Northeast Site Solutions
Carolyn Seeley
1053 Farmington Ave, Unit G,
Farmington CT 06032
cseeley@northeastsitesolutions.com

January 13, 2022

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

RE: Tower Share Application
230 Clover Mill Road, Storrs (Mansfield)
Latitude: 41.775420 N
Longitude: -72.222996 W
Site#: BOBDL00019A

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 230 Clover Mill Road, Storrs (Mansfield), Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900/2100 5G MHz antenna and six (6) RRUs, at the 137-foot level of the existing 178-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 Infinigy, dated January 12, 2022, Exhibit C. Also included is a structural analysis prepared by American Tower Corporation, dated November 1, 2021, 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 Mansfield Planning and Zoning Department on September 17, 2003. 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 Antonia Moran, Mayor of the Town of Mansfield, Linda Painter, Director for the Town of Mansfield, as well as the property owner Town of Mansfield and Octagon Towers, 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 137-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 178-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 16.77% 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 Storrs (Mansfield). 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 137-foot level of the existing 178-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 Storrs (Mansfield).

Sincerely,

Carolyn Seeley
Mobile: 978-760-5577
Fax: 413-521-0558
Office: 1053 Farmington Ave, Unit G, Farmington CT 06032
Email: cseeley@northeastsitesolutions.com

Attachments
Cc:
Antonia Moran, Mayor, Property Owner
4 S Eagleville Road
Storrs Mansfield, CT 06268

Linda Painter, Director
4 S Eagleville Road
Storrs Mansfield, CT 06268

Octagon Towers LLC, Tower Owner
57 E Washington Street
Chagrin Falls, OH 44022

Exhibit A

Original Facility Approval

Wendell Davis

TOWN OF MA

Planning and Zonin

Audrey P. Beck
Four South Eagle
Storrs, Connecticut 06268
Telephone (203) 429-3330

Memo to: Town Cou cil
From: Planning a d Zoning Commission
A. H. Bart aret, Chairman
Date: 9/17/03

Re: PZC approval of p oposed telecommunication towe and related facilities adjacent to Town Garage, PZC file 1209

At a meeting held on Sept mber 15, 2003, the Mansfield P anning and Zoning Commission unanimously adopted the following motion:

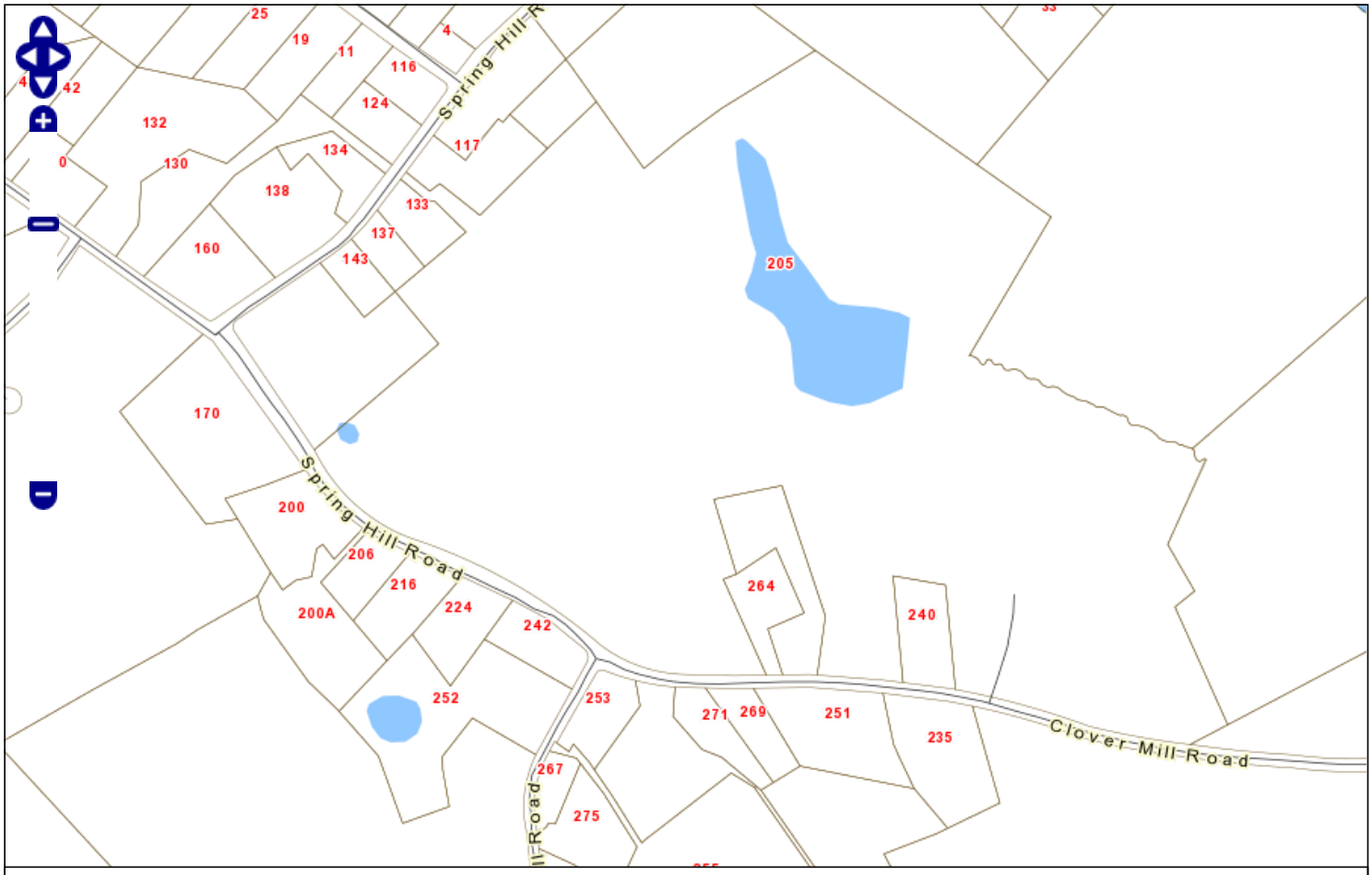
"to approve with conditic s the special permit application (file 1209) of the Town of Mansfield and TCF Communications, Inc. for a 180-foot telecommunication tower and related facilities and site work to be located at 230 Clover Mil Road, in a RAR-90 zone, as submitted to the Commission and shown on plans revised through 6/5/03 and as presented at Public Hearing on 8/4/03. This approval is granted because the application as hereby approved is considered to b fin compliance with Article V, Section B, Article X, Section R, and other provisions of the Mansfield Zoning Regu ations, and is granted with the following conditions:

1. This approval is based n submitted plans and project descriptions. Any change in plans or the proposed use of the site shall require fur her review and approval as per Mansfield's Zoning Regulations. The applicant shall be responsible for meetin Building Permit requirements and complying with all applicable State and Federal regulations pertaining t the subject telecommunication use.
2. Prior to any use of the telecommunication facilities and the issuance of a Certificate of Compliance, all site work shall be satisfacto ily completed. Based on the provisions of Article V, Section B.7.c, a variation of this condition may be auth ized by the Commission, prov ded that public health and safety components of the project have been satisf storily completed.
3. To help ensure effectiv long-term screening of the equipment compound area and compliance with regulatory provisions, the plans s all be revised to incorporate a staggered row of evergreen trees of mixed species between the Town Gara e/Bicentennial Pond access road and the compound area. The size, type and location of this required evergr en screen shall be approved by the PZC officers, with staff assistance. With this revision, the proposed eight (8) foot high wooden fence around the compound, and the retention of existing wooded areas around th compound, the proposal will be acceptably screened. The compound and tower are not expected to be readi visible from Clover Mill Road or nearby residences along Clover Mill Road.
4. Whereas abandonment/t wer removal issues are addressed by Town ownership and the Town's contract with TCP Communications, I c., a separate bond pursuant to Article X, Section R.6 of the Zoning Regulations shall not be required.
5. This permit shall not be ome valid until the applicant obtains the permit form from the Planning Office and files it on the Land Reco ds."

If there are any questions reg rding this action, the Planning Office may be contacted.

Exhibit B

Property Card



Town of Mansfield, Connecticut

Printed on 10/15/2021

100 m
500 ft

N

MainStreetMaps
MainStreetGIS, LLC
www.mainstreetgis.com

This map is for informational purposes only. It is not for appraisal of, description of, or conveyance of land. The Town of Mansfield, Connecticut and MainStreetGIS, LLC assume no legal responsibility for the information contained herein.

Property Location 205 SPRING HILL RD | Map ID 23/ 60/ 7/ / | Bldg Name | State Use 901
Vision ID 2799 | Account # 23 60 7 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 6 | Print Date 09-23-2021 12:09:55

CURRENT OWNER

MANSFIELD TOWN OF & BOARD OF
MANSFIELD MIDDLE SCHOOL
4 SOUTH EAGLEVILLE RD

STORRS CT 06268

TOPO	UTILITIES	STRT / ROAD	LOCATION
1 Level	1 Well	1 Paved	
	2 Septic		

SUPPLEMENTAL DATA

Alt Prcl ID
Census 8811
Devel. Lot

GIS ID 23.60.7 Assoc Pid#

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
Ex C Land	21	1,700,800	1,190,600
Ex C Bldg	22	8,723,600	6,106,600
Ex Com OB	25	446,100	312,400
Ind Land	3-1	153,000	107,100
	Total	11,023,500	7,716,700

6078

MANSFIELD, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
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REFERENCE	113	428	04-16-1971	U	I	0	
	106	136	12-13-1967	U	I	0	
MANSFIELD TOWN OF	83	413	05-10-1957	U	I	0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed
2020	21	1,190,600	2019	21	1,190,600	2019	21	1,190,600
	22	6,106,600		22	6,106,600		22	6,106,600
	25	312,400		25	312,400		25	312,400
	3-1	107,100		3-1	107,100		3-1	107,100
	Total	7,716,700	Total		7,716,700	Total		7,716,700

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Nbhd Name	B	Tracing	Batch
0001				

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	8,723,600
Appraised Xf (B) Value (Bldg)	0
Appraised Ob (B) Value (Bldg)	446,100
Appraised Land Value (Bldg)	1,853,800
Special Land Value	0
Total Appraised Parcel Value	11,023,500
Valuation Method	C
Total Appraised Parcel Value	11,023,500

NOTES

MANSFIELD MIDDLE SCHOOL SURVEY V7 P10
01/20/2009-7.33AC(23.60.4-3)MERGED PER
V663 P347NOW ALSO INCLUDES BICENTENNIAL
POND,ANIMAL CONTROL BUILDG,TOWN GARAGE,
GAS PUMPS,SAND STORAGE & CELL TOWER
08/26/2014-CERT APP#12-13-161 18X20GRNHS
09/11/2017-FISHING DK-BICENTENNIAL POND
02/08/2018-#17-18-256MMS LOCKER RM RENOV

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments
21-22-0164	09-17-2021	CM	Commercial	20,000		0		REPLACE ANTENNAS @ TEL
20-21-0846	05-26-2021	CM	Commercial	2,300		100	05-27-2021	REPLACE MARINE HEATER I
20-21-0805	05-13-2021	WH	Water Heater	0		100	05-19-2021	MANSFIELD ANIMAL CONTR
20-21-0730	04-26-2021	CM	Commercial	20,000		100		REPLACE 2 AIR HANDLERS
20-21-0155	08-26-2020	WH	Water Heater	3,000		100	09-14-2020	2 WATER HEATERS MIDDLE
20-21-0027	07-09-2020	GN	Generator	15,000		0		GENERATOR INSTALLED ON
19-20-0599	03-31-2020	ALT		500		100		EXHAUST FAN AT MANSFIEL

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result
05-28-2019	WG			35	Field Review
09-14-2017	MT	02	8	20	Permit Inspection
03-06-2013	MT			16	Appraiser Date
03-01-2013	MT			15	Collector Date
10-12-2000	BM			15	Collector Date

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Land Type	Land Units		Unit Price	I. Factor	Site Index	Cond.	Nbhd.	Nhbd Adj	Notes	Location Adjustment		Adj Unit Pric	Land Value
1	901	Town MDL-Com	RAR		10.000	AC	135,000	1.00000	5	1.00	C100	1.000			0	135,000	1,350,000
1	901	Town MDL-Com			83.530	AC	6,000	1.00000	0	1.00		1.000			0	4,200	350,800
1	350	Cell Tower			1.000	BL	153,000	1.00000	0	1.00		1.000	CELL SITE		0	153,000	153,000
				Total Card Land Units	93.53	AC	Parcel Total Land Area:		93.53							Total Land Value	1,853,800

Property Location 205 SPRING HILL RD | Map ID 23/ 60/ 7/ / | Bldg Name | State Use 901
Vision ID 2799 | Account # 23 60 7 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 6 | Print Date 09-23-2021 12:09:56

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	49	Pubilc School
Model	94	Comm/Ind
Grade	07	C
Stories:	2	
Occupancy	1.00	
Exterior Wall 1	20	Brick
Exterior Wall 2		
Roof Structure	01	Flat
Roof Cover	04	Tar + Gravel
Interior Wall 1	05	Drywall
Interior Wall 2		
Interior Floor 1	06	Vnl Linolium
Interior Floor 2		
Heating Fuel	09	Typical
Heating Type	05	Hot Water
AC Type	01	None/partial
Bldg Use	901	Town MDL-Com
Heat/AC	00	HEAT ONLY
Frame Type	03	MASONRY
Baths/Plumbing	02	AVERAGE
Ceiling/Wall	06	CEIL & WALLS
Rooms/Prtns	02	AVERAGE
Wall Height	14.00	
1st Floor Use:		

CONSTRUCTION DETAIL (CONTINUED)

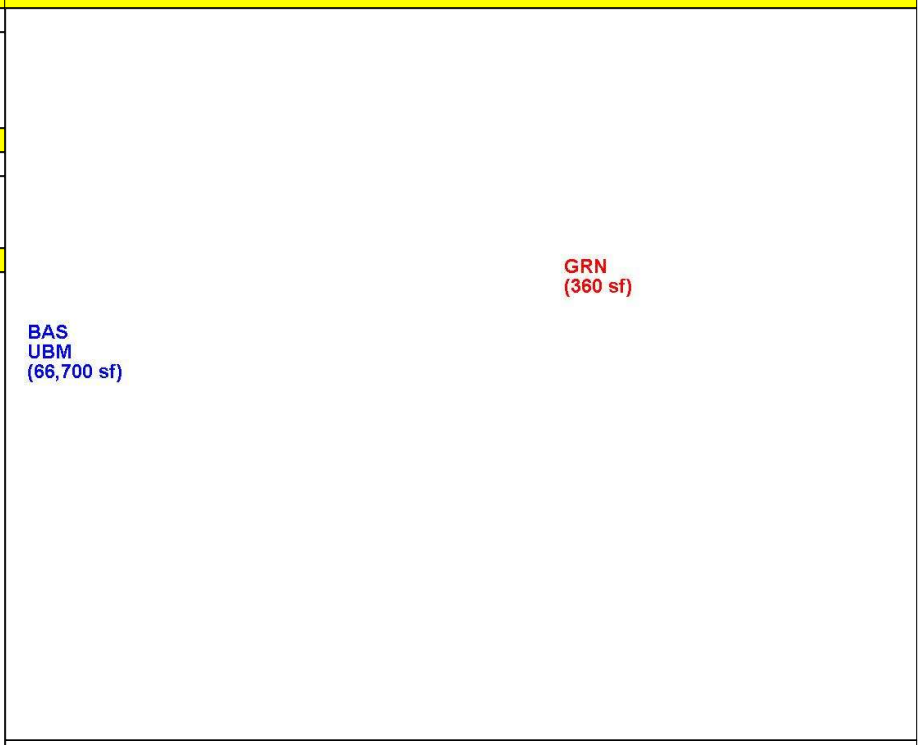
Element	Cd	Description

MIXED USE

Code	Description	Percentage
901	Town MDL-Com	100
		0
		0

COST / MARKET VALUATION

RCN	
Year Built	1969
Effective Year Built	
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	35
Functional Obsol	
Economic Obsol	
Trend Factor	1
Condition	
Condition %	
Percent Good	65
RCNLD	7,156,400
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Good	Grade	Grade Adj	Appr. Value
PAV1	Paving	L	112,40	1.80	1969	A	70		0	141,600
BTH1	Cabana	L	462	20.00	1980	A	70	C	1.00	6,500
TEN	Tennis Court	L	1	7200.00	1969	A	70	C	1.00	5,000
SHD1	Shed	L	800	12.00	1969	A	70	C	1.00	6,700
FNC	Fence	L	280	8.00	1969	A	70	C	1.00	1,600
SHD1	Shed	L	100	12.00	1969	A	70	C	1.00	800
LT5	Light 5	L	15	2700.00	1969	A	70	C	1.00	28,400
FGR4	Gar w/Loft	L	6,333	25.00	1969	A	70	C	1.00	110,800
FGR1	Garage	L	6,435	24.00	1969	A	70	C	1.00	108,100
WDK	Wood Deck	L	416	8.00	2017	A	70	C	1.00	2,300

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	66,700	66,700		137.40	9,164,580
GRN	Greenhouse	0	360		34.35	12,366
UBM	Basement	0	66,700		27.48	1,832,916
	Ttl Gross Liv / Lease Area	66,700	133,760			11,009,862

Property Location 205 SPRING HILL RD | Map ID 23/ 60/ 7/ / | Bldg Name | State Use 901
Vision ID 2799 | Account # 23 60 7 | Bldg # 2 | Sec # 1 of 1 | Card # 2 of 6 | Print Date 09-23-2021 12:09:56

CURRENT OWNER

MANSFIELD TOWN OF & BOARD OF
MANSFIELD MIDDLE SCHOOL
4 SOUTH EAGLEVILLE RD

STORRS CT 06268

TOPO	UTILITIES	STRT / ROAD	LOCATION
1 Level	1 Well	1 Paved	
	2 Septic		

SUPPLEMENTAL DATA

Alt Prcl ID
Census 8811
Devel. Lot

GIS ID 23.60.7 Assoc Pid#

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
Ex C Land	21	1,700,800	1,190,600
Ex C Bldg	22	8,723,600	6,106,600
Ex Com OB	25	446,100	312,400
Ind Land	3-1	153,000	107,100
	Total	11,023,500	7,716,700

6078

MANSFIELD, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
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REFERENCE	113	428	04-16-1971	U	I	0	
	106	136	12-13-1967	U	I	0	
MANSFIELD TOWN OF	83	413	05-10-1957	U	I	0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed
2020	21	1,190,600	2019	21	1,190,600	2019	21	1,190,600
	22	6,106,600		22	6,106,600		22	6,106,600
	25	312,400		25	312,400		25	312,400
	3-1	107,100		3-1	107,100		3-1	107,100
	Total	7,716,700	Total		7,716,700	Total		7,716,700

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Nbhd Name	B	Tracing	Batch
0001				

NOTES

TOWN GARAGE

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	8,723,600
Appraised Xf (B) Value (Bldg)	0
Appraised Ob (B) Value (Bldg)	446,100
Appraised Land Value (Bldg)	1,853,800
Special Land Value	0
Total Appraised Parcel Value	11,023,500
Valuation Method	C
Total Appraised Parcel Value	11,023,500

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Land Type	Land Units		Unit Price	I. Factor	Site Index	Cond.	Nbhd.	Nhbd Adj	Notes	Location Adjustment		Adj Unit Pric	Land Value
2	901	Town MDL-Com	21			SF	0	1.00000		1.00		1.000			0	0	0
		Total Card Land Units			0.00	AC	Parcel Total Land Area:			93.53						Total Land Value	1,853,800

Property Location 205 SPRING HILL RD | Map ID 23/ 60/ 7/ / | Bldg Name | State Use 901
Vision ID 2799 | Account # 23 60 7 | Bldg # 2 | Sec # 1 of 1 | Card # 2 of 6 | Print Date 09-23-2021 12:09:57

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	20	Office Building
Model	94	Comm/Ind
Grade	07	C
Stories:	1	
Occupancy	1.00	
Exterior Wall 1	27	Pre-finsh Metl
Exterior Wall 2		
Roof Structure	03	Gable
Roof Cover	01	Metal/Tin
Interior Wall 1	01	Minimum
Interior Wall 2		
Interior Floor 1	04	Concr Abv Grad
Interior Floor 2		
Heating Fuel	09	Typical
Heating Type	04	Forced Air
AC Type	01	None/partial
Bldg Use	901	Town MDL-Com
Heat/AC	00	HEAT ONLY
Frame Type	05	STEEL
Baths/Plumbing	02	AVERAGE
Ceiling/Wall	02	CEILING ONLY
Rooms/Prtns	02	AVERAGE
Wall Height	10.00	
1st Floor Use:		

CONSTRUCTION DETAIL (CONTINUED)

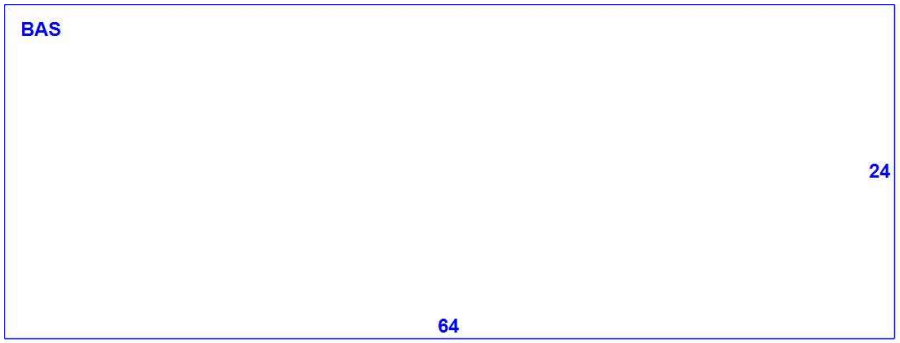
Element	Cd	Description

MIXED USE

Code	Description	Percentage
901	Town MDL-Com	100
		0
		0

COST / MARKET VALUATION

RCN	
Year Built	1986
Effective Year Built	
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	23
Functional Obsol	
Economic Obsol	
Trend Factor	1
Condition	
Condition %	
Percent Good	77
RCNLD	161,800
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



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Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Good	Grade	Grade Adj	Appr. Value

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	1,536	1,536		136.80	210,125
	Ttl Gross Liv / Lease Area	1,536	1,536			210,125

Property Location 205 SPRING HILL RD | Map ID 23/ 60/ 7/ / | Bldg Name | State Use 901
Vision ID 2799 | Account # 23 60 7 | Bldg # 3 | Sec # 1 of 1 | Card # 3 of 6 | Print Date 09-23-2021 12:09:57

CURRENT OWNER

MANSFIELD TOWN OF & BOARD OF
MANSFIELD MIDDLE SCHOOL
4 SOUTH EAGLEVILLE RD

STORRS CT 06268

TOPO	UTILITIES	STRT / ROAD	LOCATION
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SUPPLEMENTAL DATA

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Devel. Lot

GIS ID 23.60.7 Assoc Pid#

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MANSFIELD, CT

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	106	136	12-13-1967	U	I	0	
MANSFIELD TOWN OF	83	413	05-10-1957	U	I	0	

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	Total	7,716,700	Total		7,716,700	Total		7,716,700

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

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ASSESSING NEIGHBORHOOD

Nbhd	Nbhd Name	B	Tracing	Batch
0001				

NOTES

6BAY TOWN GARAGE-MAIN OFFICE COMM W/BLDG
OB=SALT SHED OPEN IN FRONT

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	8,723,600
Appraised Xf (B) Value (Bldg)	0
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3	901	Town MDL-Com	21			SF	0	1.00000		1.00		1.000			0	0	0
		Total Card Land Units			0.00	AC	Parcel Total Land Area:			93.53					Total Land Value		1,853,800

Property Location 205 SPRING HILL RD | Map ID 23/ 60/ 7/ / | Bldg Name | State Use 901
Vision ID 2799 | Account # 23 60 7 | Bldg # 3 | Sec # 1 of 1 | Card # 3 of 6 | Print Date 09-23-2021 12:09:58

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	56	Office/Garage
Model	94	Comm/Ind
Grade	07	C
Stories:	1	
Occupancy	1.00	
Exterior Wall 1	15	Concr/Cinder
Exterior Wall 2		
Roof Structure	03	Gable
Roof Cover	03	Asphalt Shingl
Interior Wall 1	01	Minimum
Interior Wall 2		
Interior Floor 1	04	Concr Abv Grad
Interior Floor 2		
Heating Fuel	09	Typical
Heating Type	04	Forced Air
AC Type	01	None/partial
Bldg Use	901	Town MDL-Com
Heat/AC	00	HEAT ONLY
Frame Type	03	MASONRY
Baths/Plumbing	02	AVERAGE
Ceiling/Wall	02	CEILING ONLY
Rooms/Prtns	02	AVERAGE
Wall Height	14.00	
1st Floor Use:		

CONSTRUCTION DETAIL (CONTINUED)

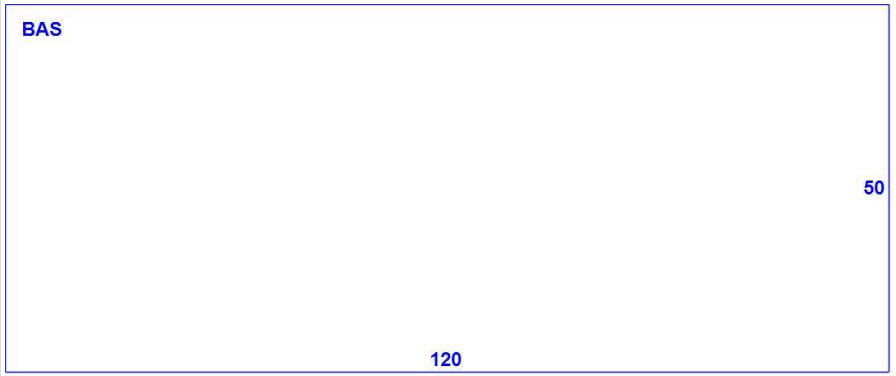
Element	Cd	Description

MIXED USE

Code	Description	Percentage
901	Town MDL-Com	100
		0
		0

COST / MARKET VALUATION

RCN	
Year Built	1980
Effective Year Built	
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	29
Functional Obsol	
Economic Obsol	
Trend Factor	1
Condition	
Condition %	
Percent Good	71
RCNLD	275,600
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Good	Grade	Grade Adj	Appr. Value
SHD1	Shed	L	3,600	12.00	2011	A	70	C	1.00	30,200
SHD1	Shed	L	120	12.00	2002	G	80	A	1.50	1,700

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	6,000	6,000		64.70	388,200
	Ttl Gross Liv / Lease Area	6,000	6,000			388,200

Property Location 205 SPRING HILL RD | Map ID 23/ 60/ 7/ / | Bldg Name | State Use 901
Vision ID 2799 | Account # 23 60 7 | Bldg # 4 | Sec # 1 of 1 | Card # 4 of 6 | Print Date 09-23-2021 12:09:58

CURRENT OWNER

MANSFIELD TOWN OF & BOARD OF
MANSFIELD MIDDLE SCHOOL
4 SOUTH EAGLEVILLE RD

STORRS CT 06268

TOPO	UTILITIES	STRT / ROAD	LOCATION
1 Level	1 Well	1 Paved	
	2 Septic		

SUPPLEMENTAL DATA

Alt Prcl ID
Census 8811
Devel. Lot

GIS ID 23.60.7 Assoc Pid#

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
Ex C Land	21	1,700,800	1,190,600
Ex C Bldg	22	8,723,600	6,106,600
Ex Com OB	25	446,100	312,400
Ind Land	3-1	153,000	107,100
	Total	11,023,500	7,716,700

6078

MANSFIELD, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
MANSFIELD TOWN OF & BOARD OF EDUCA	663	347	01-20-2009	U	V	0	25
REFERENCE	113	428	04-16-1971	U	I	0	
	106	136	12-13-1967	U	I	0	
MANSFIELD TOWN OF	83	413	05-10-1957	U	I	0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed
2020	21	1,190,600	2019	21	1,190,600	2019	21	1,190,600
	22	6,106,600		22	6,106,600		22	6,106,600
	25	312,400		25	312,400		25	312,400
	3-1	107,100		3-1	107,100		3-1	107,100
	Total	7,716,700		Total	7,716,700		Total	7,716,700

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Nbhd Name	B	Tracing	Batch
0001				

NOTES

9 BAY TOWN GARAGE

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	8,723,600
Appraised Xf (B) Value (Bldg)	0
Appraised Ob (B) Value (Bldg)	446,100
Appraised Land Value (Bldg)	1,853,800
Special Land Value	0
Total Appraised Parcel Value	11,023,500
Valuation Method	C
Total Appraised Parcel Value	11,023,500

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Land Type	Land Units		Unit Price	I. Factor	Site Index	Cond.	Nbhd.	Nhbd Adj	Notes	Location Adjustment		Adj Unit Pric	Land Value
4	901	Town MDL-Com	21			SF	0	1.00000		1.00		1.000			0	0	0
				Total Card Land Units	0.00	AC	Parcel Total Land Area:	93.53								Total Land Value	1,853,800

Property Location 205 SPRING HILL RD | Map ID 23/ 60/ 7/ / | Bldg Name | State Use 901
Vision ID 2799 | Account # 23 60 7 | Bldg # 4 | Sec # 1 of 1 | Card # 4 of 6 | Print Date 09-23-2021 12:09:59

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	61	Commercial Garage
Model	94	Comm/Ind
Grade	07	C
Stories:	1	
Occupancy	1.00	
Exterior Wall 1	27	Pre-finsh Metl
Exterior Wall 2		
Roof Structure	03	Gable
Roof Cover	01	Metal/Tin
Interior Wall 1	01	Minimum
Interior Wall 2		
Interior Floor 1	04	Concr Abv Grad
Interior Floor 2		
Heating Fuel	09	Typical
Heating Type	04	Forced Air
AC Type	01	None/partial
Bldg Use	901	Town MDL-Com
Heat/AC	00	HEAT ONLY
Frame Type	05	STEEL
Baths/Plumbing	02	AVERAGE
Ceiling/Wall	02	CEILING ONLY
Rooms/Prtns	02	AVERAGE
Wall Height	14.00	
1st Floor Use:		

CONSTRUCTION DETAIL (CONTINUED)

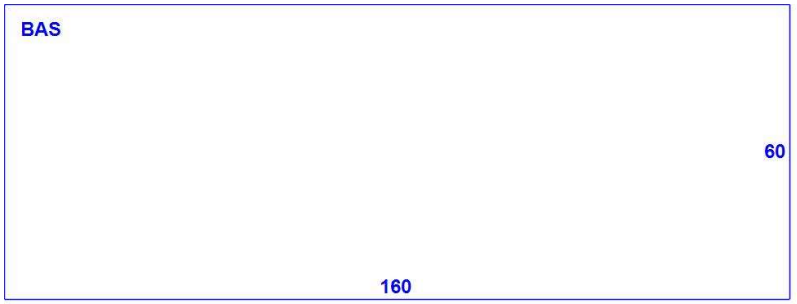
Element	Cd	Description

MIXED USE

Code	Description	Percentage
901	Town MDL-Com	100
		0
		0

COST / MARKET VALUATION

RCN	
Year Built	1980
Effective Year Built	
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	29
Functional Obsol	
Economic Obsol	
Trend Factor	1
Condition	
Condition %	
Percent Good	71
RCNLD	296,400
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Good	Grade	Grade Adj	Appr. Value
KEN2	Kennel-Good	L	150	12.00	1980	A	70	C	1.00	1,300

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	9,600	9,600		43.48	417,408
	Ttl Gross Liv / Lease Area	9,600	9,600			417,408

Property Location 205 SPRING HILL RD | Map ID 23/ 60/ 7/ / | Bldg Name | State Use 901
Vision ID 2799 | Account # 23 60 7 | Bldg # 5 | Sec # 1 of 1 | Card # 5 of 6 | Print Date 09-23-2021 12:09:59

CURRENT OWNER

MANSFIELD TOWN OF & BOARD OF
MANSFIELD MIDDLE SCHOOL
4 SOUTH EAGLEVILLE RD

STORRS CT 06268

TOPO	UTILITIES	STRT / ROAD	LOCATION
1 Level	1 Well	1 Paved	
	2 Septic		

SUPPLEMENTAL DATA

Alt Prcl ID
Census 8811
Devel. Lot

GIS ID 23.60.7 Assoc Pid#

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
Ex C Land	21	1,700,800	1,190,600
Ex C Bldg	22	8,723,600	6,106,600
Ex Com OB	25	446,100	312,400
Ind Land	3-1	153,000	107,100
	Total	11,023,500	7,716,700

6078

MANSFIELD, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
MANSFIELD TOWN OF & BOARD OF EDUCA	663	347	01-20-2009	U	V	0	25
REFERENCE	113	428	04-16-1971	U	I	0	
	106	136	12-13-1967	U	I	0	
MANSFIELD TOWN OF	83	413	05-10-1957	U	I	0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed
2020	21	1,190,600	2019	21	1,190,600	2019	21	1,190,600
	22	6,106,600		22	6,106,600		22	6,106,600
	25	312,400		25	312,400		25	312,400
	3-1	107,100		3-1	107,100		3-1	107,100
	Total	7,716,700		Total	7,716,700		Total	7,716,700

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Nbhd Name	B	Tracing	Batch
0001				

NOTES

DOG POUND

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	8,723,600
Appraised Xf (B) Value (Bldg)	0
Appraised Ob (B) Value (Bldg)	446,100
Appraised Land Value (Bldg)	1,853,800
Special Land Value	0
Total Appraised Parcel Value	11,023,500
Valuation Method	C
Total Appraised Parcel Value	11,023,500

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Land Type	Land Units		Unit Price	I. Factor	Site Index	Cond.	Nbhd.	Nhbd Adj	Notes	Location Adjustment		Adj Unit Pric	Land Value
5	901	Town MDL-Com	21			SF	0	1.00000		1.00		1.000			0	0	0
		Total Card Land Units			0.00	AC	Parcel Total Land Area:			93.53						Total Land Value	1,853,800

Property Location 205 SPRING HILL RD | Map ID 23/ 60/ 7/ / | Bldg Name | State Use 901
Vision ID 2799 | Account # 23 60 7 | Bldg # 5 | Sec # 1 of 1 | Card # 5 of 6 | Print Date 09-23-2021 12:10:00

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	52	Other Municipal
Model	94	Comm/Ind
Grade	07	C
Stories:	1	
Occupancy	1.00	
Exterior Wall 1	15	Concr/Cinder
Exterior Wall 2		
Roof Structure	03	Gable
Roof Cover	01	Metal/Tin
Interior Wall 1	01	Minimum
Interior Wall 2		
Interior Floor 1	04	Concr Abv Grad
Interior Floor 2		
Heating Fuel	09	Typical
Heating Type	05	Hot Water
AC Type	01	None/partial
Bldg Use	901	Town MDL-Com
Heat/AC	00	HEAT ONLY
Frame Type	02	WOOD FRAME
Baths/Plumbing	02	AVERAGE
Ceiling/Wall	02	CEILING ONLY
Rooms/Prtns	02	AVERAGE
Wall Height	8.00	
1st Floor Use:		

CONSTRUCTION DETAIL (CONTINUED)

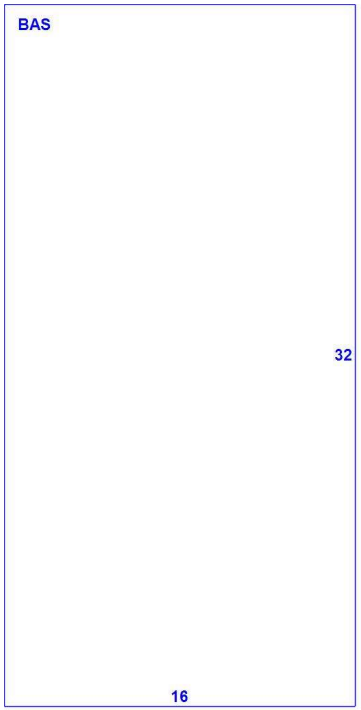
Element	Cd	Description

MIXED USE

Code	Description	Percentage
901	Town MDL-Com	100
		0
		0

COST / MARKET VALUATION

RCN	
Year Built	1975
Effective Year Built	
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	32
Functional Obsol	
Economic Obsol	
Trend Factor	1
Condition	
Condition %	
Percent Good	68
RCNLD	68,500
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Good	Grade	Grade Adj	Appr. Value
FNC	Fence	L	200	8.00	1975	A	70	C	1.00	1,100

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	512	512		196.68	100,700
	Ttl Gross Liv / Lease Area	512	512			100,700

Property Location 205 SPRING HILL RD | Map ID 23/ 60/ 7/ / | Bldg Name | State Use 901
Vision ID 2799 | Account # 23 60 7 | Bldg # 6 | Sec # 1 of 1 | Card # 6 of 6 | Print Date 09-23-2021 12:10:00

CURRENT OWNER

MANSFIELD TOWN OF & BOARD OF
MANSFIELD MIDDLE SCHOOL
4 SOUTH EAGLEVILLE RD

STORRS CT 06268

TOPO	UTILITIES	STRT / ROAD	LOCATION
1 Level	1 Well	1 Paved	
	2 Septic		

SUPPLEMENTAL DATA

Alt Prcl ID
Census 8811
Devel. Lot

GIS ID 23.60.7 Assoc Pid#

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
Ex C Land	21	1,700,800	1,190,600
Ex C Bldg	22	8,723,600	6,106,600
Ex Com OB	25	446,100	312,400
Ind Land	3-1	153,000	107,100
	Total	11,023,500	7,716,700

6078

MANSFIELD, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
MANSFIELD TOWN OF & BOARD OF EDUCA	663	347	01-20-2009	U	V	0	25
REFERENCE	113	428	04-16-1971	U	I	0	
	106	136	12-13-1967	U	I	0	
MANSFIELD TOWN OF	83	413	05-10-1957	U	I	0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed
2020	21	1,190,600	2019	21	1,190,600	2019	21	1,190,600
	22	6,106,600		22	6,106,600		22	6,106,600
	25	312,400		25	312,400		25	312,400
	3-1	107,100		3-1	107,100		3-1	107,100
	Total	7,716,700	Total		7,716,700	Total		7,716,700

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Nbhd Name	B	Tracing	Batch
0001				

NOTES

1997-MODULAR CLASSRM BUILDING ADDED TO
REAR OF MANSFIELD MIDDLE SCHOOL

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	8,723,600
Appraised Xf (B) Value (Bldg)	0
Appraised Ob (B) Value (Bldg)	446,100
Appraised Land Value (Bldg)	1,853,800
Special Land Value	0
Total Appraised Parcel Value	11,023,500
Valuation Method	C
Total Appraised Parcel Value	11,023,500

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Land Type	Land Units		Unit Price	I. Factor	Site Index	Cond.	Nbhd.	Nhbd Adj	Notes	Location Adjustment		Adj Unit Pric	Land Value
6	901	Town MDL-Com	21			SF	0	1.00000		1.00		1.000			0	0	0
		Total Card Land Units			0.00	AC	Parcel Total Land Area:			93.53						Total Land Value	1,853,800

Property Location 205 SPRING HILL RD | Map ID 23/ 60/ 7/ / | Bldg Name | State Use 901
Vision ID 2799 | Account # 23 60 7 | Bldg # 6 | Sec # 1 of 1 | Card # 6 of 6 | Print Date 09-23-2021 12:10:01

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	49	Pubilc School
Model	94	Comm/Ind
Grade	09	B-
Stories:	1	
Occupancy	1.00	
Exterior Wall 1	08	Wood
Exterior Wall 2		
Roof Structure	01	Flat
Roof Cover	03	Asphalt Shingl
Interior Wall 1	05	Drywall
Interior Wall 2		
Interior Floor 1	14	Carpet
Interior Floor 2		
Heating Fuel	09	Typical
Heating Type	04	Forced Air
AC Type	01	None/partial
Bldg Use	901	Town MDL-Com
Heat/AC	00	HEAT ONLY
Frame Type	02	WOOD FRAME
Baths/Plumbing	02	AVERAGE
Ceiling/Wall	06	CEIL & WALLS
Rooms/Prtns	02	AVERAGE
Wall Height	10.00	
1st Floor Use:		

CONSTRUCTION DETAIL (CONTINUED)

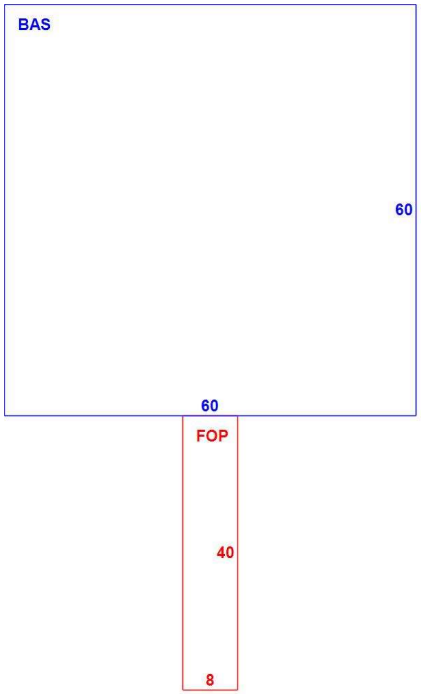
Element	Cd	Description

MIXED USE

Code	Description	Percentage
901	Town MDL-Com	100
		0
		0

COST / MARKET VALUATION

RCN	
Year Built	1997
Effective Year Built	
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	16
Functional Obsol	
Economic Obsol	
Trend Factor	1
Condition	
Condition %	
Percent Good	84
RCNLD	764,900
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Good	Grade	Grade Adj	Appr. Value

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	3,600	3,600		247.46	890,846
FOP	Framed Open Porch	0	320		61.86	19,797
	Ttl Gross Liv / Lease Area	3,600	3,920			910,643

Exhibit C

Construction Drawings

dish wireless.™

DISH Wireless L.L.C. SITE ID:

BOBDL00019A

DISH Wireless L.L.C. SITE ADDRESS:

230 CLOVER MILL RD, STORRS, CT 06268

CONNECTICUT CODE COMPLIANCE

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

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

SHEET INDEX

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

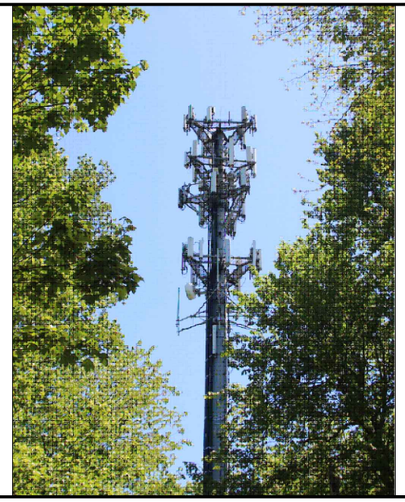
SCOPE OF WORK

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

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

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

SITE PHOTO



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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

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

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:	MANSFIELD TOWN OF & BOARD OF EDUCATION
ADDRESS:	230 CLOVER MILL RD STORRS, CT 06268
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	23.60.7
TOWER APP NUMBER:	N/A
COUNTY:	MANSFIELD
LATITUDE (NAD 83):	41°46'31.5"N 41.775420 N
LONGITUDE (NAD 83):	72°13'22.8"W -72.222996 W
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	RAR90
PARCEL NUMBER:	205
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	V-B
POWER COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	AT&T

PROJECT DIRECTORY

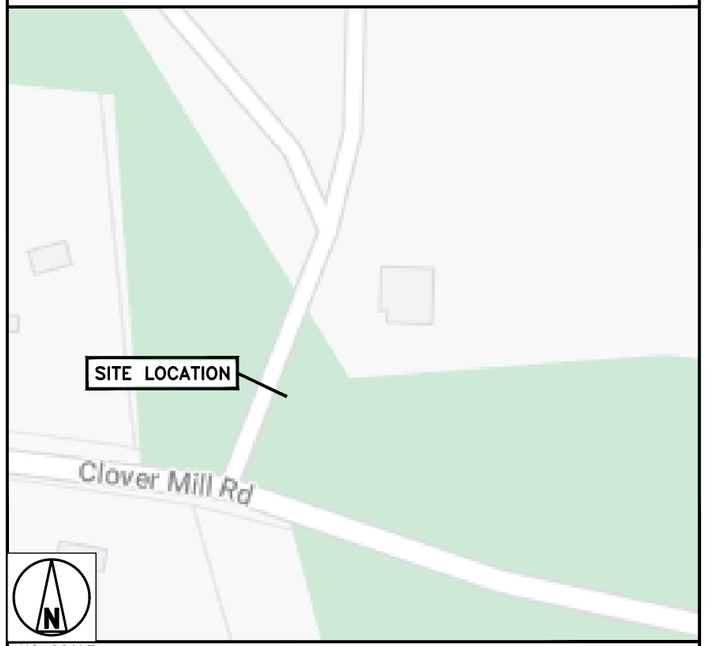
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	OCTAGON TOWERS LLC 57 E Washington Street Chagrin Falls, OH 44022
SITE DESIGNER:	INFINIGY 1033 WATERVLIET SHAKER RD ALBANY, NY 12205 (518) 690-0790
SITE ACQUISITION:	JEANNE CONTTRELL (203) 927-4317
CONSTRUCTION MANAGER:	JAVIER SOTO (617) 839-6514
RF ENGINEER:	BOSSENER CHARLES (978) 855-5870

DIRECTIONS

DIRECTIONS FROM CHESTER CHARTER, INC. AIRPORT:

HEAD NORTHWEST ON CHESTER AIRPORT TOWARD CT-145 / WINTHROP RD, TURN LEFT ONTO CT-145 / WINTHROP RD, TURN RIGHT ONTO CT-80 / CT-145 / WINTHROP RD, TURN LEFT ONTO CT-145 / STEVENSTOWN RD, TAKE THE RAMP ON THE LEFT FOR I-95 NORTH AND HEAD TOWARD NEW LONDON AT EXIT 66, HEAD RIGHT ON THE RAMP FOR CT-166 TOWARD LYNDE POINT / OLD SAYBROOK / SHORE POINTS, TURN RIGHT ONTO CT-166 / SPENCER PLAIN RD TOWARD LYNDE POINT / OLD SAYBROOK / SHORE POINTS, TURN LEFT ONTO US-1 N / BOSTON POST RD, TURN LEFT ONTO TOMPKINS RD ARRIVE AT, 1363 BOSTON POST RD, OLD SAYBROOK, CT 06475.

VICINITY MAP



NO SCALE

dish wireless.

