Northeast Site Solutions
Victoria Masse
420 Main St Unit 1 Box 2
Sturbridge, MA 01566
victoria@northeastsitesolutions.com

November 9, 2022

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Tower Share Application
23 Kelleher Court, Wethersfield, CT 06109
Latitude: 41.7153919 N
Longitude: -72.6905989 W
Site#: BOBDL00106D

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 23 Kelleher Court, Wethersfield, Connecticut.

Dish Wireless LLC proposes to install three (3) 600 MHz antenna and six (6) RRUs, at the 110-foot level of the existing 179-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Foresite, dated September 19, 2022, Exhibit C. Also included is a structural analysis prepared by Foresite (a/k/a EFI Global), dated October 20, 2022 confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. This facility was approved by the Town of Wethersfield on April 17, 2002. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Michael L. Rell, Mayor for the Town of Wethersfield, Denise Bradley, Town Planner, as well as the property owner and tower owner.

The planned modifications of the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-89.

1. The proposed modifications will not result in an increase in the height of the existing structure. The top of the tower is 179-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 110-feet.

2.The proposed modification will not result in the increase of the site boundary as depicted on the attached site plan.

3.The proposed modification will not increase the noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligent.

4.The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total density of 78.53% as evidenced by Exhibit F.

Connecticut General Statutes 16-50-aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, Dish Wireless LLC respectfully indicates that the shared use of this facility satisfies these criteria.

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included in Exhibit D.

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this monopole in Wethersfield. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish Wireless LLC to obtain a building permit for the proposed installation. Further, a letter of Authorization is included as Exhibit G, authorizing Dish Wireless LLC to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 110-foot level of the existing 179-foot tower would have an insignificant visual impact on the area around the monopole. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. Dish Wireless LLC will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist Dish Wireless LLC with this tower share application.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Dish Wireless LLC proposed loading. Dish Wireless LLC is not aware of any public safety concerns relative to the proposed sharing of the existing tower. Dish Wireless LLC intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Wethersfield.

Sincerely,

Victoria Masse
Mobile: 860-306-2326
Fax: 413-521-0558
Office: 420 Main Street, Unit 1 Box 2, Sturbridge, MA 01566
Email: victoria@northeastsitesolutions.com

Attachments
Cc:
Michael L. Rell, Mayor
Wethersfield Town Hall
505 Silas Deane Highway
Wethersfield, CT 06109

Denise Bradley, Town Planner
Wethersfield Town Hall
505 Silas Deane Highway
Wethersfield, CT 06109

Town of Weathersfield Firehouse #3, Property and Tower Owner
23 Kelleher Court
Wethersfield, CT 06109

Exhibit A

Original Facility Approval

Town of Wethersfield
505 SILAS DEANE HIGHWAY
WETHERSFIELD, CONNECTICUT 06109

17 April 2002

Mr. Michael J. Turner
Town Engineer
Town of Wethersfield
505 Silas Deane Highway
Wethersfield, Connecticut 06109

Dear Mr. Turner:

Re: Application No. 5694-2002

At a meeting of the Zoning Board of Appeals held on Monday, April 15, 2002, it was unanimously voted that the application seeking variance to erect two equipment shelters and tower in the side yard at 23 Kelleher Court, east side, A-1 Residence Zone, **BE APPROVED AS SUBMITTED.**

A building permit must be obtained from, and all construction is done under the supervision of the Building Inspection Division, Town of Wethersfield.

The effective date of this permission is **April 19, 2002.** *This variance must be recorded with the Town Clerk, Town of Wethersfield immediately after the 15 days from the effective date of this permission. Please come to the Building Department first to pick up the form to be recorded in the Town Clerk's Office.*

Very truly yours,

TOWN OF WETHERSFIELD
ZONING BOARD OF APPEALS
MORRIS R. BOREA, CHAIRMAN

Nancy Azeredo

Nancy Azeredo, Duly Authorized for
Bruce T. Bockstael, Clerk

na
Enc.

Cc: Lee C. Erdmann, Town Manager

WETHERSFIELD ZONING BOARD OF APPEALS
PUBLIC HEARING **April 15, 2002**

The Wethersfield Zoning Board of Appeals held a public hearing on April 15, 2002 at 7:30 PM in the Town Hall, 505 Silas Deane Highway, Wethersfield, Connecticut.

PRESENT: Morris R. Borea, Chairman
Bruce T. Bockstael, Clerk
Frank A. Falvo, Jr.
Thomas J. Vaughan, Jr.
Cynthia Clancy, Alternate

ABSENT: J. Edward Brymer, Jr., Vice Chairman

Also Present: Brian O'Connor, Assistant Building & Zoning Official

Chairman Borea opened the meeting. Before the meeting started, the public was welcomed to speak regarding anything except specific cases in the past or on the night's agenda. There was no one present who wished to speak.

Mr. O'Connor requested that the agenda be taken out of order as the last applicant, (Application No. 5694-2002), has to be at the Town Council Meeting being held in the Council Chambers at the same time as this meeting. Commissioner Bockstael stated that at the end of the meeting the public would again be asked if they would like to speak regarding Application No. 5694-2002 in case there were any late arrivals.

Commissioner Bockstael read the legal notice into the record.

APPLICATION NO. 5694-2002. Town of Wethersfield seeking variance to erect two equipment shelters and tower in the side yard at 23 Kelleher Court, east side, A-1 Residence Zone. (Section 167-75)

Mike Turner, Town Engineer appeared before the Board of behalf of the Town of Wethersfield, seeking variance for the location of the two equipment shelters and antenna tower that they would like to locate at Fire House #3 at 23 Kelleher Court. He stated that this is one of three tower sites that the Town is pursuing as part of the new town wide radio system that they are constructing. Mr. Turner stated that this tower site would be the main tower site where most of the radio equipment would be located.

Mr. Turner stated that the regulations require that any tower be located in the rear yard. He stated that the upper portion of the site by the parking lot is around elevation 130 to 131, the site drops off in the rear to about elevation 102. Therefore the rear portion of the property would require an antenna tower to be built around 29 to 30 feet taller. He stated that this tower site needs to have a clear line of site to the Newington tower, around 30 to 40 feet above of the tree line. Therefore what they are proposing is that the construction of the tower be in the south west corner of the property, with the equipment shelter adjacent to the tower, generally around 10 feet from the tower.

Chairman Borea questioned how high the tower is going to be. Mr. Turner stated 190 feet. Chairman Borea verified that if it were to be put in the rear yard the tower would have to be around 220 feet. Mr. Turner stated that this was correct, adding that anything over 199 feet needs flashing lights, strobe lights, etc.

There were no further questions or comments from the Board.

There was no one in the audience who wished to speak in favor of this application.

The following audience member wished to speak in opposition to this application:

1. Mr. Robert Young, 20 Coppermill Road, Wethersfield, CT – Stated that he feels this location is a bad site and feels that it will bring down the property value of homes in this area, which will in turn bring down his property value. He stated that he also feels that not all the facts were presented to the public.

APPLICATION NO. 5689-2002. Jeannine Steucek seeking variance to erect a 24'X26' detached garage over the building line at 931 Prospect Street, north side, A-1 Residence Zone. (Section 167-114)

Jeannine Steucek, 931 Prospect Street, Wethersfield, CT, appeared before the Board seeking variance to erect a detached garage over the building line. She stated that she has never had a garage but would like a garage for the protection of her car.

April 15, 2002

APPLICATION NO. 5693-2002. Sebastian A. Panioto seeking variance to construct a single car garage and attached entry having less than the required side yard at 95 Mohawk Lane, north side, A Residence Zone. (Section 167-172)

Upon motion made by Commissioner Falvo, Jr., seconded by Chairman Borea and a poll of the Board it was unanimously voted that the above application **BE APPROVED** as submitted.

APPLICATION NO. 5694-2002. Town of Wethersfield seeking variance to erect two equipment shelters and tower in the side yard at 23 Kelleher Court, east side, A-1 Residence Zone. (Section 167-75)

Upon motion made Chairman Borea, seconded by Commissioner Falvo, Jr., and a poll of the Board it was unanimously voted that the above application **BE APPROVED** as submitted.

APPROVAL OF MINUTES

Tabled until next meeting.

ADJOURNMENT

The meeting was adjourned at 8:30PM.

Exhibit B

Property Card

Unique ID: 073060 **Wethersfield** **Card No:** 1of 1

Location:	23 KELLEHER CT	Map/Lot:	073 060	Zone:	A1	Date Printed:	06-22-22
911 Address:		Exempt	X	Nbhd:	C10	Last Update:	06-22-22

Owner Of Record	Volume/Page	Date	Sales Type	Valid	Sale Price
WETHERSFIELD TOWN OF FIREHOUSE #3	0169 /0077	06-25-56		NO	0
23 KELLEHER CT WETHERSFIELD , CT 06109					

Additional Owners:

Prior Owner History					
	/				
	/				
	/				
	/				
	/				

Permit Number	Date	Cost	New Hous	Status	% Comp	Est Completion	Building Permit
B-21-0140	10-12-21	35,000	No	Closed	100	01-01-01	Swap 3 antennas and 6 radios for 3 new antennas and 6 new radios. (Ver
E-21-0070	02-17-21	20,000	No	Closed	100	01-01-01	Install a new 25kw diesel generator with tank and automatic transfer sw
B-20-0960	12-29-20	32,500	No	Imported Rec	0	01-01-01	Replace 3 existing antennas with 3 new antennas. Replace 2 fiber lines.
B-19-0752	01-31-20	25,000	No	Closed	100	10-01-20	Install 3 antennas, 6 remote radio units, 1 DC surge suppression dome,
B-19-0716	10-22-19	17,500	No	Closed	100	10-01-20	Replace 6 existing antenna & 3 RRU . Remove 3 TMA . Install 25 kw Delta
E-19-0002	01-04-19	1,000	No	Closed	100	06-04-19	UPDATE KITCHEN ELECTRICAL . NEW POWER FOR FRIDGE & MICROWAVE

Census/Tract	4923
Dev Map	Dev Lot 7-18
Date	05/30/2018
Inspector	EQ
Action	Measure

State Item Codes

Code	Quantity	Value	Code	Quantity	Value
21- Comm Land	2.30	133,840			
22-Comm Bldg	1.00	904,310			
25-Comm Outbldg	5.00	498,540			

Appraised Value

Total Land Value	191,200
Total Building Value	1,291,873
Total Outbuilding Value	712,196
Total Market Value	2,195,269

Acres

Land Type	Acres	490	Rate	Adj	Influence	Total Value
Primary Site	1.00	0.00	118,800	1.00	50	178,200
Comm Excess	1.30	0.00	10,000	1.00	0	13,000
Total	2.30					191,200

Influence Factors

Land Type	Influence	Reason	Comment
Primary Site	50	Intensive Use	

Assessment History (Prior Years as of Oct 1)

	Current	2021	2020	2019	2018
Land	133,840	133,840	133,840	133,840	133,840
Building	904,310	904,310	904,310	904,310	904,310
Outbuilding	498,540	498,540	498,540	498,540	498,540
Total	**1,536,690**	**1,536,690**	**1,536,690**	**1,536,690**	**1,536,690**

490 Appraised Totals

Type	Acres	Value	Type	Acres	Value
			Totals		

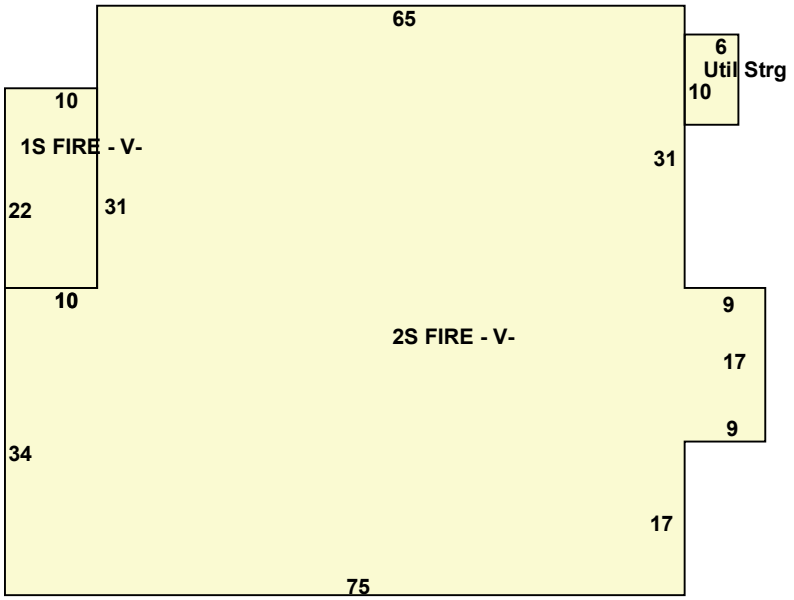
Comments

CELL POLE 4500 MONTH, 8 CAP RATE
2000 GAL DIESEL TANK
CELL TOWER VALUE= 5 SITES@ 3000/MONTH 5X3000X12=180,000 5 X 3000 X 12 = 135,000/.11 = 1,227,250
FIREHOUSE 3
CELL TOWER + EQUIP ON SITE
TOWN OWNS CELL TOWER RESEARCHED 4/2016

Unique ID: 073060 **Wethersfield**

Location:	23 KELLEHER CT	Unit	

Use	Class	Quality	Stry	WH	Area	BG	Units
Fire - Vol	Masonry	A-	2	12	9,436	NO	
Fire - Vol	Masonry	B-	1	12	220	NO	



Commercial Building Description

Building Use	Fire Station -
Class	Masonry
Overall Condition	Good
Construction Quality	B-
Stories	2.00
Year Built	1969
Remodel	
Percent Complete	100
GLA	**9,656**

Basement

Basement Area	
Basement Unfinished Area	

HVAC

Heating Type	Hot Water	
Fuel Type	Natural Gas	
Cooling Type	Central	100 %

Interior

Floors	Vinyl Tile
Walls	Drywall
Wall Height	12

Exterior

Exterior Walls	Brick
Roof Cover	Asphalt

Special Features

Total Building Value

Building 1 **Value** **1,291,873**

Valuation Method C

Description	Area/Qty	Value
Base Value	9,656	1,532,872
Central Air	1,532,872	22,993
Value Before Depr.	0	1,555,865
Depr/Adjust Amount	0	264,497
Final Value (After Depr)	0	1,291,368

Grade Factor	0	**Physical Depreciation %**	17
Functional Depreciation %	0	**Economical Depreciation %**	0

Attached Component Computations

Type	Yr Blt	Condition	Area/Qty	Value
Utility Storage	1969	Good	60	505

Detached Component Computations

Type	Year	Condition	Area/Qty	Value
PreCastConCel	2008	Average	200	8,075
PreCastConCel	2008	Average	240	9,690
PreCastConCel	2008	Average	360	14,535
Paving	1999	Good	3,600	4,896
Cell Tower	2000	Average	1	675,000

Type	Year	Condition	Area/Qty	Value


Search
L = 128.13
R = 15.00
L = 23.56
34
91.33
98.04
97.72
183.29
293.35
145.00
150
L = 36.14
L = 45.07
129.07
111.77
40.00
272
68.67
151.80
60.00
196.76
60.00
130.30
144
313.19
278
150.90
282
60.00
60.00
23
TOWN OF WETHERSFIELD
76.76
188.19
150.00
FIRE STATION NO. 3
KELLEHER CT
KELLEHER CT
150.00
60.00
335.66
290
60.00
150.00
120.00
294
158.14
60.00

Exhibit C

Construction Drawings

dish wireless.™

DISH Wireless L.L.C. SITE ID:

BOBDL00106D

DISH Wireless L.L.C. SITE ADDRESS:

23 KELLEHER COURT
WETHERSFIELD, CT 06109

CODE OF COMPLIANCE

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

CONNECTICUT STATE BUILDING CODE (CSBC).
ANSI/TIA-222-G STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.
NATIONAL ELECTRICAL CODE (NEC) FOR POWER AND GROUNDING REQUIREMENTS.
OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
NFPA – NATIONAL FIRE PROTECTION ASSOCIATION.

SHEET INDEX

SCOPE OF WORK

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

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

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

SITE PHOTO

UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	WETHERSFIELD TOWN OF
ADDRESS:	FIREHOUSE #3 23 KELLEHER CT WETHERSFIELD, CT 06109
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	X
TOWER APP NUMBER:	X
COUNTY:	HARTFORD
LATITUDE (NAD 83):	41°42'55.6" N 41.715444° N
LONGITUDE (NAD 83):	72°41'26.3" W 72.690639° W
ZONING JURISDICTION:	WETHERSFIELD
ZONING DISTRICT:	A1
PARCEL NUMBER:	7-18
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	TBD
TELEPHONE COMPANY:	TBD

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	WETHERSFIELD TOWN OF FIREHOUSE #3 23 KELLEHER CT WETHERSFIELD, CT 06109
SITE DESIGNER:	FORESITE LLC 462 WALNUT ST, SUITE 1 NEWTON, MA 02460 SMOSSAVAT@FORESITELLC.COM (617)-212-3123
SITE ACQUISITION:	DAVID GOODFELLOW DAVID.GOODFELLOW@DISH.COM
CONSTRUCTION MANAGER:	CHAD WILCOX CHAD.WILCOX@DISH.COM
RF ENGINEER:	DIPESH PARIKH, (312) 929-9086

DIRECTIONS

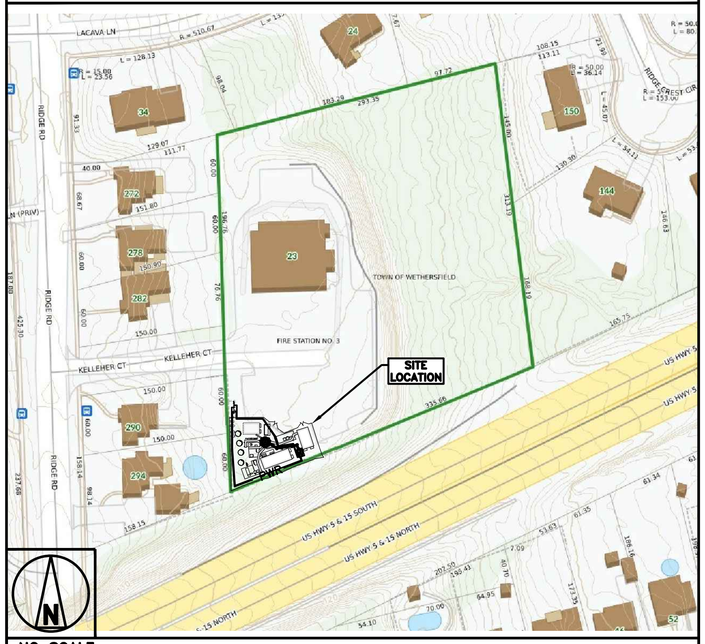
DIRECTIONS FROM AIRPORT:

GET ON BRADLEY INTERNATIONAL AIRPORT CON FROM BRADLEY INTERNATIONAL AIRPORT (0.9 MI).

TAKE CT-20 E, I-91 S, I-291 E, I-84 AND US-5 S TO CT-99 S IN WETHERSFIELD. TAKE EXIT 85 FROM US-5 S (23.9 MI).

TAKE JORDAN LN TO KELLEHER CT (1.8 MI).

VICINITY MAP



NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:
NORTHEAST SITE SOLUTIONS
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
PH: 203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 WALNUT STREET, SUITE 1
NEWTON, MA 02446

COMMONWEALTH OF MASSACHUSETTS
MARK A. NICHOLS
LICENSED ARCHITECT

DRAWN BY:	CHECKED BY:	APPROVED BY:
MR	SM	HV

RFDS REV #: 1 ---

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	05/17/2022	ISSUED FOR REVIEW
B	06/14/2022	REVISED PER COMMENTS
C	08/23/2022	REVISED PER COMMENTS
1	08/31/2022	FINAL ISSUED
2	09/19/2022	REVISED PER COMMENTS

CARRIER
DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

GIS OVERLAY

32' 24'16' 8' 0 32' 64'
1/32"=1'-0"

1

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:
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NEWTON, MA 02446

COMMONWEALTH OF MASSACHUSETTS
MARK A. NICHOLS
NO. ARI. 11181
LICENSED ARCHITECT

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
MR	SM	HV

RFDS REV #: 1 ---

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CARRIER
DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

DISH WIRELESS, LLC.
PROJECT INFORMATION

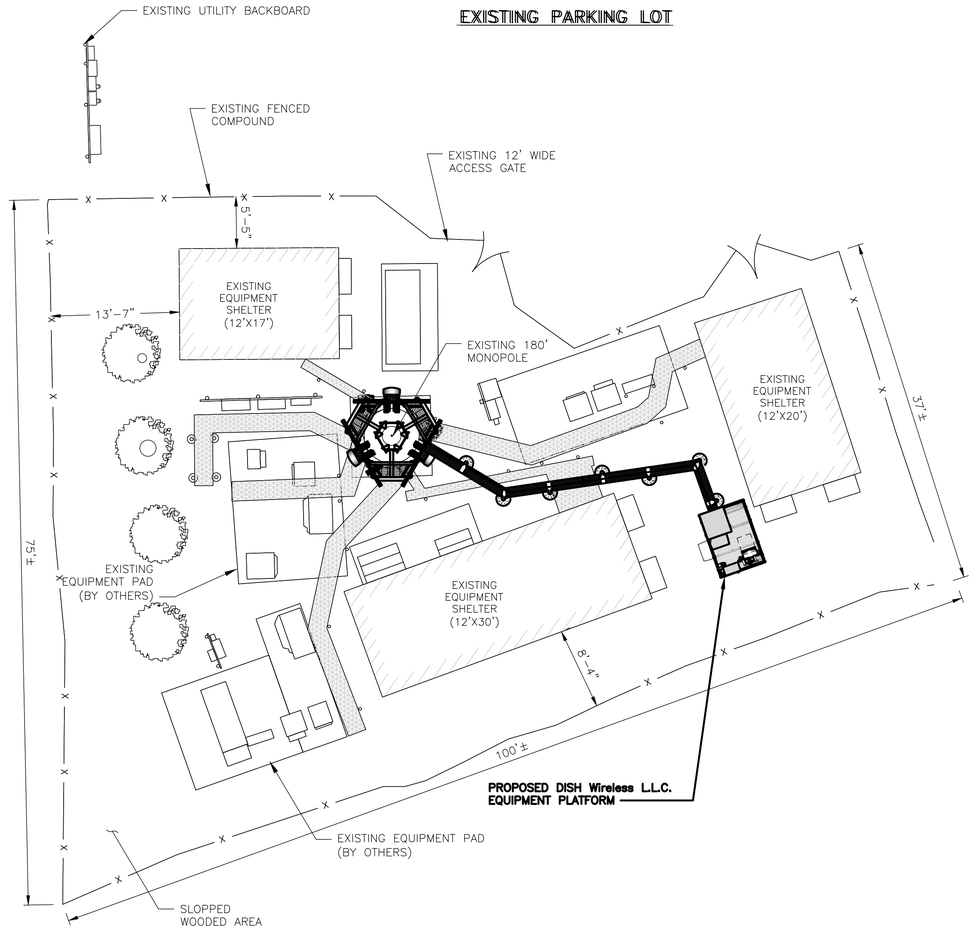
BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
GIS OVERLAY

SHEET NUMBER
GIS-1

NOTES

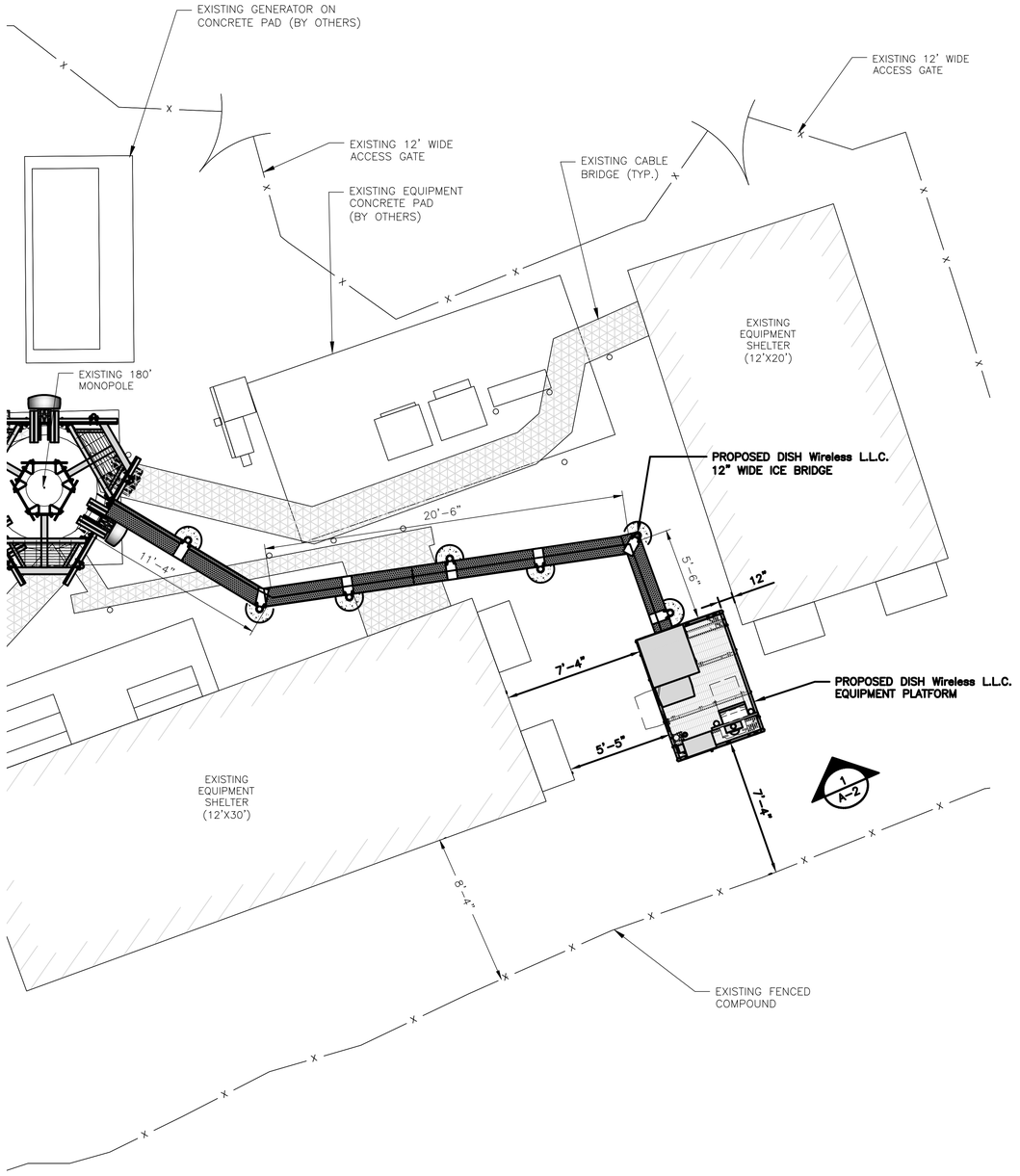
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL MAINTAIN A 10'-0" MINIMUM SEPARATION BETWEEN THE PROPOSED GPS UNIT, TRANSMITTING ANTENNAS AND EXISTING GPS UNITS.



OVERALL SITE PLAN

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

1



ENLARGED SITE PLAN

4' 2' 0 4' 8'
1/4"=1'-0"

2

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:
NORTHEAST SITE SOLUTIONS
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
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CONSULTANT:
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DRAWN BY:	CHECKED BY:	APPROVED BY:
MR	SM	HV

RFDS REV #: 1 ---

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CARRIER
DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

DISH WIRELESS, LLC.
PROJECT INFORMATION

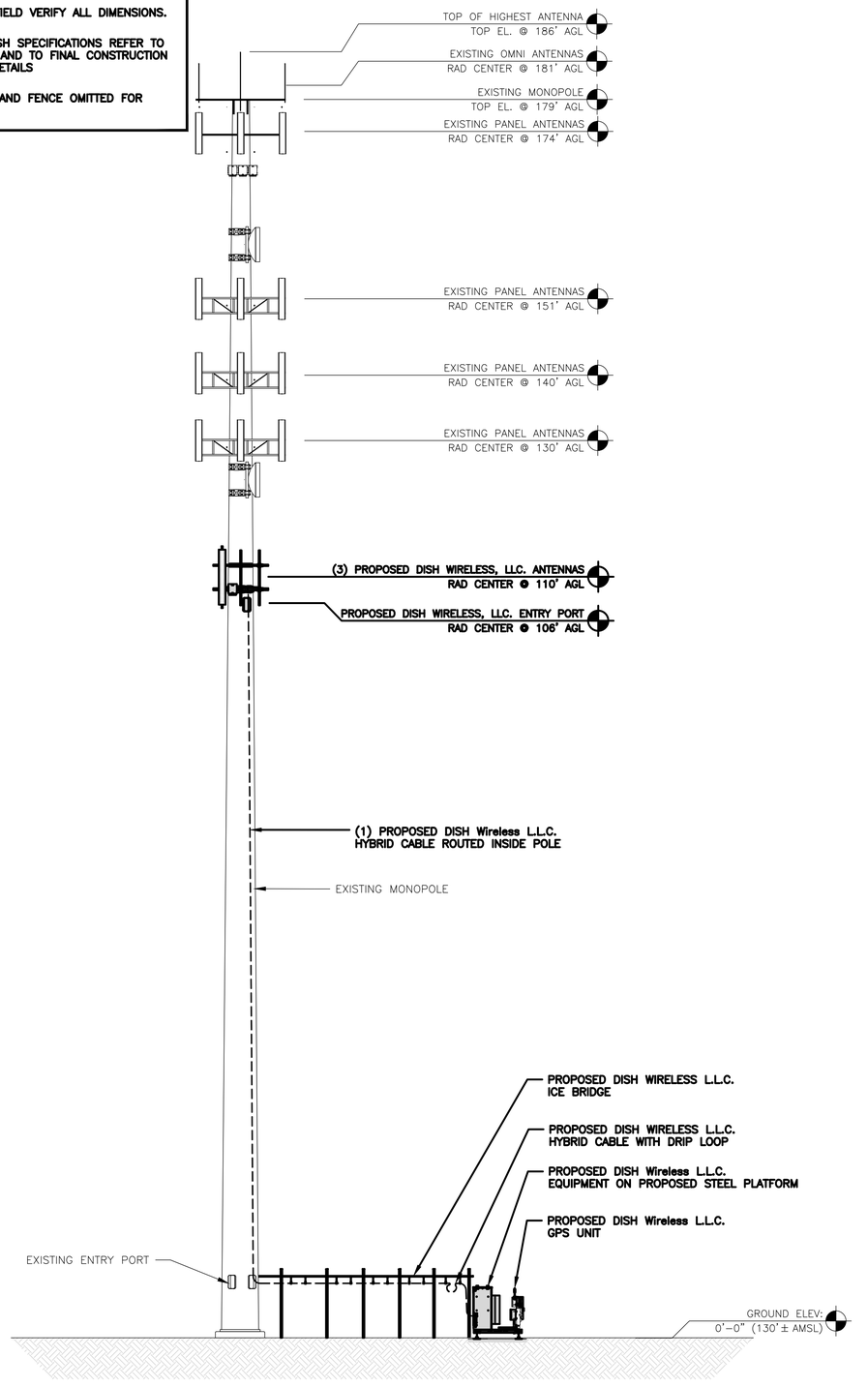
BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

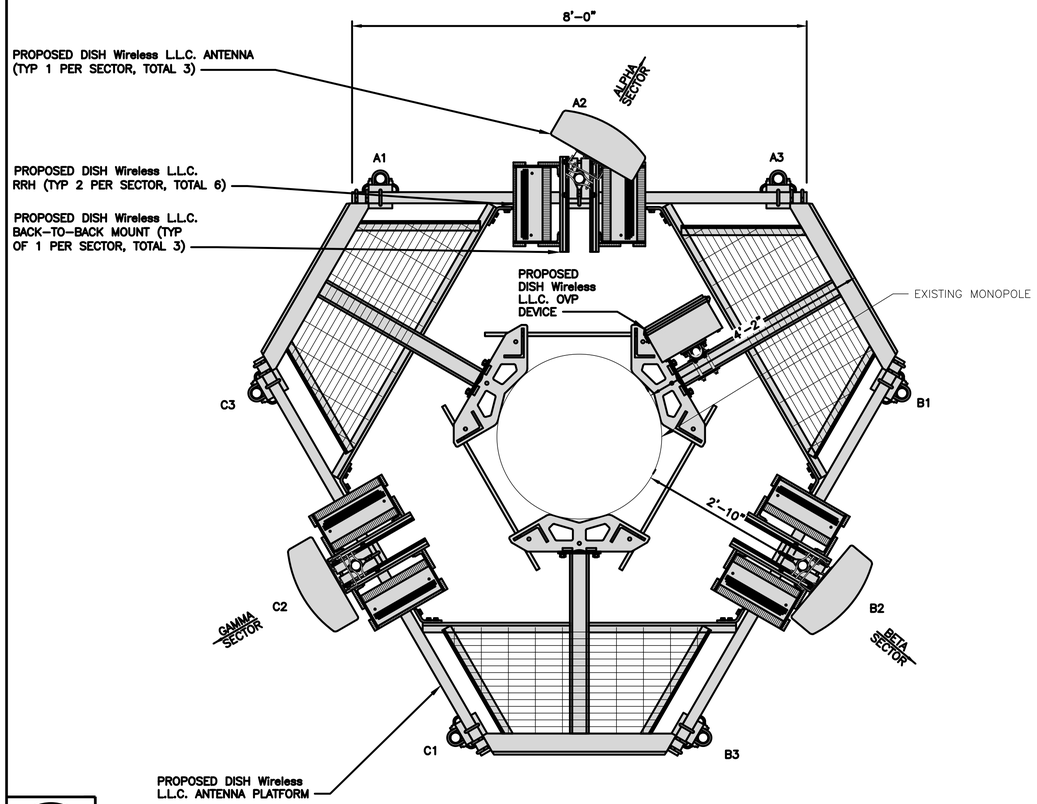
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED NORTH ELEVATION

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

1



ANTENNA LAYOUT

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

2

SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECH	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	MANUFACTURER – MODEL NUMBER	TECH	POS.	MANUFACTURER MODEL
A1	--	--	--	--	--	(1) HIGH-CAPACITY HYBRID CABLE (190' LONG)	FUJITSU – TA08025-B605	5G	A2	RAYCAP RDIDC-9181-PF-48
A2	PROPOSED	JMA – MX08FRO665-21	5G	30°	110'-0"		FUJITSU – TA08025-B604	5G	A2	
A3	--	--	--	--	--		--	--	--	
B1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU – TA08025-B605	5G	B2	SHARED W/ALPHA
B2	PROPOSED	JMA – MX08FRO665-21	5G	130°	110'-0"		FUJITSU – TA08025-B604	5G	B2	
B3	--	--	--	--	--		--	--	--	
C1	--	--	--	--	--	SHARED W/ALPHA	FUJITSU – TA08025-B605	5G	C2	SHARED W/ALPHA
C2	PROPOSED	JMA – MX08FRO665-21	5G	240°	110'-0"		FUJITSU – TA08025-B604	5G	C2	
C3	--	--	--	--	--		--	--	--	

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:
NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
PH: 203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 WALNUT STREET, SUITE 1
NEWTON, MA 02446

STATE OF CONNECTICUT
STEVEN MICHEL
NO. ARI.1116
LICENSED ARCHITECT

DRAWN BY:	CHECKED BY:	APPROVED BY:
MR	SM	HV

RFDS REV #: 1 ---

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	05/17/2022	ISSUED FOR REVIEW
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1	08/31/2022	FINAL ISSUED
2	09/19/2022	REVISED PER COMMENTS

CARRIER
DISH WIRELESS, LLC

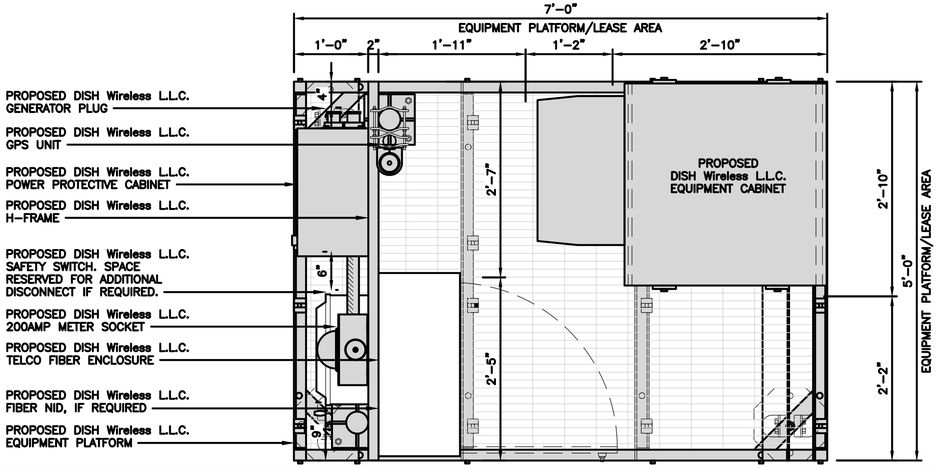
APPLICATION NUMBER
APP_#

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



NOTES

1. INSTALL POSTS BASES TO GRATING JUST INSIDE PLATFORM FRAME. NO DRILLING REQUIRED.
2. GPS MAY BE MOVED TO ICE BRIDGE.
3. ALL CONDUIT TO BE ROUTED THROUGH PLATFORM GRATING USING PVC COUPLERS. CONDUIT QUANTITY AND SIZES ARE PER ONE-LINE DIAGRAM ON E-3 SHEET OF CDS. (DC PLANT DEPENDENT.)
4. CONTRACTOR MAY FIELD INSTALL CONDUIT HOLES IN BOTTOM OF PPC CABINET TO MATCH CONDUIT SIZES.
5. PROPER SEALING IS REQUIRED FOR ALL CABINET PENETRATIONS
6. H-FRAME POSTS ARE STAGGERED TO ALLOW FIBER NID BOXES TO BE INSTALLED CLOSE TO PERIMETER FRAME OF PLATFORM
7. CONDUITS FROM PPC/FIBER DEMARK CABINETS TO EQUIPMENT CABINET (BBU) SHALL BE INSTALLED INSIDE PERIMETER OF PLATFORM AND UNDER GRATING

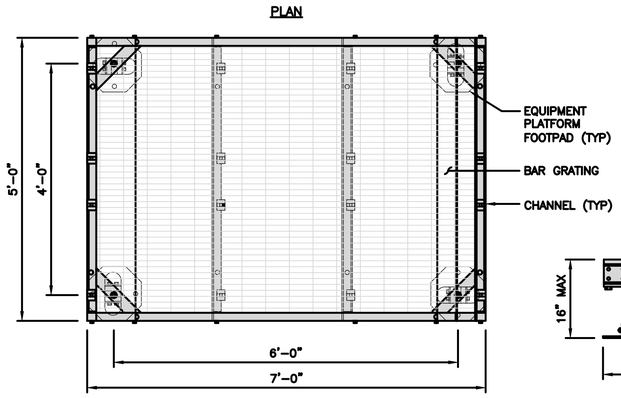
PLATFORM EQUIPMENT PLAN

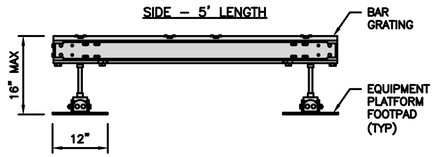
12" 9" 6" 3" 0 1' 2"
1"=1'-0"

1

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

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

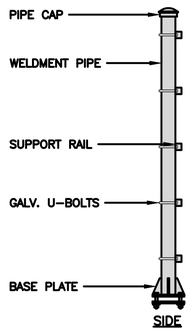




PLATFORM DETAIL

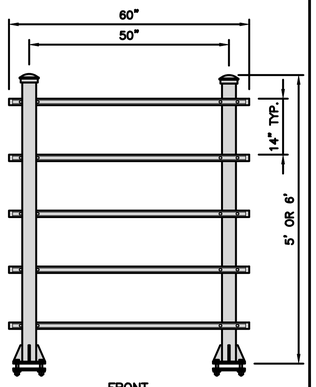
NO SCALE | 2

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



SIDE

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



FRONT

H-FRAME DETAIL

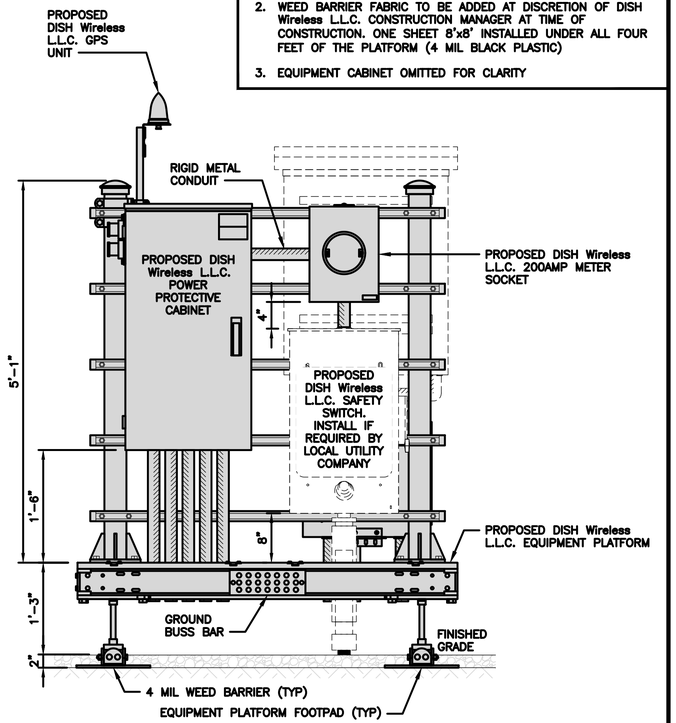
NO SCALE | 3

NOT USED

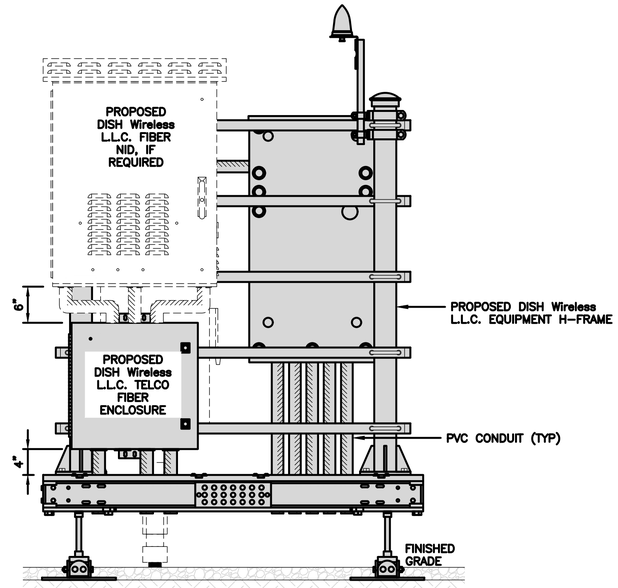
NO SCALE | 4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

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

5

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

PROJECT MANAGER:
NORTHEAST SITE SOLUTIONS
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
PH: 203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 WALNUT STREET, SUITE 1
NEWTON, MA 02446

DRAWN BY:	CHECKED BY:	APPROVED BY:
MR	SM	HV

RFDS REV #: 1 ---

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CARRIER
DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

DISH WIRELESS, LLC.
PROJECT INFORMATION

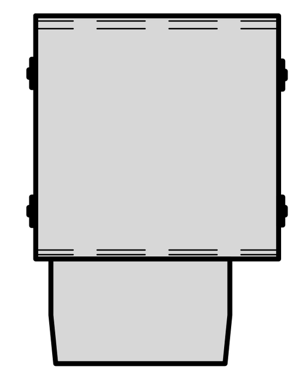
BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

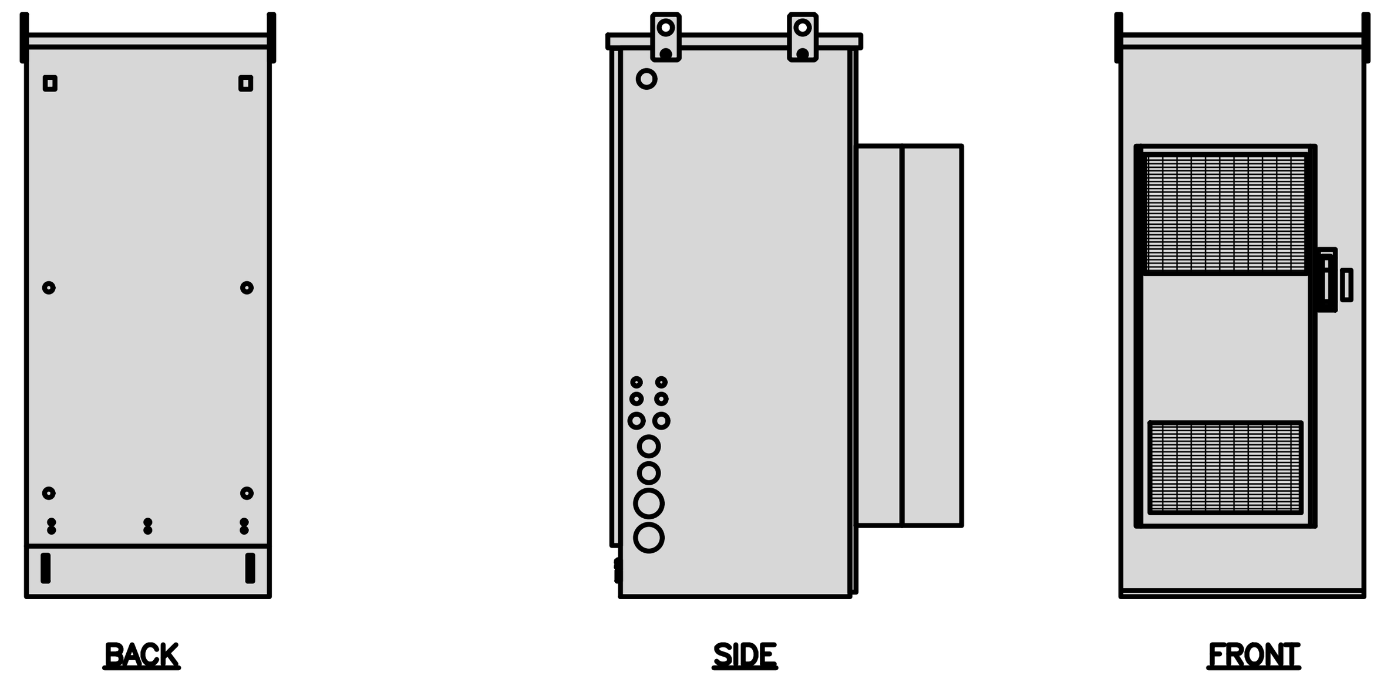
SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER
A-3

