Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Tectonic Engineering
Theresa Ranciato-Viele
63-3 N. Branford Road
Branford, CT 06405
Tranciato@Tectonicengineering.com
203-606-5127

April 28, 2022

Ms. Melanie Bachman, Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: **Notice of Exempt Modification to an existing rooftop facility located at 411 West Putnam Avenue, Greenwich, Connecticut**

Latitude: 41° 01' 18.03" / Longitude: 73° 38' 27.19"

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless, LLC ("Dish"). Dish plans to install antennas and related equipment to the rooftop at the existing facility located at 411 West Putnam Avenue, Greenwich, Connecticut. The Council originally approved the AT&T facility in 1992, and since that time, has maintained jurisdiction over the rooftop. The property is owned by West Putnam Owner, LLC (See Greenwich Assessor Field Card attached hereto as Exhibit B).

Dish proposes to install three (3) 600/1900/2100 MHz JMA – MX08Fr0665-21 antennas and six (6) FUJITSU TA08025 RRUs on the roof the fifty six foot (56') centerline AGL. Dish further proposes to install one (1) 1.5" Hybrid Cable. Dish will also install its equipment cabinets on a 5' X 7' platform within its 10' X 15' lease area. The installation is shown on plans completed by Tectonic Engineering, dated April 7, 2022 and attached hereto as Exhibit C.

Dish requests that the Connecticut Siting Council ("Council") find that the proposed shared use of this Facility satisfies the criteria of C.G.S. sec. 16-50aa and accordingly issue an order approving the proposed shared use. This proposed installation constitutes an exempt modification pursuant to R.C.S.A. 16-50j-89. Pursuant to R.C.S.A. 16-50j-73, Dish is providing notice to Fred Camillo, First Selectman of the Town of Greenwich, Katie DeLuca, Director of Planning and Zoning, the rooftop management company, SBA Site Management, LLC and the property owner, West Putnam Owner, LLC.

Under the Council's regulations, Dish's plans do not constitute a modification subject to the Council's review in that:

Dish will not change the existing 47' 11" height of the building. The Dish antennas will be installed on the existing rooftop at a height of 55'6".

The proposed installation will not extend the existing boundaries of the roof as depicted in Exhibit C;

The proposed installation will not increase the noise levels at the facility by six (6) decibels or more, or to levels that exceed local and state criteria; and

The proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The attached Exhibit F indicates that the combined site operations will result in a total power density of24.8906%.

Facility

The Facility consists of a commercial building located at 411 West Putnam Avenue, Greenwich, Connecticut. As indicated above, property is owned by West Putnam Owner, LLC. The facility currently supports Verizon Wireless on the rooftop. The antenna locations are set forth on Sheet A-2 of the attached drawings in Exhibit C. As indicated above, the Council has maintained jurisdiction over this facility sine the Verizon installation in 1992.

A. TECHNICAL FEASIBILTY

The existing rooftop has been deemed structurally capable of supporting the proposed Dish loading. The structural and mount analyses are attached hereto as Exhibits D and E respectively.

B. LEGAL FEASIBILITY

C.G.S. Se. 16-50aa authorizes the Council to issue orders approving the shared use of existing facilities such as the above referenced rooftop facility. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish to obtain a building permit from the Town of Greenwich to proceed with the proposed installation. Additionally, a License Agreement is attached as Exhibit G, granting Dish the authority from the building owner to proceed with this application for shared use.

C. ENVIRONMENTAL FEASIBILITY

The proposed shared use of this Facility would have a minimal environmental impact. The installation of the Dish equipment at the rooftop level of the building would have an insignificant visual impact on the area surrounding the building.

The proposed Dish ground equipment would be installed on the rooftop and set back from the edge of the roof. The Dish installation would not cause any significant alteration to the physical or environmental characteristics of the existing Facility. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase the radio frequency emissions to a level at or above the Federal Communications Commission safety standards.

D. ECONOMIC FEASIBILTY

Dish has entered into a Lease Agreement (Exhibit G) with the Facility owner for the proposed colocation. Therefore, this shared use is economically feasible.

E. PUBLIC SAFETY CONCERNS

As set forth above, the rooftop is structurally capable of supporting the proposed Dish loading. Dish is not aware of any public safety concerns relative to the proposed sharing of the existing roof.

For the reasons set forth herein, the proposed shared use of the existing rooftop at 411 West Putnam Avenue, Greenwich, satisfies the criteria stated in C.G.S. sec. 16-50aa, and supports the general goal of preventing the unnecessary proliferation of wireless facilities in Connecticut. Dish respectfully requests the Council issue an order approving the proposed shared use.

Respectfully submitted,
Dish Wireless, LLC

By_____
Theresa Ranciato-Viele, consultant
63-3 N. Branford Road
Branford, CT 06405
Tranciato@Tectonicengineering.com
203-606-5127

cc: Greenwich First Selectman, Honorable Fred Camillo
101 Field Point Road
Greenwich, CT 06611

Greenwich Director of Planning and Zoning, Katie DeLuca
101 Field Point Road
Greenwich, CT 06611

Property Owner: West Putnam Owner, LLC
411 West Putnam Ave.
Greenwich, CT 06830

Tectonic

PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Facility Management Company: SBA Site Management, LLC
900 South Highway Drive, Suite 201
Fenton, MO 63026

Exhibit A

Property Card

ADMINISTRATIVE INFORMATION

PARCEL NUMBER
03-1664/S

Parent Parcel Number

Property Address
WEST PUTNAM AVENUE 0411

Neighborhood
2200 WEST PUTNAM

Property Class
212 General Office

TAXING DISTRICT INFORMATION

Jurisdiction	57	Greenwich, CT
Area	001	
Corporation	057	
District	03	
Section & Plat	103	
Routing Number	9073N0043	

Site Description

Topography:

Public Utilities:
Sewer, Electric

Street or Road:

Neighborhood:

Zoning:
GB General Business

Legal Acres:
0.9480

OWNERSHIP

WEST PUTNAM OWNER LLC
411 WEST PUTNAM AVE FL1
GREENWICH, CT 06830

LOT NO 32 & 33 WEST PUTNAM AVE N-43

COMMERCIAL

TRANSFER OF OWNERSHIP

Date		
06/24/2016	411 PROPERTIES LLC Bk/Pg: 7086, 288	$51500000
04/22/2005	FLORIDA SHERWOOD FOREST LTD Bk/Pg: 4902, 307	$32257000
03/15/2002	SOFI IV 411 PUTNAM LLC Bk/Pg: 3810, 325	$23494750
09/08/1997	WEST PUTNAM ASSOC Bk/Pg: 2966, 220	$17250000
07/16/1991	WEST PUTNAM ASSOC Bk/Pg: 2144, 140	$233500

VALUATION RECORD

Assessment Year		10/01/2018	10/01/2019	10/01/2020	10/01/2020	10/01/2021	10/01/2021	10/01/2021
Reason for Change		2018 List	2019 List	2020 List	2020 BAA	2021 Prelim	2021 Final	2021 BAA
VALUATION	L	3347000	3347000	3347000	3347000	3347000	3347000	3347000
Market	B	48990300	45488800	45488800	45488800	46621500	46621500	46621500
	T	52337300	48835800	48835800	48835800	49968500	49968500	49968500
VALUATION	L	2342900	2342900	2342900	2342900	2342900	2342900	2342900
70% Assessed	B	34293210	31842160	31842160	31842160	32635050	32635050	32635050
	T	36636110	34185060	34185060	34185060	34977950	34977950	34977950

LAND DATA AND CALCULATIONS

	Land Type	Rating Soil ID -or- Actual Frontage	Measured Acreage -or- Effective Frontage	Table Effective Depth	Prod. Factor -or- Depth Factor -or- Square Feet	Base Rate	Adjusted Rate	Extended Value	Influence Factor	Value
1	Primary Commercial				41294.88	81.05	81.05	3347000		3347000

S: 03-1654/S
16: Sustain
20: Sustain
21: DNH
15: 15-0978; Tenant: Contrian Capital, $188,000 elec & int alt
18: BP16-3911, Tenant Fitout $719,000
21: 20-6826: $75,000 Fitout Pandion Mine Finance
-5160: $325,000 Fitout Libertas Funding
ST: 2016 GL, 2017 GL & 2018 GL
A: Wexford Plaza
N: Supported by parking deck and garage on 03-1654/s.
110 spaces
LE: 3/15/02 vol 3810 pg 325 sale includes 03-1654/s. Recorded sp of 3,494,750 reflects reduction for specific liability. Effective = $23,607,000. Verified arm's length. 4/05 sale w/ 03-1654/s

Permit Number / Type	FilingDate	Est. Cost / Est. SqFt	Field Visit

Supplemental Cards

TRUE TAX VALUE 3347000

Supplemental Cards

TOTAL LAND VALUE 3347000

IMPROVEMENT DATA

PHYSICAL CHARACTERISTICS

ROOFING

Built-up

WALLS

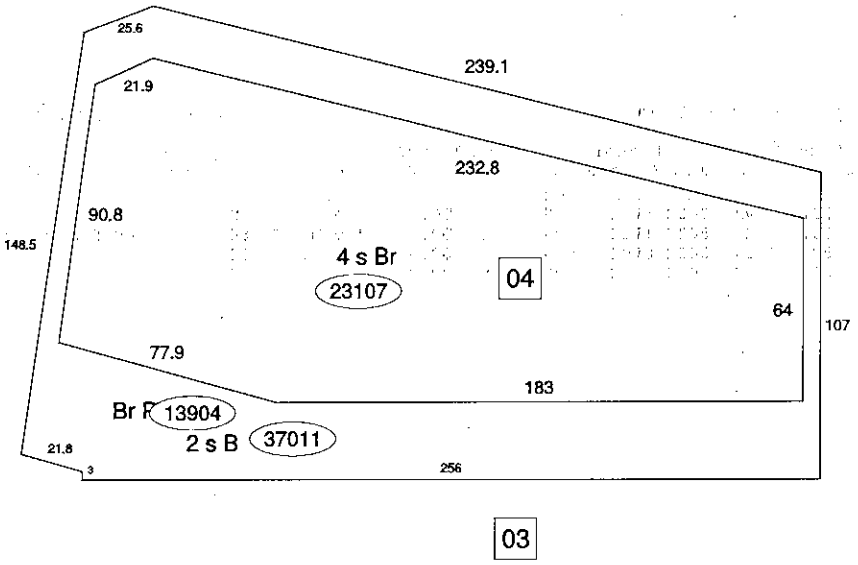
	B	1	2	U
Frame		Yes	Yes	Yes
Brick	Yes			
Metal				
Guard				

FRAMING

	B	1	2	U
R Conc	3701	0	0	0
F Prf	70321	23107	23107	46214

HEATING AND AIR CONDITIONING

	B	1	2	U
Heat	74022	4621	4621	9242
Sprink	74022	4621	4621	9242



Item Description	Units	Cost	Total	P
M & S Cost Database Date: 07/2020				
Base Cost	92428	226.50	20934942	
Exterior Walls	92428	62.40	5767508	
Heating & Cooling	18484	37.44	692040	
Sprinklers	18484	8.08	149352	
Basic Structure Cost	92428	298.00	27543842	
Unfinished Basement	74022	65.81	4871388	
Heating & Cooling	74022	22.33	1652764	
Sprinklers	74022	5.02	371516	
Building Cost New	92428	372.61	34439510	
Physical	0	0.00	4343696	12
Depreciated Cost	92428	325.61	30095814	
Rounded Total	0	0.00	30095800	
Total Exterior Features Value				
Depreciated Ext Features				
Total Before Adjustments			30095800	
Neighborhood Adjustment			15047900	50
TOTAL VALUE			45143700	

(LCM: 150.0

SPECIAL FEATURES

Description	Value
C : Remod 2009	

SUMMARY OF IMPROVEMENTS

ID	Use	Stry Hgt	Const Type	Grade	Year Const	Eff Year	Cond	Base Rate	Feat-ures	Adj Rate	Size or Area	Computed Value	Phys Depr	Obsol Depr	Market Adj	% Comp	Value
C	GENOFF	0.00		Exe-	1973	2000	AV	0.00	N	0.00	23107	0	0	0	150	100	45143700
03	PENTMECH	0.00	1	Avg	1971	1995	GD	70.00	N	105.00	2940	308700	15	0	100	100	262400
04	ELEVCOM	6.00	2E	Avg+	1973	2000	VG	178685	N	309125	2@ 0	618250	10	0	100	100	556400
05	BRP	0.00		Exe	2009	2009	AV	0.00	N	0.00	0	823800	20	0	100	100	659000

Data Collector/Date	Appraiser/Date	Neighborhood	Supplemental Cards TOTAL IMPROVEMENT VALUE	46621500
TD 06/13/2017	TOG 10/01/2015	Neigh 2200 AV		

Exhibit B

Project Plans

dish wireless.

DISH WIRELESS SITE ID:

NJJER01107B

DISH WIRELESS SITE ADDRESS:

411 WEST PUTNAM AVENUE
GREENWICH, CT 06830

SITE INFORMATION

PROPERTY OWNER:	WEST PUTNAM OWNER LLC
ADDRESS:	411 WEST PUTNAM AVENUE GREENWICH, CT 06830
TOWER TYPE:	ROOFTOP
TOWER CO SITE ID:	CT85823-M
TOWER APP NUMBER:	N/A
COUNTY:	FAIRFIELD COUNTY
LATITUDE (NAD 83):	41° 01' 18.03" N 41.021675 N
LONGITUDE (NAD 83):	73° 36' 27.19" W 73.6408° W
ZONING JURISDICTION:	TOWN OF GREENWICH CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	GB-GENERAL BUSINESS
PARCEL NUMBER:	03-1664/8
OCCUPANCY GROUP:	B/S
CONSTRUCTION TYPE:	I-B
POWER COMPANY:	EVERSOURCE
TELEPHONE COMPANY:	T.B.D.

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
ROOFTOP MANAGER:	SBA 411 WEST PUTNAM AVENUE GREENWICH, CT 06830
SITE DESIGNER:	TECTONIC ENGINEERING CONSULTANTS, GEOLOGISTS & LAND SURVEYORS, D.P.C., INC 1279 ROUTE 300 NEWBURGH, NY 12550
SITE ACQUISITION:	TECTONIC ENGINEERING CONSULTANTS, GEOLOGISTS & LAND SURVEYORS, D.P.C., INC (845) 567-4656
CONSTRUCTION MANAGER:	RAFAL ROSOLOWSKI RAFAL.ROSOLOWSKI@DISH.COM
RF ENGINEER:	PAWAN MADAHAR PAWAN.MADAHAR@DISH.COM

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:

ANTENNA SCOPE OF WORK:
- INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR)
- INSTALL (3) PROPOSED RAILSHOT MOUNTS
- INSTALL PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
- INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (3) PROPOSED FIBER CABLES (1 PER SECTOR)
- INSTALL (3) PROPOSED DC POWER CABLES (1 PER SECTOR)

EQUIPMENT SCOPE OF WORK:
- INSTALL (1) PROPOSED STEEL PLATFORM W/ OUTRIGGERS
- 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)
- REUSE (3) EXISTING SUB-METER (OLD NEXTEL METER)
- INSTALL (1) CABLE TRAY

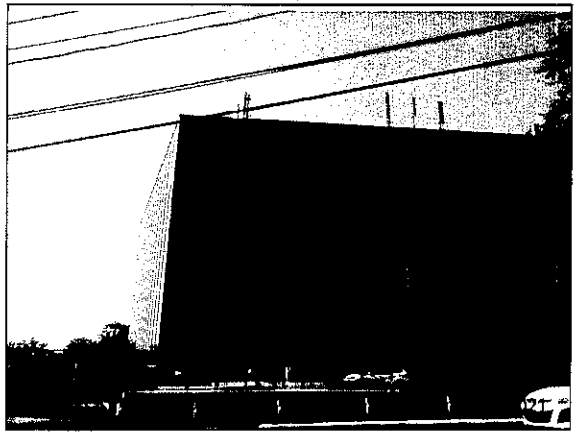
CONNECTICUT CODE COMPLIANCE

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 SITE PLAN
A-2	ROOF PLAN
A-3	ANTENNA LAYOUT AND SCHEDULE
A-4	WEST ELEVATION
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
A-7	EQUIPMENT DETAILS
A-8	EQUIPMENT DETAILS
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES



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

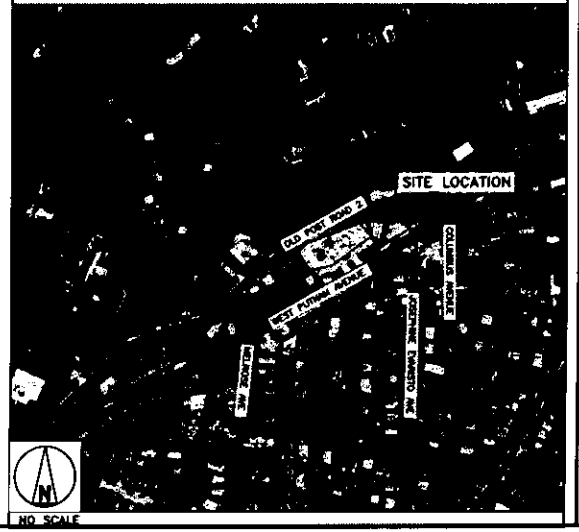
CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON THE JOB SITE, AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

DIRECTIONS

DIRECTIONS FROM 5 ADP BOULEVARD, ROSELAND, NJ:

TAKE CHESTNUT WAY AND TURN RIGHT ONTO LIVINGSTON AVE. USE THE RIGHT LANE TO TAKE THE RAMP ONTO I-280 E. FOLLOW I-280 E, GARDEN STATE PKWY AND I-287 E TO CORAM AVE IN GREENWICH. TAKE EXIT 3 FROM I-95 N. MERGE ONTO I-280 EXPY LEFT TO STAY ON I-280 E. TAKE EXIT 15 TOWARD ORANGE/EAST ORANGE. KEEP LEFT, FOLLOW SIGNS FOR GARDEN STATE PARKWAY AND MERGE ONTO GARDEN STATE PKWY. KEEP RIGHT TO STAY ON GARDEN STATE PKWY, KEEP LEFT TO STAY ON GARDEN STATE PKWY, CONTINUE ONTO NJ-444 N/GARDEN STATE PKWY. CONTINUE ONTO GARDEN STATE PARKWAY CONNECTOR. USE ANY LANE TO TAKE EXIT 1-14 TO MERGE ONTO I-287 S/I-87 S. KEEP LEFT AT THE FORK TO CONTINUE ON I-287 E, FOLLOW SIGNS FOR WHITE PLAINS/NYC. KEEP LEFT TO STAY ON I-287 E. MERGE ONTO I-95 N. TAKE EXIT 2 TOWARD BYRAM/DELAWARE AVE. TAKE BYRAM RD TO US-1 N. CONTINUE ONTO CORAM AVE. TURN LEFT ONTO BYRAM SHORE RD. TURN LEFT ONTO DELAWARE AVE. TURN RIGHT ONTO PROVIDENCE RD. TURN LEFT ONTO BYRAM RD. TURN RIGHT ONTO US-1 N. DESTINATION WILL BE ON THE LEFT.