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STATE OF CONNECTICUT
YUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
1/13/2021

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DRAWN BY:	CHECKED BY:	APPROVED BY:
RCD	SS	CJW

RFDS REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	01/12/22	ISSUED FOR PERMIT

A&E PROJECT NUMBER
1197-F0001-C

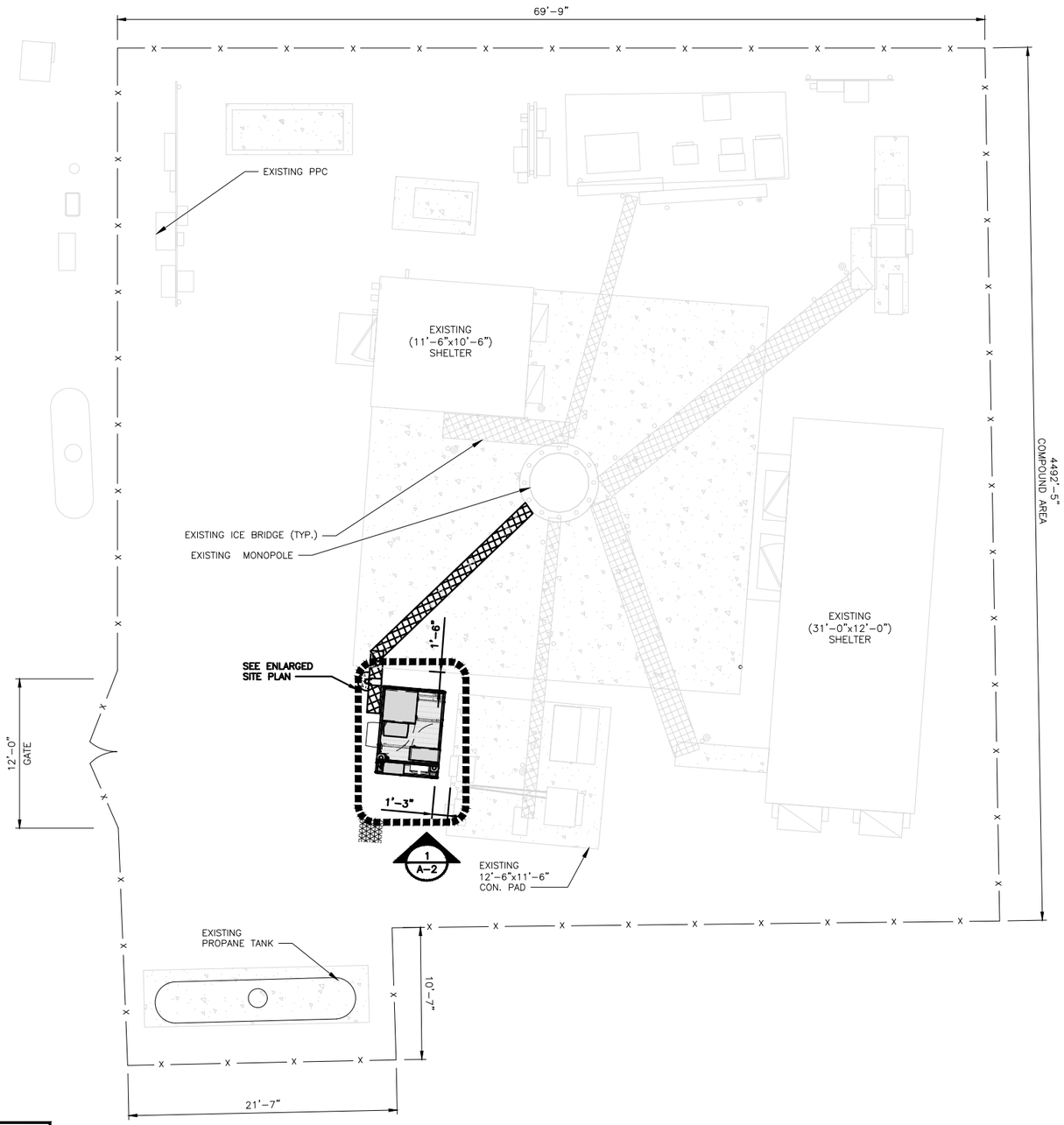
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NOTES

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



N

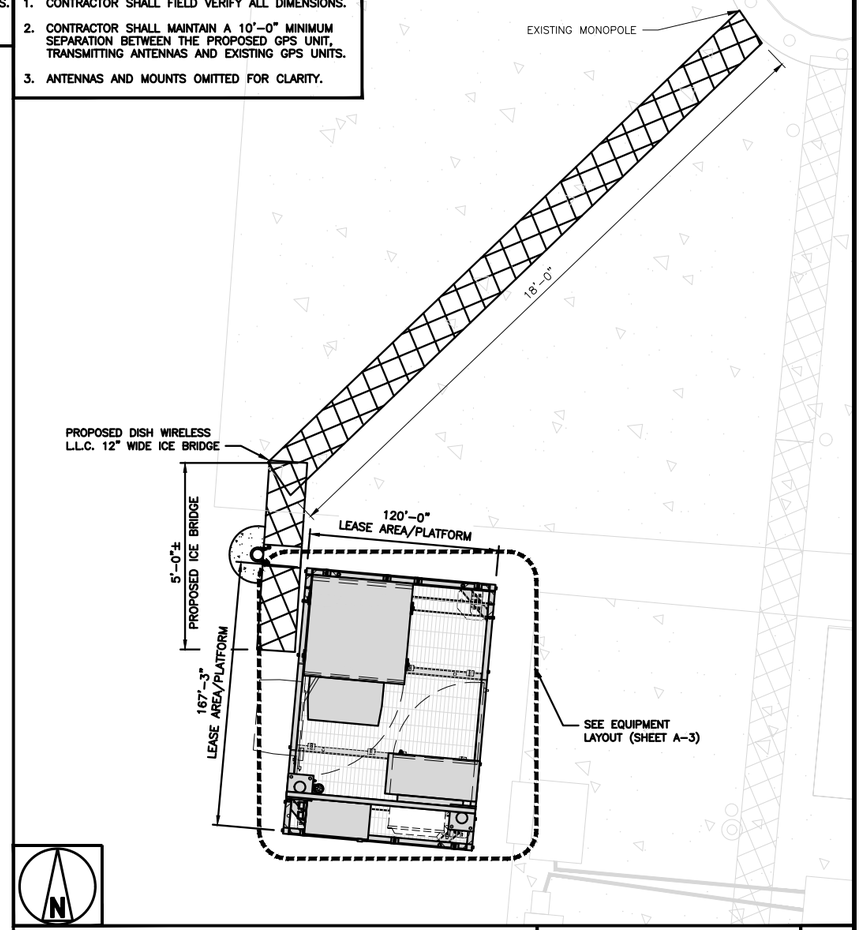
COMPOUND PLAN

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

1

NOTES

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

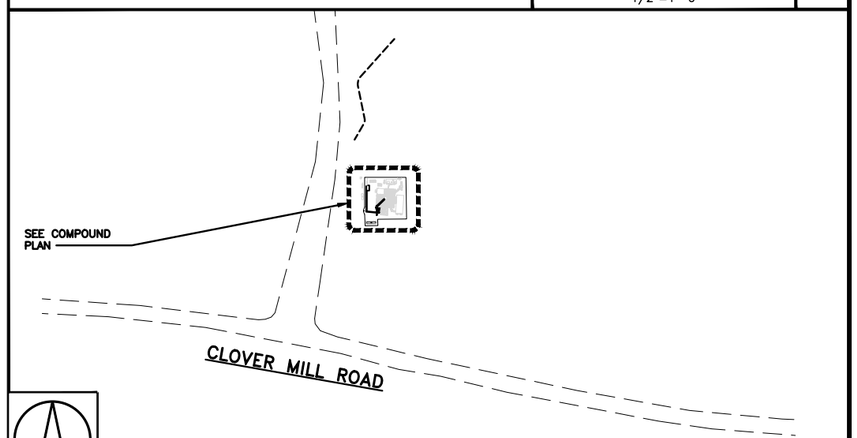


N

ENLARGED SITE PLAN

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

2



N

SITE PLAN

128' 64' 0 128' 256'
1/128"=1'-0"

3

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RFDS REV #: 2

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A&E PROJECT NUMBER
1197-F0001-C

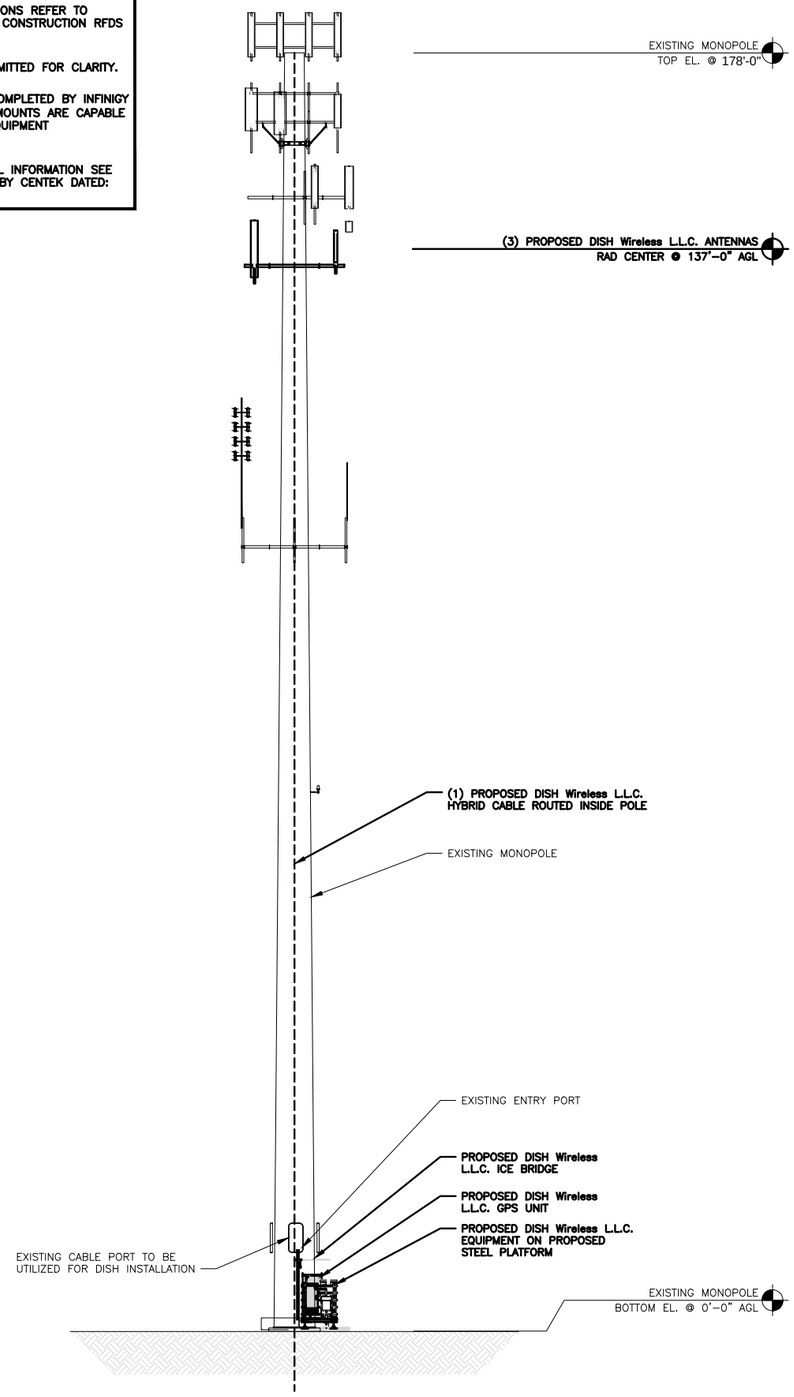
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

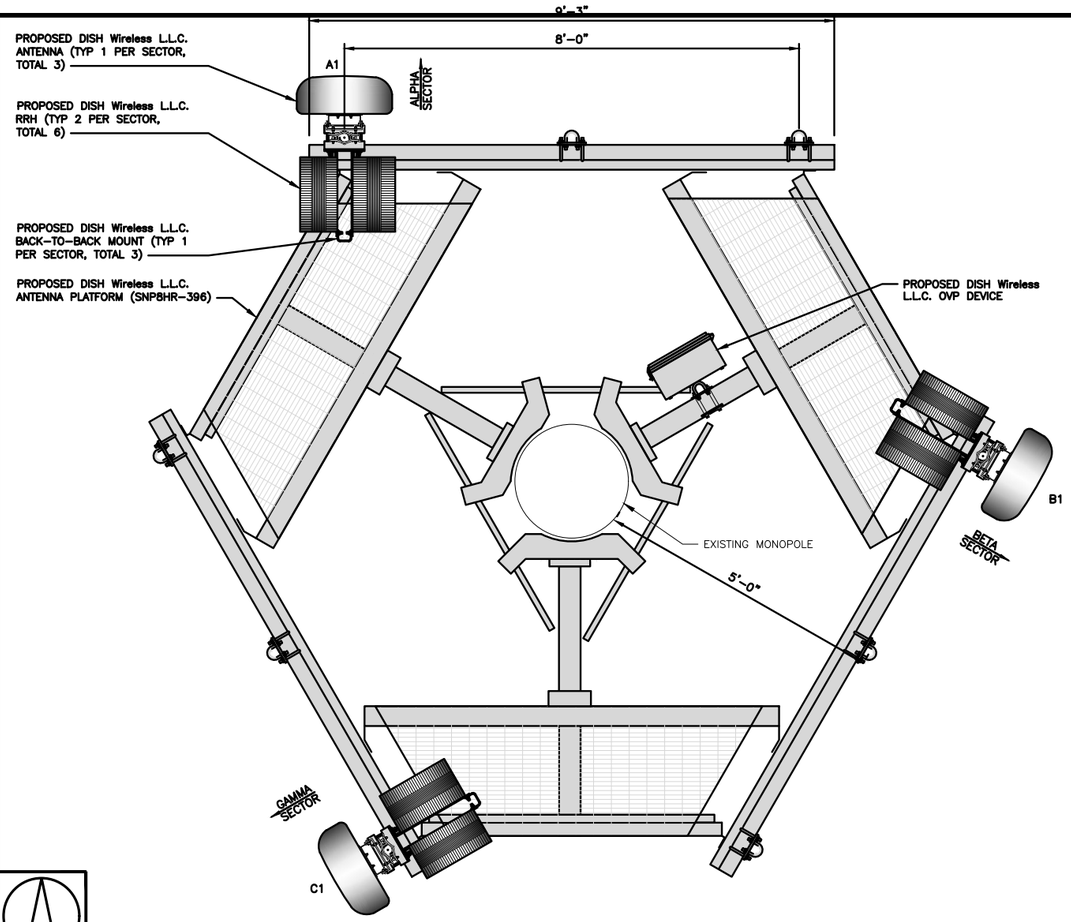
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.
4. BASED ON THE MOUNT ANALYSIS COMPLETED BY INFINIGY DATED 12/6/2021. THE ANTENNA MOUNTS ARE CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT CONFIGURATION
5. FOR ADDITIONAL TOWER STRUCTURAL INFORMATION SEE STRUCTURAL ANALYSIS COMPLETED BY CENTEK DATED: 06/18/21



PROPOSED NORTHWEST ELEVATION

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

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	0°	137'-0"	(1) HIGH-CAPACITY HYBRID CABLE (120' LONG)
BETA	B1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	120°	137'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	240°	137'-0"	

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA OR 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.

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

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

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A&E PROJECT NUMBER

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DISH Wireless L.L.C.
PROJECT INFORMATION

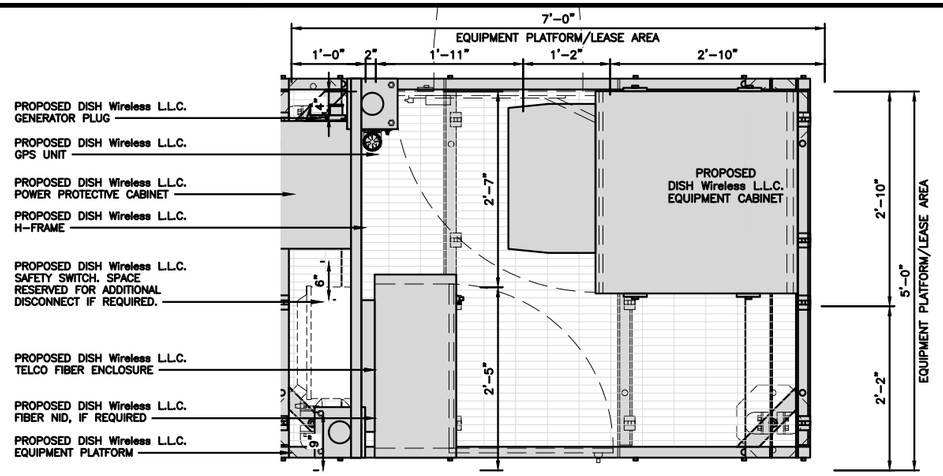
BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



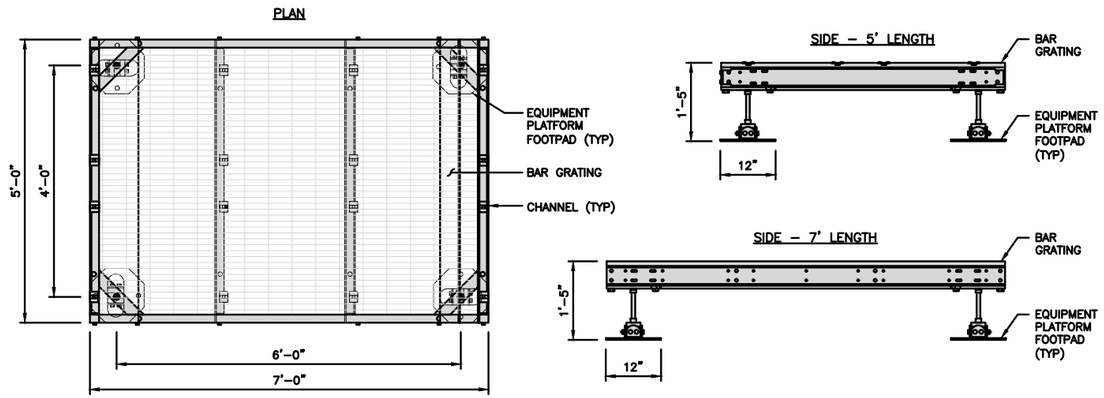
PLATFORM EQUIPMENT PLAN

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

1

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

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

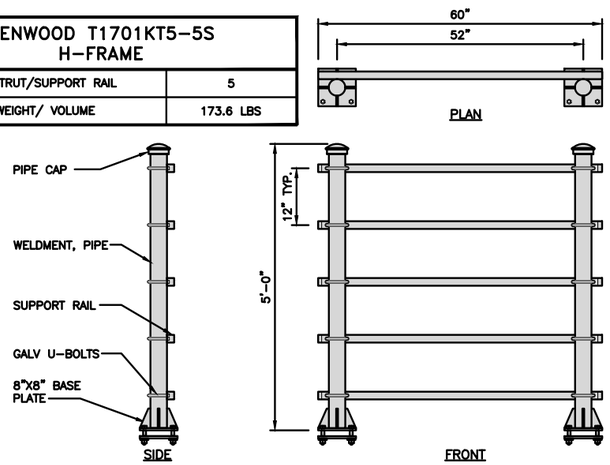


PLATFORM DETAIL

NO SCALE

2

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



H-FRAME DETAIL

NO SCALE

3

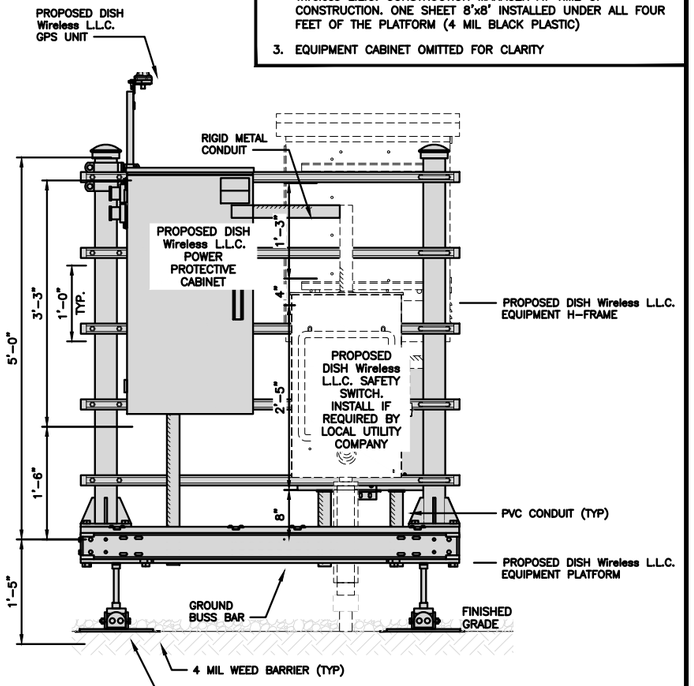
NOT USED

NO SCALE

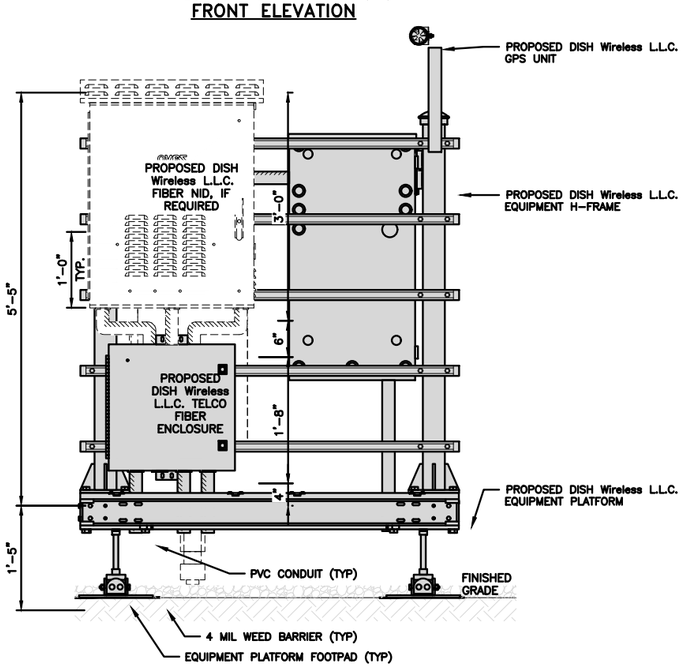
4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

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

5

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RFDS REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER
1197-F0001-C

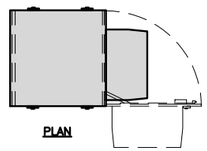
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

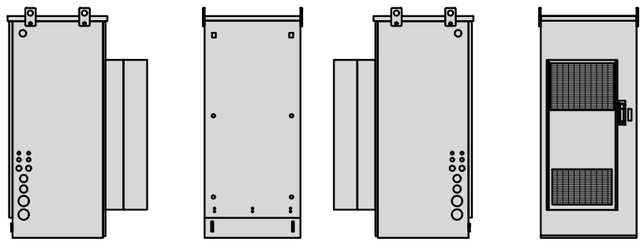
SHEET NUMBER
A-3

CHARLES INDUSTRY HEX CUBE–PM639155N4

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



PLAN



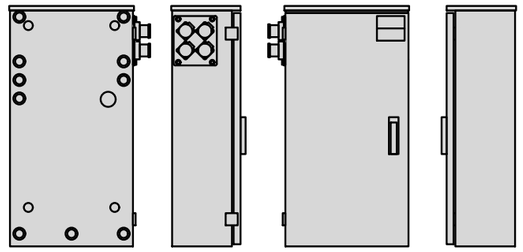
SIDE BACK SIDE FRONT

CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC–2465–P–240–MTS

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

TOP



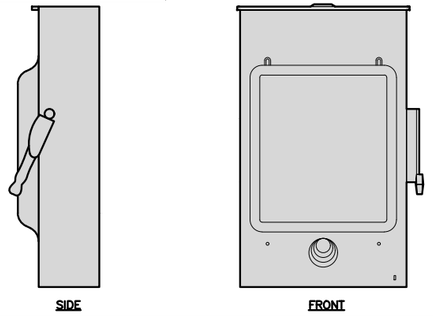
BACK SIDE FRONT SIDE

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

SQUARE D SAFETY SWITCHES D224NRB

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

TOP

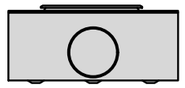


SIDE FRONT

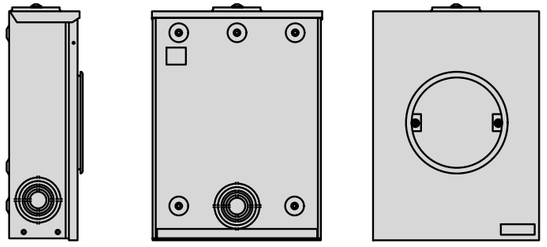
SAFETY SWITCH DETAIL | NO SCALE | 3

EATON METER SOCKET UNRRS213BEUSE

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



PLAN



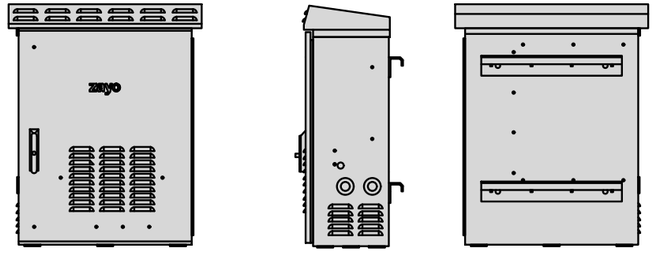
SIDE BACK FRONT

METER SOCKET DETAIL | NO SCALE | 4

ZAYO 5RU CABINET ("LIT" SITES)

DIMENSIONS (HxWxD)	36.115"x29"x12.9"
WEIGHT	85 LBS
POWER INPUT	20A, –48VDC

PLAN

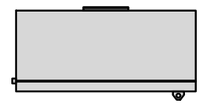


FRONT SIDE BACK

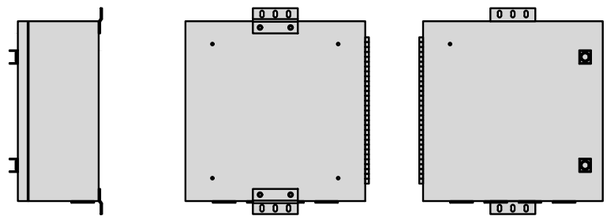
NETWORK INTERFACE UNIT DETAIL | NO SCALE | 5

CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE

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



FRONT



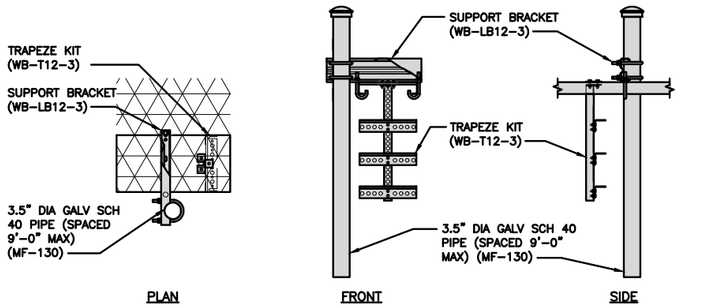
SIDE BACK FRONT

FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT

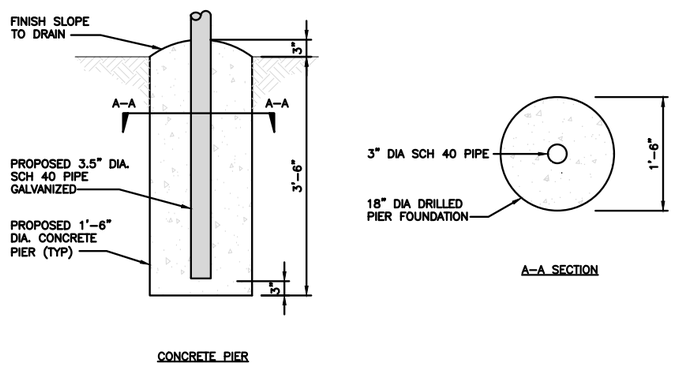
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

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



PLAN FRONT SIDE

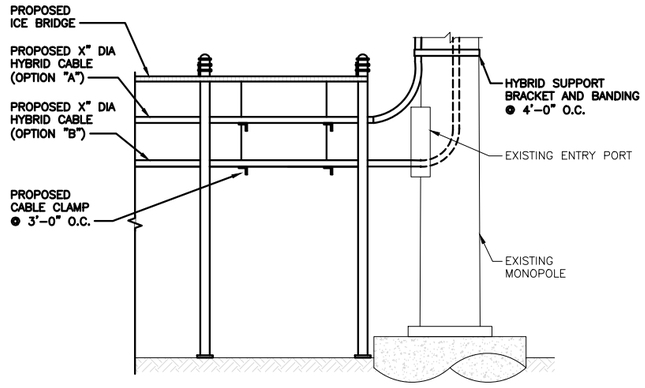
ICE BRIDGE DETAIL | NO SCALE | 7



CONCRETE PIER

A–A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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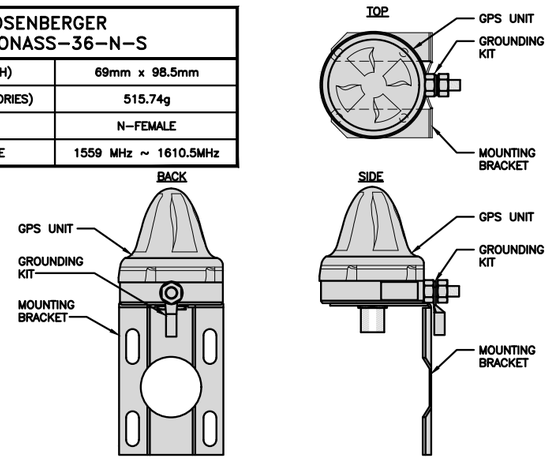
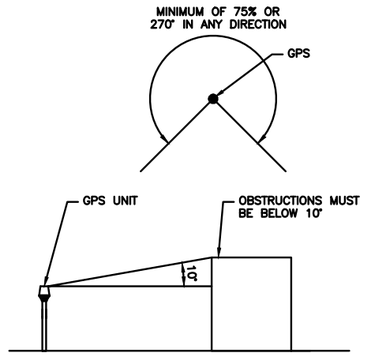
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

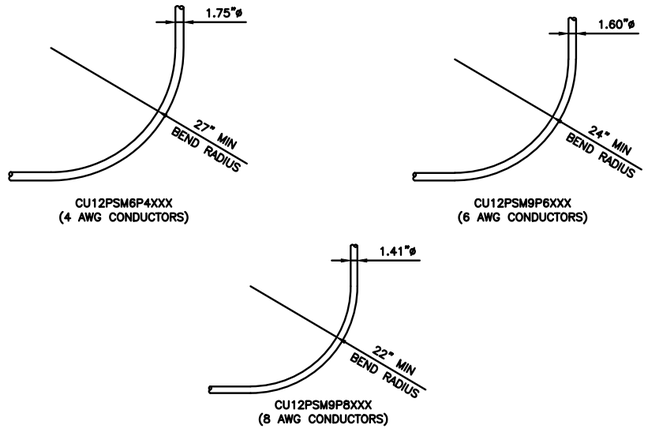
ROSENBERGER GPSGLONASS-36-N-S	
DIMENSION (DIA x H)	69mm x 98.5mm
WEIGHT (WITH ACCESSORIES)	515.74g
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1559 MHz ~ 1610.5MHz



GPS ANTENNA DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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1/13/2021

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DRAWN BY:	CHECKED BY:	APPROVED BY:
RCD	SS	CJW

RFDS REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	01/12/22	ISSUED FOR PERMIT

A&E PROJECT NUMBER

1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

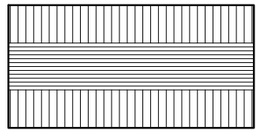
SHEET TITLE

EQUIPMENT DETAILS

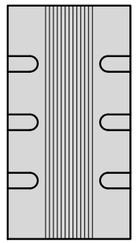
SHEET NUMBER

A-5

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



PLAN



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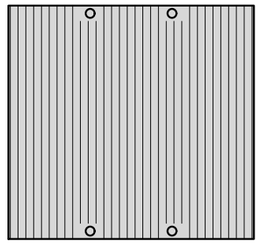


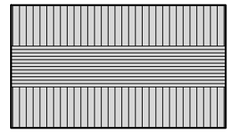
FRONT

NOTES

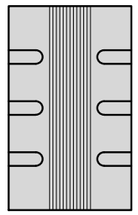
FINAL RRH SPECIFICATIONS TO BE CONFIRMED BY GC

REMOTE RADIO HEAD DETAIL | NO SCALE | 1

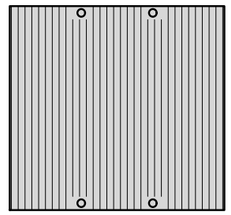
FUJITSU TA08025-B605 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x230/14.9"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~-36V



PLAN



SIDE



FRONT

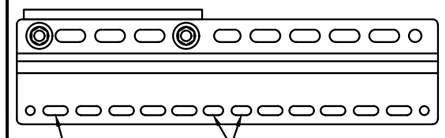
NOTES

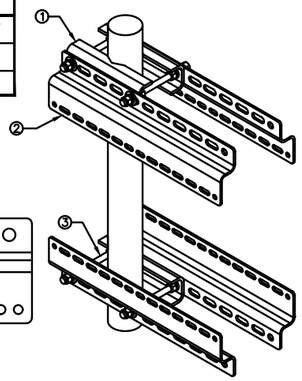
FINAL RRH SPECIFICATIONS TO BE CONFIRMED BY GC

REMOTE RADIO HEAD DETAIL | NO SCALE | 2

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

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

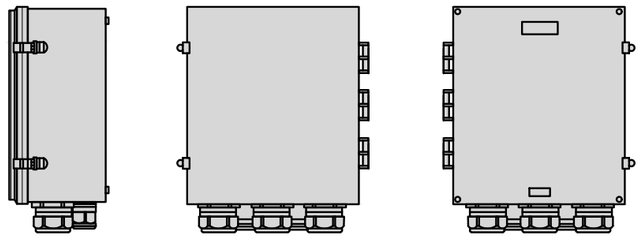




REMOTE RADIO MOUNT DETAIL | NO SCALE | 3

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

PLAN

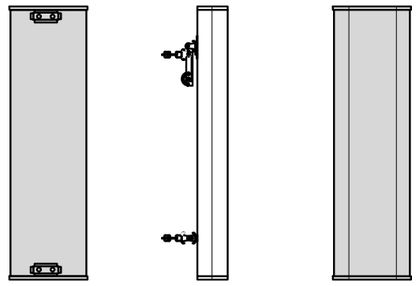


SIDE BACK FRONT

SURGE SUPPRESSION DETAIL | NO SCALE | 4

JMA WIRELESS MX08FRO665-20 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	54 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE

PLAN

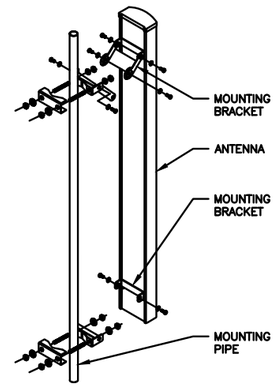


NOTES

FINAL ANTENNA SPECIFICATIONS TO BE CONFIRMED BY GC

ANTENNA DETAIL | NO SCALE | 5

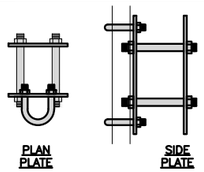
JMA MOUNTING BRACKET	
WIDTH	5"
DEPTH	2"
HEIGHT	8"
TOTAL WEIGHT	1.5 lbs
HOUSING MATERIAL	ASA/ABS/ALUMINUM
RADOME COLOR	LIGHT GRAY
CONNECTOR	1x8-PIN DAISY CHAIN

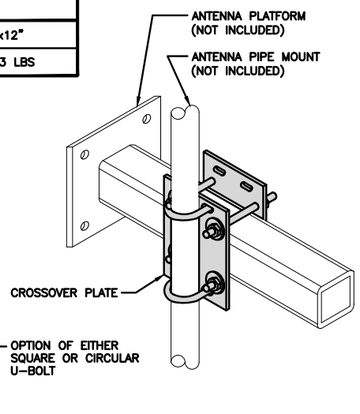


NOTE:
OR DISH Wireless L.L.C. APPROVED EQUIVALENT

ANTENNA MOUNTING DETAIL | NO SCALE | 6

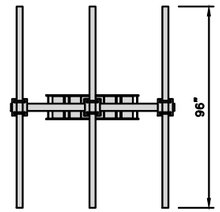
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11.023 LBS



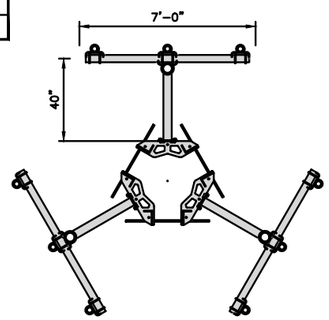


RRH/OVP MOUNT DETAIL | NO SCALE | 7

COMMSCOPE MC-K6MHDX-9-96	
FACE WIDTH	7'-0"
WEIGHT	1203.31 lbs
NOTE: 15" TO 50" O.D.	



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



	NO SCALE	8

NOT USED | NO SCALE | 9

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RFDS REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	01/12/22	ISSUED FOR PERMIT

A&E PROJECT NUMBER
1197-F0001-C

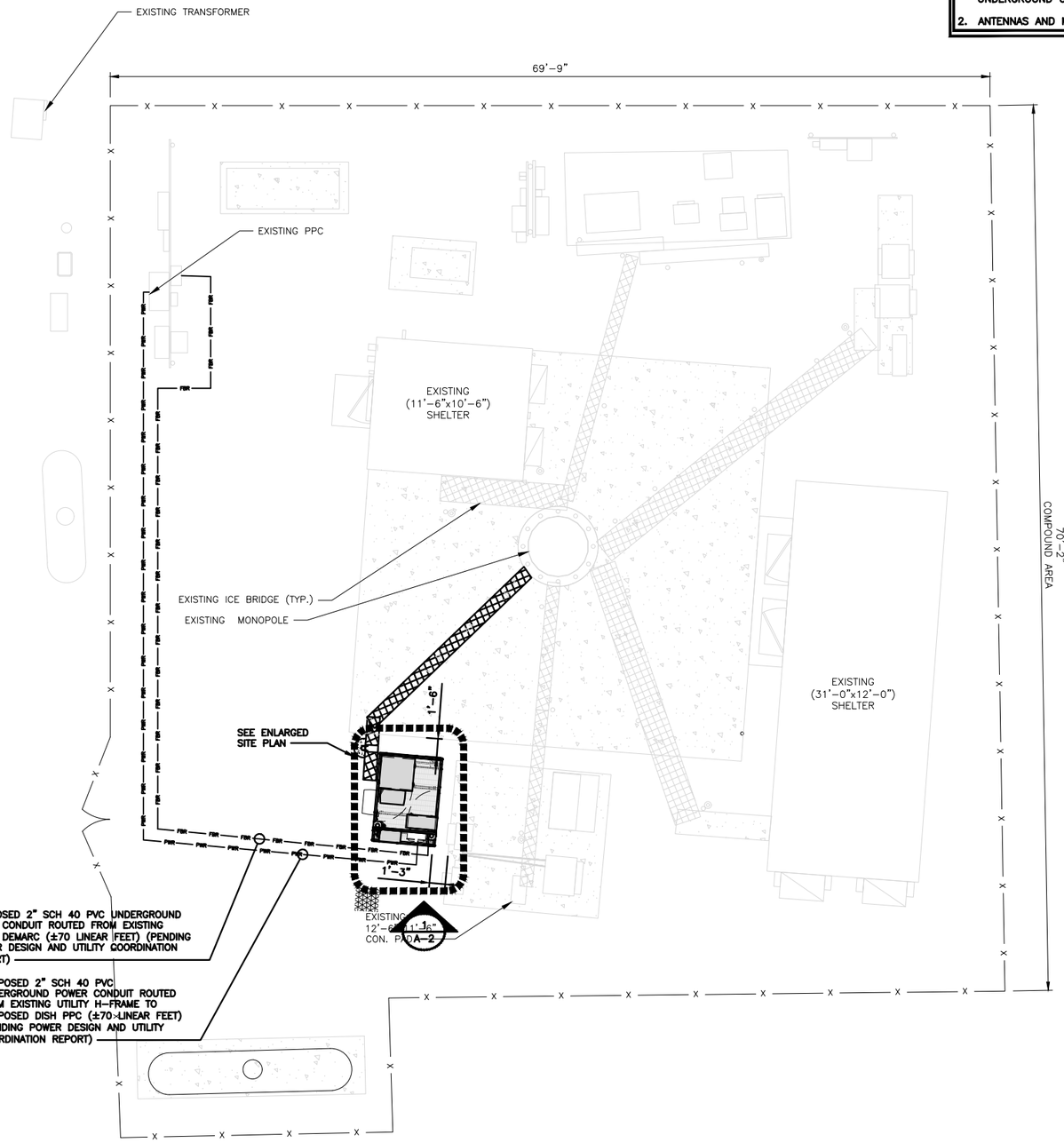
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

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



UTILITY ROUTE PLAN

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

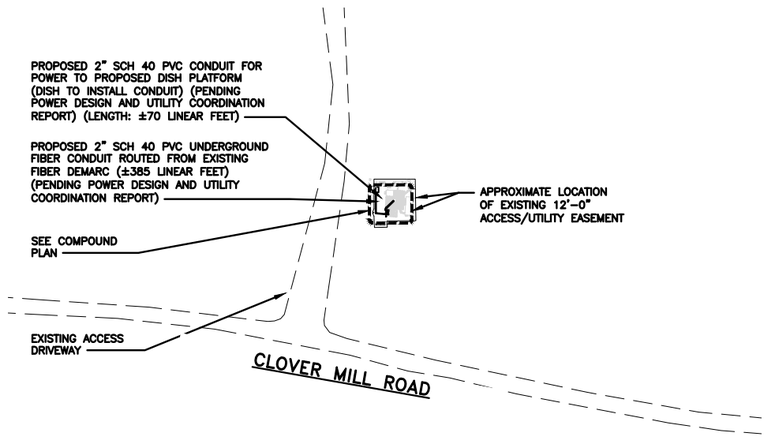
1

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

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

ELECTRICAL NOTES

2



OVERALL UTILITY ROUTE PLAN

128' 64' 0 128' 256'
1/128"=1'-0"

3

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A&E PROJECT NUMBER
1197-F0001-C

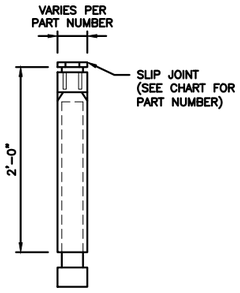
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

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"

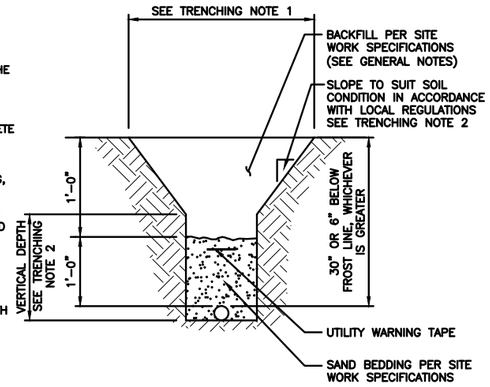


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

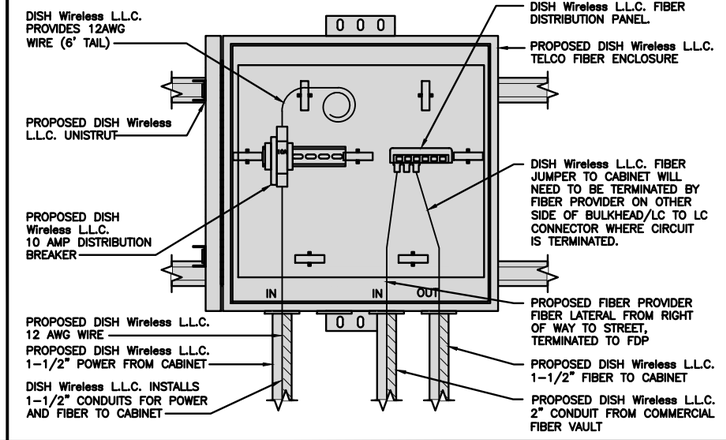
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

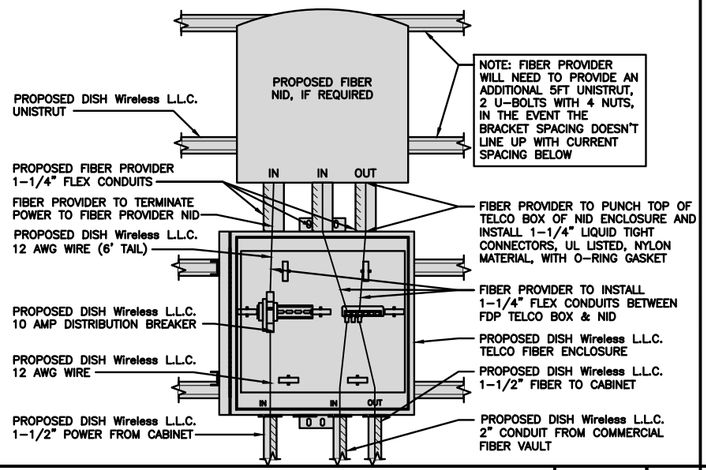
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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

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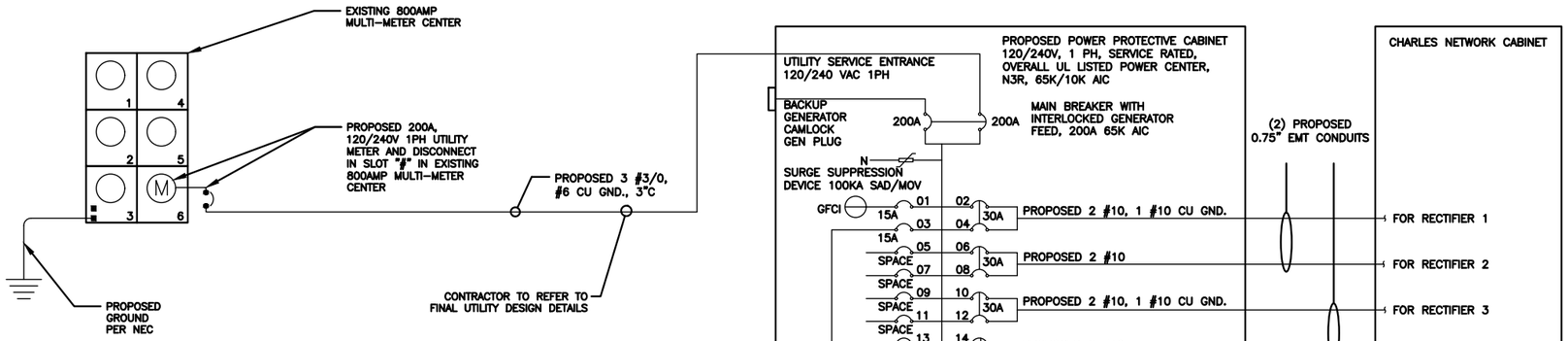
1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



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

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

NOTES

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

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

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

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

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

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

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

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

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

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

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

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

PPC ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE | NO SCALE | 2

NOT USED | NO SCALE | 3

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LICENSED PROFESSIONAL ENGINEER
1/13/2021

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DRAWN BY:	CHECKED BY:	APPROVED BY:
RCD	SS	CJW

RFDS REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

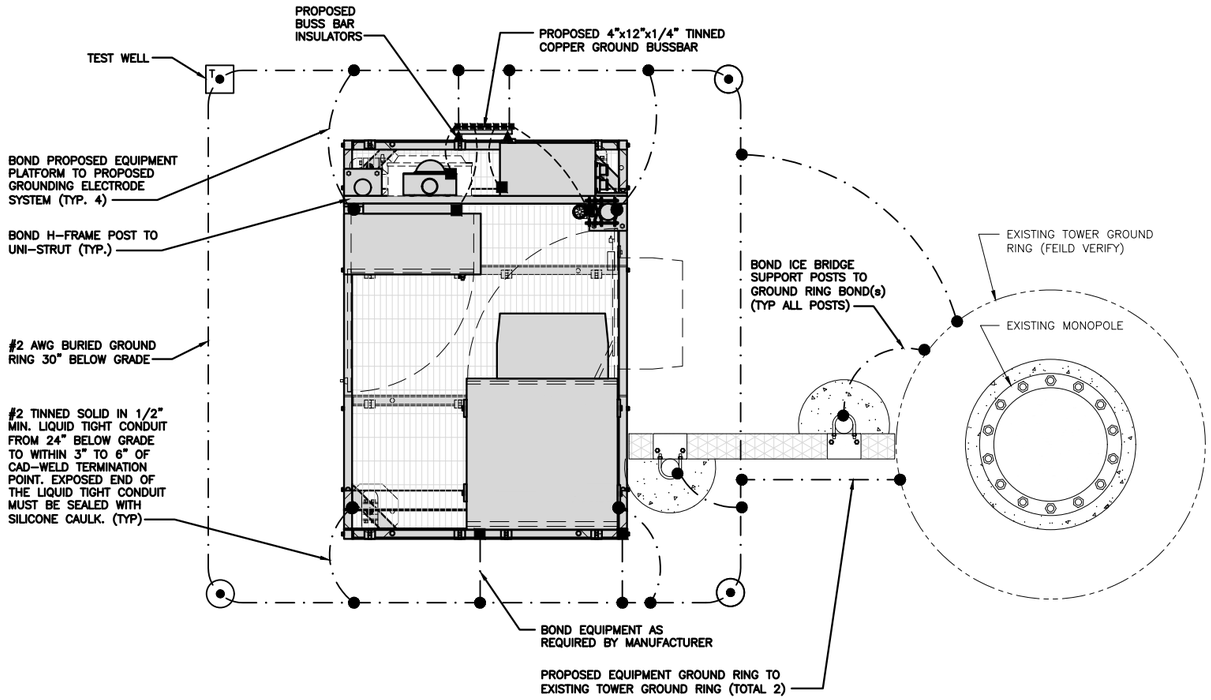
REV	DATE	DESCRIPTION
0	01/12/22	ISSUED FOR PERMIT