CHARLES INDUSTRY HEX CUBE-PM639155N4

DIMENSIONS (HxWxD)	74"x32"x32"
POWER PLANT	-48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 lbs

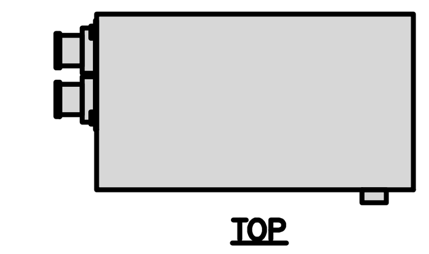


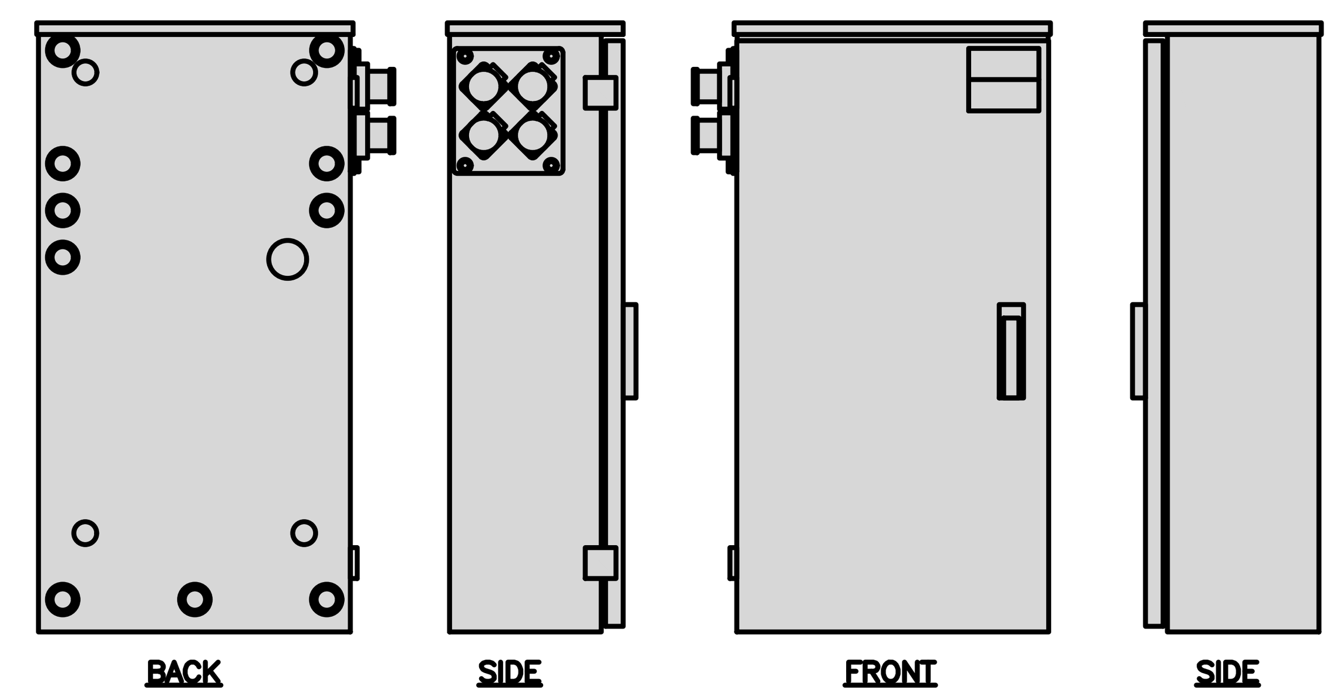


CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC-2465-P-240-MTS

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

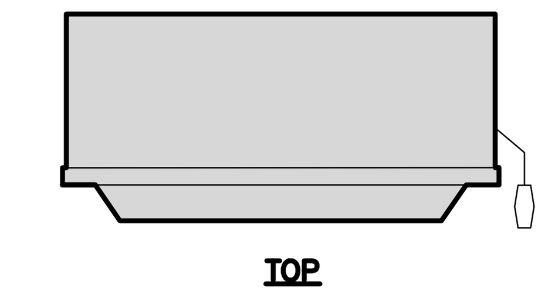


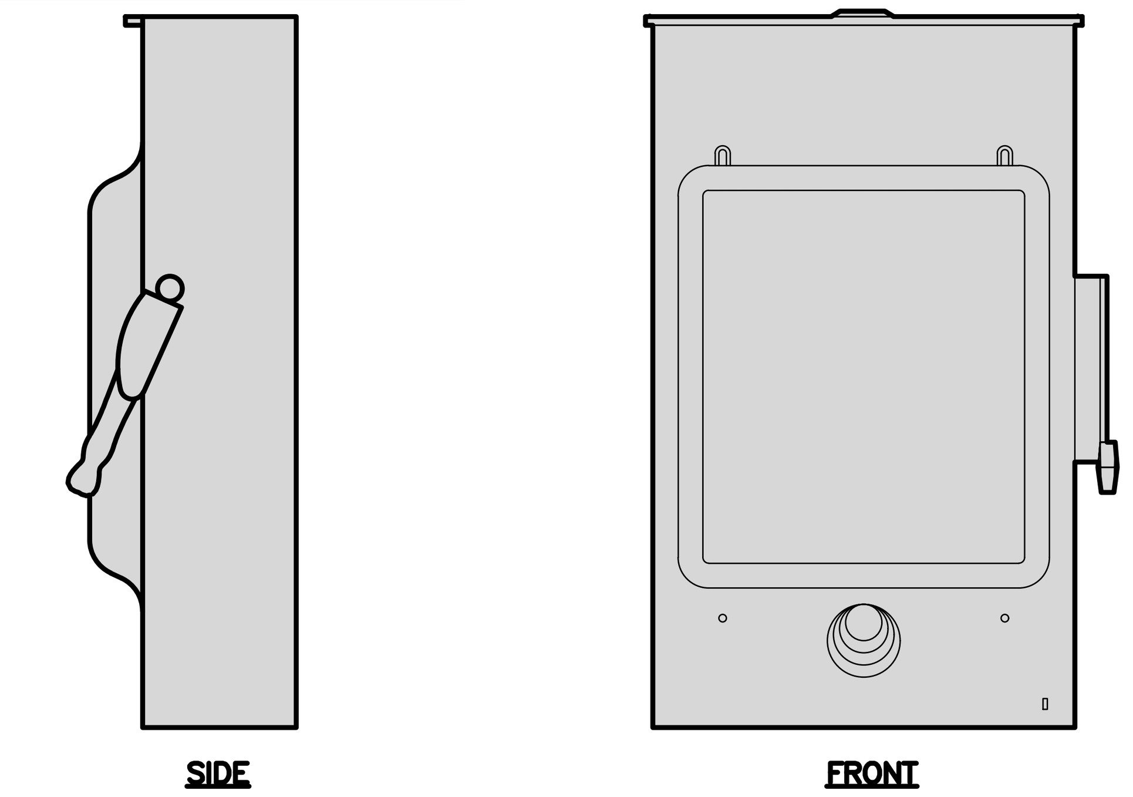


POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

SQUARE D SAFETY SWITCHES D224NRB

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

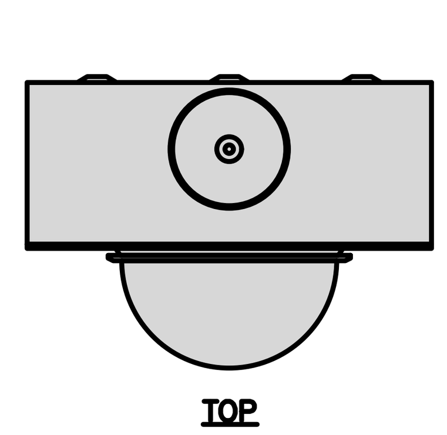


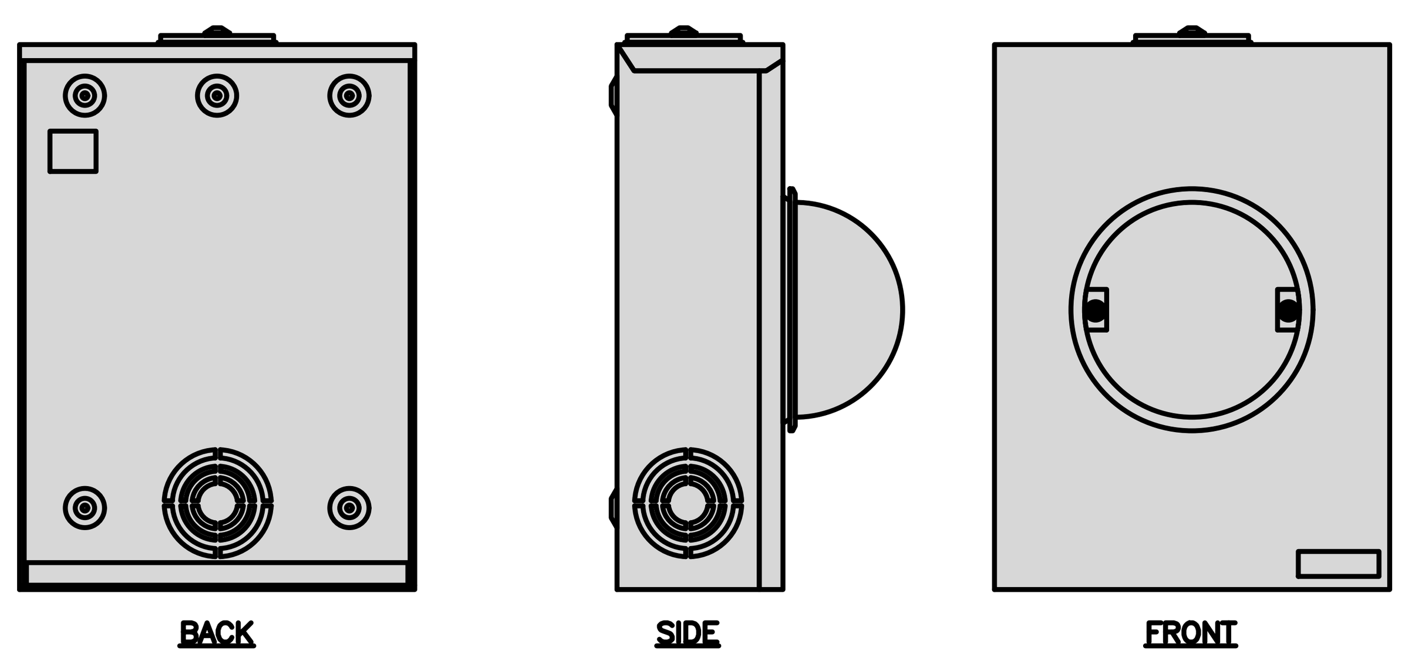


SAFETY SWITCH DETAIL | NO SCALE | 3

EATON METER SOCKET UNRRS213BEUSE

DIMENSIONS (HxWxD)	16"x12"x6"
TYPE	RING
AMPERAGE RATING	200 CONT. AMP
WEIGHT	18 lbs

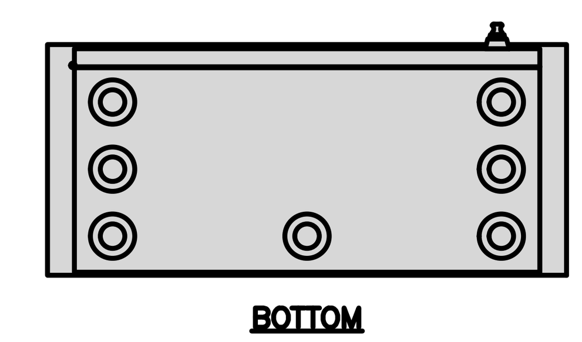


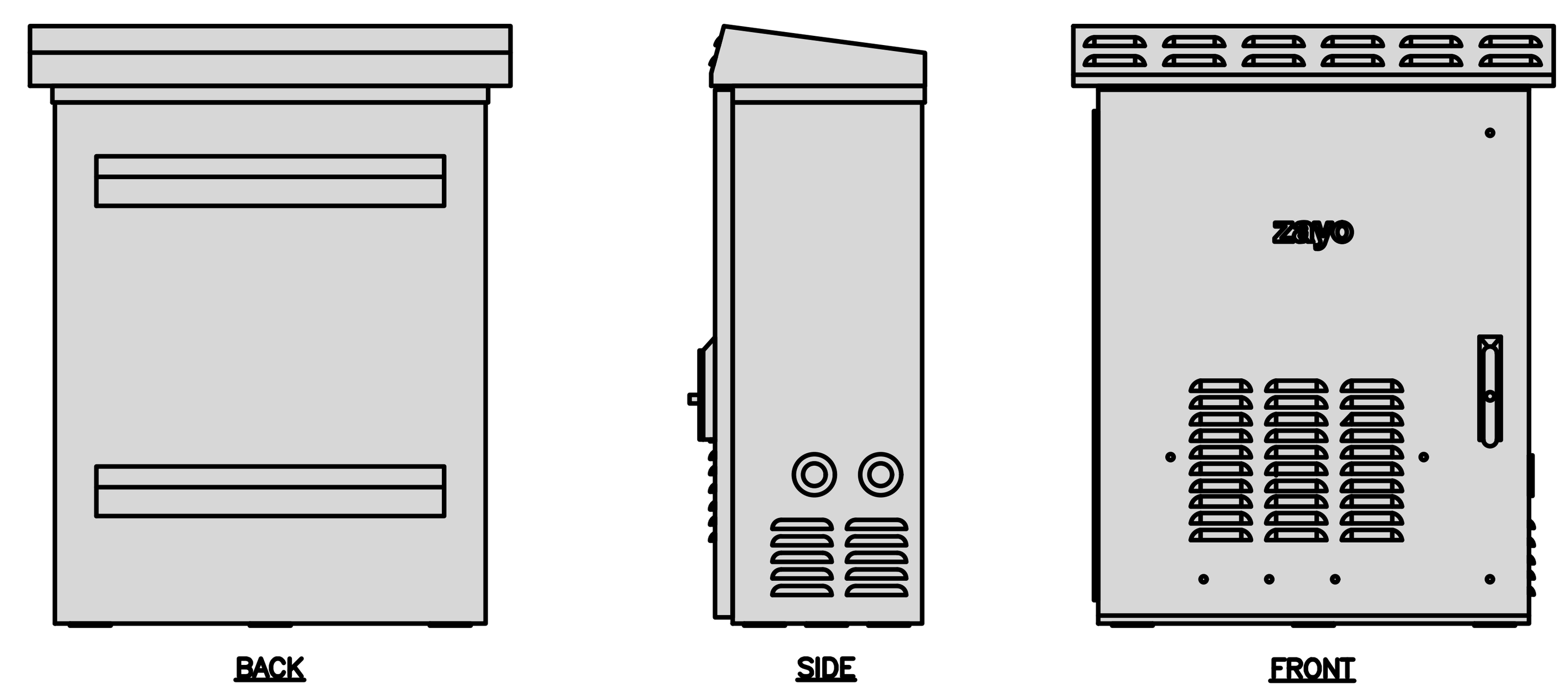


METER BANK DETAIL | NO SCALE | 4

ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE

DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs

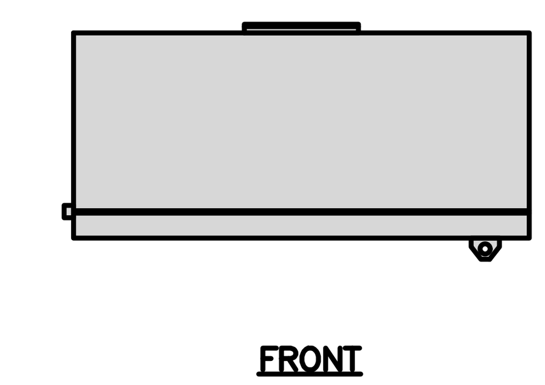


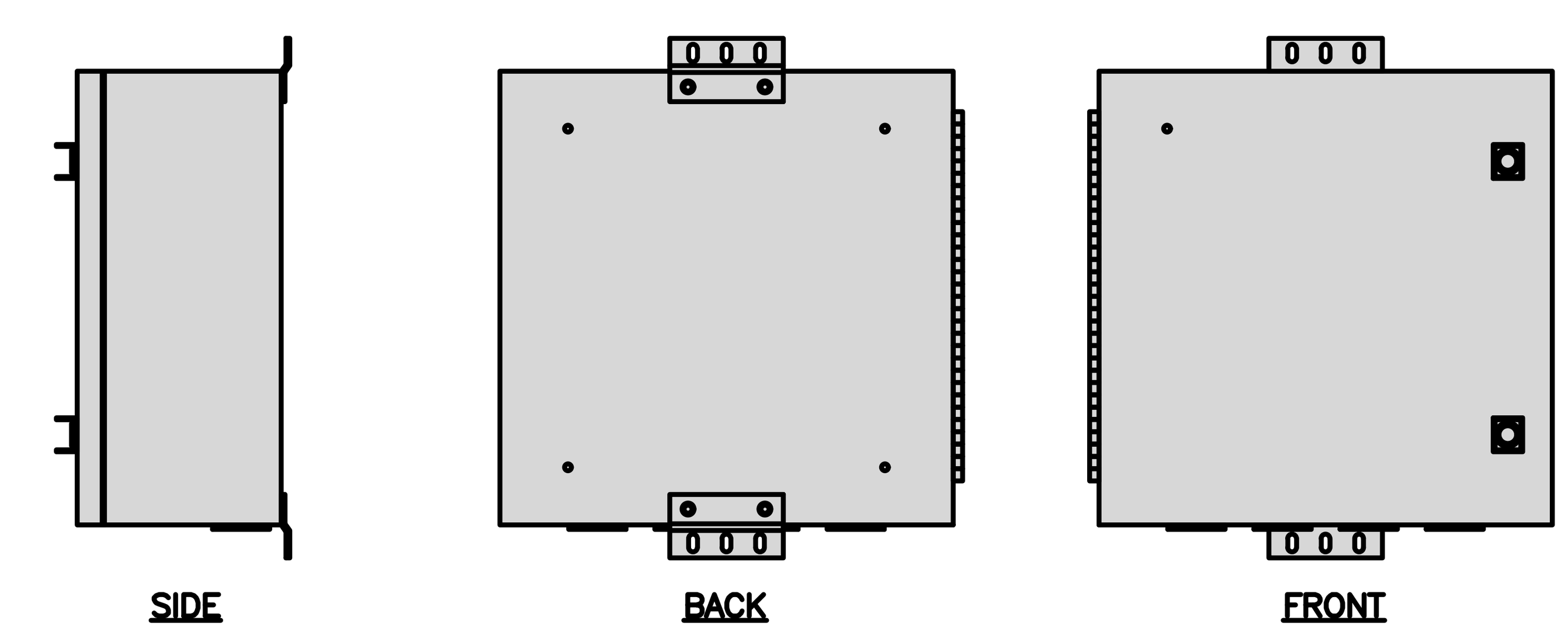


FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE

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



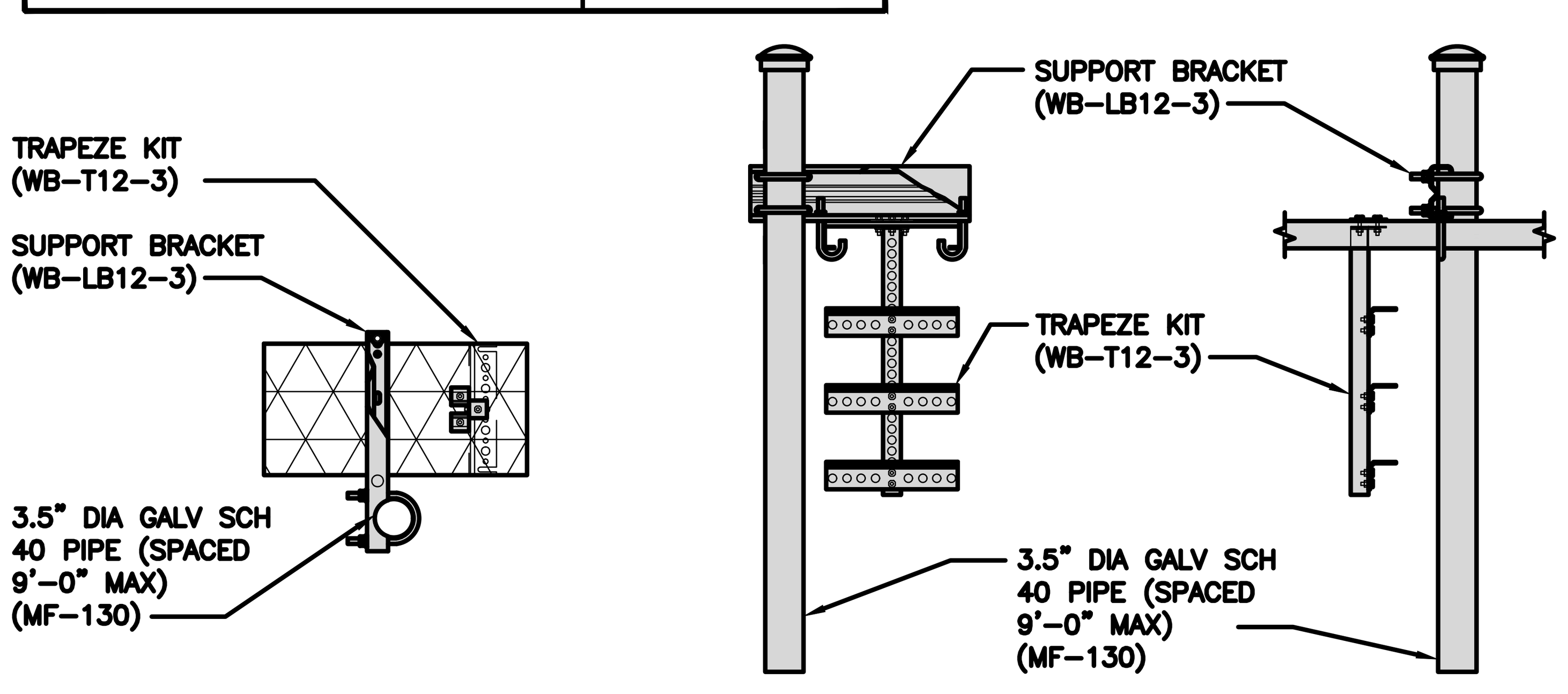


FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

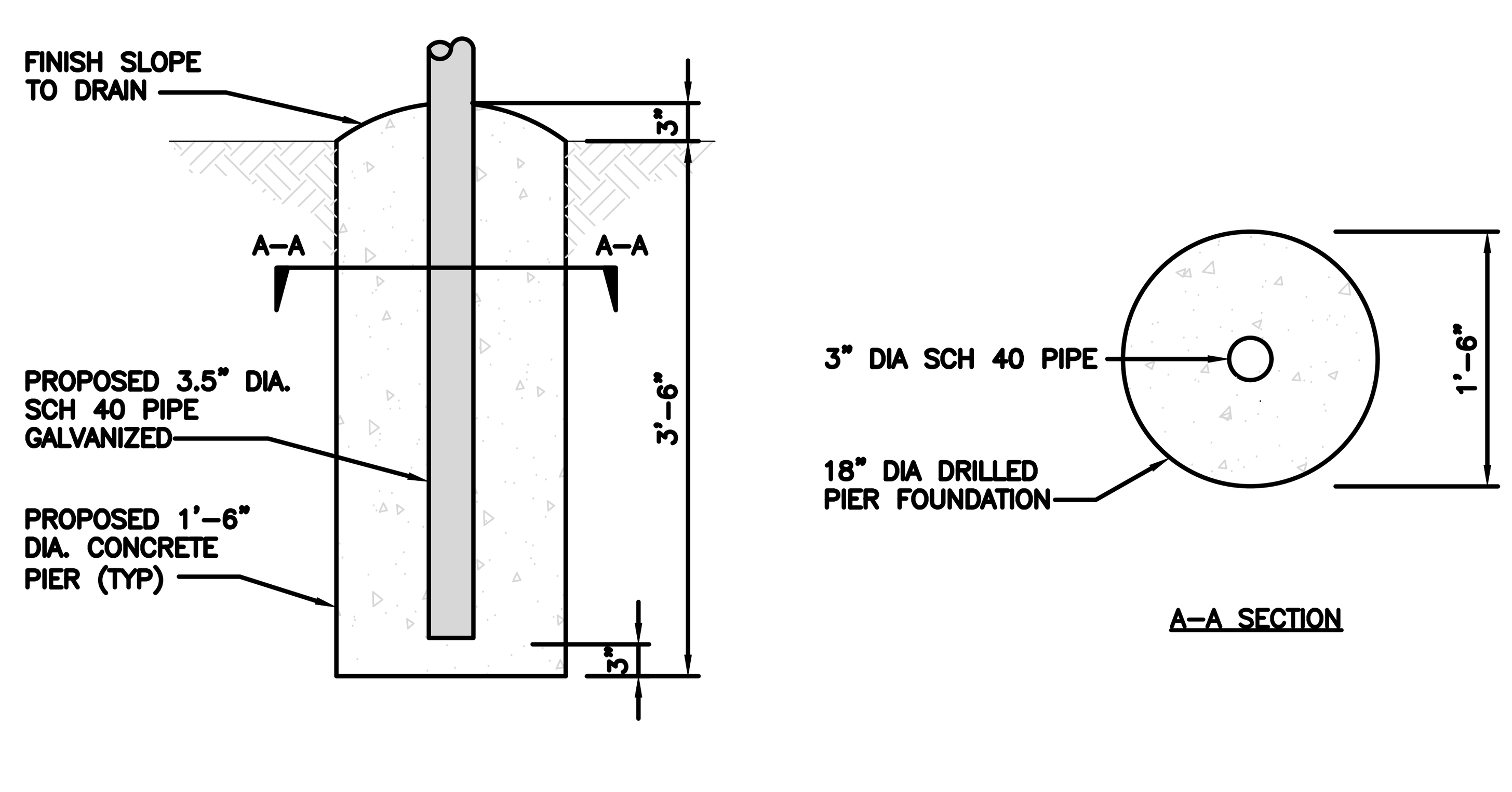
COMMSCOPE WB-K110-B WAVEGUIDE BRIDGE KIT

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

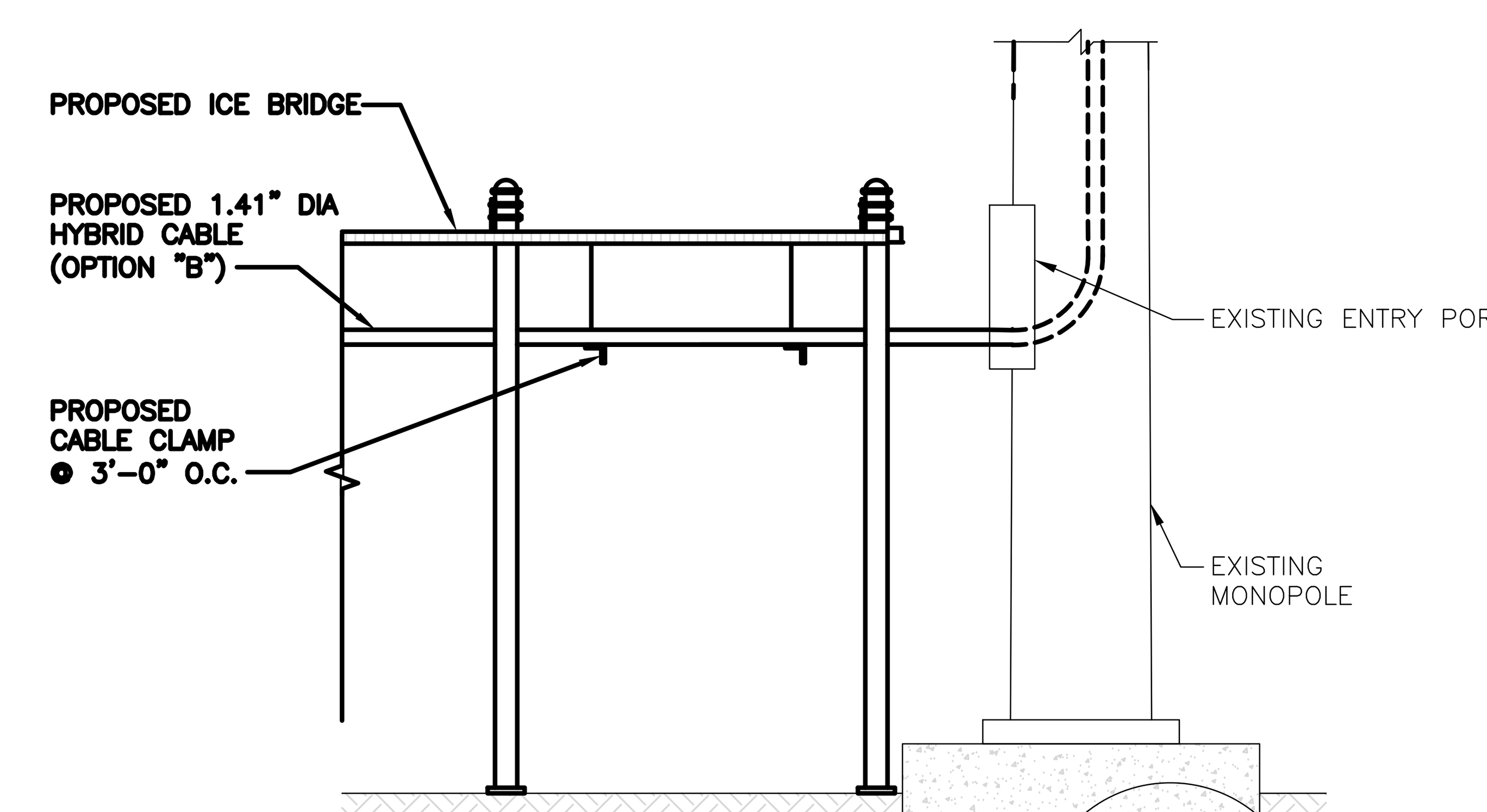
INCLUDED PRODUCTS:	WB-T12-3 TRAPEZE KIT, 3 RUNGS
	WB-LB12-3 SUPPORT BRACKET
	MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:

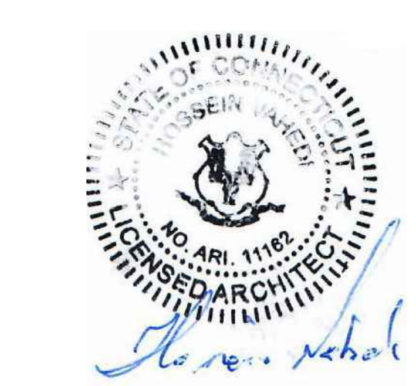
NORTHEAST SITE SOLUTIONS

420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
PH: 203-275-6669

CONSULTANT:

FORESITE LLC
Architects . Engineers . Surveyors

462 WALNUT STREET, SUITE 1
NEWTON, MA 02446



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

DRAWN BY:	CHECKED BY:	APPROVED BY:
MR	SM	HV

RFDS REV #: 1 ---

PRELIMINARY DOCUMENTS

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CARRIER
DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

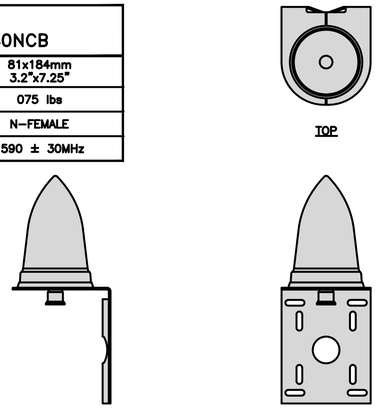
DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

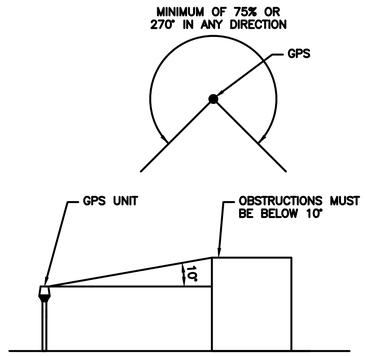
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

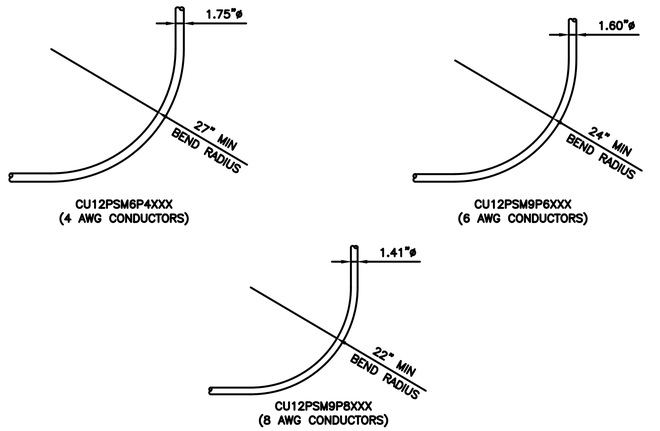
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



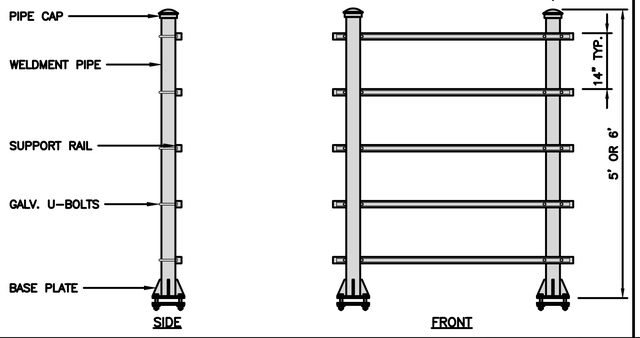
GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

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 | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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

PROJECT MANAGER:
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420 MAIN STREET, BLDG 4
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DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

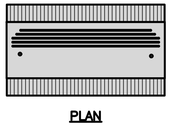
DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

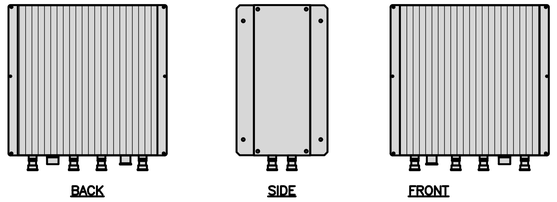
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

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



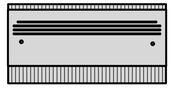
PLAN



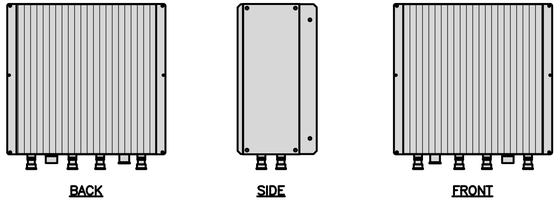
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 1

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



PLAN

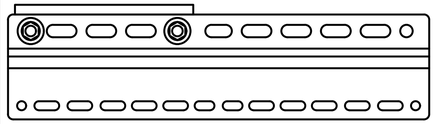


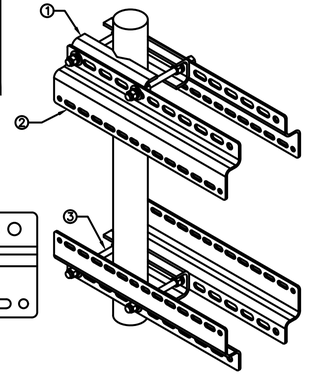
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 2

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

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

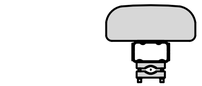




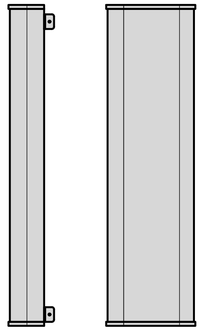
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

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



PLAN



SIDE FRONT

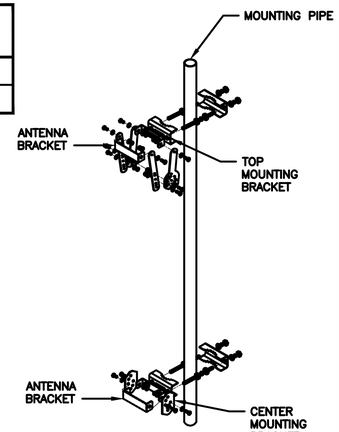
ANTENNA DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

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

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

ANTENNA BRACKET NOT PART OF KIT

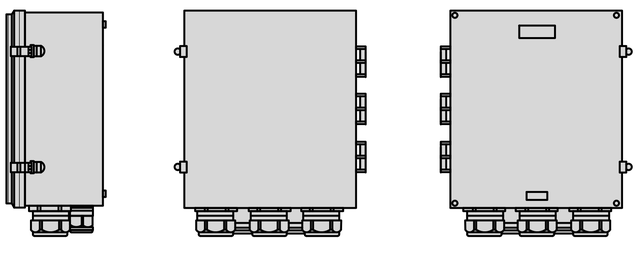


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

ANTENNA BRACKET DETAIL | NO SCALE | 6

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

PLAN



SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

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

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

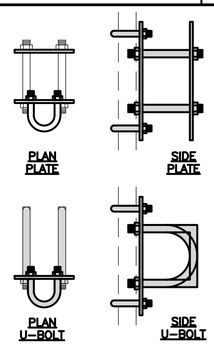
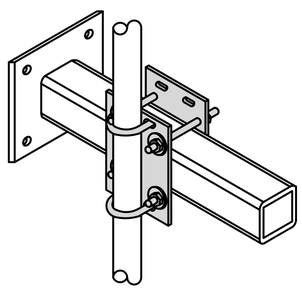


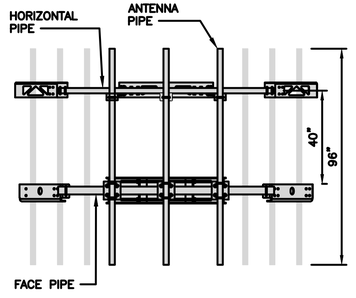
PLATE PLATE U-BOLT U-BOLT

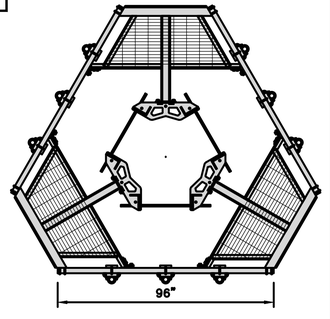


RRH/OVP MOUNT DETAIL | NO SCALE | 8

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

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





ANTENNA PLATFORM DETAIL | NO SCALE | 9

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

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NORTHEAST SITE SOLUTIONS
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CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
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DRAWN BY:	CHECKED BY:	APPROVED BY:
MR	SM	HV

RFDS REV #: 1 ---

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CARRIER
DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

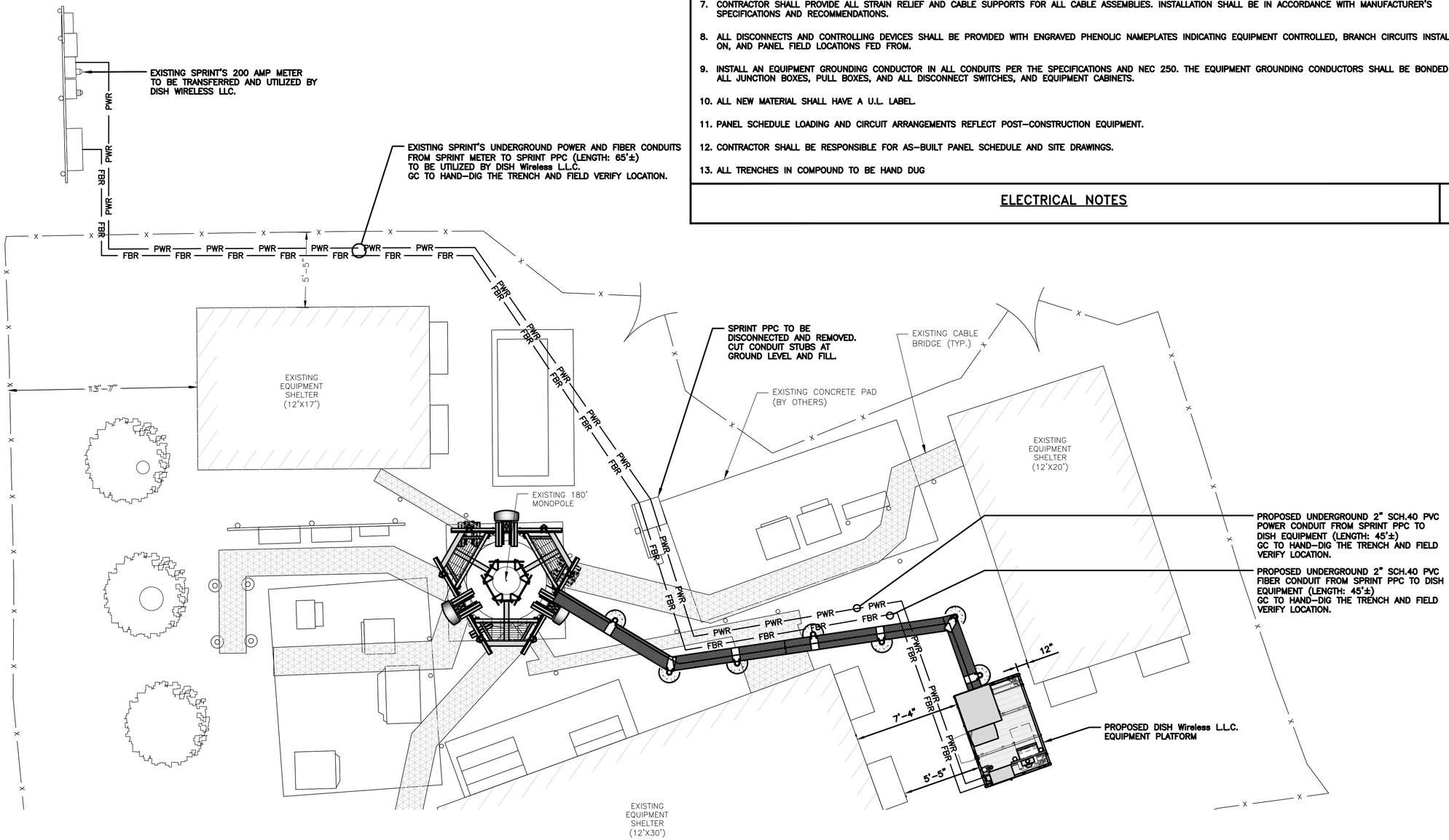
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. DUE TO UTILITY EASEMENT RIGHTS SPECIFIED IN THE GROUND LEASE, CUSTOMER MAY INSTALL EQUIPMENT WITHIN SPECIFIED UTILITY EASEMENT AREA. "PWR" AND "FBR" PATH DEPICTED ON A–1 AND E–1 REPRESENT PLANNED ROUTING BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO A SURVEY, EXHIBITS, METES AND BOUNDS OF THE UTILITY EASEMENT, FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPETY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS MATERIALLY INCONSISTENT WITH "PWR" AND "FBR" PATH DEPICTED ON A–1 AND E–1 AND SAID VARIANCE IS NOT NOTED ON CDs, PLEASE NOTIFY TOWER OWNER AS FURTHER COORDINATION MAY BE NEEDED.

* KEEP UTILITY ALIGNMENTS UNTIL FIBER AND POWER DESIGNS ARE COMPLETED, THEN VERIFY AND MODIFY AS NECESSARY.



