2,485.39	604.02	1,893.17	1,772.49	27.69	-3.83	0.704
80.00	-28.70	-22.57	0.00	-1,109.3	0.00	1,109.32	2,424.58	583.57	1,767.16	1,670.06	31.86	-4.14	0.678
85.00	-27.45	-22.29	0.00	-996.5	0.00	996.47	2,362.13	563.12	1,645.50	1,569.50	36.37	-4.46	0.648
90.00	-26.22	-22.00	0.00	-885.0	0.00	885.02	2,297.28	542.67	1,528.17	1,470.45	41.21	-4.78	0.615
95.00	-25.04	-21.75	0.00	-775.0	0.00	775.02	2,210.71	522.22	1,415.18	1,361.18	46.37	-5.09	0.582
97.75	-24.40	-21.60	0.00	-715.2	0.00	715.20	2,163.10	510.97	1,354.88	1,302.88	49.35	-5.26	0.562
100.00	-23.72	-21.46	0.00	-666.6	0.00	666.61	2,124.14	501.77	1,306.53	1,256.13	51.86	-5.4	0.544
101.50	-23.26	-21.34	0.00	-634.4	0.00	634.42	1,105.19	302.60	791.86	659.76	53.57	-5.49	0.988
104.00	-19.98	-19.40	0.00	-581.1	0.00	581.07	1,092.66	296.47	760.08	638.98	56.48	-5.64	0.932
105.00	-19.07	-18.37	0.00	-561.7	0.00	561.67	1,087.54	294.01	747.55	630.68	57.67	-5.74	0.912
110.00	-18.16	-18.11	0.00	-469.8	0.00	469.80	1,060.92	281.74	686.46	589.40	63.91	-6.17	0.818
115.00	-17.23	-17.44	0.00	-379.2	0.00	379.24	1,032.68	269.47	627.98	548.55	70.58	-6.58	0.712
120.00	-16.41	-17.16	0.00	-292.0	0.00	292.05	1,002.79	257.20	572.10	508.25	77.67	-6.95	0.595
125.00	-14.63	-16.37	0.00	-206.3	0.00	206.26	971.28	244.93	518.82	468.61	85.11	-7.27	0.460
126.00	-12.31	-14.33	0.00	-189.9	0.00	189.90	964.78	242.48	508.48	460.77	86.63	-7.33	0.428
129.20	-11.37	-12.21	0.00	-144.0	0.00	144.03	943.54	234.62	476.08	435.92	91.59	-7.49	0.345
129.40	-10.96	-11.99	0.00	-141.6	0.00	141.59	942.19	234.13	474.09	434.38	91.90	-7.5	0.340
129.50	-10.81	-11.20	0.00	-140.4	0.00	140.39	941.51	233.89	473.10	433.61	92.06	-7.5	0.338
129.70	-10.54	-11.08	0.00	-138.2	0.00	138.15	940.16	233.40	471.11	432.07	92.37	-7.51	0.333
130.00	-10.51	-10.98	0.00	-134.8	0.00	134.82	938.12	232.66	468.15	429.76	92.84	-7.52	0.327
134.00	-9.33	-8.69	0.00	-89.9	0.00	89.93	910.42	222.85	429.48	399.33	99.20	-7.68	0.237
135.00	-9.25	-8.63	0.00	-81.2	0.00	81.24	903.34	220.39	420.08	391.82	100.81	-7.71	0.219
136.00	-7.50	-7.47	0.00	-72.6	0.00	72.60	896.18	217.94	410.77	384.35	102.42	-7.74	0.198
137.80	-7.34	-7.35	0.00	-59.2	0.00	59.16	883.14	213.52	394.29	371.01	105.34	-7.79	0.169
138.90	-7.22	-7.23	0.00	-51.1	0.00	51.08	875.07	210.82	384.39	362.93	107.13	-7.82	0.150
139.20	-6.91	-7.07	0.00	-48.9	0.00	48.91	872.85	210.08	381.71	360.73	107.62	-7.83	0.145
140.00	-6.85	-6.98	0.00	-43.2	0.00	43.25	866.91	208.12	374.61	354.90	108.93	-7.84	0.131
143.00	-3.72	-3.87	0.00	-22.3	0.00	22.33	844.27	200.76	348.58	333.29	113.86	-7.89	0.072
145.00	-3.61	-3.75	0.00	-14.6	0.00	14.59	828.85	195.85	331.75	319.13	117.16	-7.91	0.050
147.30	-2.66	-2.98	0.00	-6.0	0.00	5.97	805.21	190.21	312.90	301.00	120.97	-7.92	0.023
147.50	-2.08	-2.36	0.00	-5.4	0.00	5.38	803.13	189.72	311.29	299.44	121.30	-7.92	0.021
148.60	-1.70	-1.95	0.00	-2.8	0.00	2.78	791.70	187.02	302.50	290.94	123.12	-7.93	0.012
149.00	0.00	-1.70	0.00	-2.0	0.00	2.00	787.55	186.03	299.33	287.88	123.78	-7.93	0.007

Load Case: 0.9D + 1.0W	116.96 mph wind with no ice	29 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	-40.85	-26.34	0.00	-3,022.4	0.00	3,022.37	4,132.30	1,078.56	5,030.10	4,392.86	0.00	0	0.699
5.00	-39.66	-26.08	0.00	-2,890.7	0.00	2,890.68	4,073.40	1,054.02	4,803.83	4,231.01	0.11	-0.2	0.694
10.00	-38.29	-25.82	0.00	-2,760.3	0.00	2,760.29	4,012.86	1,029.48	4,582.77	4,070.37	0.43	-0.41	0.688
15.00	-36.94	-25.57	0.00	-2,631.2	0.00	2,631.18	3,950.69	1,004.94	4,366.92	3,911.06	0.98	-0.62	0.683
20.00	-35.61	-25.32	0.00	-2,503.3	0.00	2,503.34	3,886.88	980.40	4,156.27	3,753.20	1.75	-0.84	0.677
25.00	-34.30	-25.07	0.00	-2,376.8	0.00	2,376.75	3,821.44	955.86	3,950.83	3,596.91	2.75	-1.07	0.670
30.00	-33.01	-24.82	0.00	-2,251.4	0.00	2,251.41	3,754.36	931.32	3,750.60	3,442.32	3.99	-1.29	0.664
35.00	-31.75	-24.56	0.00	-2,127.3	0.00	2,127.31	3,685.65	906.78	3,555.57	3,289.53	5.47	-1.53	0.656
40.00	-30.51	-24.29	0.00	-2,004.5	0.00	2,004.50	3,615.30	882.24	3,365.75	3,138.66	7.20	-1.77	0.648
45.00	-29.30	-24.06	0.00	-1,883.0	0.00	1,883.03	3,543.31	857.70	3,181.14	2,989.85	9.18	-2.01	0.639
48.00	-28.59	-23.92	0.00	-1,810.8	0.00	1,810.84	3,499.34	842.97	3,072.87	2,901.60	10.49	-2.16	0.633
50.00	-27.85	-23.76	0.00	-1,763.0	0.00	1,763.00	3,469.70	833.16	3,001.73	2,843.21	11.42	-2.26	0.629
53.25	-26.70	-23.59	0.00	-1,685.8	0.00	1,685.78	2,730.91	692.97	2,491.79	2,236.98	13.02	-2.43	0.765
55.00	-26.29	-23.42	0.00	-1,644.5	0.00	1,644.49	2,712.30	685.82	2,440.58	2,198.61	13.93	-2.52	0.759
60.00	-25.23	-23.13	0.00	-1,527.4	0.00	1,527.42	2,658.03	665.37	2,297.22	2,089.87	16.73	-2.82	0.742
65.00	-24.19	-22.84	0.00	-1,411.8	0.00	1,411.76	2,602.12	644.92	2,158.20	1,982.52	19.84	-3.12	0.723
70.00	-23.17	-22.55	0.00	-1,297.5	0.00	1,297.54	2,544.57	624.47	2,023.51	1,876.69	23.26	-3.42	0.702
75.00	-22.17	-22.26	0.00	-1,184.8	0.00	1,184.78	2,485.39	604.02	1,893.17	1,772.49	27.01	-3.72	0.679
80.00	-21.19	-21.96	0.00	-1,073.5	0.00	1,073.49	2,424.58	583.57	1,767.16	1,670.06	31.07	-4.03	0.653
85.00	-20.23	-21.66	0.00	-963.7	0.00	963.70	2,362.13	563.12	1,645.50	1,569.50	35.45	-4.34	0.624
90.00	-19.29	-21.35	0.00	-855.4	0.00	855.42	2,297.28	542.67	1,528.17	1,470.45	40.16	-4.64	0.592
95.00	-18.40	-21.10	0.00	-748.7	0.00	748.67	2,210.71	522.22	1,415.18	1,361.18	45.18	-4.94	0.560
97.75	-17.91	-20.94	0.00	-690.6	0.00	690.65	2,163.10	510.97	1,354.88	1,302.88	48.07	-5.11	0.540
100.00	-17.39	-20.81	0.00	-643.5	0.00	643.54	2,124.14	501.77	1,306.53	1,256.13	50.51	-5.24	0.522
101.50	-17.04	-20.68	0.00	-612.3	0.00	612.33	1,105.19	302.60	791.86	659.76	52.17	-5.33	0.948
104.00	-14.61	-18.82	0.00	-560.6	0.00	560.63	1,092.66	296.47	760.08	638.98	55.00	-5.48	0.895
105.00	-13.93	-17.79	0.00	-541.8	0.00	541.81	1,087.54	294.01	747.55	630.68	56.15	-5.57	0.876
110.00	-13.23	-17.51	0.00	-452.9	0.00	452.86	1,060.92	281.74	686.46	589.40	62.21	-5.99	0.785
115.00	-12.53	-16.83	0.00	-365.3	0.00	365.31	1,032.68	269.47	627.98	548.55	68.69	-6.39	0.682
120.00	-11.90	-16.54	0.00	-281.2	0.00	281.17	1,002.79	257.20	572.10	508.25	75.56	-6.74	0.569
125.00	-10.58	-15.80	0.00	-198.5	0.00	198.46	971.28	244.93	518.82	468.61	82.77	-7.05	0.439
126.00	-8.88	-13.85	0.00	-182.7	0.00	182.66	964.78	242.48	508.48	460.77	84.25	-7.1	0.409
129.20	-8.23	-11.76	0.00	-138.4	0.00	138.36	943.54	234.62	476.08	435.92	89.05	-7.26	0.329
129.40	-7.93	-11.56	0.00	-136.0	0.00	136.00	942.19	234.13	474.09	434.38	89.36	-7.27	0.324
129.50	-7.83	-10.77	0.00	-134.8	0.00	134.85	941.51	233.89	473.10	433.61	89.51	-7.27	0.321
129.70	-7.63	-10.66	0.00	-132.7	0.00	132.69	940.16	233.40	471.11	432.07	89.81	-7.28	0.317
130.00	-7.61	-10.56	0.00	-129.5	0.00	129.49	938.12	232.66	468.15	429.76	90.27	-7.29	0.311
134.00	-6.79	-8.31	0.00	-86.3	0.00	86.30	910.42	222.85	429.48	399.33	96.43	-7.44	0.225
135.00	-6.73	-8.26	0.00	-78.0	0.00	77.98	903.34	220.39	420.08	391.82	97.99	-7.47	0.208
136.00	-5.44	-7.16	0.00	-69.7	0.00	69.73	896.18	217.94	410.77	384.35	99.55	-7.5	0.189
137.80	-5.32	-7.04	0.00	-56.8	0.00	56.84	883.14	213.52	394.29	371.01	102.38	-7.55	0.160
138.90	-5.24	-6.93	0.00	-49.1	0.00	49.09	875.07	210.82	384.39	362.93	104.12	-7.58	0.142
139.20	-5.01	-6.79	0.00	-47.0	0.00	47.01	872.85	210.08	381.71	360.73	104.60	-7.58	0.137
140.00	-4.96	-6.69	0.00	-41.6	0.00	41.58	866.91	208.12	374.61	354.90	105.87	-7.6	0.124
143.00	-2.69	-3.71	0.00	-21.5	0.00	21.51	844.27	200.76	348.58	333.29	110.64	-7.64	0.068
145.00	-2.61	-3.60	0.00	-14.1	0.00	14.10	828.85	195.85	331.75	319.13	113.84	-7.66	0.048
147.30	-1.92	-2.86	0.00	-5.8	0.00	5.82	805.21	190.21	312.90	301.00	117.53	-7.68	0.022
147.50	-1.50	-2.28	0.00	-5.2	0.00	5.25	803.13	189.72	311.29	299.44	117.85	-7.68	0.020
148.60	-1.22	-1.88	0.00	-2.8	0.00	2.75	791.70	187.02	302.50	290.94	119.61	-7.68	0.011
149.00	0.00	-1.70	0.00	-2.0	0.00	2.00	787.55	186.03	299.33	287.88	120.25	-7.68	0.007

Load Case: 1.2D + 1.0Di + 1.0Wi	48.73 mph wind with 0.850" radial ice		29 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	-72.76	-6.70	0.00	-785.0	0.00	785.01	4,132.30	1,078.56	5,030.10	4,392.86	0.00	0	0.196
5.00	-71.04	-6.65	0.00	-751.5	0.00	751.50	4,073.40	1,054.02	4,803.83	4,231.01	0.03	-0.05	0.195
10.00	-69.06	-6.60	0.00	-718.2	0.00	718.25	4,012.86	1,029.48	4,582.77	4,070.37	0.11	-0.11	0.194
15.00	-67.10	-6.55	0.00	-685.3	0.00	685.26	3,950.69	1,004.94	4,366.92	3,911.06	0.25	-0.16	0.192
20.00	-65.17	-6.50	0.00	-652.5	0.00	652.53	3,886.88	980.40	4,156.27	3,753.20	0.45	-0.22	0.191
25.00	-63.26	-6.45	0.00	-620.0	0.00	620.05	3,821.44	955.86	3,950.83	3,596.91	0.72	-0.28	0.189
30.00	-61.38	-6.39	0.00	-587.8	0.00	587.82	3,754.36	931.32	3,750.60	3,442.32	1.04	-0.34	0.187
35.00	-59.53	-6.34	0.00	-555.8	0.00	555.85	3,685.65	906.78	3,555.57	3,289.53	1.42	-0.4	0.185
40.00	-57.71	-6.28	0.00	-524.2	0.00	524.16	3,615.30	882.24	3,365.75	3,138.66	1.87	-0.46	0.183
45.00	-55.93	-6.23	0.00	-492.8	0.00	492.75	3,543.31	857.70	3,181.14	2,989.85	2.39	-0.52	0.181
48.00	-54.87	-6.20	0.00	-474.1	0.00	474.06	3,499.34	842.97	3,072.87	2,901.60	2.73	-0.56	0.179
50.00	-53.84	-6.16	0.00	-461.7	0.00	461.67	3,469.70	833.16	3,001.73	2,843.21	2.97	-0.59	0.178
53.25	-52.18	-6.12	0.00	-441.6	0.00	441.64	2,730.91	692.97	2,491.79	2,236.98	3.39	-0.63	0.217
55.00	-51.63	-6.08	0.00	-430.9	0.00	430.94	2,712.30	685.82	2,440.58	2,198.61	3.63	-0.66	0.215
60.00	-50.08	-6.02	0.00	-400.5	0.00	400.52	2,658.03	665.37	2,297.22	2,089.87	4.36	-0.74	0.211
65.00	-48.55	-5.95	0.00	-370.4	0.00	370.41	2,602.12	644.92	2,158.20	1,982.52	5.17	-0.81	0.206
70.00	-47.06	-5.88	0.00	-340.6	0.00	340.64	2,544.57	624.47	2,023.51	1,876.69	6.07	-0.89	0.200
75.00	-45.59	-5.81	0.00	-311.2	0.00	311.24	2,485.39	604.02	1,893.17	1,772.49	7.05	-0.97	0.194
80.00	-44.15	-5.73	0.00	-282.2	0.00	282.21	2,424.58	583.57	1,767.16	1,670.06	8.11	-1.05	0.187
85.00	-42.74	-5.65	0.00	-253.6	0.00	253.57	2,362.13	563.12	1,645.50	1,569.50	9.26	-1.14	0.180
90.00	-41.36	-5.57	0.00	-225.3	0.00	225.33	2,297.28	542.67	1,528.17	1,470.45	10.49	-1.22	0.171
95.00	-40.01	-5.49	0.00	-197.5	0.00	197.50	2,210.71	522.22	1,415.18	1,361.18	11.81	-1.29	0.163
97.75	-39.28	-5.45	0.00	-182.4	0.00	182.40	2,163.10	510.97	1,354.88	1,302.88	12.57	-1.34	0.158
100.00	-38.53	-5.41	0.00	-170.2	0.00	170.15	2,124.14	501.77	1,306.53	1,256.13	13.21	-1.37	0.154
101.50	-38.03	-5.37	0.00	-162.0	0.00	162.04	1,105.19	302.60	791.86	659.76	13.64	-1.4	0.280
104.00	-33.79	-4.91	0.00	-148.6	0.00	148.61	1,092.66	296.47	760.08	638.98	14.38	-1.44	0.264
105.00	-32.34	-4.68	0.00	-143.7	0.00	143.70	1,087.54	294.01	747.55	630.68	14.69	-1.46	0.258
110.00	-31.31	-4.61	0.00	-120.3	0.00	120.30	1,060.92	281.74	686.46	589.40	16.28	-1.57	0.234
115.00	-30.09	-4.44	0.00	-97.3	0.00	97.27	1,032.68	269.47	627.98	548.55	17.98	-1.68	0.207
120.00	-29.14	-4.35	0.00	-75.1	0.00	75.10	1,002.79	257.20	572.10	508.25	19.79	-1.77	0.177
125.00	-26.77	-4.13	0.00	-53.4	0.00	53.35	971.28	244.93	518.82	468.61	21.69	-1.85	0.142
126.00	-23.63	-3.61	0.00	-49.2	0.00	49.22	964.78	242.48	508.48	460.77	22.08	-1.87	0.132
129.20	-21.54	-3.14	0.00	-37.7	0.00	37.68	943.54	234.62	476.08	435.92	23.35	-1.91	0.109
129.40	-20.97	-3.08	0.00	-37.1	0.00	37.06	942.19	234.13	474.09	434.38	23.43	-1.91	0.108
129.50	-20.39	-2.91	0.00	-36.8	0.00	36.75	941.51	233.89	473.10	433.61	23.47	-1.91	0.107
129.70	-20.03	-2.88	0.00	-36.2	0.00	36.17	940.16	233.40	471.11	432.07	23.55	-1.92	0.105
130.00	-19.99	-2.85	0.00	-35.3	0.00	35.31	938.12	232.66	468.15	429.76	23.67	-1.92	0.104
134.00	-17.40	-2.31	0.00	-23.7	0.00	23.74	910.42	222.85	429.48	399.33	25.30	-1.96	0.079
135.00	-17.28	-2.29	0.00	-21.4	0.00	21.43	903.34	220.39	420.08	391.82	25.71	-1.97	0.074
136.00	-14.93	-1.98	0.00	-19.1	0.00	19.14	896.18	217.94	410.77	384.35	26.12	-1.98	0.067
137.80	-14.68	-1.94	0.00	-15.6	0.00	15.57	883.14	213.52	394.29	371.01	26.87	-1.99	0.059
138.90	-14.46	-1.91	0.00	-13.4	0.00	13.43	875.07	210.82	384.39	362.93	27.33	-2	0.054
139.20	-14.04	-1.86	0.00	-12.9	0.00	12.86	872.85	210.08	381.71	360.73	27.45	-2	0.052
140.00	-13.94	-1.83	0.00	-11.4	0.00	11.37	866.91	208.12	374.61	354.90	27.79	-2	0.048
143.00	-9.15	-1.06	0.00	-5.9	0.00	5.88	844.27	200.76	348.58	333.29	29.05	-2.02	0.029
145.00	-8.97	-1.02	0.00	-3.8	0.00	3.76	828.85	195.85	331.75	319.13	29.90	-2.02	0.023
147.30	-7.51	-0.82	0.00	-1.4	0.00	1.42	805.21	190.21	312.90	301.00	30.87	-2.02	0.014
147.50	-3.42	-0.57	0.00	-1.3	0.00	1.26	803.13	189.72	311.29	299.44	30.96	-2.03	0.008
148.60	-2.79	-0.47	0.00	-0.6	0.00	0.63	791.70	187.02	302.50	290.94	31.42	-2.03	0.006
149.00	0.00	-0.37	0.00	-0.4	0.00	0.45	787.55	186.03	299.33	287.88	31.59	-2.03	0.002

Load Case: 1.0D + 1.0W	60 mph Wind with No Ice	28 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	-45.44	-6.20	0.00	-718.1	0.00	718.11	4,132.30	1,078.56	5,030.10	4,392.86	0.00	0	0.175
5.00	-44.21	-6.15	0.00	-687.1	0.00	687.10	4,073.40	1,054.02	4,803.83	4,231.01	0.03	-0.05	0.173
10.00	-42.79	-6.09	0.00	-656.4	0.00	656.36	4,012.86	1,029.48	4,582.77	4,070.37	0.10	-0.1	0.172
15.00	-41.38	-6.03	0.00	-625.9	0.00	625.91	3,950.69	1,004.94	4,366.92	3,911.06	0.23	-0.15	0.171
20.00	-40.00	-5.98	0.00	-595.7	0.00	595.74	3,886.88	980.40	4,156.27	3,753.20	0.42	-0.2	0.169
25.00	-38.65	-5.92	0.00	-565.8	0.00	565.85	3,821.44	955.86	3,950.83	3,596.91	0.65	-0.25	0.167
30.00	-37.32	-5.87	0.00	-536.2	0.00	536.23	3,754.36	931.32	3,750.60	3,442.32	0.95	-0.31	0.166
35.00	-36.01	-5.81	0.00	-506.9	0.00	506.88	3,685.65	906.78	3,555.57	3,289.53	1.30	-0.36	0.164
40.00	-34.72	-5.75	0.00	-477.8	0.00	477.82	3,615.30	882.24	3,365.75	3,138.66	1.71	-0.42	0.162
45.00	-33.46	-5.70	0.00	-449.1	0.00	449.06	3,543.31	857.70	3,181.14	2,989.85	2.18	-0.48	0.160
48.00	-32.72	-5.67	0.00	-432.0	0.00	431.96	3,499.34	842.97	3,072.87	2,901.60	2.50	-0.51	0.158
50.00	-31.95	-5.63	0.00	-420.6	0.00	420.62	3,469.70	833.16	3,001.73	2,843.21	2.72	-0.54	0.157
53.25	-30.72	-5.59	0.00	-402.3	0.00	402.31	2,730.91	692.97	2,491.79	2,236.98	3.10	-0.58	0.191
55.00	-30.34	-5.56	0.00	-392.5	0.00	392.52	2,712.30	685.82	2,440.58	2,198.61	3.31	-0.6	0.190
60.00	-29.27	-5.49	0.00	-364.7	0.00	364.74	2,658.03	665.37	2,297.22	2,089.87	3.98	-0.67	0.186
65.00	-28.21	-5.43	0.00	-337.3	0.00	337.28	2,602.12	644.92	2,158.20	1,982.52	4.72	-0.74	0.181
70.00	-27.18	-5.36	0.00	-310.1	0.00	310.13	2,544.57	624.47	2,023.51	1,876.69	5.54	-0.81	0.176
75.00	-26.17	-5.30	0.00	-283.3	0.00	283.31	2,485.39	604.02	1,893.17	1,772.49	6.43	-0.89	0.170
80.00	-25.18	-5.23	0.00	-256.8	0.00	256.82	2,424.58	583.57	1,767.16	1,670.06	7.40	-0.96	0.164
85.00	-24.20	-5.16	0.00	-230.7	0.00	230.66	2,362.13	563.12	1,645.50	1,569.50	8.45	-1.03	0.157
90.00	-23.25	-5.10	0.00	-204.8	0.00	204.85	2,297.28	542.67	1,528.17	1,470.45	9.57	-1.11	0.150
95.00	-22.32	-5.04	0.00	-179.4	0.00	179.37	2,210.71	522.22	1,415.18	1,361.18	10.77	-1.18	0.142
97.75	-21.82	-5.00	0.00	-165.5	0.00	165.52	2,163.10	510.97	1,354.88	1,302.88	11.46	-1.22	0.137
100.00	-21.27	-4.97	0.00	-154.3	0.00	154.27	2,124.14	501.77	1,306.53	1,256.13	12.04	-1.25	0.133
101.50	-20.91	-4.94	0.00	-146.8	0.00	146.81	1,105.19	302.60	791.86	659.76	12.44	-1.27	0.242
104.00	-18.07	-4.50	0.00	-134.5	0.00	134.46	1,092.66	296.47	760.08	638.98	13.12	-1.31	0.227
105.00	-17.30	-4.25	0.00	-130.0	0.00	129.96	1,087.54	294.01	747.55	630.68	13.39	-1.33	0.222
110.00	-16.62	-4.19	0.00	-108.7	0.00	108.69	1,060.92	281.74	686.46	589.40	14.84	-1.43	0.200
115.00	-15.87	-4.03	0.00	-87.7	0.00	87.72	1,032.68	269.47	627.98	548.55	16.39	-1.53	0.176
120.00	-15.23	-3.97	0.00	-67.6	0.00	67.55	1,002.79	257.20	572.10	508.25	18.04	-1.61	0.148
125.00	-13.72	-3.79	0.00	-47.7	0.00	47.70	971.28	244.93	518.82	468.61	19.77	-1.68	0.116
126.00	-11.62	-3.32	0.00	-43.9	0.00	43.91	964.78	242.48	508.48	460.77	20.12	-1.7	0.108
129.20	-10.64	-2.83	0.00	-33.3	0.00	33.28	943.54	234.62	476.08	435.92	21.27	-1.73	0.088
129.40	-10.28	-2.78	0.00	-32.7	0.00	32.71	942.19	234.13	474.09	434.38	21.34	-1.74	0.086
129.50	-10.08	-2.59	0.00	-32.4	0.00	32.43	941.51	233.89	473.10	433.61	21.38	-1.74	0.086
129.70	-9.84	-2.56	0.00	-31.9	0.00	31.92	940.16	233.40	471.11	432.07	21.45	-1.74	0.084
130.00	-9.82	-2.54	0.00	-31.2	0.00	31.15	938.12	232.66	468.15	429.76	21.56	-1.74	0.083
134.00	-8.62	-2.00	0.00	-20.8	0.00	20.77	910.42	222.85	429.48	399.33	23.04	-1.78	0.062
135.00	-8.55	-1.99	0.00	-18.8	0.00	18.76	903.34	220.39	420.08	391.82	23.41	-1.79	0.057
136.00	-6.99	-1.72	0.00	-16.8	0.00	16.78	896.18	217.94	410.77	384.35	23.79	-1.79	0.052
137.80	-6.84	-1.70	0.00	-13.7	0.00	13.67	883.14	213.52	394.29	371.01	24.47	-1.81	0.045
138.90	-6.73	-1.67	0.00	-11.8	0.00	11.81	875.07	210.82	384.39	362.93	24.88	-1.81	0.040
139.20	-6.46	-1.63	0.00	-11.3	0.00	11.31	872.85	210.08	381.71	360.73	25.00	-1.81	0.039
140.00	-6.41	-1.61	0.00	-10.0	0.00	10.00	866.91	208.12	374.61	354.90	25.30	-1.82	0.036
143.00	-3.49	-0.89	0.00	-5.2	0.00	5.17	844.27	200.76	348.58	333.29	26.45	-1.83	0.020
145.00	-3.39	-0.87	0.00	-3.4	0.00	3.38	828.85	195.85	331.75	319.13	27.21	-1.83	0.015
147.30	-2.52	-0.69	0.00	-1.4	0.00	1.39	805.21	190.21	312.90	301.00	28.10	-1.84	0.008
147.50	-1.97	-0.55	0.00	-1.2	0.00	1.25	803.13	189.72	311.29	299.44	28.18	-1.84	0.007
148.60	-1.61	-0.45	0.00	-0.6	0.00	0.65	791.70	187.02	302.50	290.94	28.60	-1.84	0.004
149.00	0.00	-0.40	0.00	-0.5	0.00	0.47	787.55	186.03	299.33	287.88	28.75	-1.84	0.002