A&E PROJECT NUMBER
1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

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

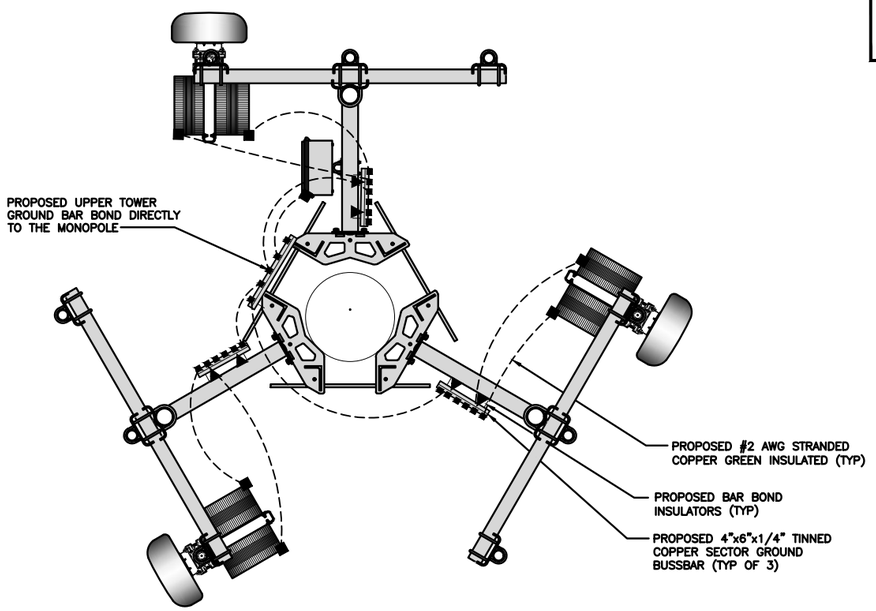
SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN | NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES | NO SCALE | 3

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1/13/2021

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RCD	SS	CJW

RFDS REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	01/12/22	ISSUED FOR PERMIT

A&E PROJECT NUMBER
1197-F0001-C

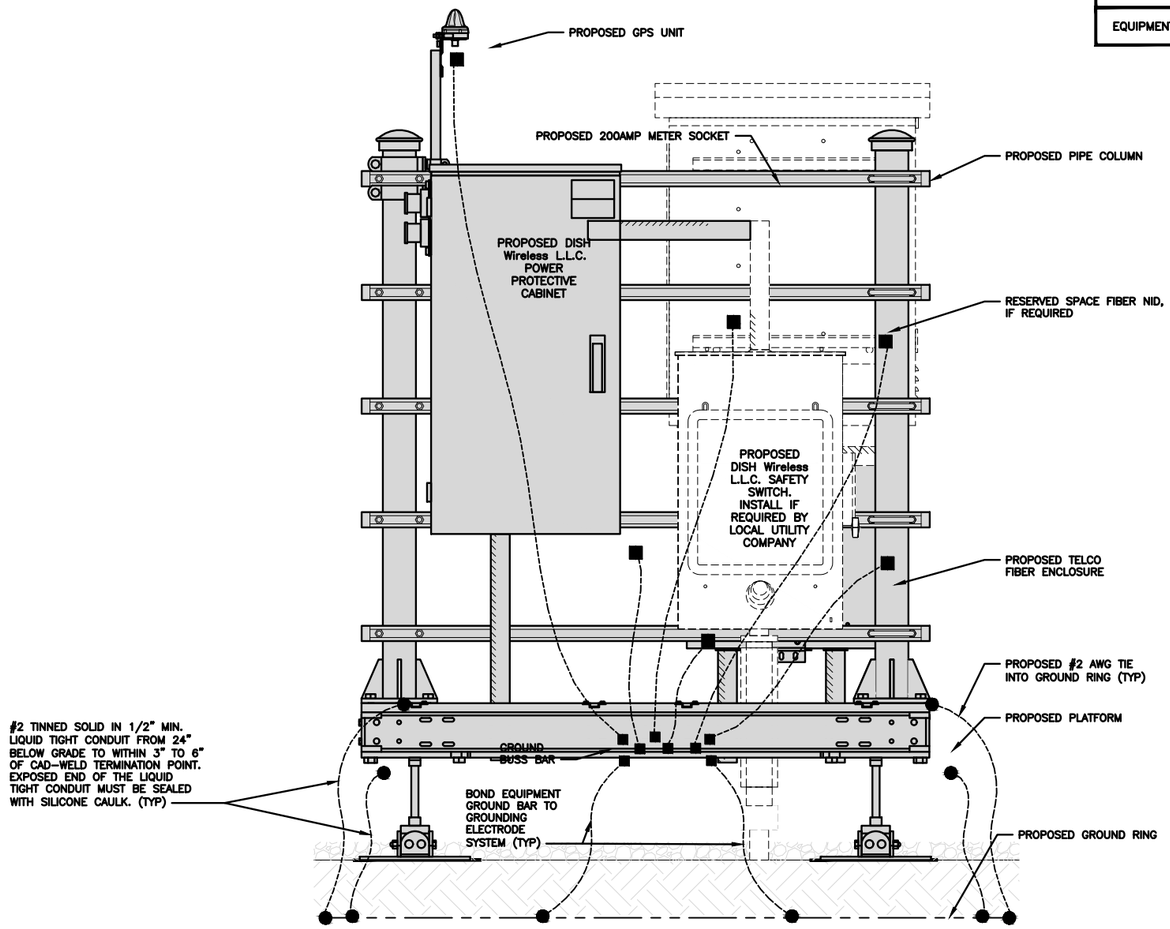
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

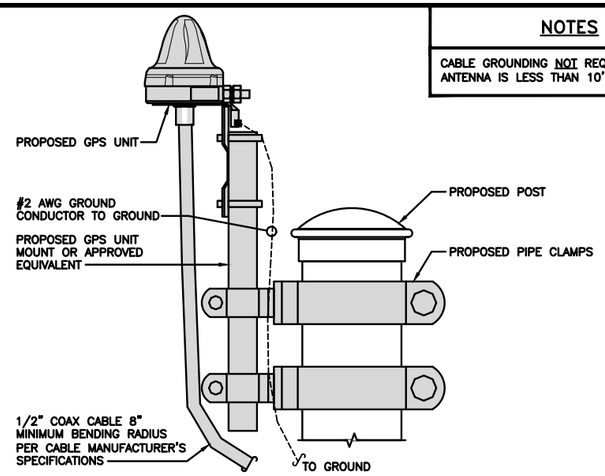
EQUIPMENT CABINET OMITTED FOR CLARITY



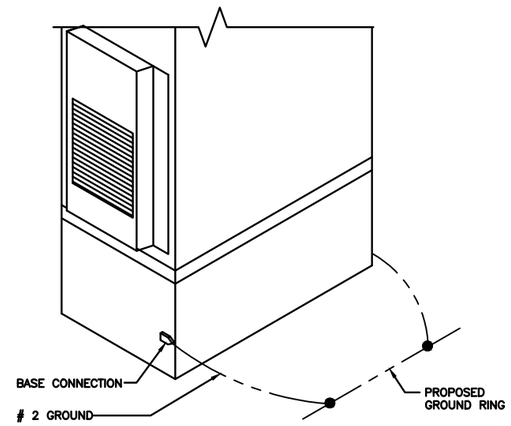
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

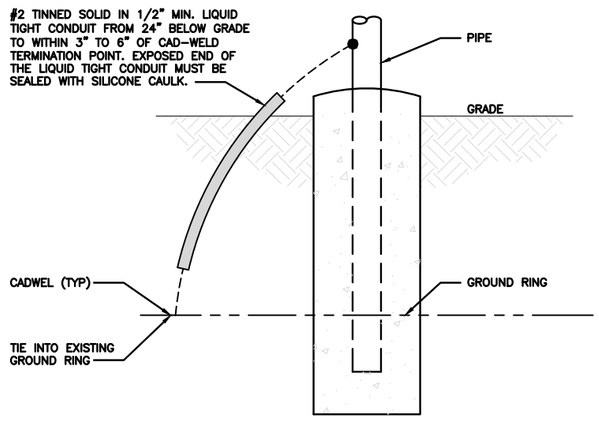
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



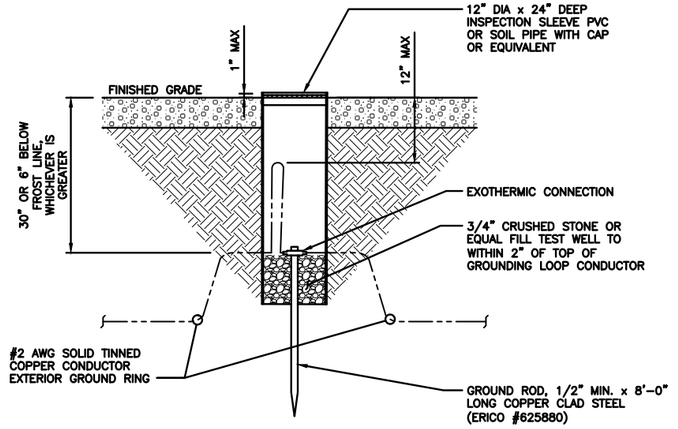
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



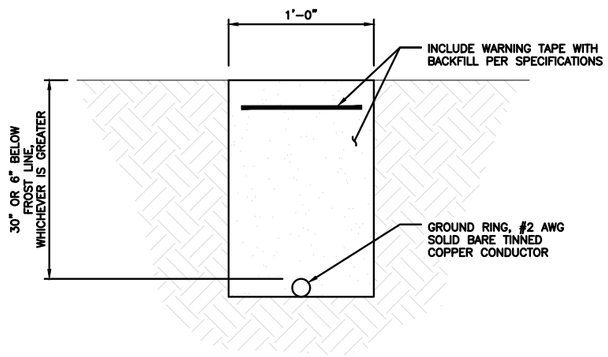
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER

1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE

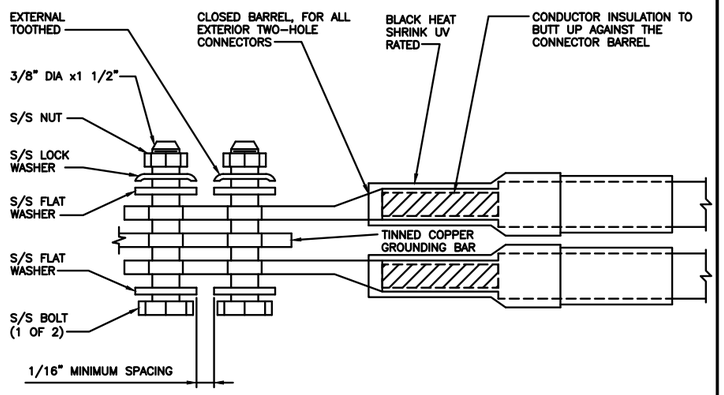
GROUNDING DETAILS

SHEET NUMBER

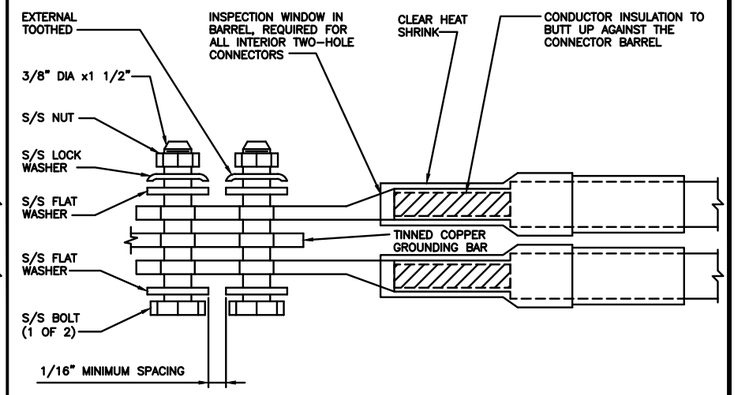
G-2

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

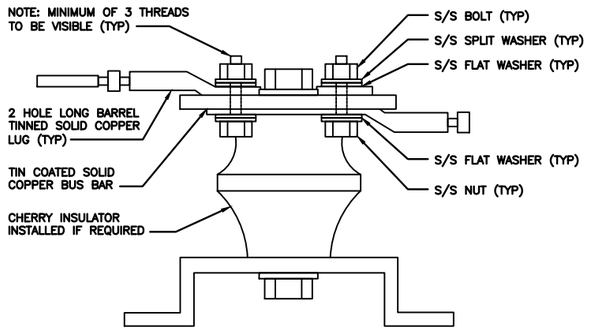
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE
GROUNDING DETAILS

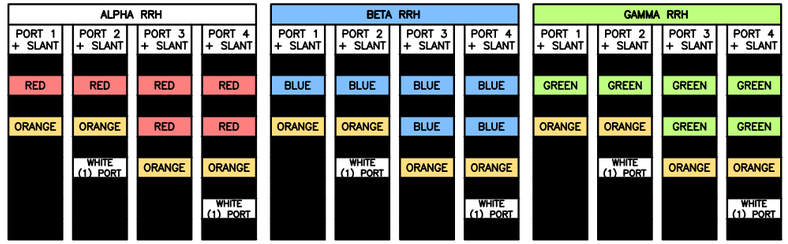
SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

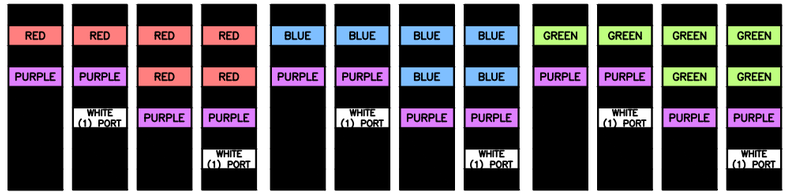
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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

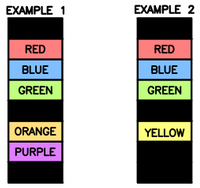


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED AM LONG WITH FREQUENCY BANDS

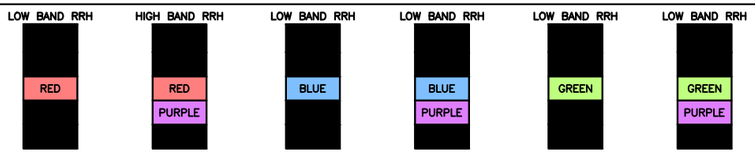
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

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



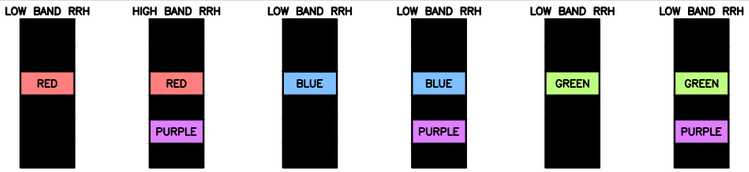
HYBRID/DISCREET CABLES

LOW-BAND RRH FIBER CABLES HAVE SECTOR STRIPE ONLY

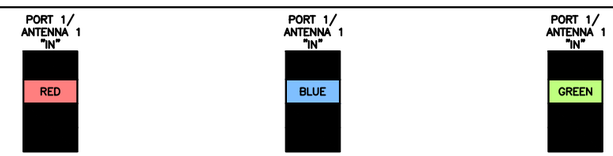


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



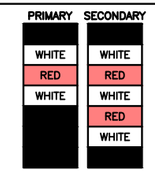
RET MOTORS AT ANTENNAS



MICROWAVE RADIO LINKS

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

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



RF CABLE COLOR CODES | NO SCALE | 1

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

AWS
(N65+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANTRRH
WHITE

ALPHA SECTOR
RED

BETA SECTOR
BLUE

GAMMA SECTOR
GREEN

COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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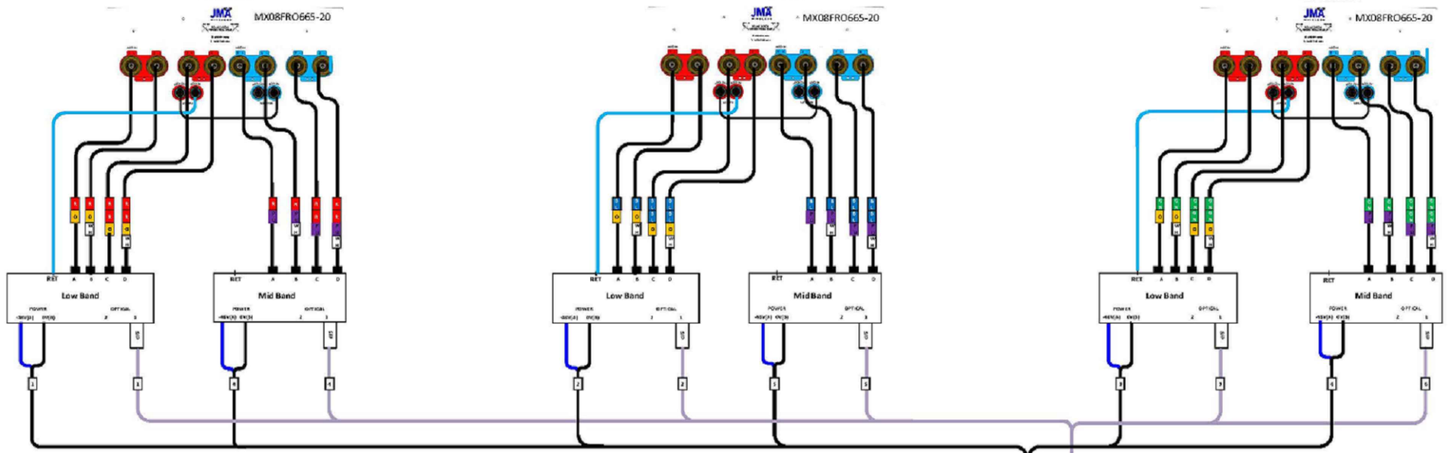
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1



Fiber Patch Panel

Bottom Row	Pair 1	Pair 2	Pair 3	Pair 10	Open	Open
Middle Row	Pair 4	Pair 5	Pair 6	Pair 11	Open	Open
Top Row	Pair 7	Pair 8	Pair 9	Pair 12	Open	Open

CSR NCS540

Port	Interface	Description
0	Gi0/0/0/0	SiteBoss
1	Gi0/0/0/1	CBRS - Alpha
2	Gi0/0/0/2	CBRS - Beta
3	Gi0/0/0/3	CBRS - Gamma
4	Te0/0/0/4	Fujitsu Low-Band RU - Alpha
5	Te0/0/0/5	Fujitsu Mid-Band RU - Alpha
6	Te0/0/0/6	Fujitsu Low-Band RU - Beta
7	Te0/0/0/7	Fujitsu Mid-Band RU - Beta
8	Te0/0/0/8	Fujitsu Low-Band RU - Gamma
9	Te0/0/0/9	Fujitsu Mid-Band RU - Gamma
10	Te0/0/0/10	Fixed VM
11	Te0/0/0/11	Fixed VM
12	Te0/0/0/12	Fixed VM
13	Te0/0/0/13	Fixed VM
14	Te0/0/0/14	CBRS1
15	Te0/0/0/15	CBRS2
16	Te0/0/0/16	CBRS3
17	Gi0/0/0/17	SM1 - BMC
18	Gi0/0/0/18	SM2 - BMC
19	Te0/0/019	SM1 - Data 1
20	Te0/0/020	SM1 - Data 2
21	Te0/0/021	SM2 - Data 1
22	Te0/0/022	SM2 - Data 2
23	Te0/0/023	Reserved Uplink (EDC, LDC)
24	Te0/0/024	Blank/Future
25	Te0/0/025	Blank/Future
26	Te0/0/026	Fiber NIU
27	Te0/0/027	Fiber NIU
28	Te0/0/028	Blank/Future
29	Te0/0/029	Blank/Future

top

bottom

Bottom OVP Layout

Circuit 1	Alpha Low Band
Circuit 2	Beta Low Band
Circuit 3	Gamma Low Band
Circuit 4	Alpha Mid Band
Circuit 5	Beta Mid Band
Circuit 6	Gamma Mid Band
Circuit 7	Alpha CBRS
Circuit 8	Beta CBRS
Circuit 9	Gamma CBRS
Circuit 10	Open
Circuit 11	Open
Circuit 12	Open

Bottom OVP
Specific OVP model number detailed in RFDS

5G plumbing diagram JMA MX08FRO665-20 2-2-2(LB+MB)

Quantity: 1 | ISSV NO | DWG NO | REV: 3
5-Jan-2021 | SCALE: None | SHEET

PLUMBING DIAGRAM | NO SCALE | 1

dish wireless.
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STATE OF CONNECTICUT
YUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
1/13/2021

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DRAWN BY:	CHECKED BY:	APPROVED BY:
RCD	SS	CJW

RFDS REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	01/12/22	ISSUED FOR PERMIT

A&E PROJECT NUMBER
1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE
RF
PLUMBING DIAGRAM

SHEET NUMBER
RF-2

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE
(2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

SECTION REFERENCE

DETAIL REFERENCE

LEGEND

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

ABBREVIATIONS

dish wireless.

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RFDS REV #: 2

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REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER

1197–F0001–C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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RCD	SS	CJW

RFDS REV #: 2

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PROJECT INFORMATION

BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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34916
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1/13/2021

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DRAWN BY:	CHECKED BY:	APPROVED BY:
RCD	SS	CJW

RFDS REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	01/12/22	ISSUED FOR PERMIT

A&E PROJECT NUMBER

1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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DRAWN BY:	CHECKED BY:	APPROVED BY:
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RFDS REV #: 2

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	01/12/22	ISSUED FOR PERMIT

A&E PROJECT NUMBER

1197-F0001-C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00019A
230 CLOVER MILL RD,
STORRS CT 06268

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**178 ft Monopole**
ATC Site Name	:	**MANSFIELD CENTER 1 CT,CT**
ATC Site Number	:	**376046**
Engineering Number	:	**OAA767708_C3_03**
Proposed Carrier	:	**DISH WIRELESS L.L.C.**
Carrier Site Name	:	**BOBDL00019A**
Carrier Site Number	:	**BOBDL00019A**
Site Location	:	**230 Clover Mill Road** **STORRS MANSFIELD, CT 06268-2826** **41.7758, -72.2225**
County	:	**Tolland**
Date	:	**November 1, 2021**
Max Usage	:	**65%**
Result	:	**Pass**

Prepared By:

Sammie Brown
Structural Engineer I

Reviewed By:

COA : PEC.0001553

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Calculations ....Attached

Introduction

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

Supporting Documents

Tower Drawings	PJF Job #29203-0151, Revision 1, dated December 23, 2003
Foundation Drawing	PJF Job #29203-0151, Revision 1, dated December 23, 2003
Geotechnical Report	JGI Project #01133G, dated May 14, 2001

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	120 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.19, S_1 = 0.06
Site Class:	D - Stiff Soil - Default

Conclusion

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

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

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
192.0	1	Generic 20' Omni	Triangular Platform with Handrails	(3) 7/8" Coax	OTHER
191.0	2	Generic 18' Dipole			
186.0	1	Generic 8' Yagi		(1) 7/8" Coax	
180.0	1	Generic 2' x 4' Rectangular Grid Dish		(1) 7/8" Coax	
178.0	3	Commscope LNX-8513DS-VTM (39.2 lb)		(6) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	6	Commscope NHH-65B-R2B			
	3	Samsung B2/B66A RRH-BR049			
	1	Raycap RCMDC-6627-PF-48			
	3	Samsung MT6407-77A			
	3	Samsung B5/B13 RRH-BR04C			
168.0	3	Commscope NNH4-65B-R6	Triangular Platform with Handrails	(2) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax (3) 3" conduit (1) 3/8" Coax	AT&T MOBILITY
	3	Ericsson RRUS 4449 B5, B12			
	3	CCI DMP65R-BU6DA			
	3	Powerwave Allgon 7770.00			
	6	Powerwave Allgon LGP21401			
	3	Raycap DC6-48-60-18-8F			
	3	Ericsson RRUS 8843 B2, B66A			
	3	Ericsson RRUS 4478 B14			
158.0	3	Commscope DT465B-2XR	Triangular Low Profile Platform	(4) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
	3	RFS APXVSPP18-C-A20			
	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
	3	Alcatel-Lucent 2X50W RRH w/o Filter			
	3	Alcatel-Lucent 1900MHz RRH (65MHz)			
	3	Alcatel-Lucent 800 MHz RRH w/ Notch Filter			
148.0	3	RFS APXVAALL24 43-U-NA20	Triangular Platform with Handrails	(6) 1 5/8" Coax (1) 1 5/8" Hybriflex	T-MOBILE
	3	RFS APXV18-209014-C-A20			
	3	Ericsson KRY 112 489/2			
	3	Ericsson Radio 4449 B71 B85A			
120.0	2	Generic 18' Dipole	T-Arm	(7) 7/8" Coax	OTHER
116.0	1	Generic 8' Yagi			
113.0	1	Generic 8' Yagi			
	1	Generic 9' Omni			
111.0	1	Generic 2' x 4' Rectangular Grid Dish			
	1	Generic 22' Dipole			
76.0	1	Generic GPS	Stand-Off	(1) 1/2" Coax	SPRINT NEXTEL

Equipment to be Removed

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
No loading was considered as removed as part of this analysis.					

Proposed Equipment

Elev.[1] (ft)	Qty	Equipment	Mount Type	Lines	Carrier
137.0	1	Raycap RDIDC-9181-PF-48	Triangular Platform with Handrails	(1) 1.41" (35.8mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B605			
	3	Fujitsu TA08025-B604			
	3	JMA Wireless MX08FRO665-21			

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

Install proposed lines inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	56%	Pass
Shaft	65%	Pass
Base Plate	45%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	6250.0	8437.5	5044.6	60%
Shear (Kips)	48.0	64.8	38.7	60%
* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2				

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
180.0	Generic 2' x 4' Rectangular Grid Dish	Other	1.830	1.110
137.0	Fujitsu TA08025-B605	DISH WIRELESS L.L.C.	1.082	0.930
	JMA Wireless MX08FRO665-21			
	Raycap RDIDC-9181-PF-48			
	Fujitsu TA08025-B604			
111.0	Generic 2' x 4' Rectangular Grid Dish	Other	0.698	0.760

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

Standard Conditions

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

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

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

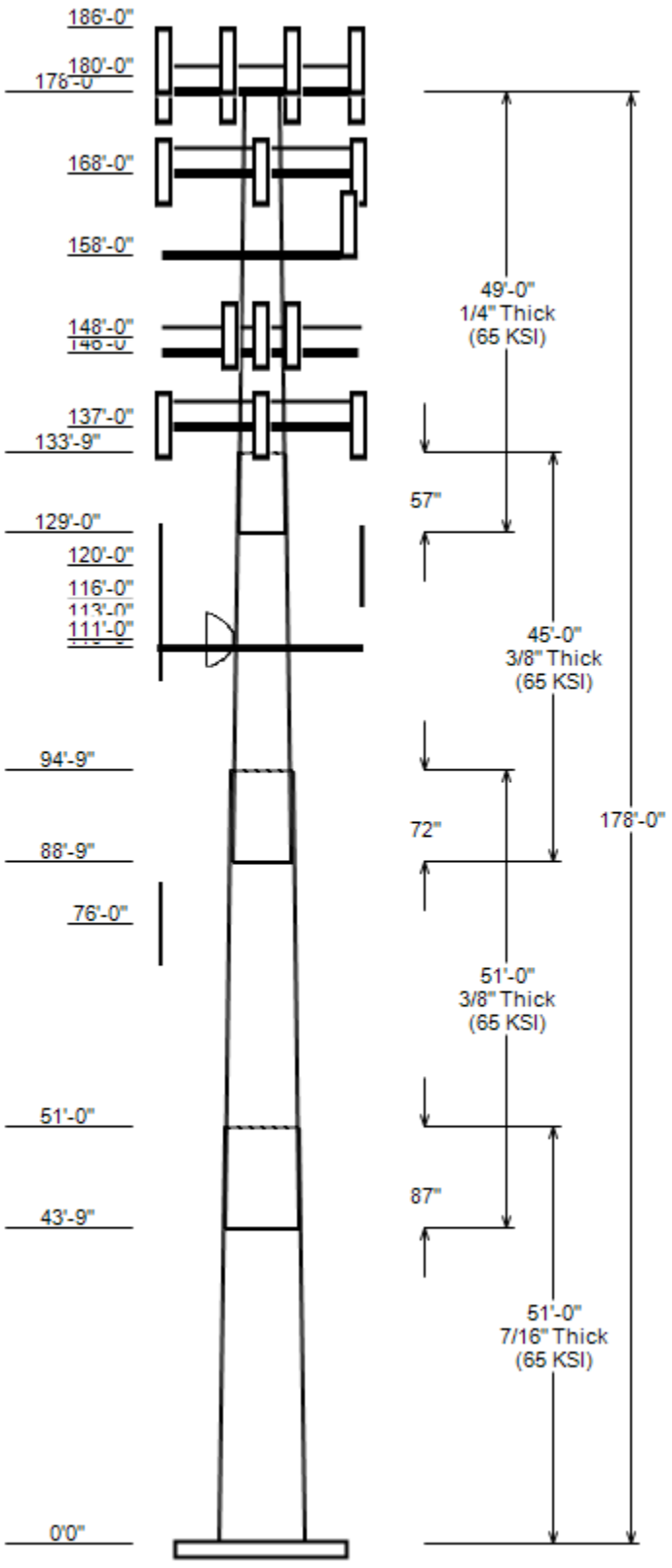
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

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

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

JOB INFORMATION

Asset :	376046, MANSFIELD CENTER 1 CT	Height :	178 ft
Client :	DISH WIRELESS L.L.C.	Base Width :	68.36
Code :	ANSI/TIA-222-H	Shape :	18 Sides



SITE PARAMETERS

Base Elev (ft):	0.00	Structure Class:	II
Taper :	0.25200 (In/ft)	Exposure :	B
Topographic Category :	1	Topographic Feature:	
Topo Method :	Method 1		

SECTION PROPERTIES

Shaft Section	Length (ft)	Diameter (in) Across Flats Top	Diameter (in) Across Flats Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	51.000	55.51	68.36	0.438		0.000	18 Sides	65
2	51.000	45.23	58.08	0.375	Slip Joint	87.000	18 Sides	65
3	45.000	36.15	47.49	0.375	Slip Joint	72.000	18 Sides	65
4	49.000	25.50	37.85	0.250	Slip Joint	57.000	18 Sides	65

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
192.0	192.0	1	Generic 20' Omni
191.0	191.0	2	Generic 18' Dipole
186.0	186.0	1	Generic 8' Yagi
180.0	180.0	1	Generic 2' x 4' Rectangular Gr
178.0	178.0	3	Samsung B2/B66A RRH-BR049
178.0	178.0	3	Samsung B5/B13 RRH-BR04C
178.0	178.0	1	Raycap RCMDC-6627-PF-48
178.0	178.0	3	Samsung MT6407-77A
178.0	178.0	6	Commscope NHH-65B-R2B
178.0	179.0	3	Commscope LNX-8513DS-VTM (39.2
178.0	178.0	1	Generic Flat Platform with Han
168.0	168.0	6	Powerwave Allgon LGP21401
168.0	168.0	3	Raycap DC6-48-60-18-8F
168.0	168.0	3	Ericsson RRUS 8843 B2, B66A
168.0	168.0	3	Ericsson RRUS 4478 B14
168.0	168.0	3	Ericsson RRUS 4449 B5, B12
168.0	168.0	3	Powerwave Allgon 7770.00
168.0	168.0	1	Generic Mount Reinforcement
168.0	168.0	3	Commscope NNH4-65B-R6
168.0	168.0	3	CCI DMP65R-BU6DA
168.0	168.0	1	Site Pro1 RMQP-496-HK
158.0	158.0	3	Alcatel-Lucent 2X50W RRH w/o F
158.0	158.0	3	Alcatel-Lucent 1900MHz RRH (65
158.0	158.0	3	Alcatel-Lucent 800 MHz RRH w/
158.0	158.0	3	Alcatel-Lucent TD-RRH8x20-25 w
158.0	159.0	3	RFS APXVSPP18-C-A20
158.0	159.0	3	Commscope DT465B-2XR
158.0	158.0	1	Generic Round Low Profile Plat
148.0	148.0	3	Ericsson KRY 112 489/2
148.0	148.0	3	Ericsson Radio 4449 B71 B85A
148.0	148.0	3	RFS APXV18-209014-C-A20
148.0	148.0	3	RFS APXVAALL24 43-U-NA20
146.0	146.0	1	Generic Flat Platform with Han
137.0	137.0	1	Raycap RDIDC-9181-PF-48
137.0	137.0	3	Fujitsu TA08025-B605
137.0	137.0	3	Fujitsu TA08025-B604
137.0	137.0	3	JMA Wireless MX08FRO665-21
137.0	137.0	1	Generic Flat Platform with Han
120.0	120.0	2	Generic 18' Dipole
116.0	116.0	1	Generic 8' Yagi
113.0	113.0	1	Generic 9' Omni
113.0	113.0	1	Generic 8' Yagi
111.0	111.0	1	Generic 2' x 4' Rectangular Gr
111.0	111.0	1	Generic 22' Dipole

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JOB INFORMATION

Asset :	376046, MANSFIELD CENTER 1 CT	Height :	178 ft
Client :	DISH WIRELESS L.L.C.	Base Width :	68.36
Code :	ANSI/TIA-222-H	Shape :	18 Sides

DISCRETE APPURTENANCE

Attach Elev (ft)	Force Elev (ft)	Qty	Description
110.0	110.0	3	Generic Flat T-Arm
76.0	76.0	1	Generic GPS

LINEAR APPURTENANCE

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	192.0	7/8" Coax	No
0.0	191.0	7/8" Coax	No
0.0	186.0	7/8" Coax	No
0.0	180.0	7/8" Coax	No
0.0	178.0	1 5/8" Hybriflex	No
0.0	178.0	1 5/8" Coax	No
0.0	168.0	3/8" Coax	No
0.0	168.0	3" conduit	No
0.0	168.0	1 5/8" Coax	No
0.0	168.0	0.78" (19.7mm) 8 AWG 6	No
0.0	168.0	0.39" (10mm) Fiber Trunk	No
0.0	158.0	1 1/4" Hybriflex Cable	No
0.0	148.0	1 5/8" Hybriflex	No
0.0	148.0	1 5/8" Coax	No
0.0	137.0	1.41" (35.8mm) Hybrid	No
0.0	120.0	7/8" Coax	No
0.0	116.0	7/8" Coax	No
0.0	113.0	7/8" Coax	No
0.0	111.0	7/8" Coax	No
0.0	76.0	1/2" Coax	No

LOAD CASES

1.2D + 1.0W Normal	120 mph wind with no ice
0.9D + 1.0W Normal	120 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Nor	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Nor	Seismic
0.9D - 1.0Ev + 1.0Eh Nor	Seismic (Reduced DL)
1.0D + 1.0W Service Norm	60 mph Wind with No Ice

REACTIONS

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W Normal	5044.57	38.67	77.40
0.9D + 1.0W Normal	4979.52	38.65	58.04
1.2D + 1.0Di + 1.0Wi Normal	1457.06	11.10	99.92
1.2D + 1.0Ev + 1.0Eh Normal	289.10	1.94	77.71
0.9D - 1.0Ev + 1.0Eh Normal	284.40	1.94	53.91
1.0D + 1.0W Service Normal	1119.66	8.65	64.54

DISH DEFLECTIONS

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W Service Normal	111.00	8.371	0.759
1.0D + 1.0W Service Normal	178.00	21.962	1.111

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ANALYSIS PARAMETERS

Location:	Tolland County,CT	Height:	178 ft
Type and Shape:	Taper, 18 Sides	Base Diameter:	68.36 in
Manufacturer:	Undetermined	Top Diameter:	25.50 in
K_d (non-service):	0.95	Taper:	0.2520 in/ft
K_e:	0.98	Rotation:	0.000°

ICE & WIND PARAMETERS

Exposure Category:	B	Design Wind Speed w/o Ice:	120 mph
Risk Category:	II	Design Wind Speed w/Ice:	50 mph
Topo Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	515.00 ft

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil			Period Based on Rayleigh Method (sec):	2.70
T_L (sec):	6	P:	1	$C_{s:}$	0.030
$S_{s:}$	0.187	$S_{1:}$	0.055	C_s Max:	0.030
$F_{a:}$	1.600	$F_{v:}$	2.400	C_s Min:	0.030
$S_{ds:}$	0.199	$S_{d1:}$	0.088		

LOAD CASES

1.2D + 1.0W Normal	120 mph wind with no ice
0.9D + 1.0W Normal	120 mph wind with no ice
1.2D + 1.0Di + 1.0Wi Normal	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL)
1.0D + 1.0W Service Normal	60 mph Wind with No Ice

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SHAFT SECTION PROPERTIES

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in^2)	Bottom Ix (in^4)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (in)	Top Area (in^2)	Top Ix (in^4)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	51.00	0.4375	65		0.00	14,819	68.36	0.000	94.32	54,974.8	25.79	156.25	55.51	51.00	76.47	29,298.9	20.61	126.87	0.2520
2-18	51.00	0.3750	65	Slip	87.00	10,592	58.08	43.750	68.69	28,900.5	25.55	154.89	45.23	94.75	53.39	13,571.6	19.50	120.62	0.2520
3-18	45.00	0.3750	65	Slip	72.00	7,554	47.49	88.750	56.08	15,730.2	20.57	126.65	36.15	133.75	42.58	6,886.3	15.24	96.41	0.2520
4-18	49.00	0.2500	65	Slip	57.00	4,157	37.85	129.000	29.83	5,328.6	24.93	151.40	25.50	178.00	20.04	1,613.8	16.22	102.00	0.2520
				Shaft Weight		37,122													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
192.00	Generic 20' Omni	1	1.00	0.000	55.00	6.000	1.00	157.09	10.808	1.00
191.00	Generic 18' Dipole	2	1.00	0.000	55.00	6.770	1.00	190.34	14.027	1.00
186.00	Generic 8' Yagi	1	1.00	0.000	30.00	12.000	1.00	259.96	34.677	1.00
180.00	Generic 2' x 4' Rectangular Gr	1	1.00	0.000	40.00	7.460	1.00	192.56	41.347	1.00
178.00	Samsung B5/B13 RRH-BR04C	3	0.75	0.000	70.30	1.875	0.50	109.14	2.488	0.50
178.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3706.21	56.640	1.00
178.00	Commscope LNX-8513DS-VTM (39.2	3	0.75	1.000	39.20	8.173	0.69	158.26	10.094	0.69
178.00	Commscope NHH-65B-R2B	6	0.75	0.000	43.70	8.079	0.69	162.08	9.971	0.69
178.00	Samsung MT6407-77A	3	0.75	0.000	81.60	4.709	0.61	150.81	5.740	0.61
178.00	Raycap RCMDC-6627-PF-48	1	0.75	0.000	32.00	4.056	1.00	118.29	4.983	1.00
178.00	Samsung B2/B66A RRH-BR049	3	0.75	0.000	84.40	1.875	0.50	127.72	2.488	0.50
168.00	Site Pro1 RMQP-496-HK	1	1.00	0.000	2500.00	27.200	1.00	3593.38	43.701	1.00
168.00	Powerwave Allgon LGP21401	6	0.75	0.000	14.10	1.104	0.50	30.94	1.586	0.50
168.00	CCI DMP65R-BU6DA	3	0.75	0.000	79.40	12.709	0.63	253.29	14.592	0.63
168.00	Commscope NNH4-65B-R6	3	0.75	0.000	89.70	12.271	0.64	259.32	14.164	0.64
168.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	330.64	12.554	1.00
168.00	Powerwave Allgon 7770.00	3	0.75	0.000	35.00	5.508	0.65	111.73	6.943	0.65
168.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	114.51	2.599	0.50
168.00	Raycap DC6-48-60-18-8F	3	0.75	0.000	20.00	1.260	1.00	55.54	1.704	1.00
168.00	Ericsson RRUS 8843 B2, B66A	3	0.75	0.000	72.00	1.639	0.50	113.38	2.209	0.50
168.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.90	1.842	0.50	97.22	2.448	0.50
158.00	RFS APXVSPP18-C-A20	3	0.80	1.000	57.00	8.024	0.69	172.72	9.895	0.69
158.00	Commscope DT465B-2XR	3	0.80	1.000	58.00	9.098	0.69	193.54	10.956	0.69
158.00	Generic Round Low Profile Plat	1	1.00	0.000	1875.00	21.700	1.00	2418.32	34.580	1.00
158.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.80	0.000	70.00	4.046	0.50	133.40	4.937	0.50
158.00	Alcatel-Lucent 800 MHz RRH w/	3	0.80	0.000	61.80	2.495	0.50	122.46	3.193	0.50
158.00	Alcatel-Lucent 1900MHz RRH (65	3	0.80	0.000	60.00	2.375	0.50	115.86	3.103	0.50
158.00	Alcatel-Lucent 2X50W RRH w/o F	3	0.80	0.000	53.00	2.058	0.50	95.70	2.701	0.50
148.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	382.48	22.716	0.63
148.00	Ericsson KRY 112 489/2	3	0.75	0.000	15.40	0.559	0.50	27.17	0.909	0.50
148.00	Ericsson Radio 4449 B71 B85A	3	0.75	0.000	75.00	1.650	0.50	115.09	2.216	0.50
148.00	RFS APXV18-209014-C-A20	3	0.75	0.000	18.70	3.530	0.67	64.46	4.730	0.67
146.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3683.14	56.368	1.00
137.00	Generic Flat Platform with Han	1	1.00	0.000	2500.00	42.400	1.00	3675.18	56.274	1.00
137.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	234.53	14.348	0.64
137.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	116.44	2.571	0.50
137.00	Raycap RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	59.55	2.462	1.00
137.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	102.48	2.571	0.50
120.00	Generic 18' Dipole	2	1.00	0.000	55.00	6.770	1.00	185.00	13.740	1.00
116.00	Generic 8' Yagi	1	1.00	0.000	30.00	12.000	1.00	250.41	33.735	1.00
113.00	Generic 8' Yagi	1	1.00	0.000	30.00	12.000	1.00	249.74	33.668	1.00
113.00	Generic 9' Omni	1	1.00	0.000	25.00	2.700	1.00	69.41	4.809	1.00
111.00	Generic 22' Dipole	1	1.00	0.000	66.00	8.270	1.00	223.63	16.714	1.00
111.00	Generic 2' x 4' Rectangular Gr	1	1.00	0.000	40.00	7.460	1.00	185.58	39.796	1.00
110.00	Generic Flat T-Arm	3	0.75	0.000	312.50	12.900	0.67	481.30	18.184	0.67
76.00	Generic GPS	1	1.00	0.000	10.00	0.900	1.00	28.25	1.299	1.00
Totals	Num Loadings: 46	108			18,452.00			32,835.79		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg) : _

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier

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Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax/ Row	Dist Between Rows(in)	Dist Between Cols(in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	192.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	Other
0.00	191.00	2	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	Other
0.00	186.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	Other
0.00	180.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	Other
0.00	178.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	VERIZON WIREL
0.00	178.00	2	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	VERIZON WIREL
0.00	168.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	168.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	168.00	3	3" conduit	3.5	7.58	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	168.00	2	0.39" (10mm) Fiber Tr	0.39	0.06	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	168.00	1	3/8" Coax	0.44	0.08	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	158.00	4	1 1/4" Hybriflex Cabl	1.54	1	N	0	0	0	0	0	N	SPRINT NEXTEL
0.00	148.00	6	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	T-MOBILE
0.00	148.00	1	1 5/8" Hybriflex	1.98	1.3	N	0	0	0	0	0	N	T-MOBILE
0.00	137.00	1	1.41" (35.8mm) Hybrid	1.41	1.66	N	0	0	0	0	0	N	DISH WIRELESS
0.00	120.00	2	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	Other
0.00	116.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	Other
0.00	113.00	2	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	Other
0.00	111.00	2	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	Other
0.00	76.00	1	1/2" Coax	0.63	0.15	N	0	0	0	0	0	N	SPRINT NEXTEL

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SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.4375	68.360	94.315	54,974.80	25.79	156.25	71.1	1584.0	0.0	0.0
5.00		0.4375	67.100	92.566	51,971.50	25.28	153.37	71.7	1525.5	0.0	1,589.8
10.00		0.4375	65.840	90.816	49,079.60	24.77	150.49	72.3	1468.2	0.0	1,560.0
15.00		0.4375	64.580	89.066	46,297.00	24.26	147.61	72.9	1412.0	0.0	1,530.2
20.00		0.4375	63.320	87.316	43,621.70	23.76	144.73	73.5	1356.9	0.0	1,500.5
25.00		0.4375	62.059	85.567	41,051.40	23.25	141.85	74.1	1302.9	0.0	1,470.7
30.00		0.4375	60.799	83.817	38,584.20	22.74	138.97	74.7	1249.9	0.0	1,440.9
35.00		0.4375	59.539	82.067	36,217.80	22.23	136.09	75.3	1198.1	0.0	1,411.2
40.00		0.4375	58.279	80.317	33,950.20	21.73	133.21	75.8	1147.4	0.0	1,381.4
43.75	Bot - Section 2	0.4375	57.334	79.005	32,313.10	21.34	131.05	76.3	1110.1	0.0	1,016.5
45.00		0.4375	57.019	78.568	31,779.30	21.22	130.33	76.4	1097.8	0.0	626.5
50.00		0.4375	55.759	76.818	29,703.00	20.71	127.45	77	1049.2	0.0	2,471.3
51.00	Top - Section 1	0.3750	56.257	66.511	26,241.40	24.69	150.02	72.4	918.7	0.0	487.6
55.00		0.3750	55.249	65.311	24,846.70	24.21	147.33	72.9	885.8	0.0	897.1
60.00		0.3750	53.989	63.811	23,174.00	23.62	143.97	73.6	845.4	0.0	1,098.4
65.00		0.3750	52.728	62.312	21,578.10	23.03	140.61	74.3	806.0	0.0	1,072.9
70.00		0.3750	51.468	60.812	20,057.20	22.44	137.25	75	767.6	0.0	1,047.4
75.00		0.3750	50.208	59.312	18,609.50	21.84	133.89	75.7	730.0	0.0	1,021.9
76.00		0.3750	49.956	59.012	18,328.50	21.73	133.22	75.8	722.6	0.0	201.3
80.00		0.3750	48.948	57.812	17,233.10	21.25	130.53	76.4	693.4	0.0	795.1
85.00		0.3750	47.688	56.312	15,926.40	20.66	127.17	77.1	657.8	0.0	970.9
88.75	Bot - Section 3	0.3750	46.743	55.187	14,991.00	20.22	124.65	77.6	631.7	0.0	711.4
90.00		0.3750	46.428	54.813	14,687.50	20.07	123.81	77.8	623.1	0.0	471.7
94.75	Top - Section 2	0.3750	45.981	54.280	14,263.80	19.86	122.62	78	611.0	0.0	1,763.3
95.00		0.3750	45.918	54.205	14,204.80	19.83	122.45	78.1	609.3	0.0	46.1
100.00		0.3750	44.658	52.706	13,058.00	19.24	119.09	78.8	575.9	0.0	909.5
105.00		0.3750	43.398	51.206	11,974.70	18.64	115.73	79.5	543.5	0.0	884.0
110.00		0.3750	42.137	49.706	10,953.00	18.05	112.37	80.2	512.0	0.0	858.5
111.00		0.3750	41.885	49.406	10,755.90	17.93	111.69	80.3	505.8	0.0	168.6
113.00		0.3750	41.381	48.806	10,368.80	17.69	110.35	80.6	493.5	0.0	334.2
115.00		0.3750	40.877	48.206	9,991.20	17.46	109.01	80.9	481.4	0.0	330.1
116.00		0.3750	40.625	47.906	9,805.80	17.34	108.33	81	475.4	0.0	163.5
120.00		0.3750	39.617	46.706	9,087.30	16.86	105.65	81.6	451.8	0.0	643.9
125.00		0.3750	38.357	45.207	8,239.70	16.27	102.29	82.3	423.1	0.0	781.9
129.00	Bot - Section 4	0.3750	37.349	44.007	7,600.90	15.80	99.60	82.6	400.8	0.0	607.1
130.00		0.3750	37.097	43.707	7,446.50	15.68	98.93	82.6	395.4	0.0	250.4
133.75	Top - Section 3	0.2500	36.652	28.884	4,835.70	24.09	146.61	73.1	259.9	0.0	923.9
135.00		0.2500	36.337	28.634	4,711.20	23.87	145.35	73.3	255.4	0.0	122.3
137.00		0.2500	35.833	28.234	4,516.50	23.51	143.33	73.7	248.3	0.0	193.5
140.00		0.2500	35.077	27.634	4,234.70	22.98	140.31	74.4	237.8	0.0	285.2
145.00		0.2500	33.817	26.634	3,791.50	22.09	135.27	75.4	220.8	0.0	461.7
146.00		0.2500	33.565	26.434	3,706.70	21.91	134.26	75.6	217.5	0.0	90.3
148.00		0.2500	33.061	26.034	3,541.00	21.55	132.24	76	211.0	0.0	178.5
150.00		0.2500	32.557	25.634	3,380.30	21.20	130.23	76.5	204.5	0.0	175.8
155.00		0.2500	31.296	24.634	3,000.00	20.31	125.19	77.5	188.8	0.0	427.6
158.00		0.2500	30.540	24.035	2,786.10	19.78	122.16	78.1	179.7	0.0	248.4
160.00		0.2500	30.036	23.635	2,649.30	19.42	120.15	78.6	173.7	0.0	162.2
165.00		0.2500	28.776	22.635	2,327.10	18.53	115.10	79.6	159.3	0.0	393.6
168.00		0.2500	28.020	22.035	2,146.90	18.00	112.08	80.2	150.9	0.0	228.0
170.00		0.2500	27.516	21.635	2,032.10	17.64	110.06	80.6	145.5	0.0	148.6
175.00		0.2500	26.256	20.635	1,763.20	16.76	105.02	81.7	132.3	0.0	359.6
178.00		0.2500	25.500	20.035	1,613.80	16.22	102.00	82.3	124.7	0.0	207.6
								Totals:			37,122.6