VICINITY MAP



NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE,
LITTLETON, CO 80120

Tectonic

PRINCIPAL DISCIPLINES: ENGINEERING SERVICES

Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C., Inc.
Project Contact Info
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-4656
(800) 829-4520
www.tectonicengineering.com

STATE OF CONNECTICUT
MANOJKUMAR PATEL
PEN.0022038
LICENSED
PROFESSIONAL ENGINEER
6/22/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
PG	JQ	MP

RFDS REV #: 0

ZONING DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	06/22/22	ISSUED FOR PLANS

A&E PROJECT NUMBER

10710.NJJER01107B

DISH Wireless L.L.C. PROJECT INFORMATION

NJJER01107B

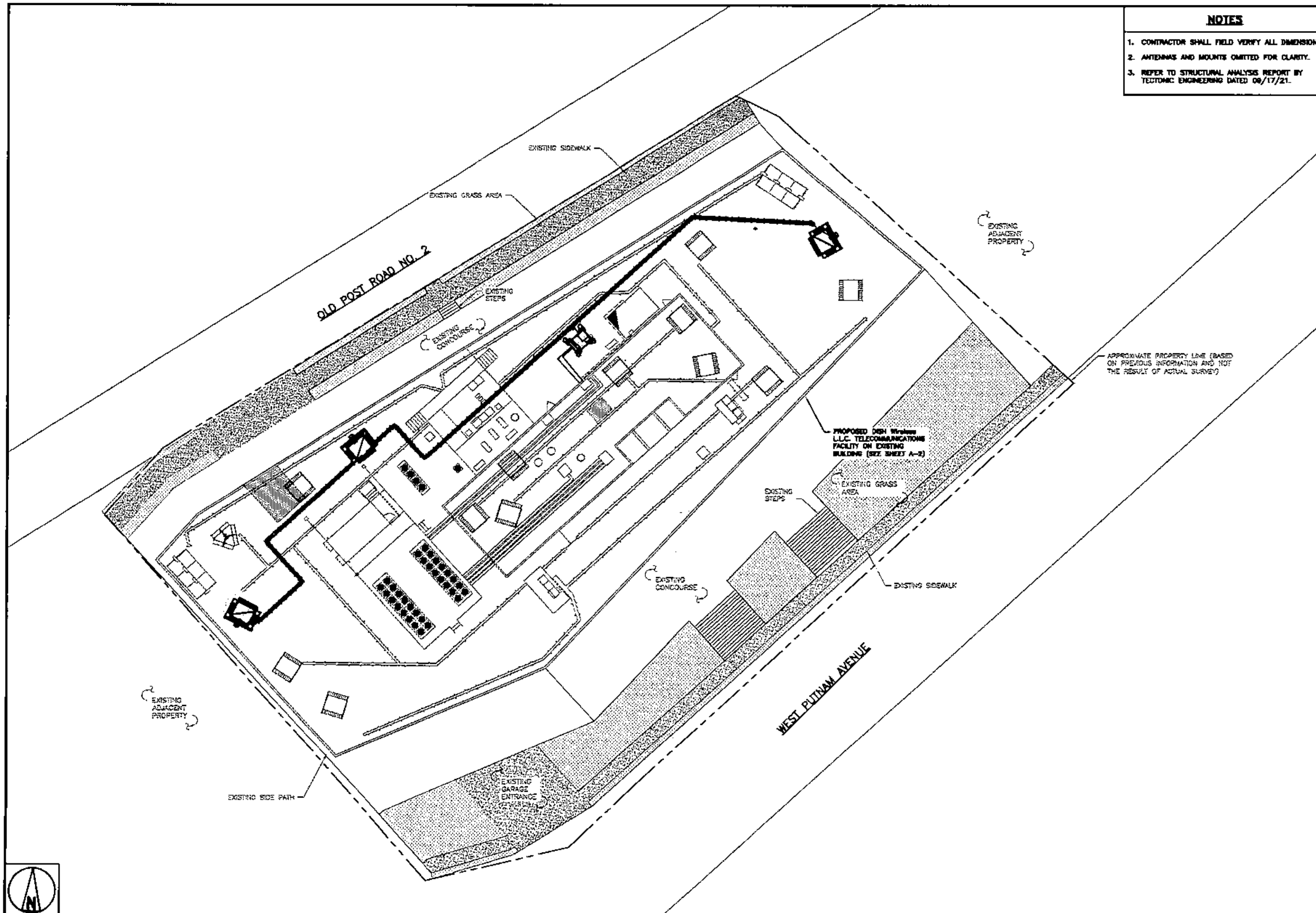
411 WEST PUTNAM AVENUE
GREENWICH, CT 06830

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



OVERALL SITE PLAN

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. REFER TO STRUCTURAL ANALYSIS REPORT BY TECTONIC ENGINEERING DATED 09/17/21.

dish wireless

5701 SOUTH SANTA FE DRIVE, LITTLETON, CO 80120

Tectonic

STATE OF CONNECTICUT
MANOJKUMAR PATEL
PEN.0022038
LICENSED PROFESSIONAL ENGINEER
4/22/22

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
PG	JQ	MP

RFDS REV #: 0

ZONING DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	04/22/22	ISSUED FOR FILING

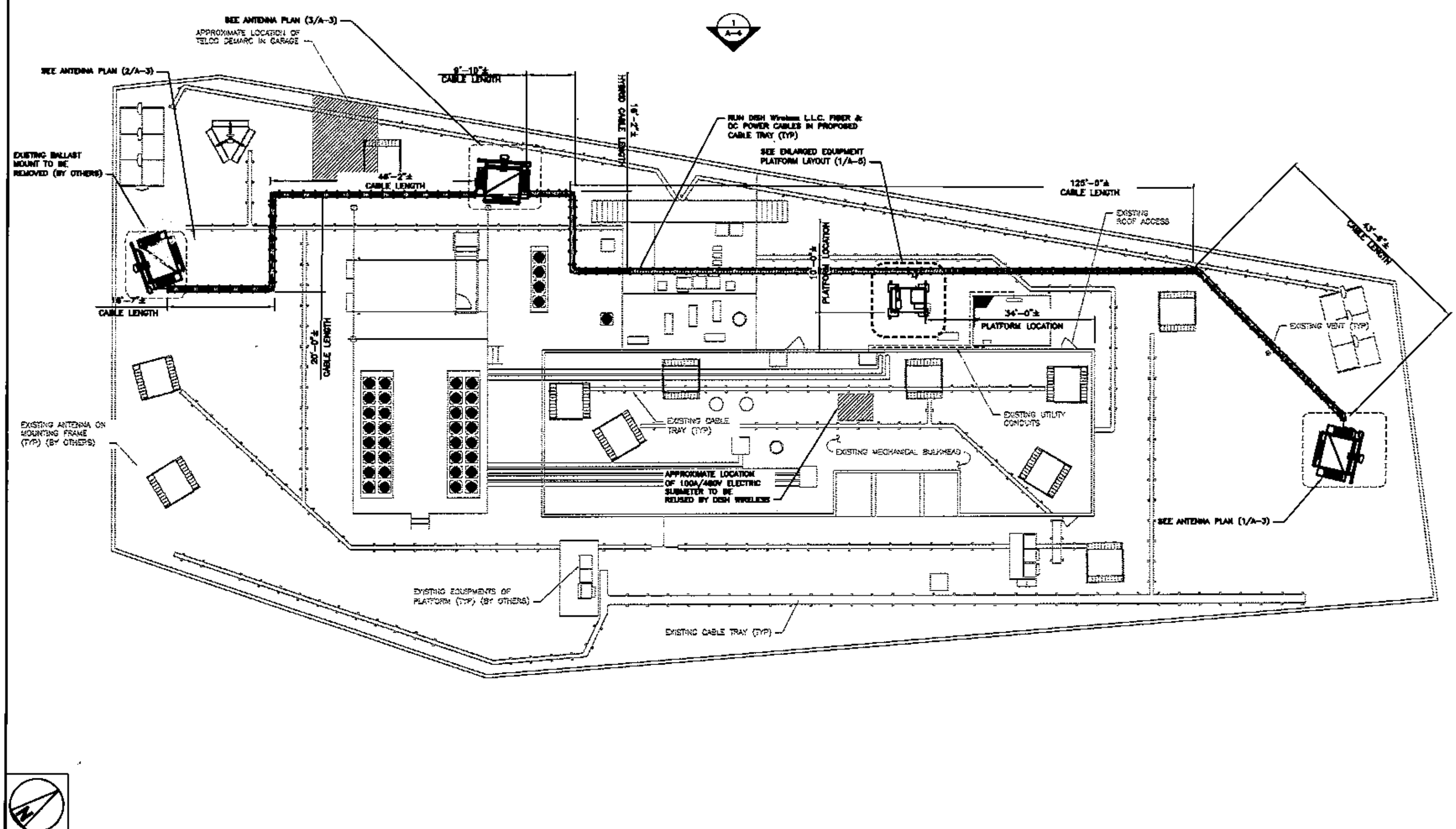
A&E PROJECT NUMBER
10710.NJJER01107B

DISH Wireless L.L.C. PROJECT INFORMATION
NJJER01107B

411 WEST PUTNAM AVENUE
GREENWICH, CT 06830

SHEET TITLE
OVERALL SITE PLAN

SHEET NUMBER
A-1



ENLARGED SITE PLAN

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

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. REFER TO STRUCTURAL ANALYSIS REPORT BY TECTONIC ENGINEERING DATED 09/17/21.

ROOFTOP CALCULATIONS

EXISTING ROOFTOP= 24240.73 SF

PROPOSED EQUIPMENT= 418.65 SF
- PLATFORM, ANTENNA MOUNTS, & CABLE TRAY

ROOFTOP COVERAGE= 1.7%

dish wireless.

5701 SOUTH SANTA FE DRIVE, LITTLETON, CO 80120

Tectonic

STATE OF CONNECTICUT — MANOJKUMAR PATEL — PEN.0022038 — LICENSED PROFESSIONAL ENGINEER — 4/22/22

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
PG	JQ	MP

RFDS REV #: 0

ZONING DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	04/22/22	ISSUED FOR FILING

A&E PROJECT NUMBER
10710.NJJER01107B

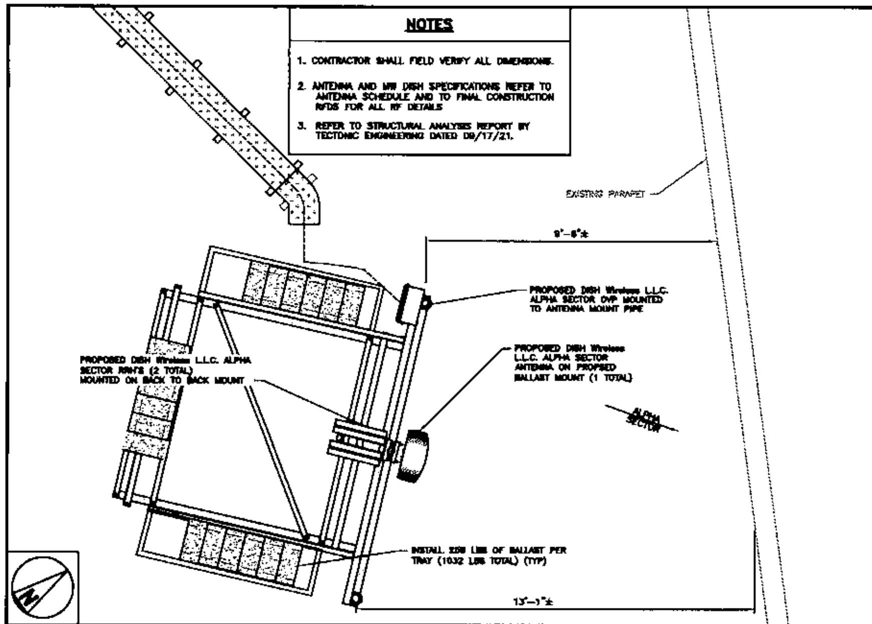
DISH Wireless L.L.C. PROJECT INFORMATION
NJJER01107B
411 WEST PUTNAM AVENUE
GREENWICH, CT 06830

SHEET TITLE
ENLARGED SITE PLAN

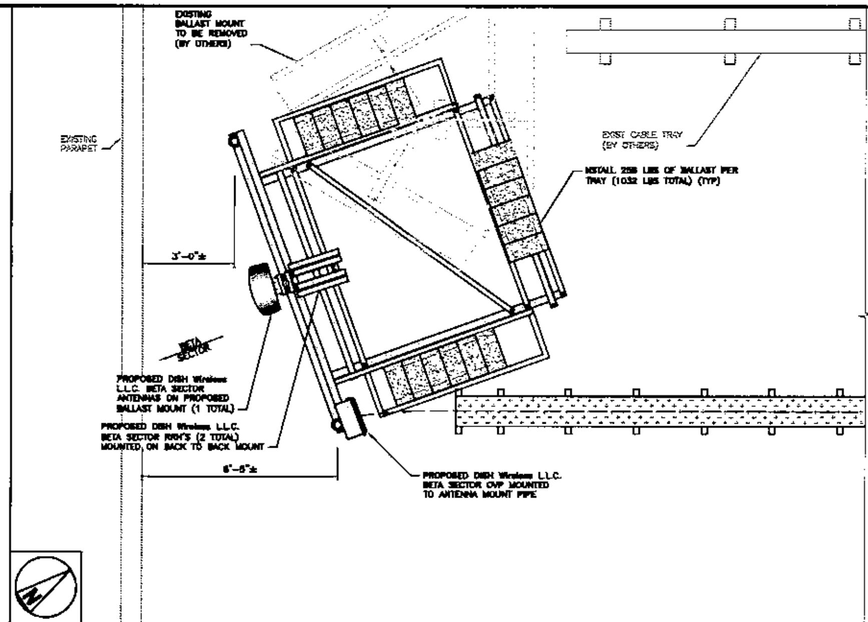
SHEET NUMBER
A-2

NOTES

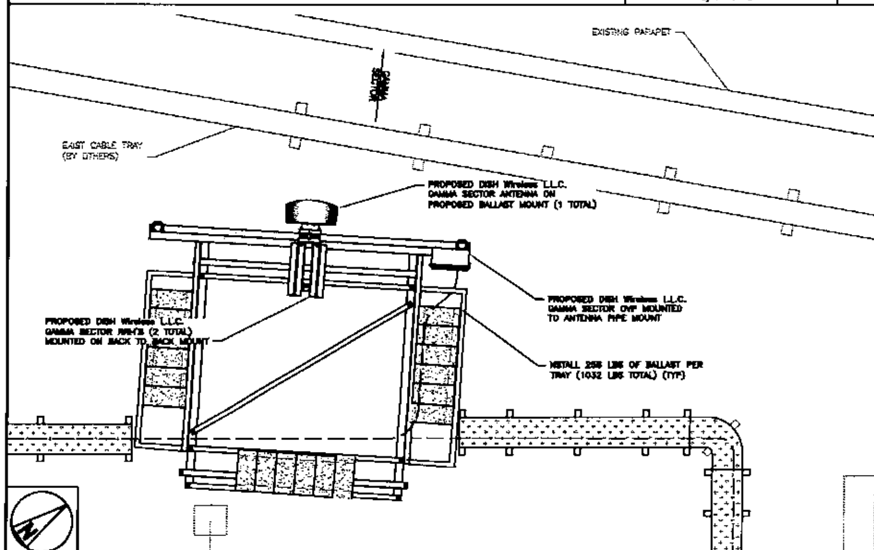
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. REFER TO STRUCTURAL ANALYSIS REPORT BY TECTONIC ENGINEERING DATED 08/17/21.



PROPOSED ALPHA SECTOR — 3/4"=1'-0" — 1



PROPOSED BETA SECTOR — 3/4"=1'-0" — 2



PROPOSED GAMMA SECTOR — 3/4"=1'-0" — 3

SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECH	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	MANUFACTURER – MODEL NUMBER	TECH	POS.	MANUFACTURER MODEL
A2	PROPOSED	JMA – MX08FRO665-21	5G	70°	55'-6"	(1) DC POWER & (1) FIBER CABLE (110'± LONG)	MTI TB GEN-1.5 G080708-30-028	5G	A2	RAYCAP – RDIDC-3045-PF-48
							MTI TB GEN-1.5 G2021-49-028	5G	A2	
							—	—	—	
B2	PROPOSED	JMA – MX08FRO665-21	5G	220°	55'-6"	(1) DC POWER & (1) FIBER CABLE (100'± LONG)	MTI TB GEN-1.5 G080708-30-028	5G	B2	RAYCAP – RDIDC-3045-PF-48
							MTI TB GEN-1.5 G2021-49-028	5G	B2	
							—	—	—	
C2	PROPOSED	JMA – MX08FRO665-21	5G	330°	55'-6"	(1) DC POWER & (1) FIBER CABLE (180'± LONG)	MTI TB GEN-1.5 G080708-30-028	5G	C2	RAYCAP – RDIDC-3045-PF-48
							MTI TB GEN-1.5 G2021-49-028	5G	C2	
							—	—	—	

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.
3. AZIMUTHS ARE SUBJECT TO CHANGE AND NEED TO BE CONFIRMED WITH THE LATEST RFDS PRIOR TO THE START OF CONSTRUCTION.

ANTENNA SCHEDULE — NO SCALE — 4

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Tectonic

STATE OF CONNECTICUT
MANOJKUMAR PATEL
PEN.0022038
LICENSED PROFESSIONAL ENGINEER
6/22/22

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RFDS REV #: 0

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SUBMITTALS

REV	DATE	DESCRIPTION
0	04/22/22	ISSUED FOR FILING

A&E PROJECT NUMBER
10710.NJJER01107B

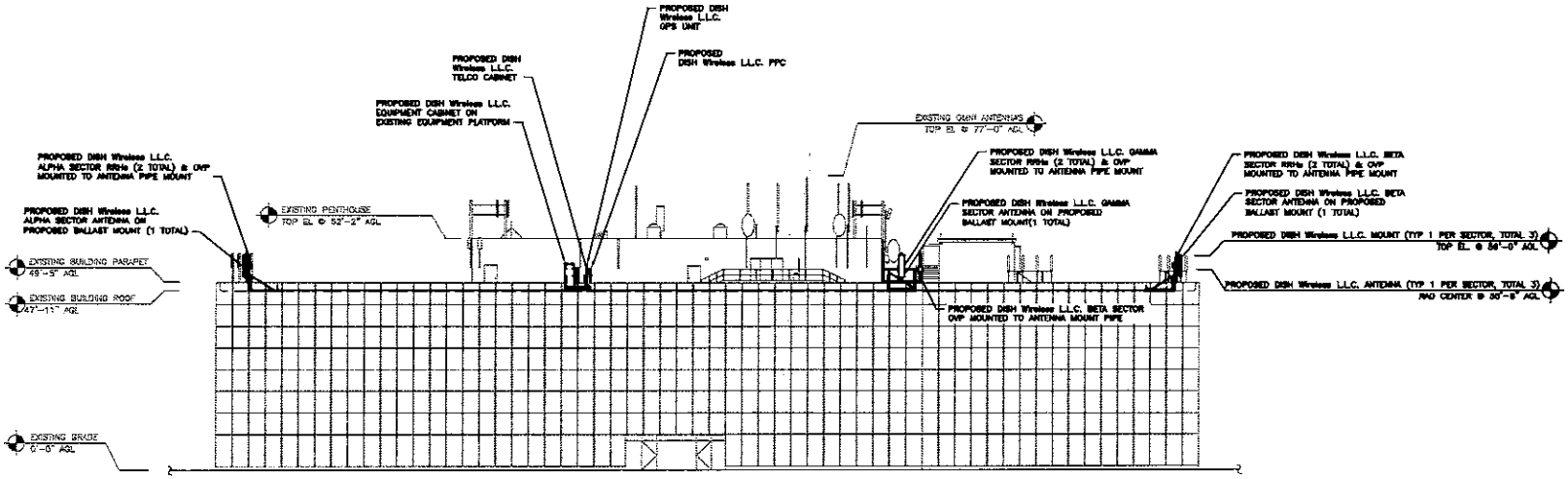
DISH Wireless L.L.C. PROJECT INFORMATION
NJJER01107B
411 WEST PUTNAM AVENUE
GREENWICH, CT 06830

SHEET TITLE
ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-3

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. REFER TO STRUCTURAL ANALYSIS REPORT BY TECTONIC ENGINEERING DATED 09/17/21.



BUILDING WEST ELEVATION

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

NO SCALE

1

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5701 SOUTH SANTA FE DRIVE,
LITTLETON, CO 80120

Tectonic

1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-0858
(800) 724-4021

STATE OF CONNECTICUT
MANOJKUMAR PATEL
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SUBMITTALS

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A&E PROJECT NUMBER

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DISH Wireless L.L.C. PROJECT INFORMATION

NJJER01107B

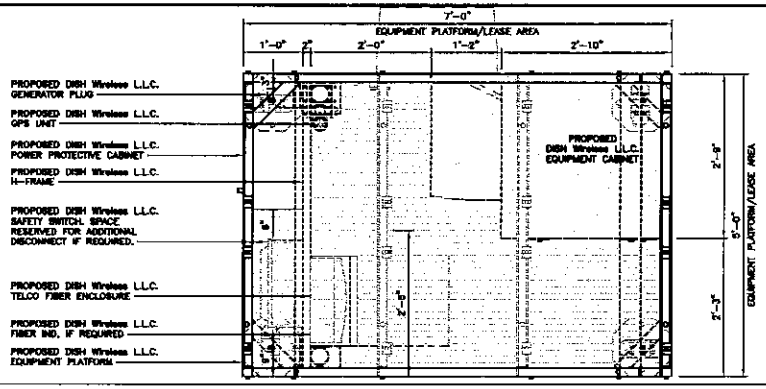
411 WEST PUTNAM AVENUE
GREENWICH, CT 06830

SHEET TITLE

WEST ELEVATION

SHEET NUMBER

A-4

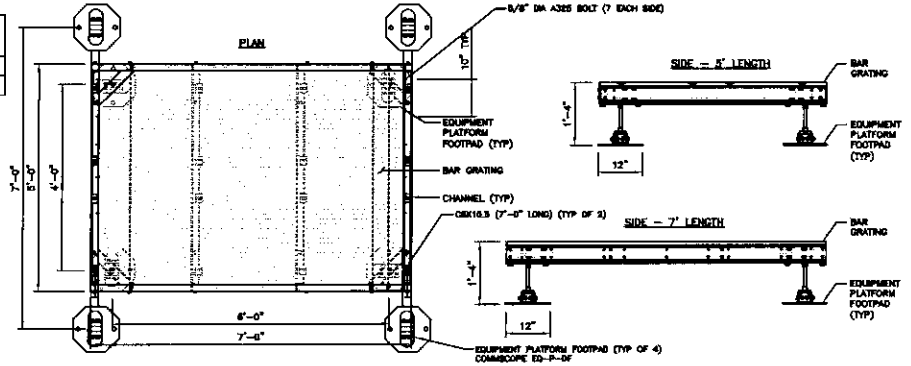


PLATFORM EQUIPMENT PLAN

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

1

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

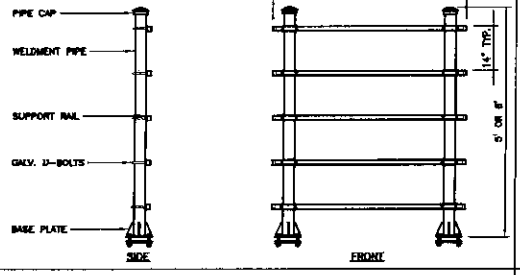


PLATFORM DETAIL

NO SCALE

2

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



H-FRAME DETAIL

NO SCALE

3

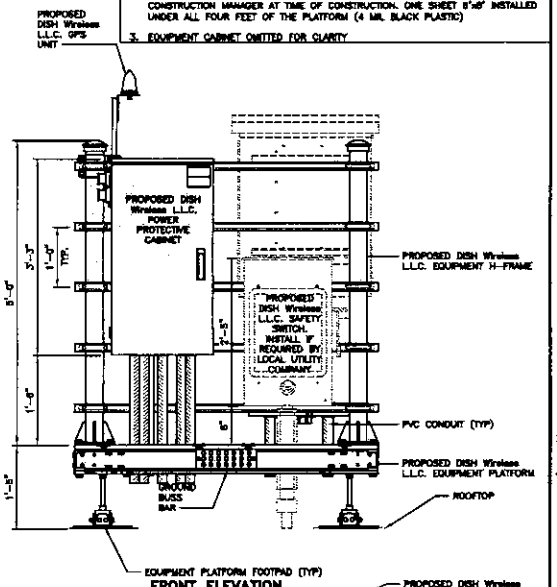
NOT USED

NO SCALE

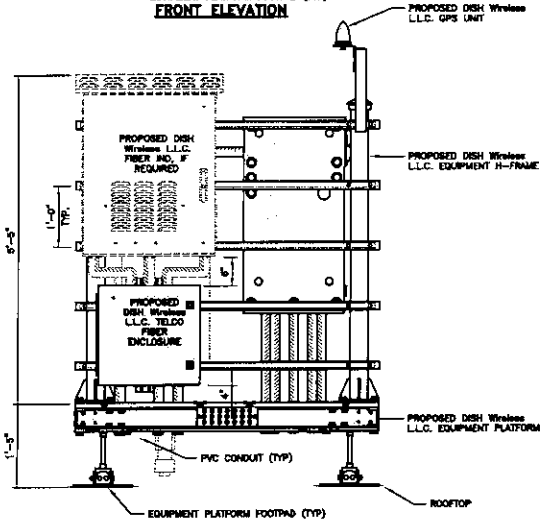
4

NOTES

1. CONTRACTOR TO BURY PLATFORM FEET WITH A MINIMUM OF 2" OF FILL PER EXISTING SITE SURFACE
2. WEED BARRIER FABRIC TO BE ADDED AT DISCRETION OF DISH WIRELESS 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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STATE OF CONNECTICUT
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10710.NJJER01107B