EQUIVALENT LATERAL FORCES METHOD ANALYSIS
(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.200
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.053
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a :	1.600
Site Coefficient F_v :	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.213
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.085
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_s :	0.030
Lower Limit C_s :	0.030
Period based on Rayleigh Method (sec):	3.080
Redundancy Factor (ρ):	1.000
Seismic Force Distribution Exponent (k):	2.000
Total Unfactored Dead Load:	45.440 k
Seismic Base Shear (E):	1.360 k

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)
49	148.8	18	400	0.001	1	22
48	148.05	50	1,098	0.003	4	62
47	147.4	9	199	0.000	1	11
46	146.15	115	2,462	0.006	8	143
45	144	103	2,143	0.005	7	128
44	141.5	206	4,120	0.010	13	256
43	139.6	56	1,083	0.002	3	69
42	139.05	21	405	0.001	1	26
41	138.35	77	1,476	0.004	5	96
40	136.9	127	2,388	0.006	8	158
39	135.5	71	1,312	0.003	4	89
38	134.5	72	1,301	0.003	4	89
37	132	341	5,948	0.014	19	424
36	129.85	26	437	0.001	1	32
35	129.6	17	291	0.001	1	21
34	129.45	9	145	0.000	0	11
33	129.3	17	290	0.001	1	22
32	127.6	304	4,945	0.012	16	377
31	125.5	112	1,770	0.004	6	140
30	122.5	619	9,287	0.022	30	769
29	117.5	631	8,709	0.020	28	784
28	112.5	667	8,445	0.020	27	829
27	107.5	679	7,849	0.018	25	844
26	104.5	140	1,525	0.004	5	173
25	102.75	351	3,707	0.009	12	436
24	100.75	357	3,625	0.008	12	444
23	98.875	541	5,289	0.012	17	672
22	96.375	502	4,662	0.011	15	624
21	92.5	928	7,940	0.019	25	1,153
20	87.5	948	7,257	0.017	23	1,178
19	82.5	968	6,586	0.015	21	1,202
18	77.5	987	5,931	0.014	19	1,227
17	72.5	1,007	5,294	0.012	17	1,252
16	67.5	1,027	4,680	0.011	15	1,276

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
15	62.5	1,047	4,090	0.010	13	1,301
14	57.5	1,067	3,527	0.008	11	1,326
13	54.125	378	1,107	0.003	4	470
12	51.625	1,229	3,274	0.008	10	1,527
11	49	765	1,837	0.004	6	951
10	46.5	742	1,604	0.004	5	922
9	42.5	1,255	2,267	0.005	7	1,560
8	37.5	1,279	1,799	0.004	6	1,589
7	32.5	1,303	1,376	0.003	4	1,619
6	27.5	1,327	1,003	0.002	3	1,648
5	22.5	1,350	684	0.002	2	1,678
4	17.5	1,374	421	0.001	1	1,708
3	12.5	1,398	218	0.000	1	1,737
2	7.5	1,422	80	0.000	0	1,767
1	2.5	1,222	8	0.000	0	1,518
DragonWave Horizon Compact	149	32	706	0.002	2	40
DragonWave A-ANT-23G-1-C	149	15	333	0.001	1	19
Alcatel-Lucent RRH2x50-08	149	317	7,047	0.016	22	394
Alcatel-Lucent 1900 MHz 4X45 RRH	149	180	3,996	0.009	13	224
Nokia 2.5G MAA - AAHC(64T64R)	149	311	6,900	0.016	22	386
DragonWave A-ANT-11G-2-C	149	54	1,199	0.003	4	67
RFS APXVFR12X-C-I20	149	138	3,064	0.007	10	171
Clearwire Side Arm	149	560	12,433	0.029	40	696
Ericsson Air6449 B41	148.6	312	6,890	0.016	22	388
Ericsson Air 3246 B66	147.5	540	11,748	0.028	37	671
Ericsson Radio 4449 B71 B85A	147.3	225	4,882	0.011	16	280
Ericsson RRUS 4415 B25	147.3	138	2,994	0.007	10	171
Ericsson AIR32 B66Aa/B2a	147.3	397	8,605	0.020	27	493
RFS APXVAARR24_43-U-NA20	143	384	7,846	0.018	25	477
Platform with SitePro1 HRK12-3HD Handrail Kit	143	2,350	48,055	0.112	153	2,920
Samsung B2/B66A RRH-BR049	139.2	253	4,906	0.012	16	315
Raycap RCMDC-6627-PF-48	138.9	32	617	0.001	2	40
RFS FD9R6004/2C-3L	137.8	16	296	0.001	1	19
Round Low Profile Platform	136	1,500	27,744	0.065	89	1,864
Samsung B5/B13 RRH-BR04C	134	211	3,787	0.009	12	262
Samsung MT6407-77A	134	245	4,396	0.010	14	304
Andrew DB854DG65ESX	134	56	997	0.002	3	69
JMA Wireless MX06FRO660-03	134	360	6,464	0.015	21	447
Ericsson RRUS 8843 B2, B66A	129.7	216	3,634	0.008	12	268
CCI CCI-HPA-65R-BUU-H8	129.5	204	3,421	0.008	11	254
Ericsson Radio 4415 B30	129.4	129	2,160	0.005	7	160
Ericsson RRUS 4449 B5, B12	129.4	213	3,567	0.008	11	265
Kathrein Scala 80010966	129.2	688	11,478	0.027	37	854
Flat Platform with Handrails	126	2,000	31,752	0.074	101	2,485
Commscope WCS-IMFQ-AMT	125	30	461	0.001	1	37
Raycap DC6-48-60-0-8F	125	33	512	0.001	2	41
Raycap DC6-48-60-0-8F (24" Height)	125	66	1,025	0.002	3	82
Ericsson RRUS 4478 B14	125	180	2,808	0.007	9	223
Mount Reinforcement SitePro1 V Stabilizer (PRK-SFS)	125	588	9,183	0.022	29	730
RFS APXV18-206517S-C	115	79	1,047	0.002	3	98
Commscope RDIDC-9181-PF-48	105	22	241	0.001	1	27
Fujitsu TA08025-B605	105	225	2,481	0.006	8	280
Fujitsu TA08025-B604	105	192	2,113	0.005	7	238
JMA Wireless MX08FRO665-21	105	194	2,133	0.005	7	240
Generic Flat Platform with Handrails	104	2,500	27,040	0.063	86	3,107
		45,442	427,254	1.000	1,363	56,469

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)
49	148.8	18	400	0.001	1	15

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
48	148.05	50	1,098	0.003	4	43
47	147.4	9	199	0.000	1	8
46	146.15	115	2,462	0.006	8	99
45	144	103	2,143	0.005	7	89
44	141.5	206	4,120	0.010	13	176
43	139.6	56	1,083	0.002	3	48
42	139.05	21	405	0.001	1	18
41	138.35	77	1,476	0.004	5	66
40	136.9	127	2,388	0.006	8	109
39	135.5	71	1,312	0.003	4	61
38	134.5	72	1,301	0.003	4	62
37	132	341	5,948	0.014	19	293
36	129.85	26	437	0.001	1	22
35	129.6	17	291	0.001	1	15
34	129.45	9	145	0.000	0	7
33	129.3	17	290	0.001	1	15
32	127.6	304	4,945	0.012	16	260
31	125.5	112	1,770	0.004	6	96
30	122.5	619	9,287	0.022	30	531
29	117.5	631	8,709	0.020	28	541
28	112.5	667	8,445	0.020	27	572
27	107.5	679	7,849	0.018	25	582
26	104.5	140	1,525	0.004	5	120
25	102.75	351	3,707	0.009	12	301
24	100.75	357	3,625	0.008	12	306
23	98.875	541	5,289	0.012	17	464
22	96.375	502	4,662	0.011	15	430
21	92.5	928	7,940	0.019	25	796
20	87.5	948	7,257	0.017	23	813
19	82.5	968	6,586	0.015	21	830
18	77.5	987	5,931	0.014	19	847
17	72.5	1,007	5,294	0.012	17	864
16	67.5	1,027	4,680	0.011	15	881
15	62.5	1,047	4,090	0.010	13	898
14	57.5	1,067	3,527	0.008	11	915
13	54.125	378	1,107	0.003	4	324
12	51.625	1,229	3,274	0.008	10	1,053
11	49	765	1,837	0.004	6	656
10	46.5	742	1,604	0.004	5	636
9	42.5	1,255	2,267	0.005	7	1,076
8	37.5	1,279	1,799	0.004	6	1,097
7	32.5	1,303	1,376	0.003	4	1,117
6	27.5	1,327	1,003	0.002	3	1,137
5	22.5	1,350	684	0.002	2	1,158
4	17.5	1,374	421	0.001	1	1,178
3	12.5	1,398	218	0.000	1	1,198
2	7.5	1,422	80	0.000	0	1,219
1	2.5	1,222	8	0.000	0	1,047
DragonWave Horizon Compact	149	32	706	0.002	2	27
DragonWave A-ANT-23G-1-C	149	15	333	0.001	1	13
Alcatel-Lucent RRH2x50-08	149	317	7,047	0.016	22	272
Alcatel-Lucent 1900 MHz 4X45 RRH	149	180	3,996	0.009	13	154
Nokia 2.5G MAA - AAHC(64T64R)	149	311	6,900	0.016	22	266
DragonWave A-ANT-11G-2-C	149	54	1,199	0.003	4	46
RFS APXVFRR12X-C-I20	149	138	3,064	0.007	10	118
Clearwire Side Arm	149	560	12,433	0.029	40	480
Ericsson Air6449 B41	148.6	312	6,890	0.016	22	267
Ericsson Air 3246 B66	147.5	540	11,748	0.028	37	463
Ericsson Radio 4449 B71 B85A	147.3	225	4,882	0.011	16	193
Ericsson RRUS 4415 B25	147.3	138	2,994	0.007	10	118
Ericsson AIR32 B66Aa/B2a	147.3	397	8,605	0.020	27	340
RFS APXVAARR24_43-U-NA20	143	384	7,846	0.018	25	329
Platform with SitePro1 HRK12-3HD Handrail Kit	143	2,350	48,055	0.112	153	2,015
Samsung B2/B66A RRH-BR049	139.2	253	4,906	0.012	16	217
Raycap RCMDC-6627-PF-48	138.9	32	617	0.001	2	27
RFS FD9R6004/2C-3L	137.8	16	296	0.001	1	13
Round Low Profile Platform	136	1,500	27,744	0.065	89	1,286
Samsung B5/B13 RRH-BR04C	134	211	3,787	0.009	12	181
Samsung MT6407-77A	134	245	4,396	0.010	14	210
Andrew DB854DG65ESX	134	56	997	0.002	3	48

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
JMA Wireless MX06FRO660-03	134	360	6,464	0.015	21	309
Ericsson RRUS 8843 B2, B66A	129.7	216	3,634	0.008	12	185
CCI CCI-HPA-65R-BUU-H8	129.5	204	3,421	0.008	11	175
Ericsson Radio 4415 B30	129.4	129	2,160	0.005	7	111
Ericsson RRUS 4449 B5, B12	129.4	213	3,567	0.008	11	183
Kathrein Scala 80010966	129.2	688	11,478	0.027	37	590
Flat Platform with Handrails	126	2,000	31,752	0.074	101	1,715
Commscope WCS-IMFQ-AMT	125	30	461	0.001	1	25
Raycap DC6-48-60-0-8F	125	33	512	0.001	2	28
Raycap DC6-48-60-0-8F (24" Height)	125	66	1,025	0.002	3	56
Ericsson RRUS 4478 B14	125	180	2,808	0.007	9	154
Mount Reinforcement SitePro1 V Stabilizer (PRK-SFS)	125	588	9,183	0.022	29	504
RFS APXV18-206517S-C	115	79	1,047	0.002	3	68
Commscope RDIDC-9181-PF-48	105	22	241	0.001	1	19
Fujitsu TA08025-B605	105	225	2,481	0.006	8	193
Fujitsu TA08025-B604	105	192	2,113	0.005	7	164
JMA Wireless MX08FRO665-21	105	194	2,133	0.005	7	166
Generic Flat Platform with Handrails	104	2,500	27,040	0.063	86	2,143
		45,442	427,254	1.000	1,363	38,959

1.2D + 1.0Ev + 1.0Eh Seismic

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-54.95	-1.37	0.00	-179.29	0.00	179.29	4,132.30	1,078.56	5,030	4,392.86	0.00	0.00	0.05
5.00	-53.18	-1.38	0.00	-172.45	0.00	172.45	4,073.40	1,054.02	4,804	4,231.01	0.01	-0.01	0.05
10.00	-51.45	-1.39	0.00	-165.56	0.00	165.56	4,012.86	1,029.48	4,583	4,070.37	0.03	-0.02	0.05
15.00	-49.74	-1.40	0.00	-158.61	0.00	158.61	3,950.69	1,004.94	4,367	3,911.06	0.06	-0.04	0.05
20.00	-48.06	-1.41	0.00	-151.62	0.00	151.62	3,886.88	980.40	4,156	3,753.20	0.10	-0.05	0.05
25.00	-46.41	-1.41	0.00	-144.60	0.00	144.60	3,821.44	955.86	3,951	3,596.91	0.16	-0.06	0.05
30.00	-44.79	-1.42	0.00	-137.54	0.00	137.54	3,754.36	931.32	3,751	3,442.32	0.24	-0.08	0.05
35.00	-43.20	-1.42	0.00	-130.45	0.00	130.45	3,685.65	906.78	3,556	3,289.53	0.33	-0.09	0.05
40.00	-41.64	-1.42	0.00	-123.36	0.00	123.36	3,615.30	882.24	3,366	3,138.66	0.43	-0.11	0.05
45.00	-40.72	-1.42	0.00	-116.26	0.00	116.26	3,543.31	857.70	3,181	2,989.85	0.55	-0.12	0.05
48.00	-39.77	-1.42	0.00	-111.99	0.00	111.99	3,499.34	842.97	3,073	2,901.60	0.63	-0.13	0.05
50.00	-38.24	-1.41	0.00	-109.15	0.00	109.15	3,469.70	833.16	3,002	2,843.21	0.69	-0.14	0.05
53.25	-37.77	-1.41	0.00	-104.57	0.00	104.57	2,730.91	692.97	2,492	2,236.98	0.79	-0.15	0.06
55.00	-36.45	-1.40	0.00	-102.10	0.00	102.10	2,712.30	685.82	2,441	2,198.61	0.84	-0.15	0.06
60.00	-35.15	-1.40	0.00	-95.07	0.00	95.07	2,658.03	665.37	2,297	2,089.87	1.01	-0.17	0.06
65.00	-33.87	-1.39	0.00	-88.08	0.00	88.08	2,602.12	644.92	2,158	1,982.52	1.20	-0.19	0.06
70.00	-32.62	-1.38	0.00	-81.12	0.00	81.12	2,544.57	624.47	2,024	1,876.69	1.41	-0.21	0.06
75.00	-31.39	-1.37	0.00	-74.22	0.00	74.22	2,485.39	604.02	1,893	1,772.49	1.64	-0.23	0.06
80.00	-30.19	-1.35	0.00	-67.38	0.00	67.38	2,424.58	583.57	1,767	1,670.06	1.89	-0.25	0.05
85.00	-29.01	-1.33	0.00	-60.62	0.00	60.62	2,362.13	563.12	1,646	1,569.50	2.16	-0.27	0.05
90.00	-27.85	-1.31	0.00	-53.96	0.00	53.96	2,297.28	542.67	1,528	1,470.45	2.45	-0.29	0.05
95.00	-27.23	-1.30	0.00	-47.40	0.00	47.40	2,210.71	522.22	1,415	1,361.18	2.76	-0.31	0.05
97.75	-26.56	-1.28	0.00	-43.82	0.00	43.82	2,163.10	510.97	1,355	1,302.88	2.94	-0.32	0.05
100.00	-26.11	-1.27	0.00	-40.93	0.00	40.93	2,124.14	501.77	1,307	1,256.13	3.09	-0.32	0.05
101.50	-25.68	-1.26	0.00	-39.02	0.00	39.02	1,105.19	302.60	792	659.76	3.20	-0.33	0.08
104.00	-22.40	-1.16	0.00	-35.87	0.00	35.87	1,092.66	296.47	760	638.98	3.37	-0.34	0.08
105.00	-20.77	-1.10	0.00	-34.71	0.00	34.71	1,087.54	294.01	748	630.68	3.44	-0.35	0.07
110.00	-19.94	-1.08	0.00	-29.19	0.00	29.19	1,060.92	281.74	686	589.40	3.82	-0.37	0.07
115.00	-19.06	-1.05	0.00	-23.78	0.00	23.78	1,032.68	269.47	628	548.55	4.22	-0.40	0.06
120.00	-18.29	-1.02	0.00	-18.52	0.00	18.52	1,002.79	257.20	572	508.25	4.65	-0.42	0.06
125.00	-17.04	-0.97	0.00	-13.40	0.00	13.40	971.28	244.93	519	468.61	5.11	-0.44	0.05
126.00	-14.17	-0.83	0.00	-12.43	0.00	12.43	964.78	242.48	508	460.77	5.20	-0.45	0.04
129.20	-13.30	-0.79	0.00	-9.77	0.00	9.77	943.54	234.62	476	435.92	5.50	-0.46	0.04
129.40	-12.86	-0.77	0.00	-9.62	0.00	9.62	942.19	234.13	474	434.38	5.52	-0.46	0.04
129.50	-12.59	-0.75	0.00	-9.54	0.00	9.54	941.51	233.89	473	433.61	5.53	-0.46	0.04
129.70	-12.29	-0.74	0.00	-9.39	0.00	9.39	940.16	233.40	471	432.07	5.55	-0.46	0.04
130.00	-11.86	-0.72	0.00	-9.17	0.00	9.17	938.12	232.66	468	429.76	5.58	-0.46	0.03
134.00	-10.69	-0.65	0.00	-6.31	0.00	6.31	910.42	222.85	429	399.33	5.97	-0.47	0.03
135.00	-10.60	-0.65	0.00	-5.65	0.00	5.65	903.34	220.39	420	391.82	6.06	-0.47	0.03

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
136.00	-8.58	-0.54	0.00	-5.00	0.00	5.00	896.18	217.94	411	384.35	6.16	-0.47	0.02
137.80	-8.47	-0.53	0.00	-4.04	0.00	4.04	883.14	213.52	394	371.01	6.34	-0.48	0.02
138.90	-8.40	-0.53	0.00	-3.46	0.00	3.46	875.07	210.82	384	362.93	6.45	-0.48	0.02
139.20	-8.02	-0.50	0.00	-3.30	0.00	3.30	872.85	210.08	382	360.73	6.48	-0.48	0.02
140.00	-7.76	-0.49	0.00	-2.90	0.00	2.90	866.91	208.12	375	354.90	6.56	-0.48	0.02
143.00	-4.24	-0.27	0.00	-1.43	0.00	1.43	844.27	200.76	349	333.29	6.87	-0.48	0.01
145.00	-4.09	-0.27	0.00	-0.88	0.00	0.88	828.85	195.85	332	319.13	7.07	-0.48	0.01
147.30	-3.14	-0.20	0.00	-0.27	0.00	0.27	805.21	190.21	313	301.00	7.30	-0.49	0.01
147.50	-2.41	-0.16	0.00	-0.23	0.00	0.23	803.13	189.72	311	299.44	7.32	-0.49	0.00
148.60	-2.00	-0.13	0.00	-0.05	0.00	0.05	791.70	187.02	302	290.94	7.44	-0.49	0.00
149.00	0.00	-0.11	0.00	0.00	0.00	0.00	787.55	186.03	299	287.88	7.48	-0.49	0.00

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 (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-37.91	-1.37	0.00	-174.63	0.00	174.63	4,132.30	1,078.56	5,030	4,392.86	0.00	0.00	0.05
5.00	-36.69	-1.37	0.00	-167.80	0.00	167.80	4,073.40	1,054.02	4,804	4,231.01	0.01	-0.01	0.05
10.00	-35.49	-1.38	0.00	-160.93	0.00	160.93	4,012.86	1,029.48	4,583	4,070.37	0.03	-0.02	0.05
15.00	-34.31	-1.39	0.00	-154.03	0.00	154.03	3,950.69	1,004.94	4,367	3,911.06	0.06	-0.04	0.05
20.00	-33.16	-1.39	0.00	-147.11	0.00	147.11	3,886.88	980.40	4,156	3,753.20	0.10	-0.05	0.05
25.00	-32.02	-1.39	0.00	-140.16	0.00	140.16	3,821.44	955.86	3,951	3,596.91	0.16	-0.06	0.05
30.00	-30.90	-1.39	0.00	-133.19	0.00	133.19	3,754.36	931.32	3,751	3,442.32	0.23	-0.08	0.05
35.00	-29.81	-1.39	0.00	-126.22	0.00	126.22	3,685.65	906.78	3,556	3,289.53	0.32	-0.09	0.05
40.00	-28.73	-1.39	0.00	-119.24	0.00	119.24	3,615.30	882.24	3,366	3,138.66	0.42	-0.10	0.05
45.00	-28.09	-1.39	0.00	-112.28	0.00	112.28	3,543.31	857.70	3,181	2,989.85	0.54	-0.12	0.05
48.00	-27.44	-1.39	0.00	-108.10	0.00	108.10	3,499.34	842.97	3,073	2,901.60	0.61	-0.13	0.05
50.00	-26.38	-1.38	0.00	-105.33	0.00	105.33	3,469.70	833.16	3,002	2,843.21	0.67	-0.13	0.05
53.25	-26.06	-1.38	0.00	-100.84	0.00	100.84	2,730.91	692.97	2,492	2,236.98	0.76	-0.14	0.06
55.00	-25.14	-1.37	0.00	-98.43	0.00	98.43	2,712.30	685.82	2,441	2,198.61	0.82	-0.15	0.05
60.00	-24.25	-1.36	0.00	-91.58	0.00	91.58	2,658.03	665.37	2,297	2,089.87	0.98	-0.17	0.05
65.00	-23.37	-1.35	0.00	-84.77	0.00	84.77	2,602.12	644.92	2,158	1,982.52	1.17	-0.18	0.05
70.00	-22.50	-1.34	0.00	-78.01	0.00	78.01	2,544.57	624.47	2,024	1,876.69	1.37	-0.20	0.05
75.00	-21.65	-1.32	0.00	-71.31	0.00	71.31	2,485.39	604.02	1,893	1,772.49	1.59	-0.22	0.05
80.00	-20.82	-1.31	0.00	-64.69	0.00	64.69	2,424.58	583.57	1,767	1,670.06	1.83	-0.24	0.05
85.00	-20.01	-1.29	0.00	-58.16	0.00	58.16	2,362.13	563.12	1,646	1,569.50	2.09	-0.26	0.05
90.00	-19.22	-1.26	0.00	-51.72	0.00	51.72	2,297.28	542.67	1,528	1,470.45	2.37	-0.28	0.04
95.00	-18.78	-1.25	0.00	-45.41	0.00	45.41	2,210.71	522.22	1,415	1,361.18	2.67	-0.29	0.04
97.75	-18.32	-1.23	0.00	-41.97	0.00	41.97	2,163.10	510.97	1,355	1,302.88	2.85	-0.30	0.04
100.00	-18.01	-1.22	0.00	-39.19	0.00	39.19	2,124.14	501.77	1,307	1,256.13	2.99	-0.31	0.04
101.50	-17.71	-1.21	0.00	-37.35	0.00	37.35	1,105.19	302.60	792	659.76	3.09	-0.32	0.07
104.00	-15.45	-1.11	0.00	-34.32	0.00	34.32	1,092.66	296.47	760	638.98	3.26	-0.33	0.07
105.00	-14.33	-1.06	0.00	-33.21	0.00	33.21	1,087.54	294.01	748	630.68	3.33	-0.33	0.07
110.00	-13.75	-1.04	0.00	-27.91	0.00	27.91	1,060.92	281.74	686	589.40	3.69	-0.36	0.06
115.00	-13.15	-1.01	0.00	-22.72	0.00	22.72	1,032.68	269.47	628	548.55	4.08	-0.38	0.05
120.00	-12.61	-0.98	0.00	-17.69	0.00	17.69	1,002.79	257.20	572	508.25	4.50	-0.41	0.05
125.00	-11.75	-0.92	0.00	-12.80	0.00	12.80	971.28	244.93	519	468.61	4.93	-0.42	0.04
126.00	-9.78	-0.79	0.00	-11.87	0.00	11.87	964.78	242.48	508	460.77	5.02	-0.43	0.04
129.20	-9.17	-0.75	0.00	-9.34	0.00	9.34	943.54	234.62	476	435.92	5.31	-0.44	0.03
129.40	-8.87	-0.73	0.00	-9.19	0.00	9.19	942.19	234.13	474	434.38	5.33	-0.44	0.03
129.50	-8.68	-0.72	0.00	-9.11	0.00	9.11	941.51	233.89	473	433.61	5.34	-0.44	0.03
129.70	-8.48	-0.70	0.00	-8.97	0.00	8.97	940.16	233.40	471	432.07	5.36	-0.44	0.03
130.00	-8.18	-0.68	0.00	-8.76	0.00	8.76	938.12	232.66	468	429.76	5.38	-0.44	0.03
134.00	-7.37	-0.62	0.00	-6.03	0.00	6.03	910.42	222.85	429	399.33	5.76	-0.45	0.02
135.00	-7.31	-0.62	0.00	-5.40	0.00	5.40	903.34	220.39	420	391.82	5.85	-0.45	0.02
136.00	-5.92	-0.51	0.00	-4.78	0.00	4.78	896.18	217.94	411	384.35	5.95	-0.46	0.02
137.80	-5.84	-0.51	0.00	-3.86	0.00	3.86	883.14	213.52	394	371.01	6.12	-0.46	0.02
138.90	-5.79	-0.50	0.00	-3.30	0.00	3.30	875.07	210.82	384	362.93	6.23	-0.46	0.02
139.20	-5.53	-0.48	0.00	-3.15	0.00	3.15	872.85	210.08	382	360.73	6.26	-0.46	0.02
140.00	-5.35	-0.47	0.00	-2.77	0.00	2.77	866.91	208.12	375	354.90	6.33	-0.46	0.01
143.00	-2.92	-0.26	0.00	-1.36	0.00	1.36	844.27	200.76	349	333.29	6.62	-0.46	0.01
145.00	-2.82	-0.25	0.00	-0.84	0.00	0.84	828.85	195.85	332	319.13	6.82	-0.47	0.01
147.30	-2.17	-0.20	0.00	-0.25	0.00	0.25	805.21	190.21	313	301.00	7.04	-0.47	0.00
147.50	-1.66	-0.15	0.00	-0.22	0.00	0.22	803.13	189.72	311	299.44	7.06	-0.47	0.00
148.60	-1.38	-0.13	0.00	-0.05	0.00	0.05	791.70	187.02	302	290.94	7.17	-0.47	0.00
149.00	0.00	-0.11	0.00	0.00	0.00	0.00	787.55	186.03	299	287.88	7.21	-0.47	0.00