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Load Case: 1.2D + 1.0W Normal 120 mph wind with no ice 24 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-77.40	-38.67	0.00	-5,044.6	0.00	5,044.57	6,032.65	1,655.24	10,154.34	8,442.81	0	0	0.611
5.00	-75.08	-38.29	0.00	-4,851.2	0.00	4,851.23	5,970.50	1,624.53	9,781.10	8,199.81	0.07	-0.13	0.605
10.00	-72.79	-37.91	0.00	-4,659.8	0.00	4,659.79	5,906.46	1,593.82	9,414.84	7,957.52	0.27	-0.26	0.598
15.00	-70.54	-37.53	0.00	-4,470.2	0.00	4,470.24	5,840.54	1,563.11	9,055.58	7,716.10	0.62	-0.39	0.592
20.00	-68.33	-37.16	0.00	-4,282.6	0.00	4,282.58	5,772.74	1,532.40	8,703.31	7,475.68	1.1	-0.52	0.585
25.00	-66.15	-36.79	0.00	-4,096.8	0.00	4,096.78	5,703.06	1,501.69	8,358.02	7,236.42	1.72	-0.66	0.578
30.00	-64.01	-36.42	0.00	-3,912.8	0.00	3,912.83	5,631.49	1,470.99	8,019.72	6,998.46	2.49	-0.8	0.571
35.00	-61.91	-36.03	0.00	-3,730.7	0.00	3,730.74	5,558.05	1,440.28	7,688.41	6,761.96	3.4	-0.94	0.563
40.00	-59.85	-35.68	0.00	-3,550.6	0.00	3,550.59	5,482.72	1,409.57	7,364.09	6,527.05	4.47	-1.08	0.556
43.75	-58.34	-35.46	0.00	-3,416.8	0.00	3,416.80	5,424.99	1,386.54	7,125.44	6,352.01	5.36	-1.19	0.549
45.00	-57.46	-35.20	0.00	-3,372.5	0.00	3,372.48	5,405.52	1,378.86	7,046.76	6,293.90	5.68	-1.23	0.547
50.00	-54.12	-34.89	0.00	-3,196.5	0.00	3,196.46	5,326.43	1,348.15	6,736.42	6,062.63	7.05	-1.38	0.538
51.00	-53.43	-34.68	0.00	-3,161.6	0.00	3,161.57	4,331.59	1,167.27	5,891.45	4,986.16	7.34	-1.41	0.647
55.00	-52.02	-34.29	0.00	-3,022.9	0.00	3,022.86	4,286.21	1,146.21	5,680.83	4,844.33	8.57	-1.53	0.637
60.00	-50.28	-33.86	0.00	-2,851.4	0.00	2,851.40	4,227.81	1,119.89	5,422.94	4,667.85	10.26	-1.7	0.624
65.00	-48.59	-33.41	0.00	-2,682.1	0.00	2,682.13	4,167.52	1,093.57	5,171.04	4,492.39	12.13	-1.87	0.610
70.00	-46.92	-32.96	0.00	-2,515.1	0.00	2,515.07	4,105.35	1,067.25	4,925.14	4,318.10	14.18	-2.04	0.595
75.00	-45.32	-32.67	0.00	-2,350.2	0.00	2,350.25	4,041.30	1,040.92	4,685.22	4,145.13	16.41	-2.21	0.579
76.00	-44.96	-32.43	0.00	-2,317.6	0.00	2,317.59	4,028.27	1,035.66	4,637.96	4,110.71	16.87	-2.25	0.576
80.00	-43.68	-32.02	0.00	-2,187.9	0.00	2,187.88	3,975.37	1,014.60	4,451.30	3,973.63	18.82	-2.39	0.563
85.00	-42.12	-31.61	0.00	-2,027.8	0.00	2,027.78	3,907.56	988.28	4,223.36	3,803.74	21.41	-2.56	0.545
88.75	-40.99	-31.36	0.00	-1,909.2	0.00	1,909.25	3,855.46	968.54	4,056.34	3,677.47	23.47	-2.69	0.531
90.00	-40.30	-31.09	0.00	-1,870.0	0.00	1,870.05	3,837.86	961.96	4,001.42	3,635.62	24.18	-2.74	0.526
94.75	-37.84	-30.76	0.00	-1,722.4	0.00	1,722.38	3,812.68	952.62	3,924.11	3,576.41	26.99	-2.9	0.493
95.00	-37.73	-30.55	0.00	-1,714.7	0.00	1,714.69	3,809.12	951.30	3,913.28	3,568.09	27.14	-2.91	0.491
100.00	-36.26	-30.06	0.00	-1,562.0	0.00	1,561.96	3,736.78	924.98	3,699.75	3,402.69	30.28	-3.08	0.470
105.00	-34.81	-29.57	0.00	-1,411.7	0.00	1,411.67	3,662.56	898.66	3,492.21	3,239.41	33.59	-3.24	0.446
110.00	-32.35	-28.44	0.00	-1,263.8	0.00	1,263.80	3,586.46	872.34	3,290.66	3,078.39	37.06	-3.4	0.421
111.00	-31.98	-27.69	0.00	-1,235.4	0.00	1,235.36	3,571.01	867.08	3,251.07	3,046.47	37.78	-3.43	0.415
113.00	-31.40	-26.92	0.00	-1,180.0	0.00	1,179.99	3,539.90	856.55	3,172.61	2,982.92	39.23	-3.49	0.405
115.00	-30.86	-26.77	0.00	-1,126.2	0.00	1,126.15	3,508.48	846.02	3,095.10	2,919.78	40.7	-3.56	0.395
116.00	-30.57	-26.08	0.00	-1,099.4	0.00	1,099.39	3,492.66	840.75	3,056.71	2,888.36	41.45	-3.59	0.390
120.00	-29.42	-25.11	0.00	-995.1	0.00	995.07	3,428.62	819.70	2,905.53	2,763.73	44.51	-3.71	0.370
125.00	-28.14	-24.67	0.00	-869.5	0.00	869.52	3,346.87	793.38	2,721.95	2,610.39	48.47	-3.85	0.342
129.00	-27.15	-24.40	0.00	-770.8	0.00	770.85	3,269.48	772.32	2,579.40	2,481.68	51.74	-3.97	0.320
130.00	-26.77	-24.19	0.00	-746.4	0.00	746.45	3,247.19	767.05	2,544.37	2,447.80	52.58	-4	0.314
133.75	-25.42	-23.89	0.00	-655.8	0.00	655.75	1,899.47	506.91	1,666.63	1,424.09	55.76	-4.1	0.476
135.00	-25.18	-23.75	0.00	-625.9	0.00	625.89	1,889.77	502.52	1,637.91	1,404.47	56.83	-4.13	0.461
137.00	-21.26	-20.56	0.00	-578.4	0.00	578.40	1,874.00	495.51	1,592.48	1,373.17	58.58	-4.2	0.434
140.00	-20.72	-20.21	0.00	-516.7	0.00	516.72	1,849.78	484.98	1,525.53	1,326.42	61.25	-4.31	0.402
145.00	-19.85	-19.92	0.00	-415.7	0.00	415.66	1,807.91	467.43	1,417.15	1,249.15	65.84	-4.46	0.346
146.00	-16.82	-17.79	0.00	-395.7	0.00	395.74	1,799.31	463.92	1,395.95	1,233.81	66.78	-4.49	0.332
148.00	-15.77	-16.03	0.00	-360.2	0.00	360.16	1,781.88	456.90	1,354.03	1,203.23	68.68	-4.55	0.309
150.00	-15.46	-15.73	0.00	-328.1	0.00	328.10	1,764.15	449.88	1,312.76	1,172.82	70.59	-4.61	0.290
155.00	-14.68	-15.36	0.00	-249.4	0.00	249.44	1,718.52	432.33	1,212.36	1,097.58	75.48	-4.73	0.237
158.00	-10.92	-12.16	0.00	-202.1	0.00	202.14	1,690.24	421.81	1,154.03	1,053.02	78.47	-4.79	0.199
160.00	-10.64	-11.87	0.00	-177.8	0.00	177.83	1,671.00	414.79	1,115.95	1,023.57	80.48	-4.83	0.181
165.00	-9.94	-11.51	0.00	-118.5	0.00	118.48	1,621.61	397.24	1,023.54	950.94	85.58	-4.91	0.132
168.00	-5.01	-6.99	0.00	-84.0	0.00	83.95	1,591.06	386.71	970.01	908.08	88.68	-4.95	0.096
170.00	-4.83	-6.72	0.00	-70.0	0.00	69.97	1,570.33	379.69	935.12	879.84	90.75	-4.97	0.083
175.00	-4.37	-6.39	0.00	-36.4	0.00	36.38	1,517.17	362.14	850.69	810.41	95.97	-5.01	0.048
178.00	0.00	-5.99	0.00	-17.2	0.00	17.20	1,484.37	351.62	801.96	769.62	99.12	-5.02	0.023

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Load Case: 0.9D + 1.0W Normal 120 mph wind with no ice 24 Iterations
Gust Response Factor: 1.10
Dead load Factor: 0.90
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-58.04	-38.65	0.00	-4,979.5	0.00	4,979.52	6,032.65	1,655.24	10,154.34	8,442.81	0	0	0.600
5.00	-56.28	-38.22	0.00	-4,786.3	0.00	4,786.29	5,970.50	1,624.53	9,781.10	8,199.81	0.07	-0.13	0.594
10.00	-54.54	-37.80	0.00	-4,595.2	0.00	4,595.18	5,906.46	1,593.82	9,414.84	7,957.52	0.27	-0.25	0.587
15.00	-52.84	-37.39	0.00	-4,406.2	0.00	4,406.17	5,840.54	1,563.11	9,055.58	7,716.10	0.61	-0.39	0.581
20.00	-51.16	-36.98	0.00	-4,219.2	0.00	4,219.25	5,772.74	1,532.40	8,703.31	7,475.68	1.08	-0.52	0.574
25.00	-49.51	-36.57	0.00	-4,034.4	0.00	4,034.38	5,703.06	1,501.69	8,358.02	7,236.42	1.7	-0.65	0.567
30.00	-47.88	-36.16	0.00	-3,851.5	0.00	3,851.53	5,631.49	1,470.99	8,019.72	6,998.46	2.45	-0.79	0.559
35.00	-46.29	-35.74	0.00	-3,670.7	0.00	3,670.73	5,558.05	1,440.28	7,688.41	6,761.96	3.36	-0.93	0.552
40.00	-44.73	-35.36	0.00	-3,492.0	0.00	3,492.01	5,482.72	1,409.57	7,364.09	6,527.05	4.4	-1.07	0.544
43.75	-43.59	-35.13	0.00	-3,359.4	0.00	3,359.41	5,424.99	1,386.54	7,125.44	6,352.01	5.29	-1.18	0.538
45.00	-42.91	-34.86	0.00	-3,315.5	0.00	3,315.49	5,405.52	1,378.86	7,046.76	6,293.90	5.6	-1.21	0.535
50.00	-40.40	-34.54	0.00	-3,141.2	0.00	3,141.21	5,326.43	1,348.15	6,736.42	6,062.63	6.95	-1.36	0.526
51.00	-39.87	-34.31	0.00	-3,106.7	0.00	3,106.67	4,331.59	1,167.27	5,891.45	4,986.16	7.23	-1.39	0.633
55.00	-38.80	-33.90	0.00	-2,969.4	0.00	2,969.41	4,286.21	1,146.21	5,680.83	4,844.33	8.45	-1.51	0.623
60.00	-37.48	-33.44	0.00	-2,799.9	0.00	2,799.91	4,227.81	1,119.89	5,422.94	4,667.85	10.11	-1.67	0.610
65.00	-36.19	-32.97	0.00	-2,632.7	0.00	2,632.72	4,167.52	1,093.57	5,171.04	4,492.39	11.95	-1.84	0.596
70.00	-34.92	-32.50	0.00	-2,467.9	0.00	2,467.88	4,105.35	1,067.25	4,925.14	4,318.10	13.97	-2.01	0.581
75.00	-33.71	-32.19	0.00	-2,305.4	0.00	2,305.40	4,041.30	1,040.92	4,685.22	4,145.13	16.16	-2.17	0.565
76.00	-33.43	-31.94	0.00	-2,273.2	0.00	2,273.21	4,028.27	1,035.66	4,637.96	4,110.71	16.62	-2.21	0.562
80.00	-32.45	-31.51	0.00	-2,145.5	0.00	2,145.46	3,975.37	1,014.60	4,451.30	3,973.63	18.53	-2.35	0.549
85.00	-31.27	-31.09	0.00	-1,987.9	0.00	1,987.90	3,907.56	988.28	4,223.36	3,803.74	21.08	-2.52	0.532
88.75	-30.42	-30.83	0.00	-1,871.3	0.00	1,871.33	3,855.46	968.54	4,056.34	3,677.47	23.1	-2.65	0.518
90.00	-29.89	-30.55	0.00	-1,832.8	0.00	1,832.79	3,837.86	961.96	4,001.42	3,635.62	23.8	-2.69	0.513
94.75	-28.04	-30.24	0.00	-1,687.7	0.00	1,687.68	3,812.68	952.62	3,924.11	3,576.41	26.56	-2.85	0.480
95.00	-27.95	-30.01	0.00	-1,680.1	0.00	1,680.12	3,809.12	951.30	3,913.28	3,568.09	26.71	-2.86	0.479
100.00	-26.83	-29.51	0.00	-1,530.1	0.00	1,530.09	3,736.78	924.98	3,699.75	3,402.69	29.79	-3.02	0.458
105.00	-25.74	-29.02	0.00	-1,382.5	0.00	1,382.53	3,662.56	898.66	3,492.21	3,239.41	33.04	-3.18	0.435
110.00	-23.90	-27.91	0.00	-1,237.4	0.00	1,237.43	3,586.46	872.34	3,290.66	3,078.39	36.46	-3.34	0.410
111.00	-23.62	-27.15	0.00	-1,209.5	0.00	1,209.52	3,571.01	867.08	3,251.07	3,046.47	37.16	-3.37	0.405
113.00	-23.19	-26.39	0.00	-1,155.2	0.00	1,155.22	3,539.90	856.55	3,172.61	2,982.92	38.58	-3.43	0.395
115.00	-22.79	-26.24	0.00	-1,102.4	0.00	1,102.44	3,508.48	846.02	3,095.10	2,919.78	40.03	-3.49	0.385
116.00	-22.58	-25.54	0.00	-1,076.2	0.00	1,076.21	3,492.66	840.75	3,056.71	2,888.36	40.77	-3.52	0.380
120.00	-21.71	-24.57	0.00	-974.0	0.00	974.04	3,428.62	819.70	2,905.53	2,763.73	43.77	-3.64	0.360
125.00	-20.75	-24.13	0.00	-851.2	0.00	851.17	3,346.87	793.38	2,721.95	2,610.39	47.66	-3.79	0.333
129.00	-20.00	-23.88	0.00	-754.6	0.00	754.64	3,269.48	772.32	2,579.40	2,481.68	50.88	-3.9	0.311
130.00	-19.72	-23.66	0.00	-730.8	0.00	730.76	3,247.19	767.05	2,544.37	2,447.80	51.7	-3.92	0.306
133.75	-18.70	-23.38	0.00	-642.0	0.00	642.04	1,899.47	506.91	1,666.63	1,424.09	54.82	-4.02	0.463
135.00	-18.52	-23.24	0.00	-612.8	0.00	612.82	1,889.77	502.52	1,637.91	1,404.47	55.88	-4.05	0.448
137.00	-15.62	-20.12	0.00	-566.4	0.00	566.35	1,874.00	495.51	1,592.48	1,373.17	57.59	-4.13	0.422
140.00	-15.21	-19.77	0.00	-506.0	0.00	506.00	1,849.78	484.98	1,525.53	1,326.42	60.21	-4.23	0.391
145.00	-14.56	-19.48	0.00	-407.2	0.00	407.17	1,807.91	467.43	1,417.15	1,249.15	64.72	-4.38	0.336
146.00	-12.32	-17.42	0.00	-387.7	0.00	387.69	1,799.31	463.92	1,395.95	1,233.81	65.64	-4.41	0.322
148.00	-11.56	-15.67	0.00	-352.9	0.00	352.86	1,781.88	456.90	1,354.03	1,203.23	67.5	-4.47	0.301
150.00	-11.32	-15.38	0.00	-321.5	0.00	321.52	1,764.15	449.88	1,312.76	1,172.82	69.38	-4.52	0.282
155.00	-10.74	-15.02	0.00	-244.6	0.00	244.64	1,718.52	432.33	1,212.36	1,097.58	74.18	-4.64	0.230
158.00	-7.97	-11.89	0.00	-198.4	0.00	198.38	1,690.24	421.81	1,154.03	1,053.02	77.11	-4.7	0.194
160.00	-7.77	-11.61	0.00	-174.6	0.00	174.59	1,671.00	414.79	1,115.95	1,023.57	79.09	-4.74	0.176
165.00	-7.25	-11.26	0.00	-116.5	0.00	116.54	1,621.61	397.24	1,023.54	950.94	84.1	-4.82	0.128
168.00	-3.63	-6.86	0.00	-82.8	0.00	82.75	1,591.06	386.71	970.01	908.08	87.13	-4.86	0.094
170.00	-3.50	-6.60	0.00	-69.0	0.00	69.02	1,570.33	379.69	935.12	879.84	89.17	-4.88	0.081
175.00	-3.15	-6.28	0.00	-36.0	0.00	36.04	1,517.17	362.14	850.69	810.41	94.29	-4.91	0.047
178.00	0.00	-5.99	0.00	-17.2	0.00	17.20	1,484.37	351.62	801.96	769.62	97.38	-4.93	0.023

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Load Case: 1.2D + 1.0Di + 1.0Wi Normal		50 mph wind with 1" radial ice			24 Iterations
Gust Response Factor:	1.10	Ice Dead Load Factor	1.00		
Dead load Factor:	1.20			Ice Importance Factor	1.00
Wind Load Factor:	1.00				

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-99.92	-11.10	0.00	-1,457.1	0.00	1,457.06	6,032.65	1,655.24	10,154.34	8,442.81	0	0	0.189
5.00	-97.35	-11.00	0.00	-1,401.6	0.00	1,401.57	5,970.50	1,624.53	9,781.10	8,199.81	0.02	-0.04	0.187
10.00	-94.78	-10.90	0.00	-1,346.6	0.00	1,346.56	5,906.46	1,593.82	9,414.84	7,957.52	0.08	-0.07	0.185
15.00	-92.24	-10.81	0.00	-1,292.0	0.00	1,292.04	5,840.54	1,563.11	9,055.58	7,716.10	0.18	-0.11	0.183
20.00	-89.72	-10.71	0.00	-1,238.0	0.00	1,238.01	5,772.74	1,532.40	8,703.31	7,475.68	0.32	-0.15	0.181
25.00	-87.24	-10.61	0.00	-1,184.5	0.00	1,184.46	5,703.06	1,501.69	8,358.02	7,236.42	0.5	-0.19	0.179
30.00	-84.80	-10.52	0.00	-1,131.4	0.00	1,131.38	5,631.49	1,470.99	8,019.72	6,998.46	0.72	-0.23	0.177
35.00	-82.39	-10.42	0.00	-1,078.8	0.00	1,078.80	5,558.05	1,440.28	7,688.41	6,761.96	0.98	-0.27	0.174
40.00	-80.02	-10.32	0.00	-1,026.7	0.00	1,026.72	5,482.72	1,409.57	7,364.09	6,527.05	1.29	-0.31	0.172
43.75	-78.27	-10.26	0.00	-988.0	0.00	988.02	5,424.99	1,386.54	7,125.44	6,352.01	1.55	-0.35	0.170
45.00	-77.33	-10.20	0.00	-975.2	0.00	975.19	5,405.52	1,378.86	7,046.76	6,293.90	1.64	-0.36	0.169
50.00	-73.66	-10.11	0.00	-924.2	0.00	924.22	5,326.43	1,348.15	6,736.42	6,062.63	2.04	-0.4	0.166
51.00	-72.93	-10.05	0.00	-914.1	0.00	914.11	4,331.59	1,167.27	5,891.45	4,986.16	2.12	-0.41	0.200
55.00	-71.29	-9.95	0.00	-873.9	0.00	873.90	4,286.21	1,146.21	5,680.83	4,844.33	2.48	-0.44	0.197
60.00	-69.27	-9.83	0.00	-824.2	0.00	824.15	4,227.81	1,119.89	5,422.94	4,667.85	2.97	-0.49	0.193
65.00	-67.29	-9.71	0.00	-775.0	0.00	775.00	4,167.52	1,093.57	5,171.04	4,492.39	3.51	-0.54	0.189
70.00	-65.34	-9.59	0.00	-726.4	0.00	726.43	4,105.35	1,067.25	4,925.14	4,318.10	4.1	-0.59	0.184
75.00	-63.43	-9.51	0.00	-678.5	0.00	678.48	4,041.30	1,040.92	4,685.22	4,145.13	4.74	-0.64	0.179
76.00	-63.03	-9.44	0.00	-669.0	0.00	668.97	4,028.27	1,035.66	4,637.96	4,110.71	4.88	-0.65	0.178
80.00	-61.53	-9.33	0.00	-631.2	0.00	631.20	3,975.37	1,014.60	4,451.30	3,973.63	5.44	-0.69	0.174
85.00	-59.70	-9.22	0.00	-584.5	0.00	584.53	3,907.56	988.28	4,223.36	3,803.74	6.19	-0.74	0.169
88.75	-58.35	-9.15	0.00	-550.0	0.00	549.96	3,855.46	968.54	4,056.34	3,677.47	6.79	-0.78	0.165
90.00	-57.61	-9.08	0.00	-538.5	0.00	538.52	3,837.86	961.96	4,001.42	3,635.62	6.99	-0.79	0.163
94.75	-54.87	-8.98	0.00	-495.4	0.00	495.41	3,812.68	952.62	3,924.11	3,576.41	7.8	-0.84	0.153
95.00	-54.78	-8.92	0.00	-493.2	0.00	493.17	3,809.12	951.30	3,913.28	3,568.09	7.85	-0.84	0.153
100.00	-53.04	-8.79	0.00	-448.6	0.00	448.55	3,736.78	924.98	3,699.75	3,402.69	8.75	-0.89	0.146
105.00	-51.33	-8.65	0.00	-404.6	0.00	404.62	3,662.56	898.66	3,492.21	3,239.41	9.71	-0.93	0.139
110.00	-48.15	-8.34	0.00	-361.4	0.00	361.39	3,586.46	872.34	3,290.66	3,078.39	10.71	-0.98	0.131
111.00	-47.46	-7.92	0.00	-353.0	0.00	353.04	3,571.01	867.08	3,251.07	3,046.47	10.92	-0.99	0.129
113.00	-46.54	-7.60	0.00	-337.2	0.00	337.20	3,539.90	856.55	3,172.61	2,982.92	11.34	-1.01	0.126
115.00	-45.90	-7.56	0.00	-322.0	0.00	322.00	3,508.48	846.02	3,095.10	2,919.78	11.76	-1.03	0.123
116.00	-45.37	-7.26	0.00	-314.4	0.00	314.44	3,492.66	840.75	3,056.71	2,888.36	11.98	-1.03	0.122
120.00	-43.78	-6.95	0.00	-285.4	0.00	285.39	3,428.62	819.70	2,905.53	2,763.73	12.86	-1.07	0.116
125.00	-42.24	-6.82	0.00	-250.7	0.00	250.66	3,346.87	793.38	2,721.95	2,610.39	14	-1.11	0.109
129.00	-41.04	-6.74	0.00	-223.4	0.00	223.41	3,269.48	772.32	2,579.40	2,481.68	14.95	-1.14	0.103
130.00	-40.62	-6.67	0.00	-216.7	0.00	216.67	3,247.19	767.05	2,544.37	2,447.80	15.19	-1.15	0.101
133.75	-39.07	-6.58	0.00	-191.6	0.00	191.65	1,899.47	506.91	1,666.63	1,424.09	16.11	-1.18	0.155
135.00	-38.78	-6.54	0.00	-183.4	0.00	183.42	1,889.77	502.52	1,637.91	1,404.47	16.42	-1.19	0.151
137.00	-33.03	-5.77	0.00	-170.3	0.00	170.33	1,874.00	495.51	1,592.48	1,373.17	16.92	-1.21	0.142
140.00	-32.35	-5.67	0.00	-153.0	0.00	153.02	1,849.78	484.98	1,525.53	1,326.42	17.69	-1.24	0.133
145.00	-31.23	-5.58	0.00	-124.7	0.00	124.67	1,807.91	467.43	1,417.15	1,249.15	19.02	-1.29	0.117
146.00	-27.10	-5.05	0.00	-119.1	0.00	119.09	1,799.31	463.92	1,395.95	1,233.81	19.29	-1.3	0.112
148.00	-24.99	-4.64	0.00	-109.0	0.00	109.00	1,781.88	456.90	1,354.03	1,203.23	19.84	-1.32	0.105
150.00	-24.58	-4.55	0.00	-99.7	0.00	99.71	1,764.15	449.88	1,312.76	1,172.82	20.39	-1.33	0.099
155.00	-23.56	-4.44	0.00	-76.9	0.00	76.94	1,718.52	432.33	1,212.36	1,097.58	21.81	-1.37	0.084
158.00	-17.89	-3.61	0.00	-63.4	0.00	63.36	1,690.24	421.81	1,154.03	1,053.02	22.68	-1.39	0.071
160.00	-17.51	-3.52	0.00	-56.1	0.00	56.13	1,671.00	414.79	1,115.95	1,023.57	23.26	-1.4	0.065
165.00	-16.57	-3.41	0.00	-38.5	0.00	38.51	1,621.61	397.24	1,023.54	950.94	24.75	-1.43	0.051
168.00	-8.76	-2.23	0.00	-28.3	0.00	28.27	1,591.06	386.71	970.01	908.08	25.65	-1.44	0.037
170.00	-8.48	-2.15	0.00	-23.8	0.00	23.81	1,570.33	379.69	935.12	879.84	26.25	-1.45	0.032
175.00	-7.79	-2.04	0.00	-13.1	0.00	13.06	1,517.17	362.14	850.69	810.41	27.78	-1.46	0.021
178.00	0.00	-1.84	0.00	-6.9	0.00	6.93	1,484.37	351.62	801.96	769.62	28.7	-1.46	0.009

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Load Case: 1.0D + 1.0W Service Normal 60 mph Wind with No Ice 23 Iterations
Gust Response Factor: 1.10
Dead load Factor: 1.00
Wind Load Factor: 1.00

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-64.54	-8.65	0.00	-1,119.7	0.00	1,119.66	6,032.65	1,655.24	10,154.34	8,442.81	0	0	0.143
5.00	-62.67	-8.55	0.00	-1,076.4	0.00	1,076.43	5,970.50	1,624.53	9,781.10	8,199.81	0.02	-0.03	0.142
10.00	-60.83	-8.46	0.00	-1,033.7	0.00	1,033.66	5,906.46	1,593.82	9,414.84	7,957.52	0.06	-0.06	0.140
15.00	-59.02	-8.37	0.00	-991.3	0.00	991.34	5,840.54	1,563.11	9,055.58	7,716.10	0.14	-0.09	0.139
20.00	-57.24	-8.28	0.00	-949.5	0.00	949.48	5,772.74	1,532.40	8,703.31	7,475.68	0.24	-0.12	0.137
25.00	-55.49	-8.20	0.00	-908.1	0.00	908.06	5,703.06	1,501.69	8,358.02	7,236.42	0.38	-0.15	0.135
30.00	-53.77	-8.11	0.00	-867.1	0.00	867.08	5,631.49	1,470.99	8,019.72	6,998.46	0.55	-0.18	0.133
35.00	-52.08	-8.02	0.00	-826.5	0.00	826.54	5,558.05	1,440.28	7,688.41	6,761.96	0.75	-0.21	0.132
40.00	-50.42	-7.93	0.00	-786.4	0.00	786.45	5,482.72	1,409.57	7,364.09	6,527.05	0.99	-0.24	0.130
43.75	-49.20	-7.88	0.00	-756.7	0.00	756.70	5,424.99	1,386.54	7,125.44	6,352.01	1.19	-0.26	0.128
45.00	-48.50	-7.82	0.00	-746.8	0.00	746.84	5,405.52	1,378.86	7,046.76	6,293.90	1.26	-0.27	0.128
50.00	-45.75	-7.75	0.00	-707.7	0.00	707.72	5,326.43	1,348.15	6,736.42	6,062.63	1.56	-0.31	0.125
51.00	-45.21	-7.70	0.00	-700.0	0.00	699.97	4,331.59	1,167.27	5,891.45	4,986.16	1.63	-0.31	0.151
55.00	-44.09	-7.61	0.00	-669.2	0.00	669.15	4,286.21	1,146.21	5,680.83	4,844.33	1.9	-0.34	0.148
60.00	-42.71	-7.51	0.00	-631.1	0.00	631.08	4,227.81	1,119.89	5,422.94	4,667.85	2.28	-0.38	0.145
65.00	-41.36	-7.41	0.00	-593.5	0.00	593.51	4,167.52	1,093.57	5,171.04	4,492.39	2.69	-0.41	0.142
70.00	-40.03	-7.31	0.00	-556.5	0.00	556.46	4,105.35	1,067.25	4,925.14	4,318.10	3.14	-0.45	0.139
75.00	-38.74	-7.24	0.00	-519.9	0.00	519.92	4,041.30	1,040.92	4,685.22	4,145.13	3.64	-0.49	0.135
76.00	-38.47	-7.19	0.00	-512.7	0.00	512.68	4,028.27	1,035.66	4,637.96	4,110.71	3.74	-0.5	0.134
80.00	-37.45	-7.09	0.00	-483.9	0.00	483.94	3,975.37	1,014.60	4,451.30	3,973.63	4.17	-0.53	0.131
85.00	-36.20	-7.00	0.00	-448.5	0.00	448.48	3,907.56	988.28	4,223.36	3,803.74	4.75	-0.57	0.127
88.75	-35.28	-6.94	0.00	-422.2	0.00	422.23	3,855.46	968.54	4,056.34	3,677.47	5.2	-0.6	0.124
90.00	-34.74	-6.88	0.00	-413.6	0.00	413.55	3,837.86	961.96	4,001.42	3,635.62	5.36	-0.61	0.123
94.75	-32.72	-6.81	0.00	-380.9	0.00	380.87	3,812.68	952.62	3,924.11	3,576.41	5.98	-0.64	0.115
95.00	-32.66	-6.76	0.00	-379.2	0.00	379.17	3,809.12	951.30	3,913.28	3,568.09	6.02	-0.64	0.115
100.00	-31.47	-6.65	0.00	-345.4	0.00	345.37	3,736.78	924.98	3,699.75	3,402.69	6.71	-0.68	0.110
105.00	-30.31	-6.54	0.00	-312.1	0.00	312.12	3,662.56	898.66	3,492.21	3,239.41	7.44	-0.72	0.105
110.00	-28.24	-6.29	0.00	-279.4	0.00	279.41	3,586.46	872.34	3,290.66	3,078.39	8.21	-0.75	0.099
111.00	-27.91	-6.12	0.00	-273.1	0.00	273.11	3,571.01	867.08	3,251.07	3,046.47	8.37	-0.76	0.098
113.00	-27.41	-5.95	0.00	-260.9	0.00	260.87	3,539.90	856.55	3,172.61	2,982.92	8.69	-0.77	0.095
115.00	-26.98	-5.92	0.00	-249.0	0.00	248.96	3,508.48	846.02	3,095.10	2,919.78	9.02	-0.79	0.093
116.00	-26.73	-5.76	0.00	-243.0	0.00	243.05	3,492.66	840.75	3,056.71	2,888.36	9.18	-0.79	0.092
120.00	-25.76	-5.55	0.00	-220.0	0.00	219.99	3,428.62	819.70	2,905.53	2,763.73	9.86	-0.82	0.087
125.00	-24.72	-5.45	0.00	-192.3	0.00	192.26	3,346.87	793.38	2,721.95	2,610.39	10.74	-0.85	0.081
129.00	-23.90	-5.39	0.00	-170.5	0.00	170.46	3,269.48	772.32	2,579.40	2,481.68	11.47	-0.88	0.076
130.00	-23.60	-5.34	0.00	-165.1	0.00	165.07	3,247.19	767.05	2,544.37	2,447.80	11.65	-0.88	0.075
133.75	-22.48	-5.28	0.00	-145.0	0.00	145.03	1,899.47	506.91	1,666.63	1,424.09	12.35	-0.91	0.114
135.00	-22.29	-5.25	0.00	-138.4	0.00	138.44	1,889.77	502.52	1,637.91	1,404.47	12.59	-0.91	0.110
137.00	-18.87	-4.54	0.00	-127.9	0.00	127.94	1,874.00	495.51	1,592.48	1,373.17	12.98	-0.93	0.103
140.00	-18.43	-4.47	0.00	-114.3	0.00	114.31	1,849.78	484.98	1,525.53	1,326.42	13.57	-0.95	0.096
145.00	-17.71	-4.40	0.00	-92.0	0.00	91.98	1,807.91	467.43	1,417.15	1,249.15	14.59	-0.99	0.084
146.00	-15.08	-3.93	0.00	-87.6	0.00	87.58	1,799.31	463.92	1,395.95	1,233.81	14.8	-0.99	0.079
148.00	-14.11	-3.54	0.00	-79.7	0.00	79.71	1,781.88	456.90	1,354.03	1,203.23	15.22	-1.01	0.074
150.00	-13.84	-3.48	0.00	-72.6	0.00	72.63	1,764.15	449.88	1,312.76	1,172.82	15.64	-1.02	0.070
155.00	-13.19	-3.40	0.00	-55.2	0.00	55.24	1,718.52	432.33	1,212.36	1,097.58	16.72	-1.05	0.058
158.00	-9.87	-2.69	0.00	-44.8	0.00	44.79	1,690.24	421.81	1,154.03	1,053.02	17.39	-1.06	0.048
160.00	-9.63	-2.62	0.00	-39.4	0.00	39.41	1,671.00	414.79	1,115.95	1,023.57	17.83	-1.07	0.044
165.00	-9.03	-2.55	0.00	-26.3	0.00	26.29	1,621.61	397.24	1,023.54	950.94	18.96	-1.09	0.033
168.00	-4.63	-1.55	0.00	-18.6	0.00	18.65	1,591.06	386.71	970.01	908.08	19.65	-1.1	0.023
170.00	-4.47	-1.49	0.00	-15.6	0.00	15.55	1,570.33	379.69	935.12	879.84	20.11	-1.1	0.021
175.00	-4.06	-1.42	0.00	-8.1	0.00	8.10	1,517.17	362.14	850.69	810.41	21.26	-1.11	0.013
178.00	0.00	-1.34	0.00	-3.8	0.00	3.85	1,484.37	351.62	801.96	769.62	21.96	-1.11	0.005

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EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.187
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.055
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a:	1.600
Site Coefficient F_v:	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.199
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.088
Seismic Response Coefficient (C_s):	0.030
Upper Limit C_S:	0.030
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	2.700
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	2.000
Total Unfactored Dead Load:	64.540 k
Seismic Base Shear (E):	1.940 k

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
51	176.5	235	7,324	0.009	18	291
50	172.5	405	12,064	0.015	30	503
49	169	167	4,768	0.006	12	207
48	166.5	350	9,695	0.012	24	434
47	162.5	596	15,750	0.020	39	740
46	159	243	6,152	0.008	15	302
45	156.5	382	9,359	0.012	23	474
44	152.5	650	15,128	0.019	37	807
43	149	265	5,882	0.008	14	329
42	147	280	6,053	0.008	15	347
41	145.5	141	2,987	0.004	7	175
40	142.5	716	14,531	0.018	36	887
39	138.5	438	8,393	0.011	21	542
38	136	298	5,519	0.007	14	370
37	134.375	188	3,393	0.004	8	233
36	131.875	1,121	19,488	0.025	48	1,389
35	129.5	303	5,079	0.006	12	376
34	127	817	13,177	0.017	32	1,013
33	122.5	1,044	15,669	0.020	38	1,295
32	118	856	11,924	0.015	29	1,062
31	115.5	217	2,894	0.004	7	269
30	114	437	5,679	0.007	14	542
29	112	442	5,549	0.007	14	549
28	110.5	223	2,728	0.004	7	277
27	107.5	1,132	13,085	0.017	32	1,404
26	102.5	1,158	12,164	0.015	30	1,436
25	97.5	1,183	11,249	0.014	28	1,467
24	94.875	60	539	0.001	1	74
23	92.375	2,023	17,266	0.022	42	2,509
22	89.375	540	4,314	0.006	11	670
21	86.875	917	6,919	0.009	17	1,137
20	82.5	1,245	8,471	0.011	21	1,543
19	78	1,014	6,170	0.008	15	1,257
18	75.5	256	1,461	0.002	4	318

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Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
17	72.5	1,296	6,814	0.009	17	1,607
16	67.5	1,322	6,023	0.008	15	1,639
15	62.5	1,347	5,264	0.007	13	1,671
14	57.5	1,373	4,539	0.006	11	1,702
13	53	1,117	3,137	0.004	8	1,385
12	50.5	543	1,384	0.002	3	673
11	47.5	2,746	6,195	0.008	15	3,405
10	44.375	695	1,369	0.002	3	862
9	41.875	1,222	2,144	0.003	5	1,516
8	37.5	1,656	2,329	0.003	6	2,053
7	32.5	1,686	1,781	0.002	4	2,090
6	27.5	1,715	1,297	0.002	3	2,127
5	22.5	1,745	884	0.001	2	2,164
4	17.5	1,775	544	0.001	1	2,201
3	12.5	1,805	282	0.000	1	2,238
2	7.5	1,835	103	0.000	0	2,275
1	2.5	1,864	12	0.000	0	2,312
Generic 20' Omni	178	55	1,743	0.002	4	68
Generic 18' Dipole	178	110	3,485	0.004	9	136
Generic 18' Dipole	120	110	1,584	0.002	4	136
Generic 8' Yagi	178	30	951	0.001	2	37
Generic 8' Yagi	116	30	404	0.000	1	37
Generic 8' Yagi	113	30	383	0.000	1	37
Generic 2' x 4' Rectangular Grid Dish	178	40	1,267	0.002	3	50
Generic 2' x 4' Rectangular Grid Dish	111	40	493	0.001	1	50
Samsung B5/B13 RRH-BR04C	178	211	6,682	0.008	16	261
Samsung B2/B66A RRH-BR049	178	253	8,022	0.010	20	314
Raycap RCMDC-6627-PF-48	178	32	1,014	0.001	2	40
Samsung MT6407-77A	178	245	7,756	0.010	19	304
Commscope NHH-65B-R2B	178	262	8,308	0.010	20	325
Commscope LNX-8513DS-VTM (39.2 lb)	178	118	3,726	0.005	9	146
Generic Flat Platform with Handrails	178	2,500	79,210	0.100	195	3,100
Generic Flat Platform with Handrails	146	2,500	53,290	0.068	131	3,100
Generic Flat Platform with Handrails	137	2,500	46,922	0.060	115	3,100
Powerwave Allgon LGP21401	168	85	2,388	0.003	6	105
Raycap DC6-48-60-18-8F	168	60	1,693	0.002	4	74
Ericsson RRUS 8843 B2, B66A	168	216	6,096	0.008	15	268
Ericsson RRUS 4478 B14	168	180	5,072	0.006	12	223
Ericsson RRUS 4449 B5, B12	168	213	6,012	0.008	15	264
Powerwave Allgon 7770.00	168	105	2,964	0.004	7	130
Generic Mount Reinforcement	168	200	5,645	0.007	14	248
Commscope NNH4-65B-R6	168	269	7,595	0.010	19	334
CCI DMP65R-BU6DA	168	238	6,723	0.008	17	295
Site Pro1 RMQP-496-HK	168	2,500	70,560	0.090	173	3,100
Alcatel-Lucent 2X50W RRH w/o Filter	158	159	3,969	0.005	10	197
Alcatel-Lucent 1900MHz RRH (65MHz)	158	180	4,494	0.006	11	223
Alcatel-Lucent 800 MHz RRH w/ Notch Filter	158	185	4,628	0.006	11	230
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	158	210	5,242	0.007	13	260
RFS APXVSPP18-C-A20	158	171	4,269	0.005	10	212
Commscope DT465B-2XR	158	174	4,344	0.006	11	216
Generic Round Low Profile Platform	158	1,875	46,808	0.059	115	2,325
Ericsson KRY 112 489/2	148	46	1,012	0.001	2	57
Ericsson Radio 4449 B71 B85A	148	225	4,928	0.006	12	279
RFS APXV18-209014-C-A20	148	56	1,229	0.002	3	70
RFS APXVAALL24 43-U-NA20	148	368	8,069	0.010	20	457
Raycap RDIDC-9181-PF-48	137	22	411	0.000	1	27
Fujitsu TA08025-B605	137	225	4,223	0.005	10	279
Fujitsu TA08025-B604	137	192	3,598	0.005	9	238
JMA Wireless MX08FRO665-21	137	194	3,632	0.005	9	240
Generic 9' Omni	113	25	319	0.000	1	31
Generic 22' Dipole	111	66	813	0.001	2	82
Generic Flat T-Arm	110	938	11,344	0.014	28	1,162
Generic GPS	76	10	58	0.000	0	12
		64,539	788,298	1.000	1,936	80,021

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

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Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
51	176.5	235	7,324	0.009	18	202
50	172.5	405	12,064	0.015	30	349
49	169	167	4,768	0.006	12	144
48	166.5	350	9,695	0.012	24	301
47	162.5	596	15,750	0.020	39	513
46	159	243	6,152	0.008	15	209
45	156.5	382	9,359	0.012	23	329
44	152.5	650	15,128	0.019	37	559
43	149	265	5,882	0.008	14	228
42	147	280	6,053	0.008	15	241
41	145.5	141	2,987	0.004	7	121
40	142.5	716	14,531	0.018	36	615
39	138.5	438	8,393	0.011	21	376
38	136	298	5,519	0.007	14	257
37	134.375	188	3,393	0.004	8	162
36	131.875	1,121	19,488	0.025	48	964
35	129.5	303	5,079	0.006	12	260
34	127	817	13,177	0.017	32	703
33	122.5	1,044	15,669	0.020	38	898
32	118	856	11,924	0.015	29	737
31	115.5	217	2,894	0.004	7	187
30	114	437	5,679	0.007	14	376
29	112	442	5,549	0.007	14	381
28	110.5	223	2,728	0.004	7	192
27	107.5	1,132	13,085	0.017	32	974
26	102.5	1,158	12,164	0.015	30	996
25	97.5	1,183	11,249	0.014	28	1,018
24	94.875	60	539	0.001	1	51
23	92.375	2,023	17,266	0.022	42	1,740
22	89.375	540	4,314	0.006	11	465
21	86.875	917	6,919	0.009	17	788
20	82.5	1,245	8,471	0.011	21	1,071
19	78	1,014	6,170	0.008	15	872
18	75.5	256	1,461	0.002	4	220
17	72.5	1,296	6,814	0.009	17	1,115
16	67.5	1,322	6,023	0.008	15	1,137
15	62.5	1,347	5,264	0.007	13	1,159
14	57.5	1,373	4,539	0.006	11	1,181
13	53	1,117	3,137	0.004	8	961
12	50.5	543	1,384	0.002	3	467
11	47.5	2,746	6,195	0.008	15	2,362
10	44.375	695	1,369	0.002	3	598
9	41.875	1,222	2,144	0.003	5	1,051
8	37.5	1,656	2,329	0.003	6	1,424
7	32.5	1,686	1,781	0.002	4	1,450
6	27.5	1,715	1,297	0.002	3	1,476
5	22.5	1,745	884	0.001	2	1,501
4	17.5	1,775	544	0.001	1	1,527
3	12.5	1,805	282	0.000	1	1,552
2	7.5	1,835	103	0.000	0	1,578
1	2.5	1,864	12	0.000	0	1,604
Generic 20' Omni	178	55	1,743	0.002	4	47
Generic 18' Dipole	178	110	3,485	0.004	9	95
Generic 18' Dipole	120	110	1,584	0.002	4	95
Generic 8' Yagi	178	30	951	0.001	2	26
Generic 8' Yagi	116	30	404	0.000	1	26
Generic 8' Yagi	113	30	383	0.000	1	26
Generic 2' x 4' Rectangular Grid Dish	178	40	1,267	0.002	3	34
Generic 2' x 4' Rectangular Grid Dish	111	40	493	0.001	1	34
Samsung B5/B13 RRH-BR04C	178	211	6,682	0.008	16	181
Samsung B2/B66A RRH-BR049	178	253	8,022	0.010	20	218
Raycap RCMDC-6627-PF-48	178	32	1,014	0.001	2	28
Samsung MT6407-77A	178	245	7,756	0.010	19	211
Commscope NHH-65B-R2B	178	262	8,308	0.010	20	226
Commscope LNX-8513DS-VTM (39.2 lb)	178	118	3,726	0.005	9	101
Generic Flat Platform with Handrails	178	2,500	79,210	0.100	195	2,150
Generic Flat Platform with Handrails	146	2,500	53,290	0.068	131	2,150
Generic Flat Platform with Handrails	137	2,500	46,922	0.060	115	2,150
Powerwave Allgon LGP21401	168	85	2,388	0.003	6	73