DISH Wireless L.L.C. PROJECT INFORMATION

NJJER01107B

411 WEST PUTNAM AVENUE
GREENWICH, CT 06830

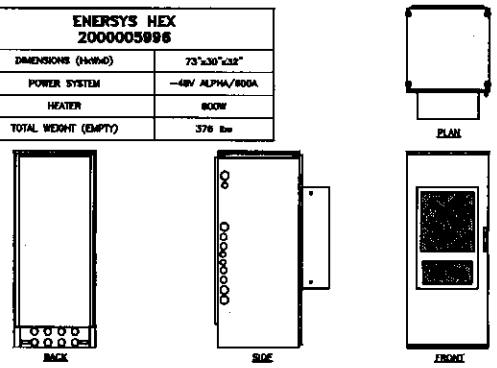
SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

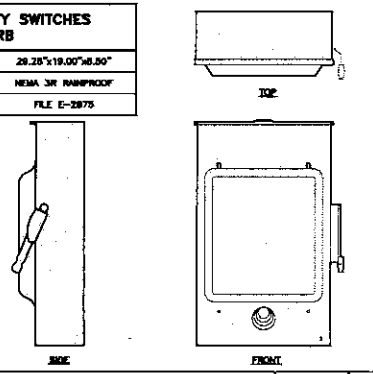
A-5

ENERSYS HEX 2000005996	
DIMENSIONS (HxWxD)	73"x30"x32"
POWER SYSTEM	-48V ALPHA/600A
HEATER	600W
TOTAL WEIGHT (EMPTY)	376 lbs



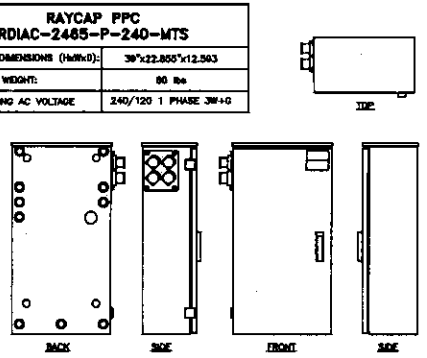
CABINET DETAIL | NO SCALE | 1

SQUARE D SAFETY SWITCHES D224NRB	
ENCLOSURE DIM (HxWxD)	29.28"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E-2875



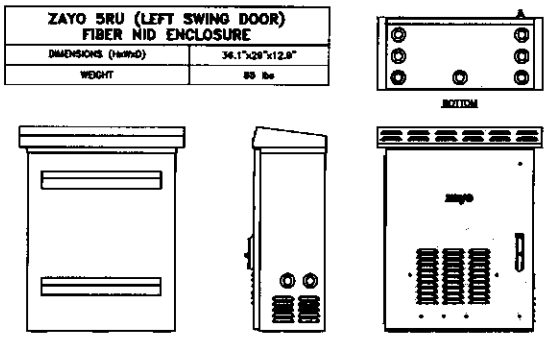
SAFETY SWITCH DETAIL | NO SCALE | 2

RAYCAP PPC RDIAC-2465-P-240-MTS	
ENCLOSURE DIMENSIONS (HxWxD):	39"x22.855"x12.563
WEIGHT:	80 lbs
OPERATING AC VOLTAGE	240/120 1 PHASE 3W+G



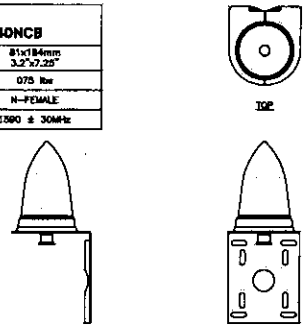
CABINET DETAIL | NO SCALE | 3

ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs

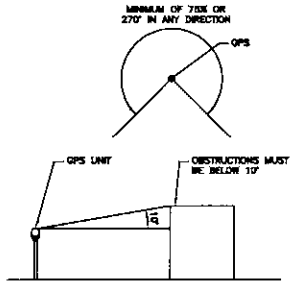


FIBER NID ENCLOSURE DETAIL | NO SCALE | 4

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

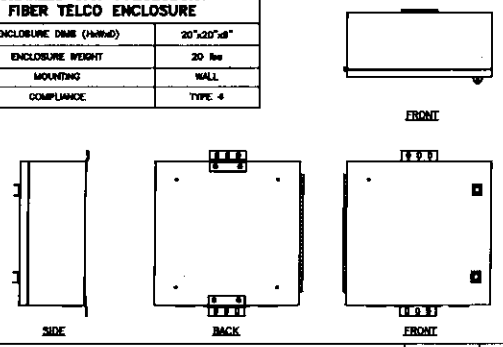


GPS DETAIL | NO SCALE | 5



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 6

CHARLES CFIT-PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x8"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 7

NO SCALE | 8

NO SCALE | 9

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LITTLETON, CO 80120

Tectonic
Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C., Inc.
Project Contact: Info
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Newburgh, NY 12550
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www.tectonic-engineering.com

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SUBMITTALS

REV	DATE	DESCRIPTION
0	06/22/22	ISSUED FOR PLANS

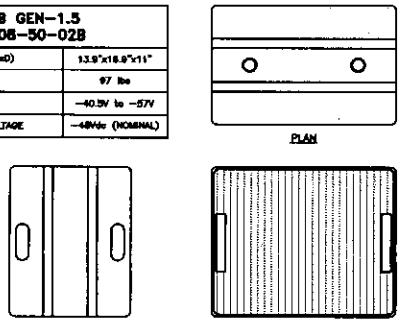
A&E PROJECT NUMBER
10710.NJJER011078

DISH Wireless L.L.C. PROJECT INFORMATION
NJJER011078
411 WEST PUTNAM AVENUE
GREENWICH, CT 06830

SHEET TITLE
EQUIPMENT DETAILS

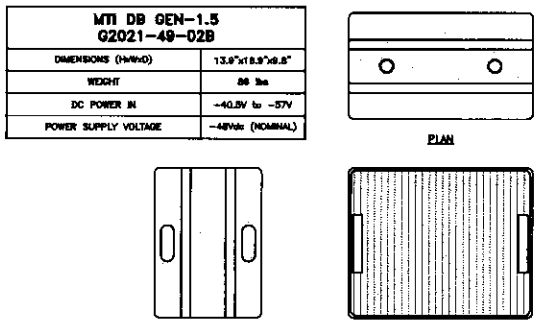
SHEET NUMBER
A-6

MTI TB GEN-1.5 G050708-50-02B	
DIMENSIONS (HxWxD)	13.9"x18.9"x11"
WEIGHT	97 lbs
DC POWER IN	-40.5V to -57V
POWER SUPPLY VOLTAGE	-48Vdc (NOMINAL)



RRH DETAIL | NO SCALE | 1

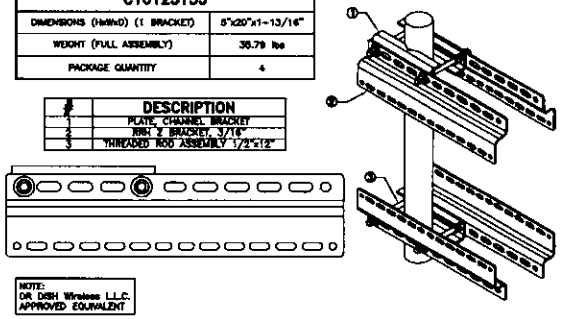
MTI DB GEN-1.5 G2021-49-02B	
DIMENSIONS (HxWxD)	13.9"x18.9"x9.8"
WEIGHT	86 lbs
DC POWER IN	-40.5V to -57V
POWER SUPPLY VOLTAGE	-48Vdc (NOMINAL)



RRH DETAIL | NO SCALE | 2

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

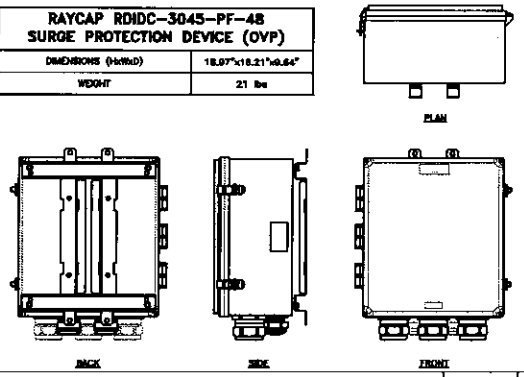
#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



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

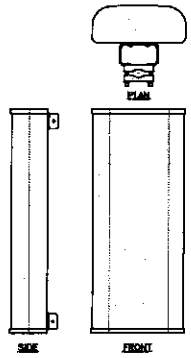
RRH MOUNT DETAIL | NO SCALE | 3

RAYCAP RDIDC-3045-PF-48 SURGE PROTECTION DEVICE (OVP)	
DIMENSIONS (HxWxD)	18.97"x18.21"x9.84"
WEIGHT	21 lbs



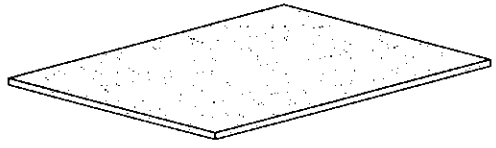
SURGE PROTECTION DEVICE DETAIL (OVP) | NO SCALE | 4

JMA MX08FRO465-20	
DIMENSIONS (HxWxD)	48"x20.0"x8.0"
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE
WEIGHT	51.3 lbs
WEIGHT WITH BRACKETS	86.3 lbs



ANTENNA DETAIL | NO SCALE | 5

UTILITY RUBBER MAT, BLACK	
DIMENSIONS	4'x 3'x 1/2"
WEIGHT/ VOLUME	38.5 LB AVERAGE
MATERIAL	100% RECYCLE RUBBER



UTILITY RUBBER MAT DETAIL | NO SCALE | 6

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

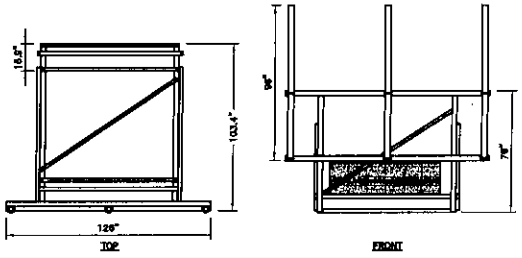
NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS FOR 4-, 8-, AND 8-FOOT ANTENNAS
ANTENNA BRACKET NOT PART OF KIT

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

ANTENNA BRACKET DETAIL | NO SCALE | 7

COMMSCOPE RF-NL10-DSH	
FACE SIZE	126"
WEIGHT	661 lbs

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



SLED DETAIL | NO SCALE | 8

NO SCALE | 9

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ENGINEERING CONSULTANTS

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MANOJKUMAR PATEL
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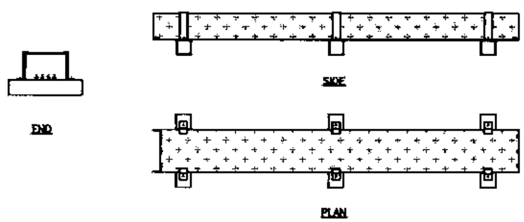
DISH Wireless L.L.C. PROJECT INFORMATION
NJJER01107B
411 WEST PUTNAM AVENUE
GREENWICH, CT 06830

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-7

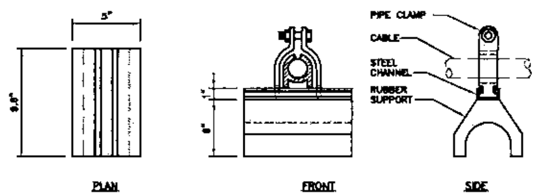
COMMSCOPE RT-CB4D ROOFTOP COVER KIT	
DIMENSIONS (HxWxL)	7"x 11.25"x 96"
WEIGHT/ VOLUME	85.98 LBS
CABLE RUN (QTY)	4

MOUNTING	NON-PENETRATING
INCLUDED PRODUCTS:	RTCB40.01 CHANNEL (1)
	MT-F1598 SLEEPERS (3)
	RTCUH HARDWARE
	RTHC.01 HOLD-DOWN CLAMPS (6)



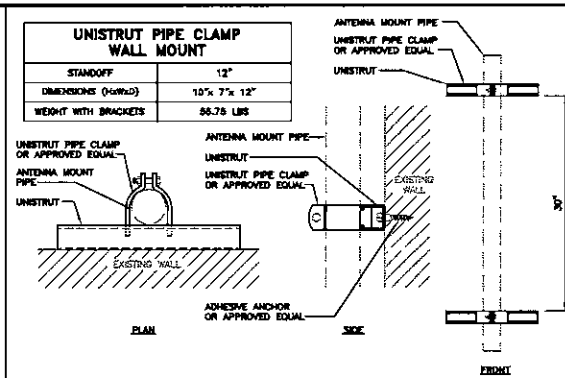
ROOFTOP CABLE TRAY DETAIL | NO SCALE | 1

DURA-BLOK DB10 ROOFTOP CABLE SUPPORT	
DIMENSIONS (HxWxL)	5"x8"x9.6"
WEIGHT/ VOLUME	5.25 LBS
ULTIMATE LOAD CAPACITY	500 LBS
NOTE: NON-PENETRATING	



ROOFTOP CABLE SUPPORT DETAIL | NO SCALE | 2

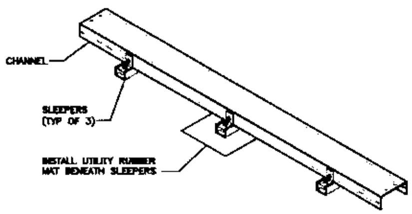
UNISTRUT PIPE CLAMP WALL MOUNT	
STANDOFF	12"
DIMENSIONS (HxWxD)	10"x 7"x 12"
WEIGHT WITH BRACKETS	56.75 LBS



UNISTRUT WALL MOUNT DETAIL | NO SCALE | 3

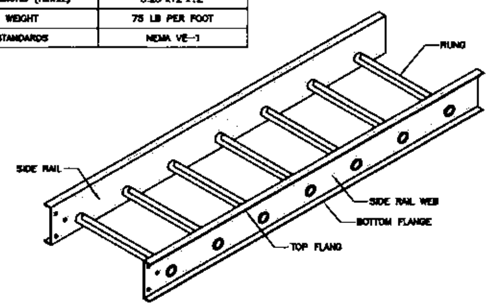
COMMSCOPE MT-F1543 ROOFTOP CABLE BRIDGE KIT	
DIMENSIONS (HxWxL)	7"x30"x84"
WEIGHT	112.3 lbs
CABLE RUN, QUANTITY	8

NOTE: NON-PENETRATING, 12-GAUGE COVER, OR APPROVED EQUAL. INCLUDES: CHANNEL, HARDWARE AND (3) SLEEPERS



WALL MOUNTED CABLE TRAY DETAIL | NO SCALE | 4

COPE 1B48-12SL-12-09 ROOFTOP LADDER TRAY	
DIMENSIONS (HxWxL)	5.25"x12"x12'
WEIGHT	75 LB PER FOOT
STANDARDS	NEMA VE-1



ROOFTOP [illegible] DETAIL | NO SCALE | 5

NOT USED | NO SCALE | 6

NO SCALE | 7

NO SCALE | 8

NO SCALE | 9

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STATE OF CONNECTICUT MANOJKUMAR PATEL PEN.0022038 LICENSED PROFESSIONAL ENGINEER 6/22/22

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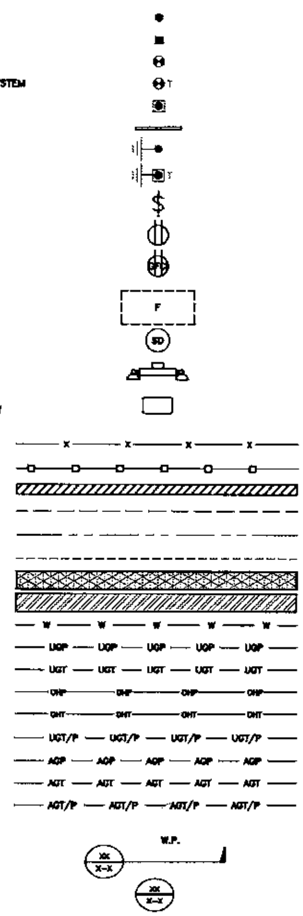
411 WEST PUTNAM AVENUE
GREENWICH, CT 06830

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-8

LEGEND

- EXOTHERMIC CONNECTION
- MECHANICAL CONNECTION
- 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



ABBREVIATIONS

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

dish wireless.

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LITTLETON, CO 80120

Tectonic

STATE OF CONNECTICUT
MANOJKUMAR PATEL
PEN.0022038
LICENSED PROFESSIONAL ENGINEER
4/22/22

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DRAWN BY:	CHECKED BY:	APPROVED BY:
PG	JQ	MP

RFDS REV #: 0

ZONING DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	04/22/22	ISSUED FOR FILING

A&E PROJECT NUMBER
10710.NJJER01107B

DISH Wireless L.L.C. PROJECT INFORMATION
NJJER01107B
411 WEST PUTNAM AVENUE
GREENWICH, CT 06830

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

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

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 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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Tectonic

STATE OF CONNECTICUT
MANOJKUMAR PATEL
PEN.0022038
LICENSED PROFESSIONAL ENGINEER
9/22/22

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DRAWN BY:	CHECKED BY:	APPROVED BY:
PG	JQ	MP

RFDS REV #: 0

ZONING DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	9/22/22	ISSUED FOR FILING

A&E PROJECT NUMBER
10710.NJJER01107B

DISH Wireless L.L.C. PROJECT INFORMATION
NJJER01107B

411 WEST PUTNAM AVENUE
GREENWICH, CT 06830

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-2

Exhibit C

Structural Analysis

Tectonic

PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Date: **September 17, 2021**

Structural Analysis Report

Project Information:

Carrier:	Dish Wireless
Site Number:	NJJER01107B
Site Address:	411 West Putnam Avenue, Greenwich, CT 06830
Site Type:	Rooftop Mounted Antennas

Tectonic Project Number: 10710.NJJER01107B

Tectonic Engineering & Surveying Consultants P.C. is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned rooftop antenna mount site.

The purpose of this analysis is to design and determine the acceptability of the proposed antenna mounts. Based on our analysis we have determined the stress level at each sector to be as follows:

All Sectors:	**Sufficient**
Platform:	**Sufficient**

This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 93 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B with a maximum topographic factor 1.0, Kzt, of 1.0 and Risk Category II was used in this analysis.

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

Structural analysis prepared by/reviewed by: Jose Rosales/ Edward N. Iamiceli, P.E.

Respectfully submitted by:
Tectonic Engineering & Surveying Consultants P.C.,

STATE OF CONNECTICUT
EDWARD N. IAMICELI
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LICENSED
PROFESSIONAL ENGINEER

Edward N. Iamiceli, P.E.
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TABLE OF CONTENTS

1) INTRODUCTION/PURPOSE

Analysis of the proposed antenna mounts due to the loading of the proposed antennas, equipment, and related appurtenances on the rooftop of the existing building structure.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-G
ASCE Revision:	7-10
Risk Category:	II
Wind Speed:	93 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	0.75 in
Wind Speed with Ice:	40 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Loading Per Ballast Mount

Centerline (ft)	Carrier Designation	Quantity	Antenna Manufacturer	Antenna Model	Proposed Mount Type	Note
51'-4"	Dish Wireless	1	JMA	MX08FRO665-21	Ballast Mount by Commscope P/N: RF-N10-3-72	1,2
		1	MTI	G060708-50-02B		
		1	MTI	G2021-49-02B		
		1	Raycap	RDIDC-3045-PF-48		

Notes:
1) To be mounted on proposed mounts.
2) Typical layout per sector, total of 3 sectors.

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Prepared By	Dated
Preliminary Construction Drawings	Tectonic	06/11/2021
RFDS	Dish	06/14/2021
Field Notes & Photos	Tectonic	08/19/2021

3.1) Analysis Method

A tool internally developed, using Microsoft Excel, was used to calculate wind loading on all appurtenances and mount members. This information was then used in conjunction with another program, RISA-3D, which is a commercially available analysis software package, used to check the supporting building framing and calculate member stresses for various loading cases. The selected output from the analysis is included in Appendices C through G.

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed, and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Tables 1.
3) 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.
4) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. Tectonic should be notified to determine the effect on the structural integrity of the mount.

4) Results/Conclusions

Table 4 - Mount Stresses/Adequacy

Notes	Components	Centerline (ft)	Maximum % Capacity	Pass / Fail
1	Members	51'-4"	89	Pass
	Sliding & Overturning		Sufficient	Pass
2	Platform	53'-9"	Sufficient	Pass
	Structure		97	Pass

Structure Rating (max from all components) =	97%

Note:
1) See additional documentation in Appendix C & D for analysis output calculations supporting the % capacity utilized.
2) See additional documentation in Appendix E & G for analysis output calculations supporting the % capacity utilized.

4.1) Results/Conclusions

The proposed ballast mounts are adequate to support the proposed antenna and equipment installation as detailed in the following report.

The proposed cabinet equipment configurations will be one (1) new cabinet (Enersys-HVAC) placed onto the proposed non-penetrating platform. The building structure is adequate to support the proposed cabinets and non-penetrating platform as detailed in the following report.

Contractor shall field verify existing conditions and recommendations as noted on the construction drawings and notify the design engineer of any discrepancies prior to construction. Any further changes to the antenna and/or appurtenance configuration should be reviewed with respect to their effect on structural loads prior to implementation.