UTILITY ROUTE PLAN

12' 8' 4' 0 10' 20'
3/32"=1'–0"

1

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

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

ELECTRICAL NOTES

2

dish wireless.
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DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

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PROJECT INFORMATION

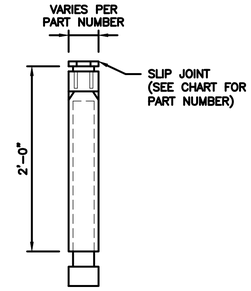
BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

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

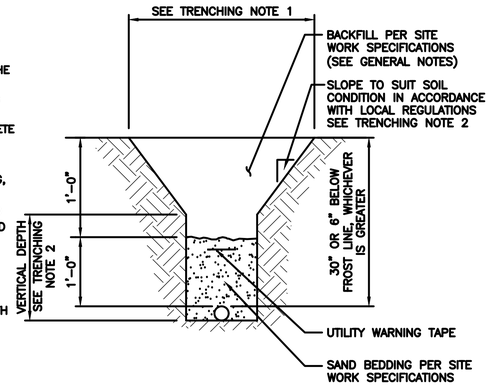


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

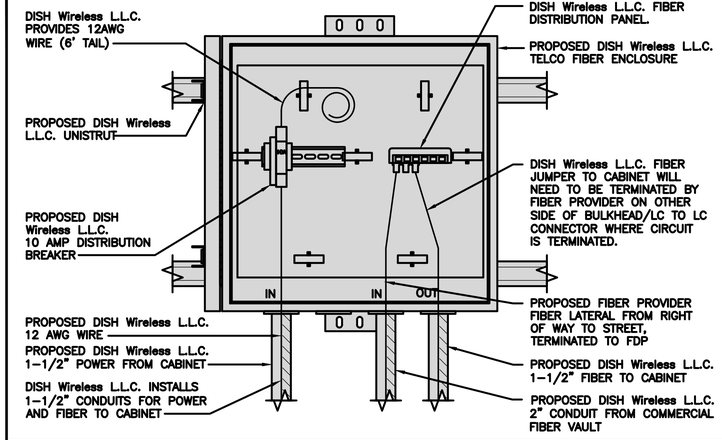
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

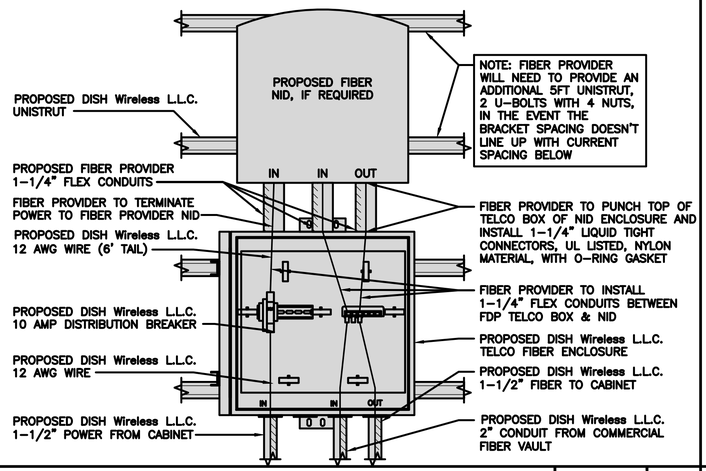
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

dish wireless.

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LITTLETON, CO 80120

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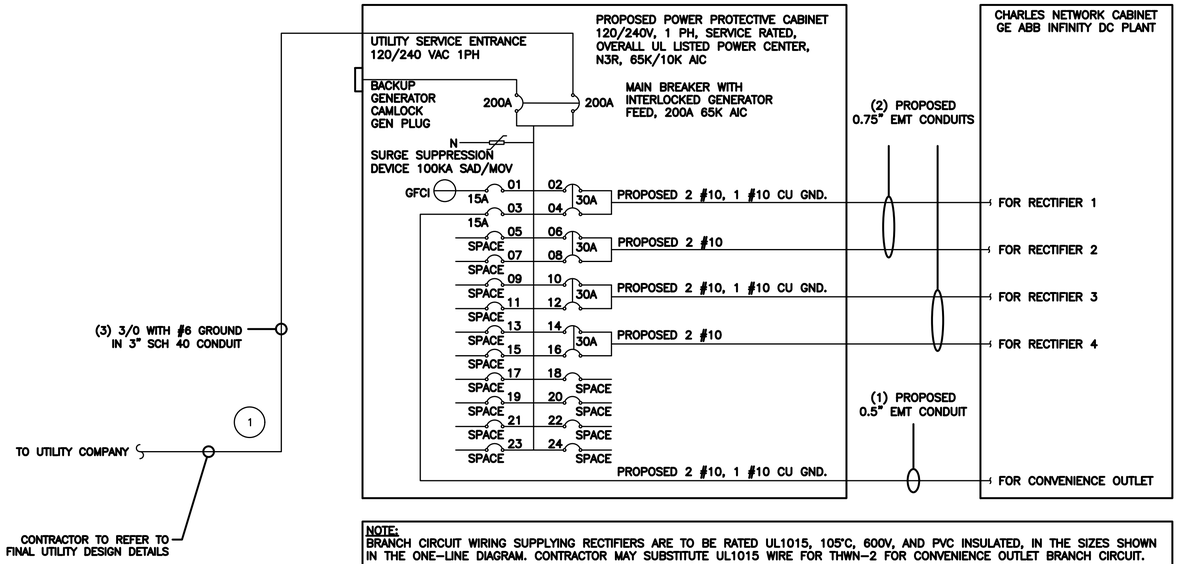
PROJECT INFORMATION

BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



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

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

NOTES

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED SHORT CIRCUIT CALCULATIONS AND THE AIC RATINGS FOR EACH DEVICE IS ADEQUATE TO PROTECT THE EQUIPMENT AND THE ELECTRICAL SYSTEM.

THE ENGINEER OF RECORD HAS PERFORMED ALL REQUIRED VOLTAGE DROP CALCULATIONS AND ALL BRANCH CIRCUIT AND FEEDERS COMPLY WITH THE NEC (LISTED ON T-1) ARTICLE 210.19(A)(1) FPN NO. 4.

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

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

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

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

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

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

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

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

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

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

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

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

(1) OPTIONAL ALUMINUM SERVICE CONDUCTOR:
- 4/0 AL + #2 GRD MAY BE USED INSTEAD OF 3/0 CU + #6 GRD IF THE TOTAL LENGTH OF THE CONDUCTOR IS LESS THAN 300 FT FROM THE TRANSFORMER.
- ALUMINUM CONDUCTORS MUST BE 90°C TO CARRY THE FULL 200A LOAD REQUIRED
- ALUMINUM TO COPPER BUSS CONNECTIONS MUST MEET AND CONFORM TO ANSI AND BE UL LISTED. USE ANTI CORROSION CONDUCTIVE LUBRICANT ON CONNECTIONS

PPC ONE-LINE DIAGRAM | NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE
GE ABB INFINITY DC PLANT

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

PANEL SCHEDULE | NO SCALE | 2

NOT USED | NO SCALE | 3

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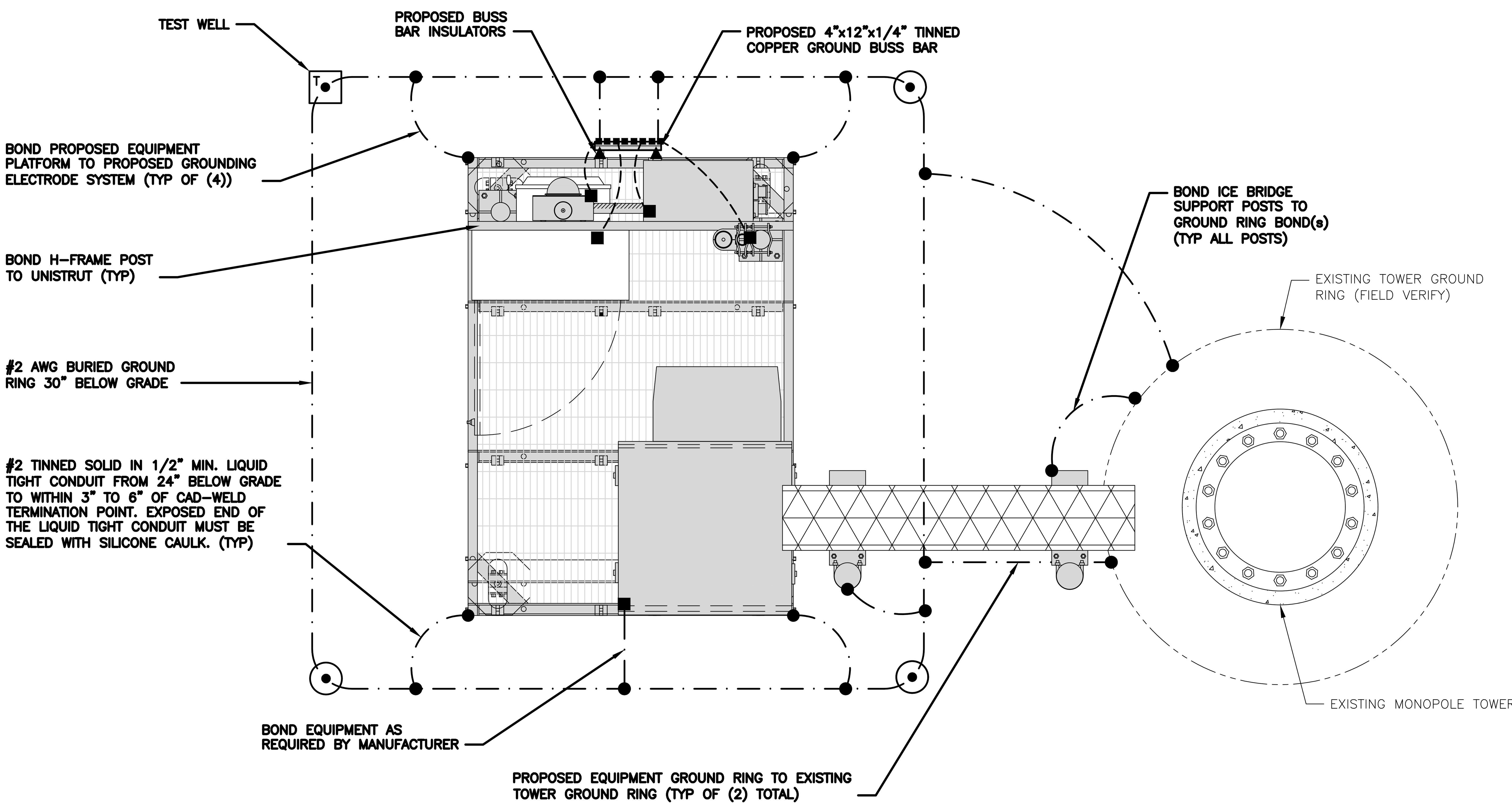
PROJECT INFORMATION

BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

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

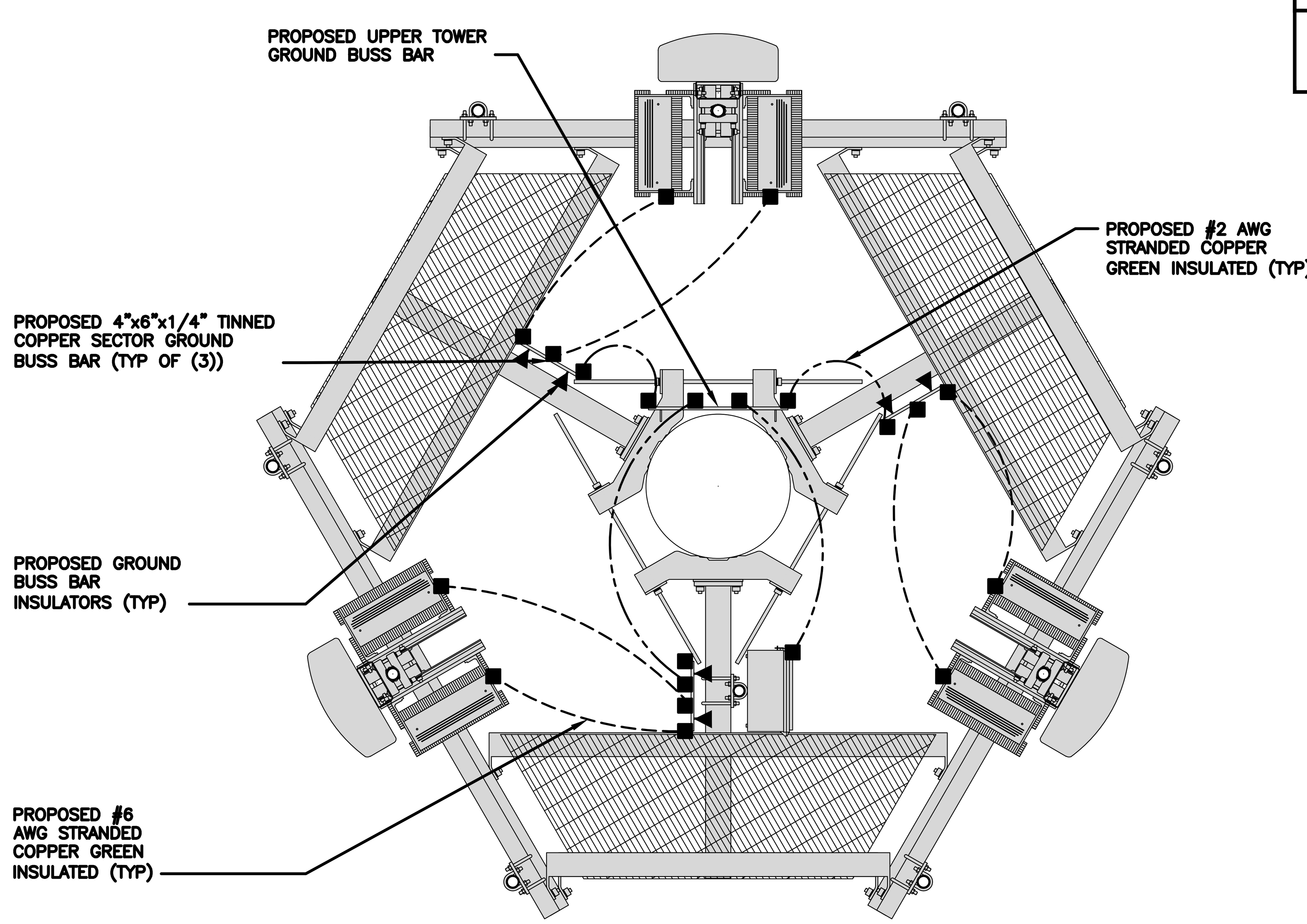
SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN — NO SCALE — 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN — NO SCALE — 2

GROUNDING LEGEND

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

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES — NO SCALE — 3

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MR	SM	HV

RFDS REV #: 1 ---

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CARRIER
DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

DISH WIRELESS, LLC.
PROJECT INFORMATION

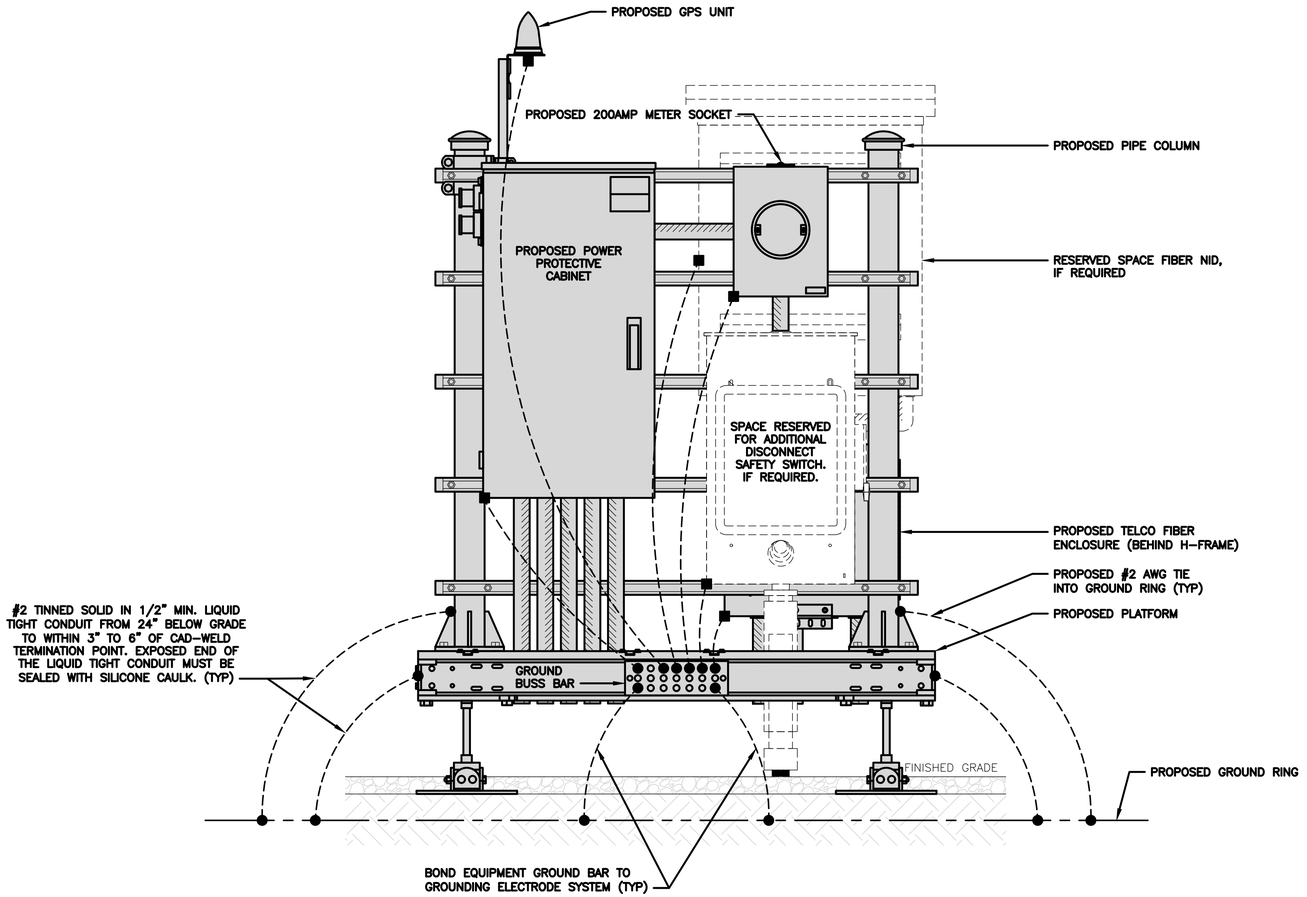
BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
GROUNDING PLANS AND NOTES

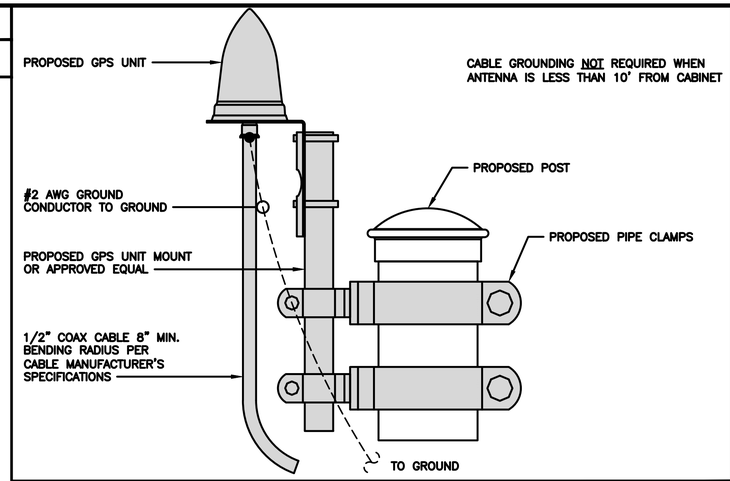
SHEET NUMBER
G-1

NOTES

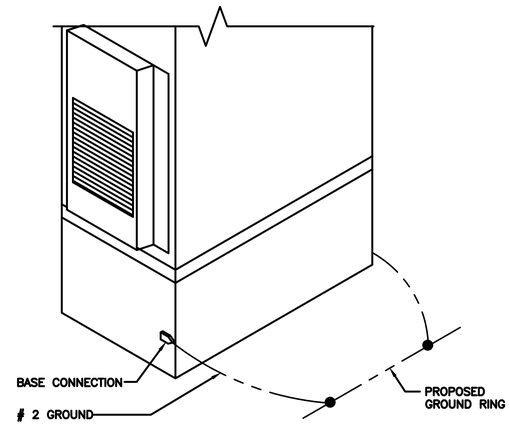
EQUIPMENT CABINET OMITTED FOR CLARITY



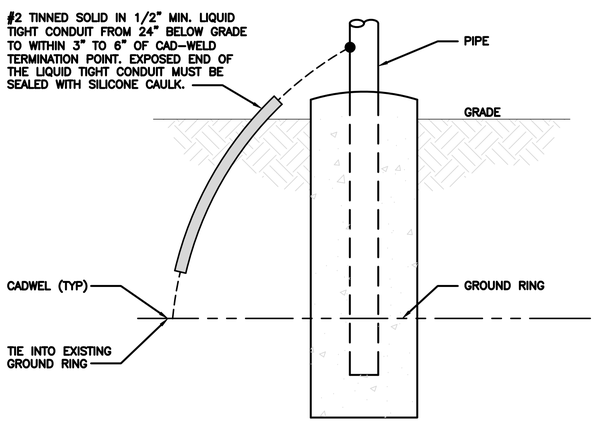
H-FRAME GROUNDING DETAIL | NO SCALE | 1



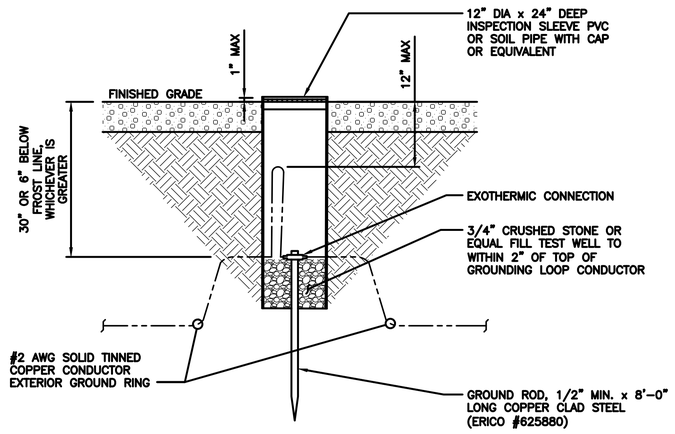
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



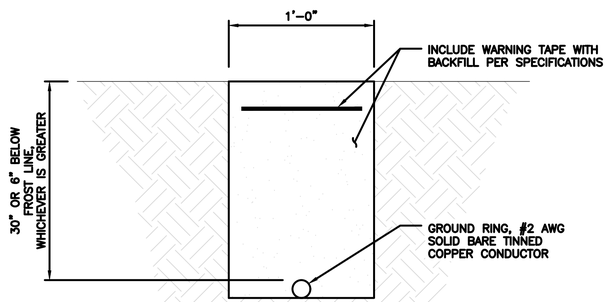
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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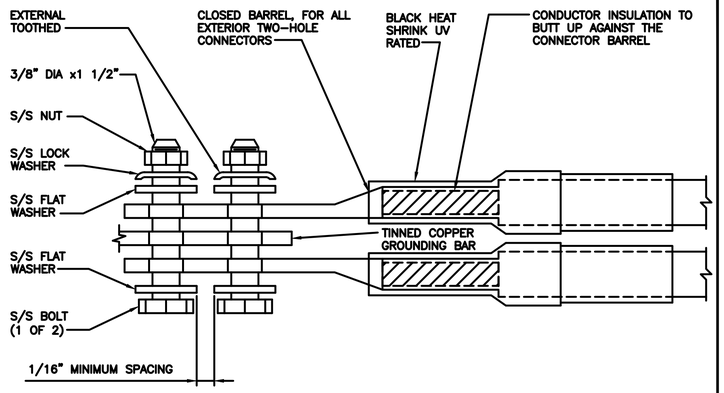
WETHERSFIELD, CT 06109

SHEET TITLE
GROUNDING DETAILS

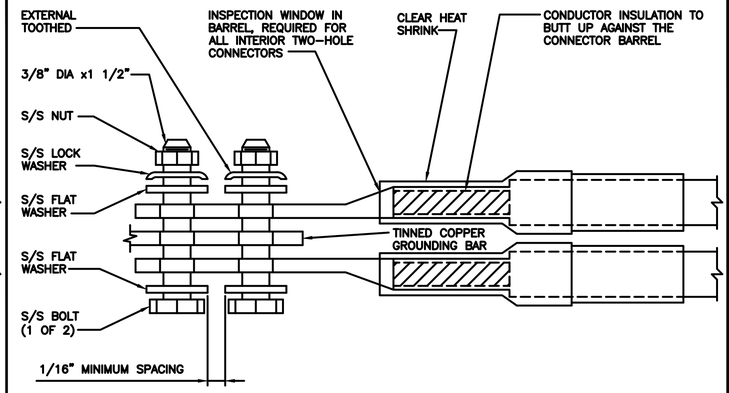
SHEET NUMBER
G-2

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

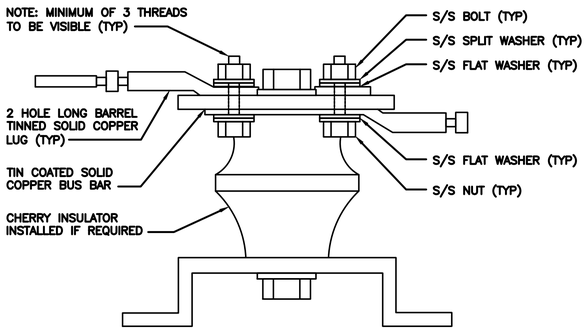
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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SHEET TITLE
GROUNDING DETAILS

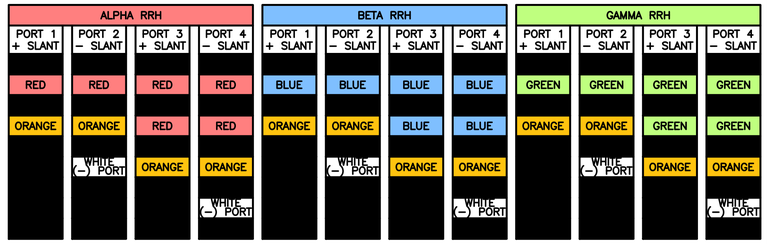
SHEET NUMBER
G-3

HYBRID/DISCREET CABLES

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

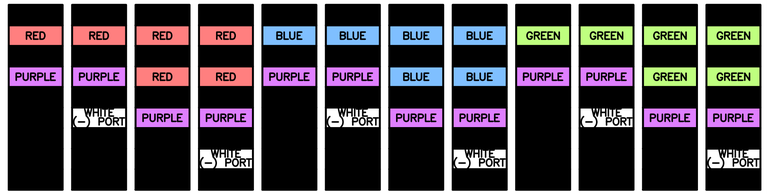
LOW-BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH
(AWS BANDS N66+N70)

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



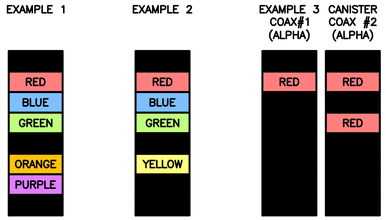
HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

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

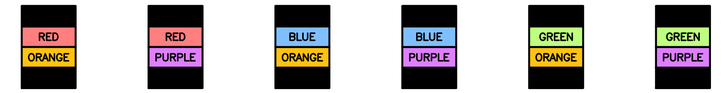
EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS.

EXAMPLE 3 – MAIN COAX WITH GROUND MOUNTED RRHs.



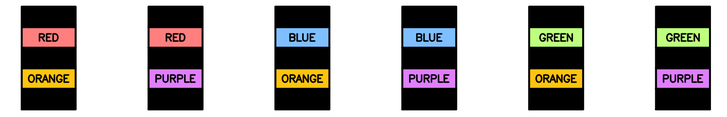
FIBER JUMPERS TO RRHs

LOW-BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.



POWER CABLES TO RRHs

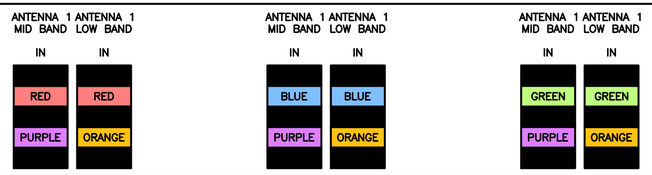
LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

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

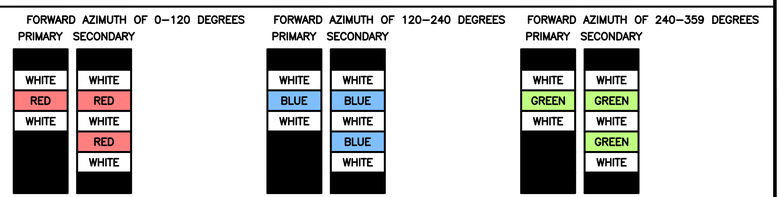
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



MICROWAVE RADIO LINKS

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

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



RF CABLE COLOR CODES	NO SCALE	1

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

AWS (N66+N70+H-BLOCK): PURPLE

CBRS TECH (3 GHz): YELLOW

NEGATIVE SLANT PORT ON ANT/RRH: WHITE

ALPHA SECTOR: RED

BETA SECTOR: BLUE

GAMMA SECTOR: GREEN

COLOR IDENTIFIER	NO SCALE	2

NOT USED	NO SCALE	3

NOT USED	NO SCALE	4

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23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM — T

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE — T

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE — GFCI

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

SMOKE DETECTION (DC) — SD

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE — X X X X

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W W W W W

UNDERGROUND POWER — UGP UGP UGP UGP UGP

UNDERGROUND TELCO — UGT UGT UGT UGT UGT

OVERHEAD POWER — OHP OHP OHP OHP

OVERHEAD TELCO — OHT OHT OHT OHT

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

ABOVE GROUND POWER — AGP AGP AGP AGP AGP

ABOVE GROUND TELCO — AGT AGT AGT AGT AGT

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

WORKPOINT — W.P.

SECTION REFERENCE — XX / X–X

DETAIL REFERENCE — XX / X–X

ABBREVIATIONS

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:
NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
PH: 203–275–6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 WALNUT STREET, SUITE 1
NEWTON, MA 02446

COMMONWEALTH OF MASSACHUSETTS — JOSEPH M. NICHOLS — NO. ARI. 111661 — REGISTERED ARCHITECT

DRAWN BY:	CHECKED BY:	APPROVED BY:
MR	SM	HV

RFDS REV #: 1 ---

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	05/17/2022	ISSUED FOR REVIEW
B	06/14/2022	REVISED PER COMMENTS
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CARRIER
DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

SIGN TYPES		
TYPE	COLOR	COLOR CODE PURPOSE
INFORMATION	GREEN	"INFORMATIONAL SIGN" TO NOTIFY OTHERS OF SITE OWNERSHIP & CONTACT NUMBER AND POTENTIAL RF EXPOSURE.
NOTICE	BLUE	"NOTICE BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
CAUTION	YELLOW	"CAUTION BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
WARNING	ORANGE/RED	"WARNING BEYOND THIS POINT" RF FIELDS AT THIS SITE EXCEED FCC RULES FOR HUMAN EXPOSURE. FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS COULD RESULT IN SERIOUS INJURY. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)

SIGN PLACEMENT:

- RF SIGNAGE PLACEMENT SHALL FOLLOW THE RECOMMENDATIONS OF AN EXISTING EME REPORT, CREATED BY A THIRD PARTY PREVIOUSLY AUTHORIZED BY DISH Wireless L.L.C.
- INFORMATION SIGN (GREEN) SHALL BE LOCATED ON EXISTING DISH Wireless L.L.C EQUIPMENT.
  A) IF THE INFORMATION SIGN IS A STICKER, IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C EQUIPMENT CABINET.
  B) IF THE INFORMATION SIGH IS A METAL SIGN IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C H-FRAME WITH A SECURE ATTACH METHOD.
- IF EME REPORT IS NOT AVAILABLE AT THE TIME OF CREATION OF CONSTRUCTION DOCUMENTS; PLEASE CONTACT DISH Wireless L.L.C. CONSTRUCTION MANAGER FOR FURTHER INSTRUCTION ON HOW TO PROCEED.

NOTES:

1. FOR DISH Wireless L.L.C. LOGO, SEE DISH Wireless L.L.C. DESIGN SPECIFICATIONS (PROVIDED BY DISH Wireless L.L.C.)
2. SITE ID SHALL BE APPLIED TO SIGNS USING "LASER ENGRAVING" OR ANY OTHER WEATHER RESISTANT METHOD (DISH Wireless L.L.C. APPROVAL REQUIRED)
3. TEXT FOR SIGNAGE SHALL INDICATE CORRECT SITE NAME AND NUMBER AS PER DISH Wireless L.L.C. CONSTRUCTION MANAGER RECOMMENDATIONS.
4. CABINET/SHELTER MOUNTING APPLICATION REQUIRES ANOTHER PLATE APPLIED TO THE FACE OF THE CABINET WITH WATER PROOF POLYURETHANE ADHESIVE
5. ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS STEEL TECH SCREWS
6. ALL SIGNS TO BE 8.5"x11" AND MADE WITH 0.04" OF ALUMINUM MATERIAL

INFORMATION

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.
Call the DISH Wireless L.L.C. NOC at 1-866-624-6874

Site ID: _____

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

NOTICE

Transmitting Antenna(s)

Radio frequency fields beyond this point MAY *EXCEED* the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: _____

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

⚠ CAUTION

Transmitting Antenna(s)

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Site ID: _____

dish

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⚠ WARNING

Transmitting Antenna(s)

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Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: _____

dish

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RF SIGNAGE

dish wireless.

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LITTLETON, CO 80120

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CARRIER
DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
RF SIGNAGE

SHEET NUMBER
GN-2

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-3

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

PROJECT MANAGER:
NORTHEAST SITE SOLUTIONS
420 MAIN STREET, BLDG 4
STURBRIDGE, MA 01566
PH: 203-275-6669

CONSULTANT:
FORESITE LLC
Architects . Engineers . Surveyors
462 WALNUT STREET, SUITE 1
NEWTON, MA 02446

COMMONWEALTH OF MASSACHUSETTS
MARK A. NICHOLS
NO. ARI. 11161
REGISTERED ARCHITECT

DRAWN BY:	CHECKED BY:	APPROVED BY:
MR	SM	HV

RFDS REV #: 1 ---

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	05/17/2022	ISSUED FOR REVIEW
B	06/14/2022	REVISED PER COMMENTS
C	08/23/2022	REVISED PER COMMENTS
1	08/31/2022	FINAL ISSUED
2	09/19/2022	REVISED PER COMMENTS

CARRIER
DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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PROJECT MANAGER:
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Turnkey Wireless Development
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Architects . Engineers . Surveyors
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NEWTON, MA 02446

DRAWN BY:	CHECKED BY:	APPROVED BY:
MR	SM	HV

RFDS REV #: 1 ---

PRELIMINARY DOCUMENTS

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CARRIER
DISH WIRELESS, LLC

APPLICATION NUMBER
APP_#

DISH WIRELESS, LLC.
PROJECT INFORMATION

BOBDL00106D
23 KELLEHER COURT
WETHERSFIELD, CT 06109

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-5

Exhibit D

Structural Analysis Report

STRUCTURAL ANALYSIS REPORT
MONOPOLE TOWER -REV 1

FORESITE LLC
•Architects •Engineers •Surveyors
Complete A&E services for wireless telecommunications industry

Prepared for:

dish WIRELESS

5701 South Santa Fe Drive
Littleton, CO 80120

Site ID: BOBDL00106D
Address:
23 Kelleher Ct
Wethersfield, CT 06109

Date: 10/20/2022
Submitted by:
Foresite LLC.
462 Walnut Street, Suite 1
Newton, MA 02460
Phone:617-5273031

STRUCTURAL ANALYSIS REPORT – REV. 1
MONOPOLE

Prepared For:

Dish Wireless LLC
5701 South Santa Fe Drive
Littleton, CO 80120

Structure Rating:

Monopole:	**Pass (78.6%)**
Anchor Bolts:	**Pass (89.4%)**
Base Plate:	**Pass (55.4%)**
Foundation:	**Pass (91.4%)**

Sincerely,
EFI Global, Inc.
License No: PEC0001245

STATE OF CONNECTICUT
AHMET COLAKOGLU
PEN. 27057
LICENSED
PROFESSIONAL ENGINEER

10/19/2022

Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057

Dish Wireless Site ID: BOBDL00106D
23 Kelleher Ct
Wethersfield, CT 06109

EFI Global, Inc.
1117 Perimeter Center West, Suite E500, Atlanta, GA 30338 – Tel: (470) 990-6593

CONTENTS

EFI Global, Inc.
1117 Perimeter Center West, Suite E500, Atlanta, GA 30338 – Tel: (470) 990-6593

1.0 SUBJECT AND REFERENCES

The purpose of this analysis is to evaluate the structural capacity of the 179 ft. tall monopole tower located at 23 Kelleher Ct, Wethersfield, CT 06109 for the additions and alterations proposed by Dish Wireless LLC (Dish).

The structural analysis is based on the following documentation provided to EFI Global, Inc. (EFI):

- Email provided by ForeSite L.L.C., dated 04/27/2022.
- RFDS prepared by Dish Wireless L.L.C., dated 04/18/2022.
- Structural Analysis Report prepared by Hudson Design Group L.L.C., dated 11/01/2021.

1.1 STRUCTURE

The structure is a 179 ft. tall, 18-sided monopole. The monopole is attached to the foundation with a base plate and anchor bolts. It is formed by the following sections:

Section Length (ft)	Lap Splice (ft)	Shaft Thickness (in)	Top Dia/Bottom Dia (in/in)	Steel Yield Strength (ksi)
37.75	4.33	0.250	23.100/33.249	65
53.00	5.92	0.375	31.584/45.833	65
53.00	7.50	0.375	43.493/57.742	65
53.00*	-	0.375	54.976/69.225	65

*Bottom 30’ of the monopole is reinforced as per previous SA by Hudson Design Group.

2.0 EXISTING AND PROPOSED APPURTENNANCES

Proposed and Final Configuration of Dish Wireless LLC Appurtenances:

Rad Center (ft.)	Antennas & Equipment	Coax	Mounts
110	(3) JMA MX08FRO665-21 (3) Fujitsu TA08025-B605 (3) Fujitsu TA08025-B604 (1) Raycap RDIDC-9181-PF-48	(1) 1.411” Hybrid*	(1) Valmont/Site Pro 1 (P/N# SNP8HR-396)

***Inside Shaft**

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Appurtenances By Others:

RAD CENTER (FT)	ANTENNA & TMA	COAX	MOUNT
181	(1) Omni 2''x6' (1) Omni 4''x6' (2) Omni 3''x4' (1) Omni 3''x10' (1) 4' Dipole (2) Distribution Box	(1) 1-1/4”* (2) 7/8”* (4) 1-5/8”* (2) 1/2"*	(3) 6’ T-Arm Mount
178	(1) 2' Dish		(1) Pipe Mount
174	(1) KMW ET-X-TU-42-15-37-18-iR-ST (2) RFS APXVSPP18-C (3) RFS APXV9TM14 (3) RRH 8X20-25	(1) 1-1/4” (6) 1-1/4”*	(3) 12’ T-Arm Mount
170	(3) 1900 RRH (3) 800 RRH		(1) Ring Mount
159	(1) 2' Dish	(1) 1/4"*	(1) Pipe Mount
151	(3) RFS APXVAARR24_43-U-NA20 (3) Ericsson AIR6449 B41 (3) Ericsson AIR 32 B66A B2A (3) 4449 B71+B85 RRH (3) 4415 B25 RRH (3) SDX1926Q-43 | E14F05P86 (3) Twin Style 1B - AWS TMA	(6) 1-5/8” (4) 6x12 Hybrid	(3) 12' T-Arm Kit w/ Handrail
140	(2) Quintel QD8616-7 (1) Quintel QD4616-7 (3) Ericsson AIR 6419 N77D (3) Ericsson AIR 6449 B77D (2) CCI DMP65R-BU8DA (1) CCI DMP65R-BU4DA (3) 4449 B5/B12 RRH (3) 4415 B25 RRH (3) 4478 B14 RRH (3) RRUS-32 B66A RRH (3) RRUS-32 B30 RRH (3) Squid Surge Arrestor	(6) 1-5/8”* (7) DC* (3) Fiber*	(3) 12'-6'' Sector Frames
130	(3) Amphenol BXA-70063/4CF (6) Commscope SBNHH-1D65B (3) L-SUB6 (3) B2/B66A RRH-BR049 RRH (3) B5/B13 RRH-BR04C RRH (2) Junction Box	(6) 1-5/8” (2) 1-1/4”*	(1) 14' Platform w/ Handrail
126	(1) 2' Dish	(1) 1/4"*	(1) Pipe Mount

***: Inside Shaft**

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3.0 CODES AND LOADING

The analysis has been performed in accordance with the TIA-222-H Standard, as referenced by the 2018 International Building Code and the 2022 Connecticut State Building Code, based upon a 3-second gust wind speed of 120 mph (Risk Category II). The following loading criteria were used in this analysis:

- Basic Wind Speed 120 mph without ice (V)
- Wind speed 50 mph concurrent with design ice thickness of 1.50" (V_i, t_i)
- Exposure Category: C, Risk Category: II, I = 1.0
- Topographic Category I
- TIA-222-H Annex S

The following load combinations were used with wind blowing at 30^o increments, measured from a line normal to the face of the tower:

- 1.2 D + 1.0 W_0
- 0.9 D + 1.0 W_0
- 1.2 D + 1.0 D_i + 1.0 W_i

D: Dead load of structures and appurtenances
D_i: Weight of ice due to factored ice thickness
W_0: Wind load without ice
W_i: Concurrent wind load with factored ice thickness

4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

The analysis is based on the information provided to EFI and is assumed to be current and correct. Unless otherwise noted, the structure and the foundation system are assumed to be in good condition, free of defects and can achieve theoretical strength.

It is assumed that the structure has been maintained and shall be maintained during its service. The superstructure and the foundation system are assumed to be designed with proper engineering practice and fabricated, constructed and erected in accordance with the design documents. EFI will accept no liability which may arise due to any existing deficiency in design, material, fabrication, erection, construction, etc. or lack of maintenance.

The analysis does not include a qualification of the mounts attached on the structure or their connections. The analysis is performed to verify the capacity of the main structural members, which is the current practice in the tower industry.

The analysis results presented in this report are only applicable for the previously mentioned existing and proposed additions and alterations. Any deviation of the proposed equipment and placement, etc., will require EFI to generate an additional structural analysis.

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5.0 ANALYSIS AND ASSUMPTIONS

The tower was analyzed by utilizing tnxTower, a non-linear, three-dimensional, finite element-analysis software package, a product of Tower Numerics, Inc. Software output for this analysis is provided in Appendix A of this report.

All reported tower member and component capacities are provided in accordance with TIA-222-H, Section 15.5.

6.0 RESULTS AND CONCLUSION

Based on a rigorous analysis per ANSI/TIA-222-H, the existing monopole is found to have **adequate** structural capacity for the proposed changes by Dish Wireless LLC. For the code specified load combinations and as a maximum, the anchor rods are stressed to **89.4%** of their structural capacity. The monopole shaft and base plate are stressed to **78.6%** and **55.4%** of their structural capacities, respectively.

The existing foundation is found to have **adequate** structural capacity for the proposed changes by Dish Wireless LLC.

Therefore, the proposed alterations and additions by Dish Wireless LLC **can** be implemented as intended, with the conditions outlined in this report.

Should you need any clarifications or have any questions about this report, please contact EFI at telecom@efiglobal.com.