ANALYSIS SUMMARY

Load Case	Reactions						Max Usage	
	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	26.37	0.00	54.48	0.00	0.00	3085.20	101.50	0.99
0.9D + 1.0W	26.34	0.00	40.85	0.00	0.00	3022.37	101.50	0.95
1.2D + 1.0Di + 1.0Wi	6.70	0.00	72.76	0.00	0.00	785.01	101.50	0.28
1.2D + 1.0Ev + 1.0Eh	1.42	0.00	54.95	0.00	0.00	179.29	101.50	0.08
0.9D - 1.0Ev + 1.0Eh	1.39	0.00	37.91	0.00	0.00	174.63	101.50	0.07
1.0D + 1.0W	6.20	0.00	45.44	0.00	0.00	718.11	101.50	0.24

Site Name: West Haven & RT 162, CT
Site Number: 243036
Tower Type: MP
Design Loads (Factored) - Analysis per TIA-222-H Standards

Monolithic Mat & Pier Foundation Analysis

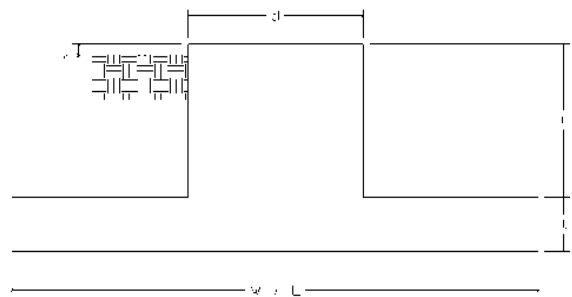
Foundation Analysis Parameters		
Design / Analysis / Mapping:	Analysis	-
Compression/Leg:	54.5	k
Uplift/Leg:	0.0	k
Total Shear:	26.4	k
Moment:	3,085.2	k-ft
Tower + Appurtenance Weight:	54.5	k
Depth to Base of Foundation (l + t - h):	5.5	ft
Diameter of Pier (d):	7	ft
Length of Pier (l):	4.5	ft
Height of Pier above Ground (h):	1	ft
Width of Pad (W):	22.5	ft
Length of Pad (L):	22.5	ft
Thickness of Pad (t):	2	ft
Tower Leg Center to Center:	0	ft
Number of Tower Legs:	1	-
Tower Center from Mat Center:	0	ft
Depth Below Ground Surface to Water Table:	5	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil Above Water Table:	125	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	62.6	pcf
Friction Angle of Uplift:	15	°
Coefficient of Shear Friction:	0.3	-
Ultimate Compressive Bearing Pressure:	15,000	psf
Ultimate Passive Pressure on Pad Face:	1,800	psf
$f_{\text{Soil and Concrete Weight}}$:	0.9	-
f_{Soil} :	0.75	-

Overturning Moment Usage		
Design OTM:	3256.6	k-ft
OTM Resistance:	4368.0	k-ft
Design OTM / OTM Resistance:	75%	Pass

Soil Bearing Pressure Usage		
Net Bearing Pressure:	6856	psf
Factored Nominal Bearing Pressure:	11250	psf
Factored Nominal (Net) Bearing Pressure:	61%	Pass
Load Direction Controlling Design Bearing Pressure:	Diagonal to Pad Edge	

Sliding Factor of Safety		
Ultimate Friction Resistance:	123.6	k
Ultimate Passive Pressure Resistance:	60.8	k
Total Factored Sliding Resistance:	138.3	k
Sliding Design / Sliding Resistance:	19%	Pass

Foundation Steel Parameters		
Shear/Leg (Compression):	17.6	k
Shear/Leg (Uplift):	14.5	k
Concrete Strength (f'_c):	4,000	psi
Pad Tension Steel Depth:	20.50	in
Dead Load Factor:	0.9	-
f_{Shear} :	0.75	-
$f_{\text{Flexure / Tension}}$:	0.9	-
$f_{\text{Compression}}$:	0.65	-
b:	0.85	-
Bottom Pad Rebar Size #:	8	-
# of Bottom Pad Rebar:	38	-
Pad Bottom Steel Area:	30.02	in ²
Pad Steel F_y :	60,000	psi
Top Pad Rebar Size #:	8	-
# of Top Pad Rebar:	38	-
Pad Top Steel Area:	30.02	in ²
Pier Rebar Size #:	8	-
Pier Steel Area (Single Bar):	0.79	in ²
# of Pier Rebar:	36	-
Pier Steel F_y :	60,000	psi
Pier Cage Diameter:	76.0	in
Rebar Strain Limit:	0.008	-
Steel Elastic Modulus:	29,000	ksi
Tie Rebar Size #:	4	-
Tie Steel Area (Single Bar):	0.20	in ²
Tie Spacing:	12	in
Tie Steel F_y :	60,000	psi
Clear Cover:	3	in



Pad Strength Capacity			
Factored One Way Shear (V_u):	389.9	k	
One Way Shear Capacity (fV_n):	525.1	k	ACI 318-14 25.5.5.1
V_u / fV_n :	74%	Pass	
Load Direction Controlling Shear Capacity:	Parallel to Pad Edge		
Lower Steel Pad Factored Moment (M_u):	2275.3	k-ft	
Lower Steel Pad Moment Capacity (fM_n):	2656.7	k-ft	ACI 318-14 22.3.1.1
M_u / fM_n :	86%	Pass	
Load Direction Controlling Flexural Capacity:	Parallel to Pad Edge		
Upper Steel Pad Factored Moment (M_u):	477.2	k-ft	
Upper Steel Pad Moment Capacity (fM_n):	2656.7	k-ft	
M_u / fM_n :	18%	Pass	
Lower Pad Flexural Reinforcement Ratio:	0.0054		OK - ACI 318-14 7.6.1.1 & 8.6.1.1
Upper Pad Flexural Reinforcement Ratio:	0.0054		OK - ACI 318-14 7.6.1.1 & 8.6.1.1
Pad Shrinkage Reinforcement Ratio:	0.0108		OK - ACI 318-14 24.4.3.2
Lower Pad Reinforcement Spacing:	7.1	in	OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3
Upper Pad Reinforcement Spacing:	7.1	in	OK - ACI 318-14 7.7.2.3, 8.7.2.2, & 24.4.3.3
Ultimate Punching Shear Stress, v_u :	75.13	psi	ACI 318-14 R8.4.4.2.3
Nominal Punching Shear Capacity ($f_c v_c$):	189.7	psi	ACI 318-14 22.6.5.2
$v_u / f_c v_c$:	40%	Pass	
Pier Moment Pad Flexure Transfer Ratio, γ_f :	0.60		TIA-222-H 9.4.2
Moment Transfer Effective Flexural Width, B_{eff} :	13.00	ft	TIA-222-H 9.4.2
Moment Transfer Through Pad Flexure:	23067.83	k-in	TIA-222-H 9.4.2
Moment Transfer Flexural Capacity ($fM_{sc,f}$):	19181.16	k-in	
$g_f M_{sc} / fM_{sc,f}$:	0%	Pass	

Pier Strength Capacity			
Factored Moment in Pier (M_u):	3203.9	k-ft	
Pier Moment Capacity (fM_n):	4756.5	k-ft	
M_u / fM_n :	67%	Pass	
Factored Shear in Pier (V_u):	26.4	k	
Pier Shear Capacity (fV_n):	629.1	k	ACI 318-14 22.5.1.1
V_u / fV_n :	4%	Pass	
Pier Shear Reinforcement Ratio:	0.0004		OK - No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0	k	
Pier Tension Capacity (fT_n):	1535.8	k	
T_u / fT_n :	0%	Pass	
Factored Compression in Pier (P_u):	54.5	k	
Pier Compression Capacity (fP_n):	9772.2	k	ACI 318-14 22.4.2.1
P_u / fP_n :	1%	Pass	
Pier Compression Reinforcement Ratio:	0.005		OK - TIA-222-H 9.4.1
Minimum Depth to Develop Vertical Rebar:	29	in	ACI 318-14 25.4.2.3
Minimum Hook Development Length:	19	in	ACI 318-14 25.4.3.1
Minimum Mat Thickness / Edge Distance from Pier:	22.0	in	
Minimum Foundation Depth:	4.02	ft	
$M_u / f_B M_n + T_u / f_T T_n$:	67%	Pass	

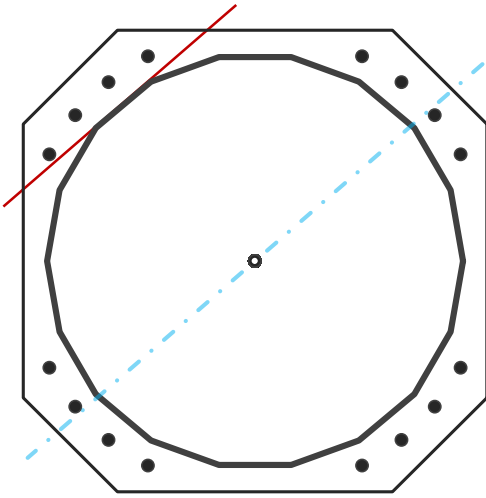
Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	52.01	in
Thickness	3/8	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	3085.2	k-ft
Axial, Pu	54.5	k
Shear, Vu	26.4	k
Neutral Axis	41	°

Report Capacities		
Component	Capacity	Result
Base Plate	51%	Pass
Anchor Rods	66%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	59	in
Thickness	2 3/4	in
Grade	A633 Gr. E	
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Clip	12	in
Orientation Offset	0	°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3	in
Applied Moment, Mu	1635.7	k
Bending Stress, ϕMn	3195.9	k



Original Anchor Rods		
Arrangement	Cluster	-
Quantity	16	-
Diameter, ϕ	2 1/4	in
Bolt Circle	59	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	160.1	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	26.4	3085.2	1.00
Anchor Rod Forces	26.4	3085.2	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	60.5227	3.3624	0.1582		20173.34
Bolt	3.9761	3.2477	0.8393	4.5	22623.84
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	59	in
Thickness, t	2.75	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Base Plate Chord	27.856	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	59	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	160.1	k
Applied Shear, Vu	0.1	k
Compressive Capacity, φPn	243.6	k
Tensile Capacity, φRnt	0.657	OK
Interaction Capacity	0.658	OK

External Base Plate		
Chord Length AA	31.304	in
Additional AA	0.000	in
Section Modulus, Z	59.183	in ³
Applied Moment, Mu	1635.7	k-ft
Bending Capacity, φMn	3195.9	k-ft
Capacity, Mu/φMn	0.512	OK
Chord Length AB	30.499	in
Additional AB	0.000	in
Section Modulus, Z	57.663	in ³
Applied Moment, Mu	1385.1	k-ft
Bending Capacity, φMn	3113.8	k-ft
Capacity, Mu/φMn	0.445	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in ³
Applied Moment, Mu	0.0	k-ft
Bending Capacity, φMn	0.0	k-ft
Capacity, Mu/φMn		

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

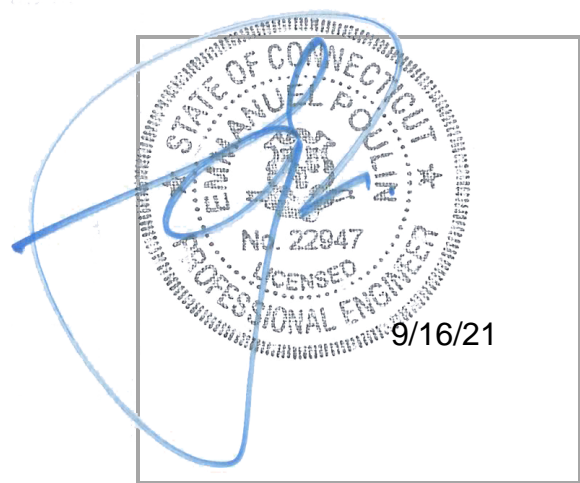
INFINIGY

MOUNT ANALYSIS REPORT

September 16, 2021

Dish Wireless Site Name	BOHVN00132A
Dish Wireless Site Number	BOHVN00132A
ATC Site Name	West Haven & RT 162 CT, CT
ATC Site Number	243036
Infinigy Job Number	1197-F0001-B
Client	ATC
Carrier	Dish Wireless
Site Location	668 Jones Hill Road West Haven, CT 06516 New Haven County 41.25640300 N NAD83 72.97236111 W NAD83
Mount Type	8.0 ft Platform
Mount Elevation	115.0 ft AGL
Structural Usage Ratio	33.8%
Overall Result	Pass

The enclosed mount structural analysis has been performed in accordance with the 2018 Connecticut State Building Code (2015 IBC) based on an ultimate 3-second gust wind speed of 120 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

September 15, 2021

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	120 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1" ice
Code / Standard	TIA-222-H
Adopted Code	2018 Connecticut State Building Code (2015 IBC)
r	II
Exposure Category	C
Topographic Category	1
Calculated Crest Height	0 ft
Seismic Spectral Response	$S_s = 0.2 \text{ g} / S_1 = 0.053 \text{ g}$
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 - 115.0 ft. AGL Platform

Antenna Centerline (ft)	Qty.	Appurtenance Manufacturers	Appurtenance Models
115.0	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-243036 Rev 1, Site #BOHVN00132A, dated July 09, 2021
Mount Manufacturer Drawings	Commscope Document # MC-PK8-DSH, dated March 08, 2021
Structural Analysis Report	ATC, Asset #243036, dated August 10, 2021

5. RESULTS

Components	Capacity	Pass/Fail
Mount Pipes	22.2%	Pass
Horizontals	13.5%	Pass
Standoffs	32.8%	Pass
Handrails	26.8%	Pass
Connections	33.8%	Pass
MOUNT RATING =	33.8%	Pass

Notes:

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

6. RECOMMENDATIONS

Infinigy recommends installing Dish Wireless’s proposed equipment loading configuration on the mount at 115.0 ft. The installation shall be performed in accordance with the construction documents issued for this site.

Alisha Khadka
 Project Engineer II | **INFINIGY**

7. ASSUMPTIONS

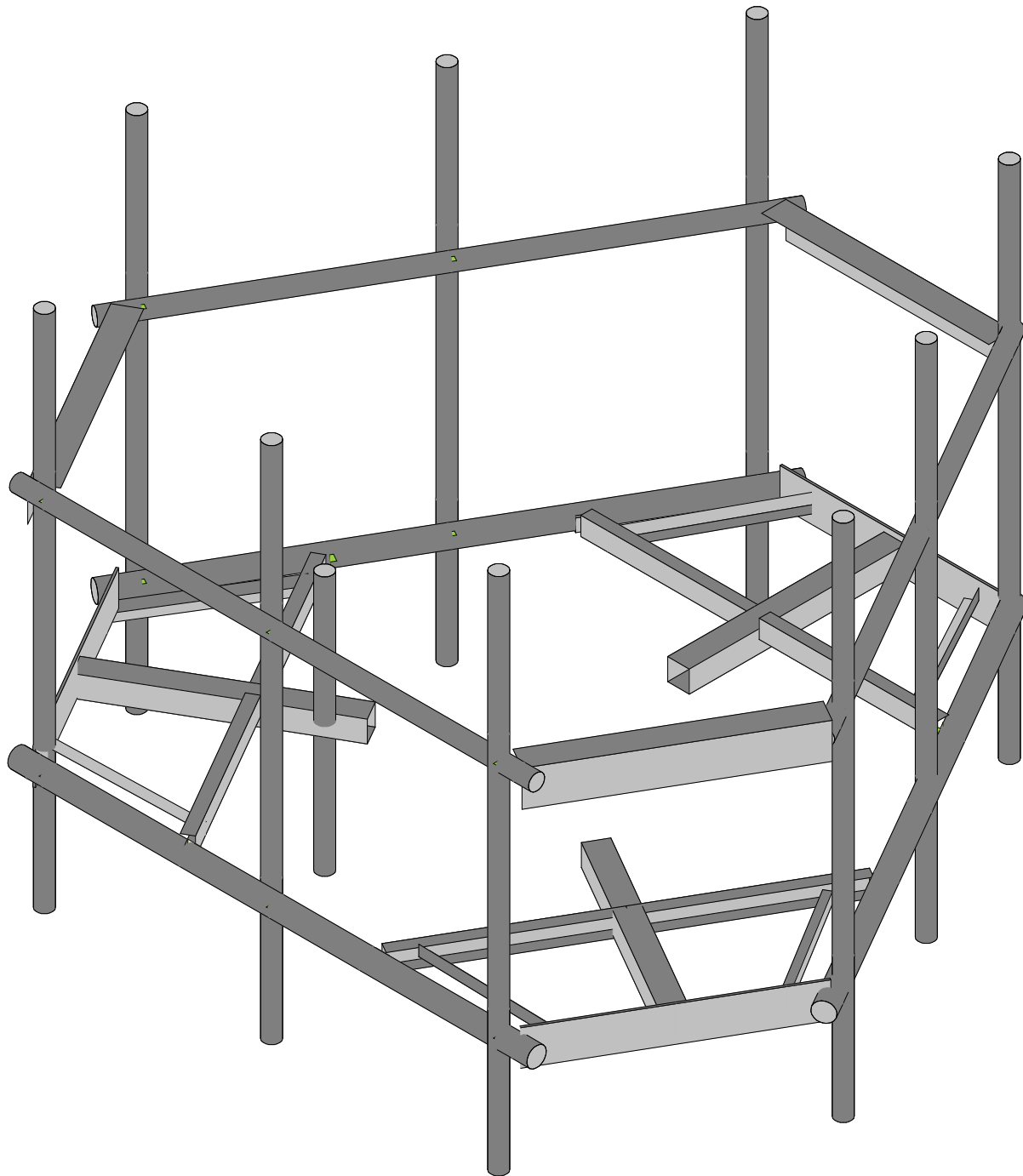
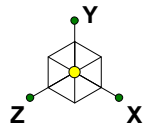
The antenna mounting system was properly fabricated, installed and maintained in accordance with its original design and manufacturer's specifications.	
The configuration of antennas, mounts, and other appurtenances are as specified in the proposed loading configuration table.	
All member connections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

8. LIABILITY WAIVER AND LIMITATIONS

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

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

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



Envelope Only Solution

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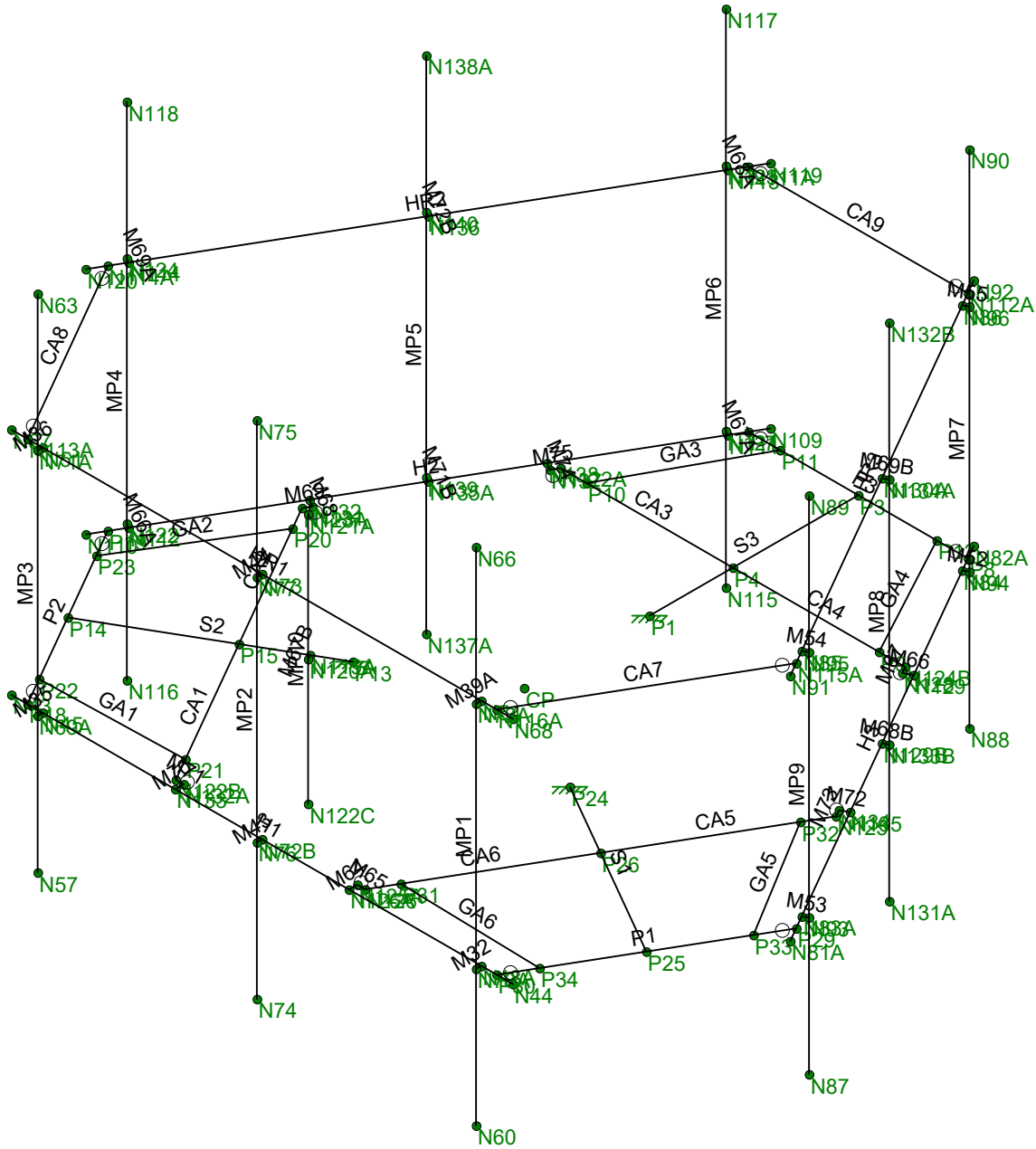
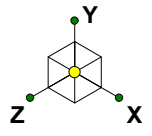
1197-F0001-B