APPENDIX A – ALL SECTORS

SOFTWARE INPUT CALCULATIONS

Tectonic	Job No.	10710.NJJER01107B	
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.	Sheet No.	1 of	3
	Calculated By	JJR Date :	09/16/21
	Checked By	EI Date :	09/16/21

WIND AND ICE LOADS PER TIA-222-G

W.O.	10710.NJJER01107B
Project Name	NJJER01107B
Location	41 W. Putnam Avenue, Greenwich, CT 06830
County	Fairfield

Tower Type	RT	Rooftop
Structure Class	II	Substantial hazard
Exposure Category	B	Suburban/wooded/obstructed
Topo Category	1	Flat or rolling terrain
Height of crest	0	ft

Basic Wind Speed (3-sec gust):			
Without ice	93	mph	Per CT BC
With ice	50	mph	
Service	60	mph	
Ice thickness	0.75	in	

Importance Factor	
Wind only	1.00
Wind with ice	1.00
Ice thickness	1.00

Supporting Data:	
K_e	0.90
K_t	N/A
f	N/A
z_g	1200
α	7
$K_{z,min}$	0.7
K_d	0.95
G_h	1.00

Height	z (ft)	61.25
	Kh	N/A
	Kzt	1.00
	Kz	0.82
	Kiz	1.05
Wind Pressure, qz (psf)	No Ice	17.17
	With Ice	3.18
	Service	7.15
(tiz)	Ice Thk	1.57
Appurtenances (qzGh)	No Ice	17.17
	With Ice	3.18
	Service	7.15

Tectonic

Job No. 10710.NJJER01107B
Sheet No. 2 of 3
Calculated By JJR Date : 09/16/21
Checked By Date :

Appurtenance Information

Effective Projected Area for Appurtenance $(EPA)_A=Max((EPA)_N,(EPA)_T)$

$(EPA)_T=\sum(C_AA_A)_T$ | $(EPA)_N=\sum(C_AA_A)_N$ | Reduction Factor = [redacted]

Wind Only Load Combinations

Antenna Configuration	(E) or (P)	Qty	z (ft)	Length or Diameter (ft)	Width (in)	Depth (in)	Flat or Cylindrical?	Antenna $(Ca)_T$	Antenna $(Ca)_N$	Side Face $(A_a)_T$ (ft^2)	Wind ward Side Face $(CaA_a)_T$ (ft^2)	Face Normal $(A_a)_N$ (ft^2)	Windward face Normal $(C_AA_a)_N$ (ft^2)	Normal Antenna Wind Load Each (lb)	Transverse Antenna Wind Load Each (lb)	Antenna Weight (lb)	Total Weight (lb)
[redacted]	P	[redacted]	51.3	6.00	20.00	8.00	[redacted]	1.47	1.25	4.00	5.87	10.00	12.49	214	101	65.0	65.0
[redacted]	P	[redacted]	51.3	1.16	16.93	11.11	[redacted]	1.20	1.20	1.07	1.29	1.63	1.96	34	22	97.0	97.0
[redacted]	P	[redacted]	51.3	1.16	16.93	9.85	[redacted]	1.20	1.20	0.95	1.14	1.63	1.96	34	20	86.0	86.0
[redacted]	P	[redacted]	51.3	1.38	14.58	8.46	[redacted]	1.20	1.20	0.97	1.17	1.68	2.01	35	20	21.0	21.0
										$\sum(CaAA)_T$	9.46	$\sum(CaAA)_N$	18.43				269

Wind with Ice Load Combinations Ice Thk= 1.57 in

Antenna Configuration	(E) or (P)	Qty	z (ft)	Length or Diameter (ft)	Width (in)	Depth (in)	Flat or Cylindrical?	Antenna $(Ca)_T$	Antenna $(Ca)_N$	Side Face $(A_a)_T$ (ft^2)	Windward Side Face $(CaA_a)_T$ (ft^2)	Face Normal $(A_a)_N$ (ft^2)	Windward Face Normal $(C_AA_a)_N$ (ft^2)	Normal Antenna Wind Load Each (lb)	Transverse Antenna Wind Load Each (lb)	Ice Area for Weight (ft^2)	Ice Weight Alone (lbs)
MX08FRO665-21	P	1.00	51.25	6.26	20.26	8.26	Flat	1.47	1.25	4.31	6.34	10.57	13.25	42	20	28.0	204.8
G060708-50-02B	P	1.00	51.25	1.42	17.19	11.37	Flat	1.20	1.20	1.35	1.61	2.03	2.44	8	5	5.4	39.6
G2021-49-02B	P	1.00	51.25	1.42	17.19	10.11	Flat	1.20	1.20	1.20	1.44	2.03	2.44	8	5	5.2	37.8
RDIDC-3045-PF-48	P	1.00	51.25	1.64	14.84	8.72	Flat	1.20	1.20	1.19	1.43	2.03	2.44	8	5	5.3	38.8
										$\sum(CaAA)_T$	10.82	$\sum(CaAA)_N$	20.57				321

$(EPA)_A=Max((EPA)_N,(EPA)_T)\rightarrow$ **20.57** ft^2

Tectonic

PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

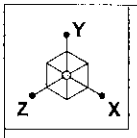
Job No.	10710.NJJER01107B		
Sheet No.	3	of	3
Calculated By	JJR	Date :	09/16/21
Checked By		Date :	

Proposed Mounts

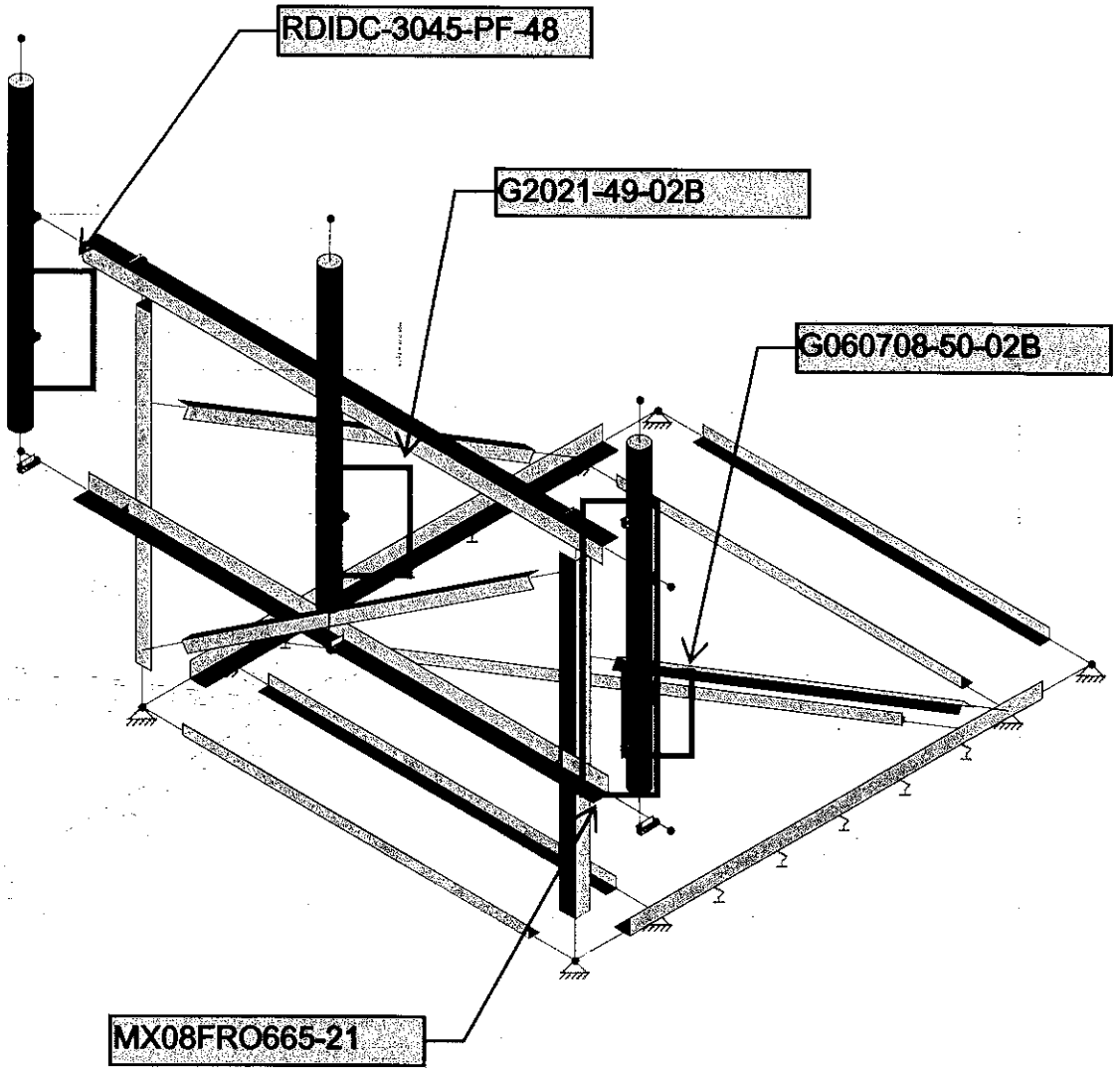
						Reduction Factor =					
Mount Part	Projected Width (in)	Depth (in)	Flat or Cylindrical ?	Drag Factor	Projected Area (ft^2)	Wind Force (lbs/ft)	Ice Weight Area (ft^2)	Ice Weight (lbs/ft)	Projected Area with Ice (ft^2)	Wind Force Ice (lbs/ft)	ServiceWind Force (lbs/ft)
[illegible]	[illegible]	[illegible]	[illegible]	1.2	0.35	6.0	0.92	6.7	0.66	2.1	2.5
[illegible]	[illegible]	[illegible]	[illegible]	2	0.50	8.6	1.00	7.3	1.02	3.2	3.6
[illegible]	[illegible]	[illegible]	[illegible]	2	0.33	5.7	0.67	4.9	0.86	2.7	2.4

APPENDIX B - ALL SECTORS

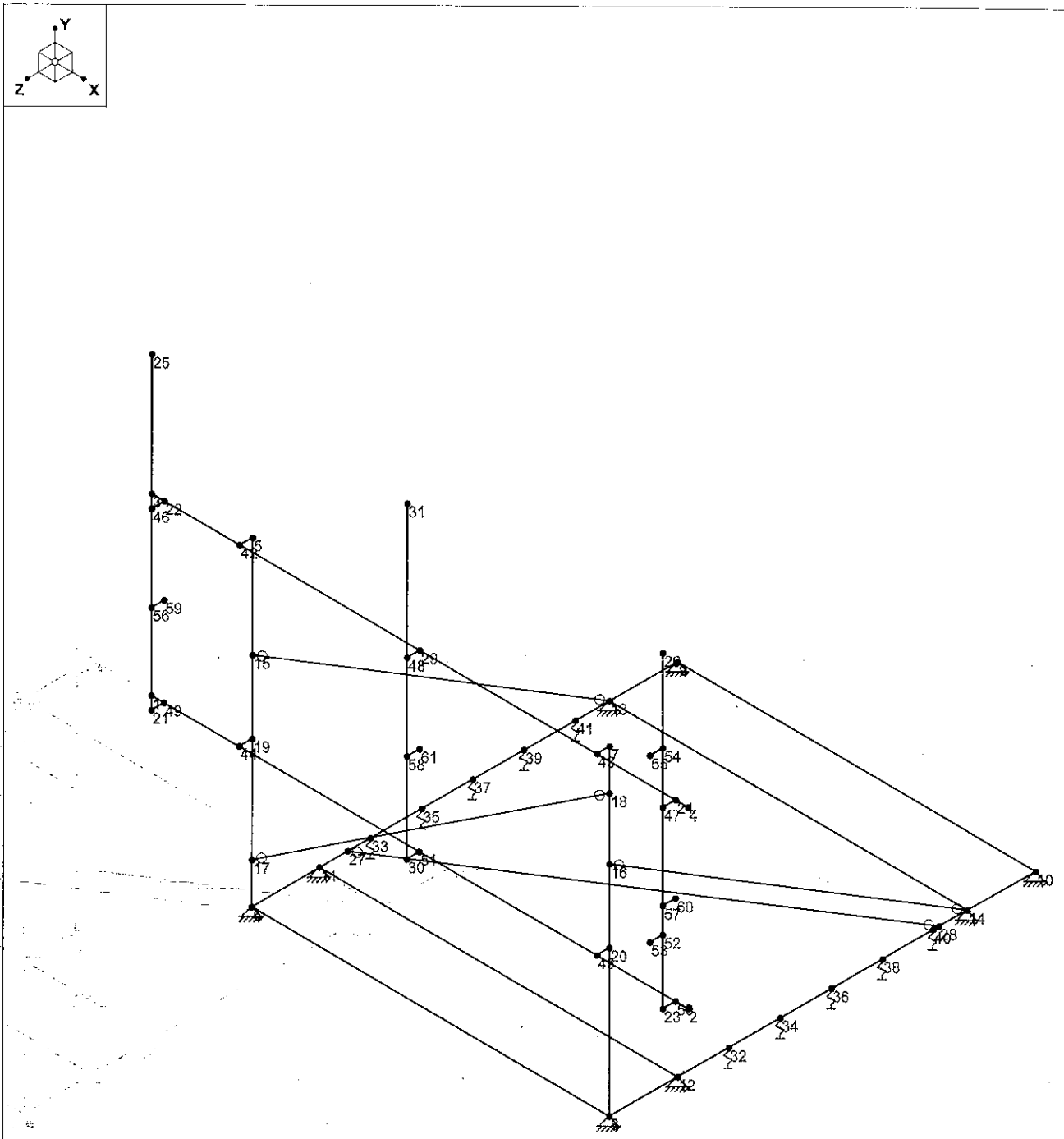
WIRE FRAME AND RENDERED MODEL



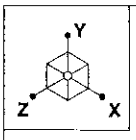
Equipment Layout
(Similar for all sectors)

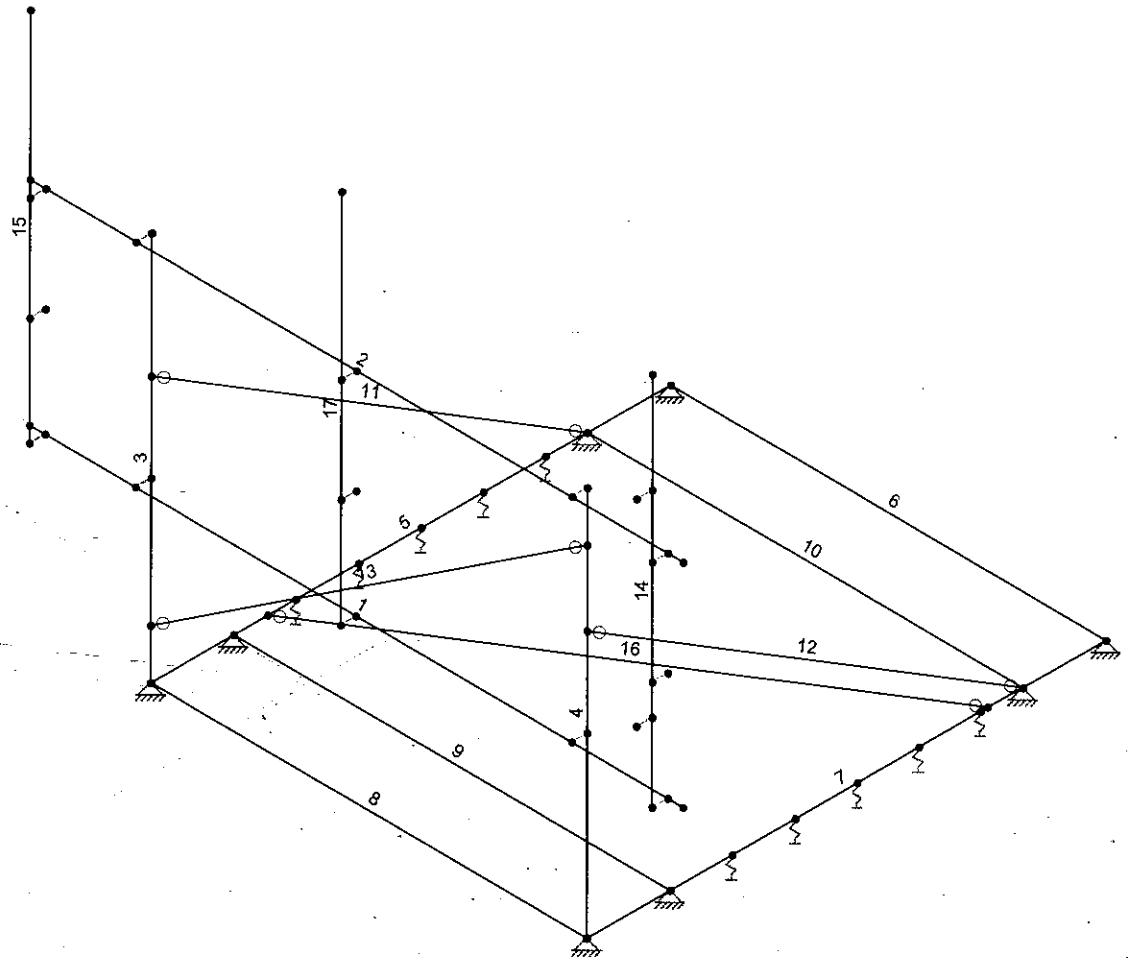


Tectonic	Proposed Ballast Mounts	
JJR		Sept 16, 2021 at 10:11 AM
10710.NJJER01107B		10710.NJJER01107B - Ballast Mo...

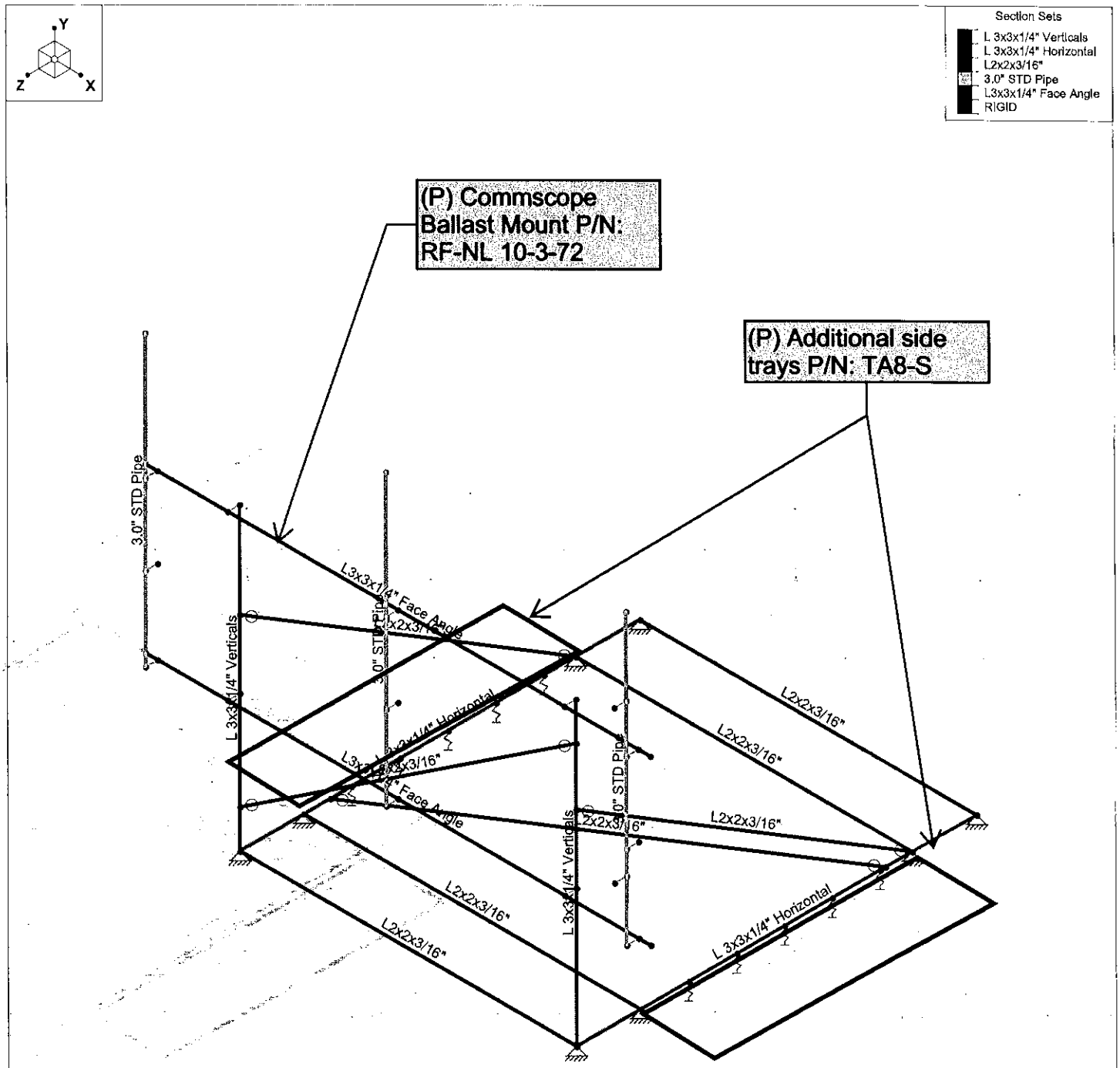


Tectonic		
JJR	Proposed Ballast Mounts	Sept 16, 2021 at 10:12 AM
10710.NJJER01107B		10710.NJJER01107B - Ballast Mo...