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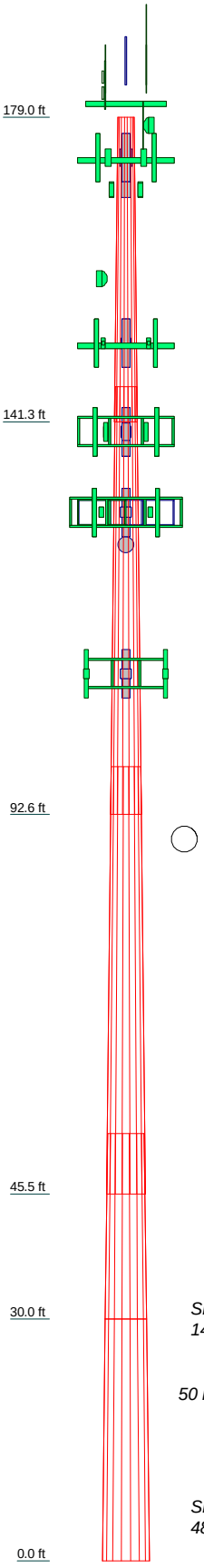
APPENDIX A
SOFTWARE OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	37.7500	18	0.2500	4.3300	23.1000	33.2490		2.8
2	53.0000	18	0.3750	5.9200	31.5849	45.8340		8.2
3	53.0000	18	0.3750	7.5000	43.4924	57.7420		10.8
4	23.0000	18	0.3750		54.9755	61.1600		5.4
5	30.0000	18	0.4100		61.1600	69.2250		8.6
							A572-65	



ALL REACTIONS ARE FACTORED

AXIAL 131 K

SHEAR 14 K

MOM 1844

TORQUE 1 kip-ft

50 mph WIND - 1.5000 in ICE

AXIAL 83 K

SHEAR 48 K

MOM 5927

TORQUE 2 kip-ft

REACTIONS - 120 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
2"Dia X6' Omni	181	AIR 6449 N77_TIA w/ Mount Pipe	140
4"Dia X6' Omni	181	DMP65R-BU8D_TIA w/ Mount Pipe	140
3"Dia X4' Omni	181	DMP65R-BU8D_TIA w/ Mount Pipe	140
3"Dia X10' Omni	181	DMP65R-BU4D_TIA w/ Mount Pipe	140
3"Dia X4' Omni	181	RADIO 4449 B5/B12	140
4'x1.75" Dipole	181	RADIO 4449 B5/B12	140
Distribution Box (20" x 12" x 7")	181	RADIO 4449 B5/B12	140
Distribution Box (20" x 12" x 7")	181	RADIO 4415 B25_TMO	140
T-Arm Mount [TA 601-3]	181	RADIO 4415 B25_TMO	140
6'-P2x0.154	178	RADIO 4415 B25_TMO	140
2' Dish	178	RADIO 4478 B14	140
APXVSPP18-C_TIA w/ Mount Pipe	174	RADIO 4478 B14	140
APXVSPP18-C_TIA w/ Mount Pipe	174	RADIO 4478 B14	140
APXV9TM14-ALU-I20_TIA w/ Mount Pipe	174	RRUS 32 B30	140
		RRUS 32 B30	140
APXV9TM14-ALU-I20_TIA w/ Mount Pipe	174	RRUS 32 B30	140
		RRUS 32 B66A	140
APXV9TM14-ALU-I20_TIA w/ Mount Pipe	174	RRUS 32 B66A	140
		RRUS 32 B66A	140
TD-RRH8x20-25	174	Squid Surge Arrestor	140
TD-RRH8x20-25	174	Squid Surge Arrestor	140
TD-RRH8x20-25	174	Squid Surge Arrestor	140
T-Arm Mount [TA 602-3]	174	(3) 12'-6" Sector Frames	140
ET-X-TU-42-15-37-18-iR-ST_TIA w/ Mount Pipe	174	4'-P2x0.154	140
		4'-P2x0.154	140
1900MHz RRH	170	4'-P2x0.154	140
1900MHz RRH	170	QD8616-7_TIA w/ Mount Pipe	140
800MHZ RRH	170	QD8616-7_TIA w/ Mount Pipe	140
800MHZ RRH	170	BXA-70063-4CF-EDIN-6_TIA w/ Mount Pipe	130
800MHZ RRH	170		
Ring Mount	170	(2) SBNHH-1D65B_TIA w/ Mount Pipe	130
1900MHz RRH	170	(2) SBNHH-1D65B_TIA w/ Mount Pipe	130
6'-P2x0.154	159	(2) SBNHH-1D65B_TIA w/ Mount Pipe	130
2' Dish	159	L-SUB6 w/ Mount Pipe	130
APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	151	L-SUB6 w/ Mount Pipe	130
		L-SUB6 w/ Mount Pipe	130
AIR6449 B41_TIA w/ Mount Pipe	151	Samsung-B2/B66A RRH-BR049	130
AIR6449 B41_TIA w/ Mount Pipe	151	Samsung-B2/B66A RRH-BR049	130
AIR6449 B41_TIA w/ Mount Pipe	151	Samsung-B2/B66A RRH-BR049	130
AIR 32 B2A B66AA_TIA w/ Mount Pipe	151	Samsung-B5/B13 RRH-BR04C	130
AIR 32 B2A B66AA_TIA w/ Mount Pipe	151	Samsung-B5/B13 RRH-BR04C	130
AIR 32 B2A B66AA_TIA w/ Mount Pipe	151	Samsung-B5/B13 RRH-BR04C	130
RADIO 4449 B71/B85A	151	Junction Box	130
RADIO 4449 B71/B85A	151	Junction Box	130
RADIO 4449 B71/B85A	151	14' Platform w/ Handrail	130
RADIO 4415 B25_TMO	151	BXA-70063-4CF-EDIN-6_TIA w/ Mount Pipe	130
RADIO 4415 B25_TMO	151		
RADIO 4415 B25_TMO	151	BXA-70063-4CF-EDIN-6_TIA w/ Mount Pipe	130
SDX1926Q-43	151		
SDX1926Q-43	151	6'-P2x0.154	126
SDX1926Q-43	151	2' Dish	126
Generic Style 1B - Twin AWS	151	TA08025-B604	110
Generic Style 1B - Twin AWS	151	TA08025-B604	110
Generic Style 1B - Twin AWS	151	TA08025-B604	110
(3) 12' T-Arm Kit w/ Handrail	151	TA08025-B605	110
APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	151	TA08025-B605	110
		TA08025-B605	110
APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	151	RDIDC-9181-PF-48	110
		Platform Mount [LP 716-1]	110
QD4616-7_TIA w/ Mount Pipe	140	(2) 8'-P2x0.203	110
AIR 6419 B77G_TIA w/ Mount Pipe	140	(2) 8'-P2x0.203	110
AIR 6419 B77G_TIA w/ Mount Pipe	140	(2) 8'-P2x0.203	110
AIR 6419 B77G_TIA w/ Mount Pipe	140	MX08FRO665-21_TIA w/ Mount Pipe	110
AIR 6449 N77_TIA w/ Mount Pipe	140	MX08FRO665-21_TIA w/ Mount Pipe	110
AIR 6449 N77_TIA w/ Mount Pipe	140	MX08FRO665-21_TIA w/ Mount Pipe	110

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.0000 ft
7. TOWER RATING: 78.6%

EFI Global, Inc.

efi global 1117 Perimeter Center West, Suite E500

Atlanta, GA 30338

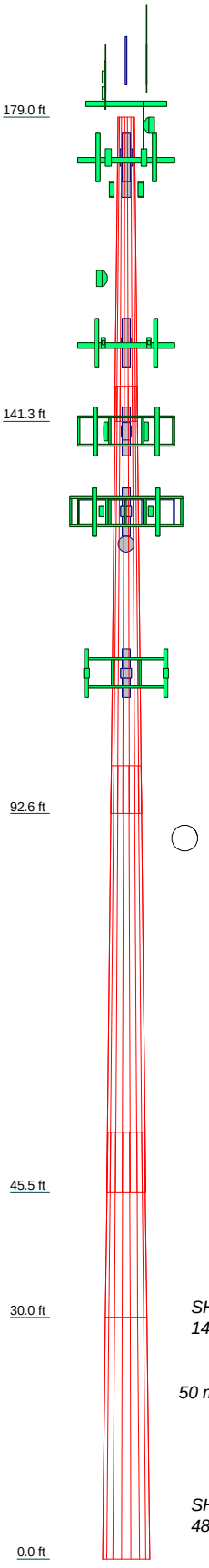
Phone: (470) 990-6593

FAX:

Job: ***BOBDL00106D***			
Project: ***049.03298 - 2275014***			
Client: Foresite LLC.	Drawn by: Patrick.Baxter	App'd:	
Code: TIA-222-H	Date: 10/19/22	Scale: NTS	
Path:		Dwg No. E-1	

Section	1	2	3	4	5
Length (ft)	37.7500	53.0000	53.0000	23.0000	30.0000
Number of Sides	18	18	18	18	18
Thickness (in)	0.2500	0.3750	0.3750	0.3750	0.4100
Socket Length (ft)	4.3300	5.9200	7.5000		
Top Dia (in)	23.1000	31.5849	43.4924	54.9755	61.1600
Bot Dia (in)	33.2490	45.8340	57.7420	61.1600	69.2250
Grade	A572-65				
Weight (K)	2.8	8.2	10.8	5.4	8.6

35.8



ALL REACTIONS ARE FACTORED

AXIAL 131 K

SHEAR 14 K *MOMENT 1844 kip-ft*

TORQUE 1 kip-ft
50 mph WIND - 1.5000 in ICE

AXIAL 83 K

SHEAR 48 K *MOMENT 5927 kip-ft*

TORQUE 2 kip-ft
REACTIONS - 120 mph WIND

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-H Standard.
2. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
3. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Risk Category II.
6. Topographic Category 1 with Crest Height of 0.0000 ft
7. TOWER RATING: 78.6%

EFI Global, Inc.
efi global 1117 Perimeter Center West, Suite E500
Atlanta, GA 30338
Phone: (470) 990-6593
FAX:

Job: ***BOBDL00106D***			
Project: ***049.03298 - 2275014***			
Client: Foresite LLC.	Drawn by: Patrick.Baxter	App'd:	
Code: TIA-222-H	Date: 10/19/22	Scale: NTS	
Path:		Dwg No. E-1	

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower base elevation above sea level: 131.0000 ft.
Basic wind speed of 120 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.0000 ft.
Nominal ice thickness of 1.5000 in.
Ice thickness is considered to increase with height.
Ice density of 56.00 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Maximum demand-capacity ratio is: 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-H Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	179.0000-141.2500	37.7500	4.33	18	23.1000	33.2490	0.2500	1.0000	A572-65 (65 ksi)
L2	141.2500-92.5800	53.0000	5.92	18	31.5849	45.8340	0.3750	1.5000	A572-65 (65 ksi)
L3	92.5800-45.5000	53.0000	7.50	18	43.4924	57.7420	0.3750	1.5000	A572-65 (65 ksi)
L4	45.5000-30.0000	23.0000	0.00	18	54.9755	61.1600	0.3750	1.5000	A572-65 (65 ksi)
L5	30.0000-0.0000	30.0000		18	61.1600	69.2250	0.4100	1.6400	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	23.4178	18.1315	1196.0325	8.1118	11.7348	101.9219	2393.6388	9.0675	3.6256	14.502
	33.7234	26.1847	3602.3567	11.7146	16.8905	213.2772	7209.4536	13.0948	5.4118	21.647
L2	33.1964	37.1476	4571.4330	11.0795	16.0451	284.9110	9148.8811	18.5773	4.8989	13.064
	46.4832	54.1076	14126.5228	16.1379	23.2837	606.7137	28271.6336	27.0589	7.4068	19.751
L3	45.7217	51.3205	12054.0604	15.3067	22.0941	545.5773	24123.9819	25.6651	6.9947	18.652
	58.5749	68.2811	28389.7820	20.3653	29.3329	967.8466	56816.9200	34.1470	9.5026	25.34
L4	57.8136	64.9883	24477.4753	19.3832	27.9276	876.4625	48987.1587	32.5003	9.0157	24.042
	62.0456	72.3493	33772.6317	21.5787	31.0693	1087.0104	67589.7022	36.1815	10.1042	26.944
L5	62.0402	79.0564	36860.9969	21.5663	31.0693	1186.4130	73770.4964	39.5357	10.0426	24.494
	70.2297	89.5517	53576.8988	24.4293	35.1663	1523.5296	107224.2955	44.7844	11.4620	27.956

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 179.0000-141.2500				1	1	1			
L2 141.2500-92.5800				1	1	1			
L3 92.5800-45.5000				1	1	1			
L4 45.5000-30.0000				1	1	1			
L5 30.0000-0.0000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
***										
174										
AVA6-50(1-1/4)	B	No	Surface Ar (CaAa)	174.0000 - 6.0000	1	1	0.000 0.000	1.5600		0.46
***										
***										
151										
MLC HYBRID 6X12 LI(1-1/2")	C	No	Surface Ar (CaAa)	151.0000 - 6.0000	4	4	-0.125 -0.125	1.5500		1.85
HJ7-50A(1-5/8")	C	No	Surface Ar (CaAa)	151.0000 - 6.0000	6	6	-0.100 -0.100	1.9800		1.04
***										
***										
130										
HJ7-50A(1-5/8")	C	No	Surface Ar (CaAa)	130.0000 - 6.0000	6	6	0.100 0.300	1.9800		1.04
***										
***										
***										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
181									
MLE Hybrid 3Power/6Fiber RL 2(1 1/4")	B	No	No	Inside Pole	179.0000 - 6.0000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.68 0.68 0.68 0.68
HJ5-50(7/8")	B	No	No	Inside Pole	179.0000 - 6.0000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.54 0.54 0.54 0.54
HJ7-50A(1-5/8")	B	No	No	Inside Pole	179.0000 - 6.0000	4	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	1.04 1.04 1.04 1.04
HJ4-50(1/2")	B	No	No	Inside Pole	179.0000 - 6.0000	2	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.25 0.25 0.25 0.25
***									
MLE Hybrid 3Power/6Fiber RL 2(1 1/4")	B	No	No	Inside Pole	174.0000 - 6.0000	6	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.68 0.68 0.68 0.68
***									
159									
LDF1-50A(1/4")	B	No	No	Inside Pole	159.0000 - 6.0000	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.0000 0.0000 0.0000 0.0000	0.06 0.06 0.06 0.06
***									
***									
140									

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
HJ7-50A(1-5/8")	B	No	No	Inside Pole	140.0000 - 6.0000	6	No Ice	0.0000	1.04
							1/2" Ice	0.0000	1.04
							1" Ice	0.0000	1.04
							2" Ice	0.0000	1.04
DC Cable	B	No	No	Inside Pole	140.0000 - 6.0000	7	No Ice	0.0000	0.88
							1/2" Ice	0.0000	0.88
							1" Ice	0.0000	0.88
							2" Ice	0.0000	0.88
Fiber	B	No	No	Inside Pole	140.0000 - 6.0000	3	No Ice	0.0000	0.49
							1/2" Ice	0.0000	0.49
							1" Ice	0.0000	0.49
							2" Ice	0.0000	0.49
***									
MLE Hybrid 3Power/6Fiber RL 2(1 1/4")	B	No	No	Inside Pole	130.0000 - 6.0000	2	No Ice	0.0000	0.68
							1/2" Ice	0.0000	0.68
							1" Ice	0.0000	0.68
							2" Ice	0.0000	0.68
***									
126									
LDF1-50A(1/4")	B	No	No	Inside Pole	126.0000 - 6.0000	1	No Ice	0.0000	0.06
							1/2" Ice	0.0000	0.06
							1" Ice	0.0000	0.06
							2" Ice	0.0000	0.06
***									
110									
1.411" Hybrid Cable	C	No	No	Inside Pole	110.0000 - 6.0000	1	No Ice	0.0000	1.70
							1/2" Ice	0.0000	1.70
							1" Ice	0.0000	1.70
							2" Ice	0.0000	1.70
***									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	179.0000-141.250	A	0.000	0.000	0.000	0.000	0.00
	0	B	0.000	0.000	5.109	0.000	0.39
		C	0.000	0.000	17.628	0.000	0.13
L2	141.2500-92.5800	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	7.593	0.000	1.25
		C	0.000	0.000	132.450	0.000	0.93
L3	92.5800-45.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	7.344	0.000	1.24
		C	0.000	0.000	141.052	0.000	1.02
L4	45.5000-30.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	2.418	0.000	0.41
		C	0.000	0.000	46.438	0.000	0.33
L5	30.0000-0.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	3.744	0.000	0.63
		C	0.000	0.000	71.904	0.000	0.52

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	179.0000-141.250	A	1.492	0.000	0.000	0.000	0.000	0.00
	0	B		0.000	0.000	14.883	0.000	0.57
		C		0.000	0.000	29.309	0.000	0.44
L2	141.2500-92.5800	A	1.446	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	22.118	0.000	1.52
		C		0.000	0.000	215.835	0.000	3.16
L3	92.5800-45.5000	A	1.372	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	20.956	0.000	1.49
		C		0.000	0.000	227.358	0.000	3.31
L4	45.5000-30.0000	A	1.292	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	6.670	0.000	0.48
		C		0.000	0.000	73.992	0.000	1.05
L5	30.0000-0.0000	A	1.176	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	9.388	0.000	0.73
		C		0.000	0.000	111.046	0.000	1.46

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	179.0000-141.2500	1.5202	2.8419	1.7631	2.1066
L2	141.2500-92.5800	0.6010	9.8974	0.8912	7.7056
L3	92.5800-45.5000	0.2406	11.6674	0.6540	9.2865
L4	45.5000-30.0000	0.2573	12.4153	0.6813	10.0032
L5	30.0000-0.0000	0.2331	11.2144	0.5647	9.1924

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	8	AVA6-50(1-1/4)	141.25 - 174.00	1.0000	1.0000
L1	15	MLC HYBRID 6X12 LI(1-1/2")	141.25 - 151.00	1.0000	1.0000
L1	16	HJ7-50A(1-5/8")	141.25 - 151.00	1.0000	1.0000
L2	8	AVA6-50(1-1/4)	92.58 - 141.25	1.0000	1.0000
L2	15	MLC HYBRID 6X12 LI(1-1/2")	92.58 - 141.25	1.0000	1.0000
L2	16	HJ7-50A(1-5/8")	92.58 - 141.25	1.0000	1.0000
L2	24	HJ7-50A(1-5/8")	92.58 - 130.00	1.0000	1.0000
L3	8	AVA6-50(1-1/4)	45.50 - 92.58	1.0000	1.0000
L3	15	MLC HYBRID 6X12	45.50 - 92.58	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		LI(1-1/2")			
L3	16	HJ7-50A(1-5/8")	45.50 - 92.58	1.0000	1.0000
L3	24	HJ7-50A(1-5/8")	45.50 - 92.58	1.0000	1.0000
L4	8	AVA6-50(1-1/4)	30.00 - 45.50	1.0000	1.0000
L4	15	MLC HYBRID 6X12	30.00 - 45.50	1.0000	1.0000
		LI(1-1/2")			
L4	16	HJ7-50A(1-5/8")	30.00 - 45.50	1.0000	1.0000
L4	24	HJ7-50A(1-5/8")	30.00 - 45.50	1.0000	1.0000
L5	8	AVA6-50(1-1/4)	6.00 - 30.00	1.0000	1.0000
L5	15	MLC HYBRID 6X12	6.00 - 30.00	1.0000	1.0000
		LI(1-1/2")			
L5	16	HJ7-50A(1-5/8")	6.00 - 30.00	1.0000	1.0000
L5	24	HJ7-50A(1-5/8")	6.00 - 30.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral / Vert (ft / ft / ft)	Azimuth Adjustment (°)	Placement (ft)		C_AA_A Front (ft^2)	C_AA_A Side (ft^2)	Weight (K)
181									
2"Dia X6' Omni	A	From Leg	2.0000 0.00 5.00	0.000	181.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.2000 2.4333 3.6772 5.1840	1.2000 2.4333 3.6772 5.1840	0.02 0.03 0.05 0.11
4"Dia X6' Omni	A	From Leg	2.0000 0.00 5.00	0.000	181.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.4000 4.8667 7.3543 10.3679	2.4000 4.8667 7.3543 10.3679	0.04 0.06 0.10 0.23
3"Dia X4' Omni	B	From Leg	2.0000 0.00 4.00	0.000	181.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.2000 2.4333 3.6772 5.1840	1.2000 2.4333 3.6772 5.1840	0.02 0.03 0.05 0.11
3"Dia X10' Omni	B	From Leg	2.0000 0.00 7.00	0.000	181.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.0000 6.0833 9.1929 12.9599	3.0000 6.0833 9.1929 12.9599	0.05 0.08 0.13 0.28
3"Dia X4' Omni	C	From Leg	2.0000 0.00 4.00	0.000	181.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.2000 2.4333 3.6772 5.1840	1.2000 2.4333 3.6772 5.1840	0.02 0.03 0.05 0.11
4'x1.75" Dipole	C	From Leg	2.0000 0.00 2.00	0.000	181.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.7000 1.1092 1.5250 2.2255	0.7000 1.1092 1.5250 2.2255	0.01 0.02 0.02 0.05
Distribution Box (20" x 12" x 7")	A	From Leg	2.0000 0.00 0.00	0.000	181.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0000 2.1815 2.3704 2.7704	1.1821 1.3299 1.4848 1.8259	0.01 0.03 0.05 0.09
Distribution Box (20" x 12" x 7")	B	From Leg	2.0000 0.00 0.00	0.000	181.0000	No Ice 1/2" Ice 1" Ice	2.0000 2.1815 2.3704	1.1821 1.3299 1.4848	0.01 0.03 0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	2.7704	1.8259	0.09
T-Arm Mount [TA 601-3]	C	None		0.000	181.0000	No Ice	12.5600	12.5600	0.73
						1/2" Ice	15.3600	15.3600	0.94
						1" Ice	18.0400	18.0400	1.21
						2" Ice	23.6900	23.6900	1.92
***									
***									
178									
6'-P2x0.154	B	From Leg	1.5000 0.00 0.00	0.000	178.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.02 0.03 0.05 0.09
**									
***									
174									
ET-X-TU-42-15-37-18-iR-ST_TIA w/ Mount Pipe	A	From Leg	3.0000 0.00 0.00	0.000	174.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.7600 8.2800 8.8000 9.8400	4.7100 5.5100 6.3100 7.9100	0.07 0.13 0.20 0.32
APXVSPP18-C_TIA w/ Mount Pipe	B	From Leg	3.0000 0.00 0.00	0.000	174.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.2619 8.8215 9.3462 10.4181	7.4708 8.6564 9.5559 11.3884	0.09 0.16 0.24 0.42
APXVSPP18-C_TIA w/ Mount Pipe	C	From Leg	3.0000 0.00 0.00	0.000	174.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.2619 8.8215 9.3462 10.4181	7.4708 8.6564 9.5559 11.3884	0.09 0.16 0.24 0.42
APXV9TM14-ALU-I20_TIA w/ Mount Pipe	A	From Leg	3.0000 0.00 0.00	0.000	174.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.5799 7.0306 7.4733 8.3846	4.9591 5.7544 6.4723 7.9407	0.09 0.14 0.20 0.35
APXV9TM14-ALU-I20_TIA w/ Mount Pipe	B	From Leg	3.0000 0.00 0.00	0.000	174.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.5799 7.0306 7.4733 8.3846	4.9591 5.7544 6.4723 7.9407	0.09 0.14 0.20 0.35
APXV9TM14-ALU-I20_TIA w/ Mount Pipe	C	From Leg	3.0000 0.00 0.00	0.000	174.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.5799 7.0306 7.4733 8.3846	4.9591 5.7544 6.4723 7.9407	0.09 0.14 0.20 0.35
TD-RRH8x20-25	A	From Leg	1.5000 0.00 0.00	0.000	174.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
TD-RRH8x20-25	B	From Leg	1.5000 0.00 0.00	0.000	174.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
TD-RRH8x20-25	C	From Leg	1.5000 0.00 0.00	0.000	174.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
T-Arm Mount [TA 602-3]	C	None		0.000	174.0000	No Ice 1/2" Ice 1" Ice 2" Ice	13.4000 16.4400 19.7000 25.8600	13.4000 16.4400 19.7000 25.8600	0.77 1.00 1.29 2.05
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Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
170									
1900MHz RRH	A	From Leg	1.0000 0.00 0.00	0.000	170.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.4917 2.6954 2.9065 3.3509	3.2583 3.4843 3.7176 4.2065	0.04 0.08 0.11 0.19
1900MHz RRH	B	From Leg	1.0000 0.00 0.00	0.000	170.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.4917 2.6954 2.9065 3.3509	3.2583 3.4843 3.7176 4.2065	0.04 0.08 0.11 0.19
1900MHz RRH	C	From Leg	1.0000 0.00 0.00	0.000	170.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.4917 2.6954 2.9065 3.3509	3.2583 3.4843 3.7176 4.2065	0.04 0.08 0.11 0.19
800MHZ RRH	A	From Leg	1.0000 0.00 0.00	0.000	170.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.1342 2.3195 2.5123 2.9201	1.7730 1.9461 2.1267 2.5100	0.05 0.07 0.10 0.16
800MHZ RRH	B	From Leg	1.0000 0.00 0.00	0.000	170.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.1342 2.3195 2.5123 2.9201	1.7730 1.9461 2.1267 2.5100	0.05 0.07 0.10 0.16
800MHZ RRH	C	From Leg	1.0000 0.00 0.00	0.000	170.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.1342 2.3195 2.5123 2.9201	1.7730 1.9461 2.1267 2.5100	0.05 0.07 0.10 0.16
Ring Mount	C	From Leg	0.0000 0.00 0.00	0.000	170.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4000 2.4000 3.4000 5.4000	1.4000 2.4000 3.4000 5.4000	0.09 0.13 0.17 0.25
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159									
6'-P2x0.154	C	From Leg	1.5000 0.00 0.00	0.000	159.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.02 0.03 0.05 0.09
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151/TMO									
APXVAARR24_43-U-NA20 _TIA w/ Mount Pipe	A	From Leg	3.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	20.4801 21.2306 21.9900 23.4441	11.0240 12.5496 14.0992 16.4509	0.19 0.32 0.47 0.80
APXVAARR24_43-U-NA20 _TIA w/ Mount Pipe	B	From Leg	3.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	20.4801 21.2306 21.9900 23.4441	11.0240 12.5496 14.0992 16.4509	0.19 0.32 0.47 0.80
APXVAARR24_43-U-NA20 _TIA w/ Mount Pipe	C	From Leg	3.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	20.4801 21.2306 21.9900 23.4441	11.0240 12.5496 14.0992 16.4509	0.19 0.32 0.47 0.80
AIR6449 B41_TIA w/ Mount Pipe	A	From Leg	3.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.8932 6.2567 6.6301 7.4065	3.2839 3.7423 4.2169 5.2149	0.12 0.17 0.22 0.35
AIR6449 B41_TIA w/ Mount Pipe	B	From Leg	3.0000 0.00	0.000	151.0000	No Ice 1/2" Ice	5.8932 6.2567	3.2839 3.7423	0.12 0.17

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	6.6301	4.2169	0.22
						2" Ice	7.4065	5.2149	0.35
AIR6449 B41_TIA w/ Mount Pipe	C	From Leg	3.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.8932 6.2567 6.6301 7.4065	3.2839 3.7423 4.2169 5.2149	0.12 0.17 0.22 0.35
AIR 32 B2A B66AA_TIA w/ Mount Pipe	A	From Leg	3.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.0872 7.5606 8.0206 8.9662	6.3736 7.2305 7.9731 9.5071	0.19 0.26 0.33 0.49
AIR 32 B2A B66AA_TIA w/ Mount Pipe	B	From Leg	3.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.0872 7.5606 8.0206 8.9662	6.3736 7.2305 7.9731 9.5071	0.19 0.26 0.33 0.49
AIR 32 B2A B66AA_TIA w/ Mount Pipe	C	From Leg	3.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	7.0872 7.5606 8.0206 8.9662	6.3736 7.2305 7.9731 9.5071	0.19 0.26 0.33 0.49
RADIO 4449 B71/B85A	A	From Leg	2.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6444 1.8044 1.9719 2.3292	1.3102 1.4555 1.6081 1.9355	0.07 0.09 0.11 0.16
RADIO 4449 B71/B85A	B	From Leg	2.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6444 1.8044 1.9719 2.3292	1.3102 1.4555 1.6081 1.9355	0.07 0.09 0.11 0.16
RADIO 4449 B71/B85A	C	From Leg	2.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6444 1.8044 1.9719 2.3292	1.3102 1.4555 1.6081 1.9355	0.07 0.09 0.11 0.16
RADIO 4415 B25_TMO	A	From Leg	2.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8563 2.0266 2.2044 2.5822	0.8701 0.9966 1.1344 1.4322	0.05 0.06 0.08 0.12
RADIO 4415 B25_TMO	B	From Leg	2.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8563 2.0266 2.2044 2.5822	0.8701 0.9966 1.1344 1.4322	0.05 0.06 0.08 0.12
RADIO 4415 B25_TMO	C	From Leg	2.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8563 2.0266 2.2044 2.5822	0.8701 0.9966 1.1344 1.4322	0.05 0.06 0.08 0.12
SDX1926Q-43	A	From Leg	2.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.2410 0.3063 0.3791 0.5469	0.1013 0.1444 0.1948 0.3180	0.01 0.01 0.01 0.02
SDX1926Q-43	B	From Leg	2.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.2410 0.3063 0.3791 0.5469	0.1013 0.1444 0.1948 0.3180	0.01 0.01 0.01 0.02
SDX1926Q-43	C	From Leg	2.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.2410 0.3063 0.3791 0.5469	0.1013 0.1444 0.1948 0.3180	0.01 0.01 0.01 0.02
Generic Style 1B - Twin AWS	A	From Leg	2.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice	0.4043 0.4857 0.5746	0.1628 0.2187 0.2820	0.01 0.01 0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	0.7746	0.4309	0.03
Generic Style 1B - Twin AWS	B	From Leg	2.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.4043 0.4857 0.5746 0.7746	0.1628 0.2187 0.2820 0.4309	0.01 0.01 0.02 0.03
Generic Style 1B - Twin AWS	C	From Leg	2.0000 0.00 0.00	0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.4043 0.4857 0.5746 0.7746	0.1628 0.2187 0.2820 0.4309	0.01 0.01 0.02 0.03
(3) 12' T-Arm Kit w/ Handrail	C	None		0.000	151.0000	No Ice 1/2" Ice 1" Ice 2" Ice	12.8500 16.3500 19.8500 26.8500	11.7000 15.2500 18.8000 25.9000	1.26 1.47 1.68 2.10
*** *** ***140/AT&T***									
QD8616-7_TIA w/ Mount Pipe	A	From Leg	3.0000 0.00 0.00	0.000	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	19.0523 19.7933 20.5431 21.9784	11.7375 13.2693 14.8252 17.1904	0.18 0.32 0.46 0.78
QD8616-7_TIA w/ Mount Pipe	B	From Leg	3.0000 0.00 0.00	0.000	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	19.0523 19.7933 20.5431 21.9784	11.7375 13.2693 14.8252 17.1904	0.18 0.32 0.46 0.78
QD4616-7_TIA w/ Mount Pipe	C	From Leg	3.0000 0.00 0.00	0.000	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.6792 10.1591 10.6406 11.6311	5.8139 6.5061 7.1741 8.5588	0.13 0.20 0.29 0.48
AIR 6419 B77G_TIA w/ Mount Pipe	A	From Leg	3.0000 0.00 0.00	0.000	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.8700 4.1784 4.4971 5.1650	2.3239 2.7198 3.1320 4.0052	0.08 0.11 0.15 0.25
AIR 6419 B77G_TIA w/ Mount Pipe	B	From Leg	3.0000 0.00 0.00	0.000	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.8700 4.1784 4.4971 5.1650	2.3239 2.7198 3.1320 4.0052	0.08 0.11 0.15 0.25
AIR 6419 B77G_TIA w/ Mount Pipe	C	From Leg	3.0000 0.00 0.00	0.000	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.8700 4.1784 4.4971 5.1650	2.3239 2.7198 3.1320 4.0052	0.08 0.11 0.15 0.25
AIR 6449 N77_TIA w/ Mount Pipe	A	From Leg	3.0000 0.00 0.00	0.000	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.2573 4.5810 4.9148 5.6123	3.4667 3.9096 4.3687 5.3358	0.11 0.15 0.20 0.31
AIR 6449 N77_TIA w/ Mount Pipe	B	From Leg	3.0000 0.00 0.00	0.000	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.2573 4.5810 4.9148 5.6123	3.4667 3.9096 4.3687 5.3358	0.11 0.15 0.20 0.31
AIR 6449 N77_TIA w/ Mount Pipe	C	From Leg	3.0000 0.00 0.00	0.000	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.2573 4.5810 4.9148 5.6123	3.4667 3.9096 4.3687 5.3358	0.11 0.15 0.20 0.31
DMP65R-BU8D_TIA w/ Mount Pipe	A	From Leg	3.0000 0.00 0.00	0.000	140.0000	No Ice 1/2" Ice 1" Ice 2" Ice	18.1086 18.8430 19.5863 21.0084	10.2597 11.7813 13.3269 15.6716	0.14 0.26 0.39 0.69
DMP65R-BU8D_TIA w/	B	From Leg	3.0000	0.000	140.0000	No Ice	18.1086	10.2597	0.14

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Mount Pipe			0.00			1/2" Ice	18.8430	11.7813	0.26
			0.00			1" Ice	19.5863	13.3269	0.39
						2" Ice	21.0084	15.6716	0.69
DMP65R-BU4D_TIA w/ Mount Pipe	C	From Leg	3.0000	0.000	140.0000	No Ice	8.5175	4.6934	0.09
			0.00			1/2" Ice	8.9645	5.3056	0.16
			0.00			1" Ice	9.4196	5.9281	0.23
						2" Ice	10.3575	7.2221	0.40
RADIO 4449 B5/B12	A	From Leg	1.5000	0.000	140.0000	No Ice	1.6444	1.3003	0.07
			0.00			1/2" Ice	1.8044	1.4450	0.09
			0.00			1" Ice	1.9719	1.5972	0.11
						2" Ice	2.3292	1.9238	0.16
RADIO 4449 B5/B12	B	From Leg	1.5000	0.000	140.0000	No Ice	1.6444	1.3003	0.07
			0.00			1/2" Ice	1.8044	1.4450	0.09
			0.00			1" Ice	1.9719	1.5972	0.11
						2" Ice	2.3292	1.9238	0.16
RADIO 4449 B5/B12	C	From Leg	1.5000	0.000	140.0000	No Ice	1.6444	1.3003	0.07
			0.00			1/2" Ice	1.8044	1.4450	0.09
			0.00			1" Ice	1.9719	1.5972	0.11
						2" Ice	2.3292	1.9238	0.16
RADIO 4415 B25_TMO	A	From Leg	1.5000	0.000	140.0000	No Ice	1.8563	0.8701	0.05
			0.00			1/2" Ice	2.0266	0.9966	0.06
			0.00			1" Ice	2.2044	1.1344	0.08
						2" Ice	2.5822	1.4322	0.12
RADIO 4415 B25_TMO	B	From Leg	1.5000	0.000	140.0000	No Ice	1.8563	0.8701	0.05
			0.00			1/2" Ice	2.0266	0.9966	0.06
			0.00			1" Ice	2.2044	1.1344	0.08
						2" Ice	2.5822	1.4322	0.12
RADIO 4415 B25_TMO	C	From Leg	1.5000	0.000	140.0000	No Ice	1.8563	0.8701	0.05
			0.00			1/2" Ice	2.0266	0.9966	0.06
			0.00			1" Ice	2.2044	1.1344	0.08
						2" Ice	2.5822	1.4322	0.12
RADIO 4478 B14	A	From Leg	1.5000	0.000	140.0000	No Ice	2.0212	1.2459	0.06
			0.00			1/2" Ice	2.1999	1.3960	0.08
			0.00			1" Ice	2.3860	1.5536	0.10
						2" Ice	2.7804	1.8909	0.15
RADIO 4478 B14	B	From Leg	1.5000	0.000	140.0000	No Ice	2.0212	1.2459	0.06
			0.00			1/2" Ice	2.1999	1.3960	0.08
			0.00			1" Ice	2.3860	1.5536	0.10
						2" Ice	2.7804	1.8909	0.15
RADIO 4478 B14	C	From Leg	1.5000	0.000	140.0000	No Ice	2.0212	1.2459	0.06
			0.00			1/2" Ice	2.1999	1.3960	0.08
			0.00			1" Ice	2.3860	1.5536	0.10
						2" Ice	2.7804	1.8909	0.15
RRUS 32 B30	A	From Leg	1.5000	0.000	140.0000	No Ice	2.6923	1.5727	0.06
			0.00			1/2" Ice	2.9115	1.7556	0.08
			0.00			1" Ice	3.1382	1.9455	0.10
						2" Ice	3.6137	2.3462	0.16
RRUS 32 B30	B	From Leg	1.5000	0.000	140.0000	No Ice	2.6923	1.5727	0.06
			0.00			1/2" Ice	2.9115	1.7556	0.08
			0.00			1" Ice	3.1382	1.9455	0.10
						2" Ice	3.6137	2.3462	0.16
RRUS 32 B30	C	From Leg	1.5000	0.000	140.0000	No Ice	2.6923	1.5727	0.06
			0.00			1/2" Ice	2.9115	1.7556	0.08
			0.00			1" Ice	3.1382	1.9455	0.10
						2" Ice	3.6137	2.3462	0.16
RRUS 32 B66A	A	From Leg	1.5000	0.000	140.0000	No Ice	2.8635	1.7816	0.06
			0.00			1/2" Ice	3.0897	1.9730	0.08

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	3.3233	2.1713	0.10
						2" Ice	3.8128	2.5890	0.16
RRUS 32 B66A	B	From Leg	1.5000	0.000	140.0000	No Ice	2.8635	1.7816	0.06
			0.00			1/2" Ice	3.0897	1.9730	0.08
			0.00			1" Ice	3.3233	2.1713	0.10
						2" Ice	3.8128	2.5890	0.16
RRUS 32 B66A	C	From Leg	1.5000	0.000	140.0000	No Ice	2.8635	1.7816	0.06
			0.00			1/2" Ice	3.0897	1.9730	0.08
			0.00			1" Ice	3.3233	2.1713	0.10
						2" Ice	3.8128	2.5890	0.16
Squid Surge Arrestor	A	From Leg	1.5000	0.000	140.0000	No Ice	0.7915	0.7915	0.02
			0.00			1/2" Ice	1.2743	1.2743	0.03
			0.00			1" Ice	1.4503	1.4503	0.05
						2" Ice	1.8314	1.8314	0.09
Squid Surge Arrestor	B	From Leg	1.5000	0.000	140.0000	No Ice	0.7915	0.7915	0.02
			0.00			1/2" Ice	1.2743	1.2743	0.03
			0.00			1" Ice	1.4503	1.4503	0.05
						2" Ice	1.8314	1.8314	0.09
Squid Surge Arrestor	C	From Leg	1.5000	0.000	140.0000	No Ice	0.7915	0.7915	0.02
			0.00			1/2" Ice	1.2743	1.2743	0.03
			0.00			1" Ice	1.4503	1.4503	0.05
						2" Ice	1.8314	1.8314	0.09
(3) 12'-6" Sector Frames	C	None		0.000	140.0000	No Ice	19.0000	13.5000	3.00
						1/2" Ice	28.5000	21.0000	3.50
						1" Ice	38.0000	54.4300	4.00
						2" Ice	57.0000	78.4900	5.00
4'-P2x0.154	A	From Leg	1.5000	0.000	140.0000	No Ice	0.8657	0.8657	0.01
			0.00			1/2" Ice	1.1106	1.1106	0.02
			0.00			1" Ice	1.3648	1.3648	0.03
						2" Ice	1.9008	1.9008	0.06
4'-P2x0.154	B	From Leg	1.5000	0.000	140.0000	No Ice	0.8657	0.8657	0.01
			0.00			1/2" Ice	1.1106	1.1106	0.02
			0.00			1" Ice	1.3648	1.3648	0.03
						2" Ice	1.9008	1.9008	0.06
4'-P2x0.154	C	From Leg	1.5000	0.000	140.0000	No Ice	0.8657	0.8657	0.01
			0.00			1/2" Ice	1.1106	1.1106	0.02
			0.00			1" Ice	1.3648	1.3648	0.03
						2" Ice	1.9008	1.9008	0.06
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130/Verizon									
BXA-70063-4CF-EDIN-6_TI A w/ Mount Pipe	A	From Leg	3.0000	0.000	130.0000	No Ice	4.9453	3.6927	0.04
			0.00			1/2" Ice	5.3243	4.2947	0.08
			0.00			1" Ice	5.7120	4.9133	0.13
						2" Ice	6.5142	6.1810	0.25
BXA-70063-4CF-EDIN-6_TI A w/ Mount Pipe	B	From Leg	3.0000	0.000	130.0000	No Ice	4.9453	3.6927	0.04
			0.00			1/2" Ice	5.3243	4.2947	0.08
			0.00			1" Ice	5.7120	4.9133	0.13
						2" Ice	6.5142	6.1810	0.25
BXA-70063-4CF-EDIN-6_TI A w/ Mount Pipe	C	From Leg	3.0000	0.000	130.0000	No Ice	4.9453	3.6927	0.04
			0.00			1/2" Ice	5.3243	4.2947	0.08
			0.00			1" Ice	5.7120	4.9133	0.13
						2" Ice	6.5142	6.1810	0.25
(2) SBNHH-1D65B_TIA w/ Mount Pipe	A	From Leg	3.0000	0.000	130.0000	No Ice	8.4376	7.1039	0.07
			0.00			1/2" Ice	9.0026	8.2979	0.14
			0.00			1" Ice	9.5343	9.2145	0.21
						2" Ice	10.6169	11.0572	0.40

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) SBNHH-1D65B_TIA w/ Mount Pipe	B	From Leg	3.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.4376 9.0026 9.5343 10.6169	7.1039 8.2979 9.2145 11.0572	0.07 0.14 0.21 0.40
(2) SBNHH-1D65B_TIA w/ Mount Pipe	C	From Leg	3.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.4376 9.0026 9.5343 10.6169	7.1039 8.2979 9.2145 11.0572	0.07 0.14 0.21 0.40
L-SUB6 w/ Mount Pipe	A	From Leg	3.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.8932 6.2567 6.6301 7.4065	3.2839 3.7423 4.2169 5.2149	0.12 0.17 0.22 0.35
L-SUB6 w/ Mount Pipe	B	From Leg	3.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.8932 6.2567 6.6301 7.4065	3.2839 3.7423 4.2169 5.2149	0.12 0.17 0.22 0.35
L-SUB6 w/ Mount Pipe	C	From Leg	3.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.8932 6.2567 6.6301 7.4065	3.2839 3.7423 4.2169 5.2149	0.12 0.17 0.22 0.35
Samsung-B2/B66A RRH-BR049	A	From Leg	2.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.2500 1.3926 1.5426 1.8648	0.08 0.10 0.12 0.18
Samsung-B2/B66A RRH-BR049	B	From Leg	2.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.2500 1.3926 1.5426 1.8648	0.08 0.10 0.12 0.18
Samsung-B2/B66A RRH-BR049	C	From Leg	2.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.2500 1.3926 1.5426 1.8648	0.08 0.10 0.12 0.18
Samsung-B5/B13 RRH-BR04C	A	From Leg	2.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.0125 1.1445 1.2840 1.5851	0.07 0.09 0.11 0.15
Samsung-B5/B13 RRH-BR04C	B	From Leg	2.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.0125 1.1445 1.2840 1.5851	0.07 0.09 0.11 0.15
Samsung-B5/B13 RRH-BR04C	C	From Leg	2.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.0125 1.1445 1.2840 1.5851	0.07 0.09 0.11 0.15
Junction Box	A	From Leg	2.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.7922 4.0441 4.3033 4.8439	2.5116 2.7247 2.9449 3.4142	0.03 0.06 0.10 0.18
Junction Box	C	From Leg	2.0000 0.00 0.00	0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.7922 4.0441 4.3033 4.8439	2.5116 2.7247 2.9449 3.4142	0.03 0.06 0.10 0.18
14' Platform w/ Handrail	C	None		0.000	130.0000	No Ice 1/2" Ice 1" Ice 2" Ice	29.0000 36.2000 43.4000 57.8000	29.0000 36.2000 43.4000 57.8000	2.20 2.94 3.69 5.18

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
126									
6'-P2x0.154	A	From Leg	1.5000 0.00 0.00	0.000	126.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.02 0.03 0.05 0.09
***									
110/DISH									
MX08FRO665-21_TIA w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.000	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	12.7264 13.3273 13.8933 15.0479	7.5292 8.7153 9.6153 11.4489	0.11 0.20 0.30 0.53
MX08FRO665-21_TIA w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.000	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	12.7264 13.3273 13.8933 15.0479	7.5292 8.7153 9.6153 11.4489	0.11 0.20 0.30 0.53
MX08FRO665-21_TIA w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.000	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	12.7264 13.3273 13.8933 15.0479	7.5292 8.7153 9.6153 11.4489	0.11 0.20 0.30 0.53
TA08025-B604	A	From Leg	4.0000 0.00 0.00	0.000	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9635 2.1378 2.3195 2.7052	0.9811 1.1117 1.2496 1.5477	0.06 0.08 0.10 0.15
TA08025-B604	B	From Leg	4.0000 0.00 0.00	0.000	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9635 2.1378 2.3195 2.7052	0.9811 1.1117 1.2496 1.5477	0.06 0.08 0.10 0.15
TA08025-B604	C	From Leg	4.0000 0.00 0.00	0.000	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9635 2.1378 2.3195 2.7052	0.9811 1.1117 1.2496 1.5477	0.06 0.08 0.10 0.15
TA08025-B605	A	From Leg	4.0000 0.00 0.00	0.000	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9635 2.1378 2.3195 2.7052	1.1295 1.2666 1.4112 1.7225	0.08 0.09 0.11 0.16
TA08025-B605	B	From Leg	4.0000 0.00 0.00	0.000	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9635 2.1378 2.3195 2.7052	1.1295 1.2666 1.4112 1.7225	0.08 0.09 0.11 0.16
TA08025-B605	C	From Leg	4.0000 0.00 0.00	0.000	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9635 2.1378 2.3195 2.7052	1.1295 1.2666 1.4112 1.7225	0.08 0.09 0.11 0.16
RDIDC-9181-PF-48	A	From Leg	4.0000 0.00 0.00	0.000	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0119 2.1886 2.3727 2.7631	1.1682 1.3109 1.4611 1.7837	0.02 0.04 0.06 0.11
Platform Mount [LP 716-1]	C	None		0.000	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	26.8000 32.2000 37.6000 48.4000	26.8000 32.2000 37.6000 48.4000	1.51 1.81 2.11 2.72
(2) 8'-P2x0.203	A	From Leg	4.0000 0.00 0.00	0.000	110.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.9000 2.7281 3.4009 4.3962	1.9000 2.7281 3.4009 4.3962	0.03 0.04 0.06 0.12
(2) 8'-P2x0.203	B	From Leg	4.0000 0.00	0.000	110.0000	No Ice 1/2" Ice	1.9000 2.7281	1.9000 2.7281	0.03 0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	3.4009	3.4009	0.06
						2" Ice	4.3962	4.3962	0.12
(2) 8'-P2x0.203	C	From Leg	4.0000	0.000	110.0000	No Ice	1.9000	1.9000	0.03
			0.00			1/2" Ice	2.7281	2.7281	0.04
			0.00			1" Ice	3.4009	3.4009	0.06
						2" Ice	4.3962	4.3962	0.12
***									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
178											
2' Dish	B	Paraboloid w/Shroud (HP)	From Leg	1.5000	0.000		178.0000	2.0000	No Ice	3.1400	0.03
				0.00					1/2" Ice	3.4100	0.05
				0.00					1" Ice	3.6800	0.07
									2" Ice	4.2100	0.10
159											
2' Dish	C	Paraboloid w/Shroud (HP)	From Leg	1.5000	0.000		159.0000	2.0000	No Ice	3.1400	0.03
				0.00					1/2" Ice	3.4100	0.05
				0.00					1" Ice	3.6800	0.07
									2" Ice	4.2100	0.10
126											
2' Dish	A	Paraboloid w/Shroud (HP)	From Leg	1.5000	0.000		126.0000	2.0000	No Ice	3.1400	0.03
				0.00					1/2" Ice	3.4100	0.05
				0.00					1" Ice	3.6800	0.07
									2" Ice	4.2100	0.10
***											