BOHVN00132A

Rendered

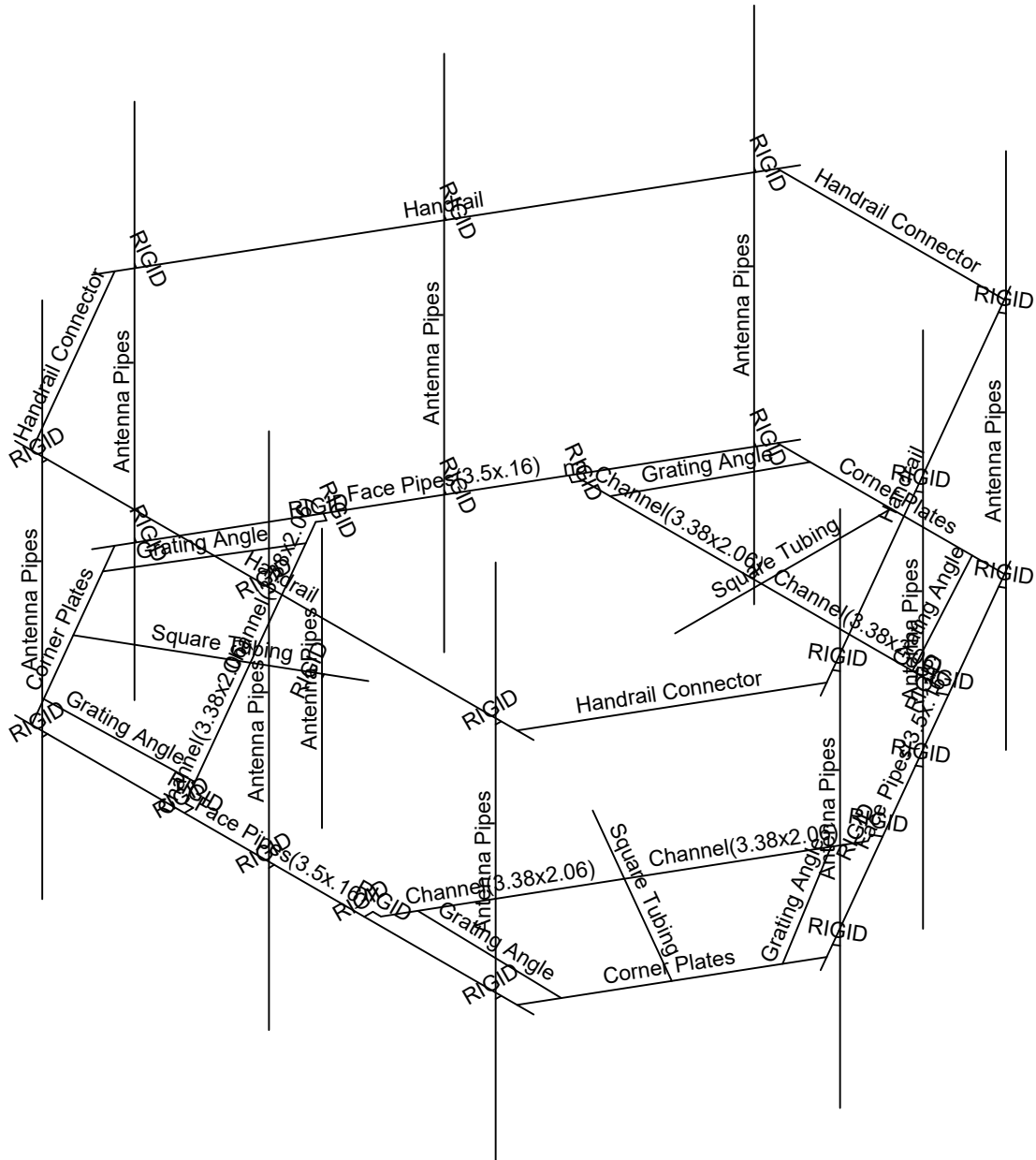
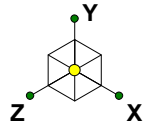
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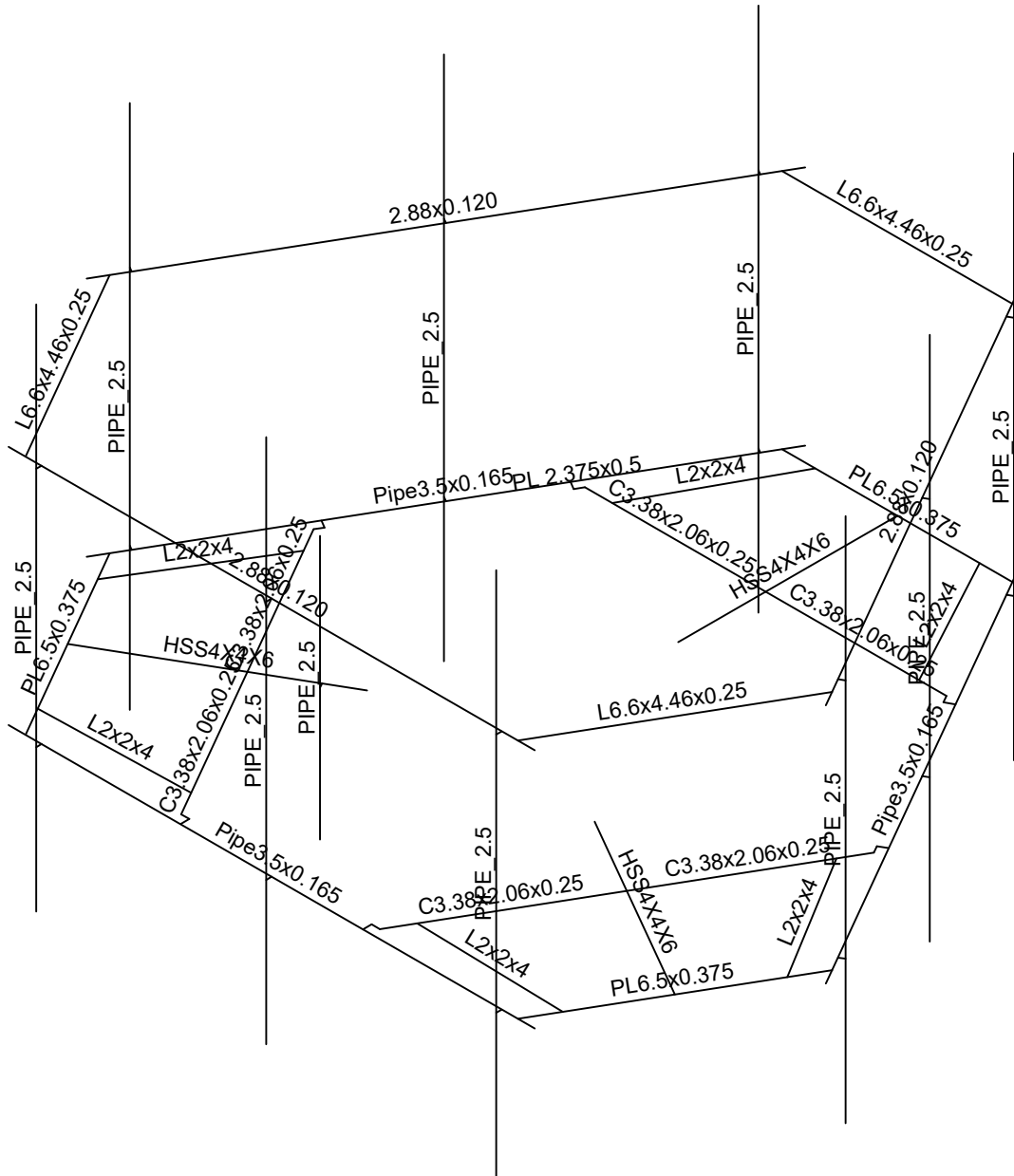
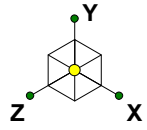
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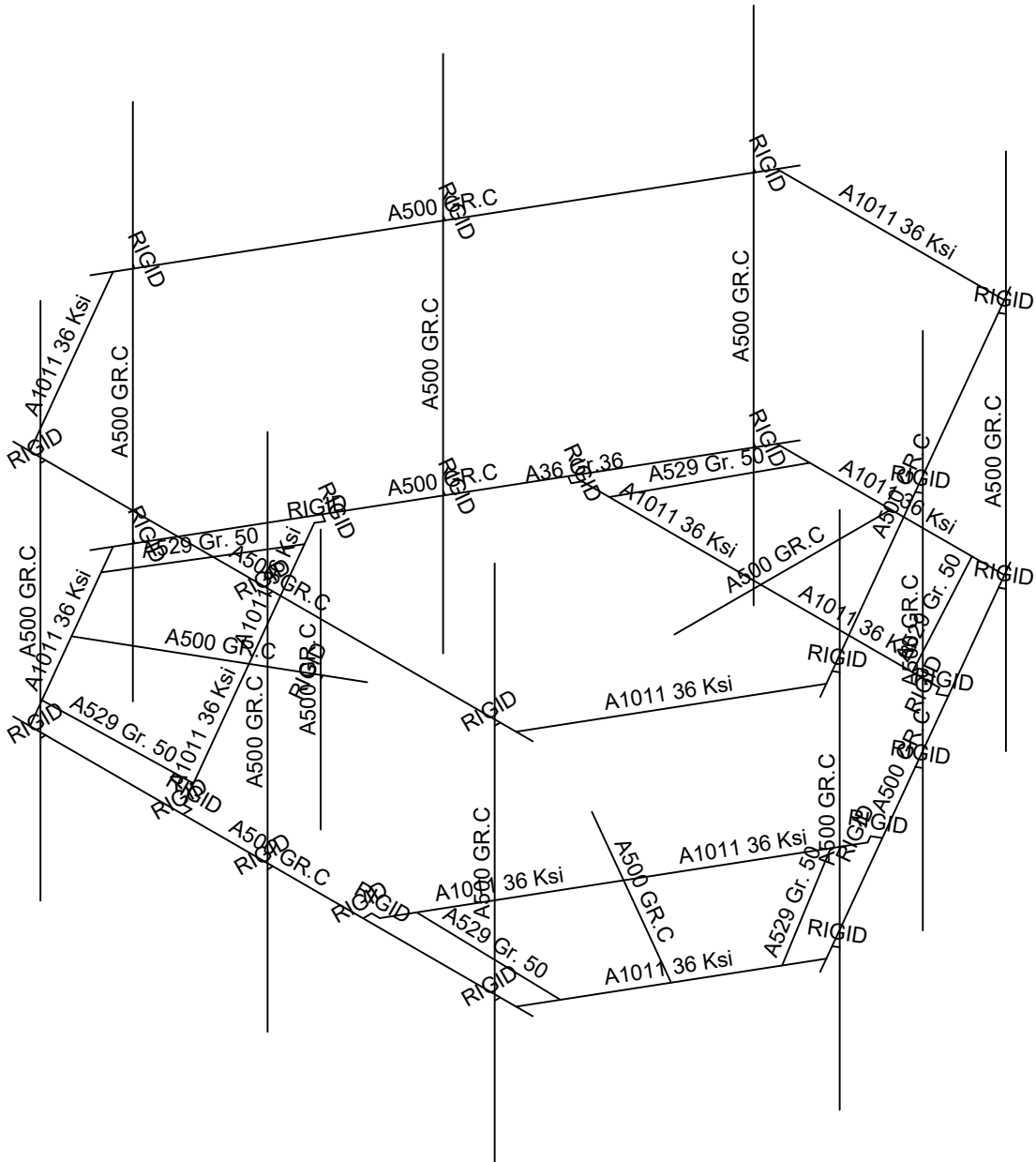
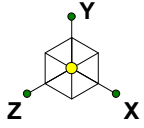
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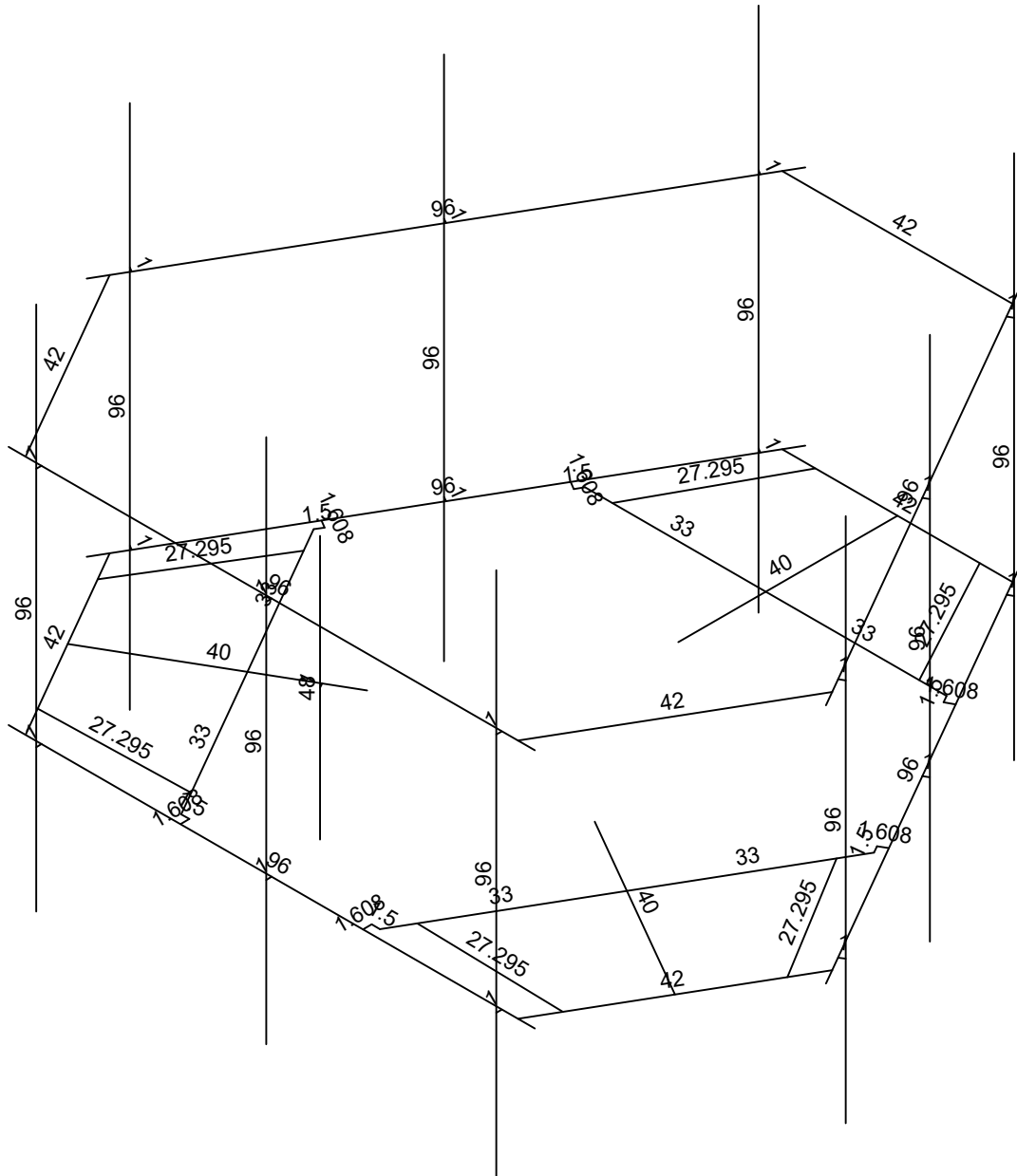
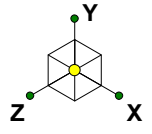
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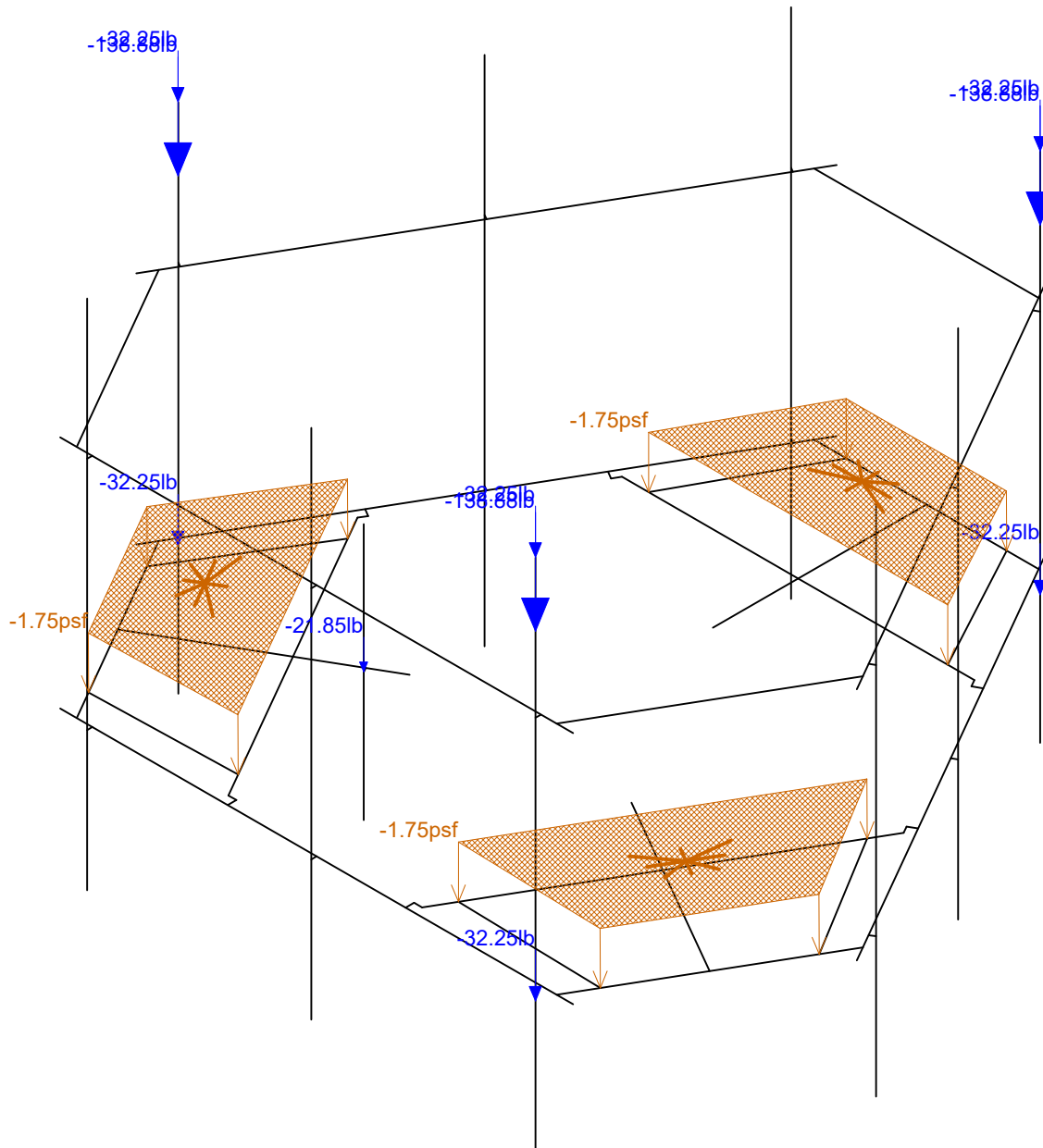
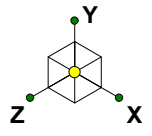
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Member Length (in) Displayed
Envelope Only Solution

Infinigy Engineering	BOHVN00132A	Member Lengths
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Loads: BLC 1, Self Weight
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Infinigy Engineering

AK

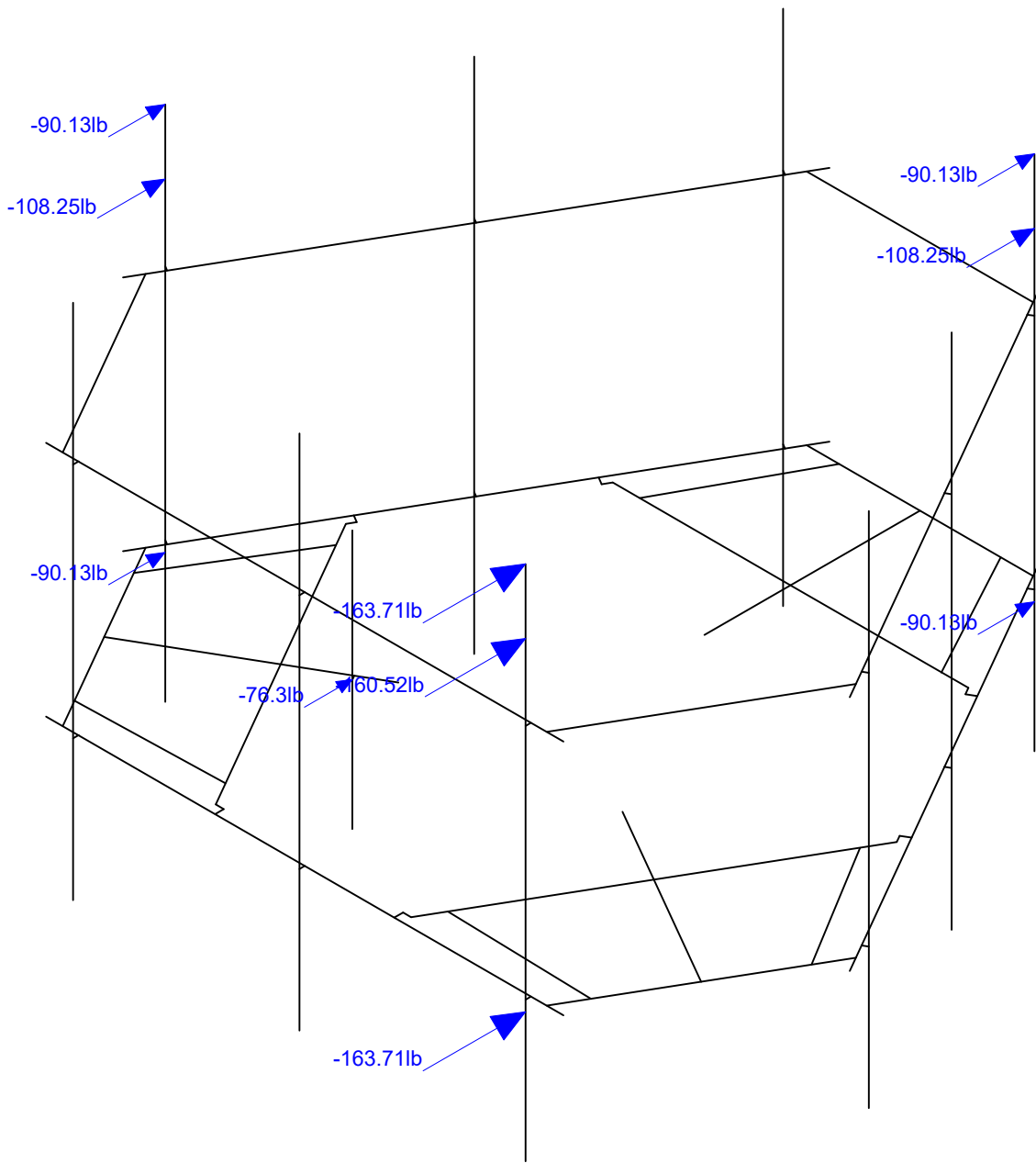
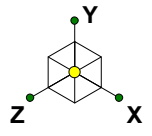
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BOHVN00132A

Self Weight

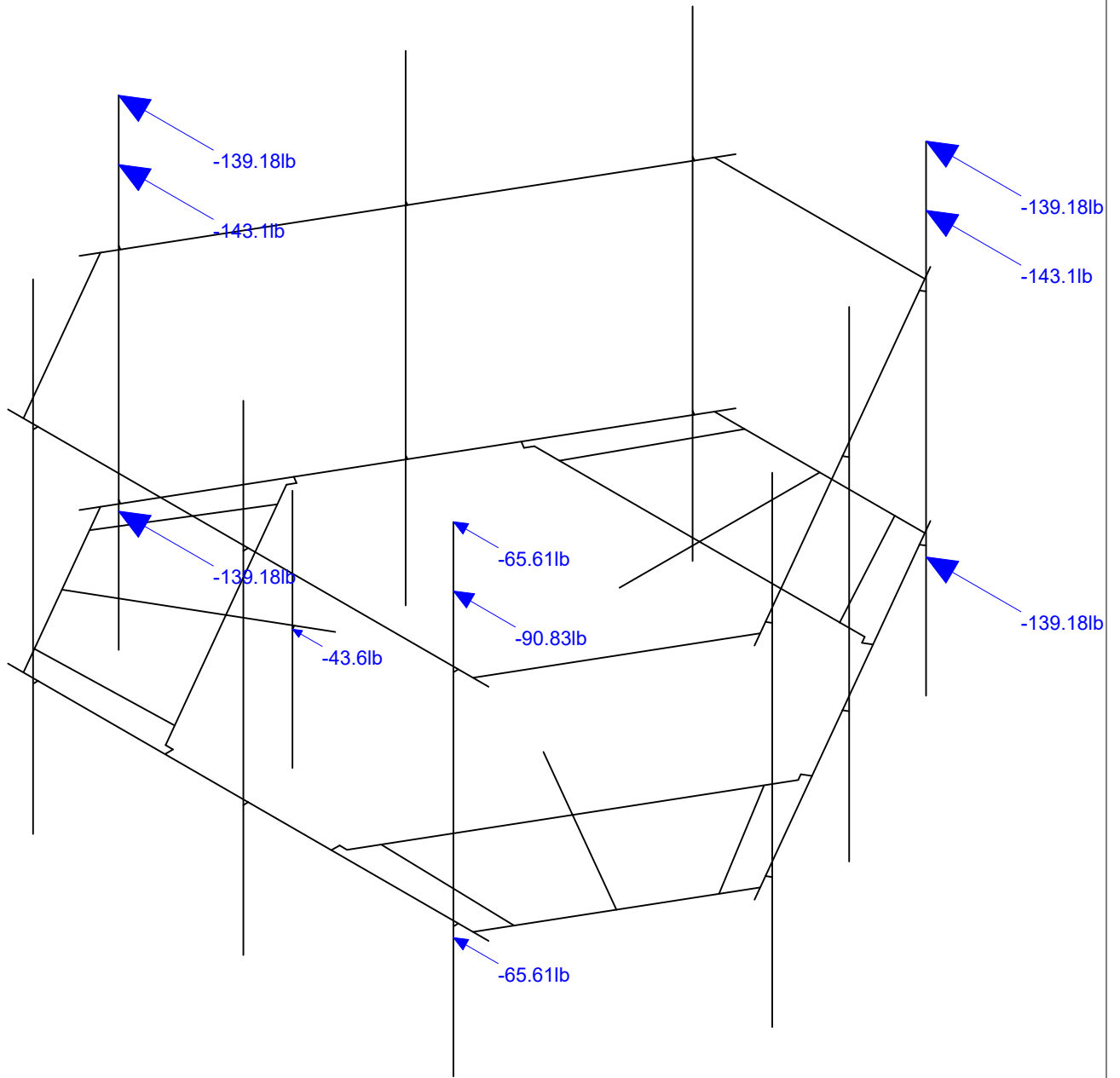
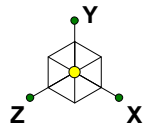
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BOHVN00132A_loaded.r3d



Loads: BLC 2, Wind Load AZI 0

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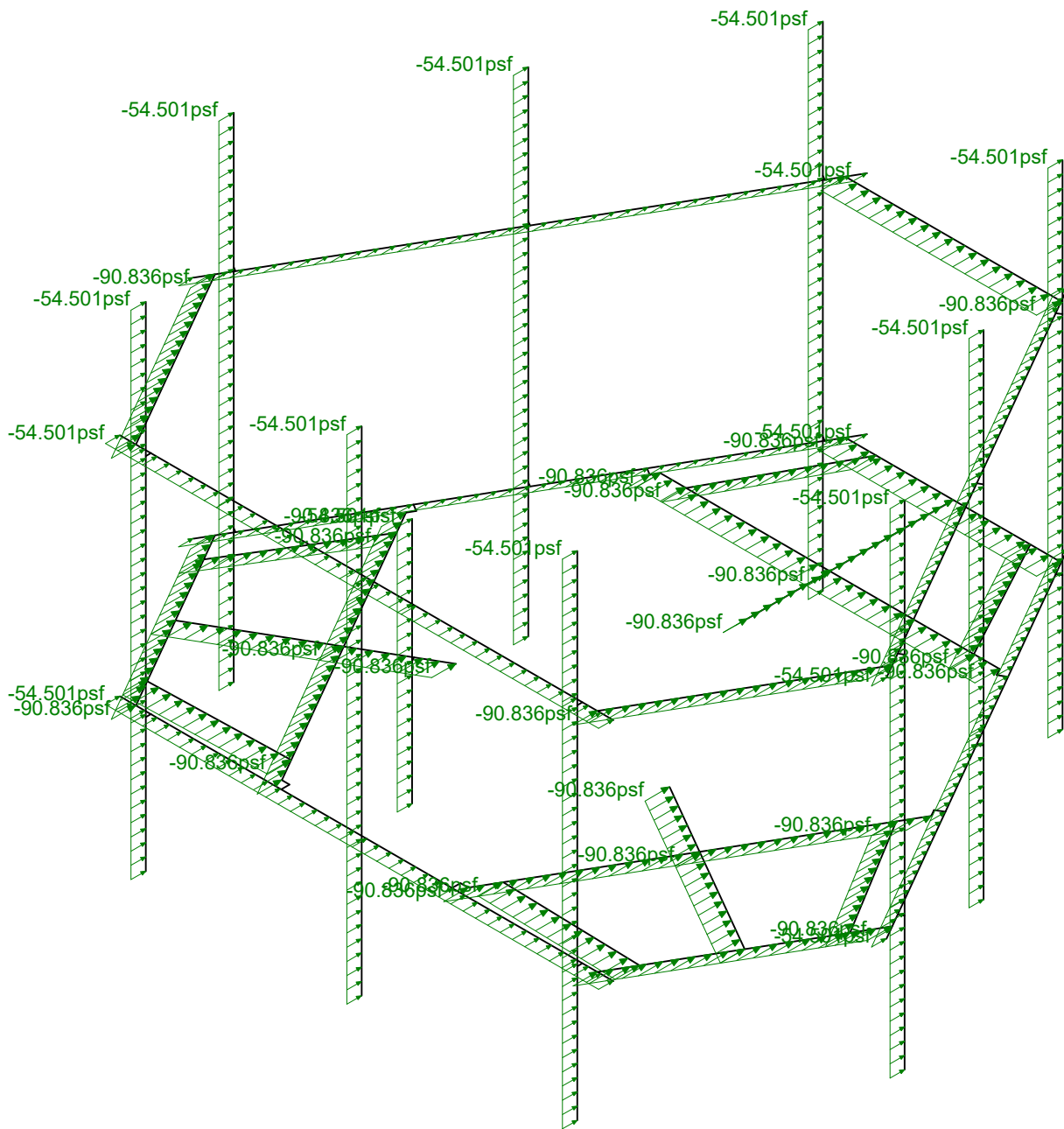
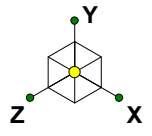