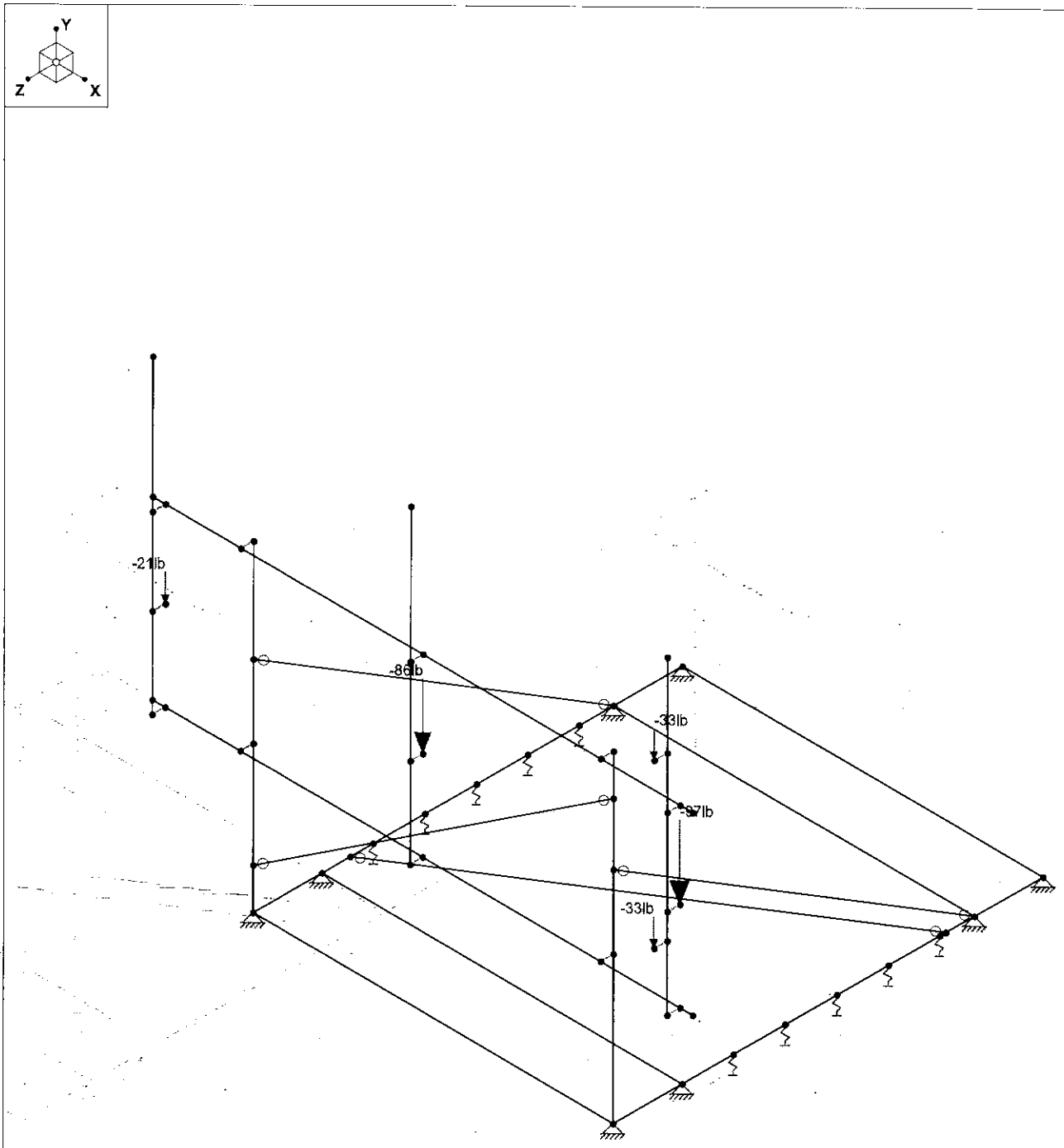




Tectonic	Proposed Ballast Mounts	
JJR		Sept 16, 2021 at 10:13 AM
10710.NJJER01107B		10710.NJJER01107B - Ballast Mo...

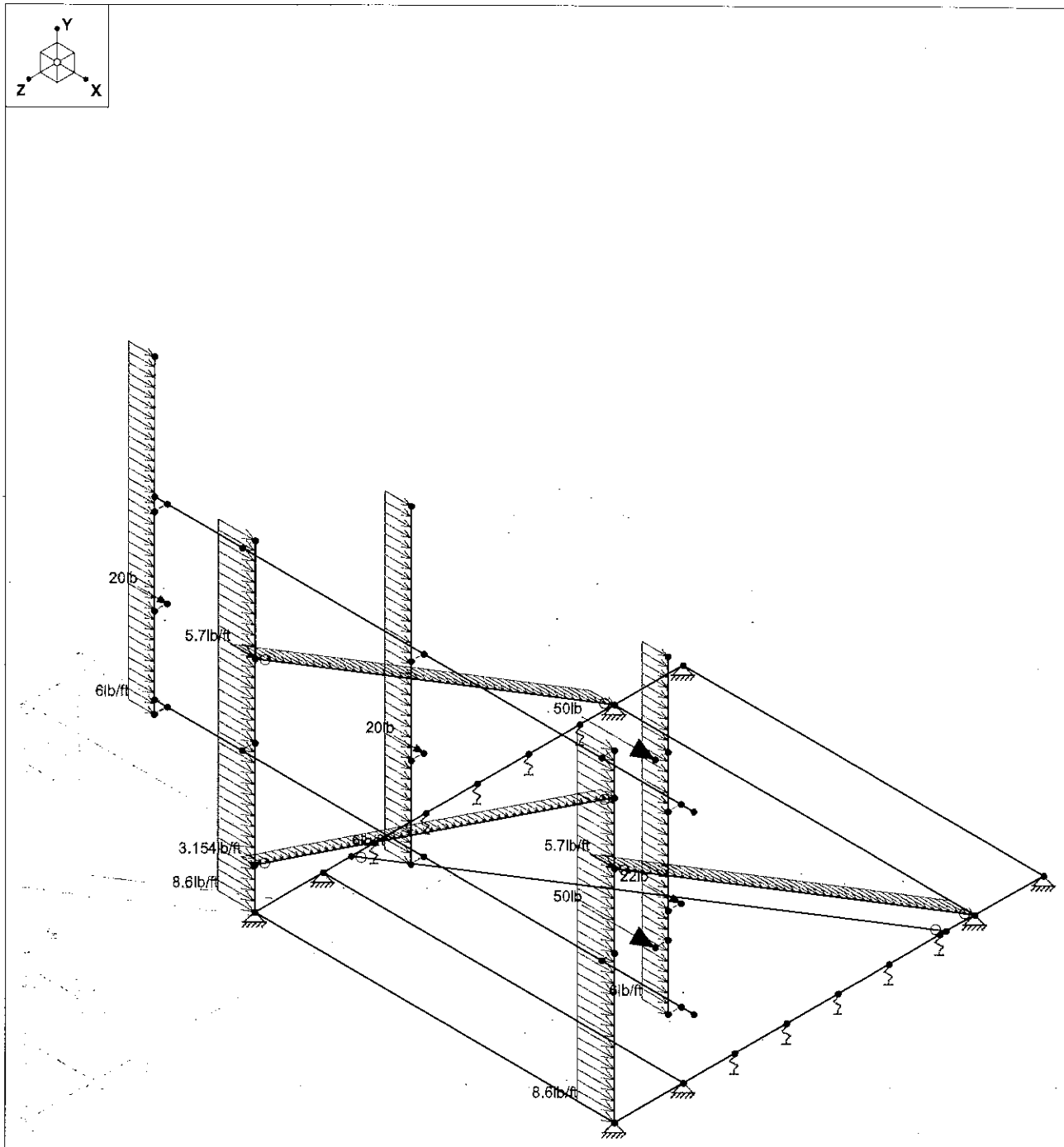


Tectonic	Proposed Ballast Mounts	
JJR		Sept 16, 2021 at 10:14 AM
10710.NJJER01107B		10710.NJJER01107B - Ballast Mo...



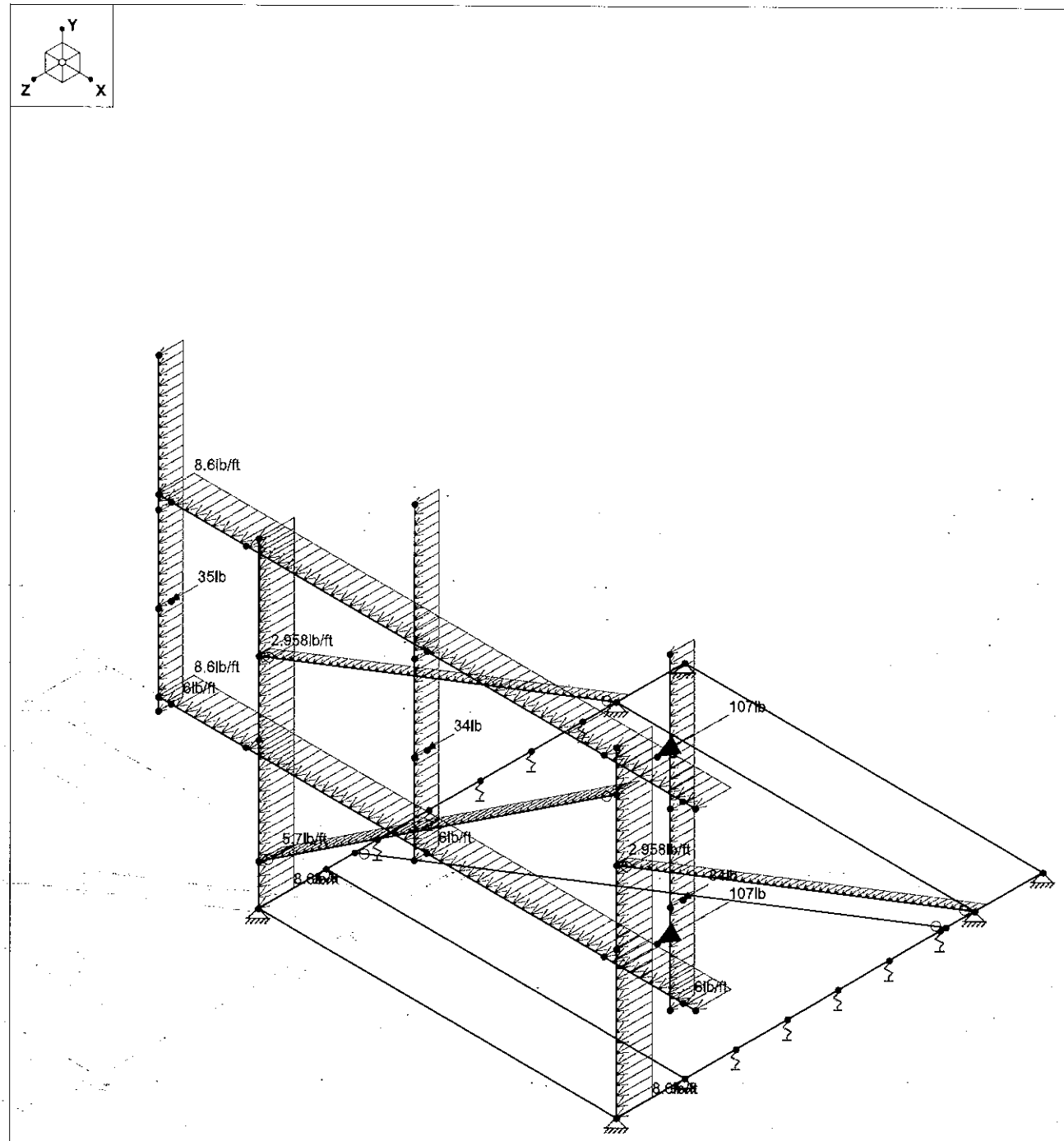
Loads: BLC 1, DL

Tectonic		
JJR	Proposed Ballast Mounts	Sept 16, 2021 at 10:14 AM
10710.NJJER01107B		10710.NJJER01107B - Ballast Mo...



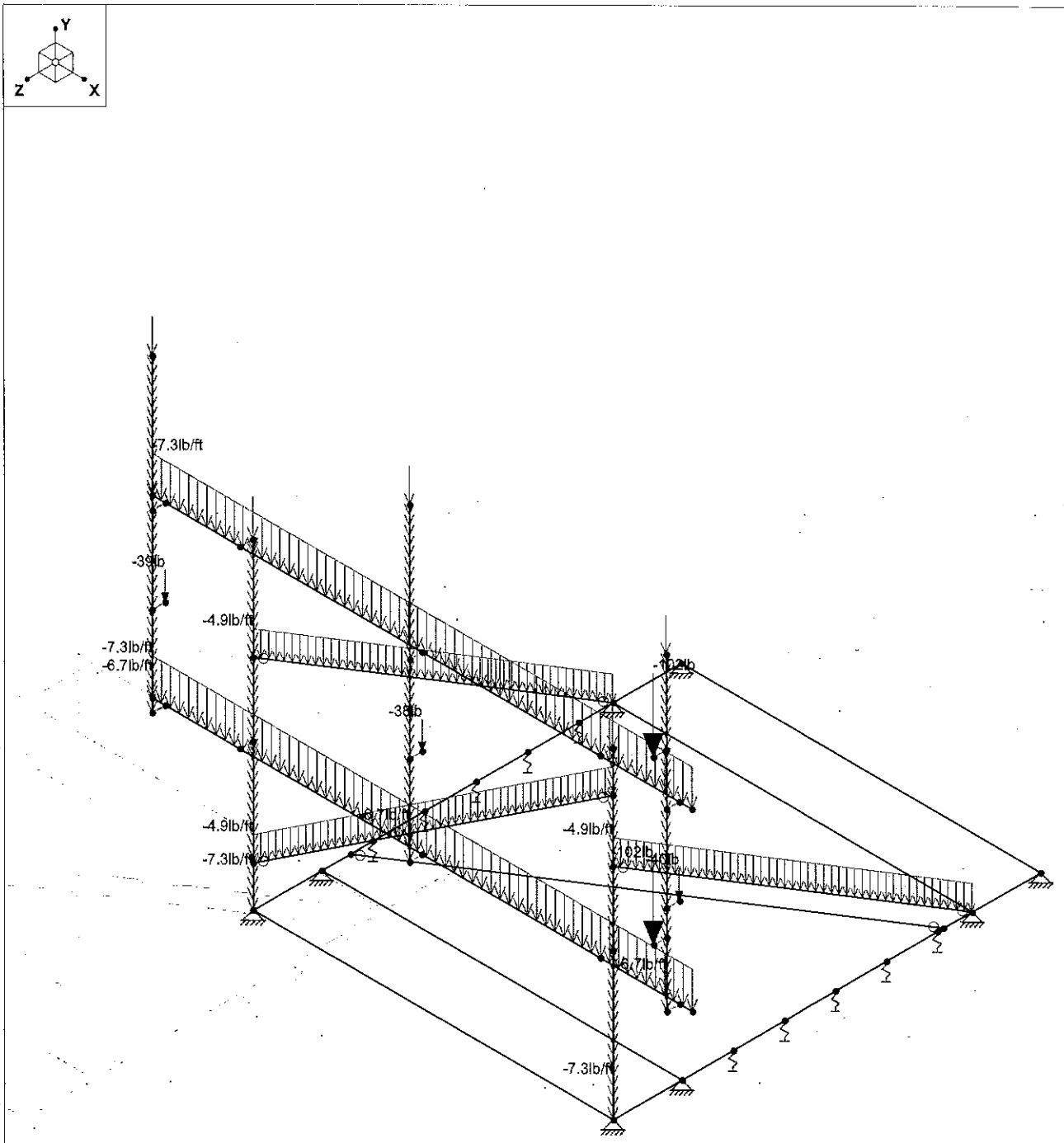
Loads: BLC 2, WLX

Tectonic	Proposed Ballast Mounts	
JJR		Sept 16, 2021 at 10:15 AM
10710.NJJER01107B		10710.NJJER01107B - Ballast Mo...



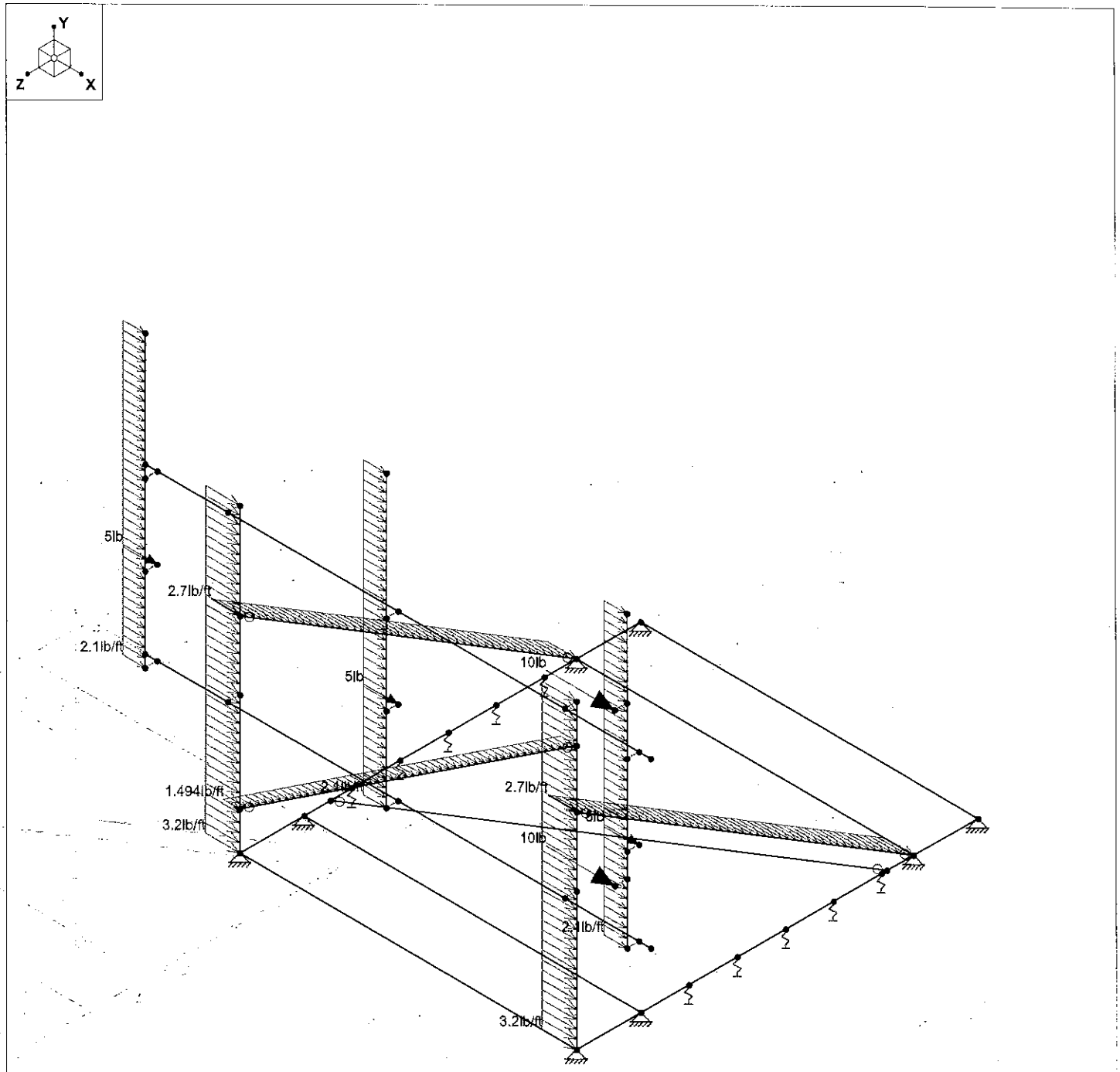
Loads: BLC 3, WLZ

Tectonic	Proposed Ballast Mounts	
JJR		Sept 16, 2021 at 10:15 AM
10710.NJJER01107B		10710.NJJER01107B - Ballast Mo...



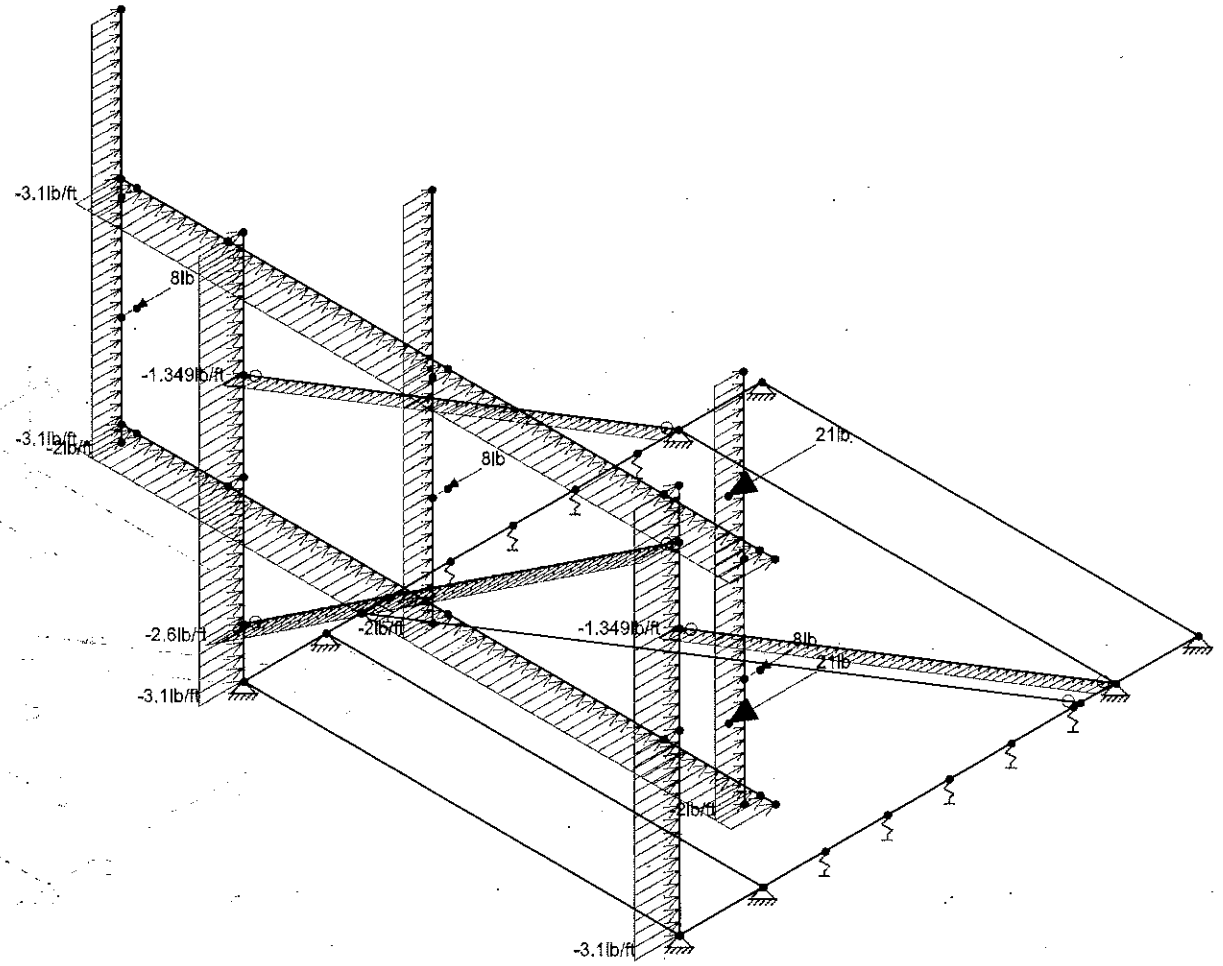
Loads: BLC 4, DLi

Tectonic	Proposed Ballast Mounts	
JJR		Sept 16, 2021 at 10:15 AM
10710.NJJER01107B		10710.NJJER01107B - Ballast Mo...