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Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
Raycap DC6-48-60-18-8F	168	60	1,693	0.002	4	52
Ericsson RRUS 8843 B2, B66A	168	216	6,096	0.008	15	186
Ericsson RRUS 4478 B14	168	180	5,072	0.006	12	155
Ericsson RRUS 4449 B5, B12	168	213	6,012	0.008	15	183
Powerwave Allgon 7770.00	168	105	2,964	0.004	7	90
Generic Mount Reinforcement	168	200	5,645	0.007	14	172
Commscope NNH4-65B-R6	168	269	7,595	0.010	19	231
CCI DMP65R-BU6DA	168	238	6,723	0.008	17	205
Site Pro1 RMQP-496-HK	168	2,500	70,560	0.090	173	2,150
Alcatel-Lucent 2X50W RRH w/o Filter	158	159	3,969	0.005	10	137
Alcatel-Lucent 1900MHz RRH (65MHz)	158	180	4,494	0.006	11	155
Alcatel-Lucent 800 MHz RRH w/ Notch Filter	158	185	4,628	0.006	11	159
Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	158	210	5,242	0.007	13	181
RFS APXVSPP18-C-A20	158	171	4,269	0.005	10	147
Commscope DT465B-2XR	158	174	4,344	0.006	11	150
Generic Round Low Profile Platform	158	1,875	46,808	0.059	115	1,613
Ericsson KRY 112 489/2	148	46	1,012	0.001	2	40
Ericsson Radio 4449 B71 B85A	148	225	4,928	0.006	12	194
RFS APXV18-209014-C-A20	148	56	1,229	0.002	3	48
RFS APXVAALL24 43-U-NA20	148	368	8,069	0.010	20	317
Raycap RDIDC-9181-PF-48	137	22	411	0.000	1	19
Fujitsu TA08025-B605	137	225	4,223	0.005	10	194
Fujitsu TA08025-B604	137	192	3,598	0.005	9	165
JMA Wireless MX08FRO665-21	137	194	3,632	0.005	9	166
Generic 9' Omni	113	25	319	0.000	1	22
Generic 22' Dipole	111	66	813	0.001	2	57
Generic Flat T-Arm	110	938	11,344	0.014	28	806
Generic GPS	76	10	58	0.000	0	9
		64,539	788,298	1.000	1,936	55,510

1.2D + 1.0Ev + 1.0Eh Normal **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-77.71	-1.94	0.00	-289.10	0.00	289.10	6,032.65	1,655.24	10,154	8,442.81	0.00	0.00	0.05
5.00	-75.43	-1.95	0.00	-279.40	0.00	279.40	5,970.50	1,624.53	9,781	8,199.81	0.00	-0.01	0.05
10.00	-73.20	-1.96	0.00	-269.65	0.00	269.65	5,906.46	1,593.82	9,415	7,957.52	0.02	-0.01	0.05
15.00	-71.00	-1.97	0.00	-259.86	0.00	259.86	5,840.54	1,563.11	9,056	7,716.10	0.04	-0.02	0.05
20.00	-68.83	-1.97	0.00	-250.03	0.00	250.03	5,772.74	1,532.40	8,703	7,475.68	0.06	-0.03	0.05
25.00	-66.70	-1.98	0.00	-240.17	0.00	240.17	5,703.06	1,501.69	8,358	7,236.42	0.10	-0.04	0.05
30.00	-64.61	-1.98	0.00	-230.28	0.00	230.28	5,631.49	1,470.99	8,020	6,998.46	0.14	-0.05	0.04
35.00	-62.56	-1.98	0.00	-220.38	0.00	220.38	5,558.05	1,440.28	7,688	6,761.96	0.20	-0.05	0.04
40.00	-61.04	-1.98	0.00	-210.47	0.00	210.47	5,482.72	1,409.57	7,364	6,527.05	0.26	-0.06	0.04
43.75	-60.18	-1.98	0.00	-203.03	0.00	203.03	5,424.99	1,386.54	7,125	6,352.01	0.31	-0.07	0.04
45.00	-56.78	-1.97	0.00	-200.55	0.00	200.55	5,405.52	1,378.86	7,047	6,293.90	0.33	-0.07	0.04
50.00	-56.10	-1.97	0.00	-190.70	0.00	190.70	5,326.43	1,348.15	6,736	6,062.63	0.41	-0.08	0.04
51.00	-54.72	-1.97	0.00	-188.73	0.00	188.73	4,331.59	1,167.27	5,891	4,986.16	0.43	-0.08	0.05
55.00	-53.02	-1.96	0.00	-180.87	0.00	180.87	4,286.21	1,146.21	5,681	4,844.33	0.50	-0.09	0.05
60.00	-51.35	-1.95	0.00	-171.08	0.00	171.08	4,227.81	1,119.89	5,423	4,667.85	0.60	-0.10	0.05
65.00	-49.71	-1.94	0.00	-161.31	0.00	161.31	4,167.52	1,093.57	5,171	4,492.39	0.71	-0.11	0.05
70.00	-48.10	-1.93	0.00	-151.59	0.00	151.59	4,105.35	1,067.25	4,925	4,318.10	0.83	-0.12	0.05
75.00	-47.78	-1.93	0.00	-141.93	0.00	141.93	4,041.30	1,040.92	4,685	4,145.13	0.96	-0.13	0.05
76.00	-46.51	-1.92	0.00	-140.00	0.00	140.00	4,028.27	1,035.66	4,638	4,110.71	0.99	-0.13	0.05
80.00	-44.97	-1.90	0.00	-132.32	0.00	132.32	3,975.37	1,014.60	4,451	3,973.63	1.10	-0.14	0.05
85.00	-43.83	-1.89	0.00	-122.80	0.00	122.80	3,907.56	988.28	4,223	3,803.74	1.26	-0.15	0.04
88.75	-43.16	-1.88	0.00	-115.72	0.00	115.72	3,855.46	968.54	4,056	3,677.47	1.38	-0.16	0.04
90.00	-40.65	-1.84	0.00	-113.37	0.00	113.37	3,837.86	961.96	4,001	3,635.62	1.42	-0.16	0.04
94.75	-40.58	-1.84	0.00	-104.64	0.00	104.64	3,812.68	952.62	3,924	3,576.41	1.59	-0.17	0.04
95.00	-39.11	-1.81	0.00	-104.18	0.00	104.18	3,809.12	951.30	3,913	3,568.09	1.60	-0.17	0.04
100.00	-37.67	-1.78	0.00	-95.13	0.00	95.13	3,736.78	924.98	3,700	3,402.69	1.79	-0.18	0.04
105.00	-36.27	-1.75	0.00	-86.22	0.00	86.22	3,662.56	898.66	3,492	3,239.41	1.98	-0.19	0.04
110.00	-34.83	-1.72	0.00	-77.46	0.00	77.46	3,586.46	872.34	3,291	3,078.39	2.19	-0.20	0.04
111.00	-34.15	-1.70	0.00	-75.74	0.00	75.74	3,571.01	867.08	3,251	3,046.47	2.23	-0.20	0.03
113.00	-33.54	-1.68	0.00	-72.35	0.00	72.35	3,539.90	856.55	3,173	2,982.92	2.32	-0.21	0.03

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Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
115.00	-33.27	-1.68	0.00	-68.98	0.00	68.98	3,508.48	846.02	3,095	2,919.78	2.41	-0.21	0.03
116.00	-32.17	-1.64	0.00	-67.31	0.00	67.31	3,492.66	840.75	3,057	2,888.36	2.45	-0.21	0.03
120.00	-30.74	-1.60	0.00	-60.73	0.00	60.73	3,428.62	819.70	2,906	2,763.73	2.64	-0.22	0.03
125.00	-29.73	-1.57	0.00	-52.72	0.00	52.72	3,346.87	793.38	2,722	2,610.39	2.87	-0.23	0.03
129.00	-29.35	-1.56	0.00	-46.44	0.00	46.44	3,269.48	772.32	2,579	2,481.68	3.07	-0.24	0.03
130.00	-27.96	-1.51	0.00	-44.89	0.00	44.89	3,247.19	767.05	2,544	2,447.80	3.12	-0.24	0.03
133.75	-27.73	-1.50	0.00	-39.24	0.00	39.24	1,899.47	506.91	1,667	1,424.09	3.31	-0.25	0.04
135.00	-27.36	-1.48	0.00	-37.37	0.00	37.37	1,889.77	502.52	1,638	1,404.47	3.37	-0.25	0.04
137.00	-22.94	-1.30	0.00	-34.40	0.00	34.40	1,874.00	495.51	1,592	1,373.17	3.48	-0.25	0.04
140.00	-22.05	-1.27	0.00	-30.49	0.00	30.49	1,849.78	484.98	1,526	1,326.42	3.64	-0.26	0.04
145.00	-21.87	-1.26	0.00	-24.16	0.00	24.16	1,807.91	467.43	1,417	1,249.15	3.91	-0.27	0.03
146.00	-18.43	-1.10	0.00	-22.90	0.00	22.90	1,799.31	463.92	1,396	1,233.81	3.97	-0.27	0.03
148.00	-17.24	-1.04	0.00	-20.71	0.00	20.71	1,781.88	456.90	1,354	1,203.23	4.08	-0.27	0.03
150.00	-16.43	-1.00	0.00	-18.62	0.00	18.62	1,764.15	449.88	1,313	1,172.82	4.20	-0.28	0.03
155.00	-15.96	-0.98	0.00	-13.61	0.00	13.61	1,718.52	432.33	1,212	1,097.58	4.49	-0.28	0.02
158.00	-11.99	-0.76	0.00	-10.67	0.00	10.67	1,690.24	421.81	1,154	1,053.02	4.67	-0.29	0.02
160.00	-11.25	-0.72	0.00	-9.14	0.00	9.14	1,671.00	414.79	1,116	1,023.57	4.79	-0.29	0.02
165.00	-10.82	-0.70	0.00	-5.54	0.00	5.54	1,621.61	397.24	1,024	950.94	5.09	-0.29	0.01
168.00	-5.57	-0.38	0.00	-3.45	0.00	3.45	1,591.06	386.71	970	908.08	5.28	-0.29	0.01
170.00	-5.07	-0.34	0.00	-2.69	0.00	2.69	1,570.33	379.69	935	879.84	5.40	-0.29	0.01
175.00	-4.78	-0.32	0.00	-0.97	0.00	0.97	1,517.17	362.14	851	810.41	5.71	-0.30	0.00
178.00	0.00	-0.30	0.00	0.00	0.00	0.00	1,484.37	351.62	802	769.62	5.89	-0.30	0.00

0.9D - 1.0Ev + 1.0Eh Normal **Seismic (Reduced DL)**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-53.91	-1.94	0.00	-284.40	0.00	284.40	6,032.65	1,655.24	10,154	8,442.81	0.00	0.00	0.04
5.00	-52.33	-1.95	0.00	-274.70	0.00	274.70	5,970.50	1,624.53	9,781	8,199.81	0.00	-0.01	0.04
10.00	-50.78	-1.95	0.00	-264.98	0.00	264.98	5,906.46	1,593.82	9,415	7,957.52	0.02	-0.01	0.04
15.00	-49.25	-1.96	0.00	-255.22	0.00	255.22	5,840.54	1,563.11	9,056	7,716.10	0.03	-0.02	0.04
20.00	-47.75	-1.96	0.00	-245.44	0.00	245.44	5,772.74	1,532.40	8,703	7,475.68	0.06	-0.03	0.04
25.00	-46.27	-1.96	0.00	-235.65	0.00	235.65	5,703.06	1,501.69	8,358	7,236.42	0.10	-0.04	0.04
30.00	-44.82	-1.96	0.00	-225.84	0.00	225.84	5,631.49	1,470.99	8,020	6,998.46	0.14	-0.05	0.04
35.00	-43.40	-1.96	0.00	-216.03	0.00	216.03	5,558.05	1,440.28	7,688	6,761.96	0.19	-0.05	0.04
40.00	-42.35	-1.96	0.00	-206.22	0.00	206.22	5,482.72	1,409.57	7,364	6,527.05	0.25	-0.06	0.04
43.75	-41.75	-1.96	0.00	-198.87	0.00	198.87	5,424.99	1,386.54	7,125	6,352.01	0.31	-0.07	0.04
45.00	-39.39	-1.95	0.00	-196.42	0.00	196.42	5,405.52	1,378.86	7,047	6,293.90	0.32	-0.07	0.04
50.00	-38.92	-1.95	0.00	-186.69	0.00	186.69	5,326.43	1,348.15	6,736	6,062.63	0.40	-0.08	0.04
51.00	-37.96	-1.94	0.00	-184.74	0.00	184.74	4,331.59	1,167.27	5,891	4,986.16	0.42	-0.08	0.05
55.00	-36.78	-1.93	0.00	-176.99	0.00	176.99	4,286.21	1,146.21	5,681	4,844.33	0.49	-0.09	0.05
60.00	-35.62	-1.92	0.00	-167.33	0.00	167.33	4,227.81	1,119.89	5,423	4,667.85	0.59	-0.10	0.04
65.00	-34.48	-1.91	0.00	-157.72	0.00	157.72	4,167.52	1,093.57	5,171	4,492.39	0.70	-0.11	0.04
70.00	-33.36	-1.90	0.00	-148.16	0.00	148.16	4,105.35	1,067.25	4,925	4,318.10	0.81	-0.12	0.04
75.00	-33.14	-1.90	0.00	-138.66	0.00	138.66	4,041.30	1,040.92	4,685	4,145.13	0.94	-0.13	0.04
76.00	-32.26	-1.88	0.00	-136.77	0.00	136.77	4,028.27	1,035.66	4,638	4,110.71	0.97	-0.13	0.04
80.00	-31.19	-1.87	0.00	-129.23	0.00	129.23	3,975.37	1,014.60	4,451	3,973.63	1.08	-0.14	0.04
85.00	-30.40	-1.85	0.00	-119.90	0.00	119.90	3,907.56	988.28	4,223	3,803.74	1.23	-0.15	0.04
88.75	-29.94	-1.84	0.00	-112.96	0.00	112.96	3,855.46	968.54	4,056	3,677.47	1.35	-0.16	0.04
90.00	-28.20	-1.80	0.00	-110.65	0.00	110.65	3,837.86	961.96	4,001	3,635.62	1.40	-0.16	0.04
94.75	-28.15	-1.80	0.00	-102.11	0.00	102.11	3,812.68	952.62	3,924	3,576.41	1.56	-0.17	0.04
95.00	-27.13	-1.77	0.00	-101.66	0.00	101.66	3,809.12	951.30	3,913	3,568.09	1.57	-0.17	0.04
100.00	-26.13	-1.74	0.00	-92.81	0.00	92.81	3,736.78	924.98	3,700	3,402.69	1.75	-0.18	0.03
105.00	-25.16	-1.71	0.00	-84.09	0.00	84.09	3,662.56	898.66	3,492	3,239.41	1.94	-0.19	0.03
110.00	-24.16	-1.68	0.00	-75.53	0.00	75.53	3,586.46	872.34	3,291	3,078.39	2.15	-0.20	0.03
111.00	-23.69	-1.66	0.00	-73.86	0.00	73.86	3,571.01	867.08	3,251	3,046.47	2.19	-0.20	0.03
113.00	-23.27	-1.64	0.00	-70.54	0.00	70.54	3,539.90	856.55	3,173	2,982.92	2.27	-0.20	0.03
115.00	-23.08	-1.64	0.00	-67.25	0.00	67.25	3,508.48	846.02	3,095	2,919.78	2.36	-0.21	0.03
116.00	-22.32	-1.61	0.00	-65.62	0.00	65.62	3,492.66	840.75	3,057	2,888.36	2.40	-0.21	0.03
120.00	-21.32	-1.56	0.00	-59.19	0.00	59.19	3,428.62	819.70	2,906	2,763.73	2.58	-0.22	0.03
125.00	-20.62	-1.53	0.00	-51.38	0.00	51.38	3,346.87	793.38	2,722	2,610.39	2.81	-0.23	0.03
129.00	-20.36	-1.52	0.00	-45.26	0.00	45.26	3,269.48	772.32	2,579	2,481.68	3.01	-0.23	0.02
130.00	-19.40	-1.47	0.00	-43.74	0.00	43.74	3,247.19	767.05	2,544	2,447.80	3.06	-0.23	0.02
133.75	-19.24	-1.46	0.00	-38.24	0.00	38.24	1,899.47	506.91	1,667	1,424.09	3.24	-0.24	0.04
135.00	-18.98	-1.45	0.00	-36.42	0.00	36.42	1,889.77	502.52	1,638	1,404.47	3.30	-0.24	0.04
137.00	-15.91	-1.27	0.00	-33.52	0.00	33.52	1,874.00	495.51	1,592	1,373.17	3.41	-0.25	0.03
140.00	-15.29	-1.23	0.00	-29.71	0.00	29.71	1,849.78	484.98	1,526	1,326.42	3.56	-0.25	0.03

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Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
145.00	-15.17	-1.23	0.00	-23.55	0.00	23.55	1,807.91	467.43	1,417	1,249.15	3.83	-0.26	0.03
146.00	-12.78	-1.07	0.00	-22.32	0.00	22.32	1,799.31	463.92	1,396	1,233.81	3.89	-0.26	0.03
148.00	-11.96	-1.02	0.00	-20.18	0.00	20.18	1,781.88	456.90	1,354	1,203.23	4.00	-0.27	0.02
150.00	-11.40	-0.98	0.00	-18.15	0.00	18.15	1,764.15	449.88	1,313	1,172.82	4.11	-0.27	0.02
155.00	-11.07	-0.95	0.00	-13.26	0.00	13.26	1,718.52	432.33	1,212	1,097.58	4.40	-0.28	0.02
158.00	-8.32	-0.74	0.00	-10.40	0.00	10.40	1,690.24	421.81	1,154	1,053.02	4.57	-0.28	0.02
160.00	-7.81	-0.70	0.00	-8.92	0.00	8.92	1,671.00	414.79	1,116	1,023.57	4.69	-0.28	0.01
165.00	-7.50	-0.68	0.00	-5.40	0.00	5.40	1,621.61	397.24	1,024	950.94	4.98	-0.28	0.01
168.00	-3.87	-0.37	0.00	-3.36	0.00	3.36	1,591.06	386.71	970	908.08	5.16	-0.29	0.01
170.00	-3.52	-0.34	0.00	-2.63	0.00	2.63	1,570.33	379.69	935	879.84	5.28	-0.29	0.01
175.00	-3.31	-0.32	0.00	-0.95	0.00	0.95	1,517.17	362.14	851	810.41	5.59	-0.29	0.00
178.00	0.00	-0.30	0.00	0.00	0.00	0.00	1,484.37	351.62	802	769.62	5.77	-0.29	0.00

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ANALYSIS SUMMARY

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W Normal	38.67	0.00	77.40	0.00	0.00	5044.57	51.00	0.65
0.9D + 1.0W Normal	38.65	0.00	58.04	0.00	0.00	4979.52	51.00	0.63
1.2D + 1.0Di + 1.0Wi Normal	11.10	0.00	99.92	0.00	0.00	1457.06	51.00	0.2
1.2D + 1.0Ev + 1.0Eh Normal	1.98	0.00	77.71	0.00	0.00	289.10	51.00	0.05
0.9D - 1.0Ev + 1.0Eh Normal	1.96	0.00	53.91	0.00	0.00	284.40	51.00	0.05
1.0D + 1.0W Service Normal	8.65	0.00	64.54	0.00	0.00	1119.66	51.00	0.15

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Base Plate & Anchor Rod Analysis

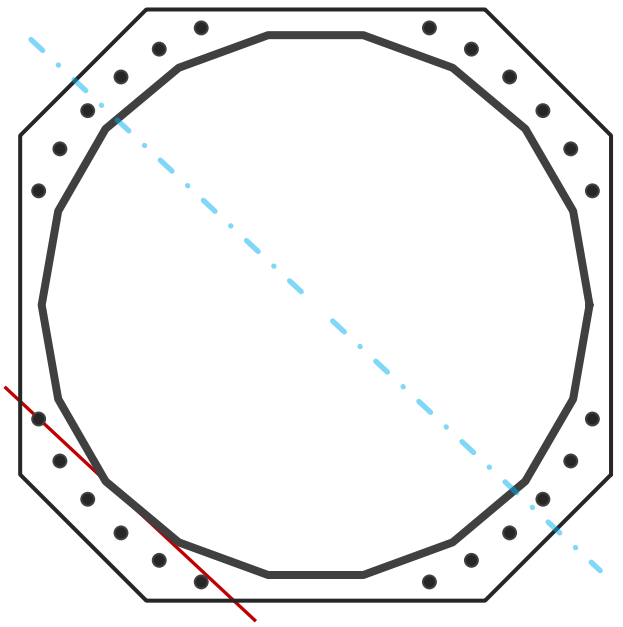
Pole Dimensions		
Number of Sides	18	-
Diameter	68.36	in
Thickness	0.4375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	5044.6	k-ft
Axial, Pu	77.4	k
Shear, Vu	38.7	k
Neutral Axis	137	°

Report Capacities		
Component	Capacity	Result
Base Plate	45%	Pass
Anchor Rods	56%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	75	in
Thickness	3	in
Grade	Other	
Yield Strength, Fy	55	ksi
Tensile Strength, Fu	70	ksi
Clip	16	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	1893.3	k
Bending Stress, ϕMn	4185.6	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	24	-
Diameter, ø	2 1/4	in
Bolt Circle	76	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	135.8	k
Anchor Rods, ϕPn	243.6	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	38.7	5044.6	1.00
Anchor Rod Forces	38.7	5044.6	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	92.8826	5.1601	0.3303		53569.80
Bolt	3.9761	3.2477	0.8393	4.5	56296.11
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	75	in
Thickness, t	3	in
Yield Strength, Fy	55	ksi
Tensile Strength, Fu	70	ksi
Base Plate Chord	30.853	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	24	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	76	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	135.8	k
Applied Shear, Vu	0.1	k
Compressive Capacity, ϕPn	243.6	k
Tensile Capacity, ϕRnt	0.558	OK
Interaction Capacity	0.559	OK

External Base Plate		
Chord Length AA	37.581	in
Additional AA	0.000	in
Section Modulus, Z	84.557	in^3
Applied Moment, Mu	1893.3	k-ft
Bending Capacity, ϕMn	4185.6	k-ft
Capacity, Mu/ϕMn	0.452	OK
Chord Length AB	36.525	in
Additional AB	0.000	in
Section Modulus, Z	82.180	in^3
Applied Moment, Mu	1505.7	k-ft
Bending Capacity, ϕMn	4067.9	k-ft
Capacity, Mu/ϕMn	0.370	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in^3
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

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

Exhibit E

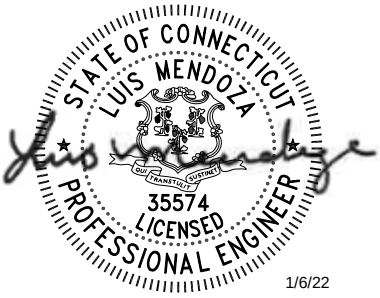
Mount Analysis

MOUNT ANALYSIS REPORT

January 6, 2022

Dish Wireless Site Name	BOBDL00019A
Infinigy Job Number	1197-F0001-B
Client	NSS
Carrier	Dish Wireless
Site Location	230 Clover Mill Road Storrs, CT 06268r Tolland County 41°46'31.5" N NAD83 72°13'22.8" W NAD83
Mount Type	8.0 ft Platform
Mount Elevation	137.0 ft AGL
Structural Usage Ratio	**29.6%**
Overall Result	**Pass**

The enclosed mount structural analysis has been performed in accordance with the 2018 Connecticut State Building Code (2015 IBC) based on an ultimate 3-second gust wind speed of 120 mph. The evaluation criteria and applicable codes are presented in the next section of this report.



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

1. INTRODUCTION

Infinigy performed a structural analysis on the Dish Wireless proposed telecommunication equipment supporting Platform mounted to the existing structure located at the aforementioned address. All referenced supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. The mount was analyzed using Risa-3D version 17.0.4 analysis software.

2. DESIGN/ANALYSIS PARAMETERS

Wind Speed	120 mph (3-Second Gust)
Wind Speed w/ ice	50 mph (3-Second Gust) w/ 1" ice
Code / Standard	TIA-222-H
Adopted Code	2018 Connecticut State Building Code (2015 IBC)
Risk Category	II
Exposure Category	B
Topographic Category	1
Calculated Crest Height	507.72 ftr
Seismic Spectral Response	S_s = 0.187 g / S_1 = 0.055 g
Live Load Wind Speed	60 mph
Man Live Load at Mid/End Points	250 lbs
Man Live Load at Mount Pipes	500 lbs

3. PROPOSED LOADING CONFIGURATION - 137.0 ft. AGL Platform

Antenna Centerline (ft)	Qty.	Appurtenance Manufacturers	Appurtenance Models
137.0	3	JMA WIRELESS	MX08FRO665-21
	3	FUJITSU	TA08025-B605
	3	FUJITSU	TA08025-B604
	1	RAYCAP	RDIDC-9181-PF-48

4. SUPPORTING DOCUMENTATION

Proposed Loading	Dish Wireless Asset ID CT-ATC-T-376046 Rev 0, Site #BOBDL00019A, dated June 14, 2021
Mount Manufacturer Drawings	Commscope Document # MC-PK8-DSH, dated March 08, 2021
Construction Drawings	Infinigy, Project Name: BOBDL00019A, dated December 14, 2021

5. RESULTS

Components	Capacity	Pass/Fail
Mount Pipes	18.4%	Pass
Horizontals	11.1%	Pass
Standoffs	27.9%	Pass
Handrails	22.1%	Pass
Connections	29.6%	Pass
MOUNT RATING =	**29.6%**	**Pass**

Notes:

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

6. RECOMMENDATIONS

Infinigy recommends installing Dish Wireless's proposed equipment loading configuration on the mount at 137.0 ft. The installation shall be performed in accordance with the construction documents issued for this site.

Alisha Khadka
Project Engineer II | **INFINIGY**

7. ASSUMPTIONS

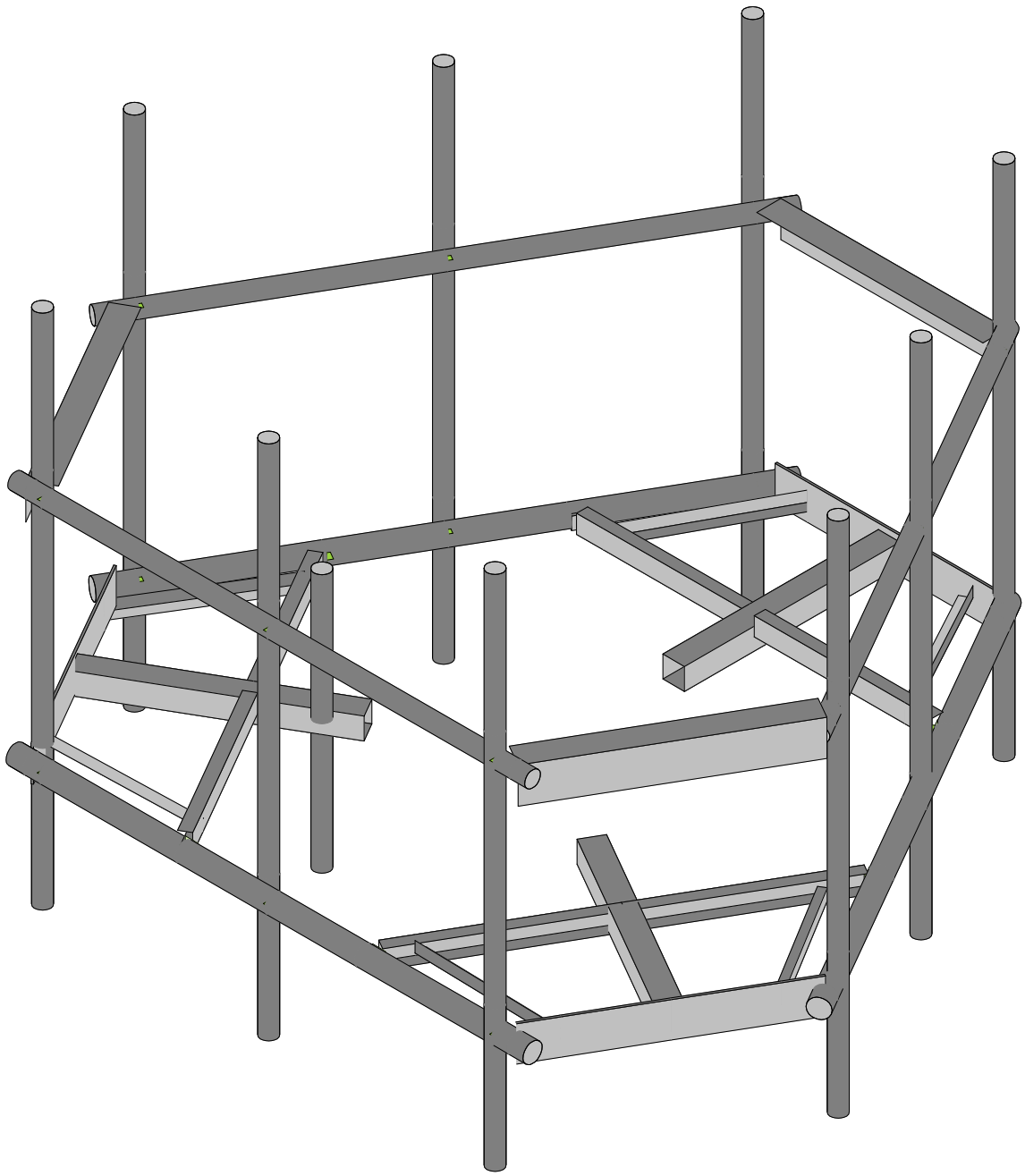
The antenna mounting system was properly fabricated, installed and maintained in accordance with its original design and manufacturer's specifications.
The configuration of antennas, mounts, and other appurtenances are as specified in the proposed loading configuration table.
All member connections are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

8. LIABILITY WAIVER AND LIMITATIONS

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

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

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



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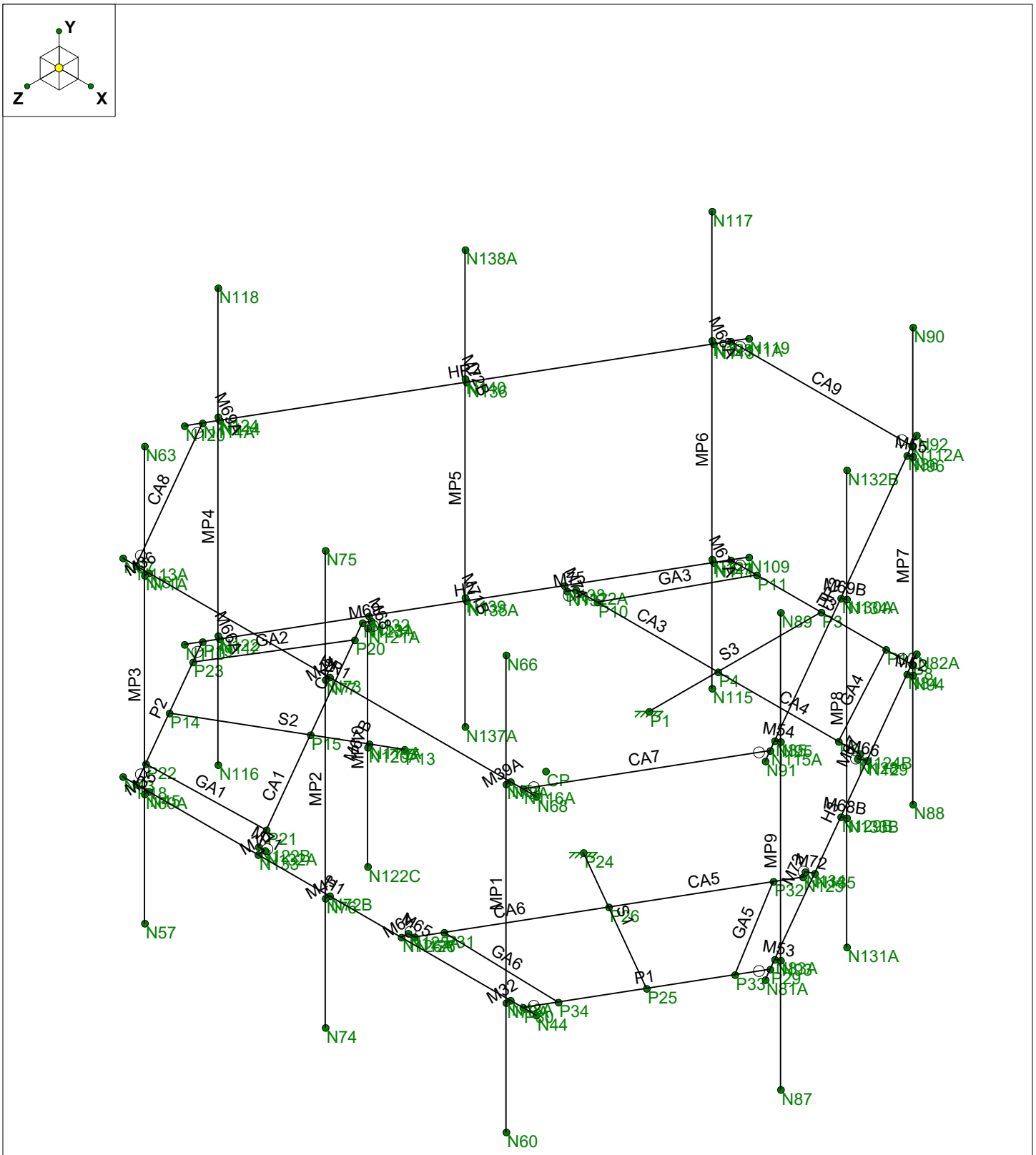
1197-F0001-B		BOBDL00019A_loaded.r3d



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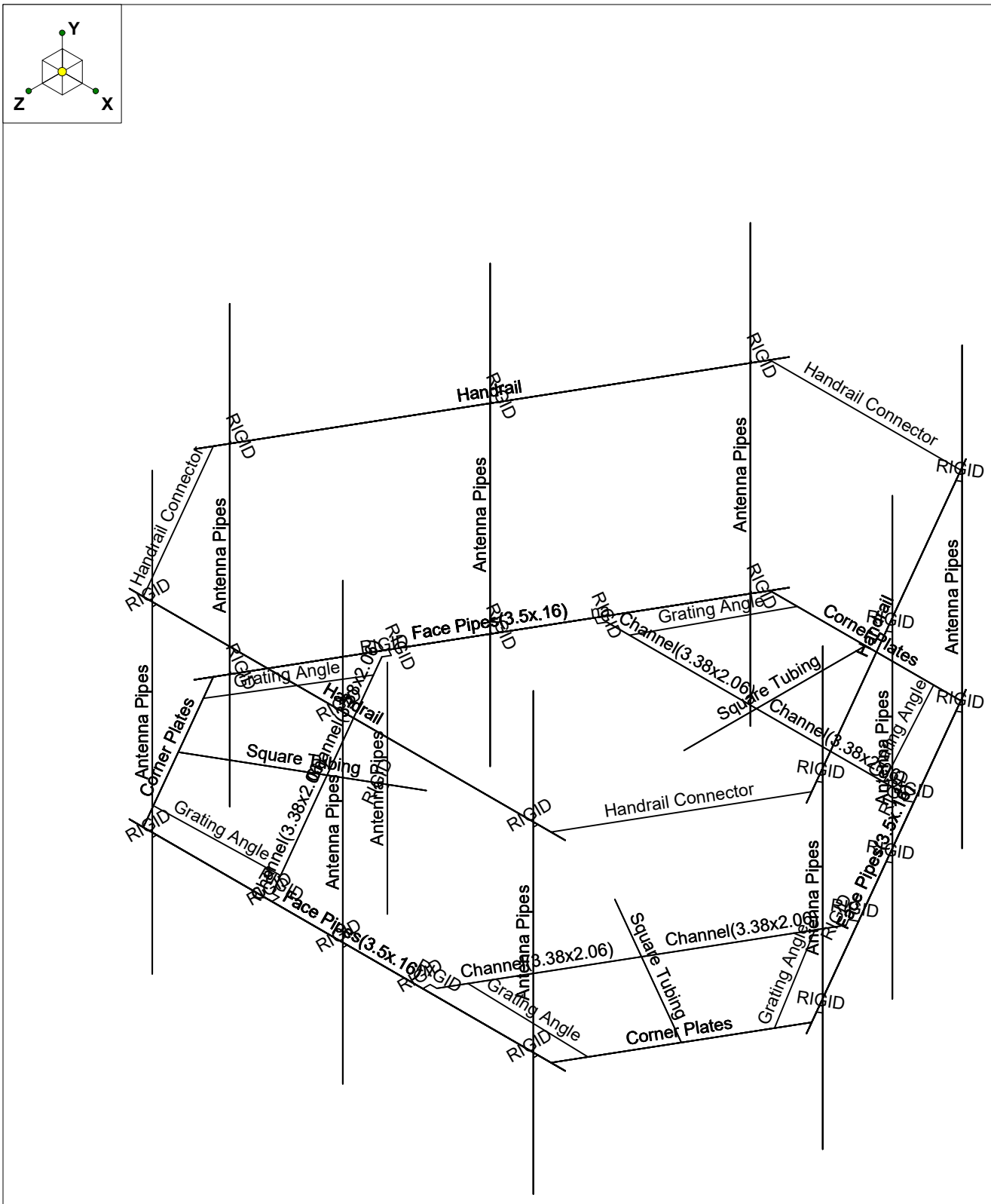

Infinigy Engineering	BOBDL00019A	Section Set
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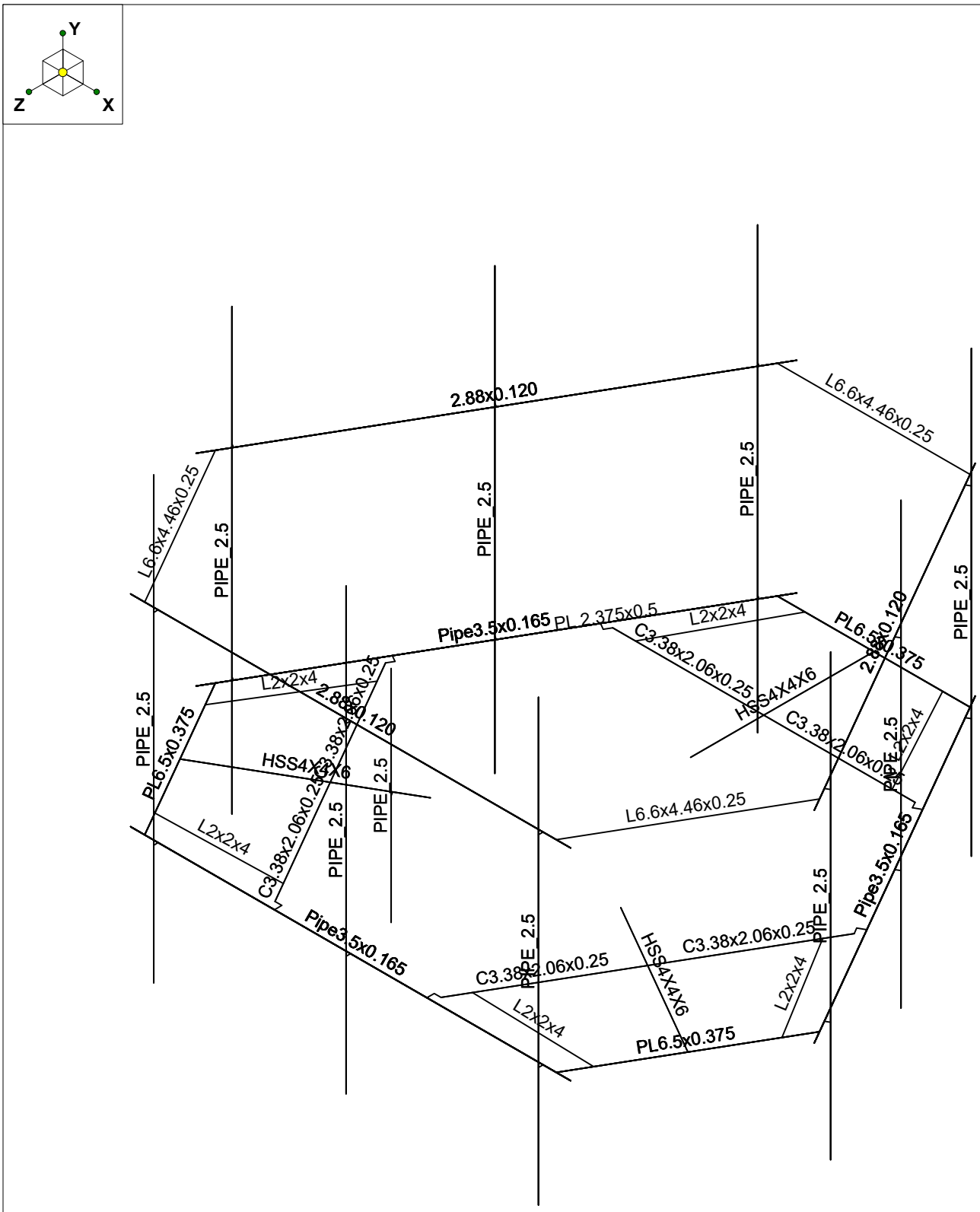

Infinigy Engineering	BOBDL00019A	Member Shape
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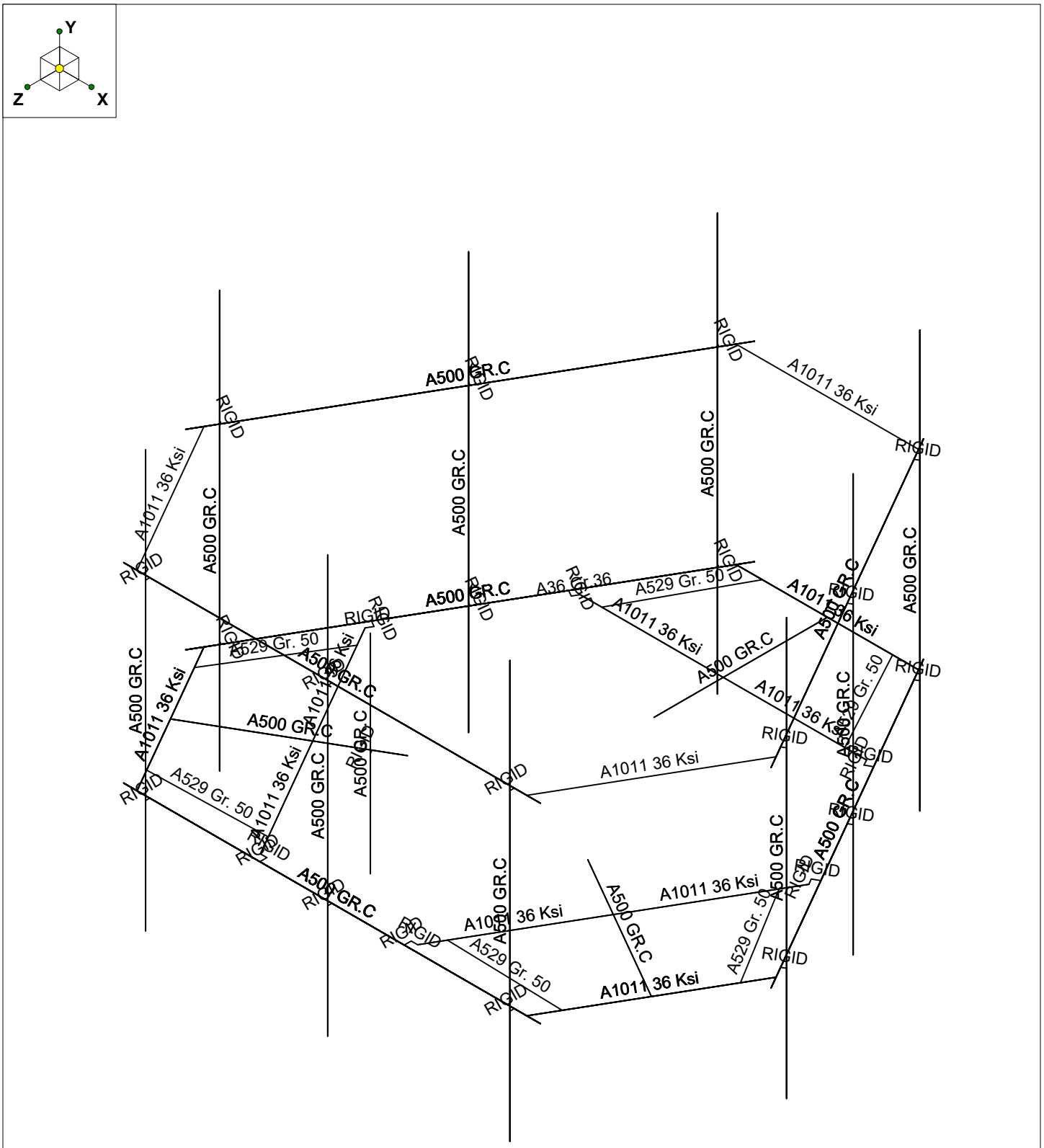
1197-F0001-B		BOBDL00019A_loaded.r3d



Infinigy Engineering	BOBDL00019A	Material Set
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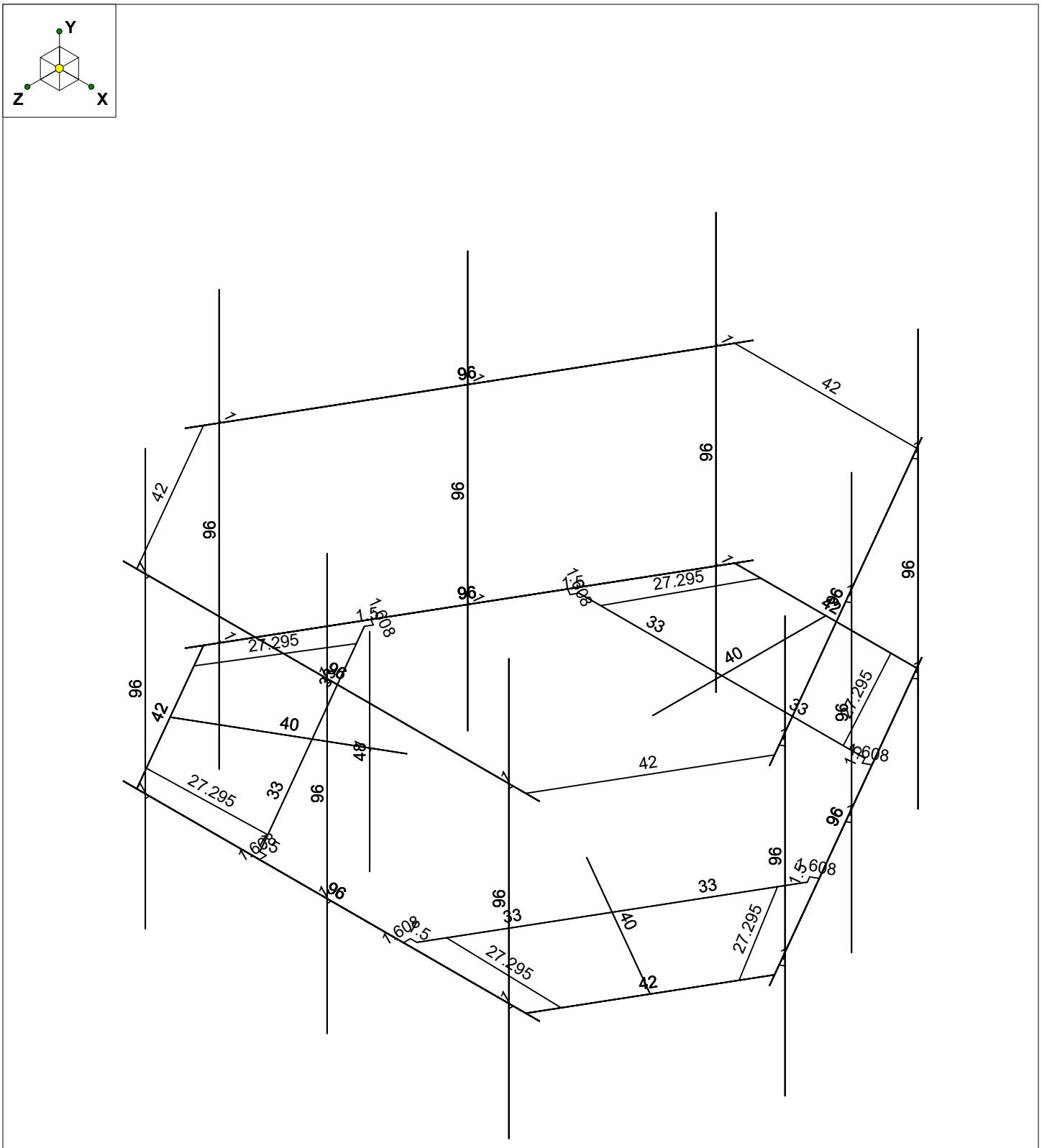
1197-F0001-B		BOBDL00019A_loaded.r3d