Loads: BLC 5, Wind Load AZI 90

Infinigy Engineering
AK
1197-F0001-B

BOHVN00132A

Wind Load 90
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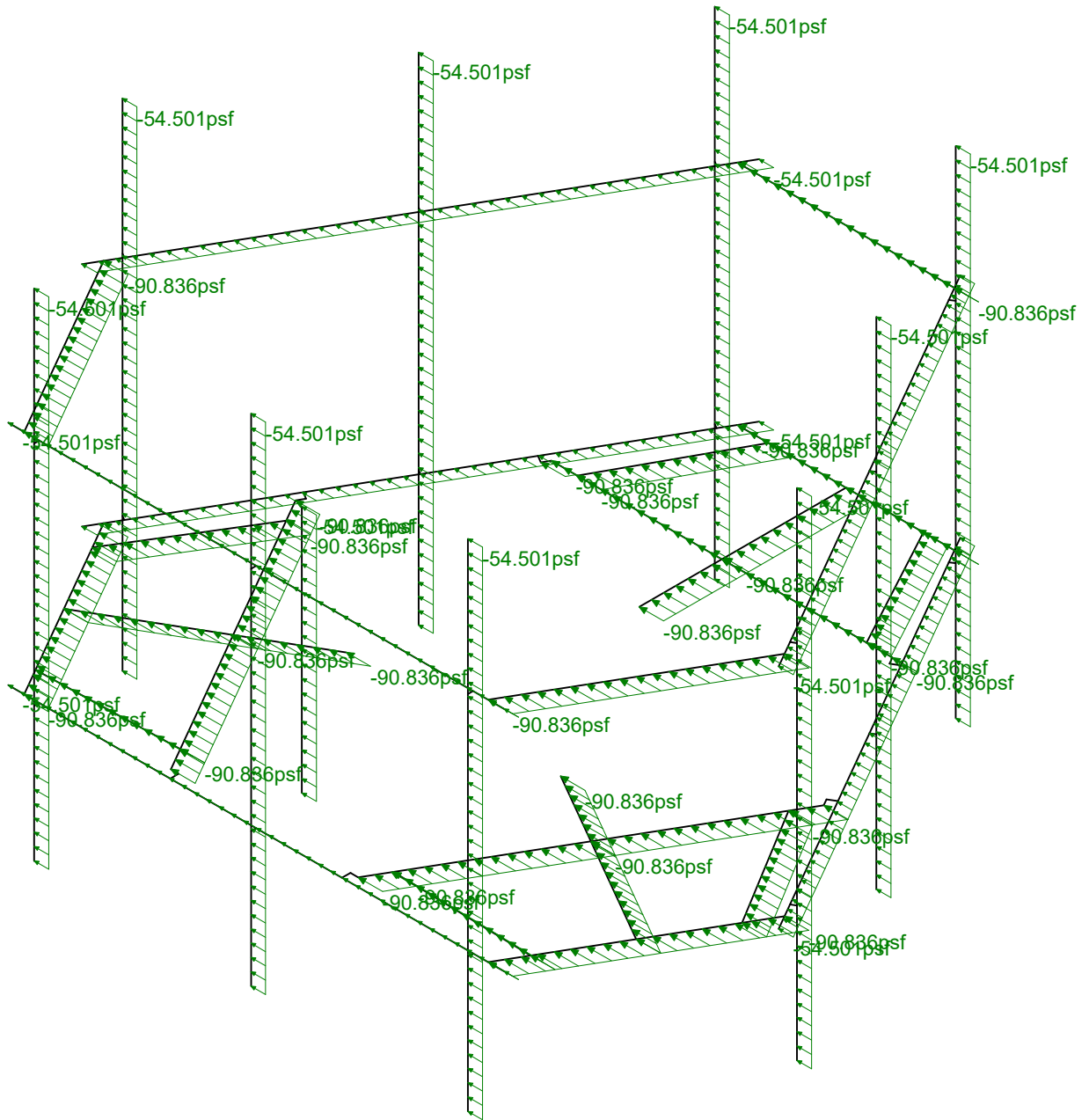
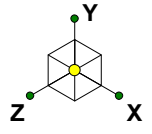


Loads: BLC 14, Distr. Wind Load Z

Infinigy Engineering
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1197-F0001-B

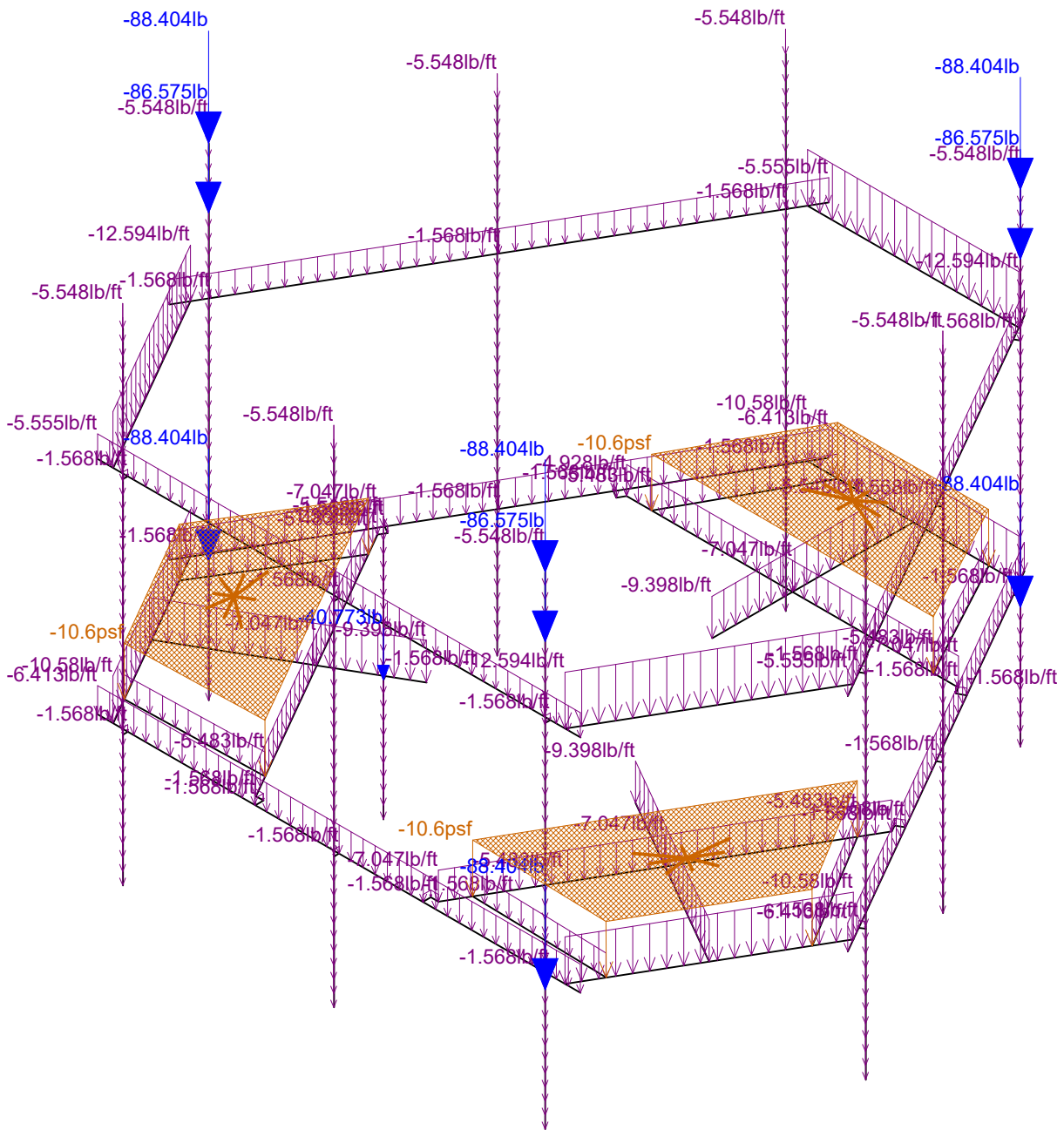
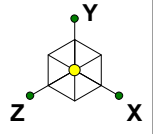
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Distr. Wind Load 0
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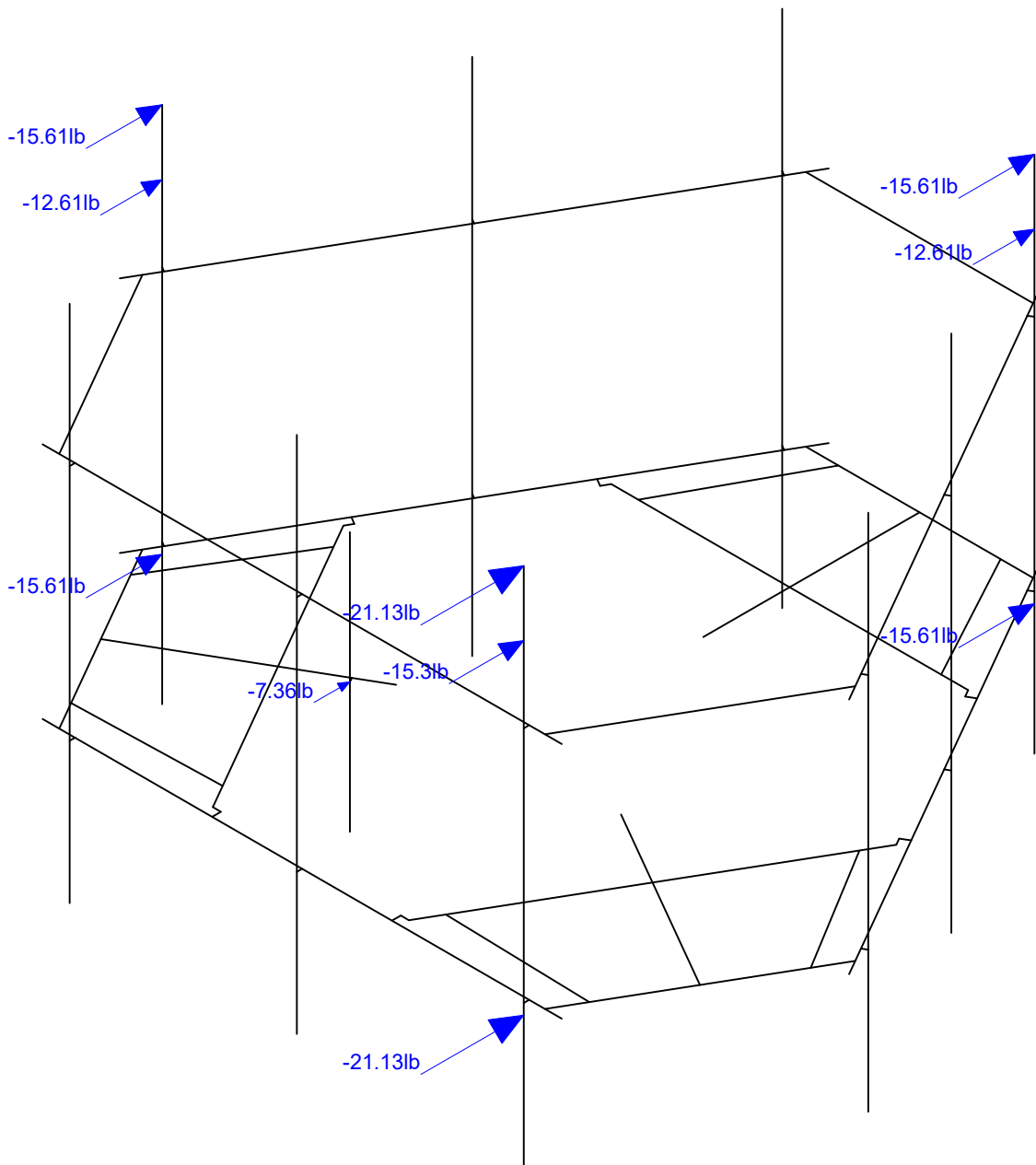
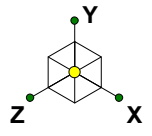
Loads: BLC 15, Distr. Wind Load X

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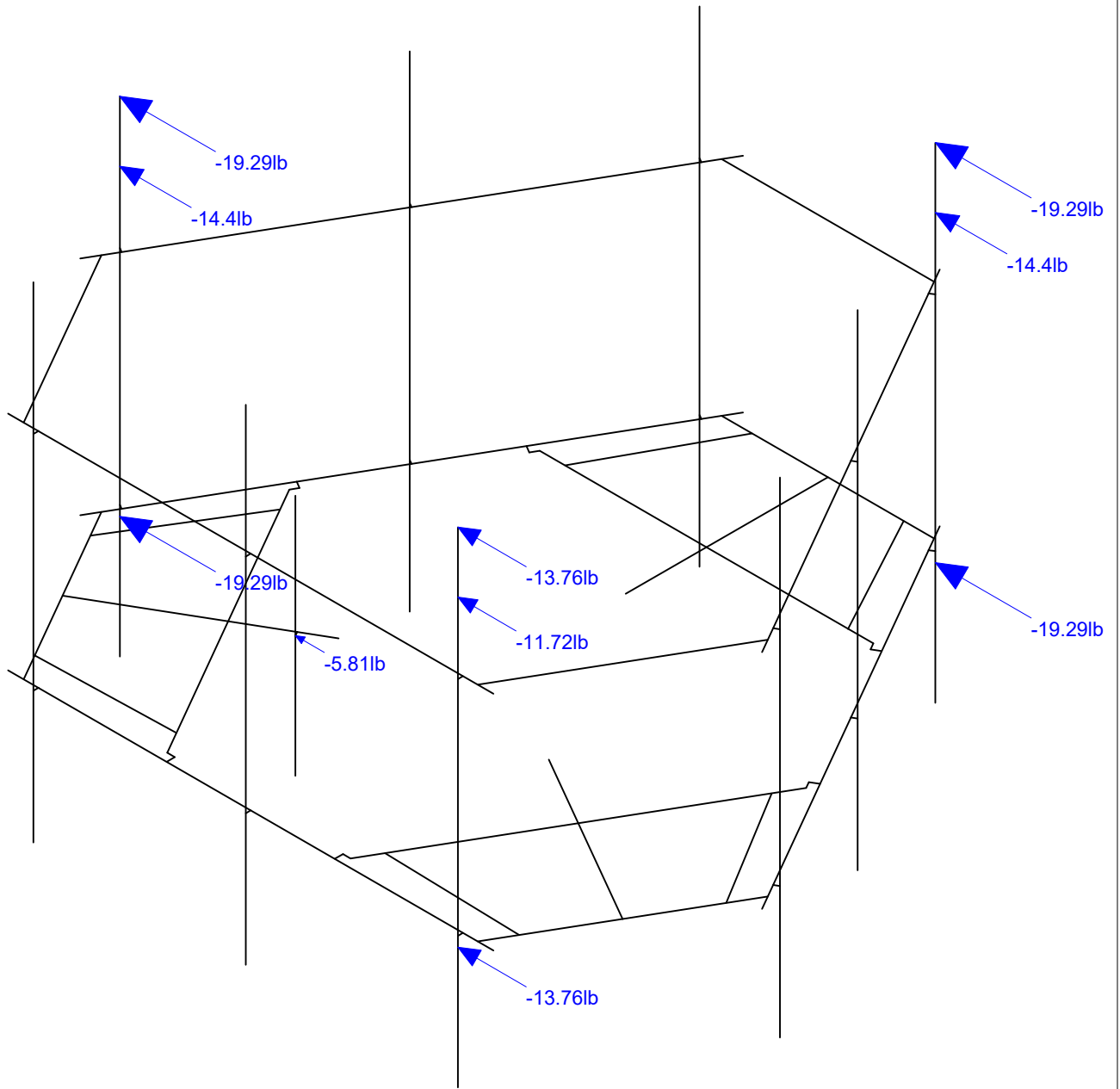
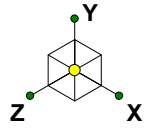
Loads: BLC 16, Ice Weight
Envelope Only Solution

Infinigy Engineering	BOHVN00132A	Ice Weight
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Loads: BLC 17, Ice Wind Load AZI 0

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Loads: BLC 20, Ice Wind Load AZI 90

Infinigy Engineering

AK

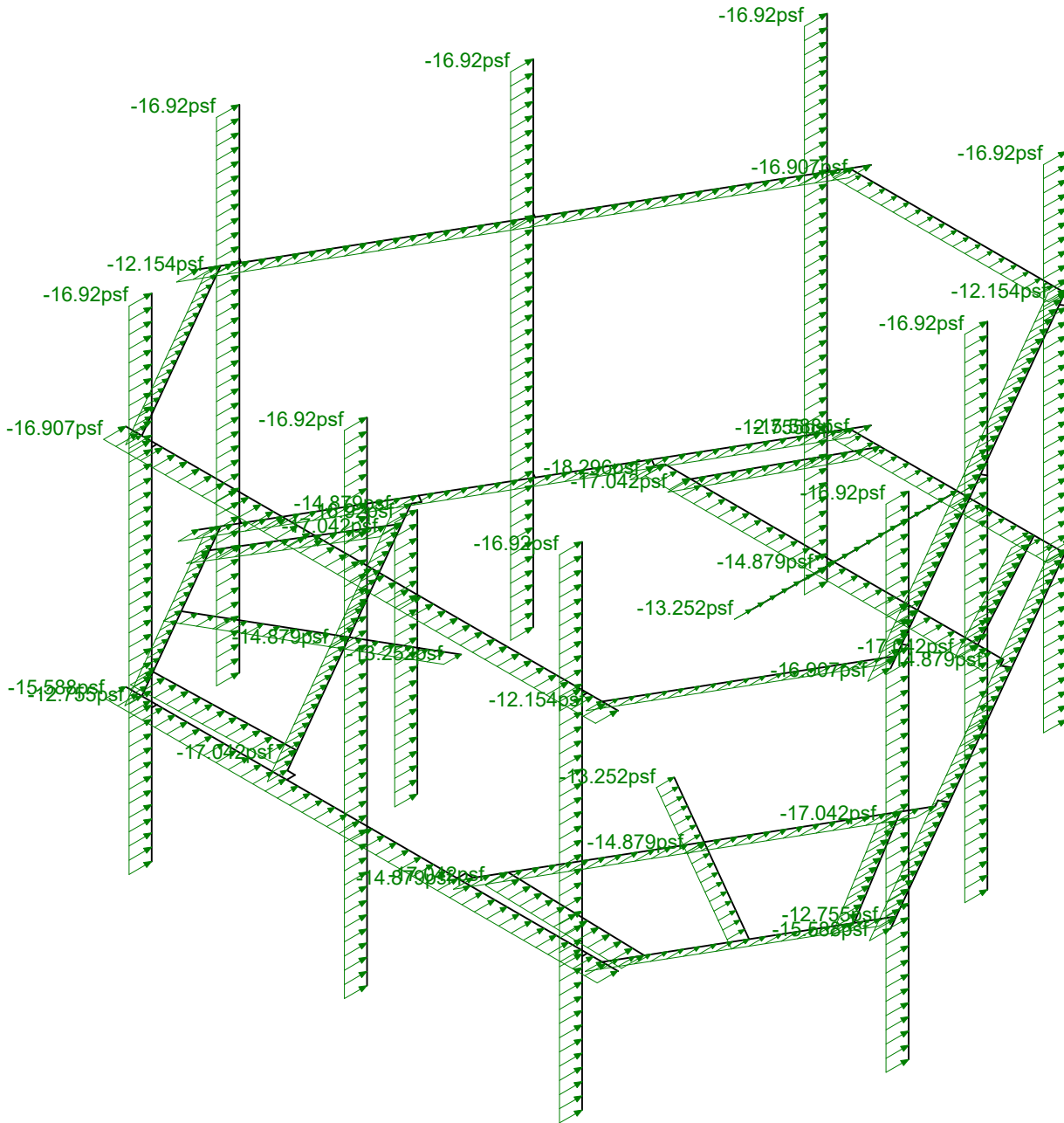
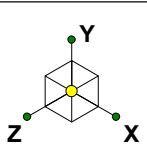
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BOHVN00132A

Ice + Wind Load 90

Sept 16, 2021 at 10:47 AM

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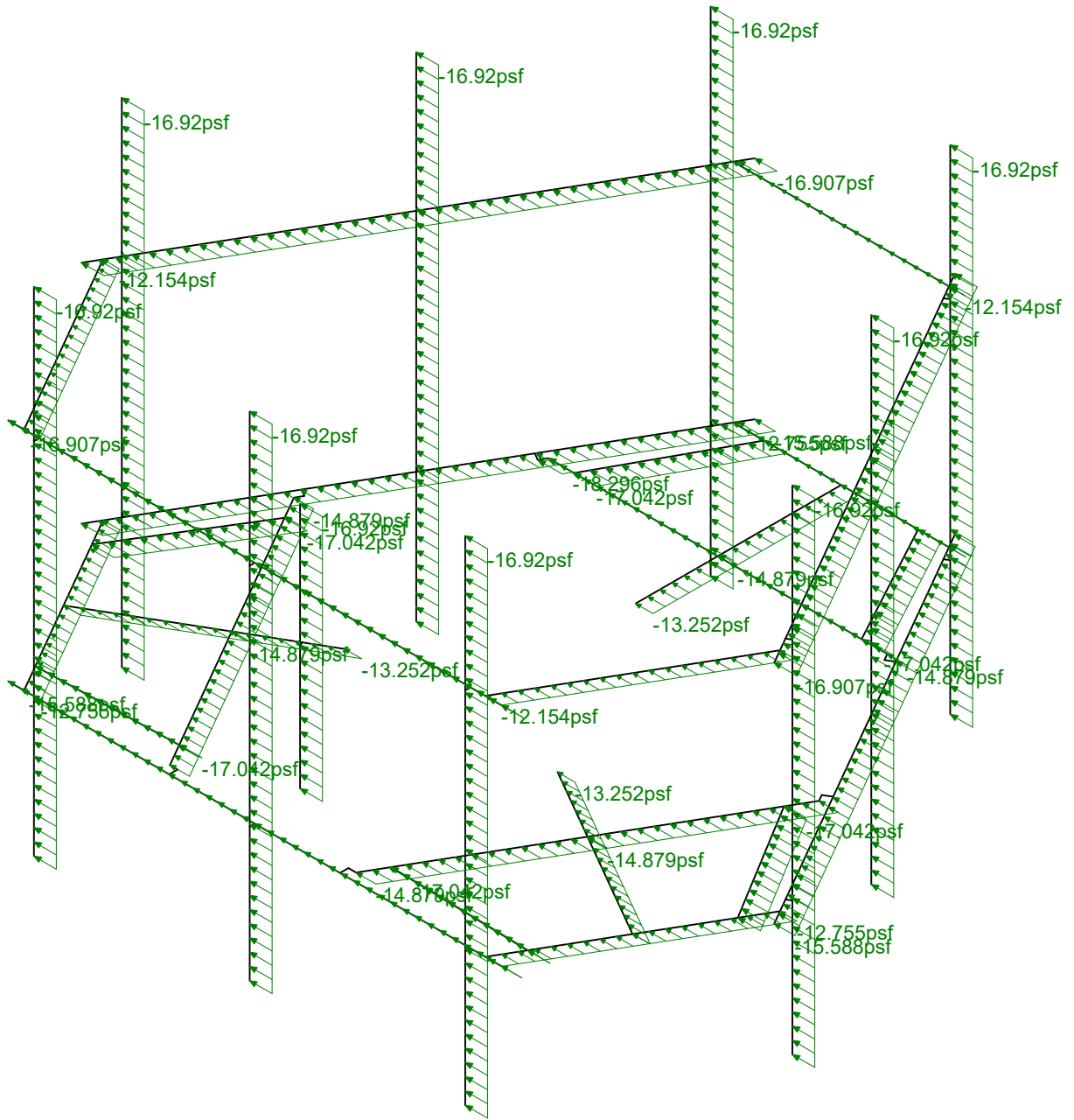
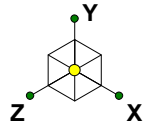


Loads: BLC 29, Distr. Ice Wind Load Z

Infinigy Engineering
AK
1197-F0001-B

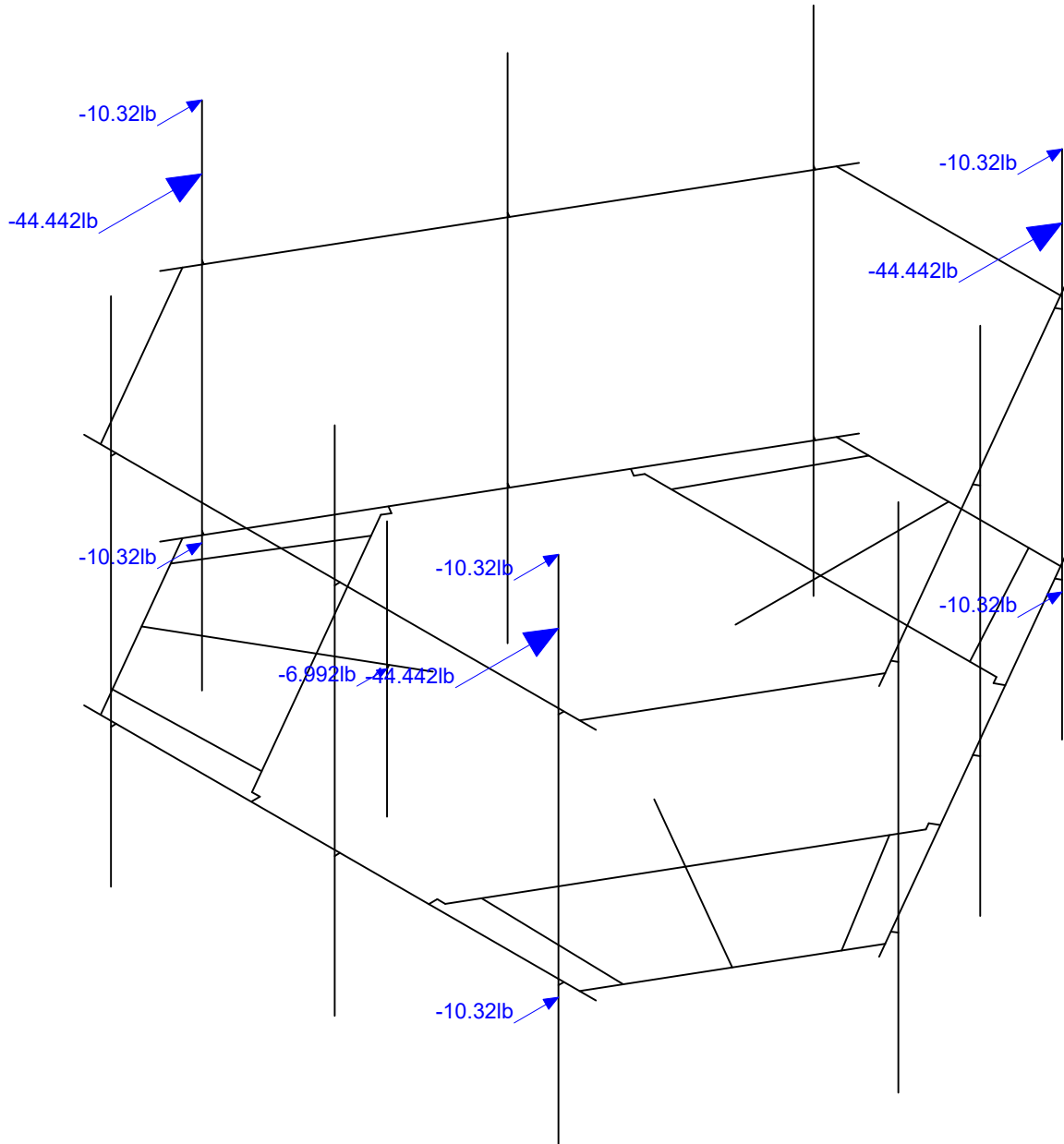
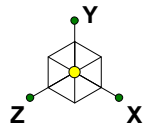
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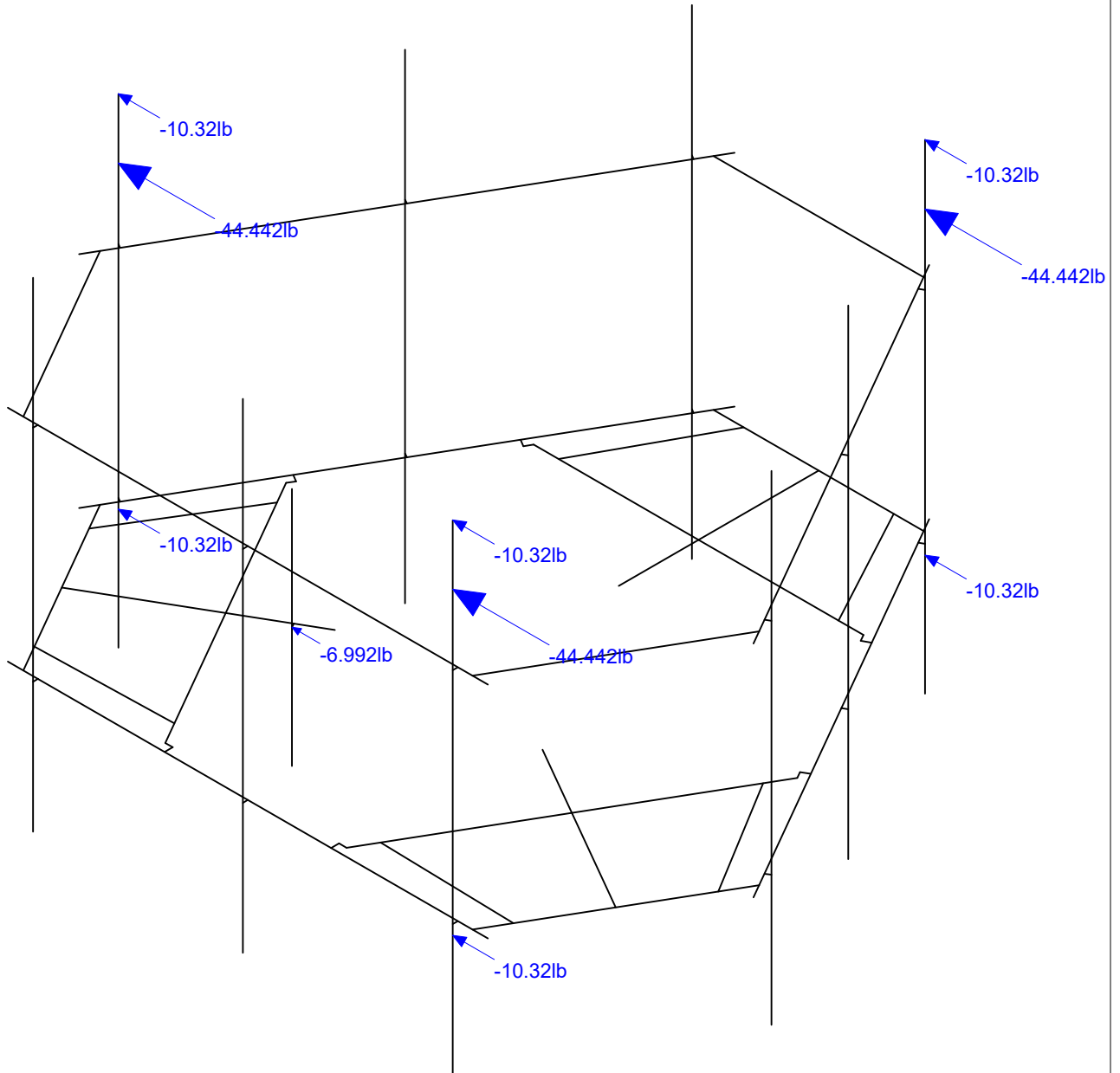
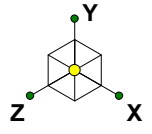
Loads: BLC 30, Distr. Ice Wind Load X