Loads: BLC 5, WLXi

Tectonic	Proposed Ballast Mounts	
JJR		Sept 16, 2021 at 10:15 AM
10710.NJJER01107B		10710.NJJER01107B - Ballast Mo...

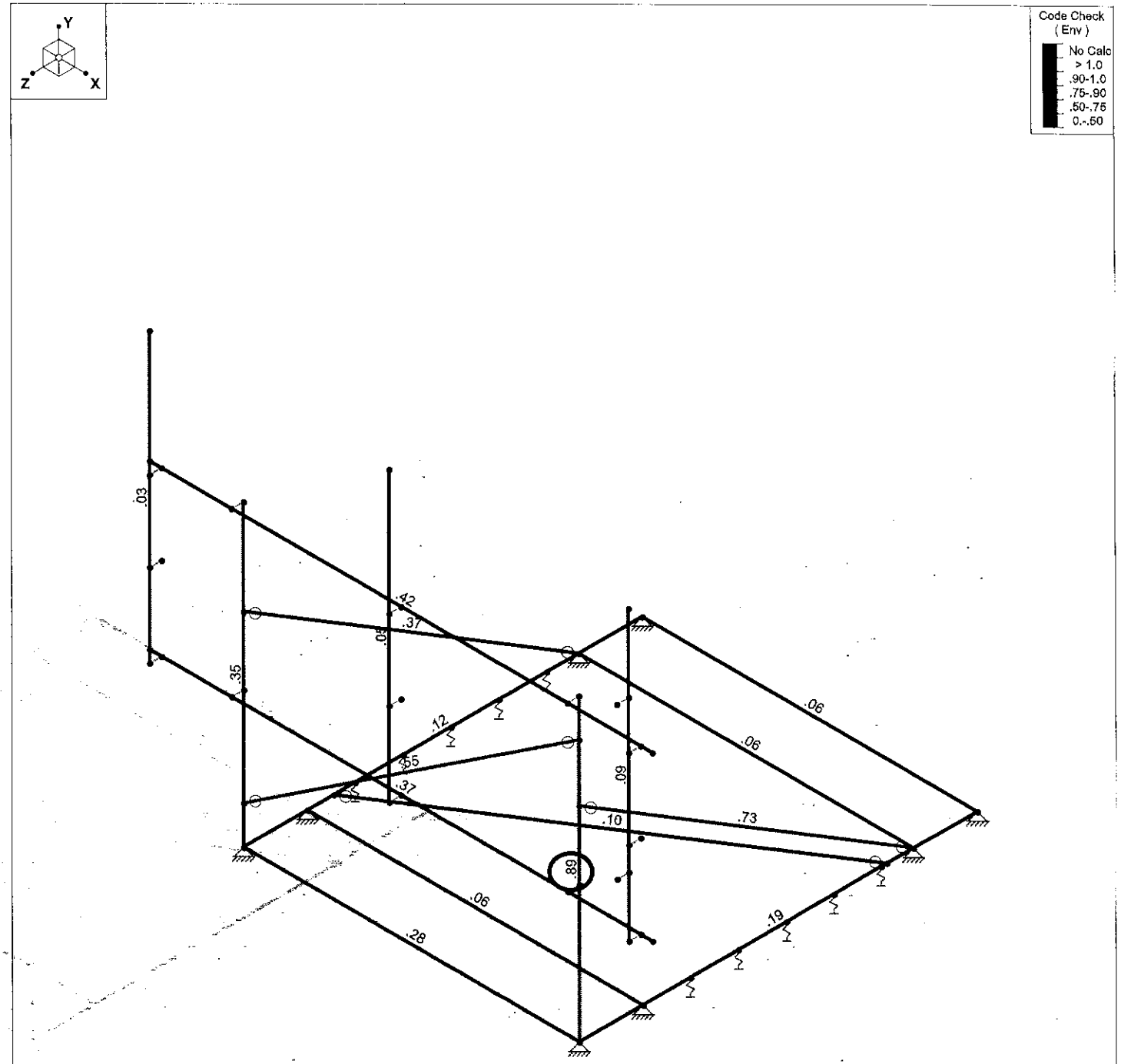


Loads: BLC 6, WLZi

Tectonic		
JJR	Proposed Ballast Mounts	Sept 16, 2021 at 10:16 AM
10710.NJJER01107B		10710.NJJER01107B - Ballast Mo...

APPENDIX C - ALL SECTORS

SOFTWARE ANALYSIS OUTPUT



0.89 ≤ 1 Okay (See Risa 3D results for further information)

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Tectonic		
JJR	Proposed Ballast Mounts	Sept 16, 2021 at 10:20 AM
10710.NJJER01107B		10710.NJJER01107B - Ballast Mo...

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1
9	A500 GR.C	29000	11154	.3	.65	.49	46	1.6	60	1.2
10	A529 Gr. 50	29000	11154	.3	.65	.49	50	1.1	65	1.1
11	A1011-33Ksi	29000	11154	.3	.65	.49	33	1.5	58	1.2
12	A1011 36 Ksi	29000	11154	.3	.65	.49	36	1.5	58	1.2
13	A1018 50 Ksi	29000	11154	.3	.65	.49	50	1.5	65	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	L 3x3x1/4" Verticals	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031
2	L 3x3x1/4" Horizontal	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031
3	L2x2x3/16"	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
4	3.0" STD Pipe	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
5	L3x3x1/4" Face Angle	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	DL	DL		-1.05		5				
2	WLX	WLX				5		8		
3	WLZ	WLZ				5		10		
4	DLi	SL				5		10		
5	WLXi	OL1				5		8		
6	WLZi	OL2				5		10		

Load Combinations

	Description	Sol...	P De...	SR...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fac...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	LRFD																							
2	1.4D	Yes	Y		1	1.4																		
3	1.2D+1.6(WLX+WLZ)...	Yes	Y		1	1.2	2	1.6																
4	1.2D+1.6(WLX+WLZ)...	Yes	Y		1	1.2	2	1.3...	3	.8														
5	1.2D+1.6(WLX+WLZ)...	Yes	Y		1	1.2	2	.8	3	1.3...														
6	1.2D+1.6(WLX+WLZ)...	Yes	Y		1	1.2	2		3	1.6														
7	1.2D+1.6(WLX+WLZ)...	Yes	Y		1	1.2	2	-.8	3	1.3...														
8	1.2D+1.6(WLX+WLZ)...	Yes	Y		1	1.2	2	-1....	3	.8														
9	1.2D+1.6(WLX+WLZ)...	Yes	Y		1	1.2	2	-1.6	3															
10	1.2D+1.6(WLX+WLZ)...	Yes	Y		1	1.2	2	-1....	3	-.8														
11	1.2D+1.6(WLX+WLZ)...	Yes	Y		1	1.2	2	-.8	3	-1														
12	1.2D+1.6(WLX+WLZ)...	Yes	Y		1	1.2	2		3	-1.6														
13	1.2D+1.6(WLX+WLZ)...	Yes	Y		1	1.2	2	.8	3	-1....														

Load Combinations (Continued)

	Description	Sol..	P.De..	SR...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fac...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
14	1.2D+1.6(WLX+WLZ)..	Yes	Y		1	1.2	2	1.3...	3	-.8														
15	**Wind Load with Ice**																							
16	1.2D+1.0Di+1.6(WLXi..	Yes	Y		1	1.2	4	1	5	1.6	6													
17	1.2D+1.0Di+1.6(WLXi..	Yes	Y		1	1.2	4	1	5	1.3...	6	.8												
18	1.2D+1.0Di+1.6(WLXi..	Yes	Y		1	1.2	4	1	5	.8	6	1.3...												
19	1.2D+1.0Di+1.6(WLXi..	Yes	Y		1	1.2	4	1	5		6	1.6												
20	1.2D+1.0Di+1.6(WLXi..	Yes	Y		1	1.2	4	1	5	-.8	6	1.3...												
21	1.2D+1.0Di+1.6(WLXi..	Yes	Y		1	1.2	4	1	5	-1....	6	.8												
22	1.2D+1.0Di+1.6(WLXi..	Yes	Y		1	1.2	4	1	5	-1.6	6													
23	1.2D+1.0Di+1.6(WLXi..	Yes	Y		1	1.2	4	1	5	-1....	6	-.8												
24	1.2D+1.0Di+1.6(WLXi..	Yes	Y		1	1.2	4	1	5	-.8	6	-1												
25	1.2D+1.0Di+1.6(WLXi..	Yes	Y		1	1.2	4	1	5		6	-1.6												
26	1.2D+1.0Di+1.6(WLXi..	Yes	Y		1	1.2	4	1	5	.8	6	-1.3...												
27	1.2D+1.0Di+1.6(WLXi..	Yes	Y		1	1.2	4	1	5	1.3...	6	-.8												
28	**Sliding + Overturn C...																							
29	1.0*WLZ		Y		3	1																		
30	*ASD		Y		1	1.2	7	1	8	1														
31	D		Y		1	1																		
32	D+(WLX) - 0 Deg		Y		1	1	2	1																
33	D+(WLX+WLZ) - 30 ...		Y		1	1	2	.866	3	.5														
34	D+(WLX+WLZ) - 60 ...		Y		1	1	2	.5	3	.866														
35	D+(WLZ) - 90 Deg		Y		1	1	2		3	1														
36	D+(WLX+WLZ) - 120...		Y		1	1	2	-.5	3	.866														
37	D+(WLX+WLZ) - 150...		Y		1	1	2	-.8...	3	.5														
38	D+(WLX+WLZ) - 180...		Y		1	1	2	-1	3															
39	D+(WLX+WLZ) - 210...		Y		1	1	2	-.8...	3	-.5														
40	D+(WLX+WLZ) - 240...		Y		1	1	2	-.5	3	-.8...														
41	D+(WLX+WLZ) - 270...		Y		1	1	2		3	-1														
42	D+(WLX+WLZ) - 300...		Y		1	1	2	.5	3	-.8...														
43	D+(WLX+WLZ) - 330...		Y		1	1	2	.866	3	-.5														
44	**Wind Load with Ice**																							
45	D+0.7Di+(WLXi+WLZ..		Y		1	1	4	1	5	1	6													
46	D+0.7Di+(WLXi+WLZ..		Y		1	1	4	1	5	.866	6	.5												
47	D+0.7Di+(WLXi+WLZ..		Y		1	1	4	1	5	.5	6	.866												
48	D+0.7Di+(WLXi+WLZ..		Y		1	1	4	1	5		6	1												
49	D+0.7Di+(WLXi+WLZ..		Y		1	1	4	1	5	-.5	6	.866												
50	D+0.7Di+(WLXi+WLZ..		Y		1	1	4	1	5	-.8...	6	.5												
51	D+0.7Di+(WLXi+WLZ..		Y		1	1	4	1	5	-1	6													
52	D+0.7Di+(WLXi+WLZ..		Y		1	1	4	1	5	-.8...	6	-.5												
53	D+0.7Di+(WLXi+WLZ..		Y		1	1	4	1	5	-.5	6	-.866												
54	D+0.7Di+(WLXi+WLZ..		Y		1	1	4	1	5		6	-1												
55	D+0.7Di+(WLXi+WLZ..		Y		1	1	4	1	5	.5	6	-.866												
56	D+0.7Di+(WLXi+WLZ..		Y		1	1	4	1	5	.866	6	-.5												

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

	Member	Shape	Code Ch...	Loc[in]	LC	Shear C...	Loc[in]	Dir	LC	Pnc/om ...	Pnt/om [...	Mnyy/o...	Mnzz/om ...	Cb	Eqn
1	4	L3X3X4	.890	50.6	6	.073	51.4	y	6	13126.8	31041.9	1123.2	2257.1	1.6	H2-1
2	12	L2x2x3	.729	51.2	13	.011	0	y	9	1700.5	15564.1	371.1	577.1	1.1	H2-1
3	13	L2x2x3	.548	47.3	10	.016	0	z	6	1614.8	15564.1	371.1	570.9	1.1	H2-1
4	2	L3X3X4	.418	105	12	.064	105	z	6	4665.7	31041.9	1123.2	1839.4	1.3	H2-1

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

	Member	Shape	Code Ch...	Loc[in]	LC	Shear C..	Loc[in]	Dir	LC	Pnc/om ...	Pnt/om [..	Mnyy/o...	Mnzz/om ...	Cb	Eqn
5	11	L2x2x3	.374	50.2	10	.009	0	z	9	1700.5	15564.1	371.1	577.1	1.1	H2-1
6	1	L3X3X4	.368	103.7	13	.116	105	y	6	4665.7	31041.9	1123.2	2111	2	H2-1
7	3	L3X3X4	.355	50.6	6	.068	0	y	9	13126.8	31041.9	1123.2	2219.5	1.4	H2-1
8	8	L2x2x3	.280	84	9	.009	84	y	9	2327.3	15564.1	371.1	750	2.4	H2-1
9	7	L3X3X4	.186	100	6	.035	84.4	y	5	7407.2	31041.9	1123.2	2498.8	4.5	H2-1
10	5	L3X3X4	.121	0	4	.056	0	y	9	7407.2	31041.9	1123.2	2498.8	4.5	H2-1
11	16	L2x2x3	.100	50.1	2	.005	100.3	y	2	1633.6	15564.1	371.1	572.3	1.1	H2-1
12	14	PPE_...	.091	40.5	13	.083	40.5		6	35779	43383.2	3824.9	3824.9	2.1	H1-1b
13	6	L2x2x3	.062	42	2	.003	84	y	2	2327.3	15564.1	371.1	605	1.1	H2-1
14	10	L2x2x3	.061	42	2	.003	0	y	2	2327.3	15564.1	371.1	605	1.1	H2-1
15	9	L2x2x3	.057	42	2	.003	0	y	8	2327.3	15564.1	371.1	606.8	1.1	H2-1
16	17	PPE_...	.046	40.5	12	.050	40.5		6	35779	43383.2	3824.9	3824.9	1.9	H1-1b
17	15	PPE_...	.031	40.5	12	.016	40.5		8	35779	43383.2	3824.9	3824.9	1.7	H1-1b

Max member stresses do not exceed 89% of the allowable capacity. Therefore the proposed ballast mounts will be adequate to support the proposed installation.

Load Combinations

	Description	Sol...	P	De..	SR...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fac..	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	*LRFD																								
2	1.4D		Y			1	1.4																		
3	1.2D+1.6(WLX+WLZ)...		Y			1	1.2	2	1.6																
4	1.2D+1.6(WLX+WLZ)...		Y			1	1.2	2	1.3...	3	.8														
5	1.2D+1.6(WLX+WLZ)...		Y			1	1.2	2	.8	3	1.3...														
6	1.2D+1.6(WLX+WLZ)...		Y			1	1.2	2		3	1.6														
7	1.2D+1.6(WLX+WLZ)...		Y			1	1.2	2	-.8	3	1.3...														
8	1.2D+1.6(WLX+WLZ)...		Y			1	1.2	2	-1....	3	.8														
9	1.2D+1.6(WLX+WLZ)...		Y			1	1.2	2	-1.6	3															
10	1.2D+1.6(WLX+WLZ)...		Y			1	1.2	2	-1....	3	-.8														
11	1.2D+1.6(WLX+WLZ)...		Y			1	1.2	2	-.8	3	-1														
12	1.2D+1.6(WLX+WLZ)...		Y			1	1.2	2		3	-1.6														
13	1.2D+1.6(WLX+WLZ)...		Y			1	1.2	2	.8	3	-1....														
14	1.2D+1.6(WLX+WLZ)...		Y			1	1.2	2	1.3...	3	-.8														
15	**Wind Load with Ice**																								
16	1.2D+1.0Di+1.6(WLXi...		Y			1	1.2	4	1	5	1.6	6													
17	1.2D+1.0Di+1.6(WLXi...		Y			1	1.2	4	1	5	1.3...	6	.8												
18	1.2D+1.0Di+1.6(WLXi...		Y			1	1.2	4	1	5	.8	6	1.3...												
19	1.2D+1.0Di+1.6(WLXi...		Y			1	1.2	4	1	5		6	1.6												
20	1.2D+1.0Di+1.6(WLXi...		Y			1	1.2	4	1	5	-.8	6	1.3...												
21	1.2D+1.0Di+1.6(WLXi...		Y			1	1.2	4	1	5	-1....	6	.8												
22	1.2D+1.0Di+1.6(WLXi...		Y			1	1.2	4	1	5	-1.6	6													
23	1.2D+1.0Di+1.6(WLXi...		Y			1	1.2	4	1	5	-1....	6	-.8												
24	1.2D+1.0Di+1.6(WLXi...		Y			1	1.2	4	1	5	-.8	6	-1												
25	1.2D+1.0Di+1.6(WLXi...		Y			1	1.2	4	1	5		6	-1.6												
26	1.2D+1.0Di+1.6(WLXi...		Y			1	1.2	4	1	5	.8	6	-1.3...												
27	1.2D+1.0Di+1.6(WLXi...		Y			1	1.2	4	1	5	1.3...	6	-.8												
28	**Sliding + Overturn C...																								
29	1.0*WLZ		Y			3	1																		
30	*ASD		Y			1	1.2	7	1	8	1														
31	D	Yes	Y			1	1																		
32	D+(WLX) - 0 Deg	Yes	Y			1	1	2	1																
33	D+(WLX+WLZ) - 30 ...	Yes	Y			1	1	2	.866	3	.5														
34	D+(WLX+WLZ) - 60 ...	Yes	Y			1	1	2	.5	3	.866														
35	D+(WLZ) - 90 Deg	Yes	Y			1	1	2		3	1														
36	D+(WLX+WLZ) - 120...	Yes	Y			1	1	2	-.5	3	.866														
37	D+(WLX+WLZ) - 150...	Yes	Y			1	1	2	-.8...	3	.5														
38	D+(WLX+WLZ) - 180...	Yes	Y			1	1	2	-1	3															
39	D+(WLX+WLZ) - 210...	Yes	Y			1	1	2	-.8...	3	-.5														
40	D+(WLX+WLZ) - 240...	Yes	Y			1	1	2	-.5	3	-.8...														
41	D+(WLX+WLZ) - 270...	Yes	Y			1	1	2		3	-1														
42	D+(WLX+WLZ) - 300...	Yes	Y			1	1	2	.5	3	-.8...														
43	D+(WLX+WLZ) - 330...	Yes	Y			1	1	2	.866	3	-.5														
44	**Wind Load with Ice**																								
45	D+0.7Di+(WLXi+WLZ...	Yes	Y			1	1	4	1	5	1	6													
46	D+0.7Di+(WLXi+WLZ...	Yes	Y			1	1	4	1	5	.866	6	.5												
47	D+0.7Di+(WLXi+WLZ...	Yes	Y			1	1	4	1	5	.5	6	.866												
48	D+0.7Di+(WLXi+WLZ...	Yes	Y			1	1	4	1	5		6	1												
49	D+0.7Di+(WLXi+WLZ...	Yes	Y			1	1	4	1	5	-.5	6	.866												
50	D+0.7Di+(WLXi+WLZ...	Yes	Y			1	1	4	1	5	-.8...	6	.5												
51	D+0.7Di+(WLXi+WLZ...	Yes	Y			1	1	4	1	5	-1	6													

Load Combinations (Continued)

	Description	Sol..	P..	De..	SR..	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fac..	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
52	D+0.7Di+(WLXi+WLZ..	Yes	Y			1	1	4	1	5	-.8...	6	-.5												
53	D+0.7Di+(WLXi+WLZ..	Yes	Y			1	1	4	1	5	-.5	6	-.866												
54	D+0.7Di+(WLXi+WLZ..	Yes	Y			1	1	4	1	5		6	-1												
55	D+0.7Di+(WLXi+WLZ..	Yes	Y			1	1	4	1	5	.5	6	-.866												
56	D+0.7Di+(WLXi+WLZ..	Yes	Y			1	1	4	1	5	.866	6	-.5												