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice

Comb. No.	Description
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	179 - 141.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.57	-0.65	-1.19
			Max. Mx	20	-12.62	243.73	1.79
			Max. My	14	-12.61	-2.04	-245.14
			Max. Vy	20	-14.68	243.73	1.79
			Max. Vx	2	-14.72	2.69	244.60
			Max. Torque	16			1.02
L2	141.25 - 92.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.13	-2.68	-4.42
			Max. Mx	8	-44.06	-1631.63	-8.12
			Max. My	14	-44.02	-8.47	-1646.19
			Max. Vy	20	-37.56	1631.59	7.76
			Max. Vx	14	37.91	-8.47	-1646.19
			Max. Torque	15			2.10
L3	92.58 - 45.5	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-101.84	-3.33	-11.82
			Max. Mx	8	-59.71	-3460.16	-15.30
			Max. My	14	-59.69	-14.75	-3492.60
			Max. Vy	20	-42.74	3460.07	12.94
			Max. Vx	14	43.08	-14.75	-3492.60
			Max. Torque	13			2.00
L4	45.5 - 30	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-115.74	-3.61	-15.69
			Max. Mx	8	-70.04	-4473.91	-19.01
			Max. My	14	-70.03	-17.84	-4515.39
			Max. Vy	20	-45.31	4473.78	15.32
			Max. Vx	14	45.63	-17.84	-4515.39
			Max. Torque	13			2.00
L5	30 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-131.38	-3.86	-19.69
			Max. Mx	8	-82.51	-5869.36	-23.57
			Max. My	14	-82.51	-21.73	-5922.21
			Max. Vy	20	-47.83	5869.19	18.48
			Max. Vx	14	48.15	-21.73	-5922.21
			Max. Torque	13			2.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	131.38	0.00	0.00
	Max. H_x	21	61.90	47.80	0.16
	Max. H_z	3	61.90	0.13	48.09
	Max. M_x	2	5905.95	0.13	48.09
	Max. M_z	8	5869.36	-47.79	-0.10
	Max. Torsion	13	2.00	-23.98	-41.74
	Min. Vert	15	61.90	-0.13	-48.11
	Min. H_x	9	61.90	-47.80	-0.10
	Min. H_z	14	82.53	-0.13	-48.11
	Min. M_x	14	-5922.21	-0.13	-48.11
	Min. M_z	20	-5869.19	47.79	0.16
	Min. Torsion	25	-1.99	24.04	41.72

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	68.78	0.00	0.00	5.51	-0.45	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	82.53	-0.13	-48.09	-5905.95	21.56	1.79
0.9 Dead+1.0 Wind 0 deg - No Ice	61.90	-0.13	-48.09	-5828.75	21.36	1.79
1.2 Dead+1.0 Wind 30 deg - No Ice	82.53	23.82	-41.59	-5103.80	-2923.64	1.11
0.9 Dead+1.0 Wind 30 deg - No Ice	61.90	23.82	-41.59	-5036.97	-2884.24	1.11

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 60 deg - No Ice	82.53	41.34	-23.95	-2932.10	-5075.73	-0.08
0.9 Dead+1.0 Wind 60 deg - No Ice	61.90	41.34	-23.95	-2894.47	-5007.43	-0.08
1.2 Dead+1.0 Wind 90 deg - No Ice	82.53	47.79	0.10	23.58	-5869.36	-1.24
0.9 Dead+1.0 Wind 90 deg - No Ice	61.90	47.80	0.10	21.51	-5790.82	-1.24
1.2 Dead+1.0 Wind 120 deg - No Ice	82.53	41.44	24.15	2978.39	-5092.73	-1.86
0.9 Dead+1.0 Wind 120 deg - No Ice	61.90	41.44	24.15	2936.68	-5024.18	-1.87
1.2 Dead+1.0 Wind 150 deg - No Ice	82.53	23.98	41.74	5140.99	-2949.74	-1.99
0.9 Dead+1.0 Wind 150 deg - No Ice	61.90	23.98	41.74	5070.23	-2909.96	-2.00
1.2 Dead+1.0 Wind 180 deg - No Ice	82.53	0.13	48.11	5922.21	-21.73	-1.79
0.9 Dead+1.0 Wind 180 deg - No Ice	61.90	0.13	48.11	5840.68	-21.25	-1.79
1.2 Dead+1.0 Wind 210 deg - No Ice	82.53	-23.77	41.62	5121.38	2912.65	-1.10
0.9 Dead+1.0 Wind 210 deg - No Ice	61.90	-23.77	41.62	5050.90	2873.73	-1.10
1.2 Dead+1.0 Wind 240 deg - No Ice	82.53	-41.32	23.94	2941.87	5072.60	0.08
0.9 Dead+1.0 Wind 240 deg - No Ice	61.90	-41.32	23.94	2900.72	5004.63	0.08
1.2 Dead+1.0 Wind 270 deg - No Ice	82.53	-47.79	-0.16	-18.48	5869.19	1.25
0.9 Dead+1.0 Wind 270 deg - No Ice	61.90	-47.80	-0.16	-19.90	5790.94	1.25
1.2 Dead+1.0 Wind 300 deg - No Ice	82.53	-41.46	-24.17	-2968.37	5095.07	1.87
0.9 Dead+1.0 Wind 300 deg - No Ice	61.90	-41.46	-24.17	-2930.19	5026.77	1.87
1.2 Dead+1.0 Wind 330 deg - No Ice	82.53	-24.04	-41.72	-5124.55	2958.43	1.99
0.9 Dead+1.0 Wind 330 deg - No Ice	61.90	-24.04	-41.72	-5057.42	2918.79	1.99
1.2 Dead+1.0 Ice+1.0 Temp	131.38	-0.00	-0.00	19.69	-3.86	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	131.38	-0.01	-14.20	-1804.01	-1.11	0.56
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	131.38	7.07	-12.29	-1558.22	-911.66	0.36
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	131.38	12.25	-7.09	-889.77	-1576.68	0.01
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	131.38	14.16	0.01	21.63	-1820.88	-0.34
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	131.38	12.26	7.11	933.41	-1578.34	-0.55
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	131.38	7.08	12.31	1601.42	-913.75	-0.61
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	131.38	0.01	14.21	1844.48	-6.56	-0.56
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	131.38	-7.06	12.30	1599.16	901.49	-0.36
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	131.38	-12.25	7.09	928.92	1568.34	-0.01
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	131.38	-14.16	-0.02	16.48	1813.22	0.34

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	131.38	-12.27	-7.11	-894.21	1571.25	0.55
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	131.38	-7.10	-12.31	-1560.75	908.11	0.61
Dead+Wind 0 deg - Service	68.78	-0.03	-11.32	-1375.51	4.68	0.43
Dead+Wind 30 deg - Service	68.78	5.61	-9.79	-1187.89	-683.18	0.26
Dead+Wind 60 deg - Service	68.78	9.73	-5.64	-680.68	-1185.79	-0.02
Dead+Wind 90 deg - Service	68.78	11.25	0.02	9.62	-1371.42	-0.29
Dead+Wind 120 deg - Service	68.78	9.76	5.69	699.73	-1189.78	-0.44
Dead+Wind 150 deg - Service	68.78	5.65	9.83	1204.83	-689.28	-0.47
Dead+Wind 180 deg - Service	68.78	0.03	11.33	1387.39	-5.42	-0.43
Dead+Wind 210 deg - Service	68.78	-5.60	9.80	1200.24	679.91	-0.26
Dead+Wind 240 deg - Service	68.78	-9.73	5.64	691.21	1184.36	0.02
Dead+Wind 270 deg - Service	68.78	-11.25	-0.04	-0.19	1370.68	0.30
Dead+Wind 300 deg - Service	68.78	-9.76	-5.69	-689.16	1189.63	0.44
Dead+Wind 330 deg - Service	68.78	-5.66	-9.82	-1192.75	690.60	0.47

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-68.78	0.00	-0.00	68.78	-0.00	0.000%
2	-0.13	-82.53	-48.10	0.13	82.53	48.09	0.007%
3	-0.13	-61.90	-48.10	0.13	61.90	48.09	0.006%
4	23.82	-82.53	-41.59	-23.82	82.53	41.59	0.000%
5	23.82	-61.90	-41.59	-23.82	61.90	41.59	0.000%
6	41.34	-82.53	-23.95	-41.34	82.53	23.95	0.000%
7	41.34	-61.90	-23.95	-41.34	61.90	23.95	0.000%
8	47.80	-82.53	0.10	-47.79	82.53	-0.10	0.007%
9	47.80	-61.90	0.10	-47.80	61.90	-0.10	0.006%
10	41.44	-82.53	24.15	-41.44	82.53	-24.15	0.000%
11	41.44	-61.90	24.15	-41.44	61.90	-24.15	0.000%
12	23.98	-82.53	41.74	-23.98	82.53	-41.74	0.000%
13	23.98	-61.90	41.74	-23.98	61.90	-41.74	0.000%
14	0.13	-82.53	48.12	-0.13	82.53	-48.11	0.003%
15	0.13	-61.90	48.12	-0.13	61.90	-48.11	0.006%
16	-23.77	-82.53	41.62	23.77	82.53	-41.62	0.000%
17	-23.77	-61.90	41.62	23.77	61.90	-41.62	0.000%
18	-41.32	-82.53	23.94	41.32	82.53	-23.94	0.000%
19	-41.32	-61.90	23.94	41.32	61.90	-23.94	0.000%
20	-47.80	-82.53	-0.16	47.79	82.53	0.16	0.007%
21	-47.80	-61.90	-0.16	47.80	61.90	0.16	0.006%
22	-41.46	-82.53	-24.17	41.46	82.53	24.17	0.000%
23	-41.46	-61.90	-24.17	41.46	61.90	24.17	0.000%
24	-24.04	-82.53	-41.72	24.04	82.53	41.72	0.000%
25	-24.04	-61.90	-41.72	24.04	61.90	41.72	0.000%
26	0.00	-131.38	0.00	0.00	131.38	0.00	0.000%
27	-0.01	-131.38	-14.20	0.01	131.38	14.20	0.000%
28	7.07	-131.38	-12.29	-7.07	131.38	12.29	0.000%
29	12.25	-131.38	-7.09	-12.25	131.38	7.09	0.000%
30	14.16	-131.38	0.01	-14.16	131.38	-0.01	0.000%
31	12.26	-131.38	7.11	-12.26	131.38	-7.11	0.000%
32	7.08	-131.38	12.31	-7.08	131.38	-12.31	0.000%
33	0.01	-131.38	14.21	-0.01	131.38	-14.21	0.000%
34	-7.06	-131.38	12.30	7.06	131.38	-12.30	0.000%
35	-12.25	-131.38	7.09	12.25	131.38	-7.09	0.000%
36	-14.16	-131.38	-0.02	14.16	131.38	0.02	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
37	-12.27	-131.38	-7.11	12.27	131.38	7.11	0.000%
38	-7.10	-131.38	-12.31	7.10	131.38	12.31	0.000%
39	-0.03	-68.78	-11.33	0.03	68.78	11.32	0.002%
40	5.61	-68.78	-9.79	-5.61	68.78	9.79	0.002%
41	9.73	-68.78	-5.64	-9.73	68.78	5.64	0.002%
42	11.25	-68.78	0.02	-11.25	68.78	-0.02	0.002%
43	9.76	-68.78	5.69	-9.76	68.78	-5.69	0.002%
44	5.65	-68.78	9.83	-5.65	68.78	-9.83	0.002%
45	0.03	-68.78	11.33	-0.03	68.78	-11.33	0.002%
46	-5.60	-68.78	9.80	5.60	68.78	-9.80	0.002%
47	-9.73	-68.78	5.64	9.73	68.78	-5.64	0.002%
48	-11.26	-68.78	-0.04	11.25	68.78	0.04	0.002%
49	-9.76	-68.78	-5.69	9.76	68.78	5.69	0.002%
50	-5.66	-68.78	-9.82	5.66	68.78	9.82	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	13	0.00013429	0.00012803
3	Yes	13	0.00008771	0.00010268
4	Yes	17	0.00000001	0.00007614
5	Yes	16	0.00000001	0.00014349
6	Yes	17	0.00000001	0.00007457
7	Yes	16	0.00000001	0.00014048
8	Yes	13	0.00013436	0.00011019
9	Yes	13	0.00008776	0.00008750
10	Yes	17	0.00000001	0.00007539
11	Yes	16	0.00000001	0.00014166
12	Yes	17	0.00000001	0.00007835
13	Yes	16	0.00000001	0.00014746
14	Yes	14	0.00005288	0.00007044
15	Yes	13	0.00008769	0.00013100
16	Yes	17	0.00000001	0.00007411
17	Yes	16	0.00000001	0.00013934
18	Yes	17	0.00000001	0.00007500
19	Yes	16	0.00000001	0.00014117
20	Yes	13	0.00013436	0.00012934
21	Yes	13	0.00008776	0.00010403
22	Yes	17	0.00000001	0.00007768
23	Yes	16	0.00000001	0.00014644
24	Yes	17	0.00000001	0.00007542
25	Yes	16	0.00000001	0.00014184
26	Yes	10	0.00000001	0.00006168
27	Yes	16	0.00000001	0.00007052
28	Yes	16	0.00000001	0.00007714
29	Yes	16	0.00000001	0.00007707
30	Yes	16	0.00000001	0.00007122
31	Yes	16	0.00000001	0.00007844
32	Yes	16	0.00000001	0.00007891
33	Yes	16	0.00000001	0.00007201
34	Yes	16	0.00000001	0.00007802
35	Yes	16	0.00000001	0.00007775
36	Yes	16	0.00000001	0.00007072
37	Yes	16	0.00000001	0.00007696

38	Yes	16	0.00000001	0.00007684
39	Yes	13	0.00010646	0.00002782
40	Yes	13	0.00010635	0.00003891
41	Yes	13	0.00010635	0.00003587
42	Yes	13	0.00010646	0.00002726
43	Yes	13	0.00010634	0.00003481
44	Yes	13	0.00010634	0.00004140
45	Yes	13	0.00010645	0.00002821
46	Yes	13	0.00010634	0.00003470
47	Yes	13	0.00010634	0.00003687
48	Yes	13	0.00010646	0.00002731
49	Yes	13	0.00010635	0.00003999
50	Yes	13	0.00010635	0.00003420

Maximum Tower Deflections - Service Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load Comb.*	*Tilt*	*Twist*
	ft	*in*		°	°
L1	179 - 141.25	26.005	44	1.193	0.002
L2	145.58 - 92.58	17.866	44	1.106	0.001
L3	98.5 - 45.5	8.212	44	0.804	0.001
L4	53 - 30	2.319	44	0.409	0.000
L5	30 - 0	0.720	44	0.233	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation	*Appurtenance*	*Gov. Load Comb.*	*Deflection*	*Tilt*	*Twist*	*Radius of Curvature*
ft			*in*	°	°	*ft*
181.0000	2"Dia X6' Omni	44	26.005	1.193	0.002	88775
178.0000	2' Dish	44	25.756	1.191	0.002	88775
174.0000	ET-X-TU-42-15-37-18-iR-ST_TIA w/ Mount Pipe	44	24.762	1.183	0.002	88775
170.0000	1900MHz RRH	44	23.771	1.175	0.002	49320
159.0000	2' Dish	44	21.070	1.150	0.002	22193
151.0000	APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	44	19.144	1.126	0.002	15852
140.0000	QD8616-7_TIA w/ Mount Pipe	44	16.578	1.082	0.001	11870
130.0000	BXA-70063-4CF-EDIN-6_TIA w/ Mount Pipe	44	14.351	1.030	0.001	9971
126.0000	2' Dish	44	13.493	1.006	0.001	9371
110.0000	MX08FRO665-21_TIA w/ Mount Pipe	44	10.277	0.896	0.001	7554

Maximum Tower Deflections - Design Wind

Section No.	*Elevation*	*Horz. Deflection*	*Gov. Load Comb.*	*Tilt*	*Twist*
	ft	*in*		°	°
L1	179 - 141.25	111.140	12	5.104	0.011

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L2	145.58 - 92.58	76.380	12	4.736	0.006
L3	98.5 - 45.5	35.109	12	3.443	0.003
L4	53 - 30	9.908	12	1.748	0.001
L5	30 - 0	3.074	12	0.995	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
181.0000	2"Dia X6' Omni	12	111.140	5.104	0.011	21171
178.0000	2' Dish	12	110.079	5.096	0.011	21171
174.0000	ET-X-TU-42-15-37-18-iR-ST_TIA w/ Mount Pipe	12	105.836	5.064	0.010	21171
170.0000	1900MHz RRH	12	101.602	5.030	0.009	11761
159.0000	2' Dish	12	90.065	4.922	0.008	5290
151.0000	APXVAARR24_43-U-NA20_TIA w/ Mount Pipe	12	81.840	4.821	0.007	3777
140.0000	QD8616-7_TIA w/ Mount Pipe	12	70.877	4.633	0.006	2821
130.0000	BXA-70063-4CF-EDIN-6_TIA w/ Mount Pipe	12	61.357	4.409	0.005	2362
126.0000	2' Dish	12	57.688	4.307	0.005	2217
110.0000	MX08FRO665-21_TIA w/ Mount Pipe	12	43.938	3.835	0.004	1780

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	179 - 141.25 (1)	TP33.249x23.1x0.25	37.7500	0.0000	0.0	25.2610	-12.61	1477.77	0.009
L2	141.25 - 92.58 (2)	TP45.834x31.5849x0.375	53.0000	0.0000	0.0	52.2132	-44.01	3054.47	0.014
L3	92.58 - 45.5 (3)	TP57.742x43.4924x0.375	53.0000	0.0000	0.0	65.8810	-59.69	3854.04	0.015
L4	45.5 - 30 (4)	TP61.16x54.9755x0.375	23.0000	0.0000	0.0	72.3493	-70.03	4232.44	0.017
L5	30 - 0 (5)	TP69.225x61.16x0.41	30.0000	0.0000	0.0	89.5517	-82.51	5238.78	0.016

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	179 - 141.25	TP33.249x23.1x0.25	246.10	1129.15	0.218	0.00	1129.15	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L2	141.25 - 92.58 (1)	TP45.834x31.5849x0.375	1648.72	3304.66	0.499	0.00	3304.66	0.000
L3	92.58 - 45.5 (2)	TP57.742x43.4924x0.375	3496.28	4842.26	0.722	0.00	4842.26	0.000
L4	45.5 - 30 (3)	TP61.16x54.9755x0.375	4519.61	5598.73	0.807	0.00	5598.73	0.000
L5	30 - 0 (4)	TP69.225x61.16x0.41	5927.12	7711.10	0.769	0.00	7711.10	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	179 - 141.25 (1)	TP33.249x23.1x0.25	14.75	443.33	0.033	0.12	1235.97	0.000
L2	141.25 - 92.58 (2)	TP45.834x31.5849x0.375	37.94	916.34	0.041	2.00	3520.29	0.001
L3	92.58 - 45.5 (3)	TP57.742x43.4924x0.375	43.11	1156.21	0.037	2.00	5604.53	0.000
L4	45.5 - 30 (4)	TP61.16x54.9755x0.375	45.66	1269.73	0.036	1.99	6759.09	0.000
L5	30 - 0 (5)	TP69.225x61.16x0.41	48.18	1571.63	0.031	1.99	9471.42	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	179 - 141.25 (1)	0.009	0.218	0.000	0.033	0.000	0.228	1.050	4.8.2
L2	141.25 - 92.58 (2)	0.014	0.499	0.000	0.041	0.001	0.515	1.050	4.8.2
L3	92.58 - 45.5 (3)	0.015	0.722	0.000	0.037	0.000	0.739	1.050	4.8.2
L4	45.5 - 30 (4)	0.017	0.807	0.000	0.036	0.000	0.825	1.050	4.8.2
L5	30 - 0 (5)	0.016	0.769	0.000	0.031	0.000	0.785	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	179 - 141.25	Pole	TP33.249x23.1x0.25	1	-12.61	1551.66	21.7	Pass
L2	141.25 - 92.58	Pole	TP45.834x31.5849x0.375	2	-44.01	3207.19	49.1	Pass
L3	92.58 - 45.5	Pole	TP57.742x43.4924x0.375	3	-59.69	4046.74	70.4	Pass
L4	45.5 - 30	Pole	TP61.16x54.9755x0.375	4	-70.03	4444.06	78.6	Pass
L5	30 - 0	Pole	TP69.225x61.16x0.41	5	-82.51	5500.72	74.8	Pass
						Summary		
						Pole (L4)	78.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
						RATING =	**78.6**	**Pass**

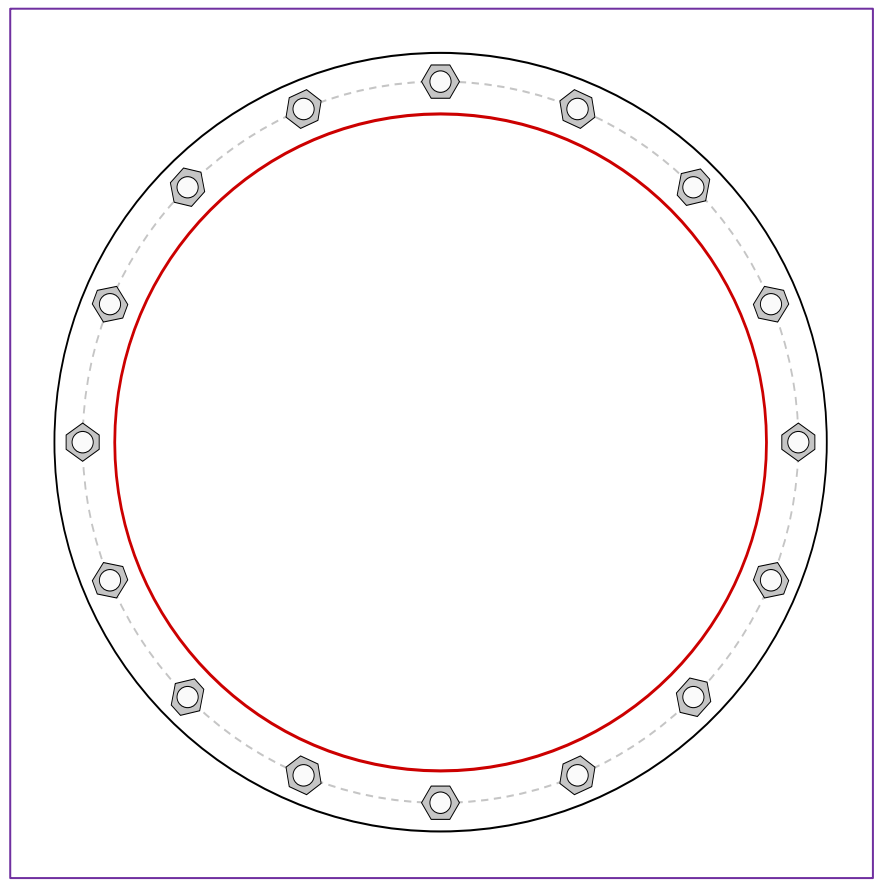
Monopole Base Plate Connection

Site Info	
BU #	
Site Name	BOBDL00106D
Order #	

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	Yes
l_{ar} (in)	0

Applied Loads	
Moment (kip-ft)	5927.12
Axial Force (kips)	82.51
Shear Force (kips)	48.18

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(16) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 76" BC

Base Plate Data

82" OD x 2.25" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

N/A

Pole Data

69.225" x 0.41" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_t = 228.72	ϕPn_t = 243.75	**Stress Rating**
Vu = 3.01	ϕVn = 149.1	**89.4%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	31.4	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**55.4%**	**Pass**

Pier and Pad Foundation

BU # :	
Site Name:	BOBDL00106D
App. Number:	

TIA-222 Revision:	H
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	☐
Block Foundation?:	☐
Rectangular Pad?:	☐

Superstructure Analysis Reactions

Compression, P_{comp}:	83	kips
Base Shear, Vu_comp:	48	kips
Moment, M_u:	5927	ft-kips
Tower Height, **H**:	179	ft
BP Dist. Above Fdn, bp_{dist}:	3	in

Pier Properties

Pier Shape:	Circular	
Pier Diameter, **dpier**:	8.5	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	9	
Pier Rebar Quantity, **mc**:	41	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	14	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	6.5	ft
Pad Width, W_1:	30	ft
Pad Thickness, **T**:	2.5	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	9	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	33	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	4	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties

Total Soil Unit Weight, γ:	100	pcf
Ultimate Net Bearing, Qnet:	8.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	30	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.3	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	251.70	48.00	**18.2%**	**Pass**
Bearing Pressure (ksf)	6.49	2.17	**33.4%**	**Pass**
*Overturning (kip*ft)*	9336.54	6275.00	**67.2%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	8383.65	6143.00	**69.8%**	**Pass**
Pier Compression (kip)	36117.07	128.96	**0.3%**	**Pass**
*Pad Flexure (kip*ft)*	3638.13	2372.00	**62.1%**	**Pass**
Pad Shear - 1-way (kips)	864.33	327.83	**36.1%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.190	0.064	**32.2%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	3840.45	3685.80	**91.4%**	**Pass**

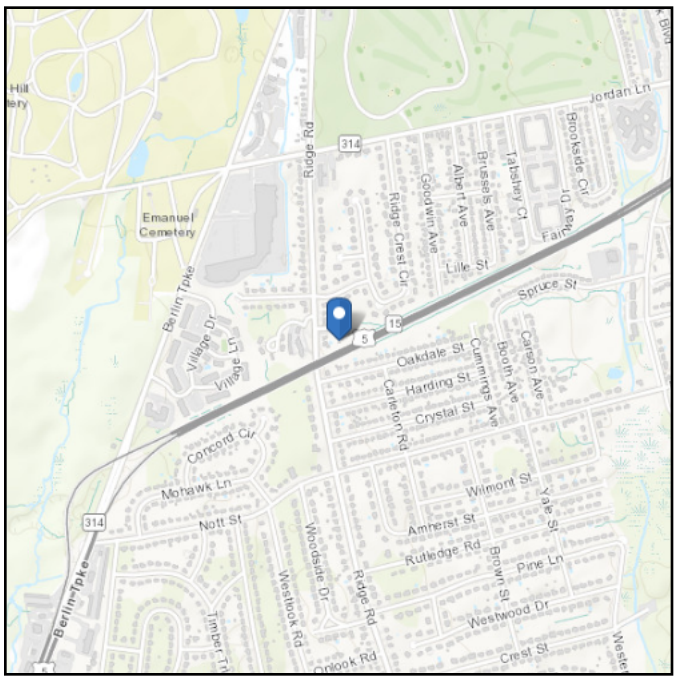
**Rating per TIA-222-H Section 15.5*

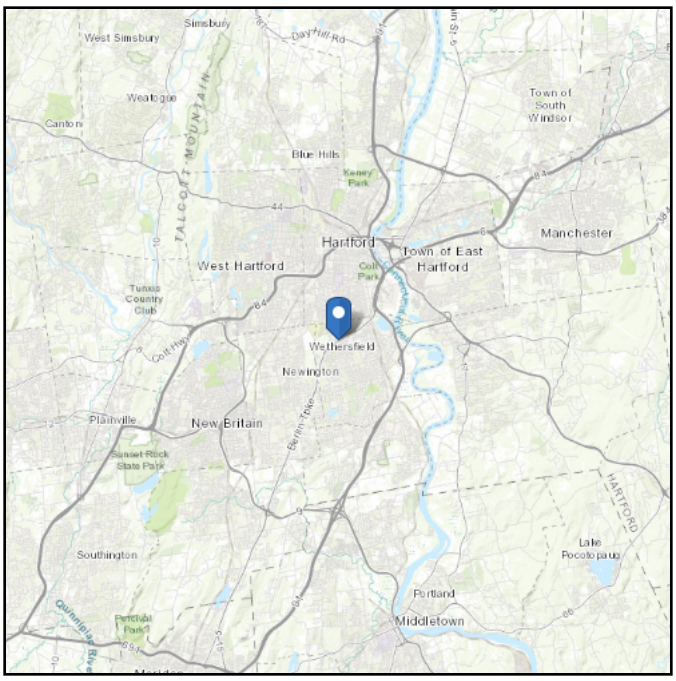
Structural Rating*:	**91.4%**
Soil Rating*:	**67.2%**

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	131.05 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.715392
Soil Class:	D - Default (see Section 11.4.3)	**Longitude:**	-72.690599





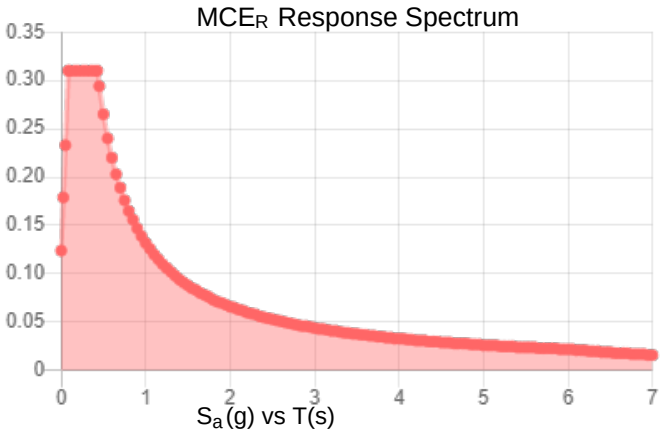
Seismic

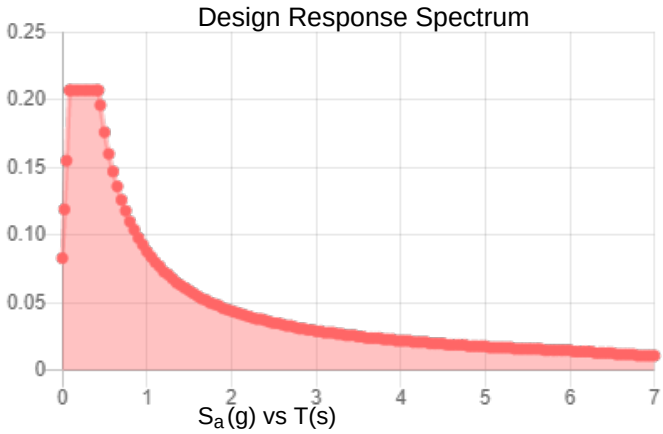
Site Soil Class: D - Default (see Section 11.4.3)

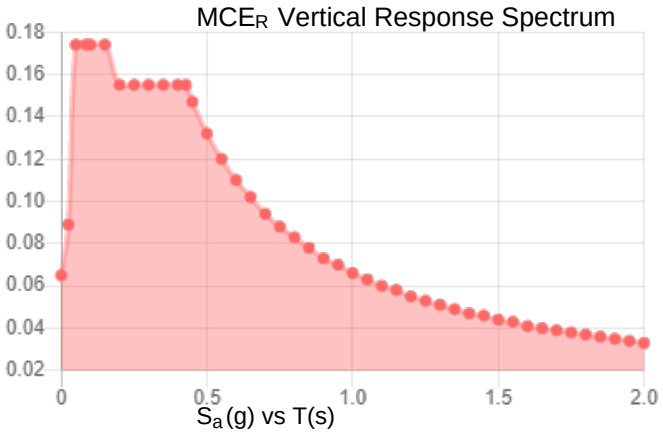
Results:

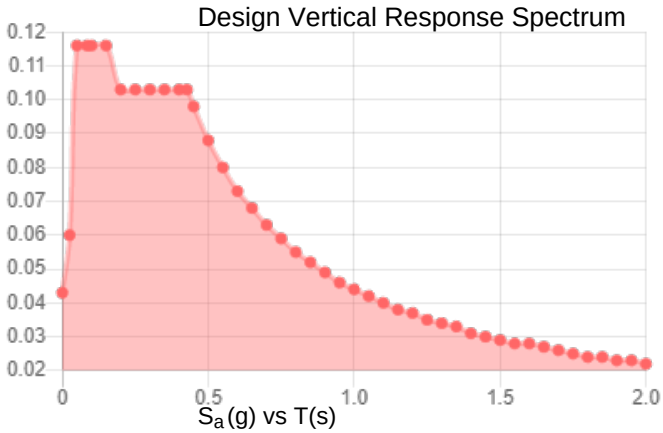
S_S :	0.194	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.105
F_v :	2.4	PGA_M :	0.167
S_{MS} :	0.31	F_{PGA} :	1.589
S_{M1} :	0.132	I_e :	1
S_{DS} :	0.207	C_v :	0.7

Seismic Design Category B









Data Accessed: **Wed Oct 19 2022**

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:	1.50 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed Oct 19 2022

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.

Exhibit E

Mount Analysis

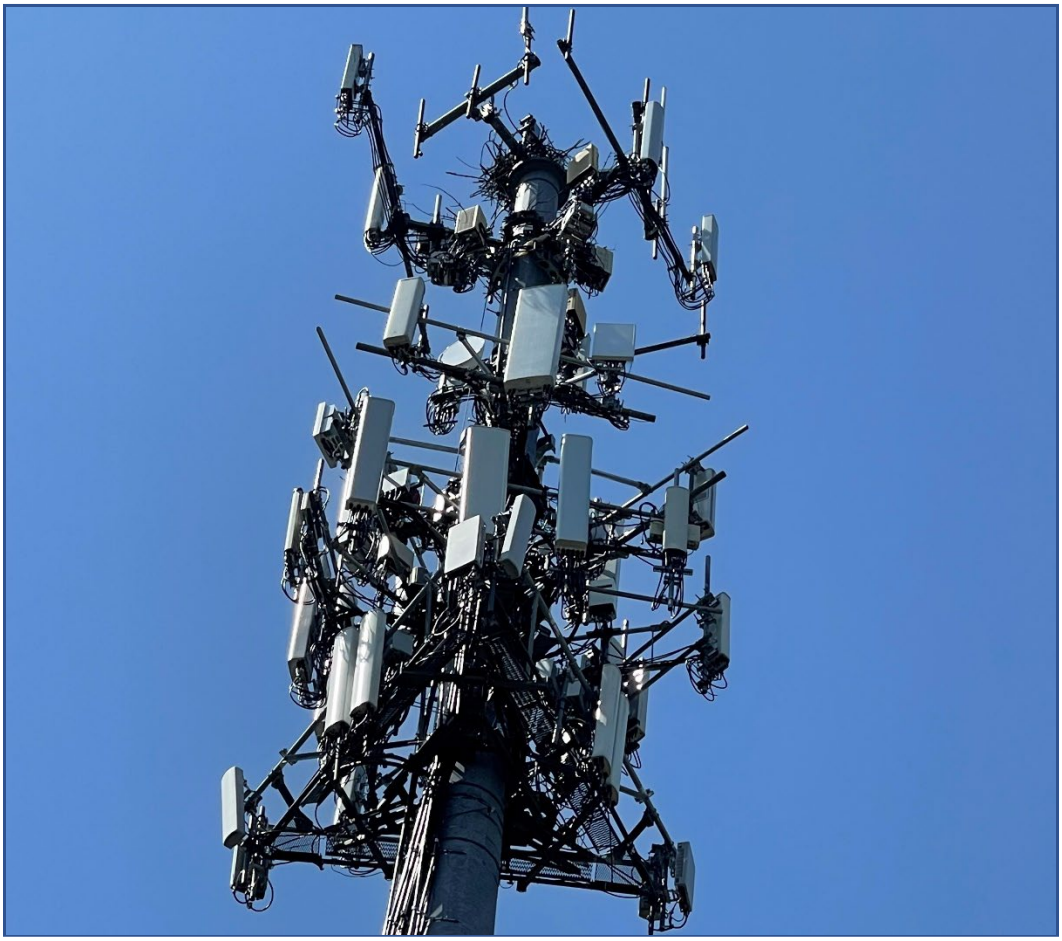
MOUNT STRUCTURAL ANALYSIS REPORT
MONOPOLE TOWER Rev. 1

FORESITE LLC
•Architects •Engineers •Surveyors
Complete A&E services for wireless telecommunications industry

Prepared for:

dish WIRELESS

5701 South Santa Fe Drive
Littleton, CO 80120



Site ID: BOBDL00106D
Address:
23 Kelleher Ct
Wethersfield, CT 06109

Date: 10/21/2022
Submitted by:
Foresite LLC.
462 Walnut Street, Suite 1
Newton, MA 02460
Phone:617-5273031

Date: 10/21/2022

To: Dish Wireless LLC
5701 South Santa Fe Drive
Littleton, CO 80120

Subject: **Mount Structural Analysis Report – Rev.1**

Dish Wireless LLC Designation: **Site ID:** BOBDL00106D

EFI Designation: **Project Number:** 049.03298 - 2275014

Site Data: **23 Kelleher Ct, Wethersfield, CT 06109**
Latitude 41.7153919°, Longitude -72.6905989°

EFI Global, Inc. is pleased to submit this **"Mount Structural Analysis Report – Rev.1"** to determine the structural capacity of the antenna mounts utilized by Dish Wireless LLC at the above referenced site.

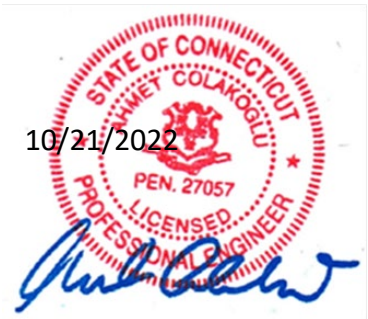
The purpose of the analysis is to determine acceptability of the mount stress level for the changes proposed by Dish Wireless LLC under the following load case we have determined the mounts to have:

Existing + Proposed Equipment **Adequate Capacity (44.2%)**
Note: See Analysis Criteria for loading configuration

The analysis has been performed in accordance with TIA-222-H Standard and the 2022 Connecticut State Building Code (2018 IBC).

We at *EFI Global, Inc.* appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or any other projects, please give us a call.

Sincerely,
EFI Global, Inc.
License No: PEC0001245



10/21/2022

Ahmet Colakoglu, PE
Connecticut Professional Engineer
License No: 27057

EFI Global, Inc.
1117 Perimeter Center West, Suite E500, Atlanta GA 30338 - Tel: (470) 990-6593

1) ANALYSIS CRITERIA

The analysis was performed for the existing and proposed appurtenances as specified in the loading information referenced below, and per the following loading criteria of Table 1.

Table 1 – Loading and Analysis Criteria

Rad Center	110’
Structure Type	Monopole
Exposure Category	C
Ultimate Wind Speed	120
Ultimate Ice Loading	1.50” with 50 mph Wind
Risk Category	II
Topographic Factor	Kzt = 1.0

Table 1.1 – Proposed and Final Appurtenance Configuration

Qty	Model
3	JMA MX08FRO665-21 – Antennas
3	Fujitsu TA08025-B605 – RRUs*
3	Fujitsu TA08025-B604 – RRUs*
1	Raycap RDIDC-9181-PF-48 – Junction Box

***To be mounted behind antennas.**

Table 1.2 – Assumed Material Properties

Member Type	ASTM Material Designation	Fy (ksi)	Fu (ksi)
Pipes	A53 Gr. B	35	60
Angles/Channels	A36	36	58
Rectangular HSS	A500 Gr. B - 46	46	58
Round HSS	A500 Gr. B - 42	42	58
Others (UNO)	A572 Gr. 50	50	65

2) ANALYSIS PROCEDURE

The analysis is based on the following information:

Table 2 – Documents

Document	Provided By	Date
Email	ForeSite LLC	04/27/2022
RFDS	Dish Wireless	04/18/2022
Structural Analysis Report	Hudson Design Group	11/01/2021

2.1) Analysis Method

Risa-3D, a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses for various loading cases. Selected output from the analysis is included in the Appendix.

2.2) Analysis Conditions and Assumptions

1) The mount was built and installed in accordance with the manufacturer's specifications.
2) The mount has been maintained and will be maintained in accordance with the manufacturer's specifications. All structural members and connections of the mount are in good condition and can achieve theoretical strength.
3) The configuration of antennas is as specified in "1) Analysis Criteria".
4) The analysis was performed for the subject mount only. It does not include an evaluation of the other mounts or the tower, which should be analyzed by others.
5) The evaluation does not include any antenna rigging loads. The equipment should not be rigged using the subject antenna mount as the support.
6) The analysis includes a minimum 250 lbf maintenance point load at the worst-case location on the mount, as well as a minimum 250 lbf maintenance point load at each antenna location in conjunction with a 30 mph wind load.
7) Any steel grating represented in this model is for loading purposes only and it is not considered to provide any structural restraint or support.
8) Member sizes per available mount specifications and assumed based on our experience with similar structures. Please refer to calculation output in the appendix of this report for sizes and lengths assumed.
9) 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.

EFI Global, Inc (EFI), must be notified immediately if any of these assumptions are discovered to be incorrect. The results of this analysis may be affected if any of the assumptions are not valid or have been made in error.

3) ANALYSIS RESULTS AND CONCLUSION

The analysis results are shown on the table below.

Table 3.1 – Mount Component Stresses vs. Capacity

Component	% Capacity	Pass / Fail
Platform Base Face Pipes	<20.0	Pass
Platform Base Tubes	33.5	Pass
Platform Base Angles	34.5	Pass
Support Rail	<20.0	Pass
Mount Pipes	44.2	Pass

Platform Mount: The proposed platform mount has **adequate** capacity for the proposed changes by Dish Wireless LLC. For the code specified load combinations and as a maximum, the mount members are stressed to **44.2%** of their structural capacities.

EFI Global, Inc. has assumed that Valmont/Site Pro 1 8' Snub Nose Platform with Handrail (P/N: SNP8HR-396, Specs attached) will be installed at this site prior to the equipment installation proposed in this analysis. The analysis also assumes the following:

- **The RAD Center is at the base of the platform.**
- **The Support Rail is installed 36" above the base of the platform.**
- **(3) 96" long 2.0 STD mount pipes are equally spaced along the face at each sector.**
- **(1) 48" long 2.0 STD OVP Box mount pipe should be installed at platform base tube to attach OVP Box. The pipe should be connected to platform base tube using Valmont/Site Pro 1 Crossover Plate Kit with Square U-Bolts (P/N: SQCX4-K).**

EFI Global, Inc.
1117 Perimeter Center West, Suite E500, Atlanta GA 30338 - Tel: (470) 990-6593

APPENDIX

INPUT LOADS
ANALYSIS OUTPUT
MOUNT SPECS

EFI Global, Inc.
1117 Perimeter Center West, Suite E500, Atlanta GA 30338 - Tel: (470) 990-6593

CLIENT: Foresite LLC

PROJECT: BOBDL00106D

SUBJECT: Antenna Loads - TIA 222 H Standard

Tower Height	179.00	ft	Type of Mount	Platform
Ultimate Wind Speed, V	120	mph		
Basic Wind Speed w/ Ice, V_i	50	mph		
Maintanence Load Factor, L_{FM}	0.0625	Load Factor for Maint. Load Cases (Basic Wind Speed=30 mph)		
Ultimate Ice Thickness, t_i		1.5	inches	

Table 2-3 Importance Factors

Structure Classification	Wind Load Without Ice	Wind Load With Ice	Ice Thickness	Earthquake
II	1	1	1	1

Table 2-4 Exposure Category Coefficients

Exposure Category	Zg	α	Kzmin	Ke	m
C	900	9.5	0.85	1	0.6

Ground elevation factor, Ke

Zs	131.05	**ft**
Ke	1.00	

Table 2-5 Topographic Categories

Kzt	1.000

Figure 2-2 Rooftop Wind Speed-Up Factor

Ks	1.00

Table 2-2 Wind Directionality Factor, Kd

Structure Type	Kd	
Monopole	0.95	DOES NOT CHANGE

Gust Effect Factor Gh

Structure Type	Gh	
Monopole	1.00	DOES NOT CHANGE

Shielding Factor, Ka

Structure Type	Ka	
Monopole	0.90	DOES NOT CHANGE

Seismic Factors

Ss	0.194	
S1	0.055	
Fa	1.6	
Fv	2.4	
R	2	Truss or Pole

CLIENT: Foresite LLC

PROJECT: BOBDL00106D

SUBJECT: Antenna Loads - TIA 222 H Standard

Rad Center **110.00** ft

Antenna AND Mount Without Ice

Mounting Pole	Height (ft)	Model Number	#	Weight (lbs)	H (in)	*W (in)	D (in)	Ka	**A_N (ft2)	***A_T (ft2)	Aspect (FRONT)	Aspect (SIDE)	Ca (FRONT)	Ca (SIDE)	K_z	q_z (psf)	Pounds: Wind Load (Front)	Wind Load (Side)	Dead Load	Total Wind Load (Front)	Total Wind Load (Side)	Total Dead Load	Lateral Load (Seismic)	Vertical Load (Seismic)
Pos.1	**110.00**	JMA MX08FRO665-21	1	64.5	72.0	20.0	8.0	0.90	10.00	4.00	3.60	9.00	1.25	1.47	1.291	45.0	505.9	237.6	64.5	506	323	203	9	8
	110.00	Fujitsu TA08025-B605	1	75.0	15.0	N/A	9.1	0.90	-	0.94	-	1.65	-	1.20	1.291	45.0	0.0	45.8	74.95					
	110.00	Fujitsu TA08025-B604	1	63.9	15.0	N/A	7.9	0.90	-	0.82	-	1.90	-	1.20	1.291	45.0	0.0	39.7	63.93					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
																				253	**162**	**102**	**5**	**4**
Standoff		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0	104	62	22	1	1
	110.00	Raycap RDIDC-9181-PF-48	1	21.9	19.0	16.2	9.6	0.90	2.13	1.27	1.17	1.97	1.20	1.20	1.291	45.0	103.7	61.7	21.85					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
																				52	**31**	**11**	**0**	**0**

* Enter N/A in the W column for front sheilded apurtanances.