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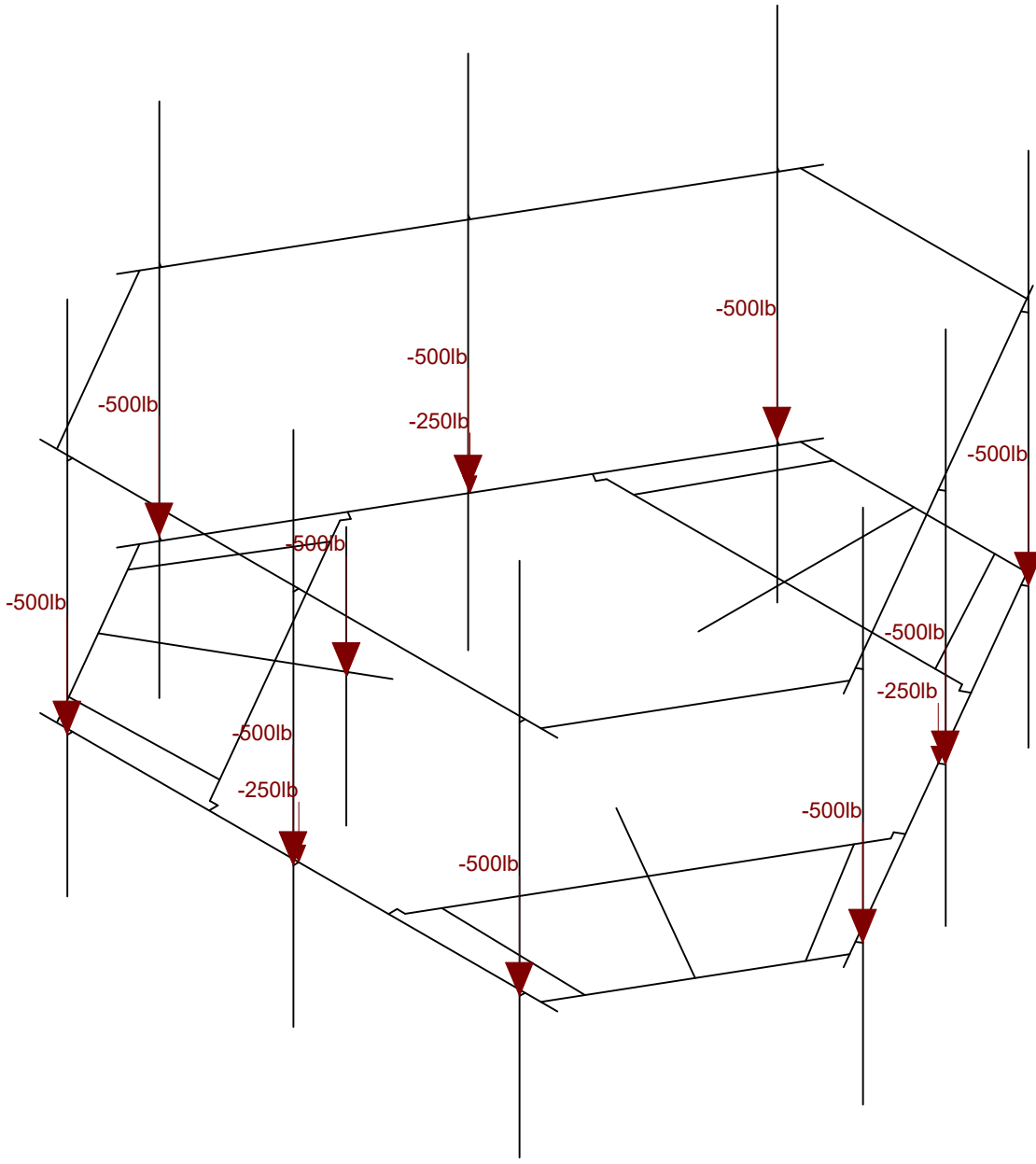
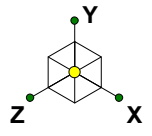
Loads: BLC 31, Seismic Load Z
Envelope Only Solution

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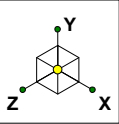
Loads: BLC 32, Seismic Load X
Envelope Only Solution

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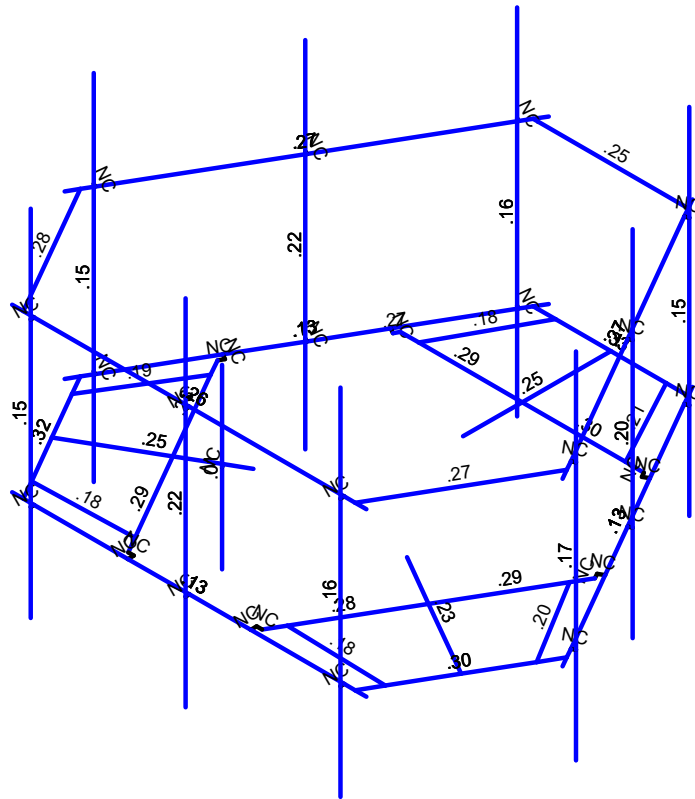


Loads: LL - Live Load
Envelope Only Solution

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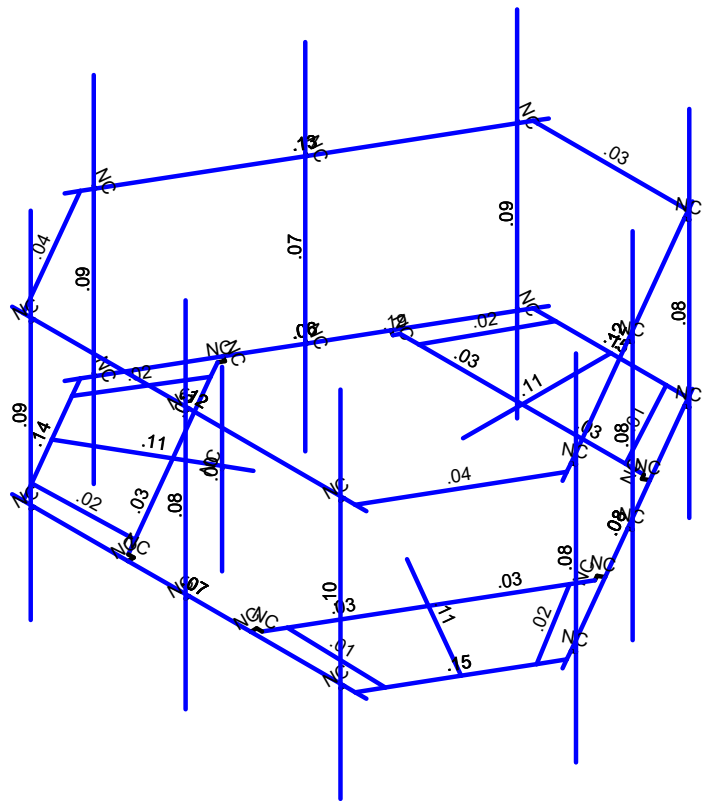
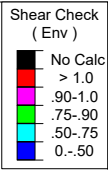
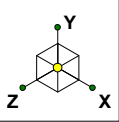


Code Check (Env)	
Black	No Calc
Red	> 1.0
Pink	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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1197-F0001-B		BOHVN00132A_loaded.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering	BOHVN00132A	Shear Check
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Program Inputs

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

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	138.77	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	115.00	ft
Tower Height AGL:	149.00	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):	0.995	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_H):	1.000	

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

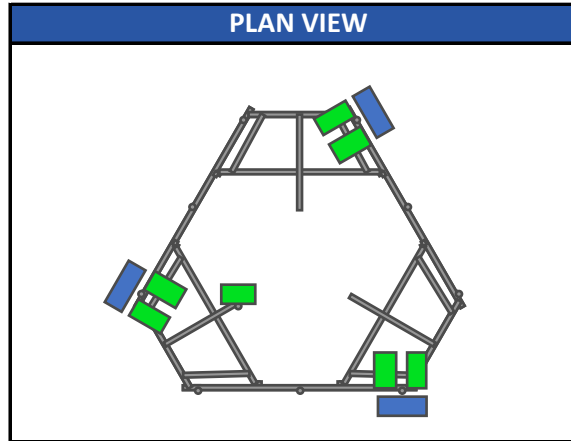
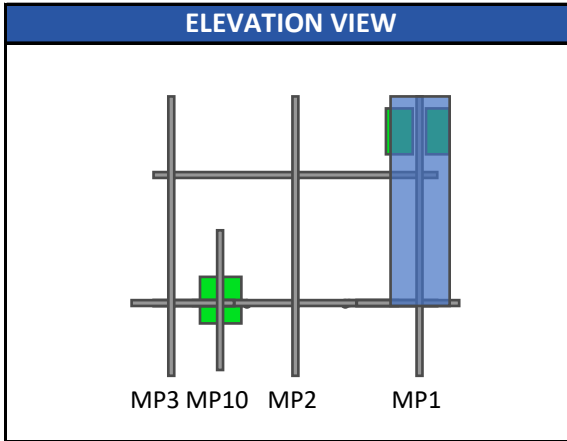
WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	120	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1	in
Flat Pressure:	90.836	psf
Round Pressure:	54.501	psf
Ice Wind Pressure:	9.462	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.200	g
1-Second Accel. (S_1):	0.053	g
Short-Period Design (S_{DS}):	0.213	
1-Second Design (S_{D1}):	0.085	
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 Load Calculator V2.1.7

Program Inputs



Infinigy Load Calculator V2.1.7

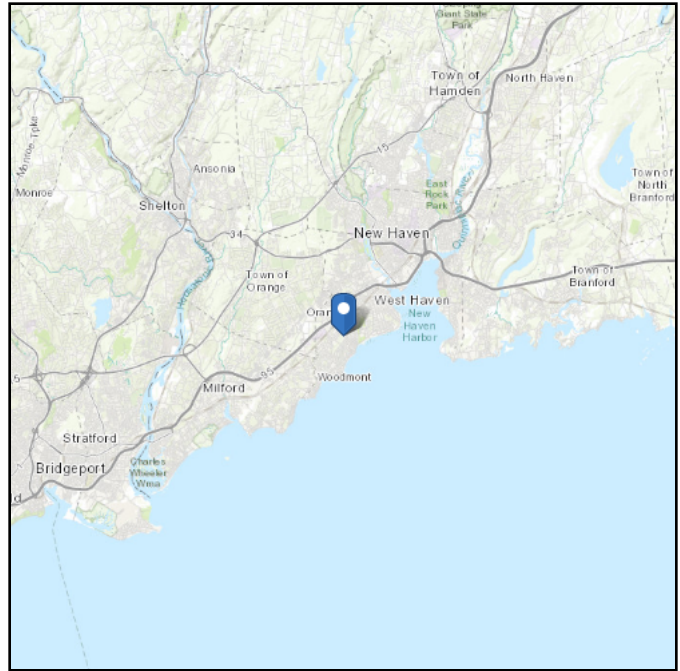
APPURTENANCE INFORMATION												
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft ²)	EPA_T (ft ²)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)	
JMA WIRELESS MX08FRO665-21	115.0	3	0.90	45.42	8.01	3.21	327.42	131.21	64.50	20.64	MP1	
FUJITSU TA08025-B605	115.0	3	0.90	45.42	1.96	1.19	80.26	48.61	74.95	23.98	MP1	
FUJITSU TA08025-B604	115.0	3	0.90	45.42	1.96	1.03	80.26	42.22	63.93	20.46	MP1	
RAYCAP RDIDC-9181-PF-48	115.0	1	0.90	45.42	1.87	1.07	76.30	43.60	21.85	6.99	MP10	

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 138.77 ft (NAVD 88)
Latitude: 41.256403
Longitude: -72.972361



Wind

Results:

Wind Speed:	120 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	91 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Tue Sep 14 2021

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

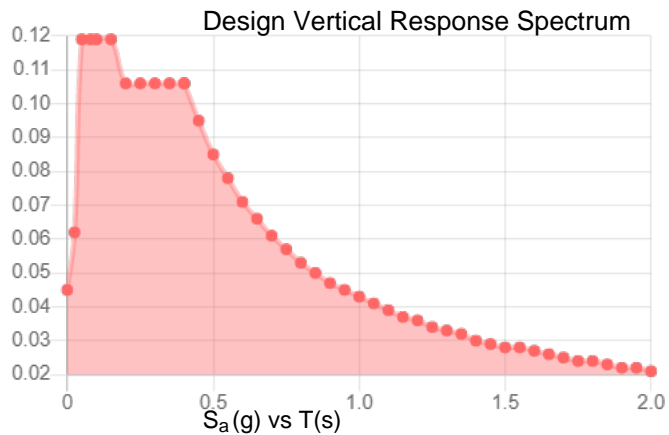
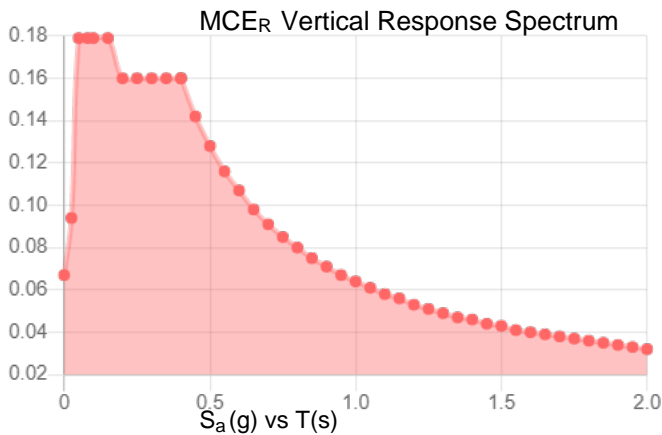
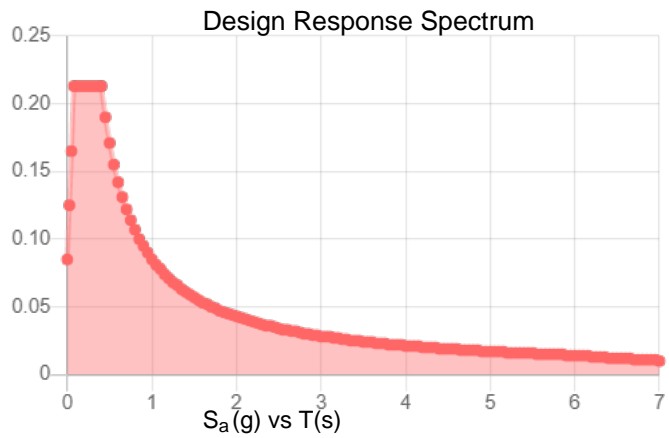
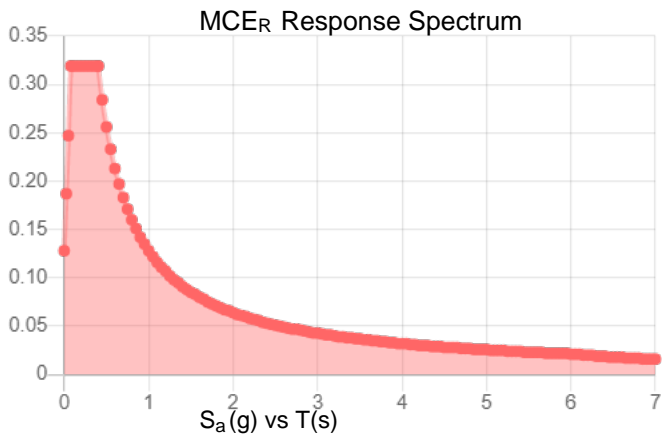
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.2	S_{D1} :	0.085
S_1 :	0.053	T_L :	6
F_a :	1.6	PGA :	0.112
F_v :	2.4	PGA _M :	0.176
S_{MS} :	0.319	F_{PGA} :	1.577
S_{M1} :	0.128	I_e :	1
S_{DS} :	0.213	C_v :	0.7

Seismic Design Category B



Data Accessed: Tue Sep 14 2021
Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.00 in.

Concurrent Temperature: 15 F

Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Tue Sep 14 2021

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

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

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Member Primary Data

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

Member Primary Data (Continued)

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

Hot Rolled Steel Design Parameters

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

Member Advanced Data

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

Member Advanced Data (Continued)

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

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		30	36.1	0
3	Total General		30	36.1	0
4					
5	Hot Rolled Steel				
6	A1011 36 Ksi	C3.38x2.06x0.25	6	198	98.255
7	A1011 36 Ksi	PL6.5x0.375	3	126	87.09
8	A1011 36 Ksi	L6.6x4.46x0.25	3	126	96.558
9	A36 Gr.36	PL 2.375x0.5	1	1.5	.505
10	A500 GR.C	2.88x0.120	3	288	84.974
11	A500 GR.C	HSS4X4X6	3	120	162.653
12	A500 GR.C	Pipe3.5x0.165	3	288	141.202
13	A500 GR.C	PIPE 2.5	10	912	416.364
14	A529 Gr. 50	L2x2x4	6	163.8	43.838
15	Total HR Steel		38	2223.3	1131.439

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Corner Plates	PL6.5x0.375	Beam	None	A1011 36 Ksi	Typical	2.438	.029	8.582	.11
2	6"x0.37" Plate	Plate 6x.37	Beam	None	A1011 36 Ksi	Typical	2.22	.025	6.66	.097
3	Grating Angle	L2x2x4	Beam	None	A529 Gr. 50	Typical	.944	.346	.346	.021
4	Face Pipes(3.5x.16)	Pipe3.5x0.1...	Beam	None	A500 GR.C	Typical	1.729	2.409	2.409	4.819
5	Antenna Pipes	PIPE 2.5	Beam	None	A500 GR.C	Typical	1.61	1.45	1.45	2.89
6	Channel(3.38x2.06)	C3.38x2.06...	Beam	None	A1011 36 Ksi	Typical	1.75	.715	3.026	.034
7	Square Tubing	HSS4X4X6	Beam	None	A500 GR.C	Typical	4.78	10.3	10.3	17.5
8	Handrail Connector	L6.6x4.46x...	Beam	None	A1011 36 Ksi	Typical	2.703	4.759	12.473	.055
9	Handrail	2.88x0.120	Beam	None	A500 GR.C	Typical	1.04	.993	.993	1.985

Basic Load Cases

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

Basic Load Cases (Continued)

BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distrib...	Area(Me...	Surface(...
8 Wind Load AZI 180	None					26			
9 Wind Load AZI 210	None					26			
10 Wind Load AZI 240	None					26			
11 Wind Load AZI 270	None					26			
12 Wind Load AZI 300	None					26			
13 Wind Load AZI 330	None					26			
14 Distr. Wind Load Z	WLZ						68		
15 Distr. Wind Load X	WLX						68		
16 Ice Weight	OL1					13	68	3	
17 Ice Wind Load AZI 0	OL2					26			
18 Ice Wind Load AZI 30	None					26			
19 Ice Wind Load AZI 60	None					26			
20 Ice Wind Load AZI 90	OL3					26			
21 Ice Wind Load AZI 120	None					26			
22 Ice Wind Load AZI 150	None					26			
23 Ice Wind Load AZI 180	None					26			
24 Ice Wind Load AZI 210	None					26			
25 Ice Wind Load AZI 240	None					26			
26 Ice Wind Load AZI 270	None					26			
27 Ice Wind Load AZI 300	None					26			
28 Ice Wind Load AZI 330	None					26			
29 Distr. Ice Wind Load Z	OL2						68		
30 Distr. Ice Wind Load X	OL3						68		
31 Seismic Load Z	ELZ			-0.32		13			
32 Seismic Load X	ELX	-0.32				13			
33 Service Live Loads	LL				3				
34 Maintenance Load 1	LL				1				
35 Maintenance Load 2	LL				1				
36 Maintenance Load 3	LL				1				
37 Maintenance Load 4	LL				1				
38 Maintenance Load 5	LL				1				
39 Maintenance Load 6	LL				1				
40 Maintenance Load 7	LL				1				
41 Maintenance Load 8	LL				1				
42 Maintenance Load 9	LL				1				
43 Maintenance Load 10	LL				1				
44 BLC 1 Transient Area Loads	None						9		
45 BLC 16 Transient Area Loads	None						9		

Load Combinations

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

Load Combinations (Continued)

Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
15	0.9DL + 1WL AZI 30	Y...	Y		1	.9	3	1	14	.866	15	.5									
16	0.9DL + 1WL AZI 60	Y...	Y		1	.9	4	1	14	.5	15	.866									
17	0.9DL + 1WL AZI 90	Y...	Y		1	.9	5	1	14		15	1									
18	0.9DL + 1WL AZI 120	Y...	Y		1	.9	6	1	14	-.5	15	.866									
19	0.9DL + 1WL AZI 150	Y...	Y		1	.9	7	1	14	-.8	15	.5									
20	0.9DL + 1WL AZI 180	Y...	Y		1	.9	8	1	14	-1	15										
21	0.9DL + 1WL AZI 210	Y...	Y		1	.9	9	1	14	-.8	15	-.5									
22	0.9DL + 1WL AZI 240	Y...	Y		1	.9	10	1	14	-.5	15	-.8									
23	0.9DL + 1WL AZI 270	Y...	Y		1	.9	11	1	14		15	-1									
24	0.9DL + 1WL AZI 300	Y...	Y		1	.9	12	1	14	.5	15	-.8									
25	0.9DL + 1WL AZI 330	Y...	Y		1	.9	13	1	14	.866	15	-.5									
26	1.2D + 1.0Di	Y...	Y		1	1.2	16	1													
27	1.2D + 1.0Di + 1.0Wi AZI 0	Y...	Y		1	1.2	16	1	17	1	29	1	30								
28	1.2D + 1.0Di + 1.0Wi AZI 30	Y...	Y		1	1.2	16	1	18	1	29	.866	30	.5							
29	1.2D + 1.0Di + 1.0Wi AZI 60	Y...	Y		1	1.2	16	1	19	1	29	.5	30	.866							
30	1.2D + 1.0Di + 1.0Wi AZI 90	Y...	Y		1	1.2	16	1	20	1	29		30	1							
31	1.2D + 1.0Di + 1.0Wi AZI 1...	Y...	Y		1	1.2	16	1	21	1	29	-.5	30	.866							
32	1.2D + 1.0Di + 1.0Wi AZI 1...	Y...	Y		1	1.2	16	1	22	1	29	-.8	30	.5							
33	1.2D + 1.0Di + 1.0Wi AZI 1...	Y...	Y		1	1.2	16	1	23	1	29	-1	30								
34	1.2D + 1.0Di + 1.0Wi AZI 2...	Y...	Y		1	1.2	16	1	24	1	29	-.8	30	-.5							
35	1.2D + 1.0Di + 1.0Wi AZI 2...	Y...	Y		1	1.2	16	1	25	1	29	-.5	30	-.8							
36	1.2D + 1.0Di + 1.0Wi AZI 2...	Y...	Y		1	1.2	16	1	26	1	29		30	-1							
37	1.2D + 1.0Di + 1.0Wi AZI 3...	Y...	Y		1	1.2	16	1	27	1	29	.5	30	-.8							
38	1.2D + 1.0Di + 1.0Wi AZI 3...	Y...	Y		1	1.2	16	1	28	1	29	.866	30	-.5							
39	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.243	31	1	32												
40	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.243	31	.866	32	.5											
41	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.243	31	.5	32	.866											
42	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.243	31		32	1											
43	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.243	31	-.5	32	.866											
44	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.243	31	-.866	32	.5											
45	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.243	31	-1	32												
46	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.243	31	-.866	32	-.5											
47	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.243	31	-.5	32	-.8											
48	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.243	31		32	-1											
49	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.243	31	.5	32	-.8											
50	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.243	31	.866	32	-.5											
51	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.857	31	1	32												
52	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.857	31	.866	32	.5											
53	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.857	31	.5	32	.866											
54	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.857	31		32	1											
55	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.857	31	-.5	32	.866											
56	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.857	31	-.866	32	.5											
57	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.857	31	-1	32												
58	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.857	31	-.866	32	-.5											
59	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.857	31	-.5	32	-.8											
60	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.857	31		32	-1											
61	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.857	31	.5	32	-.8											
62	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.857	31	.866	32	-.5											
63	1.0DL + 1.5LL + 1.0SWL (...)	Y...	Y		1	1	2	.25	14	.25	15		33	1.5							
64	1.0DL + 1.5LL + 1.0SWL (...)	Y...	Y		1	1	3	.25	14	.216	15	.125	33	1.5							
65	1.0DL + 1.5LL + 1.0SWL (...)	Y...	Y		1	1	4	.25	14	.125	15	.216	33	1.5							
66	1.0DL + 1.5LL + 1.0SWL (...)	Y...	Y		1	1	5	.25	14		15	.25	33	1.5							
67	1.0DL + 1.5LL + 1.0SWL (...)	Y...	Y		1	1	6	.25	14	-.1	15	.216	33	1.5							
68	1.0DL + 1.5LL + 1.0SWL (...)	Y...	Y		1	1	7	.25	14	-.2	15	.125	33	1.5							
69	1.0DL + 1.5LL + 1.0SWL (...)	Y...	Y		1	1	8	.25	14	-.25	15		33	1.5							
70	1.0DL + 1.5LL + 1.0SWL (...)	Y...	Y		1	1	9	.25	14	-.2	15	-.1	33	1.5							
71	1.0DL + 1.5LL + 1.0SWL (...)	Y...	Y		1	1	10	.25	14	-.1	15	-.2	33	1.5							

Load Combinations (Continued)

	Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...	Fac...	B...											
186	1.2DL + 1.5LM-MP10 + 1S...	Y	Y		1	1.2	43	1.5	4	.063	14.031	15.054																																		
187	1.2DL + 1.5LM-MP10 + 1S...	Y	Y		1	1.2	43	1.5	5	.063	14	15.063																																		
188	1.2DL + 1.5LM-MP10 + 1S...	Y	Y		1	1.2	43	1.5	6	.063	14-.0...	15.054																																		
189	1.2DL + 1.5LM-MP10 + 1S...	Y	Y		1	1.2	43	1.5	7	.063	14-.0...	15.031																																		
190	1.2DL + 1.5LM-MP10 + 1S...	Y	Y		1	1.2	43	1.5	8	.063	14-.0...	15																																		
191	1.2DL + 1.5LM-MP10 + 1S...	Y	Y		1	1.2	43	1.5	9	.063	14-.0...	15-.0...																																		
192	1.2DL + 1.5LM-MP10 + 1S...	Y	Y		1	1.2	43	1.5	10	.063	14-.0...	15-.0...																																		
193	1.2DL + 1.5LM-MP10 + 1S...	Y	Y		1	1.2	43	1.5	11	.063	14	15-.0...																																		
194	1.2DL + 1.5LM-MP10 + 1S...	Y	Y		1	1.2	43	1.5	12	.063	14.031	15-.0...																																		