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotati...	LC	Z Rotati...	LC
1	26	max	.061	43	.007	41	.397	35	5.468e-3	35	4.197e-3	42	2.478e-4	35
2		min	-.047	37	-.03	56	-.318	41	-4.015e-3	41	-4.015e-3	36	-5.611e-4	41
3	55	max	.062	43	.019	41	.292	35	5.459e-3	35	4.197e-3	42	2.478e-4	35
4		min	-.054	37	-.046	35	-.241	41	-4.006e-3	41	-4.015e-3	36	-5.611e-4	41
5	54	max	.052	43	.007	41	.292	35	5.459e-3	35	4.197e-3	42	2.478e-4	35
6		min	-.045	37	-.03	56	-.241	41	-4.006e-3	41	-4.015e-3	36	-5.611e-4	41
7	4	max	.037	43	-.004	39	.239	35	5.297e-3	35	4.183e-3	42	2.477e-4	35
8		min	-.034	37	-.025	56	-.205	41	-3.879e-3	41	-4.001e-3	36	-5.612e-4	41
9	47	max	.047	43	.007	41	.227	35	5.297e-3	35	4.183e-3	42	2.477e-4	35
10		min	-.043	37	-.03	56	-.193	41	-3.879e-3	41	-4.001e-3	36	-5.61e-4	41
11	24	max	.037	43	-.003	40	.227	35	5.297e-3	35	4.183e-3	42	2.477e-4	35
12		min	-.034	37	-.024	56	-.193	41	-3.879e-3	41	-4.001e-3	36	-5.61e-4	41
13	31	max	.036	43	-.007	42	.17	35	2.918e-3	35	5.02e-4	41	7.009e-5	42
14		min	-.03	37	-.032	50	-.126	41	-1.991e-3	41	-6.672e-4	35	-1.906e-4	50
15	43	max	.037	43	.014	41	.153	35	6.813e-3	35	3.685e-3	42	3.133e-4	38
16		min	-.034	37	-.022	35	-.115	41	-4.837e-3	41	-3.666e-3	36	-6.174e-4	32
17	7	max	.031	32	0	39	.153	35	6.813e-3	35	3.685e-3	42	3.133e-4	38
18		min	-.028	38	-.002	45	-.115	41	-4.837e-3	41	-3.666e-3	36	-6.174e-4	32
19	60	max	.037	32	-.003	40	.124	35	5.2e-3	35	3.703e-3	42	9.725e-5	33
20		min	-.037	38	-.025	56	-.116	41	-3.907e-3	41	-3.452e-3	36	-1.861e-4	39
21	57	max	.045	43	.007	41	.124	35	5.2e-3	35	3.703e-3	42	9.725e-5	33
22		min	-.044	37	-.03	56	-.116	41	-3.907e-3	41	-3.452e-3	36	-1.861e-4	39
23	25	max	.036	32	.006	40	.105	35	1.408e-3	34	6.373e-4	36	4.195e-5	41
24		min	-.028	38	-.009	34	-.077	41	-9.162e-4	40	-8.329e-4	42	-2.568e-4	54
25	53	max	.054	43	.019	41	.093	35	5.313e-3	35	3.565e-3	42	1.01e-5	33
26		min	-.053	37	-.045	35	-.093	41	-3.976e-3	41	-3.293e-3	36	-2.114e-4	52
27	52	max	.045	43	.007	41	.093	35	5.313e-3	35	3.565e-3	42	1.01e-5	33
28		min	-.045	37	-.03	56	-.093	41	-3.976e-3	41	-3.293e-3	36	-2.114e-4	52
29	18	max	.025	32	0	39	.086	35	6.778e-3	35	3.299e-3	42	4.107e-4	41
30		min	-.025	38	-.002	45	-.066	41	-5.106e-3	41	-3.212e-3	36	-7.272e-4	35
31	48	max	.038	43	-.007	42	.08	34	2.88e-3	35	5.02e-4	41	8.922e-5	42
32		min	-.035	37	-.032	50	-.065	40	-1.953e-3	41	-6.672e-4	35	-2.055e-4	36
33	29	max	.037	43	-.011	43	.08	34	2.88e-3	35	5.02e-4	41	8.922e-5	42
34		min	-.034	37	-.029	50	-.065	40	-1.953e-3	41	-6.672e-4	35	-2.055e-4	36
35	3	max	.037	43	.003	40	.063	35	1.375e-3	34	6.373e-4	36	5.483e-5	42
36		min	-.034	37	-.004	34	-.051	41	-8.83e-4	40	-8.331e-4	42	-2.63e-4	53
37	46	max	.035	43	.006	40	.062	35	1.375e-3	34	6.373e-4	36	5.463e-5	42
38		min	-.032	37	-.009	34	-.049	41	-8.83e-4	40	-8.329e-4	42	-2.632e-4	53
39	22	max	.037	43	.003	40	.062	35	1.375e-3	34	6.373e-4	36	5.463e-5	42
40		min	-.034	37	-.005	34	-.049	41	-8.83e-4	40	-8.329e-4	42	-2.632e-4	53
41	42	max	.037	43	.005	41	.057	35	2.619e-3	35	4.359e-4	38	3.409e-6	32
42		min	-.034	37	-.008	35	-.039	41	-1.728e-3	41	-6.07e-4	32	-3.127e-4	51

Envelope Joint Displacements (Continued)

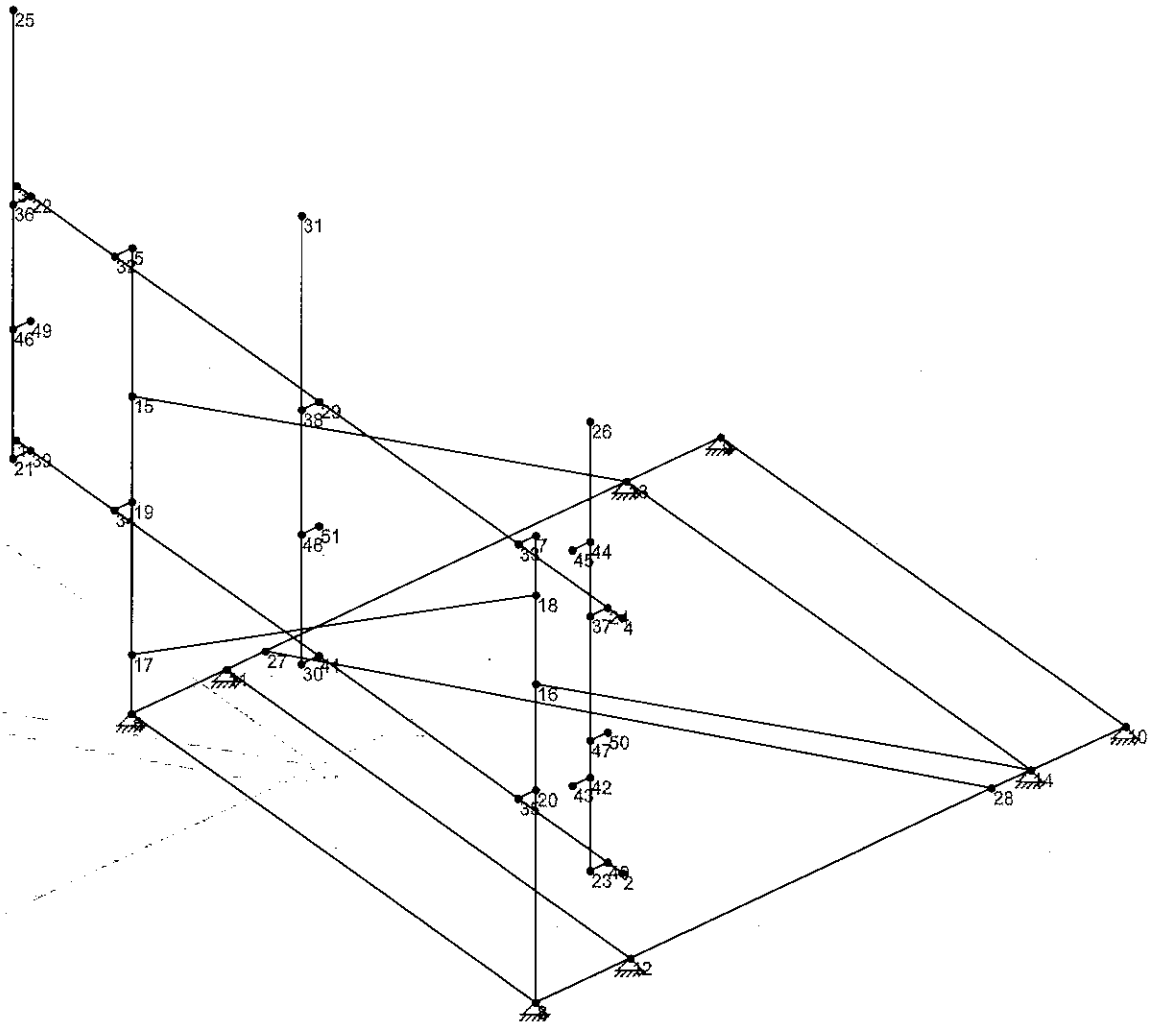
	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotati...	LC	Z Rotati...	LC
43	5	max	.039	43	0	42	.057	35	2.619e-3	35	4.359e-4	38	3.409e-6	32
44		min	-.035	37	0	53	-.039	41	-1.728e-3	41	-6.07e-4	32	-3.127e-4	51
45	2	max	.035	43	-.004	39	.024	36	5.552e-3	35	3.198e-3	42	-1.387e-4	38
46		min	-.04	37	-.026	55	-.046	42	-4.087e-3	41	-2.875e-3	36	-6.129e-4	54
47	51	max	.036	43	-.011	43	.025	42	2.989e-3	35	1.973e-4	37	1.272e-4	35
48		min	-.04	37	-.028	50	-.046	36	-2.047e-3	41	-1.263e-4	43	-2.03e-4	41
49	30	max	.035	43	-.007	42	.025	42	2.989e-3	35	1.973e-4	37	1.272e-4	35
50		min	-.039	37	-.032	50	-.046	36	-2.047e-3	41	-1.263e-4	43	-2.03e-4	41
51	23	max	.043	43	.007	41	.015	36	5.552e-3	35	3.197e-3	42	-1.386e-4	38
52		min	-.047	37	-.029	56	-.039	55	-4.087e-3	41	-2.875e-3	36	-6.127e-4	54
53	50	max	.035	43	-.004	39	.015	36	5.552e-3	35	3.197e-3	42	-1.386e-4	38
54		min	-.04	37	-.024	56	-.039	55	-4.087e-3	41	-2.875e-3	36	-6.127e-4	54
55	59	max	.037	43	.003	40	.035	35	1.415e-3	34	7.326e-4	36	-2.666e-6	33
56		min	-.038	37	-.004	34	-.031	41	-9.598e-4	40	-8.974e-4	42	-3.072e-4	52
57	56	max	.035	43	.006	40	.035	35	1.415e-3	34	7.326e-4	36	-2.666e-6	33
58		min	-.036	37	-.009	34	-.031	41	-9.598e-4	40	-8.974e-4	42	-3.072e-4	52
59	61	max	.038	43	-.011	43	.029	34	2.865e-3	35	2.404e-4	41	3.69e-5	34
60		min	-.038	37	-.029	50	-.032	40	-2.031e-3	41	-2.911e-4	34	-3.005e-4	52
61	58	max	.038	43	-.007	42	.029	34	2.865e-3	35	2.404e-4	41	3.69e-5	34
62		min	-.039	37	-.032	50	-.032	40	-2.031e-3	41	-2.911e-4	34	-3.005e-4	52
63	20	max	.032	32	0	40	.014	42	6.758e-4	51	1.966e-3	42	1.88e-4	37
64		min	-.037	38	-.001	45	-.023	36	-1.329e-4	42	-1.619e-3	36	-4.54e-4	56
65	45	max	.035	43	0	41	.014	42	6.758e-4	51	1.966e-3	42	1.88e-4	37
66		min	-.04	37	-.003	51	-.023	36	-1.329e-4	42	-1.619e-3	36	-4.54e-4	56
67	1	max	.036	43	.004	40	.016	37	1.53e-3	34	8.22e-4	36	1.413e-4	34
68		min	-.04	37	-.005	34	-.023	43	-1.032e-3	40	-9.548e-4	42	-2.14e-4	40
69	21	max	.034	32	.006	40	.014	37	1.53e-3	34	8.219e-4	36	1.413e-4	34
70		min	-.038	38	-.009	34	-.02	43	-1.032e-3	40	-9.546e-4	42	-2.142e-4	40
71	49	max	.036	43	.003	40	.014	37	1.53e-3	34	8.219e-4	36	1.413e-4	34
72		min	-.04	37	-.004	34	-.02	43	-1.032e-3	40	-9.546e-4	42	-2.142e-4	40
73	19	max	.039	43	0	42	.004	40	3.096e-4	32	9.483e-4	37	-1.824e-5	35
74		min	-.043	37	0	53	-.007	34	-2.324e-4	38	-1.004e-3	43	-1.129e-4	54
75	44	max	.036	43	0	39	.004	40	3.096e-4	32	9.483e-4	37	-1.824e-5	35
76		min	-.04	37	-.001	33	-.007	34	-2.324e-4	38	-1.004e-3	43	-1.129e-4	54
77	16	max	.03	43	0	40	.006	35	3.727e-3	35	2.679e-3	42	4.651e-4	32
78		min	-.033	37	-.001	45	-.005	41	-2.763e-3	41	-2.456e-3	36	-5.979e-4	38
79	17	max	.021	32	0	43	.003	39	3.209e-4	39	3.542e-4	36	1.991e-3	38
80		min	-.022	38	0	52	-.004	33	-4.717e-4	33	-3.05e-4	42	-1.835e-3	32
81	15	max	.04	32	0	41	.002	35	1.297e-3	35	7.027e-4	37	-1.573e-6	42
82		min	-.041	38	0	53	-.002	41	-8.831e-4	41	-8.245e-4	43	-3.277e-4	53
83	27	max	0	37	0	33	0	36	1.026e-5	33	1.516e-5	43	-6.046e-4	37
84		min	0	42	0	39	0	42	-8.207e-6	38	-1.235e-5	38	-8.781e-4	43
85	28	max	0	37	0	42	0	42	7.375e-6	36	1.571e-5	37	8.384e-4	41
86		min	0	43	0	35	0	36	4.707e-6	42	3.691e-7	43	8.177e-4	35
87	40	max	0	37	0	42	0	42	5.777e-6	36	1.483e-5	37	8.377e-4	41
88		min	0	43	0	35	0	36	3.58e-6	42	-4.443e-7	43	8.145e-4	35
89	33	max	0	37	0	33	0	36	4.456e-6	39	1.922e-5	32	-6.252e-4	37
90		min	0	43	0	39	0	42	-7.627e-6	34	-1.12e-5	38	-8.764e-4	43
91	38	max	0	37	0	41	0	42	-1.48e-6	31	1.03e-5	38	8.314e-4	41
92		min	0	43	0	34	0	36	-6.037e-6	35	-4.908e-6	32	7.865e-4	35
93	35	max	0	38	0	33	0	36	4.849e-6	39	1.269e-5	33	-6.715e-4	37
94		min	0	32	0	39	0	42	-1.21e-5	33	1.571e-6	39	-8.724e-4	43

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotati...	LC	Z Rotati...	LC
95	36	max	0	38	0	35	0	42	1.044e-7	41	6.587e-6	39	8.251e-4	41
96		min	0	32	0	38	0	36	-2.191e-5	35	-1.287e-5	35	7.586e-4	35
97	37	max	0	38	0	39	0	36	1.247e-7	39	1.011e-5	38	-7.177e-4	37
98		min	0	32	0	34	0	42	-3.165e-6	33	-1.337e-6	43	-8.684e-4	43
99	34	max	0	38	0	35	0	42	5.735e-6	41	4.167e-6	41	8.188e-4	41
100		min	0	34	0	41	0	36	-3.177e-5	35	-2.211e-5	35	7.306e-4	35
101	39	max	0	38	0	39	0	36	1.356e-7	32	8.76e-6	38	-7.639e-4	37
102		min	0	32	0	33	0	42	-8.133e-7	38	-9.626e-6	32	-8.645e-4	43
103	32	max	0	39	0	35	0	42	5.848e-6	41	4.143e-6	43	8.125e-4	41
104		min	0	34	0	41	0	35	-6.607e-6	38	-1.948e-5	38	7.027e-4	35
105	41	max	0	38	0	42	0	37	3.886e-6	33	-3.233e-6	38	-8.101e-4	37
106		min	0	32	0	33	0	41	3.346e-6	38	-1.751e-5	32	-8.605e-4	43
107	14	max	0	56	0	56	0	56	1.347e-5	35	2.229e-5	37	8.521e-4	42
108		min	0	31	0	31	0	31	1.132e-5	42	1.326e-5	42	8.41e-4	36
109	8	max	0	56	0	56	0	56	1.951e-4	41	1.138e-4	41	1.104e-3	38
110		min	0	31	0	31	0	31	-4.463e-4	35	-2.352e-4	35	-9.207e-4	32
111	13	max	0	56	0	56	0	56	9.813e-6	56	-1.766e-5	38	-8.409e-4	37
112		min	0	31	0	31	0	31	9.737e-6	42	-2.416e-5	32	-8.579e-4	43
113	6	max	0	56	0	56	0	56	1.467e-4	39	9.576e-5	34	2.164e-3	38
114		min	0	31	0	31	0	31	-2.635e-4	33	-2.868e-5	40	-2.079e-3	32
115	11	max	0	56	0	56	0	56	6.065e-5	33	1.653e-5	41	-5.873e-4	37
116		min	0	31	0	31	0	31	-4.24e-5	39	-1.839e-5	35	-8.904e-4	43
117	12	max	0	56	0	56	0	56	1.286e-4	35	6.714e-5	35	8.062e-4	41
118		min	0	31	0	31	0	31	-5.495e-5	41	-4.713e-5	40	6.747e-4	35
119	9	max	0	56	0	56	0	56	-1.238e-5	39	2.687e-5	32	-8.566e-4	37
120		min	0	31	0	31	0	31	-1.254e-5	32	2.421e-5	38	-8.599e-4	43
121	10	max	0	56	0	56	0	56	-1.293e-5	42	-2.249e-5	42	8.581e-4	52
122		min	0	31	0	31	0	31	-1.403e-5	35	-2.621e-5	37	8.572e-4	42

Maximum Deflection 0.397 < 1 Okay

Sliding/Overturn check



Tectonic		
JJR	Proposed Ballast Mounts	Sept 16, 2021 at 10:06 AM
10710.NJJER01107B		10710.NJJER01107B - OT Check.r...

Joint Reactions (By Combination)

	LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
1	29	6	24.529	136.46	14.417	0	0	0
2	29	8	-34.627	315.024	101.659	0	0	0
3	29	10	1.78	2.926	-.001	0	0	0
4	29	14	-8.6	-400.793	-659.188	0	0	0
5	29	9	-.098	.574	.001	0	0	0
6	29	13	.238	-152.594	-262.192	0	0	0
7	29	12	1.315	82.812	.703	0	0	0
8	29	11	15.463	15.591	-4.565	0	0	0
9	29	Totals:	0	0	-809.166			
10	29	COG (in):	NC	NC	NC			

Reactions used for Sliding/Overturn Check (LC:29 1*WLZ)

APPENDIX D

ADDITIONAL CALCULATIONS

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Job No. 10710.NJJER01107B
Sheet No. 1 of 1
Calculated By JJR Date : 09/16/21
Checked By EI Date : 09/16/21

BALLAST MOUNT CHECK - ALL SECTORS

Wind Force Per Rev G (qz):	17.17	PSF

			8x8x16 Block		Tray Total	
Tray-1	6	CMU-1	43	lbs	258	lbs
Tray-2	6	CMU-2	43	lbs	258	lbs
Side Extension-1	6	CMU-3	43	lbs	258	lbs
Side Extension-2	6	CMU-4	43	lbs	258	lbs
				Total	1032	lbs

*Proposed ballast mount requires two additional side trays to resist overturning (See Appendix for details).

Antenna Wind Loads:

Quantity	Model Number	Weight (lbs)	Dead Load	
1	MX08FRO665-21	65.0	65.0	lbs
1	G060708-50-02B	97.0	97.0	lbs
1	G2021-49-02B	86.0	86.0	lbs
1	RDIDC-3045-PF-48	21.0	21.0	lbs
		Wt. Total	282	lbs
			Add 5% (brackets, cables, etc)	

Mount Wind Loads:

	Frame Dimensions	
Length	9.35	ft
Width	10.08	ft

Member Summary:

Quantity	Member ID	Size (in)	Length (ft)	Unit Weight (lbs)	Net Weight	
3	3.0" STD PIPE (Mount Pipe)	3.50	6.00	45.48	136	lbs
2	L3x3x1/4" (Face Angles)	3.00	10.50	51.45	103	lbs
2	L3x3x1/4" (Vertical Supports)	3.00	6.28	30.78	62	lbs
2	L2x2x3/16" (Kickback Angle)	2.00	8.19	19.98	40	lbs
1	L2x2x3/16" (Horizontal Support)	2.00	8.40	20.51	21	lbs
2	L3x3x1/4" (Base Member)	3.00	8.35	40.92	82	lbs
4	L2x2x3/16" (Base Member)	2.00	7.08	17.28	69	lbs
1	L2x2x3/16" (Base Diagonal)	2.00	8.36	20.39	20	lbs
		Frame Weight Total	636	lbs (Excludes Equipment)		

Sliding Check:

Horizontal Wind Force Per RISA-3D Output =	809	lbs *(LC29)*		
Resisting Force:	1365	lbs	Friction Coeff: 0.7	Rubber mat to roof
FS:	1.69	≥ 1.2 OK		

Overturn Check:

Uplift Force Per RISA-3D Output =	553.0	lbs *(LC29)*
Overturn moment:	4619.9	lb-ft

Direction:	WLZ	(Worst Case)
Base	4.18	
CMU-1	0.75	
CMU-2	7.60	
CMU-3	4.18	
CMU-4	4.18	

Resisting Moment	5709.5	lb-ft
FS:	1.24	≥ 1.2 OK

Final Roof Pressure:

L	9.35	ft
W	11.08	ft
Area	103.68	ft^2
Total Weight	1950	lbs
	18.8	psf

THE SAFETY FACTORS AGAINST SLIDING AND OVERTURNING ARE GREATER THAN OR EQUAL TO 1.20. ADDITIONALLY, THE FINAL ROOF PRESSURE IS LESS THAN THE ALLOWABLE 20 PSF. THEREFORE, THE BALLAST MOUNT AND SUPPORTING STRUCTURE ARE ADEQUATE TO SUPPORT THE PROPOSED INSTALLATION.