Member Length (in) Displayed

Infinigy Engineering	BOBDL00019A	Member Length
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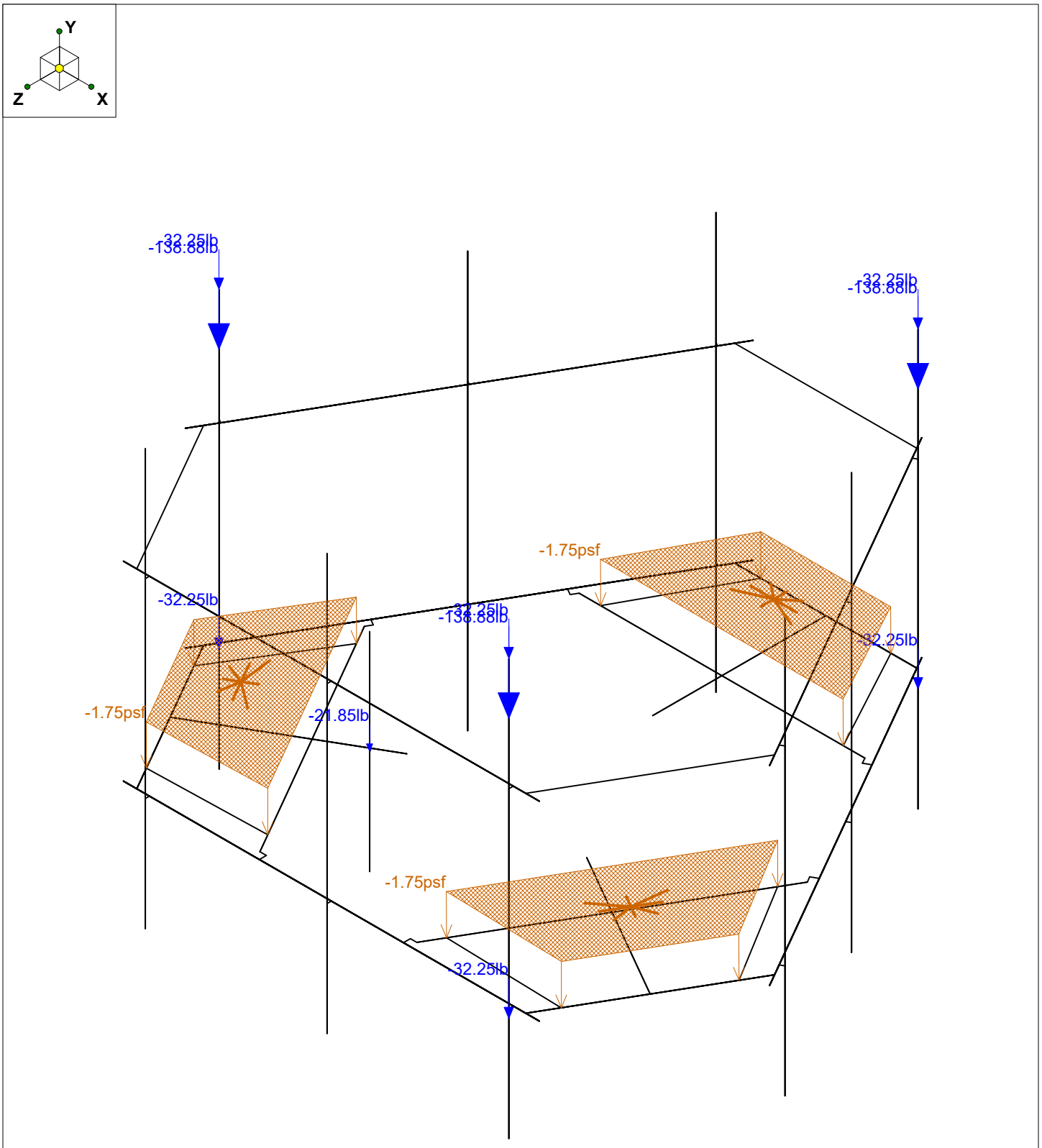
1197-F0001-B		BOBDL00019A_loaded.r3d



Loads: BLC 1, Self Weight

Infinigy Engineering	BOBDL00019A	Self Weight
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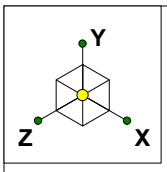
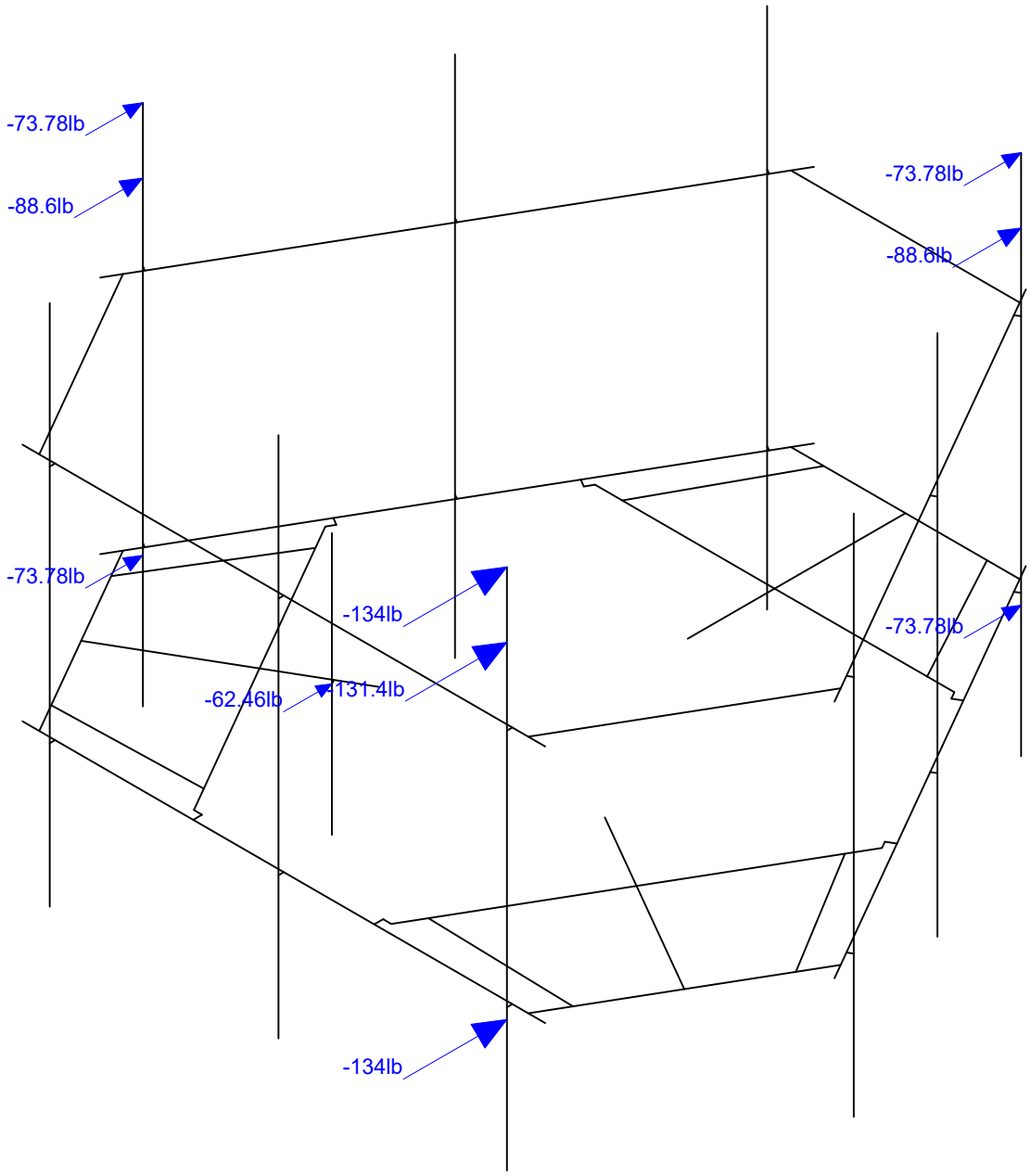
1197-F0001-B		BOBDL00019A_loaded.r3d





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

Infinigy Engineering	BOBDL00019A	Wind Load 0
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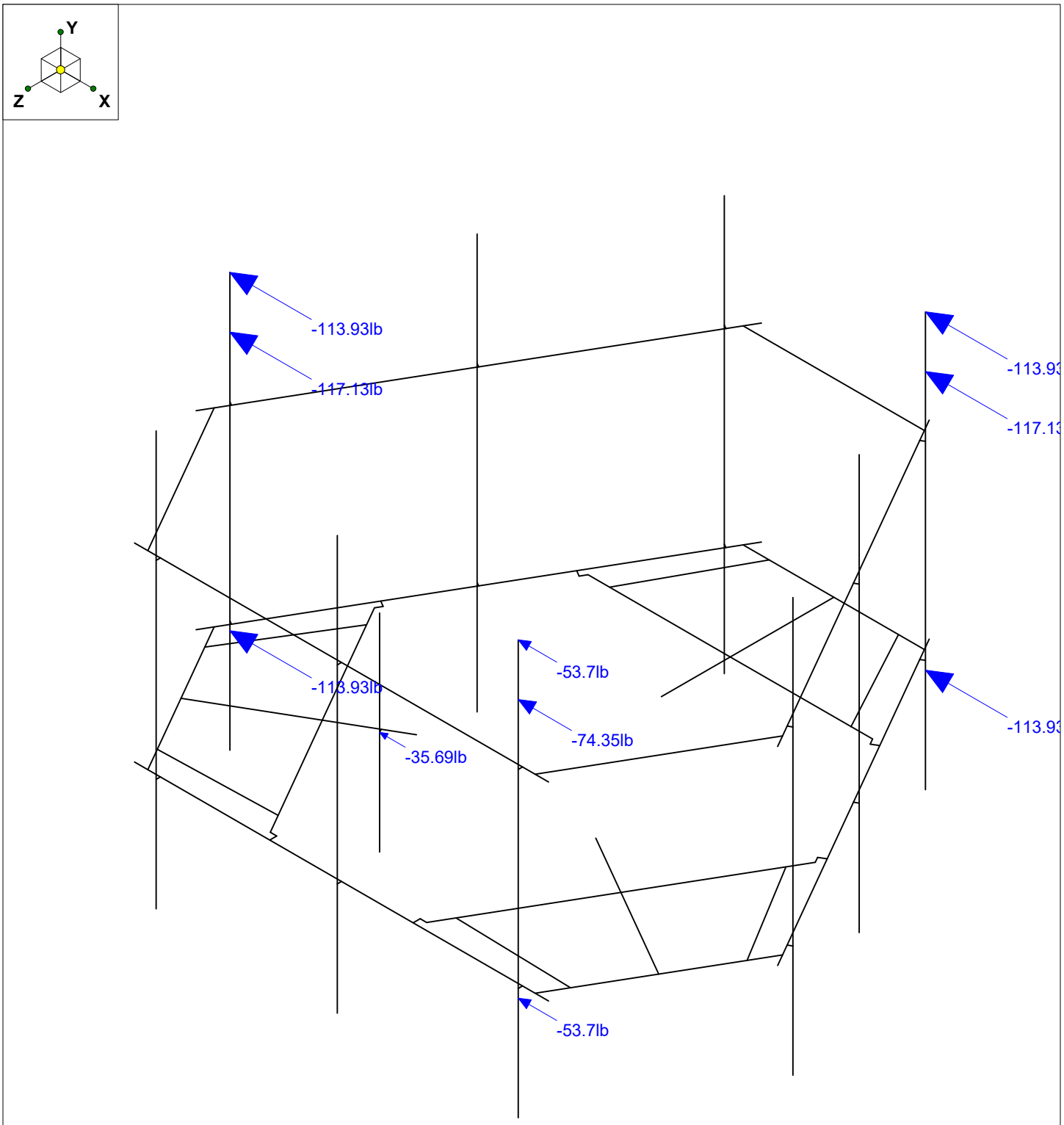
1197-F0001-B		BOBDL00019A_loaded.r3d



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

Infinigy Engineering	BOBDL00019A	Wind Load 90
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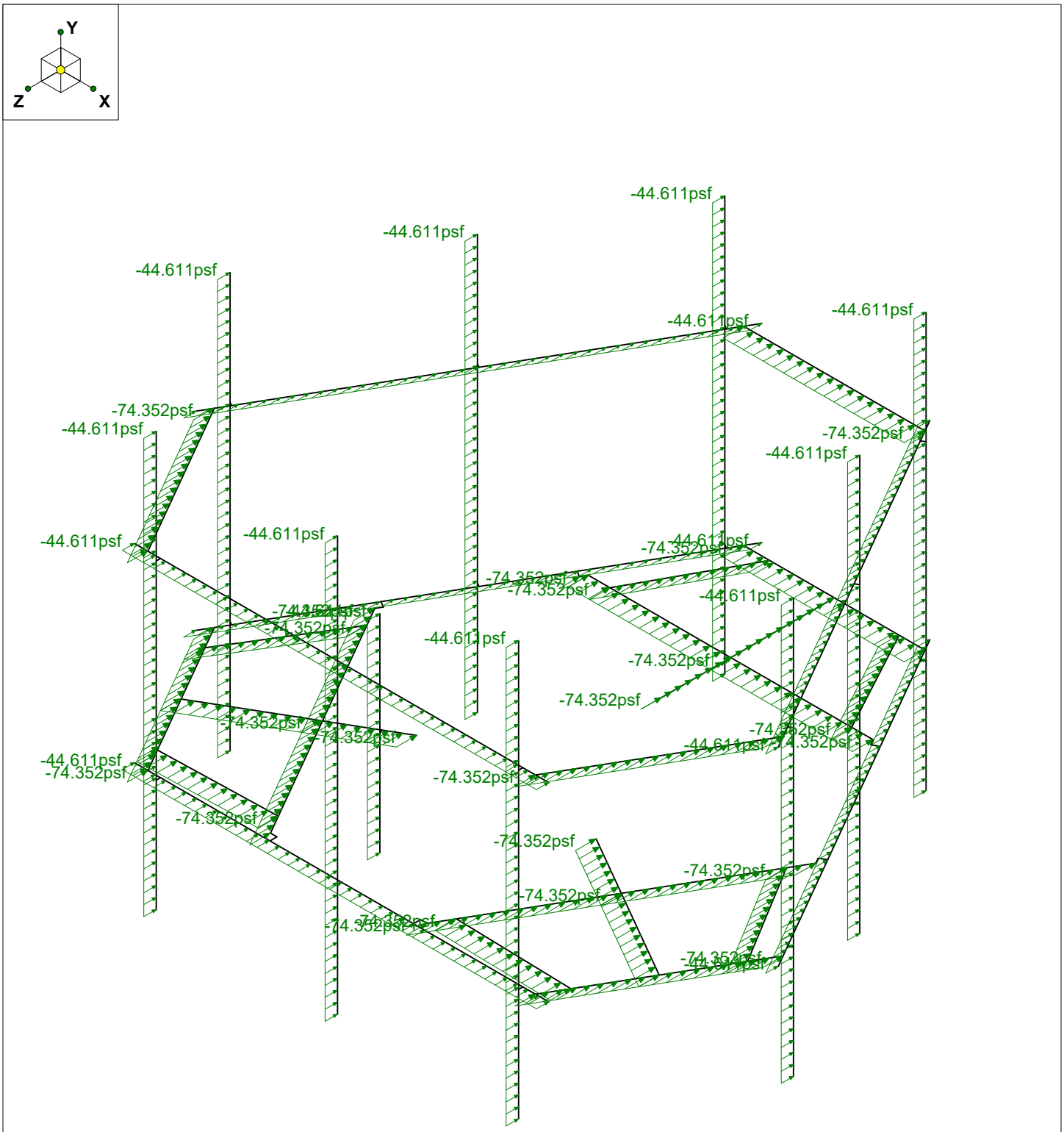
1197-F0001-B		BOBDL00019A_loaded.r3d



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

Infinigy Engineering	BOBDL00019A	Distr. Wind Load 0
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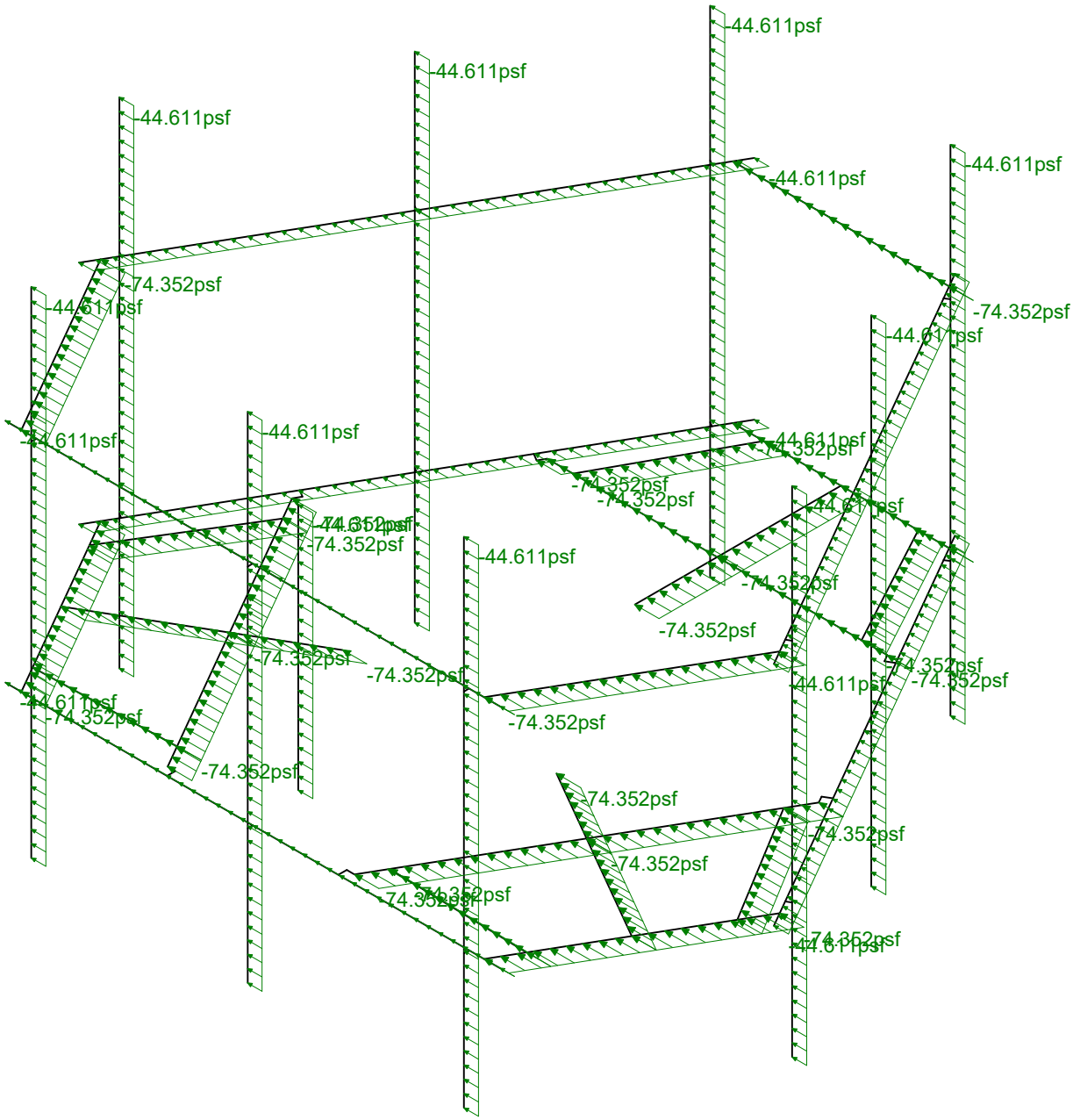
1197-F0001-B		BOBDL00019A_loaded.r3d



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

Infinigy Engineering	BOBDL00019A	Distr. Wind Load 90
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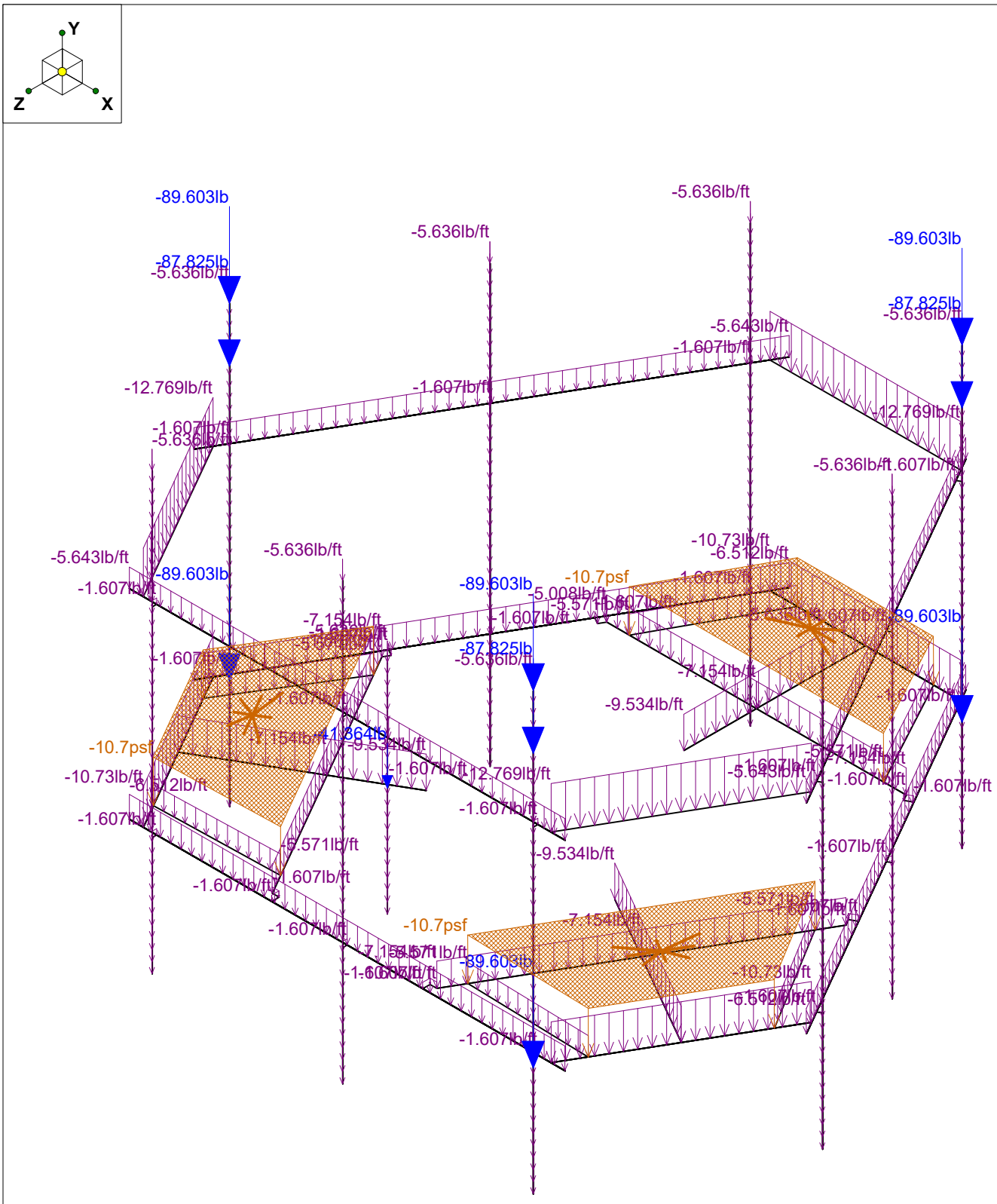
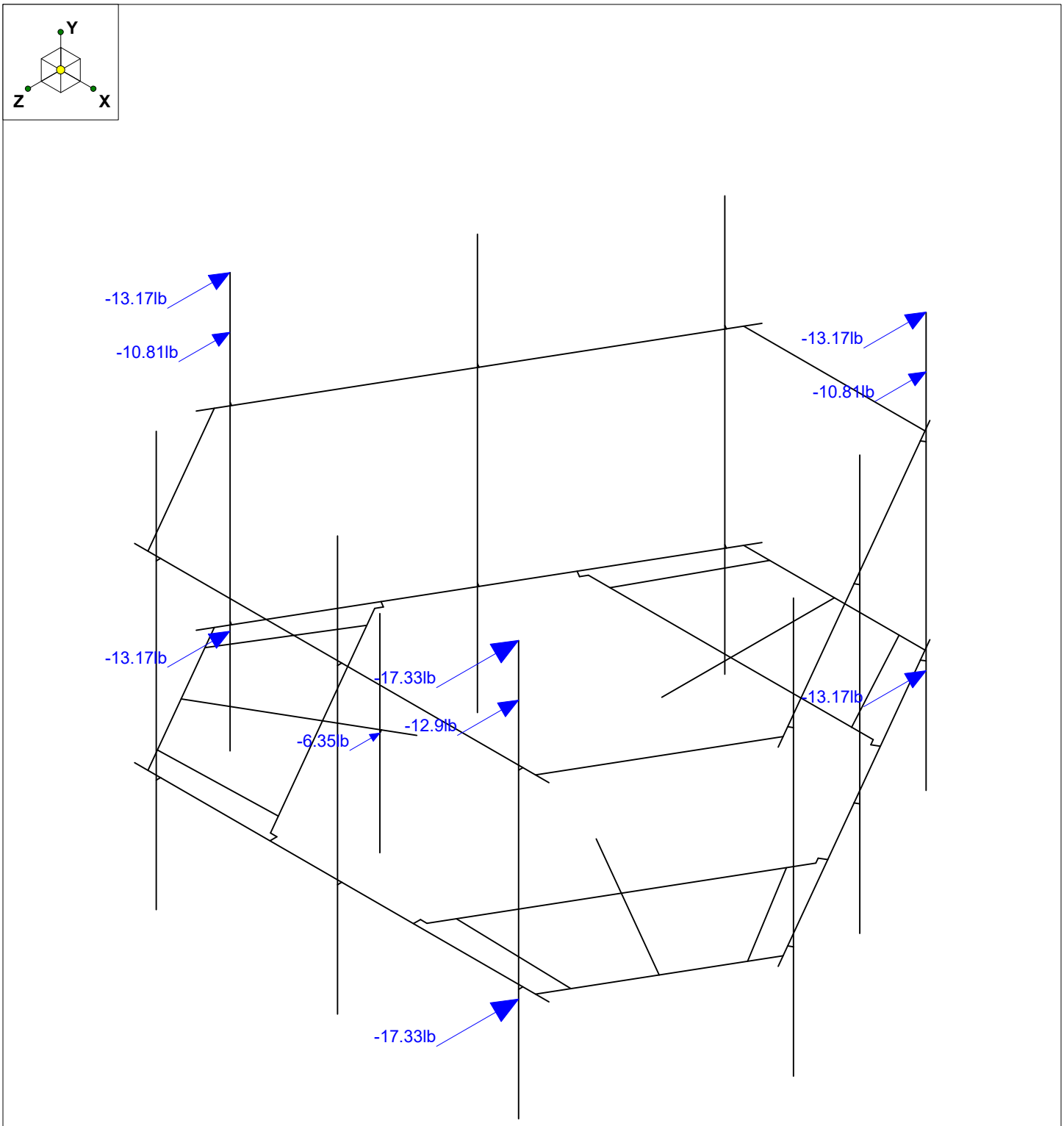
1197-F0001-B		BOBDL00019A_loaded.r3d



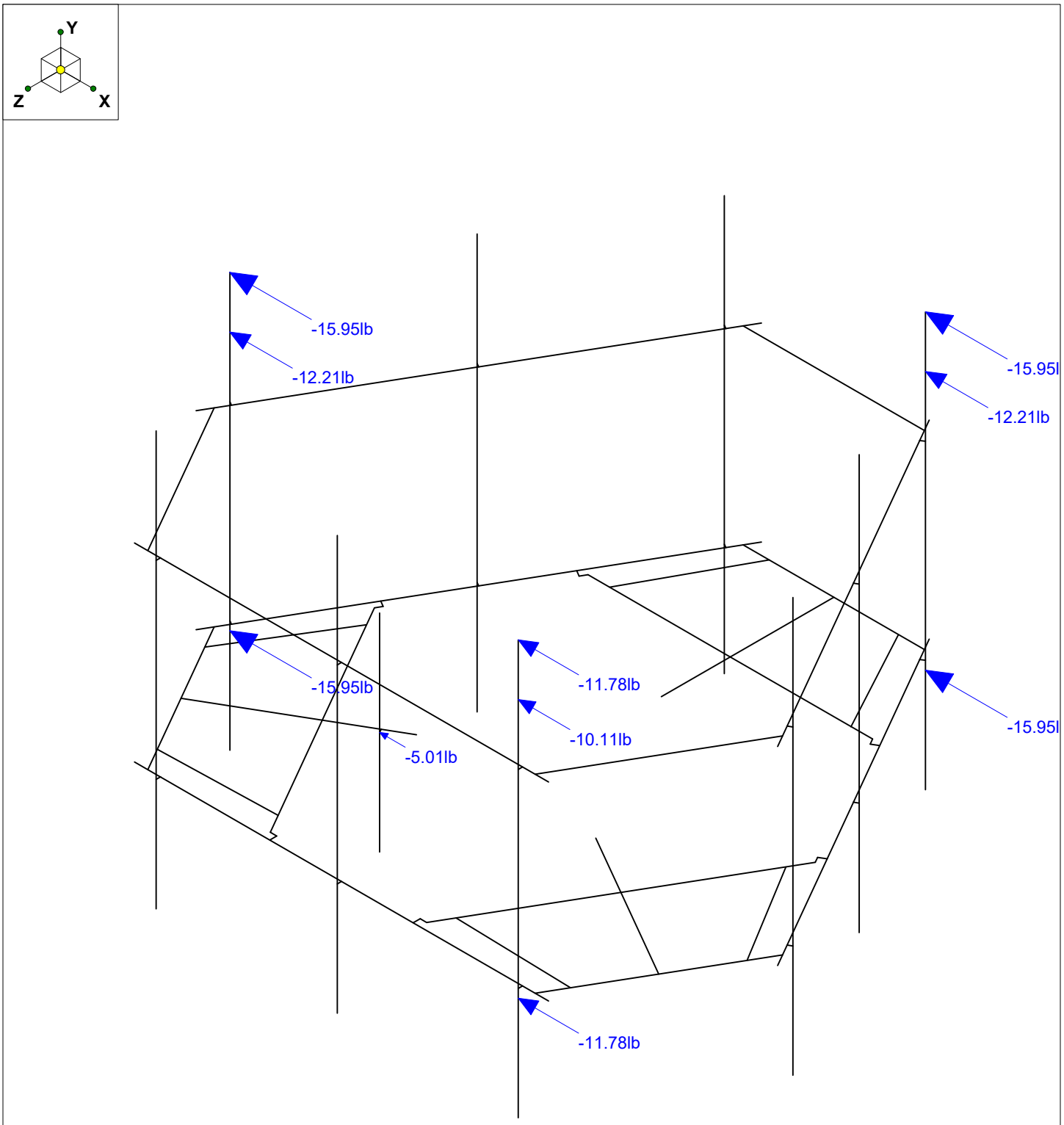
Loads: BLC 16, Ice Weight

Infinigy Engineering	BOBDL00019A	Ice Weight
AK		Jan 6, 2022 at 2:31 PM
1197-F0001-B		BOBDL00019A_loaded.r3d



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

Infinigy Engineering	BOBDL00019A	Ice + Wind Load 0
AK		Jan 6, 2022 at 2:59 PM
1197-F0001-B		BOBDL00019A_loaded.r3d



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

Infinigy Engineering	BOBDL00019A	Ice + Wind Load 90
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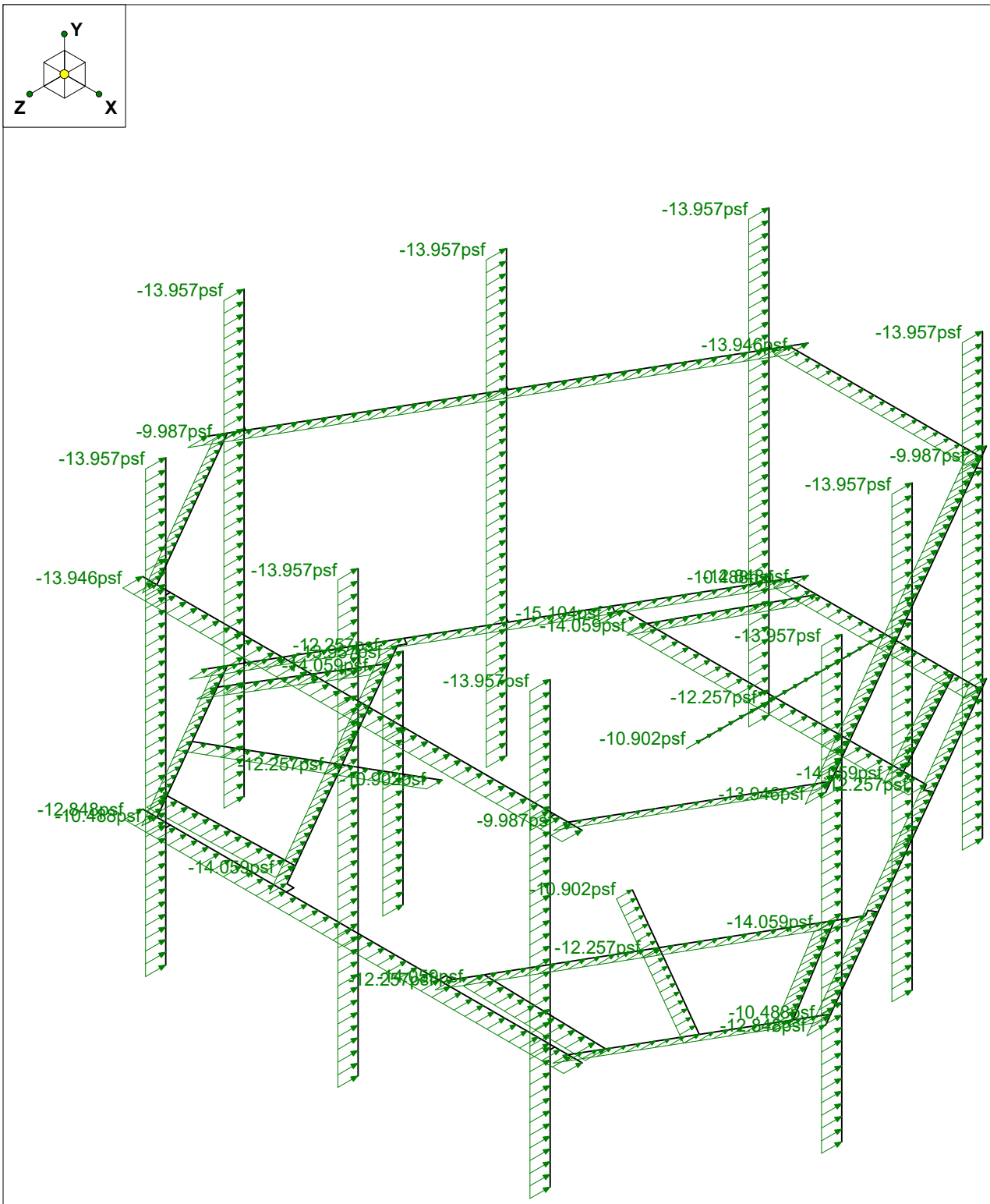
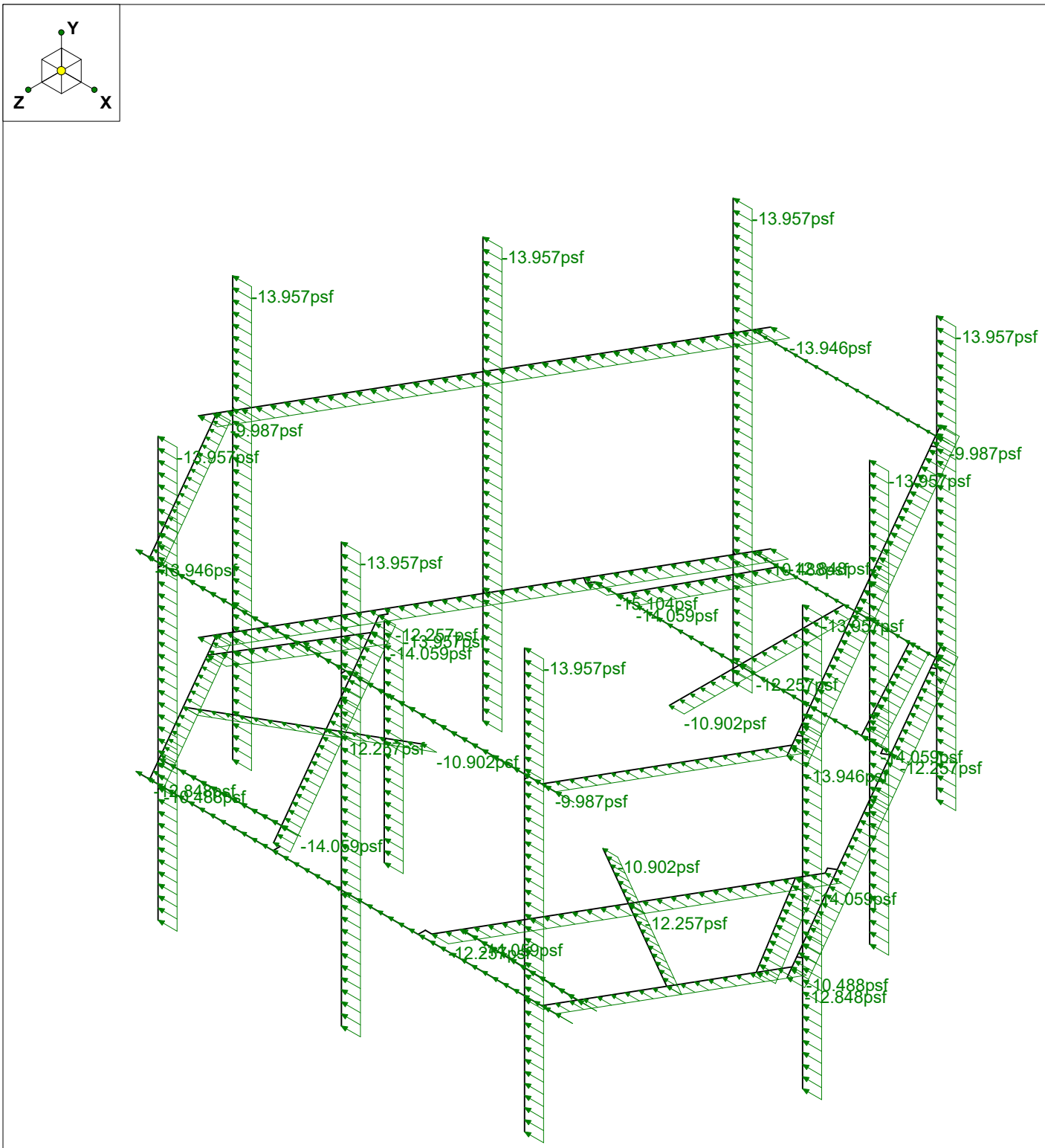


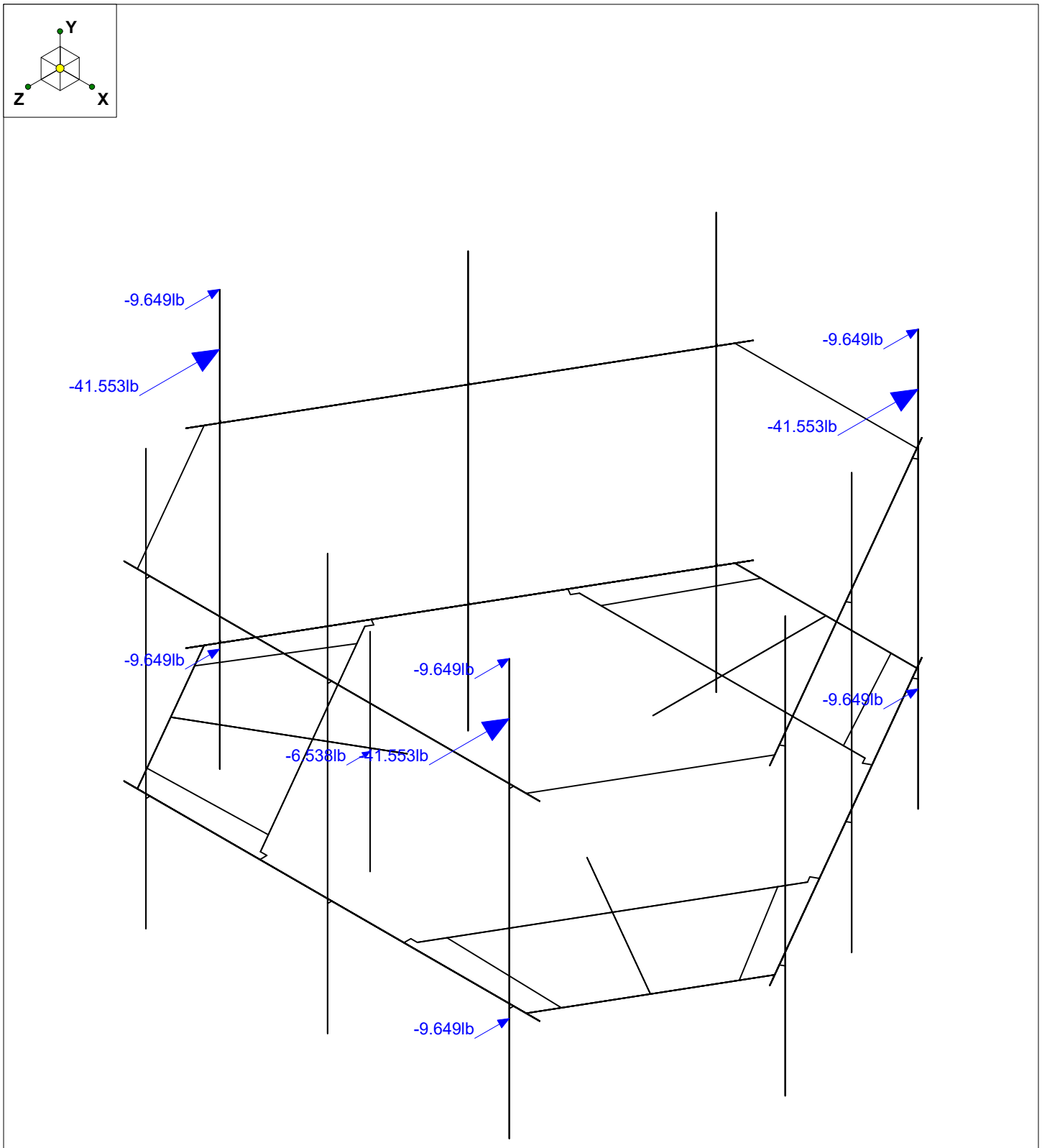
Loads: BLC 29, Distr. Ice Wind Load Z
Envelope Only Solution

Infinigy Engineering	BOBDL00019A	Distr. Ice + Wind Load 0
AK		Jan 6, 2022 at 3:00 PM
1197-F0001-B		BOBDL00019A_loaded.r3d



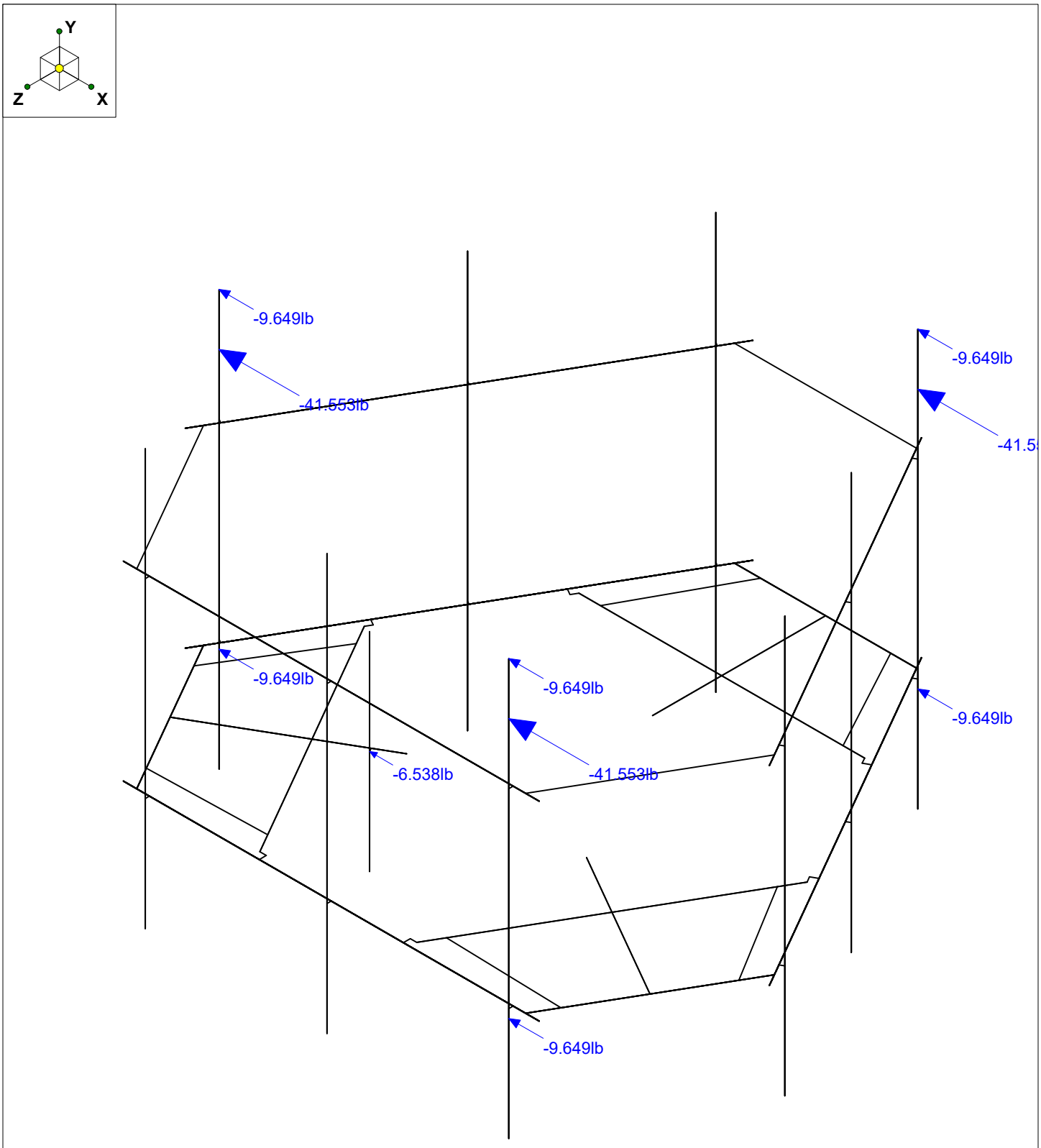
Loads: BLC 30, Distr. Ice Wind Load X
Envelope Only Solution

Infinigy Engineering	BOBDL00019A	Distr. Ice + Wind Load 90
AK		Jan 6, 2022 at 3:00 PM
1197-F0001-B		BOBDL00019A_loaded.r3d