** A_N is the product of H and W

*** A_T is the product of H and D

DL #REF!

Mount	Height (ft)	Member	*L (in)	D (in)	Weight (lb/ft)	*** Ca	K_z	q_z (psf)	Wind Load (PLF)	Lateral Load (Seismic)	Vertical Load (Seismic)
	110.00	3.0 STD Pipe	12.00	3.50	0.00	1.20	1.291	40.5	14	-	-
	110.00	2.5 STD Pipe	12.00	2.88	0.00	1.20	1.291	40.5	12	-	-
	110.00	2.0 STD Pipe	12.00	2.38	0.00	1.20	1.291	40.5	10	-	-
	110.00	1/2" SR	0.00	0.50	0.00	-	-	-	-	-	-
	110.00	(L4x4)	12.00	4.00	4.00	2.00	1.291	40.5	27	-	-
	110.00	(L2.5x2.5)	12.00	2.50	2.50	2.00	1.291	40.5	17	-	-
	110.00	(L3x3)	0.00	3.00	3.00	-	-	-	-	-	-
	110.00	Plate (PL6X0.375)	0.00	6.00	0.38	-	-	-	-	-	-
	110.00	Plate (PL6x0.5)	0.00	6.00	0.50	-	-	-	-	-	-
	110.00	HSS4.5X4.5X4	12.00	4.50	4.50	2.00	1.291	40.5	30	-	-
	110.00	HSS4X4X4	12.00	4.00	4.00	2.00	1.291	40.5	27	-	-
	110.00	LL(2.5x2.5x3x6)	0.00	5.80	2.50	-	-	-	-	-	-
	110.00	Channel (C5X4X0.375)	0.00	4.00	5.00	-	-	-	-	-	-
	110.00	Channel (2.75x2)	0.00	2.75	2.00	-	-	-	-	-	-

* The dimension L is the longest dimension of the member

** The dimension W is the height or width of the member that resists wind load

*** Ca will equal 1.2 for round members and 2.0 for flat members

CLIENT: Foresite LLC

PROJECT: BOBDL00106D

SUBJECT: Antenna Loads - TIA 222 H Standard

ti (in) 1.691917 Kiz 1.1279449 reduction 0.17361

Antenna AND Mount With Ice

Mounting Pole	Height (ft)	Model Number	#	H (in)	W (in)	D (in)	Ka	*A_N (ft2)	*A_T (ft2)	*Volume Ice (ft3)	*Weight Ice (lbs)	**Ca (FRONT)	**Ca (SIDE)	Kz	q_z (psf)	Pounds: Ice Wind Load (Front)	Ice Wind Load (Side)	Combined Wind Load (Front)	Combined Wind Load (Side)	Ice Dead Load	**Total Wind Load (Front)	**Total Wind Load (Side)	Total Ice Load
Pos.1	**110.00**	JMA MX08FRO665-21	1	72.0	20.0	8.0	0.90	2.24	1.96	4.95	276.99	0.72	0.79	1.291	7.8	11.3	10.9	99.1	52.2	277	99	73	417
	110.00	Fujitsu TA08025-B605	1	15.0	15.8	9.1	0.90	-	0.64	1.29	72.36	0.70	0.70	1.291	7.8	0.0	3.2	0.0	11.1	72			
	110.00	Fujitsu TA08025-B604	1	15.0	15.8	7.9	0.90	-	0.62	1.21	67.91	0.70	0.70	1.291	7.8	0.0	3.0	0.0	9.9	68			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					50	**37**	**209**
Standoff		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0	22	14	89
	110.00	Raycap RDIDC-9181-PF-48	1	19.0	16.2	9.6	0.90	0.91	0.75	1.59	88.76	0.70	0.70	1.291	7.8	4.5	3.7	22.5	14.4	89			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					12	**8**	**45**

* A_N ,A_T, Volume Ice and Weight Ice are calculated per unit

** Ca will equal 1.2 for all ice load calculations

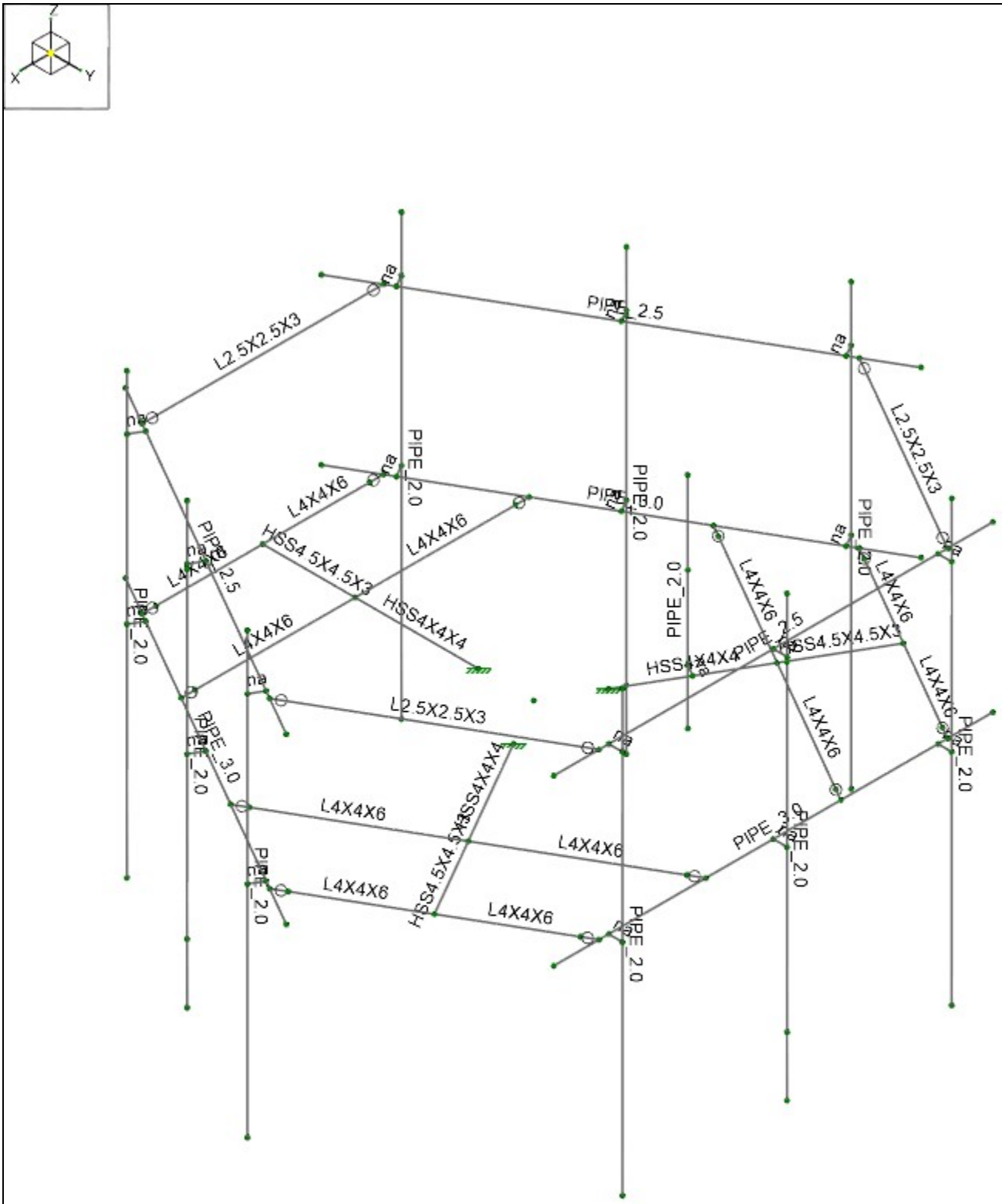
Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	***A_N (ft2)	Volume Ice (ft3)	Weight Ice (lbs)	****Ca (FRONT)	Kz	q_z (psf)	PLF: Ice Wind Load (Front)	Combined Wind Load (Front)	Ice Dead Load
	110.00	3.0 STD Pipe	12.00	3.50	0.00	0.44	0.19	10.73	1.20	1.291	7.0	3.7	6.2	11
	110.00	2.5 STD Pipe	12.00	2.88	0.00	0.43	0.17	9.44	1.20	1.291	7.0	3.6	5.6	9
	110.00	2.0 STD Pipe	12.00	2.38	0.00	0.42	0.15	8.41	1.20	1.291	7.0	3.5	5.2	8
	110.00	1/2" SR	0.00	0.50	0.00	-	-	-	-	-	-	-	-	-
	110.00	(L4x4)	12.00	4.00	4.00	0.46	0.19	10.53	1.20	1.291	7.0	3.8	8.5	11
	110.00	(L2.5x2.5)	12.00	2.50	2.50	0.42	0.12	6.58	1.20	1.291	7.0	3.5	6.5	7
	110.00	(L3x3)	0.00	3.00	3.00	-	-	-	-	-	-	-	-	-
	110.00	Plate (PL6X0.375)	0.00	6.00	0.38	-	-	-	-	-	-	-	-	-
	110.00	Plate (PL6x0.5)	0.00	6.00	0.50	-	-	-	-	-	-	-	-	-
	110.00	HSS4.5X4.5X4	12.00	4.50	4.50	0.47	0.41	23.11	1.20	1.291	7.0	3.9	9.2	23
	110.00	HSS4X4X4	12.00	4.00	4.00	0.46	0.37	20.96	1.20	1.291	7.0	3.8	8.5	21
	110.00	LL(2.5x2.5x3x6)	0.00	5.80	2.50	-	-	-	-	-	-	-	-	-
	110.00	Channel (C5X4X0.375)	0.00	4.00	5.00	-	-	-	-	-	-	-	-	-
	110.00	Channel (2.75x2)	0.00	2.75	2.00	-	-	-	-	-	-	-	-	-

* The dimension L is the longest dimension of the member

** The dimension W is the height or width of the member that resists wind load

*** A_N is the area of ice built up on the LW plane

**** Ca will equal 1.2 for all ice load calculations



Envelope Only Solution

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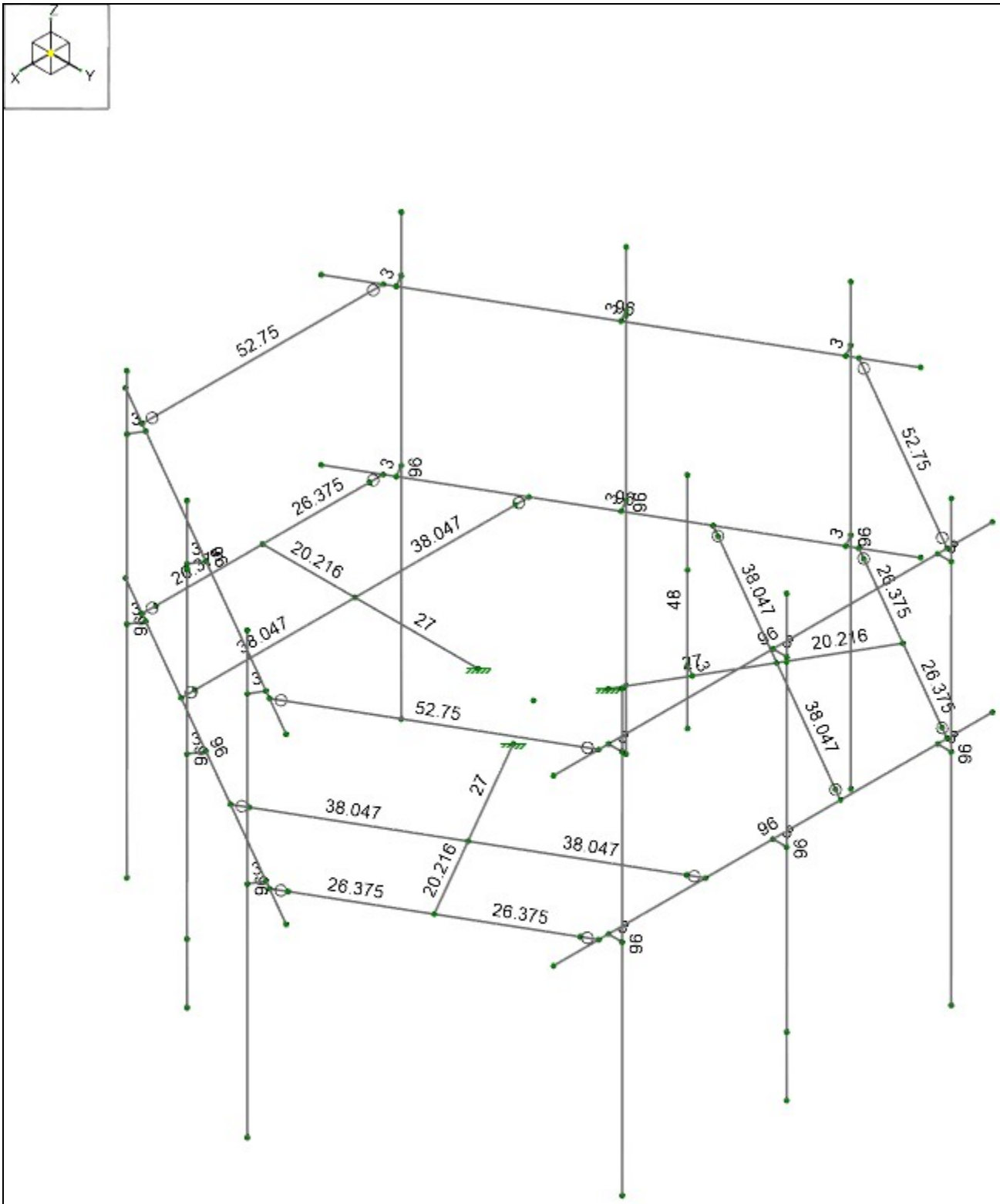

Member Length (in) Displayed
Envelope Only Solution

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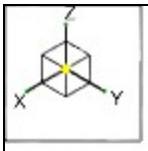

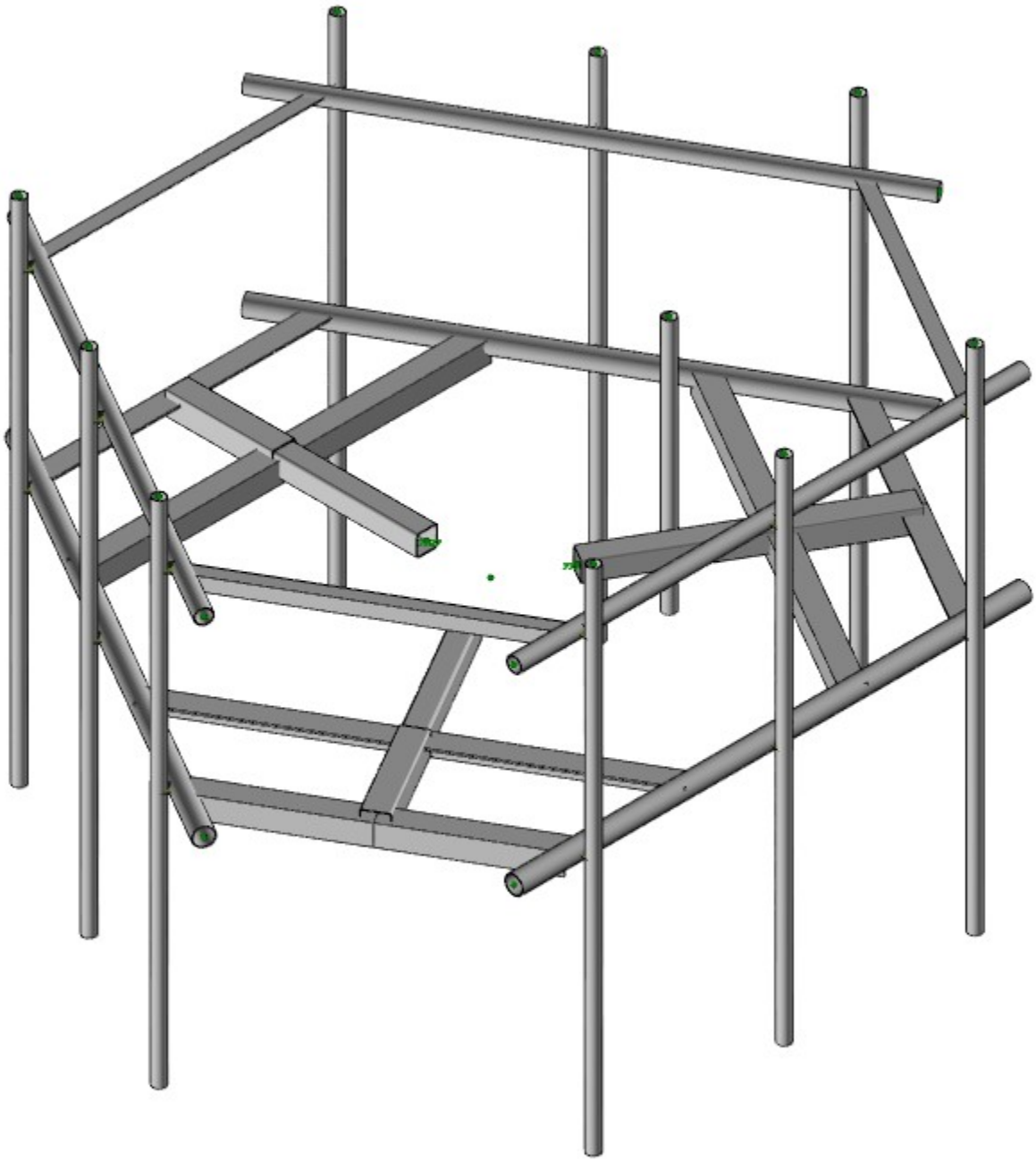

Envelope Only Solution

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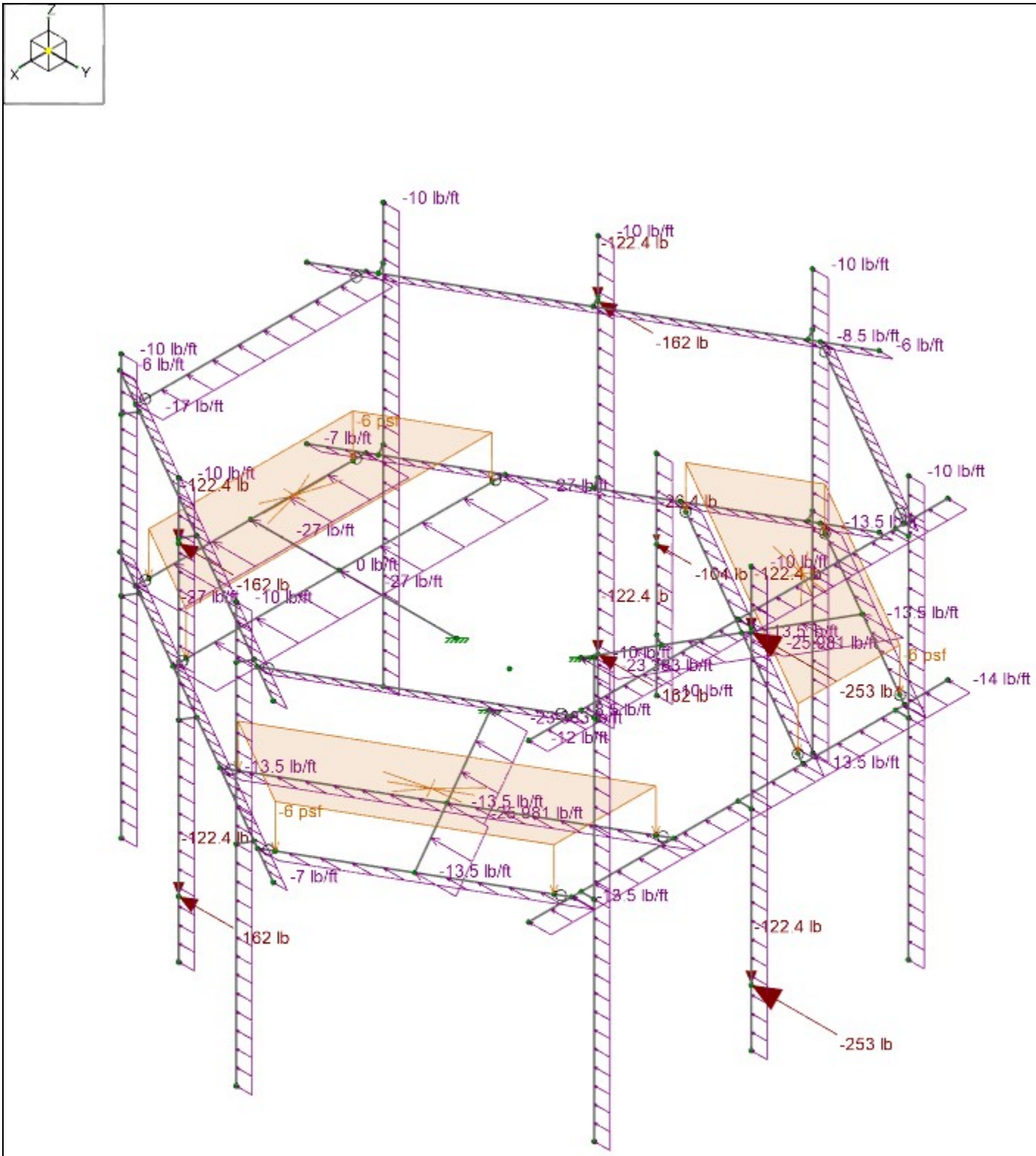

Loads: LC 1, DL + WL (NO ICE) 0 Degree
Envelope Only Solution

ForeSite/EFI	BOBDL00106D	SK-4
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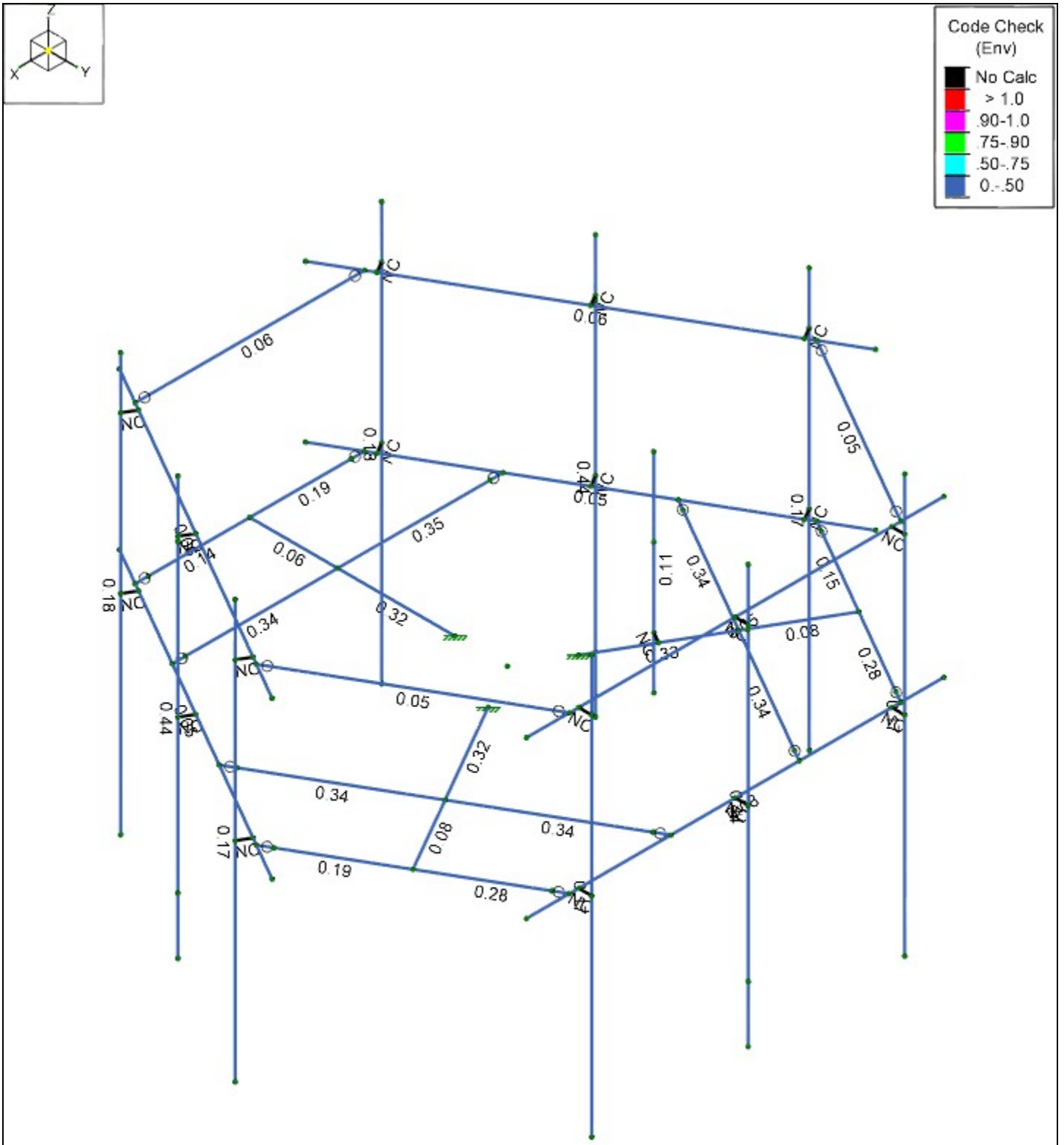
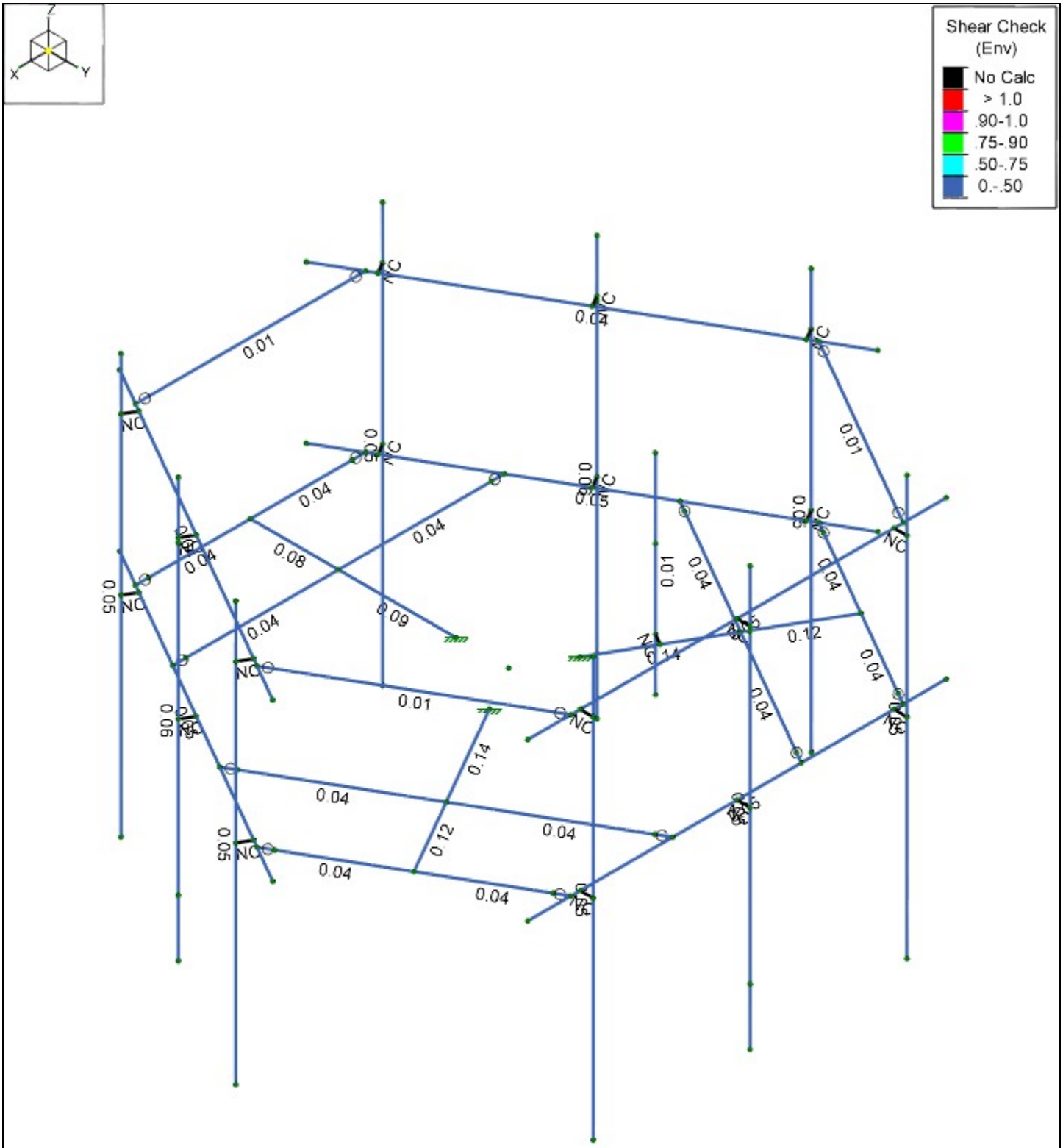


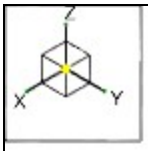
Member Code Checks Displayed (Enveloped)
Envelope Only Solution

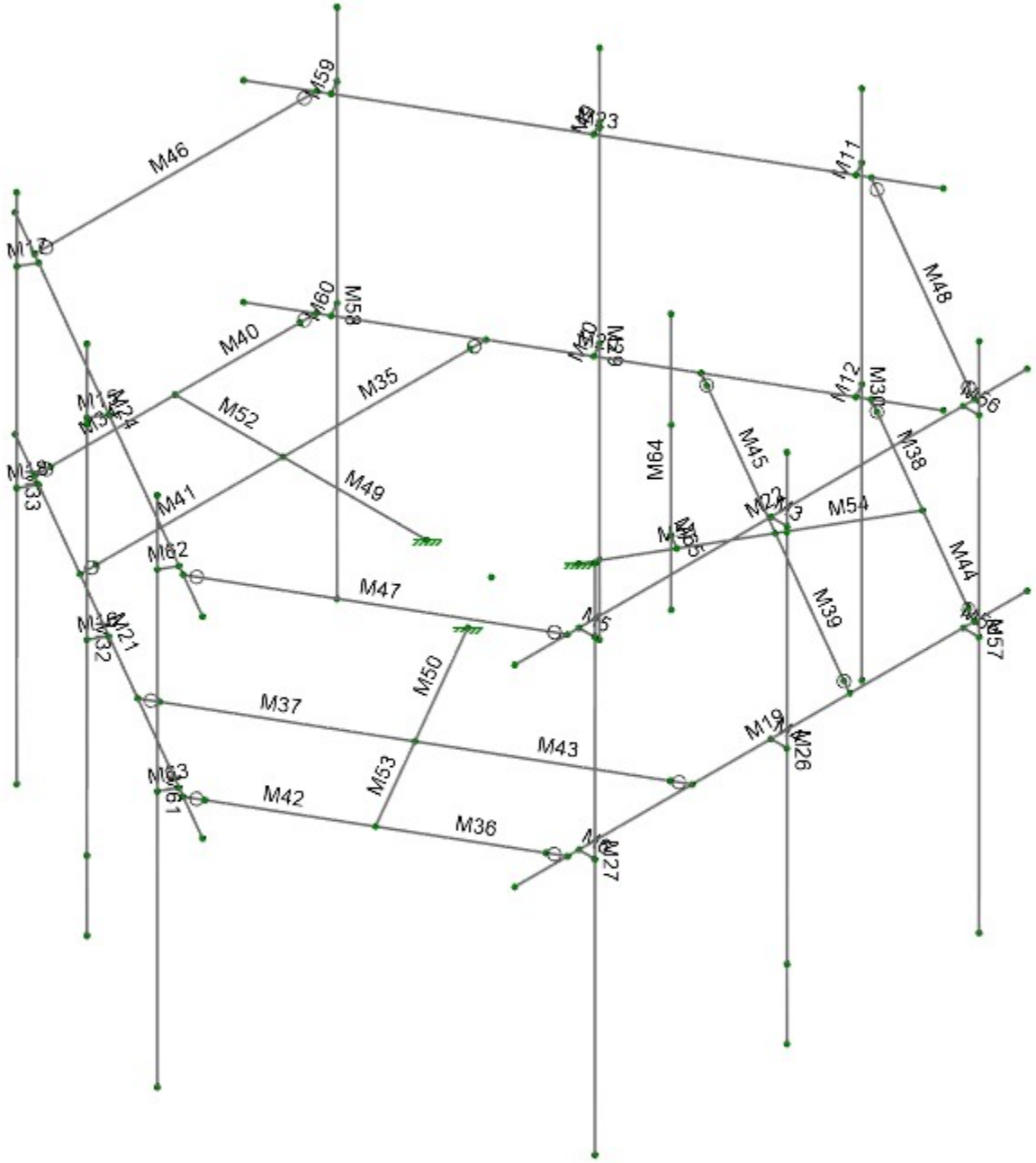
ForeSite/EFI	BOBDL00106D	SK-5
AJ		Oct 21, 2022
049.03298 - 2275014		BOBDL00106D - SNP8HR-396.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

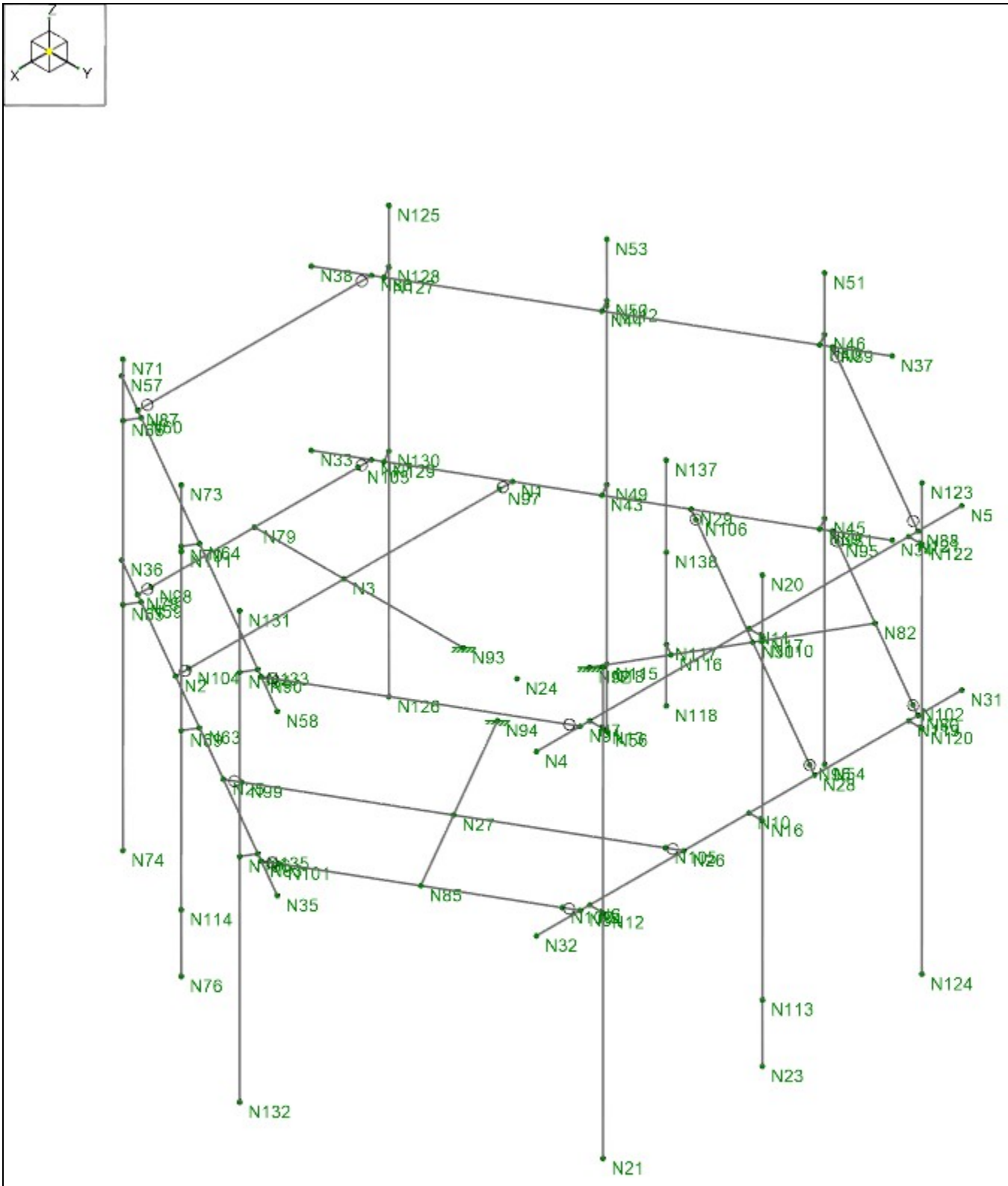
ForeSite/EFI	BOBDL00106D	SK-6
AJ		Oct 21, 2022
049.03298 - 2275014		BOBDL00106D - SNP8HR-396.r3d





Envelope Only Solution

ForeSite/EFI	BOBDL00106D	SK-7
AJ		Oct 21, 2022
049.03298 - 2275014		BOBDL00106D - SNP8HR-396.r3d



Envelope Only Solution

ForeSite/EFI	BOBDL00106D	SK-8
AJ		Oct 21, 2022
049.03298 - 2275014		BOBDL00106D - SNP8HR-396.r3d

Model Settings

Solution

Members

Number of Reported Sections	5
Number of Internal Sections	100
Member Area Load Mesh Size (in^2)	144
Consider Shear Deformation	Yes
Consider Torsional Warping	Yes

Wall Panels

Approximate Mesh Size (in)	12
Transfer Forces Between Intersecting Wood Walls	Yes
Increase Wood Wall Nailing Capacity for Wind Loads	Yes
Include P-Delta for Walls	Yes
Optimize Masonry and Wood Walls	No
Maximum Number of Iterations	3

Processor Core Utilization

Single	No
Multiple (Optimum)	Yes
Maximum	No

Axis

Vertical Global Axis

Global Axis corresponding to vertical direction	Z
Convert Existing Data	Yes

Default Member Orientation

Default Global Plane for z-axis	XY

Plate Axis

Plate Local Axis Orientation	Nodal

Codes

Hot Rolled Steel	AISC 15th (360-16): LRFD
Stiffness Adjustment	Yes (Iterative)
Notional Annex	None
Connections	AISC 15th (360-16): LRFD
Cold Formed Steel	AISI S100-16: LRFD
Stiffness Adjustment	Yes (Iterative)
Wood	AF&PA NDS-05/08: ASD
Temperature	< 100F
Concrete	ACI 318-05
Masonry	ACI 530-05: ASD
Aluminum	AA ADM1-05: ASD
Structure Type	Building
Stiffness Adjustment	Yes (Iterative)
Stainless	AISC 14th (360-10): ASD
Stiffness Adjustment	Yes (Iterative)

Concrete

Column Design

Analysis Methodology	Exact Integration Method
Parme Beta Factor	0.65

Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	No
List forces which were ignored for design in the Detail Report	Yes

Rebar

Column Min Steel	1
Column Max Steel	8
Rebar Material Spec	ASTM A615
Warn if beam-column framing arrangement is not understood	No

Model Settings (Continued)

Shear Reinforcement

Number of Shear Regions	4
Region 2 & 3 Spacing Increase Increment (in)	4

Seismic

RISA-3D Seismic Load Options

Code	ASCE 7-05
Occupancy Cat	I or II
Drift Cat	Other
Base Elevation (ft)	
Include the weight of the structure in base shear calcs	Yes

Site Parameters

S_1 (g)	1
SD_1 (g)	1
SD_S (g)	1
T_L (sec)	-1

Structure Characteristics

T Z (sec)	
T X (sec)	
C_tX	0.035
C_tExp. Z	0.75
C_tExp. X	0.75
R Z	8.5
R X	8.5
Ω_0Z	1
Ω_0X	1
C_dZ	4
C_dX	4
ρ Z	1
ρ X	1

Project Grid Lines

No Data to Print...