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	P24	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	P13	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	P1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-...]	LC	MZ [lb-ft]	LC
1	P24	max	1002.017	6	1708.2...	10	1526.184	13	1044.867	16	1931.2...	19	3733.3...	10
2		min	-984.573	24	-570.566	16	-1518.215	19	-3201.584	84	-1948.11	13	-1818...	16
3	P13	max	1269.198	4	1880.4...	31	1661.941	15	974.501	24	2170.9...	15	1638.4...	24
4		min	-1267.88	22	-457.739	24	-1669.015	9	-2831.4	92	-2216....	9	-4663.32	6
5	P1	max	1575.506	17	1790.0...	2	813.304	2	4928.196	2	1789.6...	11	1585.7...	115
6		min	-1594.461	11	-563.815	20	-819.679	8	-2090.865	20	-1737....	17	-864.245	157
7	Totals:	max	3672.182	5	4462.6...	33	3886.436	14						
8		min	-3672.18	23	1544.07	51	-3886.439	8						

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	Y	-32.25	0
2	MP1	Y	-32.25	72
3	MP1	Y	-74.95	12
4	MP1	Y	-63.93	12
5	MP10	Y	-21.85	24
6	MP4	Y	-32.25	0
7	MP4	Y	-32.25	72
8	MP4	Y	-74.95	12
9	MP4	Y	-63.93	12
10	MP7	Y	-32.25	0
11	MP7	Y	-32.25	72
12	MP7	Y	-74.95	12
13	MP7	Y	-63.93	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in, %]
1	MP1	X	0	0
2	MP1	Z	-163.71	0
3	MP1	X	0	72
4	MP1	Z	-163.71	72
5	MP1	X	0	12
6	MP1	Z	-80.26	12
7	MP1	X	0	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
8	MP1	Z	-80.26	12
9	MP10	X	0	24
10	MP10	Z	-76.3	24
11	MP4	X	0	0
12	MP4	Z	-90.13	0
13	MP4	X	0	72
14	MP4	Z	-90.13	72
15	MP4	X	0	12
16	MP4	Z	-56.52	12
17	MP4	X	0	12
18	MP4	Z	-51.73	12
19	MP7	X	0	0
20	MP7	Z	-90.13	0
21	MP7	X	0	72
22	MP7	Z	-90.13	72
23	MP7	X	0	12
24	MP7	Z	-56.52	12
25	MP7	X	0	12
26	MP7	Z	-51.73	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-69.59	0
2	MP1	Z	-120.54	0
3	MP1	X	-69.59	72
4	MP1	Z	-120.54	72
5	MP1	X	-36.17	12
6	MP1	Z	-62.65	12
7	MP1	X	-35.38	12
8	MP1	Z	-61.27	12
9	MP10	X	-34.06	24
10	MP10	Z	-59	24
11	MP4	X	-69.59	0
12	MP4	Z	-120.54	0
13	MP4	X	-69.59	72
14	MP4	Z	-120.54	72
15	MP4	X	-36.17	12
16	MP4	Z	-62.65	12
17	MP4	X	-35.38	12
18	MP4	Z	-61.27	12
19	MP7	X	-32.8	0
20	MP7	Z	-56.82	0
21	MP7	X	-32.8	72
22	MP7	Z	-56.82	72
23	MP7	X	-24.3	12
24	MP7	Z	-42.09	12
25	MP7	X	-21.11	12
26	MP7	Z	-36.57	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-78.06	0
2	MP1	Z	-45.07	0
3	MP1	X	-78.06	72
4	MP1	Z	-45.07	72
5	MP1	X	-48.95	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
6	MP1	Z	-28.26	12
7	MP1	X	-44.8	12
8	MP1	Z	-25.87	12
9	MP10	X	-44.84	24
10	MP10	Z	-25.89	24
11	MP4	X	-141.78	0
12	MP4	Z	-81.85	0
13	MP4	X	-141.78	72
14	MP4	Z	-81.85	72
15	MP4	X	-69.51	12
16	MP4	Z	-40.13	12
17	MP4	X	-69.51	12
18	MP4	Z	-40.13	12
19	MP7	X	-78.06	0
20	MP7	Z	-45.07	0
21	MP7	X	-78.06	72
22	MP7	Z	-45.07	72
23	MP7	X	-48.95	12
24	MP7	Z	-28.26	12
25	MP7	X	-44.8	12
26	MP7	Z	-25.87	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-65.61	0
2	MP1	Z	0	0
3	MP1	X	-65.61	72
4	MP1	Z	0	72
5	MP1	X	-48.61	12
6	MP1	Z	0	12
7	MP1	X	-42.22	12
8	MP1	Z	0	12
9	MP10	X	-43.6	24
10	MP10	Z	0	24
11	MP4	X	-139.18	0
12	MP4	Z	0	0
13	MP4	X	-139.18	72
14	MP4	Z	0	72
15	MP4	X	-72.35	12
16	MP4	Z	0	12
17	MP4	X	-70.75	12
18	MP4	Z	0	12
19	MP7	X	-139.18	0
20	MP7	Z	0	0
21	MP7	X	-139.18	72
22	MP7	Z	0	72
23	MP7	X	-72.35	12
24	MP7	Z	0	12
25	MP7	X	-70.75	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	-78.06	0
2	MP1	Z	45.07	0
3	MP1	X	-78.06	72

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
4	MP1	Z	45.07	72
5	MP1	X	-48.95	12
6	MP1	Z	28.26	12
7	MP1	X	-44.8	12
8	MP1	Z	25.87	12
9	MP10	X	-44.84	24
10	MP10	Z	25.89	24
11	MP4	X	-78.06	0
12	MP4	Z	45.07	0
13	MP4	X	-78.06	72
14	MP4	Z	45.07	72
15	MP4	X	-48.95	12
16	MP4	Z	28.26	12
17	MP4	X	-44.8	12
18	MP4	Z	25.87	12
19	MP7	X	-141.78	0
20	MP7	Z	81.85	0
21	MP7	X	-141.78	72
22	MP7	Z	81.85	72
23	MP7	X	-69.51	12
24	MP7	Z	40.13	12
25	MP7	X	-69.51	12
26	MP7	Z	40.13	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-69.59	0
2	MP1	Z	120.54	0
3	MP1	X	-69.59	72
4	MP1	Z	120.54	72
5	MP1	X	-36.17	12
6	MP1	Z	62.65	12
7	MP1	X	-35.38	12
8	MP1	Z	61.27	12
9	MP10	X	-34.06	24
10	MP10	Z	59	24
11	MP4	X	-32.8	0
12	MP4	Z	56.82	0
13	MP4	X	-32.8	72
14	MP4	Z	56.82	72
15	MP4	X	-24.3	12
16	MP4	Z	42.09	12
17	MP4	X	-21.11	12
18	MP4	Z	36.57	12
19	MP7	X	-69.59	0
20	MP7	Z	120.54	0
21	MP7	X	-69.59	72
22	MP7	Z	120.54	72
23	MP7	X	-36.17	12
24	MP7	Z	62.65	12
25	MP7	X	-35.38	12
26	MP7	Z	61.27	12

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

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

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
2	MP1	Z	163.71	0
3	MP1	X	0	72
4	MP1	Z	163.71	72
5	MP1	X	0	12
6	MP1	Z	80.26	12
7	MP1	X	0	12
8	MP1	Z	80.26	12
9	MP10	X	0	24
10	MP10	Z	76.3	24
11	MP4	X	0	0
12	MP4	Z	90.13	0
13	MP4	X	0	72
14	MP4	Z	90.13	72
15	MP4	X	0	12
16	MP4	Z	56.52	12
17	MP4	X	0	12
18	MP4	Z	51.73	12
19	MP7	X	0	0
20	MP7	Z	90.13	0
21	MP7	X	0	72
22	MP7	Z	90.13	72
23	MP7	X	0	12
24	MP7	Z	56.52	12
25	MP7	X	0	12
26	MP7	Z	51.73	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	69.59	0
2	MP1	Z	120.54	0
3	MP1	X	69.59	72
4	MP1	Z	120.54	72
5	MP1	X	36.17	12
6	MP1	Z	62.65	12
7	MP1	X	35.38	12
8	MP1	Z	61.27	12
9	MP10	X	34.06	24
10	MP10	Z	59	24
11	MP4	X	69.59	0
12	MP4	Z	120.54	0
13	MP4	X	69.59	72
14	MP4	Z	120.54	72
15	MP4	X	36.17	12
16	MP4	Z	62.65	12
17	MP4	X	35.38	12
18	MP4	Z	61.27	12
19	MP7	X	32.8	0
20	MP7	Z	56.82	0
21	MP7	X	32.8	72
22	MP7	Z	56.82	72
23	MP7	X	24.3	12
24	MP7	Z	42.09	12
25	MP7	X	21.11	12
26	MP7	Z	36.57	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	78.06	0
2	MP1	Z	45.07	0
3	MP1	X	78.06	72
4	MP1	Z	45.07	72
5	MP1	X	48.95	12
6	MP1	Z	28.26	12
7	MP1	X	44.8	12
8	MP1	Z	25.87	12
9	MP10	X	44.84	24
10	MP10	Z	25.89	24
11	MP4	X	141.78	0
12	MP4	Z	81.85	0
13	MP4	X	141.78	72
14	MP4	Z	81.85	72
15	MP4	X	69.51	12
16	MP4	Z	40.13	12
17	MP4	X	69.51	12
18	MP4	Z	40.13	12
19	MP7	X	78.06	0
20	MP7	Z	45.07	0
21	MP7	X	78.06	72
22	MP7	Z	45.07	72
23	MP7	X	48.95	12
24	MP7	Z	28.26	12
25	MP7	X	44.8	12
26	MP7	Z	25.87	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	65.61	0
2	MP1	Z	0	0
3	MP1	X	65.61	72
4	MP1	Z	0	72
5	MP1	X	48.61	12
6	MP1	Z	0	12
7	MP1	X	42.22	12
8	MP1	Z	0	12
9	MP10	X	43.6	24
10	MP10	Z	0	24
11	MP4	X	139.18	0
12	MP4	Z	0	0
13	MP4	X	139.18	72
14	MP4	Z	0	72
15	MP4	X	72.35	12
16	MP4	Z	0	12
17	MP4	X	70.75	12
18	MP4	Z	0	12
19	MP7	X	139.18	0
20	MP7	Z	0	0
21	MP7	X	139.18	72
22	MP7	Z	0	72
23	MP7	X	72.35	12
24	MP7	Z	0	12
25	MP7	X	70.75	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	78.06	0
2	MP1	Z	-45.07	0
3	MP1	X	78.06	72
4	MP1	Z	-45.07	72
5	MP1	X	48.95	12
6	MP1	Z	-28.26	12
7	MP1	X	44.8	12
8	MP1	Z	-25.87	12
9	MP10	X	44.84	24
10	MP10	Z	-25.89	24
11	MP4	X	78.06	0
12	MP4	Z	-45.07	0
13	MP4	X	78.06	72
14	MP4	Z	-45.07	72
15	MP4	X	48.95	12
16	MP4	Z	-28.26	12
17	MP4	X	44.8	12
18	MP4	Z	-25.87	12
19	MP7	X	141.78	0
20	MP7	Z	-81.85	0
21	MP7	X	141.78	72
22	MP7	Z	-81.85	72
23	MP7	X	69.51	12
24	MP7	Z	-40.13	12
25	MP7	X	69.51	12
26	MP7	Z	-40.13	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	69.59	0
2	MP1	Z	-120.54	0
3	MP1	X	69.59	72
4	MP1	Z	-120.54	72
5	MP1	X	36.17	12
6	MP1	Z	-62.65	12
7	MP1	X	35.38	12
8	MP1	Z	-61.27	12
9	MP10	X	34.06	24
10	MP10	Z	-59	24
11	MP4	X	32.8	0
12	MP4	Z	-56.82	0
13	MP4	X	32.8	72
14	MP4	Z	-56.82	72
15	MP4	X	24.3	12
16	MP4	Z	-42.09	12
17	MP4	X	21.11	12
18	MP4	Z	-36.57	12
19	MP7	X	69.59	0
20	MP7	Z	-120.54	0
21	MP7	X	69.59	72
22	MP7	Z	-120.54	72
23	MP7	X	36.17	12
24	MP7	Z	-62.65	12
25	MP7	X	35.38	12
26	MP7	Z	-61.27	12

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	Y	-88.404	0
2	MP1	Y	-88.404	72
3	MP1	Y	-44.728	12
4	MP1	Y	-41.847	12
5	MP10	Y	-40.773	24
6	MP4	Y	-88.404	0
7	MP4	Y	-88.404	72
8	MP4	Y	-44.728	12
9	MP4	Y	-41.847	12
10	MP7	Y	-88.404	0
11	MP7	Y	-88.404	72
12	MP7	Y	-44.728	12
13	MP7	Y	-41.847	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	-21.13	0
3	MP1	X	0	72
4	MP1	Z	-21.13	72
5	MP1	X	0	12
6	MP1	Z	-7.65	12
7	MP1	X	0	12
8	MP1	Z	-7.65	12
9	MP10	X	0	24
10	MP10	Z	-7.36	24
11	MP4	X	0	0
12	MP4	Z	-15.61	0
13	MP4	X	0	72
14	MP4	Z	-15.61	72
15	MP4	X	0	12
16	MP4	Z	-6.43	12
17	MP4	X	0	12
18	MP4	Z	-6.18	12
19	MP7	X	0	0
20	MP7	Z	-15.61	0
21	MP7	X	0	72
22	MP7	Z	-15.61	72
23	MP7	X	0	12
24	MP7	Z	-6.43	12
25	MP7	X	0	12
26	MP7	Z	-6.18	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-9.64	0
2	MP1	Z	-16.7	0
3	MP1	X	-9.64	72
4	MP1	Z	-16.7	72
5	MP1	X	-3.62	12
6	MP1	Z	-6.27	12
7	MP1	X	-3.58	12
8	MP1	Z	-6.2	12
9	MP10	X	-3.49	24
10	MP10	Z	-6.04	24
11	MP4	X	-9.64	0

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
12	MP4	Z	-16.7	0
13	MP4	X	-9.64	72
14	MP4	Z	-16.7	72
15	MP4	X	-3.62	12
16	MP4	Z	-6.27	12
17	MP4	X	-3.58	12
18	MP4	Z	-6.2	12
19	MP7	X	-6.88	0
20	MP7	Z	-11.92	0
21	MP7	X	-6.88	72
22	MP7	Z	-11.92	72
23	MP7	X	-3.01	12
24	MP7	Z	-5.22	12
25	MP7	X	-2.85	12
26	MP7	Z	-4.93	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-13.51	0
2	MP1	Z	-7.8	0
3	MP1	X	-13.51	72
4	MP1	Z	-7.8	72
5	MP1	X	-5.57	12
6	MP1	Z	-3.22	12
7	MP1	X	-5.35	12
8	MP1	Z	-3.09	12
9	MP10	X	-5.37	24
10	MP10	Z	-3.1	24
11	MP4	X	-18.3	0
12	MP4	Z	-10.56	0
13	MP4	X	-18.3	72
14	MP4	Z	-10.56	72
15	MP4	X	-6.62	12
16	MP4	Z	-3.82	12
17	MP4	X	-6.62	12
18	MP4	Z	-3.82	12
19	MP7	X	-13.51	0
20	MP7	Z	-7.8	0
21	MP7	X	-13.51	72
22	MP7	Z	-7.8	72
23	MP7	X	-5.57	12
24	MP7	Z	-3.22	12
25	MP7	X	-5.35	12
26	MP7	Z	-3.09	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-13.76	0
2	MP1	Z	0	0
3	MP1	X	-13.76	72
4	MP1	Z	0	72
5	MP1	X	-6.03	12
6	MP1	Z	0	12
7	MP1	X	-5.69	12
8	MP1	Z	0	12
9	MP10	X	-5.81	24

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
10	MP10	Z	0	24
11	MP4	X	-19.29	0
12	MP4	Z	0	0
13	MP4	X	-19.29	72
14	MP4	Z	0	72
15	MP4	X	-7.24	12
16	MP4	Z	0	12
17	MP4	X	-7.16	12
18	MP4	Z	0	12
19	MP7	X	-19.29	0
20	MP7	Z	0	0
21	MP7	X	-19.29	72
22	MP7	Z	0	72
23	MP7	X	-7.24	12
24	MP7	Z	0	12
25	MP7	X	-7.16	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	-13.51	0
2	MP1	Z	7.8	0
3	MP1	X	-13.51	72
4	MP1	Z	7.8	72
5	MP1	X	-5.57	12
6	MP1	Z	3.22	12
7	MP1	X	-5.35	12
8	MP1	Z	3.09	12
9	MP10	X	-5.37	24
10	MP10	Z	3.1	24
11	MP4	X	-13.51	0
12	MP4	Z	7.8	0
13	MP4	X	-13.51	72
14	MP4	Z	7.8	72
15	MP4	X	-5.57	12
16	MP4	Z	3.22	12
17	MP4	X	-5.35	12
18	MP4	Z	3.09	12
19	MP7	X	-18.3	0
20	MP7	Z	10.56	0
21	MP7	X	-18.3	72
22	MP7	Z	10.56	72
23	MP7	X	-6.62	12
24	MP7	Z	3.82	12
25	MP7	X	-6.62	12
26	MP7	Z	3.82	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-9.64	0
2	MP1	Z	16.7	0
3	MP1	X	-9.64	72
4	MP1	Z	16.7	72
5	MP1	X	-3.62	12
6	MP1	Z	6.27	12
7	MP1	X	-3.58	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
8	MP1	Z	6.2	12
9	MP10	X	-3.49	24
10	MP10	Z	6.04	24
11	MP4	X	-6.88	0
12	MP4	Z	11.92	0
13	MP4	X	-6.88	72
14	MP4	Z	11.92	72
15	MP4	X	-3.01	12
16	MP4	Z	5.22	12
17	MP4	X	-2.85	12
18	MP4	Z	4.93	12
19	MP7	X	-9.64	0
20	MP7	Z	16.7	0
21	MP7	X	-9.64	72
22	MP7	Z	16.7	72
23	MP7	X	-3.62	12
24	MP7	Z	6.27	12
25	MP7	X	-3.58	12
26	MP7	Z	6.2	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	21.13	0
3	MP1	X	0	72
4	MP1	Z	21.13	72
5	MP1	X	0	12
6	MP1	Z	7.65	12
7	MP1	X	0	12
8	MP1	Z	7.65	12
9	MP10	X	0	24
10	MP10	Z	7.36	24
11	MP4	X	0	0
12	MP4	Z	15.61	0
13	MP4	X	0	72
14	MP4	Z	15.61	72
15	MP4	X	0	12
16	MP4	Z	6.43	12
17	MP4	X	0	12
18	MP4	Z	6.18	12
19	MP7	X	0	0
20	MP7	Z	15.61	0
21	MP7	X	0	72
22	MP7	Z	15.61	72
23	MP7	X	0	12
24	MP7	Z	6.43	12
25	MP7	X	0	12
26	MP7	Z	6.18	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	9.64	0
2	MP1	Z	16.7	0
3	MP1	X	9.64	72
4	MP1	Z	16.7	72
5	MP1	X	3.62	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
6	MP1	Z	6.27	12
7	MP1	X	3.58	12
8	MP1	Z	6.2	12
9	MP10	X	3.49	24
10	MP10	Z	6.04	24
11	MP4	X	9.64	0
12	MP4	Z	16.7	0
13	MP4	X	9.64	72
14	MP4	Z	16.7	72
15	MP4	X	3.62	12
16	MP4	Z	6.27	12
17	MP4	X	3.58	12
18	MP4	Z	6.2	12
19	MP7	X	6.88	0
20	MP7	Z	11.92	0
21	MP7	X	6.88	72
22	MP7	Z	11.92	72
23	MP7	X	3.01	12
24	MP7	Z	5.22	12
25	MP7	X	2.85	12
26	MP7	Z	4.93	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	13.51	0
2	MP1	Z	7.8	0
3	MP1	X	13.51	72
4	MP1	Z	7.8	72
5	MP1	X	5.57	12
6	MP1	Z	3.22	12
7	MP1	X	5.35	12
8	MP1	Z	3.09	12
9	MP10	X	5.37	24
10	MP10	Z	3.1	24
11	MP4	X	18.3	0
12	MP4	Z	10.56	0
13	MP4	X	18.3	72
14	MP4	Z	10.56	72
15	MP4	X	6.62	12
16	MP4	Z	3.82	12
17	MP4	X	6.62	12
18	MP4	Z	3.82	12
19	MP7	X	13.51	0
20	MP7	Z	7.8	0
21	MP7	X	13.51	72
22	MP7	Z	7.8	72
23	MP7	X	5.57	12
24	MP7	Z	3.22	12
25	MP7	X	5.35	12
26	MP7	Z	3.09	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	13.76	0
2	MP1	Z	0	0
3	MP1	X	13.76	72

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
4	MP1	Z	0	72
5	MP1	X	6.03	12
6	MP1	Z	0	12
7	MP1	X	5.69	12
8	MP1	Z	0	12
9	MP10	X	5.81	24
10	MP10	Z	0	24
11	MP4	X	19.29	0
12	MP4	Z	0	0
13	MP4	X	19.29	72
14	MP4	Z	0	72
15	MP4	X	7.24	12
16	MP4	Z	0	12
17	MP4	X	7.16	12
18	MP4	Z	0	12
19	MP7	X	19.29	0
20	MP7	Z	0	0
21	MP7	X	19.29	72
22	MP7	Z	0	72
23	MP7	X	7.24	12
24	MP7	Z	0	12
25	MP7	X	7.16	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	13.51	0
2	MP1	Z	-7.8	0
3	MP1	X	13.51	72
4	MP1	Z	-7.8	72
5	MP1	X	5.57	12
6	MP1	Z	-3.22	12
7	MP1	X	5.35	12
8	MP1	Z	-3.09	12
9	MP10	X	5.37	24
10	MP10	Z	-3.1	24
11	MP4	X	13.51	0
12	MP4	Z	-7.8	0
13	MP4	X	13.51	72
14	MP4	Z	-7.8	72
15	MP4	X	5.57	12
16	MP4	Z	-3.22	12
17	MP4	X	5.35	12
18	MP4	Z	-3.09	12
19	MP7	X	18.3	0
20	MP7	Z	-10.56	0
21	MP7	X	18.3	72
22	MP7	Z	-10.56	72
23	MP7	X	6.62	12
24	MP7	Z	-3.82	12
25	MP7	X	6.62	12
26	MP7	Z	-3.82	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	9.64	0

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
2	MP1	Z	-16.7	0
3	MP1	X	9.64	72
4	MP1	Z	-16.7	72
5	MP1	X	3.62	12
6	MP1	Z	-6.27	12
7	MP1	X	3.58	12
8	MP1	Z	-6.2	12
9	MP10	X	3.49	24
10	MP10	Z	-6.04	24
11	MP4	X	6.88	0
12	MP4	Z	-11.92	0
13	MP4	X	6.88	72
14	MP4	Z	-11.92	72
15	MP4	X	3.01	12
16	MP4	Z	-5.22	12
17	MP4	X	2.85	12
18	MP4	Z	-4.93	12
19	MP7	X	9.64	0
20	MP7	Z	-16.7	0
21	MP7	X	9.64	72
22	MP7	Z	-16.7	72
23	MP7	X	3.62	12
24	MP7	Z	-6.27	12
25	MP7	X	3.58	12
26	MP7	Z	-6.2	12