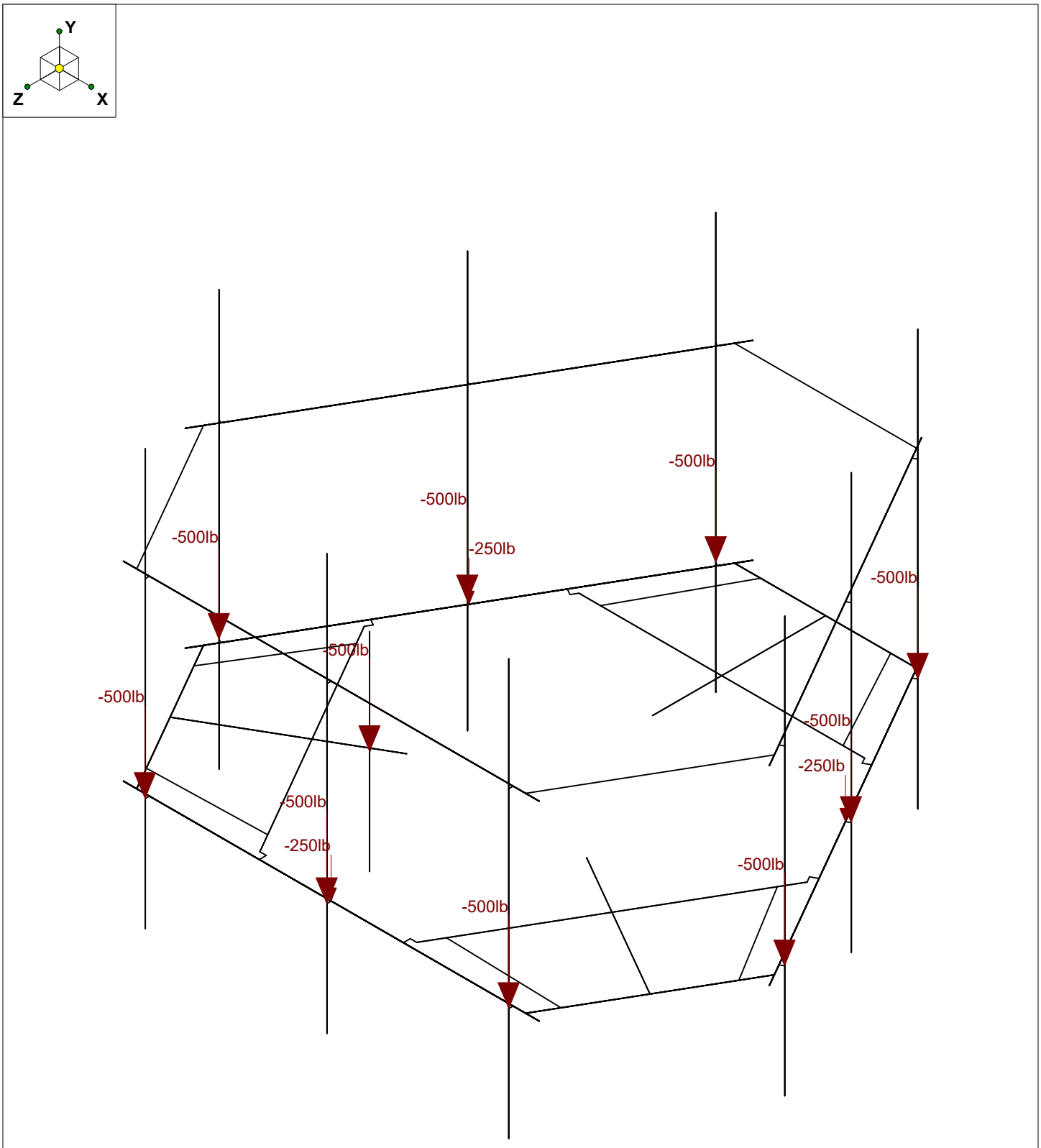
Loads: BLC 31, Seismic Load Z

Infinigy Engineering	BOBDL00019A	Seismic Load 0
AK		Jan 6, 2022 at 2:34 PM
1197-F0001-B		BOBDL00019A_loaded.r3d



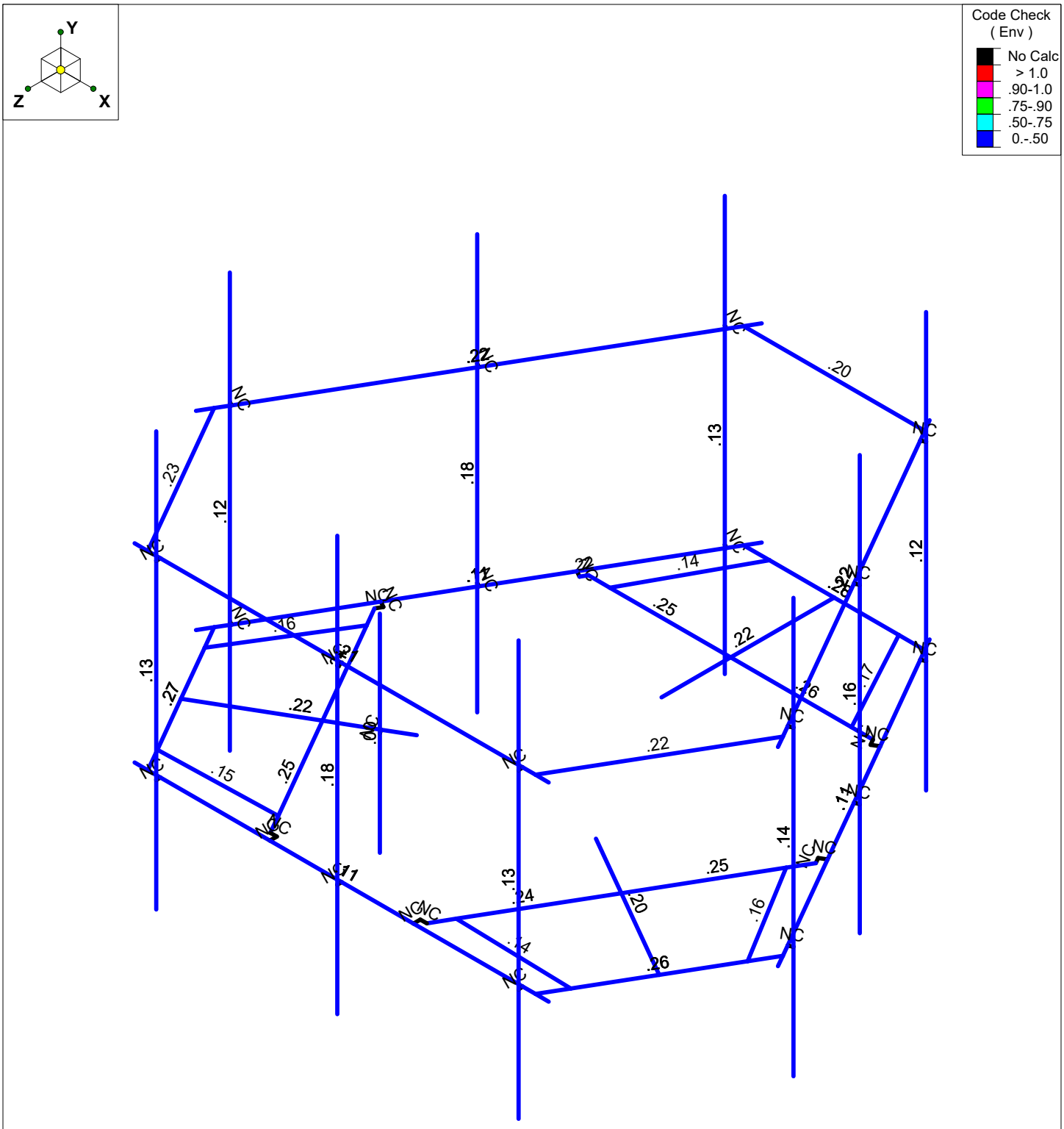
Loads: BLC 32, Seismic Load X

Infinigy Engineering	BOBDL00019A	Seismic Load 90
AK		Jan 6, 2022 at 2:34 PM
1197-F0001-B		BOBDL00019A_loaded.r3d



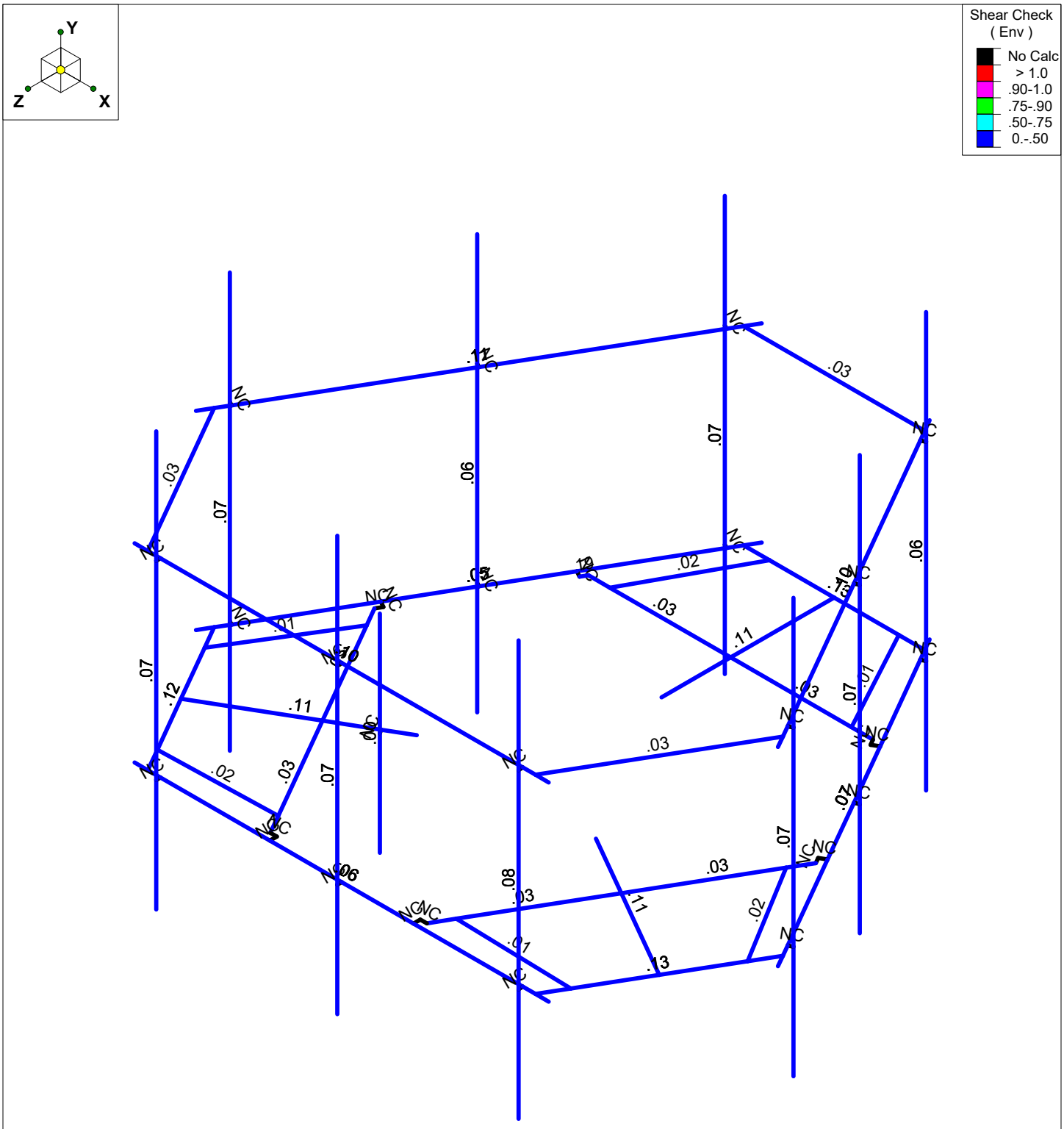
Loads: LL - Live Load

Infinigy Engineering	BOBDL00019A	Non-concurrent Live Loads
AK		Jan 6, 2022 at 2:35 PM
1197-F0001-B		BOBDL00019A_loaded.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering	BOBDL00019A	Bending Check
AK		Jan 6, 2022 at 3:01 PM
1197-F0001-B		BOBDL00019A_loaded.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Infinigy Engineering	BOBDL00019A	Shear Check
AK		Jan 6, 2022 at 3:01 PM
1197-F0001-B		BOBDL00019A_loaded.r3d

Program Inputs

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

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	B	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	507.72	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	137.00	ft
Tower Height AGL:	175.00	ft

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

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	0.982	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_h):	1.000	

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

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	120	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	1	in
Flat Pressure:	74.352	psf
Round Pressure:	44.611	psf
Ice Wind Pressure:	7.745	psf

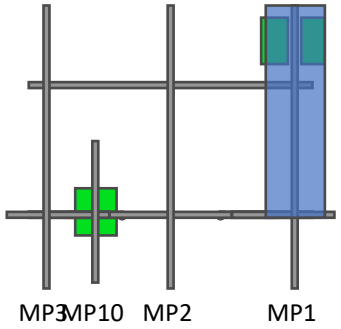
SEISMIC DATA		
Short-Period Accel. (S_s):	0.187	g
1-Second Accel. (S_1):	0.055	g
Short-Period Design (S_{DS}):	0.199	
1-Second Design (S_{D1}):	0.088	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

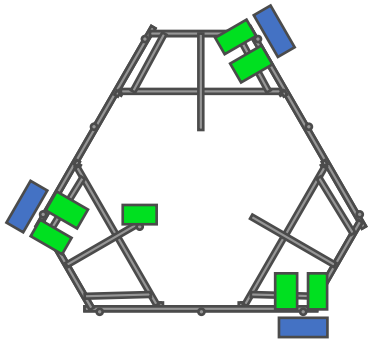
Infinigy Load Calculator V2.1.7

Program Inputs

ELEVATION VIEW



PLAN VIEW



INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Infinigy Load Calculator V2.1.7

APPURTENANCE INFORMATION

Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
JMA WIRELESS MX08FRO665-21	137.0	3	0.90	37.18	8.01	3.21	268.00	107.40	64.50	19.30	MP1
FUJITSU TA08025-B605	137.0	3	0.90	37.18	1.96	1.19	65.70	39.79	74.95	22.43	MP1
FUJITSU TA08025-B604	137.0	3	0.90	37.18	1.96	1.03	65.70	34.56	63.93	19.13	MP1
RAYCAP RDIDC-9181-PF-48	137.0	1	0.90	37.18	1.87	1.07	62.46	35.69	21.85	6.54	MP10

Member Primary Data

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

Member Primary Data (Continued)

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

Hot Rolled Steel Design Parameters

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

Member Advanced Data

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

Member Advanced Data (Continued)

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

Material Takeoff

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

Hot Rolled Steel Section Sets

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

Basic Load Cases

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

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
8	Wind Load AZI 180	None					26			
9	Wind Load AZI 210	None					26			
10	Wind Load AZI 240	None					26			
11	Wind Load AZI 270	None					26			
12	Wind Load AZI 300	None					26			
13	Wind Load AZI 330	None					26			
14	Distr. Wind Load Z	WLZ						68		
15	Distr. Wind Load X	WLX						68		
16	Ice Weight	OL1					13	68	3	
17	Ice Wind Load AZI 0	OL2					26			
18	Ice Wind Load AZI 30	None					26			
19	Ice Wind Load AZI 60	None					26			
20	Ice Wind Load AZI 90	OL3					26			
21	Ice Wind Load AZI 120	None					26			
22	Ice Wind Load AZI 150	None					26			
23	Ice Wind Load AZI 180	None					26			
24	Ice Wind Load AZI 210	None					26			
25	Ice Wind Load AZI 240	None					26			
26	Ice Wind Load AZI 270	None					26			
27	Ice Wind Load AZI 300	None					26			
28	Ice Wind Load AZI 330	None					26			
29	Distr. Ice Wind Load Z	OL2						68		
30	Distr. Ice Wind Load X	OL3						68		
31	Seismic Load Z	ELZ			-.299		13			
32	Seismic Load X	ELX	-.299				13			
33	Service Live Loads	LL				3				
34	Maintenance Load 1	LL				1				
35	Maintenance Load 2	LL				1				
36	Maintenance Load 3	LL				1				
37	Maintenance Load 4	LL				1				
38	Maintenance Load 5	LL				1				
39	Maintenance Load 6	LL				1				
40	Maintenance Load 7	LL				1				
41	Maintenance Load 8	LL				1				
42	Maintenance Load 9	LL				1				
43	Maintenance Load 10	LL				1				
44	BLC 1 Transient Area Loads	None						9		
45	BLC 16 Transient Area Loads	None						9		

Load Combinations

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

Load Combinations (Continued)

	Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
15	0.9DL + 1WL AZI 30	Y...	Y		1	.9	3	1	14	.866	15	.5												
16	0.9DL + 1WL AZI 60	Y...	Y		1	.9	4	1	14	.5	15	.866												
17	0.9DL + 1WL AZI 90	Y...	Y		1	.9	5	1	14		15	1												
18	0.9DL + 1WL AZI 120	Y...	Y		1	.9	6	1	14	-.5	15	.866												
19	0.9DL + 1WL AZI 150	Y...	Y		1	.9	7	1	14	-.8...	15	.5												
20	0.9DL + 1WL AZI 180	Y...	Y		1	.9	8	1	14	-1	15													
21	0.9DL + 1WL AZI 210	Y...	Y		1	.9	9	1	14	-.8...	15	-.5												
22	0.9DL + 1WL AZI 240	Y...	Y		1	.9	10	1	14	-.5	15	-.8...												
23	0.9DL + 1WL AZI 270	Y...	Y		1	.9	11	1	14		15	-1												
24	0.9DL + 1WL AZI 300	Y...	Y		1	.9	12	1	14	.5	15	-.8...												
25	0.9DL + 1WL AZI 330	Y...	Y		1	.9	13	1	14	.866	15	-.5												
26	1.2D + 1.0Di	Y...	Y		1	1.2	16	1																
27	1.2D + 1.0Di +1.0Wi AZI 0	Y...	Y		1	1.2	16	1	17	1	29	1	30											
28	1.2D + 1.0Di +1.0Wi AZI 30	Y...	Y		1	1.2	16	1	18	1	29	.866	30	.5										
29	1.2D + 1.0Di +1.0Wi AZI 60	Y...	Y		1	1.2	16	1	19	1	29	.5	30	.866										
30	1.2D + 1.0Di +1.0Wi AZI 90	Y...	Y		1	1.2	16	1	20	1	29		30	1										
31	1.2D + 1.0Di +1.0Wi AZI 1...	Y...	Y		1	1.2	16	1	21	1	29	-.5	30	.866										
32	1.2D + 1.0Di +1.0Wi AZI 1...	Y...	Y		1	1.2	16	1	22	1	29	-.8...	30	.5										
33	1.2D + 1.0Di +1.0Wi AZI 1...	Y...	Y		1	1.2	16	1	23	1	29	-1	30											
34	1.2D + 1.0Di +1.0Wi AZI 2...	Y...	Y		1	1.2	16	1	24	1	29	-.8...	30	-.5										
35	1.2D + 1.0Di +1.0Wi AZI 2...	Y...	Y		1	1.2	16	1	25	1	29	-.5	30	-.8...										
36	1.2D + 1.0Di +1.0Wi AZI 2...	Y...	Y		1	1.2	16	1	26	1	29		30	-1										
37	1.2D + 1.0Di +1.0Wi AZI 3...	Y...	Y		1	1.2	16	1	27	1	29	.5	30	-.8...										
38	1.2D + 1.0Di +1.0Wi AZI 3...	Y...	Y		1	1.2	16	1	28	1	29	.866	30	-.5										
39	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.24	31	1	32															
40	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.24	31	.866	32	.5														
41	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.24	31	.5	32	.866														
42	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.24	31		32	1														
43	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.24	31	-.5	32	.866														
44	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.24	31	-.866	32	.5														
45	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.24	31	-1	32															
46	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.24	31	-.866	32	-.5														
47	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.24	31	-.5	32	-.8...														
48	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.24	31		32	-1														
49	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.24	31	.5	32	-.8...														
50	(1.2 + 0.2Sds)DL + 1.0E A...	Y...	Y		1	1.24	31	.866	32	-.5														
51	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.86	31	1	32															
52	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.86	31	.866	32	.5														
53	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.86	31	.5	32	.866														
54	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.86	31		32	1														
55	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.86	31	-.5	32	.866														
56	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.86	31	-.866	32	.5														
57	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.86	31	-1	32															
58	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.86	31	-.866	32	-.5														
59	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.86	31	-.5	32	-.8...														
60	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.86	31		32	-1														
61	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.86	31	.5	32	-.8...														
62	(0.9 - 0.2Sds)DL + 1.0E A...	Y...	Y		1	.86	31	.866	32	-.5														
63	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	2	.25	14	.25	15		33	1.5										
64	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	3	.25	14	.216	15	.125	33	1.5										
65	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	4	.25	14	.125	15	.216	33	1.5										
66	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	5	.25	14		15	.25	33	1.5										
67	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	6	.25	14	-.1...	15	.216	33	1.5										
68	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	7	.25	14	-.2...	15	.125	33	1.5										
69	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	8	.25	14	-.25	15		33	1.5										
70	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	9	.25	14	-.2...	15	-.1...	33	1.5										
71	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	10	.25	14	-.1...	15	-.2...	33	1.5										

Load Combinations (Continued)

	Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
72	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	11	.25	14		15	-.25	33	1.5												
73	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	12	.25	14	.125	15	-.2...	33	1.5												
74	1.0DL + 1.5LL + 1.0SWL (...	Y...	Y		1	1	13	.25	14	.216	15	-.1...	33	1.5												
75	1.2DL + 1.5LL	Y...	Y		1	1.2	33	1.5																		
76	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	2	.063	14	.063	15													
77	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	3	.063	14	.054	15	.031												
78	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	4	.063	14	.031	15	.054												
79	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	5	.063	14		15	.063												
80	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	6	.063	14	-.0...	15	.054												
81	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	7	.063	14	-.0...	15	.031												
82	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	8	.063	14	-.0...	15													
83	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	9	.063	14	-.0...	15	-.0...												
84	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	10	.063	14	-.0...	15	-.0...												
85	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	11	.063	14		15	-.0...												
86	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	12	.063	14	.031	15	-.0...												
87	1.2DL + 1.5LM-MP1 + 1S...	Y...	Y		1	1.2	34	1.5	13	.063	14	.054	15	-.0...												
88	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	2	.063	14	.063	15													
89	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	3	.063	14	.054	15	.031												
90	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	4	.063	14	.031	15	.054												
91	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	5	.063	14		15	.063												
92	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	6	.063	14	-.0...	15	.054												
93	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	7	.063	14	-.0...	15	.031												
94	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	8	.063	14	-.0...	15													
95	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	9	.063	14	-.0...	15	-.0...												
96	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	10	.063	14	-.0...	15	-.0...												
97	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	11	.063	14		15	-.0...												
98	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	12	.063	14	.031	15	-.0...												
99	1.2DL + 1.5LM-MP2 + 1S...	Y...	Y		1	1.2	35	1.5	13	.063	14	.054	15	-.0...												
100	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	2	.063	14	.063	15													
101	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	3	.063	14	.054	15	.031												
102	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	4	.063	14	.031	15	.054												
103	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	5	.063	14		15	.063												
104	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	6	.063	14	-.0...	15	.054												
105	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	7	.063	14	-.0...	15	.031												
106	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	8	.063	14	-.0...	15													
107	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	9	.063	14	-.0...	15	-.0...												
108	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	10	.063	14	-.0...	15	-.0...												
109	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	11	.063	14		15	-.0...												
110	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	12	.063	14	.031	15	-.0...												
111	1.2DL + 1.5LM-MP3 + 1S...	Y...	Y		1	1.2	36	1.5	13	.063	14	.054	15	-.0...												
112	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	2	.063	14	.063	15													
113	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	3	.063	14	.054	15	.031												
114	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	4	.063	14	.031	15	.054												
115	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	5	.063	14		15	.063												
116	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	6	.063	14	-.0...	15	.054												
117	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	7	.063	14	-.0...	15	.031												
118	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	8	.063	14	-.0...	15													
119	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	9	.063	14	-.0...	15	-.0...												
120	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	10	.063	14	-.0...	15	-.0...												
121	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	11	.063	14		15	-.0...												
122	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	12	.063	14	.031	15	-.0...												
123	1.2DL + 1.5LM-MP4 + 1S...	Y...	Y		1	1.2	37	1.5	13	.063	14	.054	15	-.0...												
124	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	2	.063	14	.063	15													
125	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	3	.063	14	.054	15	.031												
126	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	4	.063	14	.031	15	.054												
127	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	5	.063	14		15	.063												
128	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	6	.063	14	-.0...	15	.054												

Load Combinations (Continued)

	Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
129	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	7	.063	14	-.0...	15	.031										
130	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	8	.063	14	-.0...	15											
131	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	9	.063	14	-.0...	15	-.0...										
132	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	10	.063	14	-.0...	15	-.0...										
133	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	11	.063	14		15	-.0...										
134	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	12	.063	14	.031	15	-.0...										
135	1.2DL + 1.5LM-MP5 + 1S...	Y...	Y		1	1.2	38	1.5	13	.063	14	.054	15	-.0...										
136	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	2	.063	14	.063	15											
137	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	3	.063	14	.054	15	.031										
138	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	4	.063	14	.031	15	.054										
139	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	5	.063	14		15	.063										
140	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	6	.063	14	-.0...	15	.054										
141	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	7	.063	14	-.0...	15	.031										
142	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	8	.063	14	-.0...	15											
143	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	9	.063	14	-.0...	15	-.0...										
144	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	10	.063	14	-.0...	15	-.0...										
145	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	11	.063	14		15	-.0...										
146	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	12	.063	14	.031	15	-.0...										
147	1.2DL + 1.5LM-MP6 + 1S...	Y...	Y		1	1.2	39	1.5	13	.063	14	.054	15	-.0...										
148	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	2	.063	14	.063	15											
149	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	3	.063	14	.054	15	.031										
150	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	4	.063	14	.031	15	.054										
151	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	5	.063	14		15	.063										
152	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	6	.063	14	-.0...	15	.054										
153	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	7	.063	14	-.0...	15	.031										
154	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	8	.063	14	-.0...	15											
155	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	9	.063	14	-.0...	15	-.0...										
156	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	10	.063	14	-.0...	15	-.0...										
157	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	11	.063	14		15	-.0...										
158	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	12	.063	14	.031	15	-.0...										
159	1.2DL + 1.5LM-MP7 + 1S...	Y...	Y		1	1.2	40	1.5	13	.063	14	.054	15	-.0...										
160	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	2	.063	14	.063	15											
161	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	3	.063	14	.054	15	.031										
162	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	4	.063	14	.031	15	.054										
163	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	5	.063	14		15	.063										
164	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	6	.063	14	-.0...	15	.054										
165	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	7	.063	14	-.0...	15	.031										
166	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	8	.063	14	-.0...	15											
167	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	9	.063	14	-.0...	15	-.0...										
168	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	10	.063	14	-.0...	15	-.0...										
169	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	11	.063	14		15	-.0...										
170	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	12	.063	14	.031	15	-.0...										
171	1.2DL + 1.5LM-MP8 + 1S...	Y...	Y		1	1.2	41	1.5	13	.063	14	.054	15	-.0...										
172	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	2	.063	14	.063	15											
173	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	3	.063	14	.054	15	.031										
174	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	4	.063	14	.031	15	.054										
175	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	5	.063	14		15	.063										
176	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	6	.063	14	-.0...	15	.054										
177	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	7	.063	14	-.0...	15	.031										
178	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	8	.063	14	-.0...	15											
179	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	9	.063	14	-.0...	15	-.0...										
180	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	10	.063	14	-.0...	15	-.0...										
181	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	11	.063	14		15	-.0...										
182	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	12	.063	14	.031	15	-.0...										
183	1.2DL + 1.5LM-MP9 + 1S...	Y...	Y		1	1.2	42	1.5	13	.063	14	.054	15	-.0...										
184	1.2DL + 1.5LM-MP10 + 1S...	Y...	Y		1	1.2	43	1.5	2	.063	14	.063	15											
185	1.2DL + 1.5LM-MP10 + 1S...	Y...	Y		1	1.2	43	1.5	3	.063	14	.054	15	.031										

Load Combinations (Continued)

	Description	S...	PDe...	SRSS	BLC	Factor	BLC	Fac...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
186	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	4	.063	14	.031	15	.054										
187	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	5	.063	14		15	.063										
188	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	6	.063	14	-.0...	15	.054										
189	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	7	.063	14	-.0...	15	.031										
190	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	8	.063	14	-.0...	15											
191	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	9	.063	14	-.0...	15	-.0...										
192	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	10	.063	14	-.0...	15	-.0...										
193	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	11	.063	14		15	-.0...										
194	1.2DL + 1.5LM-MP10 + 1S..	Y...	Y		1	1.2	43	1.5	12	.063	14	.031	15	-.0...										

Joint Boundary Conditions

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

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-...	LC	MZ [lb-ft]	LC
1	P24	max	821.195	6	1525.4...	35	1250.122	13	719.961	16	1579.0...	19	3674.7...	132
2		min	-805.232	24	-378.61	16	-1242.016	19	-3181.339	84	-1596....	13	-1339....	16
3	P13	max	1039.566	4	1863.9...	31	1359.383	15	710.922	24	1772.8...	15	1105.4...	24
4		min	-1037.229	22	-264.257	24	-1367.353	9	-2814.927	92	-1819....	9	-4325....	140
5	P1	max	1288.417	17	1632.4...	27	666.458	2	4328.608	2	1469.8...	11	1579.9...	115
6		min	-1306.807	11	-366.188	20	-670.209	20	-1490.353	20	-1418....	17	-858.411	157
7	Totals:	max	3005.839	5	4510.6...	33	3181.215	14						
8		min	-3005.836	23	1549.0...	51	-3181.218	8						

Member Point Loads (BLC 1 : Self Weight)

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

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	-134	0
3	MP1	X	0	72
4	MP1	Z	-134	72
5	MP1	X	0	12
6	MP1	Z	-65.7	12
7	MP1	X	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP1	Z	-65.7	12
9	MP10	X	0	24
10	MP10	Z	-62.46	24
11	MP4	X	0	0
12	MP4	Z	-73.78	0
13	MP4	X	0	72
14	MP4	Z	-73.78	72
15	MP4	X	0	12
16	MP4	Z	-46.26	12
17	MP4	X	0	12
18	MP4	Z	-42.34	12
19	MP7	X	0	0
20	MP7	Z	-73.78	0
21	MP7	X	0	72
22	MP7	Z	-73.78	72
23	MP7	X	0	12
24	MP7	Z	-46.26	12
25	MP7	X	0	12
26	MP7	Z	-42.34	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-56.96	0
2	MP1	Z	-98.66	0
3	MP1	X	-56.96	72
4	MP1	Z	-98.66	72
5	MP1	X	-29.61	12
6	MP1	Z	-51.28	12
7	MP1	X	-28.96	12
8	MP1	Z	-50.15	12
9	MP10	X	-27.88	24
10	MP10	Z	-48.29	24
11	MP4	X	-56.96	0
12	MP4	Z	-98.66	0
13	MP4	X	-56.96	72
14	MP4	Z	-98.66	72
15	MP4	X	-29.61	12
16	MP4	Z	-51.28	12
17	MP4	X	-28.96	12
18	MP4	Z	-50.15	12
19	MP7	X	-26.85	0
20	MP7	Z	-46.51	0
21	MP7	X	-26.85	72
22	MP7	Z	-46.51	72
23	MP7	X	-19.89	12
24	MP7	Z	-34.46	12
25	MP7	X	-17.28	12
26	MP7	Z	-29.93	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-63.89	0
2	MP1	Z	-36.89	0
3	MP1	X	-63.89	72
4	MP1	Z	-36.89	72
5	MP1	X	-40.07	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
6	MP1	Z	-23.13	12
7	MP1	X	-36.67	12
8	MP1	Z	-21.17	12
9	MP10	X	-36.7	24
10	MP10	Z	-21.19	24
11	MP4	X	-116.05	0
12	MP4	Z	-67	0
13	MP4	X	-116.05	72
14	MP4	Z	-67	72
15	MP4	X	-56.89	12
16	MP4	Z	-32.85	12
17	MP4	X	-56.89	12
18	MP4	Z	-32.85	12
19	MP7	X	-63.89	0
20	MP7	Z	-36.89	0
21	MP7	X	-63.89	72
22	MP7	Z	-36.89	72
23	MP7	X	-40.07	12
24	MP7	Z	-23.13	12
25	MP7	X	-36.67	12
26	MP7	Z	-21.17	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-53.7	0
2	MP1	Z	0	0
3	MP1	X	-53.7	72
4	MP1	Z	0	72
5	MP1	X	-39.79	12
6	MP1	Z	0	12
7	MP1	X	-34.56	12
8	MP1	Z	0	12
9	MP10	X	-35.69	24
10	MP10	Z	0	24
11	MP4	X	-113.93	0
12	MP4	Z	0	0
13	MP4	X	-113.93	72
14	MP4	Z	0	72
15	MP4	X	-59.22	12
16	MP4	Z	0	12
17	MP4	X	-57.91	12
18	MP4	Z	0	12
19	MP7	X	-113.93	0
20	MP7	Z	0	0
21	MP7	X	-113.93	72
22	MP7	Z	0	72
23	MP7	X	-59.22	12
24	MP7	Z	0	12
25	MP7	X	-57.91	12
26	MP7	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-63.89	0
2	MP1	Z	36.89	0
3	MP1	X	-63.89	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP1	Z	36.89	72
5	MP1	X	-40.07	12
6	MP1	Z	23.13	12
7	MP1	X	-36.67	12
8	MP1	Z	21.17	12
9	MP10	X	-36.7	24
10	MP10	Z	21.19	24
11	MP4	X	-63.89	0
12	MP4	Z	36.89	0
13	MP4	X	-63.89	72
14	MP4	Z	36.89	72
15	MP4	X	-40.07	12
16	MP4	Z	23.13	12
17	MP4	X	-36.67	12
18	MP4	Z	21.17	12
19	MP7	X	-116.05	0
20	MP7	Z	67	0
21	MP7	X	-116.05	72
22	MP7	Z	67	72
23	MP7	X	-56.89	12
24	MP7	Z	32.85	12
25	MP7	X	-56.89	12
26	MP7	Z	32.85	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-56.96	0
2	MP1	Z	98.66	0
3	MP1	X	-56.96	72
4	MP1	Z	98.66	72
5	MP1	X	-29.61	12
6	MP1	Z	51.28	12
7	MP1	X	-28.96	12
8	MP1	Z	50.15	12
9	MP10	X	-27.88	24
10	MP10	Z	48.29	24
11	MP4	X	-26.85	0
12	MP4	Z	46.51	0
13	MP4	X	-26.85	72
14	MP4	Z	46.51	72
15	MP4	X	-19.89	12
16	MP4	Z	34.46	12
17	MP4	X	-17.28	12
18	MP4	Z	29.93	12
19	MP7	X	-56.96	0
20	MP7	Z	98.66	0
21	MP7	X	-56.96	72
22	MP7	Z	98.66	72
23	MP7	X	-29.61	12
24	MP7	Z	51.28	12
25	MP7	X	-28.96	12
26	MP7	Z	50.15	12

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

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

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP1	Z	134	0
3	MP1	X	0	72
4	MP1	Z	134	72
5	MP1	X	0	12
6	MP1	Z	65.7	12
7	MP1	X	0	12
8	MP1	Z	65.7	12
9	MP10	X	0	24
10	MP10	Z	62.46	24
11	MP4	X	0	0
12	MP4	Z	73.78	0
13	MP4	X	0	72
14	MP4	Z	73.78	72
15	MP4	X	0	12
16	MP4	Z	46.26	12
17	MP4	X	0	12
18	MP4	Z	42.34	12
19	MP7	X	0	0
20	MP7	Z	73.78	0
21	MP7	X	0	72
22	MP7	Z	73.78	72
23	MP7	X	0	12
24	MP7	Z	46.26	12
25	MP7	X	0	12
26	MP7	Z	42.34	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	56.96	0
2	MP1	Z	98.66	0
3	MP1	X	56.96	72
4	MP1	Z	98.66	72
5	MP1	X	29.61	12
6	MP1	Z	51.28	12
7	MP1	X	28.96	12
8	MP1	Z	50.15	12
9	MP10	X	27.88	24
10	MP10	Z	48.29	24
11	MP4	X	56.96	0
12	MP4	Z	98.66	0
13	MP4	X	56.96	72
14	MP4	Z	98.66	72
15	MP4	X	29.61	12
16	MP4	Z	51.28	12
17	MP4	X	28.96	12
18	MP4	Z	50.15	12
19	MP7	X	26.85	0
20	MP7	Z	46.51	0
21	MP7	X	26.85	72
22	MP7	Z	46.51	72
23	MP7	X	19.89	12
24	MP7	Z	34.46	12
25	MP7	X	17.28	12
26	MP7	Z	29.93	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	63.89	0
2	MP1	Z	36.89	0
3	MP1	X	63.89	72
4	MP1	Z	36.89	72
5	MP1	X	40.07	12
6	MP1	Z	23.13	12
7	MP1	X	36.67	12
8	MP1	Z	21.17	12
9	MP10	X	36.7	24
10	MP10	Z	21.19	24
11	MP4	X	116.05	0
12	MP4	Z	67	0
13	MP4	X	116.05	72
14	MP4	Z	67	72
15	MP4	X	56.89	12
16	MP4	Z	32.85	12
17	MP4	X	56.89	12
18	MP4	Z	32.85	12
19	MP7	X	63.89	0
20	MP7	Z	36.89	0
21	MP7	X	63.89	72
22	MP7	Z	36.89	72
23	MP7	X	40.07	12
24	MP7	Z	23.13	12
25	MP7	X	36.67	12
26	MP7	Z	21.17	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	53.7	0
2	MP1	Z	0	0
3	MP1	X	53.7	72
4	MP1	Z	0	72
5	MP1	X	39.79	12
6	MP1	Z	0	12
7	MP1	X	34.56	12
8	MP1	Z	0	12
9	MP10	X	35.69	24
10	MP10	Z	0	24
11	MP4	X	113.93	0
12	MP4	Z	0	0
13	MP4	X	113.93	72
14	MP4	Z	0	72
15	MP4	X	59.22	12
16	MP4	Z	0	12
17	MP4	X	57.91	12
18	MP4	Z	0	12
19	MP7	X	113.93	0
20	MP7	Z	0	0
21	MP7	X	113.93	72
22	MP7	Z	0	72
23	MP7	X	59.22	12
24	MP7	Z	0	12
25	MP7	X	57.91	12
26	MP7	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	63.89	0
2	MP1	Z	-36.89	0
3	MP1	X	63.89	72
4	MP1	Z	-36.89	72
5	MP1	X	40.07	12
6	MP1	Z	-23.13	12
7	MP1	X	36.67	12
8	MP1	Z	-21.17	12
9	MP10	X	36.7	24
10	MP10	Z	-21.19	24
11	MP4	X	63.89	0
12	MP4	Z	-36.89	0
13	MP4	X	63.89	72
14	MP4	Z	-36.89	72
15	MP4	X	40.07	12
16	MP4	Z	-23.13	12
17	MP4	X	36.67	12
18	MP4	Z	-21.17	12
19	MP7	X	116.05	0
20	MP7	Z	-67	0
21	MP7	X	116.05	72
22	MP7	Z	-67	72
23	MP7	X	56.89	12
24	MP7	Z	-32.85	12
25	MP7	X	56.89	12
26	MP7	Z	-32.85	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	56.96	0
2	MP1	Z	-98.66	0
3	MP1	X	56.96	72
4	MP1	Z	-98.66	72
5	MP1	X	29.61	12
6	MP1	Z	-51.28	12
7	MP1	X	28.96	12
8	MP1	Z	-50.15	12
9	MP10	X	27.88	24
10	MP10	Z	-48.29	24
11	MP4	X	26.85	0
12	MP4	Z	-46.51	0
13	MP4	X	26.85	72
14	MP4	Z	-46.51	72
15	MP4	X	19.89	12
16	MP4	Z	-34.46	12
17	MP4	X	17.28	12
18	MP4	Z	-29.93	12
19	MP7	X	56.96	0
20	MP7	Z	-98.66	0
21	MP7	X	56.96	72
22	MP7	Z	-98.66	72
23	MP7	X	29.61	12
24	MP7	Z	-51.28	12
25	MP7	X	28.96	12
26	MP7	Z	-50.15	12

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-90.121	0
2	MP1	Y	-90.121	72
3	MP1	Y	-45.651	12
4	MP1	Y	-42.715	12
5	MP10	Y	-41.62	24
6	MP4	Y	-90.121	0
7	MP4	Y	-90.121	72
8	MP4	Y	-45.651	12
9	MP4	Y	-42.715	12
10	MP7	Y	-90.121	0
11	MP7	Y	-90.121	72
12	MP7	Y	-45.651	12
13	MP7	Y	-42.715	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	-17.33	0
3	MP1	X	0	72
4	MP1	Z	-17.33	72
5	MP1	X	0	12
6	MP1	Z	-6.45	12
7	MP1	X	0	12
8	MP1	Z	-6.45	12
9	MP10	X	0	24
10	MP10	Z	-6.35	24
11	MP4	X	0	0
12	MP4	Z	-13.17	0
13	MP4	X	0	72
14	MP4	Z	-13.17	72
15	MP4	X	0	12
16	MP4	Z	-5.51	12
17	MP4	X	0	12
18	MP4	Z	-5.3	12
19	MP7	X	0	0
20	MP7	Z	-13.17	0
21	MP7	X	0	72
22	MP7	Z	-13.17	72
23	MP7	X	0	12
24	MP7	Z	-5.51	12
25	MP7	X	0	12
26	MP7	Z	-5.3	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-7.97	0
2	MP1	Z	-13.81	0
3	MP1	X	-7.97	72
4	MP1	Z	-13.81	72
5	MP1	X	-3.07	12
6	MP1	Z	-5.32	12
7	MP1	X	-3.03	12
8	MP1	Z	-5.25	12
9	MP10	X	-3.01	24
10	MP10	Z	-5.21	24
11	MP4	X	-7.97	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
12	MP4	Z	-13.81	0
13	MP4	X	-7.97	72
14	MP4	Z	-13.81	72
15	MP4	X	-3.07	12
16	MP4	Z	-5.32	12
17	MP4	X	-3.03	12
18	MP4	Z	-5.25	12
19	MP7	X	-5.89	0
20	MP7	Z	-10.2	0
21	MP7	X	-5.89	72
22	MP7	Z	-10.2	72
23	MP7	X	-2.6	12
24	MP7	Z	-4.5	12
25	MP7	X	-2.46	12
26	MP7	Z	-4.25	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-11.41	0
2	MP1	Z	-6.59	0
3	MP1	X	-11.41	72
4	MP1	Z	-6.59	72
5	MP1	X	-4.77	12
6	MP1	Z	-2.76	12
7	MP1	X	-4.59	12
8	MP1	Z	-2.65	12
9	MP10	X	-4.63	24
10	MP10	Z	-2.67	24
11	MP4	X	-15.01	0
12	MP4	Z	-8.67	0
13	MP4	X	-15.01	72
14	MP4	Z	-8.67	72
15	MP4	X	-5.59	12
16	MP4	Z	-3.23	12
17	MP4	X	-5.59	12
18	MP4	Z	-3.23	12
19	MP7	X	-11.41	0
20	MP7	Z	-6.59	0
21	MP7	X	-11.41	72
22	MP7	Z	-6.59	72
23	MP7	X	-4.77	12
24	MP7	Z	-2.76	12
25	MP7	X	-4.59	12
26	MP7	Z	-2.65	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-11.78	0
2	MP1	Z	0	0
3	MP1	X	-11.78	72
4	MP1	Z	0	72
5	MP1	X	-5.2	12
6	MP1	Z	0	12
7	MP1	X	-4.91	12
8	MP1	Z	0	12
9	MP10	X	-5.01	24

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
10	MP10	Z	0	24
11	MP4	X	-15.95	0
12	MP4	Z	0	0
13	MP4	X	-15.95	72
14	MP4	Z	0	72
15	MP4	X	-6.14	12
16	MP4	Z	0	12
17	MP4	X	-6.07	12
18	MP4	Z	0	12
19	MP7	X	-15.95	0
20	MP7	Z	0	0
21	MP7	X	-15.95	72
22	MP7	Z	0	72
23	MP7	X	-6.14	12
24	MP7	Z	0	12
25	MP7	X	-6.07	12
26	MP7	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-11.41	0
2	MP1	Z	6.59	0
3	MP1	X	-11.41	72
4	MP1	Z	6.59	72
5	MP1	X	-4.77	12
6	MP1	Z	2.76	12
7	MP1	X	-4.59	12
8	MP1	Z	2.65	12
9	MP10	X	-4.63	24
10	MP10	Z	2.67	24
11	MP4	X	-11.41	0
12	MP4	Z	6.59	0
13	MP4	X	-11.41	72
14	MP4	Z	6.59	72
15	MP4	X	-4.77	12
16	MP4	Z	2.76	12
17	MP4	X	-4.59	12
18	MP4	Z	2.65	12
19	MP7	X	-15.01	0
20	MP7	Z	8.67	0
21	MP7	X	-15.01	72
22	MP7	Z	8.67	72
23	MP7	X	-5.59	12
24	MP7	Z	3.23	12
25	MP7	X	-5.59	12
26	MP7	Z	3.23	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-7.97	0
2	MP1	Z	13.81	0
3	MP1	X	-7.97	72
4	MP1	Z	13.81	72
5	MP1	X	-3.07	12
6	MP1	Z	5.32	12
7	MP1	X	-3.03	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP1	Z	5.25	12
9	MP10	X	-3.01	24
10	MP10	Z	5.21	24
11	MP4	X	-5.89	0
12	MP4	Z	10.2	0
13	MP4	X	-5.89	72
14	MP4	Z	10.2	72
15	MP4	X	-2.6	12
16	MP4	Z	4.5	12
17	MP4	X	-2.46	12
18	MP4	Z	4.25	12
19	MP7	X	-7.97	0
20	MP7	Z	13.81	0
21	MP7	X	-7.97	72
22	MP7	Z	13.81	72
23	MP7	X	-3.07	12
24	MP7	Z	5.32	12
25	MP7	X	-3.03	12
26	MP7	Z	5.25	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	0
2	MP1	Z	17.33	0
3	MP1	X	0	72
4	MP1	Z	17.33	72
5	MP1	X	0	12
6	MP1	Z	6.45	12
7	MP1	X	0	12
8	MP1	Z	6.45	12
9	MP10	X	0	24
10	MP10	Z	6.35	24
11	MP4	X	0	0
12	MP4	Z	13.17	0
13	MP4	X	0	72
14	MP4	Z	13.17	72
15	MP4	X	0	12
16	MP4	Z	5.51	12
17	MP4	X	0	12
18	MP4	Z	5.3	12
19	MP7	X	0	0
20	MP7	Z	13.17	0
21	MP7	X	0	72
22	MP7	Z	13.17	72
23	MP7	X	0	12
24	MP7	Z	5.51	12
25	MP7	X	0	12
26	MP7	Z	5.3	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	7.97	0
2	MP1	Z	13.81	0
3	MP1	X	7.97	72
4	MP1	Z	13.81	72
5	MP1	X	3.07	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
6	MP1	Z	5.32	12
7	MP1	X	3.03	12
8	MP1	Z	5.25	12
9	MP10	X	3.01	24
10	MP10	Z	5.21	24
11	MP4	X	7.97	0
12	MP4	Z	13.81	0
13	MP4	X	7.97	72
14	MP4	Z	13.81	72
15	MP4	X	3.07	12
16	MP4	Z	5.32	12
17	MP4	X	3.03	12
18	MP4	Z	5.25	12
19	MP7	X	5.89	0
20	MP7	Z	10.2	0
21	MP7	X	5.89	72
22	MP7	Z	10.2	72
23	MP7	X	2.6	12
24	MP7	Z	4.5	12
25	MP7	X	2.46	12
26	MP7	Z	4.25	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	11.41	0
2	MP1	Z	6.59	0
3	MP1	X	11.41	72
4	MP1	Z	6.59	72
5	MP1	X	4.77	12
6	MP1	Z	2.76	12
7	MP1	X	4.59	12
8	MP1	Z	2.65	12
9	MP10	X	4.63	24
10	MP10	Z	2.67	24
11	MP4	X	15.01	0
12	MP4	Z	8.67	0
13	MP4	X	15.01	72
14	MP4	Z	8.67	72
15	MP4	X	5.59	12
16	MP4	Z	3.23	12
17	MP4	X	5.59	12
18	MP4	Z	3.23	12
19	MP7	X	11.41	0
20	MP7	Z	6.59	0
21	MP7	X	11.41	72
22	MP7	Z	6.59	72
23	MP7	X	4.77	12
24	MP7	Z	2.76	12
25	MP7	X	4.59	12
26	MP7	Z	2.65	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	11.78	0
2	MP1	Z	0	0
3	MP1	X	11.78	72