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e^{5}°F^{-1}]	Density [k/ft^{3}]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.2
3	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.2
4	A500 Gr.42	29000	11154	0.3	0.65	0.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	0.3	0.65	0.49	46	1.2	58	1.1
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.5	60	1.2

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M3	N11	N17		RIGID	None	None	LINK	Typical
2	M4	N10	N16		RIGID	None	None	LINK	Typical
3	M9	N44	N50		RIGID	None	None	LINK	Typical
4	M10	N43	N49		RIGID	None	None	LINK	Typical
5	M5	N7	N13		RIGID	None	None	LINK	Typical
6	M6	N6	N12		RIGID	None	None	LINK	Typical
7	M15	N64	N70		RIGID	None	None	LINK	Typical
8	M12	N39	N45		RIGID	None	None	LINK	Typical
9	M63	N135	N136		RIGID	None	None	LINK	Typical
10	M11	N40	N46		RIGID	None	None	LINK	Typical
11	M17	N60	N66		RIGID	None	None	LINK	Typical
12	M18	N59	N65		RIGID	None	None	LINK	Typical
13	M62	N133	N134		RIGID	None	None	LINK	Typical
14	M55	N119	N120		RIGID	None	None	LINK	Typical
15	M56	N121	N122		RIGID	None	None	LINK	Typical
16	M59	N127	N128		RIGID	None	None	LINK	Typical
17	M60	N129	N130		RIGID	None	None	LINK	Typical
18	M16	N63	N69		RIGID	None	None	LINK	Typical
19	M19	N31	N32		PIPE_3.0	Beam	Pipe	A500 Gr.42	Typical
20	M20	N33	N34		PIPE_3.0	Beam	Pipe	A500 Gr.42	Typical
21	M21	N35	N36		PIPE_3.0	Beam	Pipe	A500 Gr.42	Typical
22	M22	N4	N5		PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical
23	M23	N37	N38		PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical
24	M24	N57	N58		PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical
25	M30	N51	N54		PIPE_2.0	Beam	HSS Pipe	A53 Gr.B	Typical
26	M27	N18	N21		PIPE_2.0	Beam	HSS Pipe	A53 Gr.B	Typical
27	M58	N125	N126		PIPE_2.0	Beam	HSS Pipe	A53 Gr.B	Typical
28	M57	N123	N124		PIPE_2.0	Beam	HSS Pipe	A53 Gr.B	Typical
29	M33	N71	N74		PIPE_2.0	Beam	HSS Pipe	A53 Gr.B	Typical
30	M32	N73	N76		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
31	M29	N53	N56		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
32	M26	N20	N23		PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical
33	M61	N131	N132		PIPE_2.0	Beam	HSS Pipe	A53 Gr.B	Typical
34	M36	N84	N85	90	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical
35	M44	N82	N80	90	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical
36	M42	N85	N83	90	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical
37	M40	N79	N77	90	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical
38	M39	N28	N30	90	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical
39	M38	N81	N82	90	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical
40	M37	N25	N27	90	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical
41	M34	N78	N79	90	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical
42	M43	N27	N26	90	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical
43	M41	N3	N2	90	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical
44	M45	N30	N29	90	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical
45	M35	N1	N3	90	L4X4X6	Beam	Single Angle	A36 Gr.36	Typical
46	M48	N89	N88	90	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
47	M47	N91	N90	90	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
48	M46	N87	N86	90	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
49	M51	N92	N30		HSS4X4X4	Beam	Tube	A500 Gr.46	Typical
50	M50	N94	N27		HSS4X4X4	Beam	Tube	A500 Gr.46	Typical
51	M49	N93	N3		HSS4X4X4	Beam	Tube	A500 Gr.46	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
52	M53	N27	N85		HSS4.5X4.5X3	Beam	Tube	A500 Gr.46	Typical
53	M52	N3	N79		HSS4.5X4.5X3	Beam	Tube	A500 Gr.46	Typical
54	M54	N30	N82		HSS4.5X4.5X3	Beam	Tube	A500 Gr.46	Typical
55	M64	N118	N137		PIPE_2.0	Beam	HSS Pipe	A53 Gr.B	Typical
56	M65	N116	N117		RIGID	None	None	LINK	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	M3			Yes	** NA **	None
2	M4			Yes	** NA **	None
3	M9			Yes	** NA **	None
4	M10			Yes	** NA **	None
5	M5			Yes	** NA **	None
6	M6			Yes	** NA **	None
7	M15			Yes	** NA **	None
8	M12			Yes	** NA **	None
9	M63			Yes	** NA **	None
10	M11			Yes	** NA **	None
11	M17			Yes	** NA **	None
12	M18			Yes	** NA **	None
13	M62			Yes	** NA **	None
14	M55			Yes	** NA **	None
15	M56			Yes	** NA **	None
16	M59			Yes	** NA **	None
17	M60			Yes	** NA **	None
18	M16			Yes	** NA **	None
19	M19			Yes		None
20	M20			Yes		None
21	M21			Yes		None
22	M22			Yes		None
23	M23			Yes		None
24	M24			Yes		None
25	M30			Yes	Default	None
26	M27			Yes	Default	None
27	M58			Yes	Default	None
28	M57			Yes	Default	None
29	M33			Yes	Default	None
30	M32			Yes	Default	None
31	M29			Yes	Default	None
32	M26			Yes	Default	None
33	M61			Yes	Default	None
34	M36	BenPIN		Yes		None
35	M44		BenPIN	Yes		None
36	M42		BenPIN	Yes		None
37	M40		BenPIN	Yes		None
38	M39	BenPIN		Yes		None
39	M38	BenPIN		Yes		None
40	M37	BenPIN		Yes		None
41	M34	BenPIN		Yes		None
42	M43		BenPIN	Yes		None
43	M41		BenPIN	Yes		None
44	M45		BenPIN	Yes		None
45	M35	BenPIN		Yes		None
46	M48	BenPIN	BenPIN	Yes		None
47	M47	BenPIN	BenPIN	Yes		None
48	M46	BenPIN	BenPIN	Yes		None
49	M51			Yes		None
50	M50			Yes		None
51	M49			Yes		None
52	M53			Yes		None
53	M52			Yes		None
54	M54			Yes		None
55	M64			Yes	Default	None
56	M65			Yes	** NA **	None

Member Advanced Data (Continued)

Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lcomp top [in]	Function
1	M19	PIPE_3.0	96	Lbyy	Lateral
2	M20	PIPE_3.0	96	Lbyy	Lateral
3	M21	PIPE_3.0	96	Lbyy	Lateral
4	M22	PIPE_2.5	96	Lbyy	Lateral
5	M23	PIPE_2.5	96	Lbyy	Lateral
6	M24	PIPE_2.5	96	Lbyy	Lateral
7	M30	PIPE_2.0	96	Lbyy	Lateral
8	M27	PIPE_2.0	96	Lbyy	Lateral
9	M58	PIPE_2.0	96	Lbyy	Lateral
10	M57	PIPE_2.0	96	Lbyy	Lateral
11	M33	PIPE_2.0	96	Lbyy	Lateral
12	M32	PIPE_2.0	96	Lbyy	Lateral
13	M29	PIPE_2.0	96	Lbyy	Lateral
14	M26	PIPE_2.0	96	Lbyy	Lateral
15	M61	PIPE_2.0	96	Lbyy	Lateral
16	M36	L4X4X6	26.375	Lbyy	Lateral
17	M44	L4X4X6	26.375	Lbyy	Lateral
18	M42	L4X4X6	26.375	Lbyy	Lateral
19	M40	L4X4X6	26.375	Lbyy	Lateral
20	M39	L4X4X6	38.047	Lbyy	Lateral
21	M38	L4X4X6	26.375	Lbyy	Lateral
22	M37	L4X4X6	38.047	Lbyy	Lateral
23	M34	L4X4X6	26.375	Lbyy	Lateral
24	M43	L4X4X6	38.047	Lbyy	Lateral
25	M41	L4X4X6	38.047	Lbyy	Lateral
26	M45	L4X4X6	38.047	Lbyy	Lateral
27	M35	L4X4X6	38.047	Lbyy	Lateral
28	M48	L2.5x2.5x3	52.75	Lbyy	Lateral
29	M47	L2.5x2.5x3	52.75	Lbyy	Lateral
30	M46	L2.5x2.5x3	52.75	Lbyy	Lateral
31	M51	HSS4X4X4	27	Lbyy	Lateral
32	M50	HSS4X4X4	27	Lbyy	Lateral
33	M49	HSS4X4X4	27	Lbyy	Lateral
34	M53	HSS4.5X4.5X3	20.216	Lbyy	Lateral
35	M52	HSS4.5X4.5X3	20.216	Lbyy	Lateral
36	M54	HSS4.5X4.5X3	20.216	Lbyy	Lateral
37	M64	PIPE_2.0	48	Lbyy	Lateral

Node Coordinates

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
1	N1	-38.046958	-39.000041	0	
2	N2	38.046958	-39.000041	0	
3	N3	0	-39.000041	0	
4	N4	48	52.4497	36	
5	N5	-48	52.4497	36	
6	N6	36	52.449653	0	
7	N7	36	52.4497	36	
8	N10	0	52.449653	0	
9	N11	0	52.4497	36	
10	N12	36	55.4497	0	
11	N13	36	55.4497	36	
12	N16	0	55.4497	0	
13	N17	0	55.4497	36	
14	N18	36	55.4497	48	
15	N20	0	55.4497	48	
16	N21	36	55.4497	-48	
17	N23	0	55.4497	-48	
18	N24	0	0	0	
19	N25	52.798505	-13.449612	0	
20	N26	14.751547	52.449653	0	
21	N27	33.775026	19.500021	0	
22	N28	-14.751547	52.449653	0	
23	N29	-52.798505	-13.449612	0	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
24	N30	-33.775026	19.500021	0	
25	N31	-48	52.449653	0	
26	N32	48	52.449653	0	
27	N33	-21.422732	-67.794046	0	
28	N34	-69.422732	15.344393	0	
29	N35	69.422732	15.344393	0	
30	N36	21.422732	-67.794046	0	
31	N37	-69.422773	15.344369	36	
32	N38	-21.422773	-67.794069	36	
33	N39	-63.422732	4.952088	0	
34	N40	-63.422773	4.952065	36	
35	N43	-45.422732	-26.224827	0	
36	N44	-45.422773	-26.22485	36	
37	N45	-66.020848	3.452065	0	
38	N46	-66.020848	3.452065	36	
39	N49	-48.020849	-27.72485	0	
40	N50	-48.020849	-27.72485	36	
41	N51	-66.020849	3.452065	48	
42	N53	-48.020849	-27.72485	48	
43	N54	-66.020849	3.452065	-48	
44	N56	-48.020849	-27.72485	-48	
45	N57	21.422773	-67.794069	36	
46	N58	69.422773	15.344369	36	
47	N59	27.422732	-57.401741	0	
48	N60	27.422773	-57.401765	36	
49	N63	45.422732	-26.224827	0	
50	N64	45.422773	-26.22485	36	
51	N65	30.02085	-58.901765	0	
52	N66	30.02085	-58.901765	36	
53	N69	48.020849	-27.72485	0	
54	N70	48.020849	-27.72485	36	
55	N71	30.020849	-58.901765	48	
56	N73	48.020849	-27.72485	48	
57	N74	30.020849	-58.901765	-48	
58	N76	48.020849	-27.72485	-48	
59	N77	-26.374982	-59.216497	0	
60	N78	26.374982	-59.216497	0	
61	N79	-0.	-59.216497	0	
62	N80	-38.0955	52.449653	0	
63	N81	-64.470482	6.766844	0	
64	N82	-51.282991	29.608249	0	
65	N83	64.470482	6.766844	0	
66	N84	38.0955	52.449653	0	
67	N85	51.282991	29.608249	0	
68	N86	-26.375036	-59.216497	36	
69	N87	26.375036	-59.216497	36	
70	N88	-38.095473	52.4497	36	
71	N89	-64.470509	6.766797	36	
72	N90	64.470509	6.766797	36	
73	N91	38.095473	52.4497	36	
74	N92	-10.392305	6	0	
75	N93	0	-12	0	
76	N94	10.392305	6	0	
77	N95	-62.970482	9.36492	0	
78	N96	-16.251547	49.851577	0	
79	N97	-35.046958	-39.000041	0	
80	N98	23.374982	-59.216497	0	
81	N99	51.298505	-10.851536	0	
82	N100	39.5955	49.851577	0	
83	N101	62.970491	9.364905	0	
84	N102	-39.595491	49.851592	0	
85	N103	-23.375	-59.216497	0	
86	N104	35.047	-39.000041	0	
87	N105	16.251526	49.851613	0	
88	N106	-51.298526	-10.851572	0	

Node Coordinates (Continued)

	Label	X [in]	Y [in]	Z [in]	Detach From Diaphragm
89	N119	-36	52.449653	0	
90	N120	-36	55.4497	0	
91	N121	-36	52.4497	36	
92	N122	-36	55.4497	36	
93	N123	-36	55.4497	48	
94	N124	-36	55.4497	-48	
95	N125	-30.020849	-58.901765	48	
96	N126	-30.020849	-58.901765	-48	
97	N127	-27.422773	-57.401765	36	
98	N128	-30.020849	-58.901765	36	
99	N129	-27.422732	-57.401741	0	
100	N130	-30.020849	-58.901765	0	
101	N131	66.020849	3.452065	48	
102	N132	66.020849	3.452065	-48	
103	N133	63.422773	4.952065	36	
104	N134	66.020849	3.452065	36	
105	N135	63.422732	4.952088	0	
106	N136	66.020849	3.452065	0	
107	N110	0	55.4497	35	
108	N111	48.020849	-27.72485	35	
109	N112	-48.020849	-27.72485	35	
110	N113	0	55.4497	-35	
111	N114	48.020849	-27.72485	-35	
112	N115	-48.020849	-27.72485	-35	
113	N116	-22.083648	12.75	0	
114	N117	-23.583648	10.151924	0	
115	N118	-23.583648	10.151924	-12	
116	N137	-23.583648	10.151924	36	
117	N138	-23.583648	10.151924	18	

Node Boundary Conditions

	Y [k/in]	X Rot [k-ft/rad]	X [k/in]	Z Rot [k-ft/rad]	Z [k/in]	Node Label	Y Rot [k-ft/rad]
1	Reaction	Reaction	Reaction	Reaction	Reaction	N92	Reaction
2	Reaction	Reaction	Reaction	Reaction	Reaction	N93	Reaction
3	Reaction	Reaction	Reaction	Reaction	Reaction	N94	Reaction

Basic Load Cases

	BLC Description	Category	Z Gravity	Nodal	Distributed	Area(Member)
1	DEAD LOAD	None	-1	7		3
2	DEAD LOAD ICE	None		7	37	3
3	WIND LOAD (NO ICE) FRONT	None		7	37	
4	WIND LOAD (NO ICE) SIDE	None		7	37	
5	WIND LOAD (ICE) FRONT	None		7	37	
6	WIND LOAD (ICE) SIDE	None		7	37	
7	LIVE LOAD 1	None		1		
8	LIVE LOAD 2	None		1		
9	LIVE LOAD 3	None		1		
10	MAINTENANCE LOAD 1	None		1		
11	MAINTENANCE LOAD 2	None		1		
12	MAINTENANCE LOAD 3	None		1		
13	MAINTENANCE LOAD 4	None				
14	BLC 1 Transient Area Loads	None			24	
15	BLC 2 Transient Area Loads	None			24	

Node Loads and Enforced Displacements (BLC 1 : DEAD LOAD)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N110	L	Z	-102
2	N113	L	Z	-102
3	N111	L	Z	-102
4	N112	L	Z	-102
5	N114	L	Z	-102

Node Loads and Enforced Displacements (BLC 1 : DEAD LOAD) (Continued)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
6	N115	L	Z	-102
7	N138	L	Z	-22

Node Loads and Enforced Displacements (BLC 2 : DEAD LOAD ICE)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N110	L	Z	-209
2	N113	L	Z	-209
3	N111	L	Z	-209
4	N112	L	Z	-209
5	N114	L	Z	-209
6	N115	L	Z	-209
7	N138	L	Z	-89

Node Loads and Enforced Displacements (BLC 3 : WIND LOAD (NO ICE) FRONT)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N110	L	Y	-253
2	N113	L	Y	-253
3	N111	L	Y	-162
4	N112	L	Y	-162
5	N114	L	Y	-162
6	N115	L	Y	-162
7	N138	L	Y	-104

Node Loads and Enforced Displacements (BLC 4 : WIND LOAD (NO ICE) SIDE)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N110	L	X	-162
2	N113	L	X	-162
3	N111	L	X	-253
4	N112	L	X	-253
5	N114	L	X	-253
6	N115	L	X	-253
7	N138	L	X	-62

Node Loads and Enforced Displacements (BLC 5 : WIND LOAD (ICE) FRONT)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N110	L	Y	-50
2	N113	L	Y	-50
3	N111	L	Y	-37
4	N112	L	Y	-37
5	N114	L	Y	-37
6	N115	L	Y	-37
7	N138	L	Y	-22

Node Loads and Enforced Displacements (BLC 6 : WIND LOAD (ICE) SIDE)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N110	L	X	-37
2	N113	L	X	-37
3	N111	L	X	-50
4	N112	L	X	-50
5	N114	L	X	-50
6	N115	L	X	-50
7	N138	L	X	-14

Node Loads and Enforced Displacements (BLC 7 : LIVE LOAD 1)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N31	L	Z	-250

Node Loads and Enforced Displacements (BLC 8 : LIVE LOAD 2)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N33	L	Z	-250

Node Loads and Enforced Displacements (BLC 9 : LIVE LOAD 3)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N35	L	Z	-250

Node Loads and Enforced Displacements (BLC 10 : MAINTENANCE LOAD 1)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N124	L	Z	-500

Node Loads and Enforced Displacements (BLC 11 : MAINTENANCE LOAD 2)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N23	L	Z	-500

Node Loads and Enforced Displacements (BLC 12 : MAINTENANCE LOAD 3)

	Node Label	L, D, M	Direction	Magnitude [(lb, k-ft), (in, rad), (lb*s²/in, lb*s²*in)]
1	N21	L	Z	-500

Member Point Loads

No Data to Print...

Member Distributed Loads (BLC 2 : DEAD LOAD ICE)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M19	Z	-11	-11	0	%100
2	M20	Z	-11	-11	0	%100
3	M21	Z	-11	-11	0	%100
4	M22	Z	-9	-9	0	%100
5	M23	Z	-9	-9	0	%100
6	M24	Z	-9	-9	0	%100
7	M30	Z	-8	-8	0	%100
8	M27	Z	-8	-8	0	%100
9	M58	Z	-8	-8	0	%100
10	M57	Z	-8	-8	0	%100
11	M33	Z	-8	-8	0	%100
12	M32	Z	-8	-8	0	%100
13	M29	Z	-8	-8	0	%100
14	M26	Z	-8	-8	0	%100
15	M61	Z	-8	-8	0	%100
16	M36	Z	-11	-11	0	%100
17	M44	Z	-11	-11	0	%100
18	M42	Z	-11	-11	0	%100
19	M40	Z	-11	-11	0	%100
20	M39	Z	-11	-11	0	%100
21	M38	Z	-11	-11	0	%100
22	M37	Z	-11	-11	0	%100
23	M34	Z	-11	-11	0	%100
24	M43	Z	-11	-11	0	%100
25	M41	Z	-11	-11	0	%100
26	M45	Z	-11	-11	0	%100
27	M35	Z	-11	-11	0	%100
28	M48	Z	-7	-7	0	%100

Member Distributed Loads (BLC 2 : DEAD LOAD ICE) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
29	M47	Z	-7	-7	0	%100
30	M46	Z	-7	-7	0	%100
31	M51	Z	-21	-21	0	%100
32	M50	Z	-21	-21	0	%100
33	M49	Z	-21	-21	0	%100
34	M53	Z	-23	-23	0	%100
35	M52	Z	-23	-23	0	%100
36	M54	Z	-23	-23	0	%100
37	M64	Z	-8	-8	0	%100

Member Distributed Loads (BLC 3 : WIND LOAD (NO ICE) FRONT)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M19	PY	-14	-14	0	%100
2	M20	PY	-14	-14	0	%100
3	M21	PY	-14	-14	0	%100
4	M22	PY	-12	-12	0	%100
5	M23	PY	-12	-12	0	%100
6	M24	PY	-12	-12	0	%100
7	M30	PY	-10	-10	0	%100
8	M27	PY	-10	-10	0	%100
9	M58	PY	-10	-10	0	%100
10	M57	PY	-10	-10	0	%100
11	M33	PY	-10	-10	0	%100
12	M32	PY	-10	-10	0	%100
13	M29	PY	-10	-10	0	%100
14	M26	PY	-10	-10	0	%100
15	M61	PY	-10	-10	0	%100
16	M36	PY	-27	-27	0	%100
17	M44	PY	-27	-27	0	%100
18	M42	PY	-27	-27	0	%100
19	M40	PY	-27	-27	0	%100
20	M39	PY	-27	-27	0	%100
21	M38	PY	-27	-27	0	%100
22	M37	PY	-27	-27	0	%100
23	M34	PY	-27	-27	0	%100
24	M43	PY	-27	-27	0	%100
25	M41	PY	-27	-27	0	%100
26	M45	PY	-27	-27	0	%100
27	M35	PY	-27	-27	0	%100
28	M48	PY	-17	-17	0	%100
29	M47	PY	-17	-17	0	%100
30	M46	PY	-17	-17	0	%100
31	M51	PY	-27	-27	0	%100
32	M50	PY	-27	-27	0	%100
33	M49	PY	-27	-27	0	%100
34	M53	PY	-30	-30	0	%100
35	M52	PY	-30	-30	0	%100
36	M54	PY	-30	-30	0	%100
37	M64	PY	-10	-10	0	%100

Member Distributed Loads (BLC 4 : WIND LOAD (NO ICE) SIDE)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M19	PX	-14	-14	0	%100
2	M20	PX	-14	-14	0	%100
3	M21	PX	-14	-14	0	%100
4	M22	PX	-12	-12	0	%100
5	M23	PX	-12	-12	0	%100
6	M24	PX	-12	-12	0	%100
7	M30	PX	-10	-10	0	%100
8	M27	PX	-10	-10	0	%100
9	M58	PX	-10	-10	0	%100
10	M57	PX	-10	-10	0	%100
11	M33	PX	-10	-10	0	%100

Member Distributed Loads (BLC 4 : WIND LOAD (NO ICE) SIDE) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
12	M32	PX	-10	-10	0	%100
13	M29	PX	-10	-10	0	%100
14	M26	PX	-10	-10	0	%100
15	M61	PX	-10	-10	0	%100
16	M36	PX	-27	-27	0	%100
17	M44	PX	-27	-27	0	%100
18	M42	PX	-27	-27	0	%100
19	M40	PX	-27	-27	0	%100
20	M39	PX	-27	-27	0	%100
21	M38	PX	-27	-27	0	%100
22	M37	PX	-27	-27	0	%100
23	M34	PX	-27	-27	0	%100
24	M43	PX	-27	-27	0	%100
25	M41	PX	-27	-27	0	%100
26	M45	PX	-27	-27	0	%100
27	M35	PX	-27	-27	0	%100
28	M48	PX	-17	-17	0	%100
29	M47	PX	-17	-17	0	%100
30	M46	PX	-17	-17	0	%100
31	M51	PX	-27	-27	0	%100
32	M50	PX	-27	-27	0	%100
33	M49	PX	-27	-27	0	%100
34	M53	PX	-30	-30	0	%100
35	M52	PX	-30	-30	0	%100
36	M54	PX	-30	-30	0	%100
37	M64	PX	-10	-10	0	%100

Member Distributed Loads (BLC 5 : WIND LOAD (ICE) FRONT)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M19	PY	-6.2	-6.2	0	%100
2	M20	PY	-6.2	-6.2	0	%100
3	M21	PY	-6.2	-6.2	0	%100
4	M22	PY	-5.6	-5.6	0	%100
5	M23	PY	-5.6	-5.6	0	%100
6	M24	PY	-5.6	-5.6	0	%100
7	M30	PY	-5.2	-5.2	0	%100
8	M27	PY	-5.2	-5.2	0	%100
9	M58	PY	-5.2	-5.2	0	%100
10	M57	PY	-5.2	-5.2	0	%100
11	M33	PY	-5.2	-5.2	0	%100
12	M32	PY	-5.2	-5.2	0	%100
13	M29	PY	-5.2	-5.2	0	%100
14	M26	PY	-5.2	-5.2	0	%100
15	M61	PY	-5.2	-5.2	0	%100
16	M36	PY	-8.5	-8.5	0	%100
17	M44	PY	-8.5	-8.5	0	%100
18	M42	PY	-8.5	-8.5	0	%100
19	M40	PY	-8.5	-8.5	0	%100
20	M39	PY	-8.5	-8.5	0	%100
21	M38	PY	-8.5	-8.5	0	%100
22	M37	PY	-8.5	-8.5	0	%100
23	M34	PY	-8.5	-8.5	0	%100
24	M43	PY	-8.5	-8.5	0	%100
25	M41	PY	-8.5	-8.5	0	%100
26	M45	PY	-8.5	-8.5	0	%100
27	M35	PY	-8.5	-8.5	0	%100
28	M48	PY	-6.5	-6.5	0	%100
29	M47	PY	-6.5	-6.5	0	%100
30	M46	PY	-6.5	-6.5	0	%100
31	M51	PY	-8.5	-8.5	0	%100
32	M50	PY	-8.5	-8.5	0	%100
33	M49	PY	-8.5	-8.5	0	%100
34	M53	PY	-9.2	-9.2	0	%100
35	M52	PY	-9.2	-9.2	0	%100

Member Distributed Loads (BLC 5 : WIND LOAD (ICE) FRONT) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
36	M54	PY	-9.2	-9.2	0	%100
37	M64	PY	-5.2	-5.2	0	%100

Member Distributed Loads (BLC 6 : WIND LOAD (ICE) SIDE)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M19	PX	-6.2	-6.2	0	%100
2	M20	PX	-6.2	-6.2	0	%100
3	M21	PX	-6.2	-6.2	0	%100
4	M22	PX	-5.6	-5.6	0	%100
5	M23	PX	-5.6	-5.6	0	%100
6	M24	PX	-5.6	-5.6	0	%100
7	M30	PX	-5.2	-5.2	0	%100
8	M27	PX	-5.2	-5.2	0	%100
9	M58	PX	-5.2	-5.2	0	%100
10	M57	PX	-5.2	-5.2	0	%100
11	M33	PX	-5.2	-5.2	0	%100
12	M32	PX	-5.2	-5.2	0	%100
13	M29	PX	-5.2	-5.2	0	%100
14	M26	PX	-5.2	-5.2	0	%100
15	M61	PX	-5.2	-5.2	0	%100
16	M36	PX	-8.5	-8.5	0	%100
17	M44	PX	-8.5	-8.5	0	%100
18	M42	PX	-8.5	-8.5	0	%100
19	M40	PX	-8.5	-8.5	0	%100
20	M39	PX	-8.5	-8.5	0	%100
21	M38	PX	-8.5	-8.5	0	%100
22	M37	PX	-8.5	-8.5	0	%100
23	M34	PX	-8.5	-8.5	0	%100
24	M43	PX	-8.5	-8.5	0	%100
25	M41	PX	-8.5	-8.5	0	%100
26	M45	PX	-8.5	-8.5	0	%100
27	M35	PX	-8.5	-8.5	0	%100
28	M48	PX	-6.5	-6.5	0	%100
29	M47	PX	-6.5	-6.5	0	%100
30	M46	PX	-6.5	-6.5	0	%100
31	M51	PX	-8.5	-8.5	0	%100
32	M50	PX	-8.5	-8.5	0	%100
33	M49	PX	-8.5	-8.5	0	%100
34	M53	PX	-9.2	-9.2	0	%100
35	M52	PX	-9.2	-9.2	0	%100
36	M54	PX	-9.2	-9.2	0	%100
37	M64	PX	-5.2	-5.2	0	%100

Member Distributed Loads (BLC 14 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M21	Z	-2.451	-2.451	73.572	85.572
2	M40	Z	-6.091	-6.091	11.068	24.721
3	M34	Z	-4.474	-4.474	5.048	26.233
4	M41	Z	-0.974	-4.474	7.609	38.047
5	M35	Z	-5.429	-3.646	6.532	13.952
6	M35	Z	-3.646	-2.835	13.952	21.373
7	M35	Z	-2.835	-2.996	21.373	28.794
8	M52	Z	-8.473	-3.646	0	20.216
9	M20	Z	-2.451	-2.451	73.572	85.572
10	M44	Z	-6.091	-6.091	11.068	24.721
11	M39	Z	-5.429	-3.646	6.532	13.952
12	M39	Z	-3.646	-2.835	13.952	21.373
13	M39	Z	-2.835	-2.996	21.373	28.794
14	M38	Z	-4.474	-4.474	5.048	26.233
15	M45	Z	-0.974	-4.474	7.609	38.047
16	M54	Z	-7.645	-4.474	0	20.216
17	M19	Z	-2.451	-2.451	73.572	85.572
18	M36	Z	-4.474	-4.474	5.048	26.233

Member Distributed Loads (BLC 14 : BLC 1 Transient Area Loads) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
19	M42	Z	-6.091	-6.091	11.068	24.721
20	M37	Z	-5.429	-3.646	6.532	13.952
21	M37	Z	-3.646	-2.835	13.952	21.373
22	M37	Z	-2.835	-2.996	21.373	28.794
23	M43	Z	-1.802	-3.646	7.609	38.047
24	M53	Z	-8.473	-3.646	0	20.216

Member Distributed Loads (BLC 15 : BLC 2 Transient Area Loads)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, k-ft/in]	End Magnitude [lb/ft, F, psf, k-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M21	Z	-3.87	-3.87	73.572	85.572
2	M40	Z	-9.619	-9.619	11.068	24.721
3	M34	Z	-7.065	-7.065	5.048	26.233
4	M41	Z	-1.538	-7.065	7.609	38.047
5	M35	Z	-8.574	-5.757	6.532	13.952
6	M35	Z	-5.757	-4.477	13.952	21.373
7	M35	Z	-4.477	-4.731	21.373	28.794
8	M52	Z	-13.379	-5.757	0	20.216
9	M20	Z	-3.87	-3.87	73.572	85.572
10	M44	Z	-9.619	-9.619	11.068	24.721
11	M39	Z	-8.574	-5.757	6.532	13.952
12	M39	Z	-5.757	-4.477	13.952	21.373
13	M39	Z	-4.477	-4.731	21.373	28.794
14	M38	Z	-7.065	-7.065	5.048	26.233
15	M45	Z	-1.538	-7.065	7.609	38.047
16	M54	Z	-12.072	-7.065	0	20.216
17	M19	Z	-3.87	-3.87	73.572	85.572
18	M36	Z	-7.065	-7.065	5.048	26.233
19	M42	Z	-9.619	-9.619	11.068	24.721
20	M37	Z	-8.574	-5.757	6.532	13.952
21	M37	Z	-5.757	-4.477	13.952	21.373
22	M37	Z	-4.477	-4.731	21.373	28.794
23	M43	Z	-2.846	-5.757	7.609	38.047
24	M53	Z	-13.379	-5.757	0	20.216

Member Area Loads (BLC 1 : DEAD LOAD)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [psf]
1	N103	N98	N104	N97	Z	Two Way	-5
2	N102	N95	N106	N96	Z	Two Way	-5
3	N101	N100	N105	N99	Z	Two Way	-5

Member Area Loads (BLC 2 : DEAD LOAD ICE)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [psf]
1	N103	N98	N104	N97	Z	Two Way	-7.896
2	N102	N95	N106	N96	Z	Two Way	-7.896
3	N101	N100	N105	N99	Z	Two Way	-7.896

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	DL + WL (NO ICE) 0 Degree	Yes	Y	1	1.2			3	1		
2	DL + WL (NO ICE) 30 Degree	Yes	Y	1	1.2			3	0.866	4	0.5
3	DL + WL (NO ICE) 60 Degree	Yes	Y	1	1.2			3	0.5	4	0.866
4	DL + WL (NO ICE) 90 Degree	Yes	Y	1	1.2					4	1
5	DL + WL (NO ICE) 120 Degree	Yes	Y	1	1.2			3	-0.5	4	0.866
6	DL + WL (NO ICE) 150 Degree	Yes	Y	1	1.2			3	-0.866	4	0.5
7	DL + WL (NO ICE) 180 Degree	Yes	Y	1	1.2			3	-1		
8	DL + WL (NO ICE) 210 Degree	Yes	Y	1	1.2			3	-0.866	4	-0.5
9	DL + WL (NO ICE) 240 Degree	Yes	Y	1	1.2			3	-0.5	4	-0.866
10	DL + WL (NO ICE) 270 Degree	Yes	Y	1	1.2					4	-1
11	DL + WL (NO ICE) 300 Degree	Yes	Y	1	1.2			3	0.5	4	-0.866
12	DL + WL (NO ICE) 330 Degree	Yes	Y	1	1.2			3	0.866	4	-0.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
13	DL + DL ICE + WL (ICE) 0 Degree	Yes	Y	1	1.2	2	1	5	1		
14	DL + DL ICE + WL (ICE) 30 Degree	Yes	Y	1	1.2	2	1	5	0.866	6	0.5
15	DL + DL ICE + WL (ICE) 60 Degree	Yes	Y	1	1.2	2	1	5	0.5	6	0.866
16	DL + DL ICE + WL (ICE) 90 Degree	Yes	Y	1	1.2	2	1			6	1
17	DL + DL ICE + WL (ICE) 120 Degree	Yes	Y	1	1.2	2	1	5	-0.5	6	0.866
18	DL + DL ICE + WL (ICE) 150 Degree	Yes	Y	1	1.2	2	1	5	-0.866	6	0.5
19	DL + DL ICE + WL (ICE) 180 Degree	Yes	Y	1	1.2	2	1	5	-1		
20	DL + DL ICE + WL (ICE) 210 Degree	Yes	Y	1	1.2	2	1	5	-0.866	6	-0.5
21	DL + DL ICE + WL (ICE) 240 Degree	Yes	Y	1	1.2	2	1	5	-0.5	6	-0.866
22	DL + DL ICE + WL (ICE) 270 Degree	Yes	Y	1	1.2	2	1			6	-1
23	DL + DL ICE + WL (ICE) 300 Degree	Yes	Y	1	1.2	2	1	5	0.5	6	-0.866
24	DL + DL ICE + WL (ICE) 330 Degree	Yes	Y	1	1.2	2	1	5	0.866	6	-0.5
25	DEAD LOAD + LIVE LOAD1	Yes	Y	1	1.2					7	1.5
26	DEAD LOAD + LIVE LOAD2	Yes	Y	1	1.2					8	1.5
27	DEAD LOAD + LIVE LOAD3	Yes	Y	1	1.2					9	1.5
28	DL + MAIN L1+30MPH WL FRONT	Yes	Y	1	1.2	10	1.5	3	0.063		
29	DL + MAIN L2+30MPH WL FRONT	Yes	Y	1	1.2	11	1.5	3	0.063		
30	DL + MAIN L3+30MPH WL FRONT	Yes	Y	1	1.2	12	1.5	3	0.063		
31	DL + MAIN L4+30MPH WL FRONT	Yes	Y	1	1.2	13	1.5	3	0.063		
32	DL + MAIN L1+30MPH WL SIDE	Yes	Y	1	1.2	10	1.5	4	0.063		
33	DL + MAIN L2+30MPH WL SIDE	Yes	Y	1	1.2	11	1.5	4	0.063		
34	DL + MAIN L3+30MPH WL SIDE	Yes	Y	1	1.2	12	1.5	4	0.063		
35	DL + MAIN L4+30MPH WL SIDE	Yes	Y	1	1.2	13	1.5	4	0.063		
36	DL + MAIN L1+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	10	1.5	3	-0.063		
37	DL + MAIN L2+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	11	1.5	3	-0.063		
38	DL + MAIN L3+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	12	1.5	3	-0.063		
39	DL + MAIN L4+30MPH WL FRONT (REVERSED)	Yes	Y	1	1.2	13	1.5	3	-0.063		
40	DL + MAIN L1+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	10	1.5	4	-0.063		
41	DL + MAIN L2+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	11	1.5	4	-0.063		
42	DL + MAIN L3+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	12	1.5	4	-0.063		
43	DL + MAIN L4+30MPH WL SIDE (REVERSED)	Yes	Y	1	1.2	13	1.5	4	-0.063		

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N92	max	980.854	4	1325.735	1	1990.046	17	3.392	32	4.391	17	1.637	8
2		min	-1326.466	10	-1125.625	7	649.205	11	0.51	11	0.908	11	-1.637	2
3	N93	max	1159.958	4	849.193	1	1837.642	13	-1.044	7	0.771	26	1.679	4
4		min	-1160.103	10	-1248.78	7	557.774	37	-4.856	13	-0.145	4	-1.678	10
5	N94	max	1231.572	4	1181.104	1	1827.811	21	3.378	42	-0.965	3	1.509	12
6		min	-885.815	10	-981.627	7	602.065	3	0.561	4	-4.178	21	-1.509	6
7	Totals:	max	3372.384	4	3356.032	1	5493.583	13						
8		min	-3372.384	10	-3356.032	7	2163.66	7						

Envelope Node Displacements

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
1	N1	max	0.022	10	0.023	7	-0.044	36	2.811e-3	26	2.02e-3	42	2.032e-4	26
2		min	-0.022	4	-0.024	1	-0.194	24	-1.247e-3	7	-2.495e-3	15	-1.049e-4	3
3	N2	max	0.022	10	0.022	8	-0.044	38	1.685e-3	12	2.505e-3	11	1.481e-4	27
4		min	-0.022	4	-0.022	2	-0.193	14	-2.137e-3	27	-2.052e-3	32	-1.163e-4	6
5	N3	max	0.022	10	0	7	-0.016	7	5.045e-3	13	3.294e-4	4	7.089e-4	10
6		min	-0.022	4	0	1	-0.087	13	7.175e-4	7	-1.751e-3	26	-7.104e-4	4
7	N4	max	0.157	42	0.233	6	0.005	32	7.356e-3	1	4.761e-3	42	1.65e-3	3
8		min	-0.157	32	-0.235	12	-0.428	42	-6.936e-3	7	-4.323e-3	32	-1.862e-3	9
9	N5	max	0.157	42	0.232	8	0.005	42	7.356e-3	1	4.317e-3	42	1.851e-3	5
10		min	-0.158	32	-0.234	2	-0.428	32	-6.937e-3	7	-4.768e-3	32	-1.641e-3	11
11	N6	max	0.018	10	0.028	7	-0.036	25	2.682e-3	1	4.747e-3	42	4.983e-4	6
12		min	-0.018	4	-0.028	1	-0.365	42	-3.527e-3	7	-3.909e-3	32	-5.107e-4	12
13	N7	max	0.157	42	0.232	6	-0.038	25	7.356e-3	1	4.756e-3	42	1.649e-3	3
14		min	-0.157	32	-0.231	12	-0.371	42	-6.937e-3	7	-4.328e-3	32	-1.858e-3	9
15	N10	max	0.018	10	0.021	7	-0.058	27	1.467e-3	1	4.521e-3	42	3.478e-4	40
16		min	-0.018	4	-0.021	1	-0.213	37	-2.908e-3	19	-4.525e-3	32	-3.491e-4	34
17	N11	max	0.157	42	0.254	7	-0.06	27	7.912e-3	1	4.477e-3	42	1.736e-3	4
18		min	-0.157	32	-0.247	1	-0.218	29	-7.545e-3	7	-4.485e-3	32	-1.737e-3	10

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
19	N12	max	0.019	10	0.028	7	-0.037	25	2.682e-3	1	4.747e-3	42	4.983e-4	6
20		min	-0.019	4	-0.028	1	-0.373	42	-3.527e-3	7	-3.909e-3	32	-5.107e-4	12
21	N13	max	0.158	42	0.232	6	-0.037	25	7.356e-3	1	4.756e-3	42	1.649e-3	3
22		min	-0.157	32	-0.231	12	-0.373	42	-6.937e-3	7	-4.328e-3	32	-1.858e-3	9
23	N16	max	0.018	10	0.021	7	-0.062	1	1.467e-3	1	4.521e-3	42	3.478e-4	40
24		min	-0.018	4	-0.021	1	-0.221	37	-2.908e-3	19	-4.525e-3	32	-3.491e-4	34
25	N17	max	0.157	42	0.254	7	-0.062	1	7.912e-3	1	4.477e-3	42	1.736e-3	4
26		min	-0.158	32	-0.247	1	-0.22	37	-7.545e-3	7	-4.485e-3	32	-1.737e-3	10
27	N18	max	0.215	42	0.315	7	-0.037	25	7.372e-3	1	4.757e-3	42	1.649e-3	3
28		min	-0.209	32	-0.318	1	-0.373	42	-6.953e-3	7	-4.329e-3	32	-1.858e-3	9
29	N20	max	0.211	42	0.345	7	-0.062	1	7.928e-3	1	4.478e-3	42	1.736e-3	4
30		min	-0.212	32	-0.342	1	-0.22	37	-7.561e-3	7	-4.486e-3	32	-1.737e-3	10
31	N21	max	0.192	36	0.07	12	-0.037	25	1.758e-3	12	4.417e-3	30	4.983e-4	6
32		min	-0.223	30	-0.132	38	-0.374	42	-2.593e-3	6	-3.848e-3	36	-5.107e-4	12
33	N23	max	0.274	10	0.324	7	-0.062	1	9.129e-3	7	7.224e-3	4	3.478e-4	40
34		min	-0.274	4	-0.376	1	-0.222	37	-1.021e-2	1	-7.228e-3	10	-3.491e-4	34
35	N24	max	0	43	0	43	0	43	0	43	0	43	0	43
36		min	0	1	0	1	0	1	0	1	0	1	0	1
37	N25	max	0.025	10	0.021	7	-0.039	34	2.138e-3	12	2.413e-3	11	2.041e-4	27
38		min	-0.025	4	-0.021	1	-0.193	20	-2.457e-3	27	-2.254e-3	32	-1.599e-4	42
39	N26	max	0.018	10	0.021	7	-0.054	27	1.959e-3	1	4.725e-3	42	2.323e-4	36
40		min	-0.018	4	-0.02	1	-0.262	42	-2.953e-3	7	-4.268e-3	32	-2.961e-4	30
41	N27	max	0.009	12	0.016	6	-0.017	3	-2.974e-4	27	4.34e-3	20	5.85e-4	6
42		min	-0.01	6	-0.016	12	-0.086	21	-5.101e-3	42	6.893e-4	3	-5.848e-4	12
43	N28	max	0.018	10	0.021	7	-0.059	11	1.958e-3	1	4.263e-3	42	2.962e-4	28
44		min	-0.018	4	-0.021	1	-0.262	32	-2.953e-3	7	-4.731e-3	32	-2.345e-4	38
45	N29	max	0.025	10	0.022	7	-0.04	40	2.508e-3	26	2.222e-3	42	1.586e-4	32
46		min	-0.025	4	-0.022	1	-0.197	18	-1.526e-3	7	-2.398e-3	3	-1.379e-4	9
47	N30	max	0.01	8	0.017	8	-0.015	11	-3.606e-4	10	-6.251e-4	11	6.033e-4	2
48		min	-0.01	2	-0.017	2	-0.089	17	-5.099e-3	32	-4.462e-3	17	-6.048e-4	8
49	N31	max	0.018	10	0.034	7	0.003	42	2.679e-3	1	3.886e-3	42	5.32e-4	2
50		min	-0.018	4	-0.034	1	-0.422	32	-3.528e-3	7	-4.743e-3	32	-5.218e-4	8
51	N32	max	0.018	10	0.033	7	0.003	32	2.68e-3	1	4.731e-3	42	5.016e-4	6
52		min	-0.018	4	-0.033	1	-0.422	42	-3.528e-3	7	-3.896e-3	32	-5.133e-4	12
53	N33	max	0.037	10	0.022	7	-0.016	6	3.781e-3	26	2.343e-3	10	6.49e-4	10
54		min	-0.037	4	-0.023	1	-0.296	26	-1.328e-3	8	-3.01e-3	4	-6.385e-4	4
55	N34	max	0.03	9	0.03	7	-0.008	26	2.505e-3	1	2.339e-3	42	5.54e-4	1
56		min	-0.029	3	-0.03	1	-0.221	18	-2.258e-3	7	-2.978e-3	3	-5.667e-4	7
57	N35	max	0.029	11	0.028	7	-0.017	2	2.556e-3	1	2.999e-3	11	5.402e-4	7
58		min	-0.03	5	-0.028	1	-0.297	27	-3.559e-3	27	-2.368e-3	32	-5.288e-4	1
59	N36	max	0.037	10	0.022	7	-0.007	27	1.936e-3	12	2.984e-3	10	6.372e-4	10
60		min	-0.037	4	-0.022	1	-0.214	14	-2.012e-3	27	-2.375e-3	4	-6.508e-4	4
61	N37	max	0.195	9	0.178	7	-0.007	26	3.866e-3	2	6.159e-3	9	1.575e-3	12
62		min	-0.195	3	-0.175	1	-0.226	18	-4.075e-3	8	-5.782e-3	3	-1.793e-3	6
63	N38	max	0.215	10	0.114	8	-0.01	6	3.11e-3	3	6.12e-3	10	1.701e-3	1
64		min	-0.214	4	-0.112	2	-0.285	26	-3.414e-3	9	-5.791e-3	4	-1.491e-3	7
65	N39	max	0.027	10	0.026	7	-0.033	12	2.51e-3	1	2.344e-3	42	5.539e-4	1
66		min	-0.027	4	-0.026	1	-0.211	18	-2.256e-3	7	-2.977e-3	3	-5.672e-4	7
67	N40	max	0.198	9	0.17	7	-0.034	12	3.87e-3	2	6.162e-3	9	1.571e-3	12
68		min	-0.2	3	-0.168	1	-0.217	18	-4.07e-3	8	-5.78e-3	3	-1.787e-3	6
69	N43	max	0.024	10	0.023	7	-0.043	40	2.679e-3	26	2.067e-3	42	2.468e-4	26
70		min	-0.024	4	-0.023	1	-0.193	15	-1.109e-3	8	-2.438e-3	15	-1.161e-4	11
71	N44	max	0.206	10	0.145	8	-0.046	32	3.544e-3	2	6.406e-3	9	1.644e-3	12
72		min	-0.212	4	-0.146	2	-0.2	21	-3.774e-3	8	-6.103e-3	3	-1.645e-3	6
73	N45	max	0.027	10	0.028	7	-0.036	11	2.51e-3	1	2.344e-3	42	5.539e-4	1
74		min	-0.027	4	-0.028	1	-0.214	17	-2.256e-3	7	-2.977e-3	3	-5.672e-4	7
75	N46	max	0.199	9	0.173	7	-0.036	11	3.87e-3	2	6.162e-3	9	1.571e-3	12
76		min	-0.201	3	-0.171	1	-0.214	17	-4.07e-3	8	-5.78e-3	3	-1.787e-3	6
77	N49	max	0.024	10	0.023	7	-0.05	40	2.679e-3	26	2.067e-3	42	2.468e-4	26
78		min	-0.024	4	-0.023	1	-0.202	15	-1.109e-3	8	-2.438e-3	15	-1.161e-4	11
79	N50	max	0.207	10	0.147	8	-0.05	40	3.544e-3	2	6.406e-3	9	1.644e-3	12
80		min	-0.213	4	-0.149	2	-0.202	15	-3.774e-3	8	-6.103e-3	3	-1.645e-3	6
81	N51	max	0.273	9	0.218	7	-0.036	11	3.884e-3	2	6.176e-3	9	1.571e-3	12
82		min	-0.271	3	-0.213	1	-0.214	17	-4.085e-3	8	-5.795e-3	3	-1.787e-3	6
83	N53	max	0.281	9	0.193	8	-0.05	40	3.558e-3	2	6.42e-3	9	1.644e-3	12

Envelope Node Displacements (Continued)