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	Z	-10.32	0
2	MP1	Z	-10.32	72
3	MP1	Z	-23.984	12
4	MP1	Z	-20.458	12
5	MP10	Z	-6.992	24
6	MP4	Z	-10.32	0
7	MP4	Z	-10.32	72
8	MP4	Z	-23.984	12
9	MP4	Z	-20.458	12
10	MP7	Z	-10.32	0
11	MP7	Z	-10.32	72
12	MP7	Z	-23.984	12
13	MP7	Z	-20.458	12

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
1	MP1	X	-10.32	0
2	MP1	X	-10.32	72
3	MP1	X	-23.984	12
4	MP1	X	-20.458	12
5	MP10	X	-6.992	24
6	MP4	X	-10.32	0
7	MP4	X	-10.32	72
8	MP4	X	-23.984	12
9	MP4	X	-20.458	12
10	MP7	X	-10.32	0
11	MP7	X	-10.32	72
12	MP7	X	-23.984	12

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

	Member Label	Direction	Magnitude[lb.lb-ft]	Location[in.%]
13	MP7	X	-20.458	12

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

	Member Label	Direction	Start Magnitude[lb/ft....]	End Magnitude[lb/ft.F...]	Start Location[in,%]	End Location[in,%]
1	S3	SZ	-90.836	-90.836	0	%100
2	GA4	SZ	-90.836	-90.836	0	%100
3	GA3	SZ	-90.836	-90.836	0	%100
4	P3	SZ	-90.836	-90.836	0	%100
5	S2	SZ	-90.836	-90.836	0	%100
6	GA2	SZ	-90.836	-90.836	0	%100
7	GA1	SZ	-90.836	-90.836	0	%100
8	P2	SZ	-90.836	-90.836	0	%100
9	S1	SZ	-90.836	-90.836	0	%100
10	GA6	SZ	-90.836	-90.836	0	%100
11	GA5	SZ	-90.836	-90.836	0	%100
12	P1	SZ	-90.836	-90.836	0	%100
13	H1	SZ	-54.501	-54.501	0	%100
14	MP1	SZ	-54.501	-54.501	0	%100
15	MP3	SZ	-54.501	-54.501	0	%100
16	HR1	SZ	-54.501	-54.501	0	%100
17	CA8	SZ	-90.836	-90.836	0	%100
18	CA9	SZ	-90.836	-90.836	0	%100
19	CA7	SZ	-90.836	-90.836	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	-90.836	-90.836	0	%100
25	CA4	SZ	-90.836	-90.836	0	%100
26	CA1	SZ	-90.836	-90.836	0	%100
27	CA2	SZ	-90.836	-90.836	0	%100
28	CA5	SZ	-90.836	-90.836	0	%100
29	CA6	SZ	-90.836	-90.836	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	-90.836	-90.836	0	%100
42	MP2	SZ	-54.501	-54.501	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	H3	SZ	-54.501	-54.501	0	%100
46	MP7	SZ	-54.501	-54.501	0	%100
47	MP9	SZ	-54.501	-54.501	0	%100
48	HR3	SZ	-54.501	-54.501	0	%100
49	M52	SZ	0	0	0	%100
50	M53	SZ	0	0	0	%100
51	M54	SZ	0	0	0	%100
52	M55	SZ	0	0	0	%100
53	H2	SZ	-54.501	-54.501	0	%100
54	MP4	SZ	-54.501	-54.501	0	%100
55	MP6	SZ	-54.501	-54.501	0	%100
56	HR2	SZ	-54.501	-54.501	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
57	M66A	SZ	0	0	0	%100
58	M67A	SZ	0	0	0	%100
59	M68A	SZ	0	0	0	%100
60	M69A	SZ	0	0	0	%100
61	MP8	SZ	-54.501	-54.501	0	%100
62	M68B	SZ	0	0	0	%100
63	M69B	SZ	0	0	0	%100
64	MP5	SZ	-54.501	-54.501	0	%100
65	M71B	SZ	0	0	0	%100
66	M72B	SZ	0	0	0	%100
67	M67B	SZ	0	0	0	%100
68	MP10	SZ	-54.501	-54.501	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
1	S3	SX	-90.836	-90.836	0	%100
2	GA4	SX	-90.836	-90.836	0	%100
3	GA3	SX	-90.836	-90.836	0	%100
4	P3	SX	-90.836	-90.836	0	%100
5	S2	SX	-90.836	-90.836	0	%100
6	GA2	SX	-90.836	-90.836	0	%100
7	GA1	SX	-90.836	-90.836	0	%100
8	P2	SX	-90.836	-90.836	0	%100
9	S1	SX	-90.836	-90.836	0	%100
10	GA6	SX	-90.836	-90.836	0	%100
11	GA5	SX	-90.836	-90.836	0	%100
12	P1	SX	-90.836	-90.836	0	%100
13	H1	SX	-54.501	-54.501	0	%100
14	MP1	SX	-54.501	-54.501	0	%100
15	MP3	SX	-54.501	-54.501	0	%100
16	HR1	SX	-54.501	-54.501	0	%100
17	CA8	SX	-90.836	-90.836	0	%100
18	CA9	SX	-90.836	-90.836	0	%100
19	CA7	SX	-90.836	-90.836	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	-90.836	-90.836	0	%100
25	CA4	SX	-90.836	-90.836	0	%100
26	CA1	SX	-90.836	-90.836	0	%100
27	CA2	SX	-90.836	-90.836	0	%100
28	CA5	SX	-90.836	-90.836	0	%100
29	CA6	SX	-90.836	-90.836	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	-90.836	-90.836	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
42	MP2	SX	-54.501	-54.501	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	H3	SX	-54.501	-54.501	0	%100
46	MP7	SX	-54.501	-54.501	0	%100
47	MP9	SX	-54.501	-54.501	0	%100
48	HR3	SX	-54.501	-54.501	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	-54.501	-54.501	0	%100
54	MP4	SX	-54.501	-54.501	0	%100
55	MP6	SX	-54.501	-54.501	0	%100
56	HR2	SX	-54.501	-54.501	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	-54.501	-54.501	0	%100
62	M68B	SX	0	0	0	%100
63	M69B	SX	0	0	0	%100
64	MP5	SX	-54.501	-54.501	0	%100
65	M71B	SX	0	0	0	%100
66	M72B	SX	0	0	0	%100
67	M67B	SX	0	0	0	%100
68	MP10	SX	-54.501	-54.501	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
1	S3	Y	-9.398	-9.398	0	%100
2	GA4	Y	-5.483	-5.483	0	%100
3	GA3	Y	-5.483	-5.483	0	%100
4	P3	Y	-10.58	-10.58	0	%100
5	S2	Y	-9.398	-9.398	0	%100
6	GA2	Y	-5.483	-5.483	0	%100
7	GA1	Y	-5.483	-5.483	0	%100
8	P2	Y	-10.58	-10.58	0	%100
9	S1	Y	-9.398	-9.398	0	%100
10	GA6	Y	-5.483	-5.483	0	%100
11	GA5	Y	-5.483	-5.483	0	%100
12	P1	Y	-10.58	-10.58	0	%100
13	H1	Y	-6.413	-6.413	0	%100
14	MP1	Y	-5.548	-5.548	0	%100
15	MP3	Y	-5.548	-5.548	0	%100
16	HR1	Y	-5.555	-5.555	0	%100
17	CA8	Y	-12.594	-12.594	0	%100
18	CA9	Y	-12.594	-12.594	0	%100
19	CA7	Y	-12.594	-12.594	0	%100
20	M32	Y	-1.568	-1.568	0	%100
21	M35	Y	-1.568	-1.568	0	%100
22	M36	Y	-1.568	-1.568	0	%100
23	M39A	Y	-1.568	-1.568	0	%100
24	CA3	Y	-7.047	-7.047	0	%100
25	CA4	Y	-7.047	-7.047	0	%100
26	CA1	Y	-7.047	-7.047	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
27	CA2	Y	-7.047	-7.047	0	%100
28	CA5	Y	-7.047	-7.047	0	%100
29	CA6	Y	-7.047	-7.047	0	%100
30	M64	Y	-1.568	-1.568	0	%100
31	M65	Y	-1.568	-1.568	0	%100
32	M66	Y	-1.568	-1.568	0	%100
33	M67	Y	-1.568	-1.568	0	%100
34	M68	Y	-1.568	-1.568	0	%100
35	M69	Y	-1.568	-1.568	0	%100
36	M70	Y	-1.568	-1.568	0	%100
37	M71	Y	-1.568	-1.568	0	%100
38	M72	Y	-1.568	-1.568	0	%100
39	M73	Y	-1.568	-1.568	0	%100
40	M74	Y	-1.568	-1.568	0	%100
41	M75	Y	-4.928	-4.928	0	%100
42	MP2	Y	-5.548	-5.548	0	%100
43	M43	Y	-1.568	-1.568	0	%100
44	M44	Y	-1.568	-1.568	0	%100
45	H3	Y	-6.413	-6.413	0	%100
46	MP7	Y	-5.548	-5.548	0	%100
47	MP9	Y	-5.548	-5.548	0	%100
48	HR3	Y	-5.555	-5.555	0	%100
49	M52	Y	-1.568	-1.568	0	%100
50	M53	Y	-1.568	-1.568	0	%100
51	M54	Y	-1.568	-1.568	0	%100
52	M55	Y	-1.568	-1.568	0	%100
53	H2	Y	-6.413	-6.413	0	%100
54	MP4	Y	-5.548	-5.548	0	%100
55	MP6	Y	-5.548	-5.548	0	%100
56	HR2	Y	-5.555	-5.555	0	%100
57	M66A	Y	-1.568	-1.568	0	%100
58	M67A	Y	-1.568	-1.568	0	%100
59	M68A	Y	-1.568	-1.568	0	%100
60	M69A	Y	-1.568	-1.568	0	%100
61	MP8	Y	-5.548	-5.548	0	%100
62	M68B	Y	-1.568	-1.568	0	%100
63	M69B	Y	-1.568	-1.568	0	%100
64	MP5	Y	-5.548	-5.548	0	%100
65	M71B	Y	-1.568	-1.568	0	%100
66	M72B	Y	-1.568	-1.568	0	%100
67	M67B	Y	-1.568	-1.568	0	%100
68	MP10	Y	-5.548	-5.548	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft,F...	Start Location[in, %]	End Location[in, %]
1	S3	SZ	-13.252	-13.252	0	%100
2	GA4	SZ	-17.042	-17.042	0	%100
3	GA3	SZ	-17.042	-17.042	0	%100
4	P3	SZ	-12.755	-12.755	0	%100
5	S2	SZ	-13.252	-13.252	0	%100
6	GA2	SZ	-17.042	-17.042	0	%100
7	GA1	SZ	-17.042	-17.042	0	%100
8	P2	SZ	-12.755	-12.755	0	%100
9	S1	SZ	-13.252	-13.252	0	%100
10	GA6	SZ	-17.042	-17.042	0	%100
11	GA5	SZ	-17.042	-17.042	0	%100

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

Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft.F...	Start Location[in,%]	End Location[in,%]
12	P1	SZ	-12.755	-12.755	0 %100
13	H1	SZ	-15.588	-15.588	0 %100
14	MP1	SZ	-16.92	-16.92	0 %100
15	MP3	SZ	-16.92	-16.92	0 %100
16	HR1	SZ	-16.907	-16.907	0 %100
17	CA8	SZ	-12.154	-12.154	0 %100
18	CA9	SZ	-12.154	-12.154	0 %100
19	CA7	SZ	-12.154	-12.154	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	-14.879	-14.879	0 %100
25	CA4	SZ	-14.879	-14.879	0 %100
26	CA1	SZ	-14.879	-14.879	0 %100
27	CA2	SZ	-14.879	-14.879	0 %100
28	CA5	SZ	-14.879	-14.879	0 %100
29	CA6	SZ	-14.879	-14.879	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	-18.296	-18.296	0 %100
42	MP2	SZ	-16.92	-16.92	0 %100
43	M43	SZ	0	0	0 %100
44	M44	SZ	0	0	0 %100
45	H3	SZ	-15.588	-15.588	0 %100
46	MP7	SZ	-16.92	-16.92	0 %100
47	MP9	SZ	-16.92	-16.92	0 %100
48	HR3	SZ	-16.907	-16.907	0 %100
49	M52	SZ	0	0	0 %100
50	M53	SZ	0	0	0 %100
51	M54	SZ	0	0	0 %100
52	M55	SZ	0	0	0 %100
53	H2	SZ	-15.588	-15.588	0 %100
54	MP4	SZ	-16.92	-16.92	0 %100
55	MP6	SZ	-16.92	-16.92	0 %100
56	HR2	SZ	-16.907	-16.907	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	-16.92	-16.92	0 %100
62	M68B	SZ	0	0	0 %100
63	M69B	SZ	0	0	0 %100
64	MP5	SZ	-16.92	-16.92	0 %100
65	M71B	SZ	0	0	0 %100
66	M72B	SZ	0	0	0 %100
67	M67B	SZ	0	0	0 %100
68	MP10	SZ	-16.92	-16.92	0 %100

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

	Member Label	Direction	Start Magnitude[lb/ft....	End Magnitude[lb/ft.F...	Start Location[in.%,]	End Location[in.%,]
1	S3	SX	-13.252	-13.252	0	%100
2	GA4	SX	-17.042	-17.042	0	%100
3	GA3	SX	-17.042	-17.042	0	%100
4	P3	SX	-12.755	-12.755	0	%100
5	S2	SX	-13.252	-13.252	0	%100
6	GA2	SX	-17.042	-17.042	0	%100
7	GA1	SX	-17.042	-17.042	0	%100
8	P2	SX	-12.755	-12.755	0	%100
9	S1	SX	-13.252	-13.252	0	%100
10	GA6	SX	-17.042	-17.042	0	%100
11	GA5	SX	-17.042	-17.042	0	%100
12	P1	SX	-12.755	-12.755	0	%100
13	H1	SX	-15.588	-15.588	0	%100
14	MP1	SX	-16.92	-16.92	0	%100
15	MP3	SX	-16.92	-16.92	0	%100
16	HR1	SX	-16.907	-16.907	0	%100
17	CA8	SX	-12.154	-12.154	0	%100
18	CA9	SX	-12.154	-12.154	0	%100
19	CA7	SX	-12.154	-12.154	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	-14.879	-14.879	0	%100
25	CA4	SX	-14.879	-14.879	0	%100
26	CA1	SX	-14.879	-14.879	0	%100
27	CA2	SX	-14.879	-14.879	0	%100
28	CA5	SX	-14.879	-14.879	0	%100
29	CA6	SX	-14.879	-14.879	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	-18.296	-18.296	0	%100
42	MP2	SX	-16.92	-16.92	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	H3	SX	-15.588	-15.588	0	%100
46	MP7	SX	-16.92	-16.92	0	%100
47	MP9	SX	-16.92	-16.92	0	%100
48	HR3	SX	-16.907	-16.907	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	-15.588	-15.588	0	%100
54	MP4	SX	-16.92	-16.92	0	%100
55	MP6	SX	-16.92	-16.92	0	%100
56	HR2	SX	-16.907	-16.907	0	%100
57	M66A	SX	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft....]	End Magnitude[lb/ft.F...]	Start Location[in.%]	End Location[in.%]
58	M67A	SX	0	0	0	%100
59	M68A	SX	0	0	0	%100
60	M69A	SX	0	0	0	%100
61	MP8	SX	-16.92	-16.92	0	%100
62	M68B	SX	0	0	0	%100
63	M69B	SX	0	0	0	%100
64	MP5	SX	-16.92	-16.92	0	%100
65	M71B	SX	0	0	0	%100
66	M72B	SX	0	0	0	%100
67	M67B	SX	0	0	0	%100
68	MP10	SX	-16.92	-16.92	0	%100

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

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

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

	Member Label	Direction	Start Magnitude[lb/ft....]	End Magnitude[lb/ft.F...]	Start Location[in.%]	End Location[in.%]
1	S2	Y	-19.294	-19.294	16.404	40
2	GA2	Y	-9.723	-9.723	3.828	27.295
3	GA1	Y	-9.723	-9.723	3.828	27.295
4	S3	Y	-19.294	-19.294	16.404	40
5	GA4	Y	-9.723	-9.723	3.828	27.295
6	GA3	Y	-9.723	-9.723	3.828	27.295
7	S1	Y	-19.294	-19.294	16.404	40
8	GA6	Y	-9.723	-9.723	3.828	27.295
9	GA5	Y	-9.723	-9.723	3.828	27.295

Member Area Loads (BLC 1 : Self Weight)

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

Member Area Loads (BLC 16 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	P22	P21	P20	P23	Y	Two Way	-10.6
2	P10	P11	P12	P9	Y	Two Way	-10.6
3	P31	P34	P33	P32	Y	Two Way	-10.6

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

	Memb...	Shape	Code Check	Loc[in]	LC	Shear C...Loc[in]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
1	P3	PL6.5x0.375	.328	21	2	.149 36.312	y	5	3658.14	78975	616.993	7941.561	1.4...	H1-...
2	P2	PL6.5x0.375	.321	21	6	.140 36.312	y	10	3658.14	78975	616.993	7930.736	1.4...	H1-...

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

Memb...	Shape	Code Check	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn y-y	phi*Mn z-z	Cb	Eqn
3	P1	PL6.5x0.375	.302	21	10	.151	36.312	y	2	3658.14	78975	616.993	7947.263	1.4..H1-...
4	CA4	C3.38x2.06x0....	.300	33	2	.033	33	y	115	47760....	56700	2202.821	5751.945	1.6..H1-...
5	CA5	C3.38x2.06x0....	.294	0	10	.033	28.187	y	28	47760....	56700	2202.821	5751.945	1.62..H1-...
6	CA3	C3.38x2.06x0....	.288	0	2	.034	28.188	y	32	47760....	56700	2202.821	5751.945	1.6..H1-...
7	CA1	C3.38x2.06x0....	.286	0	6	.034	28.188	y	36	47760....	56700	2202.821	5751.945	1.6..H1-...
8	CA2	C3.38x2.06x0....	.283	33	6	.033	33	y	143	47760....	56700	2202.821	5751.945	1.6..H1-...
9	CA6	C3.38x2.06x0....	.279	33	10	.032	33	y	87	47760....	56700	2202.821	5751.945	1.6..H1-...
10	CA8	L6.6x4.46x0.25	.279	41.562	22	.039	42	z	4	51170....	87561	2464.809	7125.374	1.1..H2-1
11	M75	PL 2.375x0.5	.274	1.5	12	.186	0	y	173	38256....	38475	400.783	1903.711	2.2..H1-...
12	CA7	L6.6x4.46x0.25	.269	41.562	3	.036	42	z	8	51170....	87561	2464.809	7125.374	1.1..H2-1
13	HR2	2.88x0.120	.268	90	3	.134	92		4	22491....	43076....	3155.674	3155.674	1.6..H1-...
14	HR3	2.88x0.120	.265	6	2	.125	92		6	22491....	43076....	3155.674	3155.674	1.8..H1-...
15	HR1	2.88x0.120	.257	6	4	.117	6		4	22491....	43076....	3155.674	3155.674	1.9..H1-...
16	S2	HSS4X4X6	.255	0	5	.111	0	y	142	188250....	197892	22045.5	22045.5	1.8..H1-...
17	S3	HSS4X4X6	.248	0	13	.111	0	y	114	188250....	197892	22045.5	22045.5	1.8..H1-...
18	CA9	L6.6x4.46x0.25	.246	41.562	6	.034	42	z	12	51170....	87561	2464.809	7125.374	1.1..H2-1
19	S1	HSS4X4X6	.228	0	9	.108	0	y	86	188250....	197892	22045.5	22045.5	1.8..H1-...
20	MP2	PIPE 2.5	.222	70	5	.079	70		5	33487....	66654	4726.5	4726.5	4.4..H1-...
21	MP5	PIPE 2.5	.219	70	7	.068	70		7	33487....	66654	4726.5	4726.5	4.59..H1-...
22	GA4	L2x2x4	.206	0	2	.014	27.295	y	9	29527....	42480	959.63	2190.068	2.2..H2-1
23	MP8	PIPE 2.5	.196	70	9	.084	70		3	33487....	66654	4726.5	4726.5	4.0..H1-...
24	GA5	L2x2x4	.196	0	9	.018	27.295	z	2	29527....	42480	959.63	2190.068	2.1..H2-1
25	GA2	L2x2x4	.190	0	12	.015	0	y	12	29527....	42480	959.63	2190.068	2.3..H2-1
26	GA1	L2x2x4	.176	0	6	.016	27.295	z	10	29527....	42480	959.63	2190.068	2.2..H2-1
27	GA3	L2x2x4	.176	0	7	.018	27.295	z	6	29527....	42480	959.63	2190.068	2.1..H2-1
28	GA6	L2x2x4	.176	0	4	.014	0	y	4	29527....	42480	959.63	2190.068	2.3..H2-1
29	MP9	PIPE 2.5	.174	70	2	.079	70		7	33487....	66654	4726.5	4726.5	3.3..H1-...
30	MP6	PIPE 2.5	.159	70	7	.086	70		6	33487....	66654	4726.5	4726.5	4.5..H1-...
31	MP1	PIPE 2.5	.156	70	11	.096	26		8	33487....	66654	4726.5	4726.5	2.6..H1-...
32	MP3	PIPE 2.5	.154	70	5	.087	70		3	33487....	66654	4726.5	4726.5	4.3..H1-...
33	MP4	PIPE 2.5	.150	70	7	.087	26		4	33487....	66654	4726.5	4726.5	1.83..H1-...
34	MP7	PIPE 2.5	.146	70	9	.078	26		6	33487....	66654	4726.5	4726.5	3.4..H1-...
35	H3	Pipe3.5x0.165	.135	31	2	.082	90		2	45873....	71580.6	6337.65	6337.65	1.9..H1-...
36	H1	Pipe3.5x0.165	.129	31	10	.074	48		4	45873....	71580.6	6337.65	6337.65	2.0..H1-...
37	H2	Pipe3.5x0.165	.128	31	6	.060	48		12	45873....	71580.6	6337.65	6337.65	1.7..H1-...
38	MP10	PIPE 2.5	.006	24	6	.001	24		6	56116....	66654	4726.5	4726.5	1.5..H1-...

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	BOHVN00132A
Site Number:	BOHVN00132A
Connection Description:	Platform to Monopole

MAXIMUM BOLT LOADS		
Bolt Tension:	6882.17	lbs
Bolt Shear:	3886.11	lbs

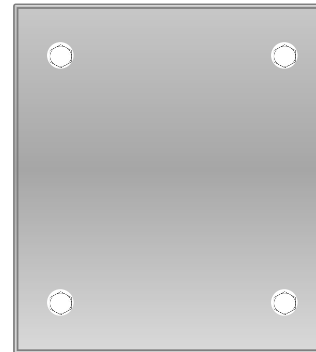
WORST CASE BOLT LOADS ¹		
Bolt Tension:	6882.17	lbs
Bolt Shear:	476.27	lbs

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

¹ Worst case bolt loads correspond to Load combination #5 on member S2 in RISA-3D, which causes the maximum demand on the bolts.

Member Information
I nodes of S3, S2, S1

BOLT CHECK	
Tensile Strength	20340.15
Shear Strength	13805.83
Max Tensile Usage	33.8%
Max Shear Usage	28.1%
Interaction Check (Worst Case)	0.12 ≤1.05
Result	Pass



POWER DENSITY STUDY

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

Dish Wireless Existing Facility

Site ID: BOHVN00132A

BOHVN00132A
668 Jones Hill Road
West Haven, Connecticut 06516

October 5, 2021

EBI Project Number: 6221003999

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	47.45%

October 5, 2021

Dish Wireless

Emissions Analysis for Site: BOHVN00132A - BOHVN00132A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **668 Jones Hill Road in West Haven, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed Dish Wireless antenna facility located at 668 Jones Hill Road in West Haven, 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 105 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):	105 feet	Height (AGL):	105 feet	Height (AGL):	105 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 AI MPE %:	2.41%	Antenna BI MPE %:	2.41%	Antenna CI MPE %:	2.41%

Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	2.41%
Verizon	10.96%
AT&T	18.81%
T-Mobile	11.23%
Sprint	2.79%
Metro PCS	1.02%
Computer Hospital	0.23%
Site Total MPE % :	47.45%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	2.41%
Dish Wireless Sector B Total:	2.41%
Dish Wireless Sector C Total:	2.41%
Site Total MPE % :	47.45%

Dish Wireless Maximum MPE Power Values (Sector A)							
Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	105.0	3.28	600 MHz n71	400	0.82%
Dish Wireless 1900 MHz n70	4	542.70	105.0	7.96	1900 MHz n70	1000	0.80%
Dish Wireless 2190 MHz n66	4	542.70	105.0	7.96	2190 MHz n66	1000	0.80%
						Total:	2.41%

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

Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	2.41%
Sector B:	2.41%
Sector C:	2.41%
Dish Wireless Maximum MPE % (Sector A):	2.41%
Site Total:	47.45%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **47.45%** 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.

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Tracking Number: 9505511588621309299581

Remove X

Your item has been delivered and is available at a PO Box at 7:57 am on November 9, 2021 in ATLANTA, GA 31139.

USPS Tracking Plus™ Available ∨

 **Delivered, PO Box**

November 9, 2021 at 7:57 am
ATLANTA, GA 31139

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FAQs

Dear Customer,

The following is the proof-of-delivery for tracking number: 775107612038

Delivery Information:

Status:	Delivered	Delivered To:	Receptionist/Front Desk
Signed for by:	L.IALEGGIO	Delivery Location:	355 MAIN ST
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		WEST HAVEN, CT, 06516
		Delivery date:	Nov 8, 2021 09:44

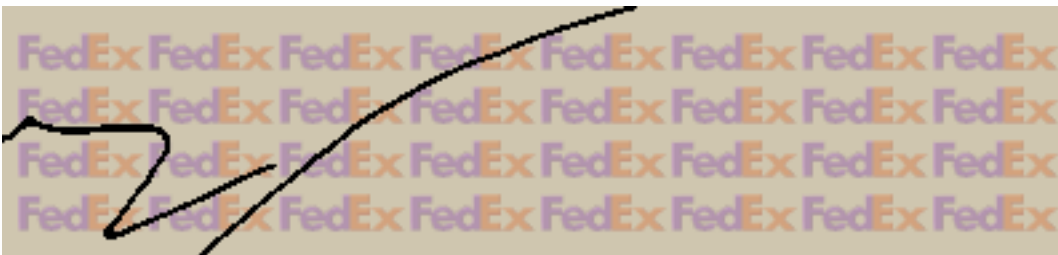
Shipping Information:

Tracking number:	775107612038	Ship Date:	Nov 5, 2021
		Weight:	1.0 LB/0.45 KG

Recipient:
Frank Gladwin,
355 Main St
1st Floor
WEST HAVEN, CT, US, 06516

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

Reference 100814



Dear Customer,

The following is the proof-of-delivery for tracking number: 775107584398

Delivery Information:

Status:	Delivered	Delivered To:	Receptionist/Front Desk
Signed for by:	L.IALEGGIO	Delivery Location:	355 MAIN ST
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		WEST HAVEN, CT, 06516
		Delivery date:	Nov 8, 2021 09:44

Shipping Information:

Tracking number:	775107584398	Ship Date:	Nov 5, 2021
		Weight:	1.0 LB/0.45 KG

Recipient:
Nancy R. Rossi,
355 Main St
1st Floor
WEST HAVEN, CT, US, 06516

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

Reference 100814