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP1	Z	0	72
5	MP1	X	5.2	12
6	MP1	Z	0	12
7	MP1	X	4.91	12
8	MP1	Z	0	12
9	MP10	X	5.01	24
10	MP10	Z	0	24
11	MP4	X	15.95	0
12	MP4	Z	0	0
13	MP4	X	15.95	72
14	MP4	Z	0	72
15	MP4	X	6.14	12
16	MP4	Z	0	12
17	MP4	X	6.07	12
18	MP4	Z	0	12
19	MP7	X	15.95	0
20	MP7	Z	0	0
21	MP7	X	15.95	72
22	MP7	Z	0	72
23	MP7	X	6.14	12
24	MP7	Z	0	12
25	MP7	X	6.07	12
26	MP7	Z	0	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	11.41	0
2	MP1	Z	-6.59	0
3	MP1	X	11.41	72
4	MP1	Z	-6.59	72
5	MP1	X	4.77	12
6	MP1	Z	-2.76	12
7	MP1	X	4.59	12
8	MP1	Z	-2.65	12
9	MP10	X	4.63	24
10	MP10	Z	-2.67	24
11	MP4	X	11.41	0
12	MP4	Z	-6.59	0
13	MP4	X	11.41	72
14	MP4	Z	-6.59	72
15	MP4	X	4.77	12
16	MP4	Z	-2.76	12
17	MP4	X	4.59	12
18	MP4	Z	-2.65	12
19	MP7	X	15.01	0
20	MP7	Z	-8.67	0
21	MP7	X	15.01	72
22	MP7	Z	-8.67	72
23	MP7	X	5.59	12
24	MP7	Z	-3.23	12
25	MP7	X	5.59	12
26	MP7	Z	-3.23	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	7.97	0

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
2	MP1	Z	-13.81	0
3	MP1	X	7.97	72
4	MP1	Z	-13.81	72
5	MP1	X	3.07	12
6	MP1	Z	-5.32	12
7	MP1	X	3.03	12
8	MP1	Z	-5.25	12
9	MP10	X	3.01	24
10	MP10	Z	-5.21	24
11	MP4	X	5.89	0
12	MP4	Z	-10.2	0
13	MP4	X	5.89	72
14	MP4	Z	-10.2	72
15	MP4	X	2.6	12
16	MP4	Z	-4.5	12
17	MP4	X	2.46	12
18	MP4	Z	-4.25	12
19	MP7	X	7.97	0
20	MP7	Z	-13.81	0
21	MP7	X	7.97	72
22	MP7	Z	-13.81	72
23	MP7	X	3.07	12
24	MP7	Z	-5.32	12
25	MP7	X	3.03	12
26	MP7	Z	-5.25	12

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-9.649	0
2	MP1	Z	-9.649	72
3	MP1	Z	-22.425	12
4	MP1	Z	-19.128	12
5	MP10	Z	-6.538	24
6	MP4	Z	-9.649	0
7	MP4	Z	-9.649	72
8	MP4	Z	-22.425	12
9	MP4	Z	-19.128	12
10	MP7	Z	-9.649	0
11	MP7	Z	-9.649	72
12	MP7	Z	-22.425	12
13	MP7	Z	-19.128	12

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-9.649	0
2	MP1	X	-9.649	72
3	MP1	X	-22.425	12
4	MP1	X	-19.128	12
5	MP10	X	-6.538	24
6	MP4	X	-9.649	0
7	MP4	X	-9.649	72
8	MP4	X	-22.425	12
9	MP4	X	-19.128	12
10	MP7	X	-9.649	0
11	MP7	X	-9.649	72
12	MP7	X	-22.425	12

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
13	MP7	X	-19.128	12

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	SZ	-74.352	-74.352	0	%100
2	GA4	SZ	-74.352	-74.352	0	%100
3	GA3	SZ	-74.352	-74.352	0	%100
4	P3	SZ	-74.352	-74.352	0	%100
5	S2	SZ	-74.352	-74.352	0	%100
6	GA2	SZ	-74.352	-74.352	0	%100
7	GA1	SZ	-74.352	-74.352	0	%100
8	P2	SZ	-74.352	-74.352	0	%100
9	S1	SZ	-74.352	-74.352	0	%100
10	GA6	SZ	-74.352	-74.352	0	%100
11	GA5	SZ	-74.352	-74.352	0	%100
12	P1	SZ	-74.352	-74.352	0	%100
13	H1	SZ	-44.611	-44.611	0	%100
14	MP1	SZ	-44.611	-44.611	0	%100
15	MP3	SZ	-44.611	-44.611	0	%100
16	HR1	SZ	-44.611	-44.611	0	%100
17	CA8	SZ	-74.352	-74.352	0	%100
18	CA9	SZ	-74.352	-74.352	0	%100
19	CA7	SZ	-74.352	-74.352	0	%100
20	M32	SZ	0	0	0	%100
21	M35	SZ	0	0	0	%100
22	M36	SZ	0	0	0	%100
23	M39A	SZ	0	0	0	%100
24	CA3	SZ	-74.352	-74.352	0	%100
25	CA4	SZ	-74.352	-74.352	0	%100
26	CA1	SZ	-74.352	-74.352	0	%100
27	CA2	SZ	-74.352	-74.352	0	%100
28	CA5	SZ	-74.352	-74.352	0	%100
29	CA6	SZ	-74.352	-74.352	0	%100
30	M64	SZ	0	0	0	%100
31	M65	SZ	0	0	0	%100
32	M66	SZ	0	0	0	%100
33	M67	SZ	0	0	0	%100
34	M68	SZ	0	0	0	%100
35	M69	SZ	0	0	0	%100
36	M70	SZ	0	0	0	%100
37	M71	SZ	0	0	0	%100
38	M72	SZ	0	0	0	%100
39	M73	SZ	0	0	0	%100
40	M74	SZ	0	0	0	%100
41	M75	SZ	-74.352	-74.352	0	%100
42	MP2	SZ	-44.611	-44.611	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	H3	SZ	-44.611	-44.611	0	%100
46	MP7	SZ	-44.611	-44.611	0	%100
47	MP9	SZ	-44.611	-44.611	0	%100
48	HR3	SZ	-44.611	-44.611	0	%100
49	M52	SZ	0	0	0	%100
50	M53	SZ	0	0	0	%100
51	M54	SZ	0	0	0	%100
52	M55	SZ	0	0	0	%100
53	H2	SZ	-44.611	-44.611	0	%100
54	MP4	SZ	-44.611	-44.611	0	%100
55	MP6	SZ	-44.611	-44.611	0	%100
56	HR2	SZ	-44.611	-44.611	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
57	M66A	SZ	0	0	0	%100
58	M67A	SZ	0	0	0	%100
59	M68A	SZ	0	0	0	%100
60	M69A	SZ	0	0	0	%100
61	MP8	SZ	-44.611	-44.611	0	%100
62	M68B	SZ	0	0	0	%100
63	M69B	SZ	0	0	0	%100
64	MP5	SZ	-44.611	-44.611	0	%100
65	M71B	SZ	0	0	0	%100
66	M72B	SZ	0	0	0	%100
67	M67B	SZ	0	0	0	%100
68	MP10	SZ	-44.611	-44.611	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	SX	-74.352	-74.352	0	%100
2	GA4	SX	-74.352	-74.352	0	%100
3	GA3	SX	-74.352	-74.352	0	%100
4	P3	SX	-74.352	-74.352	0	%100
5	S2	SX	-74.352	-74.352	0	%100
6	GA2	SX	-74.352	-74.352	0	%100
7	GA1	SX	-74.352	-74.352	0	%100
8	P2	SX	-74.352	-74.352	0	%100
9	S1	SX	-74.352	-74.352	0	%100
10	GA6	SX	-74.352	-74.352	0	%100
11	GA5	SX	-74.352	-74.352	0	%100
12	P1	SX	-74.352	-74.352	0	%100
13	H1	SX	-44.611	-44.611	0	%100
14	MP1	SX	-44.611	-44.611	0	%100
15	MP3	SX	-44.611	-44.611	0	%100
16	HR1	SX	-44.611	-44.611	0	%100
17	CA8	SX	-74.352	-74.352	0	%100
18	CA9	SX	-74.352	-74.352	0	%100
19	CA7	SX	-74.352	-74.352	0	%100
20	M32	SX	0	0	0	%100
21	M35	SX	0	0	0	%100
22	M36	SX	0	0	0	%100
23	M39A	SX	0	0	0	%100
24	CA3	SX	-74.352	-74.352	0	%100
25	CA4	SX	-74.352	-74.352	0	%100
26	CA1	SX	-74.352	-74.352	0	%100
27	CA2	SX	-74.352	-74.352	0	%100
28	CA5	SX	-74.352	-74.352	0	%100
29	CA6	SX	-74.352	-74.352	0	%100
30	M64	SX	0	0	0	%100
31	M65	SX	0	0	0	%100
32	M66	SX	0	0	0	%100
33	M67	SX	0	0	0	%100
34	M68	SX	0	0	0	%100
35	M69	SX	0	0	0	%100
36	M70	SX	0	0	0	%100
37	M71	SX	0	0	0	%100
38	M72	SX	0	0	0	%100
39	M73	SX	0	0	0	%100
40	M74	SX	0	0	0	%100
41	M75	SX	-74.352	-74.352	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
42	MP2	SX	-44.611	-44.611	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	H3	SX	-44.611	-44.611	0	%100
46	MP7	SX	-44.611	-44.611	0	%100
47	MP9	SX	-44.611	-44.611	0	%100
48	HR3	SX	-44.611	-44.611	0	%100
49	M52	SX	0	0	0	%100
50	M53	SX	0	0	0	%100
51	M54	SX	0	0	0	%100
52	M55	SX	0	0	0	%100
53	H2	SX	-44.611	-44.611	0	%100
54	MP4	SX	-44.611	-44.611	0	%100
55	MP6	SX	-44.611	-44.611	0	%100
56	HR2	SX	-44.611	-44.611	0	%100
57	M66A	SX	0	0	0	%100
58	M67A	SX	0	0	0	%100
59	M68A	SX	0	0	0	%100
60	M69A	SX	0	0	0	%100
61	MP8	SX	-44.611	-44.611	0	%100
62	M68B	SX	0	0	0	%100
63	M69B	SX	0	0	0	%100
64	MP5	SX	-44.611	-44.611	0	%100
65	M71B	SX	0	0	0	%100
66	M72B	SX	0	0	0	%100
67	M67B	SX	0	0	0	%100
68	MP10	SX	-44.611	-44.611	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	Y	-9.593	-9.593	0	%100
2	GA4	Y	-5.608	-5.608	0	%100
3	GA3	Y	-5.608	-5.608	0	%100
4	P3	Y	-10.795	-10.795	0	%100
5	S2	Y	-9.593	-9.593	0	%100
6	GA2	Y	-5.608	-5.608	0	%100
7	GA1	Y	-5.608	-5.608	0	%100
8	P2	Y	-10.795	-10.795	0	%100
9	S1	Y	-9.593	-9.593	0	%100
10	GA6	Y	-5.608	-5.608	0	%100
11	GA5	Y	-5.608	-5.608	0	%100
12	P1	Y	-10.795	-10.795	0	%100
13	H1	Y	-6.554	-6.554	0	%100
14	MP1	Y	-5.674	-5.674	0	%100
15	MP3	Y	-5.674	-5.674	0	%100
16	HR1	Y	-5.681	-5.681	0	%100
17	CA8	Y	-12.845	-12.845	0	%100
18	CA9	Y	-12.845	-12.845	0	%100
19	CA7	Y	-12.845	-12.845	0	%100
20	M32	Y	-1.624	-1.624	0	%100
21	M35	Y	-1.624	-1.624	0	%100
22	M36	Y	-1.624	-1.624	0	%100
23	M39A	Y	-1.624	-1.624	0	%100
24	CA3	Y	-7.2	-7.2	0	%100
25	CA4	Y	-7.2	-7.2	0	%100
26	CA1	Y	-7.2	-7.2	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
27	CA2	Y	-7.2	-7.2	0	%100
28	CA5	Y	-7.2	-7.2	0	%100
29	CA6	Y	-7.2	-7.2	0	%100
30	M64	Y	-1.624	-1.624	0	%100
31	M65	Y	-1.624	-1.624	0	%100
32	M66	Y	-1.624	-1.624	0	%100
33	M67	Y	-1.624	-1.624	0	%100
34	M68	Y	-1.624	-1.624	0	%100
35	M69	Y	-1.624	-1.624	0	%100
36	M70	Y	-1.624	-1.624	0	%100
37	M71	Y	-1.624	-1.624	0	%100
38	M72	Y	-1.624	-1.624	0	%100
39	M73	Y	-1.624	-1.624	0	%100
40	M74	Y	-1.624	-1.624	0	%100
41	M75	Y	-5.043	-5.043	0	%100
42	MP2	Y	-5.674	-5.674	0	%100
43	M43	Y	-1.624	-1.624	0	%100
44	M44	Y	-1.624	-1.624	0	%100
45	H3	Y	-6.554	-6.554	0	%100
46	MP7	Y	-5.674	-5.674	0	%100
47	MP9	Y	-5.674	-5.674	0	%100
48	HR3	Y	-5.681	-5.681	0	%100
49	M52	Y	-1.624	-1.624	0	%100
50	M53	Y	-1.624	-1.624	0	%100
51	M54	Y	-1.624	-1.624	0	%100
52	M55	Y	-1.624	-1.624	0	%100
53	H2	Y	-6.554	-6.554	0	%100
54	MP4	Y	-5.674	-5.674	0	%100
55	MP6	Y	-5.674	-5.674	0	%100
56	HR2	Y	-5.681	-5.681	0	%100
57	M66A	Y	-1.624	-1.624	0	%100
58	M67A	Y	-1.624	-1.624	0	%100
59	M68A	Y	-1.624	-1.624	0	%100
60	M69A	Y	-1.624	-1.624	0	%100
61	MP8	Y	-5.674	-5.674	0	%100
62	M68B	Y	-1.624	-1.624	0	%100
63	M69B	Y	-1.624	-1.624	0	%100
64	MP5	Y	-5.674	-5.674	0	%100
65	M71B	Y	-1.624	-1.624	0	%100
66	M72B	Y	-1.624	-1.624	0	%100
67	M67B	Y	-1.624	-1.624	0	%100
68	MP10	Y	-5.674	-5.674	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	SZ	-10.902	-10.902	0	%100
2	GA4	SZ	-14.059	-14.059	0	%100
3	GA3	SZ	-14.059	-14.059	0	%100
4	P3	SZ	-10.488	-10.488	0	%100
5	S2	SZ	-10.902	-10.902	0	%100
6	GA2	SZ	-14.059	-14.059	0	%100
7	GA1	SZ	-14.059	-14.059	0	%100
8	P2	SZ	-10.488	-10.488	0	%100
9	S1	SZ	-10.902	-10.902	0	%100
10	GA6	SZ	-14.059	-14.059	0	%100
11	GA5	SZ	-14.059	-14.059	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
12	P1	SZ	-10.488	-10.488	0	%100
13	H1	SZ	-12.848	-12.848	0	%100
14	MP1	SZ	-13.957	-13.957	0	%100
15	MP3	SZ	-13.957	-13.957	0	%100
16	HR1	SZ	-13.946	-13.946	0	%100
17	CA8	SZ	-9.987	-9.987	0	%100
18	CA9	SZ	-9.987	-9.987	0	%100
19	CA7	SZ	-9.987	-9.987	0	%100
20	M32	SZ	0	0	0	%100
21	M35	SZ	0	0	0	%100
22	M36	SZ	0	0	0	%100
23	M39A	SZ	0	0	0	%100
24	CA3	SZ	-12.257	-12.257	0	%100
25	CA4	SZ	-12.257	-12.257	0	%100
26	CA1	SZ	-12.257	-12.257	0	%100
27	CA2	SZ	-12.257	-12.257	0	%100
28	CA5	SZ	-12.257	-12.257	0	%100
29	CA6	SZ	-12.257	-12.257	0	%100
30	M64	SZ	0	0	0	%100
31	M65	SZ	0	0	0	%100
32	M66	SZ	0	0	0	%100
33	M67	SZ	0	0	0	%100
34	M68	SZ	0	0	0	%100
35	M69	SZ	0	0	0	%100
36	M70	SZ	0	0	0	%100
37	M71	SZ	0	0	0	%100
38	M72	SZ	0	0	0	%100
39	M73	SZ	0	0	0	%100
40	M74	SZ	0	0	0	%100
41	M75	SZ	-15.104	-15.104	0	%100
42	MP2	SZ	-13.957	-13.957	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	H3	SZ	-12.848	-12.848	0	%100
46	MP7	SZ	-13.957	-13.957	0	%100
47	MP9	SZ	-13.957	-13.957	0	%100
48	HR3	SZ	-13.946	-13.946	0	%100
49	M52	SZ	0	0	0	%100
50	M53	SZ	0	0	0	%100
51	M54	SZ	0	0	0	%100
52	M55	SZ	0	0	0	%100
53	H2	SZ	-12.848	-12.848	0	%100
54	MP4	SZ	-13.957	-13.957	0	%100
55	MP6	SZ	-13.957	-13.957	0	%100
56	HR2	SZ	-13.946	-13.946	0	%100
57	M66A	SZ	0	0	0	%100
58	M67A	SZ	0	0	0	%100
59	M68A	SZ	0	0	0	%100
60	M69A	SZ	0	0	0	%100
61	MP8	SZ	-13.957	-13.957	0	%100
62	M68B	SZ	0	0	0	%100
63	M69B	SZ	0	0	0	%100
64	MP5	SZ	-13.957	-13.957	0	%100
65	M71B	SZ	0	0	0	%100
66	M72B	SZ	0	0	0	%100
67	M67B	SZ	0	0	0	%100
68	MP10	SZ	-13.957	-13.957	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	SX	-10.902	-10.902	0	%100
2	GA4	SX	-14.059	-14.059	0	%100
3	GA3	SX	-14.059	-14.059	0	%100
4	P3	SX	-10.488	-10.488	0	%100
5	S2	SX	-10.902	-10.902	0	%100
6	GA2	SX	-14.059	-14.059	0	%100
7	GA1	SX	-14.059	-14.059	0	%100
8	P2	SX	-10.488	-10.488	0	%100
9	S1	SX	-10.902	-10.902	0	%100
10	GA6	SX	-14.059	-14.059	0	%100
11	GA5	SX	-14.059	-14.059	0	%100
12	P1	SX	-10.488	-10.488	0	%100
13	H1	SX	-12.848	-12.848	0	%100
14	MP1	SX	-13.957	-13.957	0	%100
15	MP3	SX	-13.957	-13.957	0	%100
16	HR1	SX	-13.946	-13.946	0	%100
17	CA8	SX	-9.987	-9.987	0	%100
18	CA9	SX	-9.987	-9.987	0	%100
19	CA7	SX	-9.987	-9.987	0	%100
20	M32	SX	0	0	0	%100
21	M35	SX	0	0	0	%100
22	M36	SX	0	0	0	%100
23	M39A	SX	0	0	0	%100
24	CA3	SX	-12.257	-12.257	0	%100
25	CA4	SX	-12.257	-12.257	0	%100
26	CA1	SX	-12.257	-12.257	0	%100
27	CA2	SX	-12.257	-12.257	0	%100
28	CA5	SX	-12.257	-12.257	0	%100
29	CA6	SX	-12.257	-12.257	0	%100
30	M64	SX	0	0	0	%100
31	M65	SX	0	0	0	%100
32	M66	SX	0	0	0	%100
33	M67	SX	0	0	0	%100
34	M68	SX	0	0	0	%100
35	M69	SX	0	0	0	%100
36	M70	SX	0	0	0	%100
37	M71	SX	0	0	0	%100
38	M72	SX	0	0	0	%100
39	M73	SX	0	0	0	%100
40	M74	SX	0	0	0	%100
41	M75	SX	-15.104	-15.104	0	%100
42	MP2	SX	-13.957	-13.957	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	H3	SX	-12.848	-12.848	0	%100
46	MP7	SX	-13.957	-13.957	0	%100
47	MP9	SX	-13.957	-13.957	0	%100
48	HR3	SX	-13.946	-13.946	0	%100
49	M52	SX	0	0	0	%100
50	M53	SX	0	0	0	%100
51	M54	SX	0	0	0	%100
52	M55	SX	0	0	0	%100
53	H2	SX	-12.848	-12.848	0	%100
54	MP4	SX	-13.957	-13.957	0	%100
55	MP6	SX	-13.957	-13.957	0	%100
56	HR2	SX	-13.946	-13.946	0	%100
57	M66A	SX	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
58	M67A	SX	0	0	0	%100
59	M68A	SX	0	0	0	%100
60	M69A	SX	0	0	0	%100
61	MP8	SX	-13.957	-13.957	0	%100
62	M68B	SX	0	0	0	%100
63	M69B	SX	0	0	0	%100
64	MP5	SX	-13.957	-13.957	0	%100
65	M71B	SX	0	0	0	%100
66	M72B	SX	0	0	0	%100
67	M67B	SX	0	0	0	%100
68	MP10	SX	-13.957	-13.957	0	%100

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

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

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S2	Y	-19.658	-19.658	16.404	40
2	GA2	Y	-9.906	-9.906	3.828	27.295
3	GA1	Y	-9.906	-9.906	3.828	27.295
4	S3	Y	-19.658	-19.658	16.404	40
5	GA4	Y	-9.906	-9.906	3.828	27.295
6	GA3	Y	-9.906	-9.906	3.828	27.295
7	S1	Y	-19.658	-19.658	16.404	40
8	GA6	Y	-9.906	-9.906	3.828	27.295
9	GA5	Y	-9.906	-9.906	3.828	27.295

Member Area Loads (BLC 1 : Self Weight)

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

Member Area Loads (BLC 16 : Ice Weight)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[psf]
1	P22	P21	P20	P23	Y	Two Way	-10.8
2	P10	P11	P12	P9	Y	Two Way	-10.8
3	P31	P34	P33	P32	Y	Two Way	-10.8

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

	Memb...	Shape	Code Check	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn y-y ...	phi*Mn z-z ...	Cb	Eqn
1	P3	PL6.5x0.375	.279	21	2	.130	36.312	y	5	3658.14	78975	616.993	7990.16	1.4...	H1-...
2	P2	PL6.5x0.375	.274	21	6	.119	36.312	y	10	3658.14	78975	616.993	7967.915	1.4...	H1-...

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

	Memb...	Shape	Code Check	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	phi*Pnc...	phi*Pnt...	phi*Mn y-y ...	phi*Mn z-z ...	Cb	Eqn
3	CA4	C3.38x2.06x0....	.257	33	2	.033	33	y	115	47760....	56700	2202.821	5751.945	1.6...	H1-...
4	P1	PL6.5x0.375	.256	21	10	.129	36.312	y	2	3658.14	78975	616.993	7990.424	1.4...	H1-...
5	CA5	C3.38x2.06x0....	.254	0	10	.033	28.187	y	28	47760....	56700	2202.821	5751.945	1.6...	H1-...
6	CA1	C3.38x2.06x0....	.249	0	6	.035	28.188	y	36	47760....	56700	2202.821	5751.945	1.6...	H1-...
7	CA3	C3.38x2.06x0....	.249	0	2	.034	28.188	y	32	47760....	56700	2202.821	5751.945	1.6...	H1-...
8	CA2	C3.38x2.06x0....	.243	33	6	.033	33	y	143	47760....	56700	2202.821	5751.945	1.6...	H1-...
9	CA6	C3.38x2.06x0....	.240	33	10	.032	33	y	87	47760....	56700	2202.821	5751.945	1.6...	H1-...
10	CA8	L6.6x4.46x0.25	.226	41.562	22	.032	42	z	4	51170....	87561	2464.809	7125.374	1.1...	H2-1
11	M75	PL 2.375x0.5	.224	1.5	12	.186	0	y	173	38256....	38475	400.783	1903.711	2.2...	H1-...
12	S2	HSS4X4X6	.223	0	5	.111	0	y	142	188250...	197892	22045.5	22045.5	1.8...	H1-...
13	HR2	2.88x0.120	.221	90	3	.110	92		4	22491....	43076....	3155.674	3155.674	1.6...	H1-...
14	CA7	L6.6x4.46x0.25	.220	41.562	3	.030	42	z	8	51170....	87561	2464.809	7125.374	1.1...	H2-1
15	HR3	2.88x0.120	.218	6	2	.103	92		6	22491....	43076....	3155.674	3155.674	1.7...	H1-...
16	S3	HSS4X4X6	.216	0	13	.111	0	y	114	188250...	197892	22045.5	22045.5	1.8...	H1-...
17	HR1	2.88x0.120	.212	6	4	.097	6		4	22491....	43076....	3155.674	3155.674	1.9...	H1-...
18	CA9	L6.6x4.46x0.25	.203	41.562	6	.028	42	z	12	51170....	87561	2464.809	7125.374	1.1...	H2-1
19	S1	HSS4X4X6	.199	0	9	.108	0	y	86	188250...	197892	22045.5	22045.5	1.8...	H1-...
20	MP2	PIPE_2.5	.184	70	5	.066	70		5	33487....	66654	4726.5	4726.5	4.4...	H1-...
21	MP5	PIPE_2.5	.180	70	7	.056	70		7	33487....	66654	4726.5	4726.5	4.4...	H1-...
22	GA4	L2x2x4	.170	0	2	.012	27.295	y	9	29527....	42480	959.63	2190.068	2.1...	H2-1
23	MP8	PIPE_2.5	.161	70	9	.069	70		3	33487....	66654	4726.5	4726.5	4.0...	H1-...
24	GA5	L2x2x4	.161	0	9	.016	27.295	z	2	29527....	42480	959.63	2190.068	2.1...	H2-1
25	GA2	L2x2x4	.156	0	12	.013	0	y	12	29527....	42480	959.63	2190.068	2.3...	H2-1
26	GA1	L2x2x4	.146	0	6	.016	27.295	y	34	29527....	42480	959.63	2190.068	2.2...	H2-1
27	GA3	L2x2x4	.145	0	7	.016	27.295	y	30	29527....	42480	959.63	2190.068	2.1...	H2-1
28	MP9	PIPE_2.5	.144	70	2	.065	70		7	33487....	66654	4726.5	4726.5	3.3...	H1-...
29	GA6	L2x2x4	.144	0	4	.012	0	y	4	29527....	42480	959.63	2190.068	2.2...	H2-1
30	MP6	PIPE_2.5	.132	70	7	.071	70		6	33487....	66654	4726.5	4726.5	4.6...	H1-...
31	MP1	PIPE_2.5	.128	70	11	.079	26		8	33487....	66654	4726.5	4726.5	2.6...	H1-...
32	MP3	PIPE_2.5	.126	70	5	.072	70		3	33487....	66654	4726.5	4726.5	4.4...	H1-...
33	MP4	PIPE_2.5	.124	70	7	.072	26		4	33487....	66654	4726.5	4726.5	1.7...	H1-...
34	MP7	PIPE_2.5	.121	70	9	.065	26		6	33487....	66654	4726.5	4726.5	3.3...	H1-...
35	H3	Pipe3.5x0.165	.111	31	2	.070	90		2	45873....	71580.6	6337.65	6337.65	1.9...	H1-...
36	H1	Pipe3.5x0.165	.106	31	10	.062	48		4	45873....	71580.6	6337.65	6337.65	2.0...	H1-...
37	H2	Pipe3.5x0.165	.105	31	6	.050	90		143	45873....	71580.6	6337.65	6337.65	1.7...	H1-...
38	MP10	PIPE_2.5	.005	24	6	.001	24		6	56116....	66654	4726.5	4726.5	1.5...	H1-...

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	BOBDL00019A
Site Number:	BOBDL00019A
Connection Description:	Platform to Monopole

MAXIMUM BOLT LOADS		
Bolt Tension:	6023.50	lbs
Bolt Shear:	3886.11	lbs

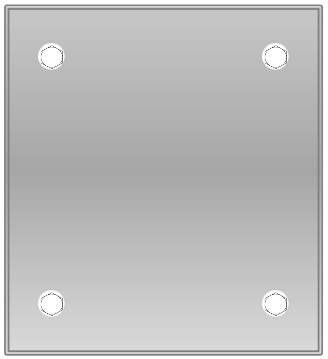
WORST CASE BOLT LOADS[1]		
Bolt Tension:	6023.50	lbs
Bolt Shear:	420.96	lbs

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

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

Member Information
I nodes of S3, S2, S1

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	29.6%	
Max Shear Usage	28.1%	
Interaction Check (Worst Case)	0.09	***≤1.05***
Result	Pass	

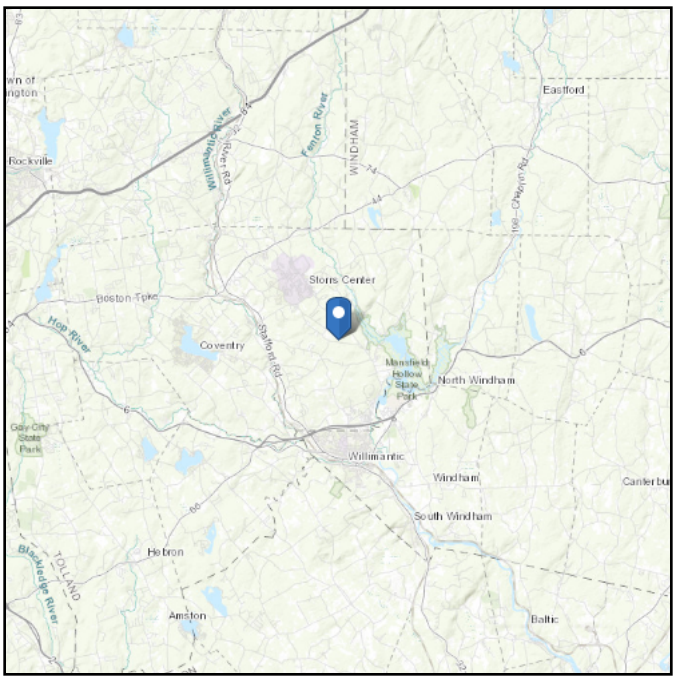


ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 507.72 ft (NAVD 88)
Latitude: 41.775778
Longitude: -72.2225



Wind

Results:

Wind Speed	120 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Thu Jan 06 2022

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

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

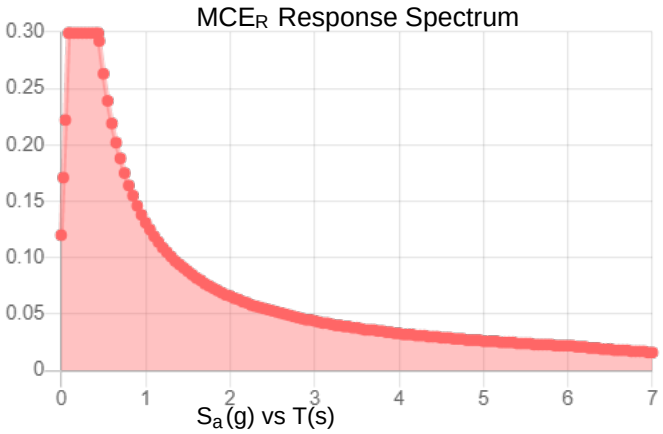
Seismic

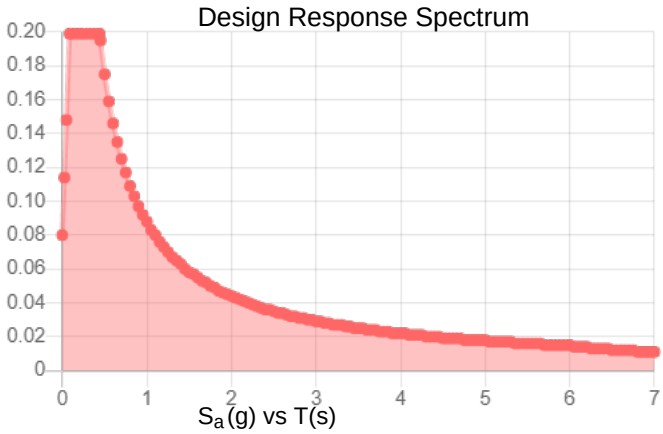
Site Soil Class: D - Default (see Section 11.4.3)

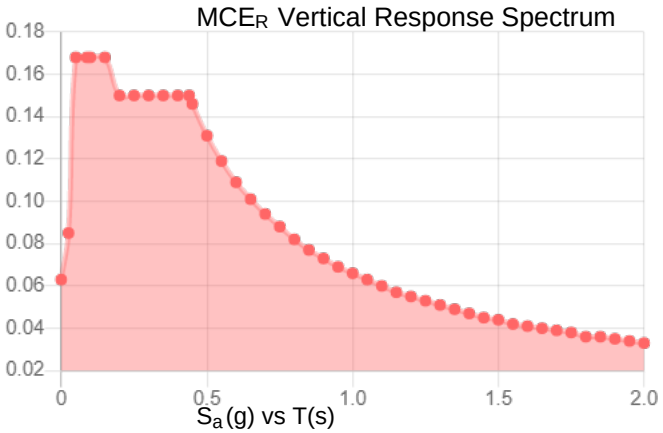
Results:

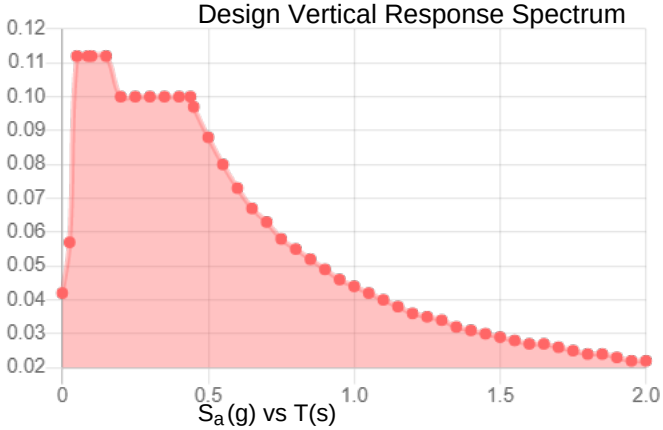
S_S :	0.187	S_{D1} :	0.088
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.101
F_v :	2.4	PGA_M :	0.161
S_{MS} :	0.299	F_{PGA} :	1.598
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.199	C_v :	0.7

Seismic Design Category B









Data Accessed: **Thu Jan 06 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:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Jan 06 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.

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

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Exhibit F

Power Density/RF Emissions Report

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

Site ID: BOBDL00019A

230 Clover Mill Road
Storrs, CT 06268

January 16, 2022

Fox Hill Telecom Project Number: 210854

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**16.22 %**

Fox Hill Telecom

January 16, 2022

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOBDL00019A**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **230 Clover Mill Road, Storrs, 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 **230 Clover Mill Road, Storrs, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since **Dish** is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

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. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	137
B	1	JMA MX08FRO665-21	137
C	1	JMA MX08FRO665-21	137

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	4.73
						Sector A Composite MPE%	**4.73**
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	4.73
						Sector B Composite MPE%	**4.73**
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	4.73
						Sector C Composite MPE%	**4.73**

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	**4.73 %**
Fire Svcs & EMS	0.66 %
Emergency Mgmt	0.27 %
Public Works	0.27 %
Fire Svcs & EMS	0.54 %
AT&T	3.11 %
Sprint	2.13 %
Verizon Wireless	1.60 %
T-Mobile	2.91 %
Site Total MPE %:	**16.22 %**

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	4.73 %
Dish Sector B Total:	4.73 %
Dish Sector C Total:	4.73 %
Site Total:	16.22 %

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	137	7.20	n71 (600 MHz)	400	1.80%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,648.39	137	13.81	n70 (AWS-4 / 1995-2020)	1000	1.38%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,849.52	137	15.50	n66 (AWS-4 / 2180-2200)	1000	1.55%
						Total:	**4.73%**

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:	4.73 %
Sector B:	4.73 %
Sector C:	4.73 %
Dish Maximum Total (per sector):	4.73 %
Site Total:	16.22 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **16.22 %** 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
Holden, MA 01520
(978)660-3998

Exhibit G

Letter of Authorization

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION

SITE NO/PROJECT NO: 376046 / OAA767708 **SITE NAME: MANSFIELD CENTER 1 CT**

ADDRESS: 230 Clover Mill Road, Storrs
Mansfield, CT 06268-2826

APN: MANS-000023-000060-000007

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

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

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

Signature: _____

Margaret Robinson, Senior Counsel
US Tower Division

NOTARY BLOCK

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

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

WITNESS my hand and official seal, this 12th day of January 2022.

NOTARY SEAL

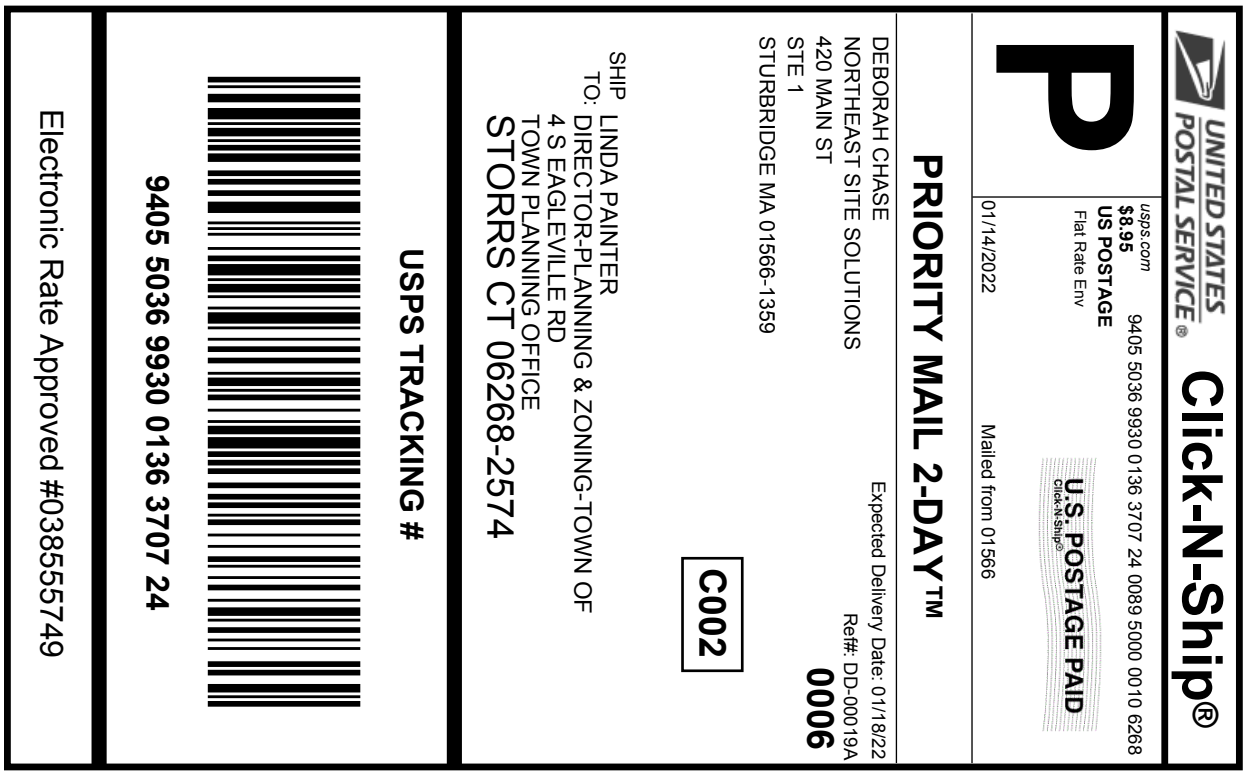
GERARD T. HEFFRON
Notary Public
Commonwealth of Massachusetts
My Commission Expires
August 9, 2024

Notary Public _____
My Commission Expires: August 9th, 2024

* American Tower as used herein is defined as American Tower Corporation and any of its affiliates or subsidiaries.

Exhibit H

Recipient Mailings



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Instructions

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2. **Place your label so it does not wrap around the edge of the package.**
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5. **Mail your package on the "Ship Date" you selected when creating this label.**

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9405 5036 9930 0136 3707 24

Trans. #:	554062332
Print Date:	01/14/2022
Ship Date:	01/14/2022
Expected Delivery Date:	01/18/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

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

Ref#: DD-00019A

To: LINDA PAINTER
DIRECTOR-PLANNING & ZONING-TOWN OF MANSFIELD
4 S EAGLEVILLE RD
TOWN PLANNING OFFICE
STORRS CT 06268-2574

* 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.

Thank you for shipping with the United States Postal Service!
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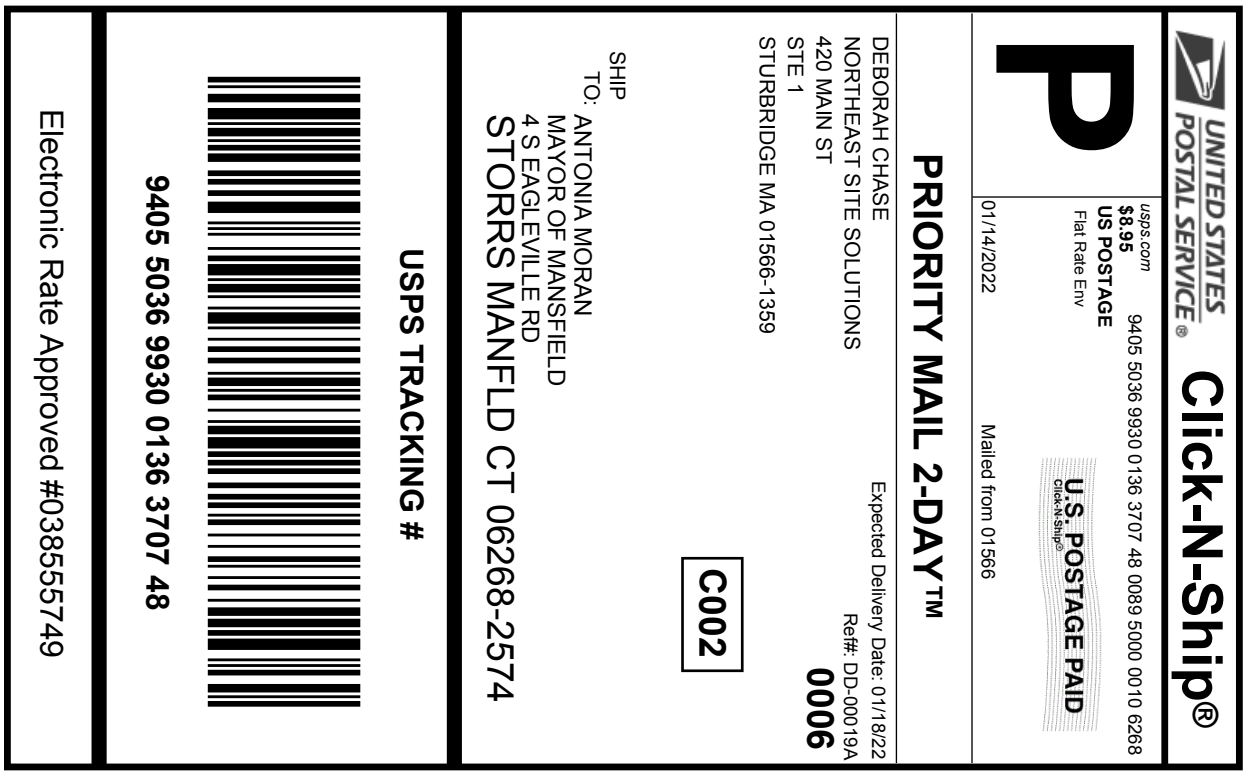

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0136 3707 48

Trans. #:	554062332
Print Date:	01/14/2022
Ship Date:	01/14/2022
Expected Delivery Date:	01/18/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

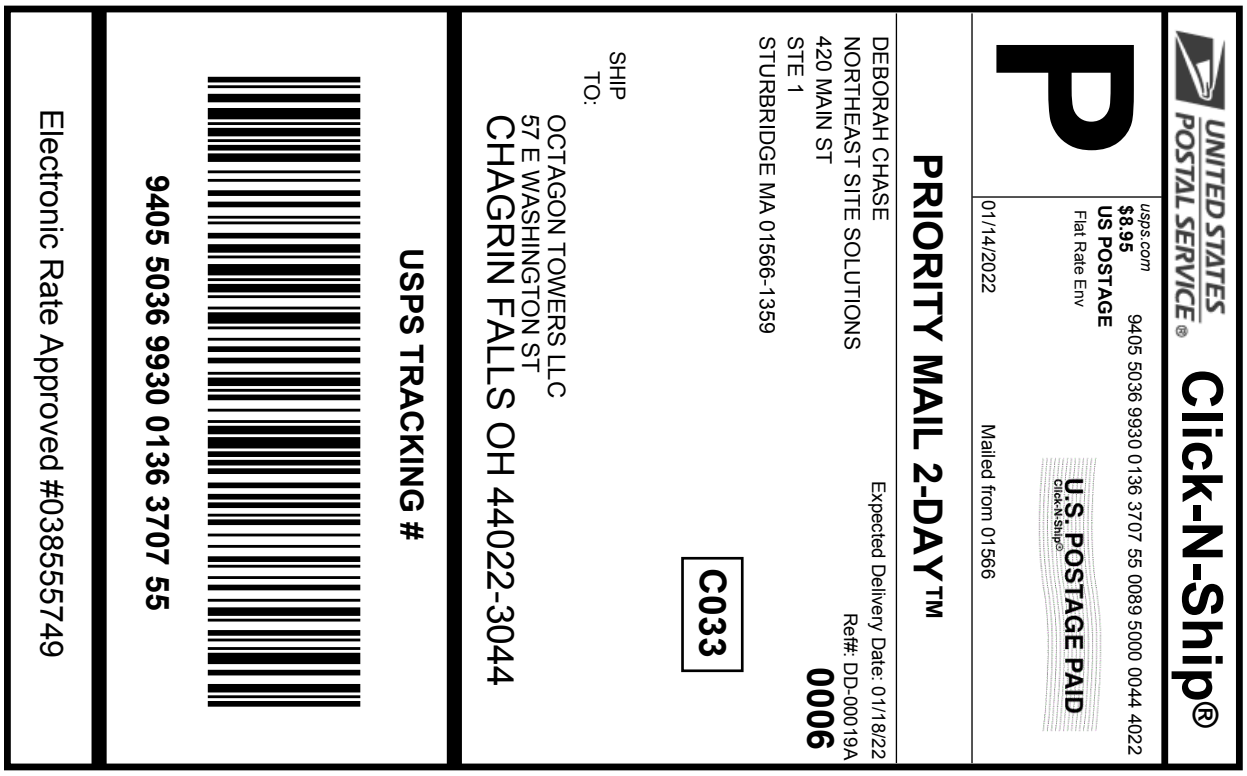
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DD-00019A

To: ANTONIA MORAN
MAYOR OF MANSFIELD
4 S EAGLEVILLE RD
STORRS MANFLD CT 06268-2574

* 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.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0136 3707 55

Trans. #:	554062332
Print Date:	01/14/2022
Ship Date:	01/14/2022
Expected Delivery Date:	01/18/2022

Priority Mail® Postage:	**$8.95**
Total:	**$8.95**

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

Ref#: DD-00019A

To: OCTAGON TOWERS LLC
57 E WASHINGTON ST
CHAGRIN FALLS OH 44022-3044

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UNITED STATES POSTAL SERVICE.

UNIONVILLE
24 MILL ST
UNIONVILLE, CT 06085-9998
(800)275-8777

01/18/2022 03:23 PM

Product	Qty	Unit Price	Price
Prepaid Mail Chagrin Falls, OH 44022 Weight: 0 lb 13.40 oz Acceptance Date: Tue 01/18/2022 Tracking #: 9405 5036 9930 0136 3707 55	1		$0.00
Prepaid Mail Storrs Mansfield, CT 06268 Weight: 0 lb 13.40 oz Acceptance Date: Tue 01/18/2022 Tracking #: 9405 5036 9930 0136 3707 24	1		$0.00
Prepaid Mail Storrs Mansfield, CT 06268 Weight: 0 lb 13.40 oz Acceptance Date: Tue 01/18/2022 Tracking #: 9405 5036 9930 0136 3707 48	1		$0.0
Grand Total:			