	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
84		min	-0.284	3	-0.192	2	-0.202	15	-3.789e-3	8	-6.117e-3	3	-1.645e-3	6
85	N54	max	0.095	2	0.111	26	-0.036	11	2.268e-3	26	2.301e-3	38	5.539e-4	1
86		min	-0.11	38	-0.065	38	-0.214	17	-1.453e-3	38	-2.197e-3	2	-5.672e-4	7
87	N56	max	0.407	10	0.256	7	-0.05	40	6.745e-3	7	9.859e-3	4	2.468e-4	26
88		min	-0.362	4	-0.233	1	-0.202	15	-6.262e-3	1	-1.08e-2	10	-1.161e-4	11
89	N57	max	0.213	10	0.116	6	-0.005	27	3.228e-3	11	5.761e-3	10	1.468e-3	7
90		min	-0.216	4	-0.115	12	-0.22	14	-3.503e-3	5	-6.153e-3	4	-1.681e-3	1
91	N58	max	0.196	11	0.177	7	-0.013	2	3.969e-3	12	5.8e-3	11	1.772e-3	8
92		min	-0.198	5	-0.176	1	-0.286	27	-4.148e-3	6	-6.24e-3	5	-1.556e-3	2
93	N59	max	0.03	10	0.022	7	-0.035	8	1.935e-3	12	2.986e-3	10	6.327e-4	10
94		min	-0.03	4	-0.022	1	-0.206	14	-2.023e-3	27	-2.375e-3	4	-6.47e-4	4
95	N60	max	0.214	10	0.123	6	-0.033	8	3.224e-3	11	5.764e-3	10	1.465e-3	7
96		min	-0.215	4	-0.123	12	-0.212	14	-3.508e-3	5	-6.15e-3	4	-1.675e-3	1
97	N63	max	0.024	10	0.022	7	-0.043	34	1.71e-3	12	2.336e-3	23	2.479e-4	27
98		min	-0.024	4	-0.022	1	-0.19	23	-2.237e-3	27	-2.1e-3	32	-1.215e-4	9
99	N64	max	0.212	11	0.146	6	-0.045	42	3.646e-3	12	6.124e-3	11	1.627e-3	8
100		min	-0.207	5	-0.149	12	-0.199	17	-3.849e-3	6	-6.488e-3	5	-1.628e-3	2
101	N65	max	0.031	10	0.023	7	-0.036	7	1.935e-3	12	2.986e-3	10	6.327e-4	10
102		min	-0.031	4	-0.023	1	-0.208	14	-2.023e-3	27	-2.375e-3	4	-6.47e-4	4
103	N66	max	0.214	10	0.126	6	-0.036	7	3.224e-3	11	5.764e-3	10	1.465e-3	7
104		min	-0.215	4	-0.127	12	-0.208	14	-3.508e-3	5	-6.15e-3	4	-1.675e-3	1
105	N69	max	0.024	10	0.021	7	-0.049	34	1.71e-3	12	2.336e-3	23	2.479e-4	27
106		min	-0.024	4	-0.021	1	-0.199	23	-2.237e-3	27	-2.1e-3	32	-1.215e-4	9
107	N70	max	0.212	10	0.149	6	-0.049	34	3.646e-3	12	6.124e-3	11	1.627e-3	8
108		min	-0.208	4	-0.151	12	-0.199	23	-3.849e-3	6	-6.488e-3	5	-1.628e-3	2
109	N71	max	0.284	10	0.168	6	-0.036	7	3.232e-3	11	5.78e-3	10	1.465e-3	7
110		min	-0.289	4	-0.165	12	-0.208	14	-3.517e-3	5	-6.167e-3	4	-1.675e-3	1
111	N73	max	0.285	11	0.195	6	-0.049	34	3.66e-3	12	6.138e-3	11	1.627e-3	8
112		min	-0.285	5	-0.195	12	-0.199	23	-3.863e-3	6	-6.502e-3	5	-1.628e-3	2
113	N74	max	0.096	32	0.068	42	-0.036	7	1.382e-3	30	2.063e-3	42	6.327e-4	10
114		min	-0.099	42	-0.104	27	-0.208	14	-2.022e-3	27	-1.994e-3	32	-6.47e-4	4
115	N76	max	0.364	10	0.252	7	-0.049	34	6.706e-3	7	1.077e-2	4	2.479e-4	27
116		min	-0.406	4	-0.228	1	-0.199	23	-6.191e-3	1	-9.895e-3	10	-1.215e-4	9
117	N77	max	0.032	10	0.023	7	-0.03	6	3.539e-3	26	2.343e-3	10	6.469e-4	10
118		min	-0.032	4	-0.023	1	-0.255	26	-1.33e-3	8	-3.011e-3	4	-6.363e-4	4
119	N78	max	0.032	10	0.022	7	-0.031	27	1.935e-3	12	2.985e-3	10	6.35e-4	10
120		min	-0.032	4	-0.022	1	-0.207	14	-2.013e-3	27	-2.374e-3	4	-6.486e-4	4
121	N79	max	0.032	10	0.001	7	-0.028	7	5.492e-3	13	5.177e-4	4	3.144e-4	10
122		min	-0.032	4	-0.001	1	-0.196	13	5.749e-4	7	-3.087e-3	26	-3.158e-4	4
123	N80	max	0.018	10	0.03	7	-0.036	42	2.679e-3	1	3.888e-3	42	5.296e-4	2
124		min	-0.018	4	-0.03	1	-0.375	32	-3.528e-3	7	-4.741e-3	32	-5.193e-4	8
125	N81	max	0.027	10	0.027	7	-0.03	12	2.507e-3	1	2.34e-3	42	5.533e-4	1
126		min	-0.027	4	-0.027	1	-0.213	18	-2.256e-3	7	-2.977e-3	3	-5.66e-4	7
127	N82	max	0.014	8	0.025	8	-0.029	11	-3.343e-4	10	-4.88e-4	11	2.975e-4	28
128		min	-0.014	2	-0.025	2	-0.199	17	-7.205e-3	32	-4.866e-3	17	-2.149e-4	7
129	N83	max	0.027	10	0.025	7	-0.031	2	2.558e-3	1	2.998e-3	11	5.395e-4	7
130		min	-0.027	4	-0.025	1	-0.255	27	-3.317e-3	27	-2.369e-3	32	-5.281e-4	1
131	N84	max	0.018	10	0.029	7	-0.031	25	2.68e-3	1	4.729e-3	42	4.991e-4	6
132		min	-0.018	4	-0.029	1	-0.375	42	-3.528e-3	7	-3.897e-3	32	-5.108e-4	12
133	N85	max	0.013	12	0.023	6	-0.032	3	6.493e-4	27	5.052e-3	27	1.905e-4	7
134		min	-0.014	6	-0.023	12	-0.194	21	-7.215e-3	42	5.43e-4	3	-2.968e-4	30
135	N86	max	0.214	10	0.12	8	-0.027	6	3.108e-3	3	6.119e-3	10	1.703e-3	1
136		min	-0.215	4	-0.119	2	-0.255	26	-3.416e-3	9	-5.792e-3	4	-1.492e-3	7
137	N87	max	0.214	10	0.122	6	-0.029	8	3.226e-3	11	5.762e-3	10	1.47e-3	7
138		min	-0.215	4	-0.122	12	-0.213	14	-3.506e-3	5	-6.151e-3	4	-1.682e-3	1
139	N88	max	0.157	42	0.232	8	-0.037	10	7.356e-3	1	4.319e-3	42	1.853e-3	5
140		min	-0.158	32	-0.231	2	-0.381	32	-6.937e-3	7	-4.765e-3	32	-1.643e-3	11
141	N89	max	0.198	9	0.171	7	-0.03	12	3.868e-3	2	6.16e-3	9	1.576e-3	12
142		min	-0.199	3	-0.17	1	-0.219	18	-4.073e-3	8	-5.781e-3	3	-1.794e-3	6
143	N90	max	0.2	11	0.171	7	-0.031	2	3.971e-3	12	5.799e-3	11	1.773e-3	8
144		min	-0.201	5	-0.17	1	-0.255	27	-4.146e-3	6	-6.241e-3	5	-1.556e-3	2
145	N91	max	0.157	42	0.233	6	-0.032	25	7.356e-3	1	4.758e-3	42	1.653e-3	3
146		min	-0.157	32	-0.232	12	-0.381	42	-6.936e-3	7	-4.325e-3	32	-1.864e-3	9
147	N92	max	0	10	0	7	0	11	0	11	0	11	0	2
148		min	0	4	0	1	0	17	0	32	0	17	0	8

Envelope Node Displacements (Continued)

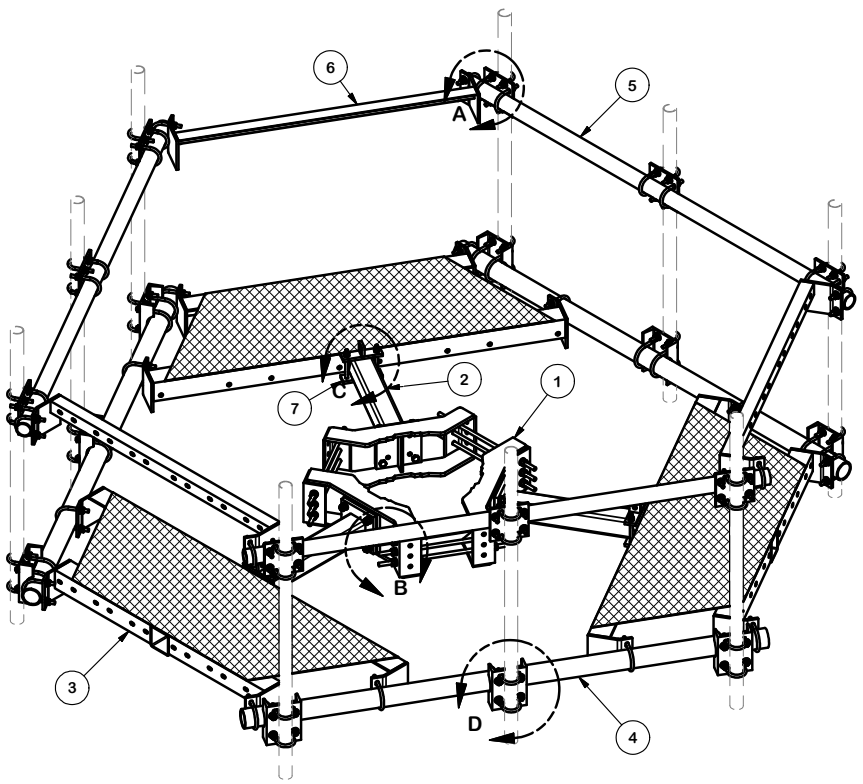
	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
149	N93	max	0	10	0	7	0	37	0	13	0	4	0	10
150		min	0	4	0	1	0	13	0	7	0	26	0	4
151	N94	max	0	10	0	7	0	3	0	4	0	21	0	6
152		min	0	4	0	1	0	21	0	42	0	3	0	12
153	N95	max	0.024	9	0.027	7	-0.031	12	1.209e-3	9	1.871e-3	26	1.339e-3	10
154		min	-0.024	3	-0.027	1	-0.21	18	-5.786e-3	32	-1.916e-3	16	-1.342e-3	4
155	N96	max	0.017	10	0.02	7	-0.054	11	-8.56e-4	12	3.938e-3	30	7.81e-4	6
156		min	-0.017	4	-0.02	1	-0.245	32	-7.384e-3	36	-1.812e-3	36	-7.673e-4	12
157	N97	max	0.022	10	0.021	6	-0.042	36	2.875e-3	26	-8.469e-4	40	8.526e-4	1
158		min	-0.022	4	-0.021	12	-0.182	24	-1.092e-3	7	-4.085e-3	20	-8.38e-4	7
159	N98	max	0.032	10	0.019	7	-0.032	8	2.072e-3	12	1.045e-3	5	1.175e-3	7
160		min	-0.032	4	-0.019	1	-0.205	14	-1.633e-3	27	-3.32e-3	26	-1.181e-3	1
161	N99	max	0.022	10	0.021	7	-0.039	30	3.468e-3	16	4.247e-3	27	9.867e-4	10
162		min	-0.022	4	-0.021	1	-0.181	20	-8.675e-4	42	-2.565e-4	32	-9.757e-4	4
163	N100	max	0.016	10	0.027	7	-0.034	25	2.111e-3	27	2.991e-3	27	1.147e-3	2
164		min	-0.016	4	-0.028	1	-0.351	42	-9.474e-3	42	-1.388e-3	28	-1.153e-3	8
165	N101	max	0.024	11	0.025	7	-0.031	2	2.436e-3	27	5.563e-3	27	1.354e-3	10
166		min	-0.024	4	-0.025	1	-0.24	27	-5.797e-3	42	-1.387e-3	34	-1.346e-3	4
167	N102	max	0.016	10	0.028	7	-0.037	10	1.882e-3	42	1.382e-3	12	1.107e-3	6
168		min	-0.016	4	-0.028	1	-0.352	32	-9.452e-3	32	-2.048e-3	6	-1.095e-3	12
169	N103	max	0.032	10	0.019	7	-0.03	6	3.597e-3	26	7.076e-4	4	1.221e-3	1
170		min	-0.032	4	-0.019	1	-0.24	26	-1.108e-3	7	-4.887e-3	26	-1.208e-3	7
171	N104	max	0.022	10	0.02	8	-0.042	38	1.771e-3	12	4.071e-3	17	8.041e-4	7
172		min	-0.022	4	-0.02	2	-0.181	14	-1.863e-3	27	5.398e-4	26	-8.16e-4	1
173	N105	max	0.017	10	0.02	7	-0.053	27	-9.455e-4	2	1.792e-3	38	8.088e-4	2
174		min	-0.017	4	-0.019	1	-0.245	42	-7.385e-3	38	-3.941e-3	28	-8.206e-4	8
175	N106	max	0.022	10	0.022	7	-0.04	40	3.446e-3	22	3.46e-4	26	9.698e-4	10
176		min	-0.022	4	-0.022	1	-0.184	18	-8.733e-4	32	-3.449e-3	16	-9.795e-4	4
177	N119	max	0.018	10	0.029	7	-0.04	10	2.681e-3	1	3.9e-3	42	5.294e-4	2
178		min	-0.018	4	-0.029	1	-0.365	32	-3.527e-3	7	-4.759e-3	32	-5.185e-4	8
179	N120	max	0.019	10	0.029	7	-0.039	11	2.681e-3	1	3.9e-3	42	5.294e-4	2
180		min	-0.019	4	-0.029	1	-0.373	32	-3.527e-3	7	-4.759e-3	32	-5.185e-4	8
181	N121	max	0.157	42	0.232	7	-0.04	10	7.357e-3	1	4.322e-3	42	1.847e-3	5
182		min	-0.158	32	-0.23	1	-0.371	32	-6.937e-3	7	-4.763e-3	32	-1.639e-3	11
183	N122	max	0.156	42	0.232	7	-0.039	11	7.357e-3	1	4.322e-3	42	1.847e-3	5
184		min	-0.159	32	-0.23	1	-0.373	32	-6.937e-3	7	-4.763e-3	32	-1.639e-3	11
185	N123	max	0.208	42	0.315	7	-0.039	11	7.373e-3	1	4.323e-3	42	1.847e-3	5
186		min	-0.216	32	-0.319	1	-0.373	32	-6.954e-3	7	-4.764e-3	32	-1.639e-3	11
187	N124	max	0.223	28	0.067	2	-0.039	11	1.713e-3	2	3.831e-3	42	5.294e-4	2
188		min	-0.19	38	-0.132	36	-0.375	32	-2.549e-3	8	-4.421e-3	32	-5.185e-4	8
189	N125	max	0.288	10	0.165	8	-0.035	7	3.114e-3	3	6.134e-3	10	1.696e-3	1
190		min	-0.285	4	-0.161	2	-0.248	26	-3.427e-3	9	-5.81e-3	4	-1.488e-3	7
191	N126	max	0.1	32	0.172	26	-0.035	7	3.433e-3	26	1.965e-3	42	6.453e-4	10
192		min	-0.094	42	-0.045	42	-0.248	26	-9.932e-4	38	-2.092e-3	32	-6.34e-4	4
193	N127	max	0.214	10	0.121	8	-0.031	6	3.106e-3	3	6.118e-3	10	1.696e-3	1
194		min	-0.216	4	-0.121	2	-0.249	26	-3.419e-3	9	-5.794e-3	4	-1.488e-3	7
195	N128	max	0.214	10	0.125	8	-0.035	7	3.106e-3	3	6.118e-3	10	1.696e-3	1
196		min	-0.215	4	-0.124	2	-0.248	26	-3.419e-3	9	-5.794e-3	4	-1.488e-3	7
197	N129	max	0.03	10	0.023	7	-0.033	6	3.435e-3	26	2.343e-3	10	6.453e-4	10
198		min	-0.03	4	-0.023	1	-0.247	26	-1.337e-3	8	-3.012e-3	4	-6.34e-4	4
199	N130	max	0.031	10	0.024	7	-0.035	7	3.435e-3	26	2.343e-3	10	6.453e-4	10
200		min	-0.031	4	-0.024	1	-0.248	26	-1.337e-3	8	-3.012e-3	4	-6.34e-4	4
201	N131	max	0.272	11	0.218	7	-0.038	2	3.987e-3	12	5.813e-3	11	1.765e-3	8
202		min	-0.277	5	-0.215	1	-0.248	27	-4.158e-3	6	-6.257e-3	5	-1.551e-3	2
203	N132	max	0.112	36	0.066	12	-0.038	2	1.594e-3	12	2.258e-3	12	5.409e-4	7
204		min	-0.109	27	-0.155	27	-0.248	27	-3.212e-3	27	-2.337e-3	36	-5.288e-4	1
205	N133	max	0.201	11	0.169	7	-0.034	1	3.973e-3	12	5.798e-3	11	1.765e-3	8
206		min	-0.201	5	-0.169	1	-0.249	27	-4.143e-3	6	-6.243e-3	5	-1.551e-3	2
207	N134	max	0.202	11	0.173	7	-0.038	2	3.973e-3	12	5.798e-3	11	1.765e-3	8
208		min	-0.202	5	-0.172	1	-0.248	27	-4.143e-3	6	-6.243e-3	5	-1.551e-3	2
209	N135	max	0.027	10	0.025	7	-0.034	2	2.561e-3	1	2.998e-3	11	5.409e-4	7
210		min	-0.027	4	-0.025	1	-0.247	27	-3.214e-3	27	-2.374e-3	32	-5.288e-4	1
211	N136	max	0.027	10	0.026	7	-0.038	2	2.561e-3	1	2.998e-3	11	5.409e-4	7
212		min	-0.027	4	-0.026	1	-0.248	27	-3.214e-3	27	-2.374e-3	32	-5.288e-4	1
213	N110	max	0.153	42	0.246	7	-0.062	1	7.972e-3	1	4.479e-3	42	1.687e-3	4

Envelope Node Displacements (Continued)

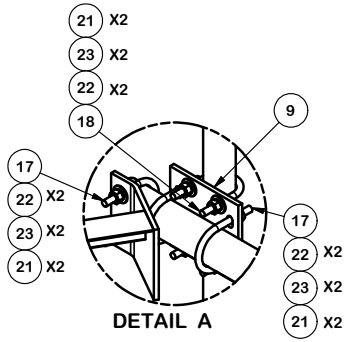
	Node Label		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotation [rad]	LC	Z Rotation [rad]	LC
214		min	-0.153	32	-0.239	1	-0.221	37	-7.618e-3	7	-4.487e-3	32	-1.688e-3	10
215	N111	max	0.206	10	0.145	6	-0.049	34	3.754e-3	12	6.192e-3	11	1.579e-3	8
216		min	-0.202	4	-0.148	12	-0.199	23	-3.95e-3	6	-6.544e-3	5	-1.58e-3	2
217	N112	max	0.201	10	0.144	7	-0.05	40	3.653e-3	2	6.462e-3	9	1.595e-3	12
218		min	-0.207	4	-0.146	1	-0.202	15	-3.876e-3	8	-6.171e-3	3	-1.597e-3	6
219	N113	max	0.181	10	0.206	7	-0.062	1	9.109e-3	7	7.204e-3	4	3.478e-4	40
220		min	-0.18	4	-0.243	1	-0.222	37	-1.018e-2	1	-7.207e-3	10	-3.491e-4	34
221	N114	max	0.235	10	0.165	7	-0.049	34	6.685e-3	7	1.075e-2	4	2.479e-4	27
222		min	-0.266	4	-0.147	1	-0.199	23	-6.17e-3	1	-9.875e-3	10	-1.215e-4	9
223	N115	max	0.267	10	0.168	7	-0.05	40	6.724e-3	7	9.838e-3	4	2.468e-4	26
224		min	-0.234	4	-0.151	1	-0.202	15	-6.242e-3	1	-1.078e-2	10	-1.161e-4	11
225	N116	max	0.004	8	0.007	8	-0.005	11	-2.914e-4	11	-5.33e-4	11	8.639e-4	2
226		min	-0.004	2	-0.007	2	-0.027	17	-2.925e-3	32	-3.074e-3	17	-8.644e-4	8
227	N117	max	0.002	8	0.008	8	-0.005	11	-2.914e-4	11	-5.33e-4	11	8.639e-4	2
228		min	-0.002	2	-0.008	2	-0.028	17	-2.925e-3	32	-3.074e-3	17	-8.644e-4	8
229	N118	max	0.037	18	0.001	9	-0.005	11	-2.996e-4	11	-5.473e-4	11	8.639e-4	2
230		min	0.006	12	-0.035	32	-0.028	17	-2.925e-3	32	-3.067e-3	17	-8.644e-4	8
231	N137	max	0.011	10	0.109	36	-0.005	11	1.151e-3	1	4.964e-4	10	8.639e-4	2
232		min	-0.12	17	-0.038	1	-0.028	17	-3.02e-3	36	-3.418e-3	16	-8.644e-4	8
233	N138	max	0.002	10	0.054	36	-0.005	11	1.096e-3	1	4.407e-4	10	8.639e-4	2
234		min	-0.059	17	-0.018	1	-0.028	17	-3.016e-3	36	-3.391e-3	17	-8.644e-4	8

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

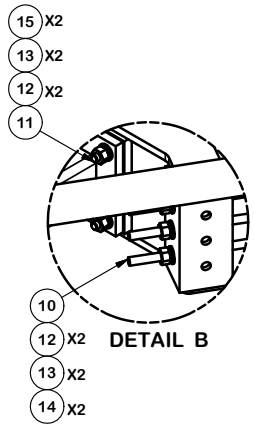
	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	M32	PIPE_2.0	0.442	48	4	0.057	48		2	14916.096	32130	1.872	1.872	1.761	H1-1b
2	M29	PIPE_2.0	0.442	48	10	0.058	48		12	14916.096	32130	1.872	1.872	1.762	H1-1b
3	M26	PIPE_2.0	0.441	48	1	0.055	48		10	14916.096	32130	1.872	1.872	1.597	H1-1b
4	M35	L4X4X6	0.345	38.047	17	0.044	38.047	z	20	81728.349	92664	4.398	9.886	1.5	H2-1
5	M37	L4X4X6	0.342	38.047	14	0.044	38.047	z	17	81728.349	92664	4.398	9.886	1.5	H2-1
6	M41	L4X4X6	0.342	0	21	0.043	0	z	18	81728.349	92664	4.398	9.886	1.5	H2-1
7	M43	L4X4X6	0.342	0	17	0.043	0	z	13	81728.349	92664	4.398	9.886	1.5	H2-1
8	M39	L4X4X6	0.342	38.047	22	0.044	38.047	z	13	81728.349	92664	4.398	9.886	1.5	H2-1
9	M45	L4X4X6	0.341	0	24	0.044	0	z	21	81728.349	92664	4.398	9.886	1.5	H2-1
10	M51	HSS4X4X4	0.335	0	19	0.139	13.5	y	28	136593.11	139518	16.181	16.181	1.549	H1-1b
11	M49	HSS4X4X4	0.32	0	23	0.086	0	y	26	136593.11	139518	16.181	16.181	1.52	H1-1b
12	M50	HSS4X4X4	0.32	0	19	0.138	0	y	30	136593.11	139518	16.181	16.181	1.521	H1-1b
13	M36	L4X4X6	0.281	26.375	30	0.039	26.375	z	23	87237.317	92664	4.398	9.886	1.5	H2-1
14	M44	L4X4X6	0.28	0	28	0.039	0	z	15	87237.317	92664	4.398	9.886	1.5	H2-1
15	M42	L4X4X6	0.189	0	27	0.039	0	z	19	87237.317	92664	4.398	9.886	1.5	H2-1
16	M40	L4X4X6	0.188	0	26	0.039	0	z	23	87237.317	92664	4.398	9.886	1.5	H2-1
17	M58	PIPE_2.0	0.182	48	11	0.045	48		1	14916.096	32130	1.872	1.872	2.089	H1-1b
18	M33	PIPE_2.0	0.181	48	3	0.045	48		1	14916.096	32130	1.872	1.872	2.082	H1-1b
19	M27	PIPE_2.0	0.175	48	12	0.049	48		9	14916.096	32130	1.872	1.872	1.648	H1-1b
20	M57	PIPE_2.0	0.174	48	2	0.049	48		5	14916.096	32130	1.872	1.872	1.648	H1-1b
21	M61	PIPE_2.0	0.167	48	6	0.045	48		9	14916.096	32130	1.872	1.872	1.784	H1-1b
22	M30	PIPE_2.0	0.167	48	8	0.045	48		5	14916.096	32130	1.872	1.872	1.783	H1-1b
23	M38	L4X4X6	0.152	26.375	4	0.04	26.375	z	19	87237.317	92664	4.398	9.886	1.5	H2-1
24	M34	L4X4X6	0.142	26.375	12	0.039	26.375	z	15	87237.317	92664	4.398	9.886	1.5	H2-1
25	M64	PIPE_2.0	0.108	12	7	0.014	12		7	26521.424	32130	1.872	1.872	1.784	H1-1b
26	M54	HSS4.5X4.5X3	0.082	0	36	0.122	0	y	32	120223.527	121302	16.25	16.25	1.702	H1-1b
27	M53	HSS4.5X4.5X3	0.082	0	38	0.122	0	y	42	120223.527	121302	16.25	16.25	1.702	H1-1b
28	M19	PIPE_3.0	0.076	48	41	0.049	34		2	51869.919	78246	6.899	6.899	1.775	H1-1b
29	M46	L2.5x2.5x3	0.062	26.375	7	0.009	52.75	y	11	15539.423	29192.4	0.873	1.674	1.136	H2-1
30	M23	PIPE_2.5	0.059	84	12	0.044	12		5	30038.461	50715	3.596	3.596	1.586	H1-1b
31	M24	PIPE_2.5	0.059	84	8	0.044	84		9	30038.461	50715	3.596	3.596	1.599	H1-1b
32	M52	HSS4.5X4.5X3	0.056	0	26	0.08	0	y	26	120223.527	121302	16.25	16.25	1.709	H1-1b
33	M22	PIPE_2.5	0.051	12	10	0.046	12		9	30038.461	50715	3.596	3.596	1.607	H1-1b
34	M21	PIPE_3.0	0.051	48	21	0.048	62		4	51869.919	78246	6.899	6.899	1.55	H1-1b
35	M20	PIPE_3.0	0.051	48	17	0.048	34		10	51869.919	78246	6.899	6.899	1.547	H1-1b
36	M47	L2.5x2.5x3	0.05	26.375	3	0.01	52.75	y	5	15539.423	29192.4	0.873	1.674	1.136	H2-1
37	M48	L2.5x2.5x3	0.05	26.375	11	0.011	52.75	y	3	15539.423	29192.4	0.873	1.674	1.136	H2-1



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	3	X-SNP-ST8	PLATFORM STANDOFF ARM WELDMENT, 43-3/4" LONG		60.39	181.16
3	3	X-SNPC	CORNER GRATING WELDMENT		194.33	582.99
4	3	P396	3" SCH. 40 PIPE (3.5" O.D. x 0.216" WALL) A500	96.000 in	60.75	182.25
5	3	P3096	2-7/8" OD X 96" SCH 40 GALVANIZED PIPE	96	49.24	147.72
6	3	X-SNP-HRA	CORNER BRACKET FOR SNPX PLATFORMS		25.95	77.86
7	3	X-SNPP1G	CLAMP PLATE	7.250 in	2.03	6.10
8	9	X-SP219	SMALL SUPPORT CROSS PLATE	8.250 in	8.61	77.50
9	9	SCX2	CROSSOVER PLATE	7.000 in	4.80	43.17
10	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)		0.40	3.59
10	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)		0.40	3.59
11	12	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2.75	0.36	4.27
12	30	A58FW	5/8" HDG A325 FLATWASHER		0.03	1.02
13	30	G58LW	5/8" HDG LOCKWASHER		0.03	0.78
14	18	A58NUT	5/8" HDG A325 HEX NUT		0.13	2.34
15	12	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	1.56
16	12	X-UB1358	1/2" X 3-5/8" X 5-1/2" X 3" U-BOLT (HDG.)		0.26	3.08
17	24	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.26	6.17
18	36	X-UB1212	1/2" X 2-1/2" X 4-1/2" X 2" U-BOLT (HDG.)		0.26	9.25
19	6	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	7-1/2	0.41	2.46
20	18	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.26	4.63
21	186	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	13.32
22	180	G12FW	1/2" HDG USS FLATWASHER	0.095	0.03	6.13
23	186	G12LW	1/2" HDG LOCKWASHER	.125	0.01	2.59
24	9	A	2" SCH. 40 PIPE (2.375" O.D. x 0.154" WALL) A500	B	C	D



DETAIL A



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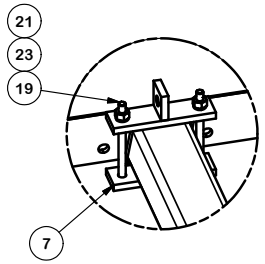

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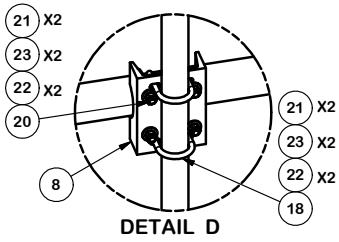


DETAIL D

2-3/8" O.D. VERTICAL MOUNTING PIPES					
ASSEMBLY NO.	PART NO. "A"	LENGTH "B"	UNIT WEIGHT "C	NET WEIGHT "D"	TOTAL WEIGHT
SNP8HR-372	P272	6'-0"	23.07	207.63	1717.07
SNP8HR-384	P284	7'-0"	26.91	242.19	1751.63
SNP8HR-396	P296	8'-0"	30.76	276.84	1786.28
SNP8HR-3126	P2126	10'-6"	40.75	366.75	1876.19

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION: 8' SNUB NOSE PLATFORM WITH HANDRAIL

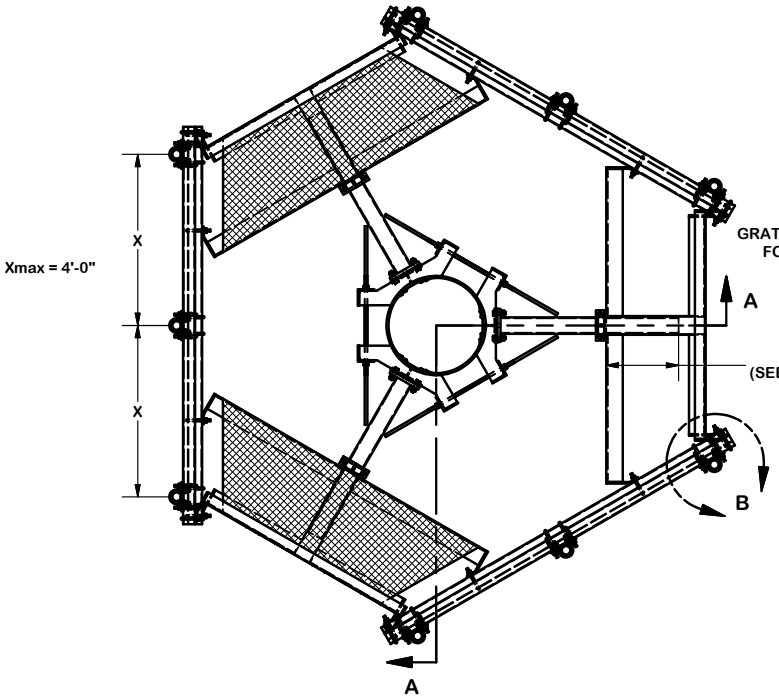
SITE PRO 1 — A valmont COMPANY

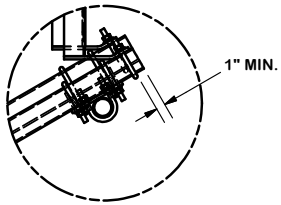
Engineering Support Team: 1-888-753-7446

Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CEK 11/19/2014		SEE ASSEMBLY NO.

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 11/21/2014	SNP8HR-3XX





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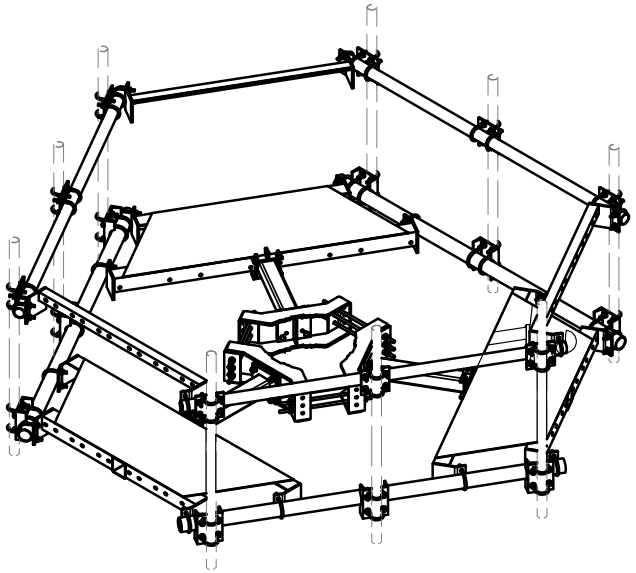
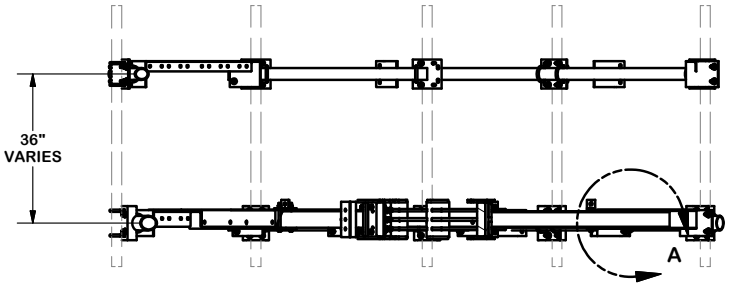
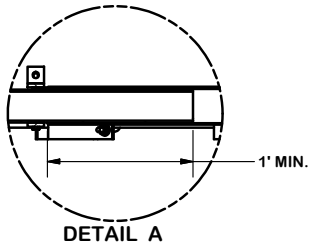
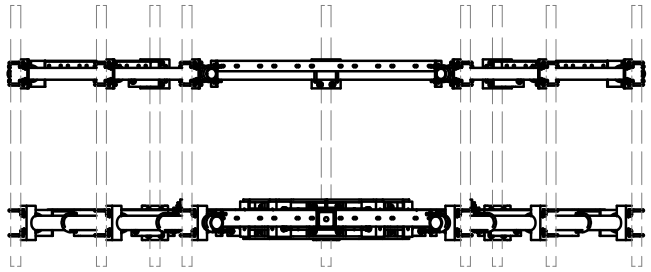




SECTION A-A



DETAIL A



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LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION: 8' SNUB NOSE PLATFORM WITH HANDRAIL

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

Locations: New York, NY; Atlanta, GA; Los Angeles, CA; Plymouth, IN; Salem, OR; Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
	CEK 11/19/2014		SEE ASSEMBLY NO.

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	02	CUSTOMER	BMC 11/21/2014	SNP8HR-3XX

Exhibit F

Power Density/RF Emissions Report

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

Site ID: BOBDL00106D

23 Kelleher Court
Wethersfield, CT 06109

October 18, 2022

Fox Hill Telecom Project Number: 221873

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**78.53 %**

Fox Hill Telecom

October 18, 2022

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOBDL00106D –**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **23 Kelleher Court, Wethersfield, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and antenna installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz & 700 MHz bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS / AWS-4) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed radio system installation for **Dish** on the subject site located at **23 Kelleher Court, Wethersfield, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65.

In OET-65, plane wave power densities in the Far Field of an antenna may be estimated by considering the additional factors of antenna gain and reflective waves that would contribute to exposure.

The radiation pattern of an antenna has developed in the Far Field region and the power gain needs to be considered in exposure predictions. Also, since the vertical radiation pattern of the antenna is considered, the exposure predictions would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential four-fold increase in power density.

These additional factors are considered, and the Far Field prediction model is determined by the following equation:

$$S = EIRP \times Rc \div 4\pi R^2$$

S = Power Density
EIRP = Effective Radiated Power from antenna
Rc = Reflection Coefficient (2.56)
R = Distance from the antenna

Predicted power densities are calculated 6 feet above the ground level and are displayed as a percentage of the applicable FCC standards.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves.

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
5G	n71 (600 MHz)	4	61.5
5G	n70 (AWS-4 / 1995-2020)	4	40
5G	n66 (AWS-4 / 2180-2200)	4	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz (n71) frequency band, and the 2100 MHz (AWS 4) frequency bands at 1995-2020 MHz (n70) and 2180-2200 MHz (n66). This is based on feedback from the carrier with regards to anticipated antenna selection.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	110
B	1	JMA MX08FRO665-21	110
C	1	JMA MX08FRO665-21	110

Table 2: Antenna Data

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

RESULTS

Per the calculations completed for the proposed **Dish** configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	1.09
						Sector A Composite MPE%	**1.09**
Antenna B1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	1.09
						Sector B Composite MPE%	**1.09**
Antenna C1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	1.09
						Sector C Composite MPE%	**1.09**

Table 3: Dish Emissions Levels

The Following table (*Table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum **Dish** MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each **Dish** Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
Dish – Max Per Sector Value	**1.09 %**
Town of Weathersfield	0.17 %
Clearwire	0.07 %
AT&T	21.31 %
Verizon Wireless	46.45 %
T-Mobile	9.44 %
Site Total MPE %:	**78.53 %**

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	1.09 %
Dish Sector B Total:	1.09 %
Dish Sector C Total:	1.09 %
Site Total:	78.53 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated **Dish** sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Dish n71 (600 MHz) 5G	4	858.77	110	2.12	n71 (600 MHz)	400	0.53%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,648.39	110	2.80	n70 (AWS-4 / 1995-2020)	1000	0.28%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,849.52	110	2.80	n66 (AWS-4 / 2180-2200)	1000	0.28%
						Total:	**1.09%**

Table 6: Dish Maximum Sector MPE Power Values

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 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 Sector	Power Density Value (%)
Sector A:	1.09 %
Sector B:	1.09 %
Sector C:	1.09 %
Dish Maximum Total (per sector):	1.09 %
Site Total:	78.53 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **78.53 %** 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.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Worcester, MA 01609
(978)660-3998

Exhibit G

Letter of Authorization

NORTHEAST
SITE SOLUTIONS
Turnkey Wireless Development

www.northeastsitesolutions.com

Dish Wireless, LLC Letter of Authorization

CONNECTICUT SITING COUNCIL

Attn: Melanie A. Bachman Executive
Director Connecticut Siting Council

10 Franklin Square
New Britain, CT 06051

Re: **Tower Share Application**

Dish Wireless, LLC telecommunications site at:

23 Kelleher Court, Wethersfield CT

The town of Wethersfield hereby authorizes DISH Wireless LLC, including their Agent, Northeast Site Solutions, LLC to act as our Agent in the processing of all zoning applications, building permits and approvals through the CONNECTICUT SITING COUNCIL for the existing wireless communicationssite described below:

Customer Site ID: BOBHVN00149A

23 Kelleher Court, Wethersfield CT

The town of Wethersfield

By: Frederick J Presley Date: 11/4/2022

Exhibit H

Recipient Mailings

UNITED STATES POSTAL SERVICE®

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MICHAEL L RELL
MAYOR, WETHERSFIELD TOWN HALL
505 SILAS DEANE HWY
WETHERSFIELD CT 06109-2216

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Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

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9405 5036 9930 0392 2389 36

Trans. #:	575496080
Print Date:	11/10/2022
Ship Date:	11/10/2022
Expected Delivery Date:	11/14/2022

Priority Mail® Postage:	**$9.90**
Total:	**$9.90**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

To: MICHAEL L RELL
MAYOR, WETHERSFIELD TOWN HALL
505 SILAS DEANE HWY
WETHERSFIELD CT 06109-2216

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

UNITED STATES POSTAL SERVICE®

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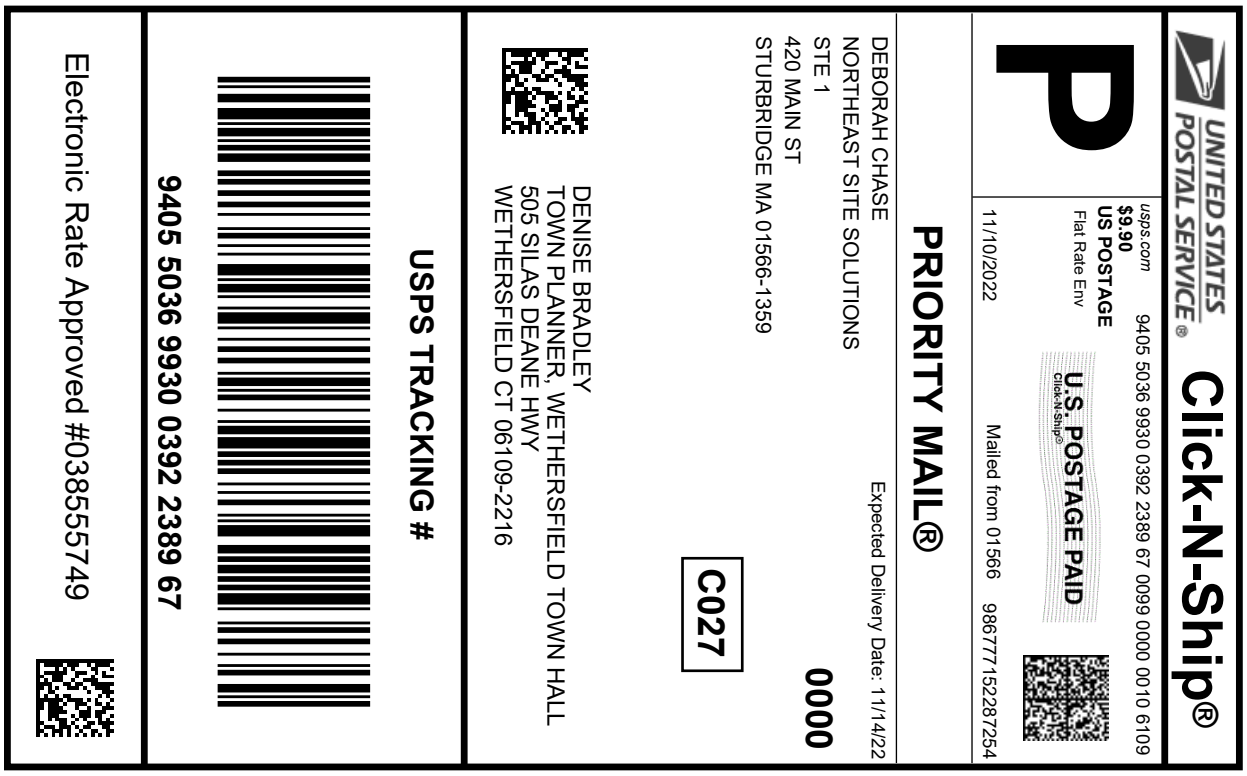

Cut on dotted line.

Instructions

1. **Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.**
2. **Place your label so it does not wrap around the edge of the package.**
3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0392 2389 67

Trans. #:	575496080
Print Date:	11/10/2022
Ship Date:	11/10/2022
Expected Delivery Date:	11/14/2022

Priority Mail® Postage:	**$9.90**
Total:	**$9.90**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

To: DENISE BRADLEY
TOWN PLANNER, WETHERSFIELD TOWN HALL
505 SILAS DEANE HWY
WETHERSFIELD CT 06109-2216

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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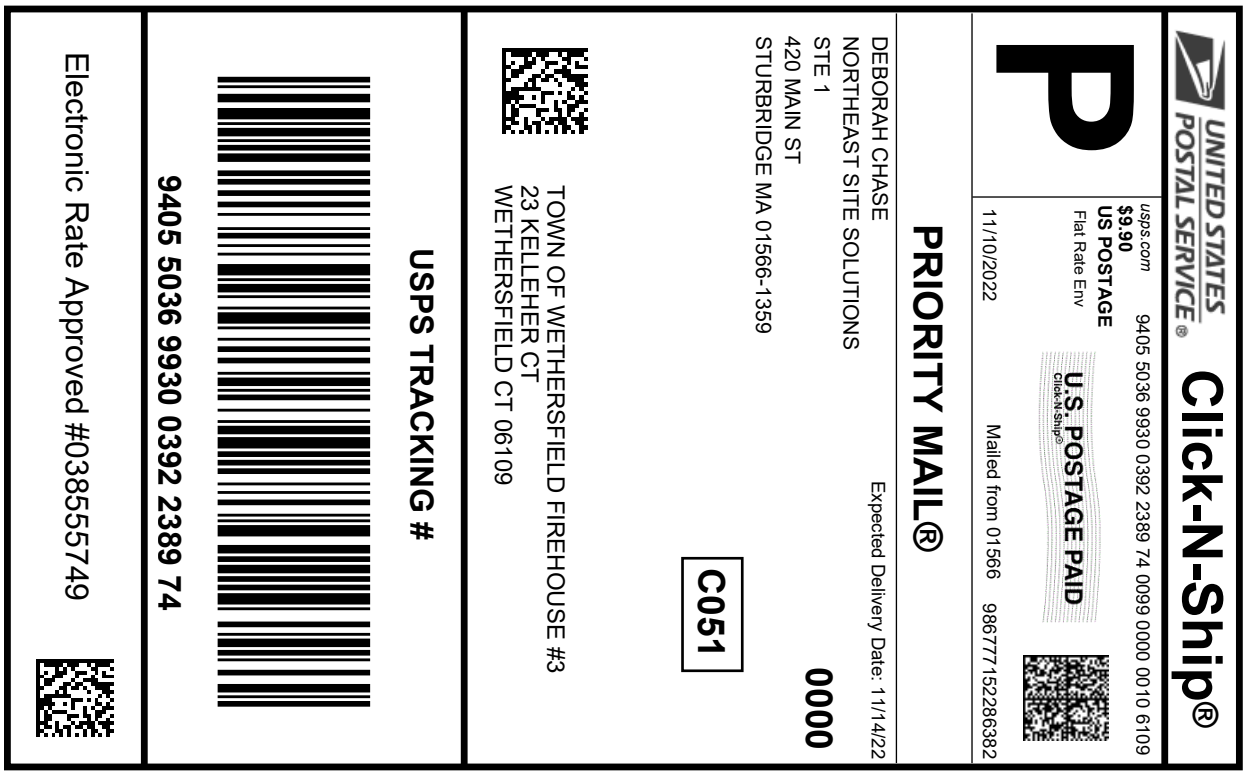

Cut on dotted line.

Instructions

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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0392 2389 74

Trans. #:	575496080
Print Date:	11/10/2022
Ship Date:	11/10/2022
Expected Delivery Date:	11/14/2022

Priority Mail® Postage:	**$9.90**
Total:	**$9.90**

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
STE 1
420 MAIN ST
STURBRIDGE MA 01566-1359

To: TOWN OF WETHERSFIELD FIREHOUSE #3
23 KELLEHER CT
WETHERSFIELD CT 06109

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

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UNITED STATES POSTAL SERVICE.

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210 MAIN ST
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(800)275-8777

11/10/2022 09:21 AM

Product	Qty	Unit Price	Price
Prepaid Mail Wethersfield, CT 06109 Weight: 0 lb 12.00 oz Acceptance Date: Thu 11/10/2022 Tracking #: 9405 5036 9930 0392 2389 67	1		$0.00
Prepaid Mail Wethersfield, CT 06109 Weight: 0 lb 11.90 oz Acceptance Date: Thu 11/10/2022 Tracking #: 9405 5036 9930 0392 2389 36	1		$0.00
Prepaid Mail Wethersfield, CT 06109 Weight: 0 lb 11.90 oz Acceptance Date: Thu 11/10/2022 Tracking #: 9405 5036 9930 0392 2389 74	1		$0.00
Grand Total:			$0.00

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Clerk: 77