APPENDIX E – PLATFORM

SOFTWARE INPUT CALCULATIONS

Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Job No.	10710.NJJER01107B		
Sheet No.	1	of	3
Calculated By	JJR	Date :	09/17/21
Checked By	EI	Date :	09/17/21

Proposed Equipment Non-Penetrating Platform Loading

1 - Dead Load

Number of units	Cabinet Type	Width (in.)	Depth (in.)	Height (in.)	Weight (lbs)	Total Weight	
1	Enersys Hex Sabinet 2000005996	30.0	32.0	73.0	983.0	983	lbs
1	Square Safety Switches	19.0	6.5	29.3	30.0	30	lbs
1	Raycap PPC RDIAC-2465-P-240-MTS	22.9	12.6	39.0	80.0	80.0	lbs
1	PCTEL GPSGL-TMG-SPI-40NCB	3.2	3.2	7.3	7.5	7.5	lbs
1	Charles CFIT-PF2020DSH1 Enclosure	20.0	9.0	20.0	20.0	20.0	lbs
1	Zayo 5RU Enclosure	29.0	12.9	36.1	85.0	85.0	lbs
					Total	1205.5	lbs

3- Snow Load

Per ASC 7-10: Chapter 7

$P_f = 0.7C_eC_tIP_g$

P_f = 21 psf

But not less than P_f = 30 (per CTS BC)

P_f = 30 psf **GOVERNS**

C_e = 1.0 Table 7.3-1
C_t = 1.0 Table 7.3-2
I = 1.0 Table 1.5-2
P_g = 30 psf

Snow Drift Load (At Bulkhead)

$\gamma = 0.13xp_g + 14$ = 17.9 pcf
Height of Parapet = 14.25 ft
h_b = 1.68 ft
h_c = 12.57 ft
h_c/h_b = 7.50 **> 0.2 Therefore, Consider Snow Drift (Section 7.7.1)**

Leeward Drift lu = 33.59 ft
h_d = 2.00 ft Figure 7-9 **GOVERNS**
$W = 4h_d^2/h_c$ = **ft**
$p_d = \gamma h_c$ = **psf**

Windward Drift lu = 31.17 ft
h_d = 1.50 ft Figure 7-9
$W = 4h_d^2/h_c$ = **ft**
$p_d = \gamma h_c$ = **psf**

4- Wind Load

Per ASCE 7-10 Chapters 26

z=	53.75	ft Top of Equipment
V=	93	MPH (Per CTS BC)
Exposure:	B	Section 26.7.3
α=	7	Table 26.9-1
Z_g=	1200	ft Table 26.9-1
K_z=	0.828	Table 29.3-1
K_{zt}=	1.00	Section 26.8.2
K_d=	0.90	Table 26.6-1 (Square)
q_z=	16.5	psf (Equation 29.3-1)

Per ASCE 7-10 Section 29.5 (Design Wind Load - Other Structures)

$F = q_zGC_f$

h=	46.25	ft (Height of Structure)
GCf =	1.9	Section 29.5.2 (h < 60 ft = 1.9, h > 60 ft = 1.0)
q_z=	16.5	psf
F=	31.35	psf (Equation 29.5-1)

Number of units	Cabinet Type	Transverse Wind Load (lbs)	Normal Wind Load (lbs)
1	Enersys Hex Sabinet 2000005996	509	477
1	Square Safety Switches	54	121
1	Raycap PPC RDIAC-2465-P-240-MTS	107	194
1	PCTEL GPSGL-TMG-SPI-40NCB	5	5
1	Charles CFIT-PF2020DSH1 Enclosure	39	87
1	Zayo 5RU Enclosure	101	228

Tectonic

PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Job No.	10710.NJJER01107B		
Sheet No.	2	of	3
Calculated By	JJR	Date :	09/17/21
Checked By	EI	Date :	09/17/21

PROPOSED NON-PENTRATING PLATFORM CHECK

Wind Force Per ASCE 7-10:	31.4	PSF

Cabinet Wind Loads:

Quantity	Model	Force per ASCE 7-10 (ea.)			Centerline Height		Weight		
1	Enersys Hex Sabinet 2000005996	476.8	357.6	lbs (Transverse)	4.5	ft	983.0	983.0	lbs
1	Square Safety Switches	121.0	121.0	Shielded	3.3	ft	30.0	30.0	lbs
1	Raycap PPC RDIAC-2465-P-240-MTS	194.1	194.1	Shielded	4.5	ft	80.0	80.0	lbs
1	PCTEL GPSGL-TMG-SPI-40NCB	5.1	5.1	lbs (Transverse)	7.2	ft	7.5	7.5	lbs
1	Charles CFIT-PF2020DSH1 Enclosure	87.1	0.0	Shielded	2.6	ft	20.0	20.0	lbs
1	Zayo SRU Enclosure	227.9	227.9	lbs (Transverse)	5.4	ft	85.0	85.0	lbs
		Equip. WL Total:	905.6	lbs	Wt. Total (Includes +5% for cables, etc.)			1265.8	lbs

Wind Loads:

Length	7.00	ft	
Width	7.00	ft	
Total Platform Weight	849.4	lbs	

Quantity	Member ID	Force per ASCE 7-10 (ea.)			Centerline Height		Size (in)	Length	
1	MTC404SLP	109.7	109.7	lbs	1.17	ft	6.0	7.00	ft
		Mount Total:	109.7	lbs					

Sliding Check:

Horizontal Wind Force Total:	1015.3	lbs			
Resisting Force:	1480.6	lbs	Friction Coeff:	0.7	Rubber mat to roof
FS:	**1.46**	**>1.2 OK**			

Overturn Check:

Overturning Moment:	4273	lb-ft
Direction 1:	WLT	(Worst Case Overturning)
Frame:	3.50	ft
Cabinet:	1.38	ft
Equip:	6.00	ft
Resisting Moment:	5659.6	lb-ft
FS:	**1.32**	**>1.2 OK**

Final Roof Pressure:

L	8.00	ft
W	8.00	ft
Area	64	ft^2
Total Weight	2115.2	lbs
	33.05	psf

THE SAFETY FACTORS AGAINST SLIDING AND OVERTURNING ARE GREATER THAN 1.2. THEREFORE, THE PROPOSED NON-PENETRATING EQUIPMENT PLATFORM IS ADEQAUTE TO SUPPORT THE PROPOSED DISH WIRELESS INSTALLATION. SEE EXISTING STRUCTURE CHECK FOR ROOF CAPACITY.

Tectonic

PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

Job No.	10710.NJJER01107B		
Sheet No.	3	of	3
Calculated By	JJR	Date :	09/17/21
Checked By	EI	Date :	09/17/21

ROOF STRUCTURE LOADS

Point Load

Platform Leg Loads	529	lbs	

Dead Loads

4" Light Wight Concrete Slab=	48	psf	(assumed)
Metal Deck=	4	psf	(assumed)
MEP Equipement and Hang Ceiling =	5	psf	
Total Dead Load Applied to Roof=	57	psf	

Snow Load

Snow Load=	30	psf	(per CTS BC)
Snow Drift Load Per Beam=	237	plf	Per ASC 7-10 (See snow drift calcs above)

Live Load

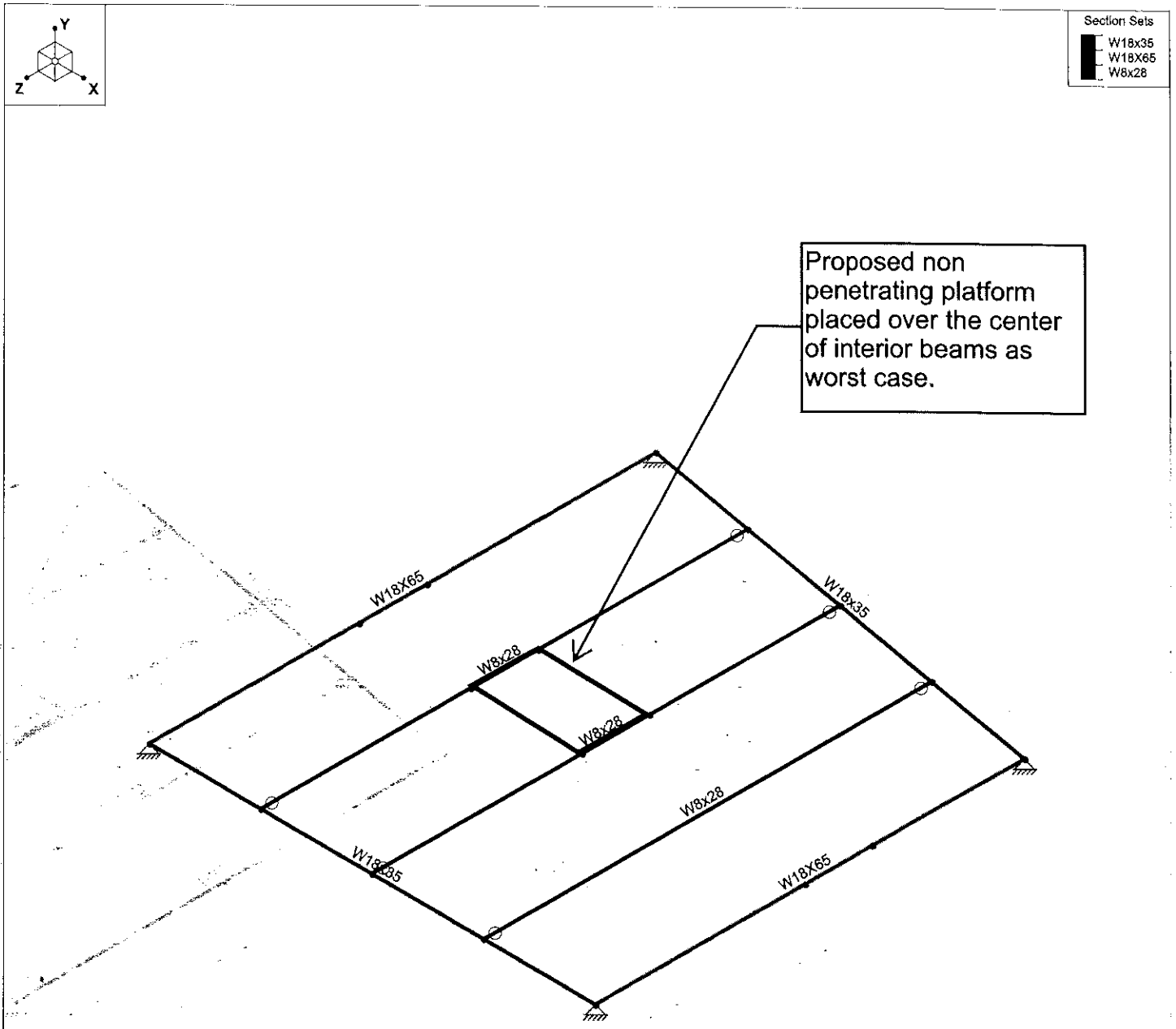
Live Load=	20	psf	Per Table 4-1

Wiind Load

Wind Load=	16	psf	Per Section 28.4.4

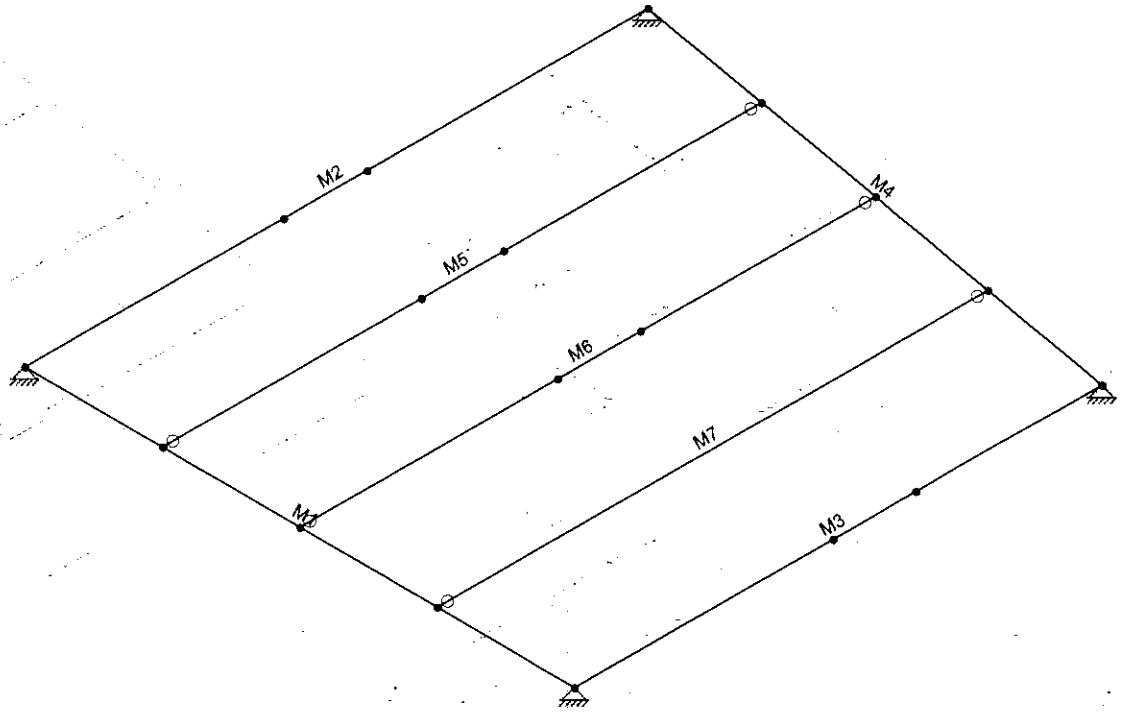
APPENDIX F – STRUCTURE CHECK

WIRE FRAME AND RENDERED MODEL

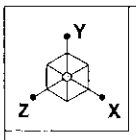


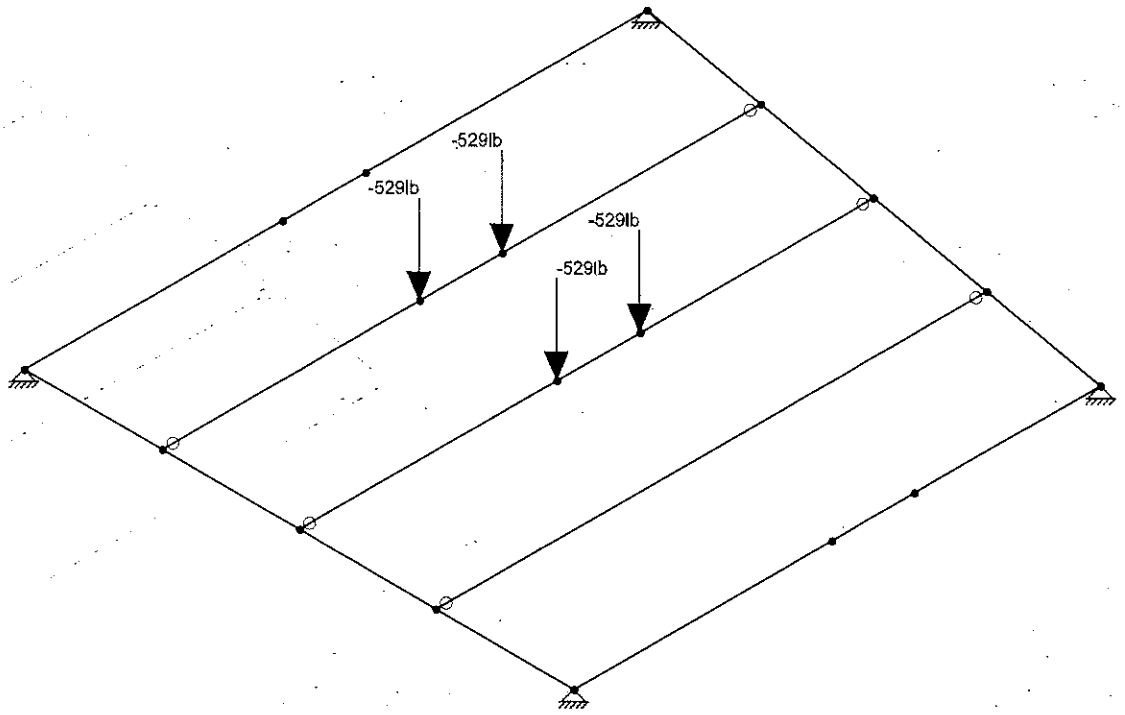
Notes:
1. Contractor shall place the Non penetrating platform such that the platform legs are directly above a roof beam or girder.

Tectonic Engineering	Steel Beam Check	
RTK		Sept 17, 2021 at 12:39 PM
10710.NJJER01107B		Roof Steel Beam Check.r3d



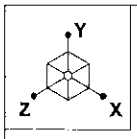
Tectonic Engineering	Steel Beam Check	
RTK		Sept 17, 2021 at 12:38 PM
10710.NJJER01107B		Roof Steel Beam Check.r3d

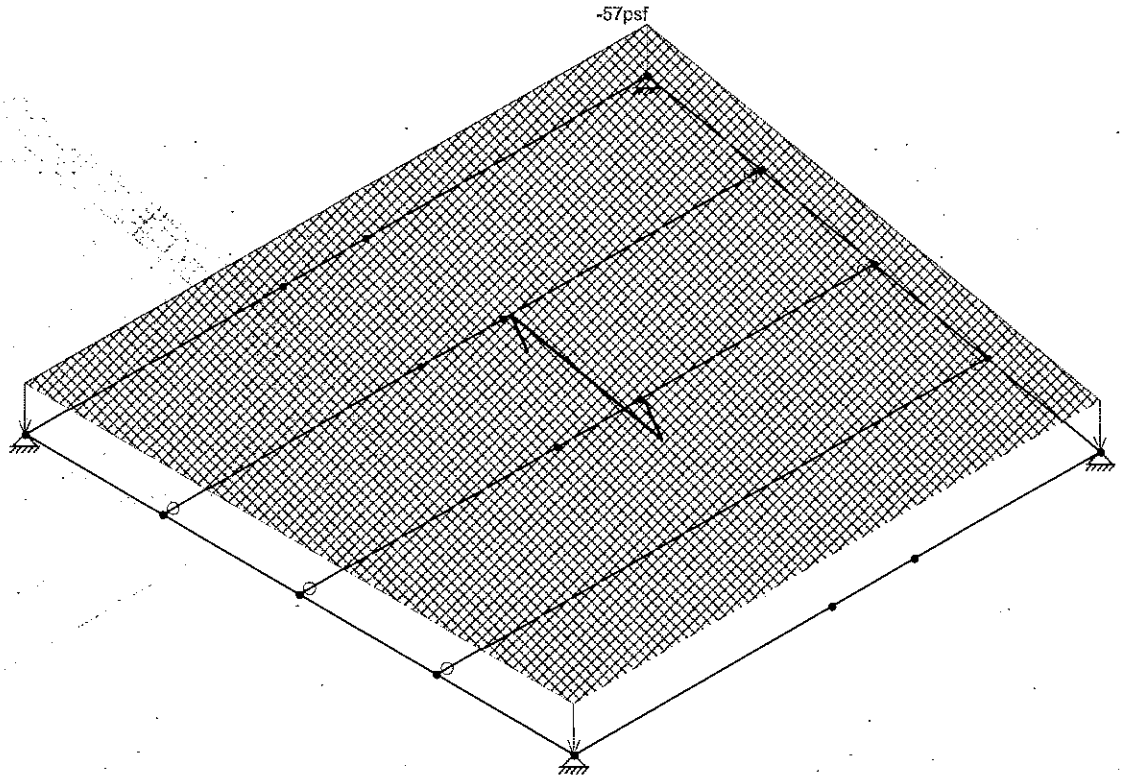




Loads: BLC 5, (P) PL

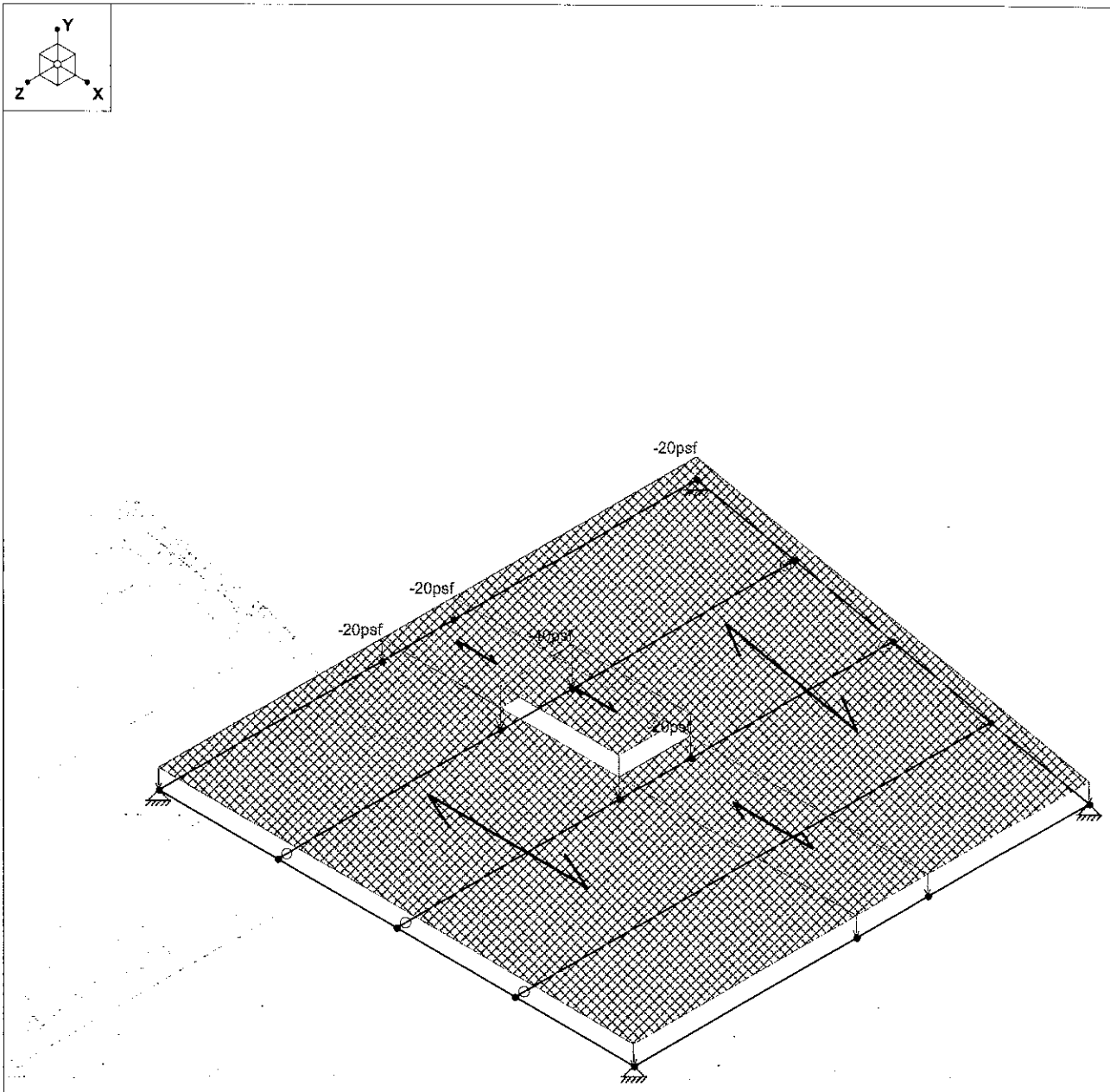
Tectonic Engineering	Steel Beam Check	
RTK		Sept 17, 2021 at 12:40 PM
10710.NJJER01107B		Roof Steel Beam Check.r3d





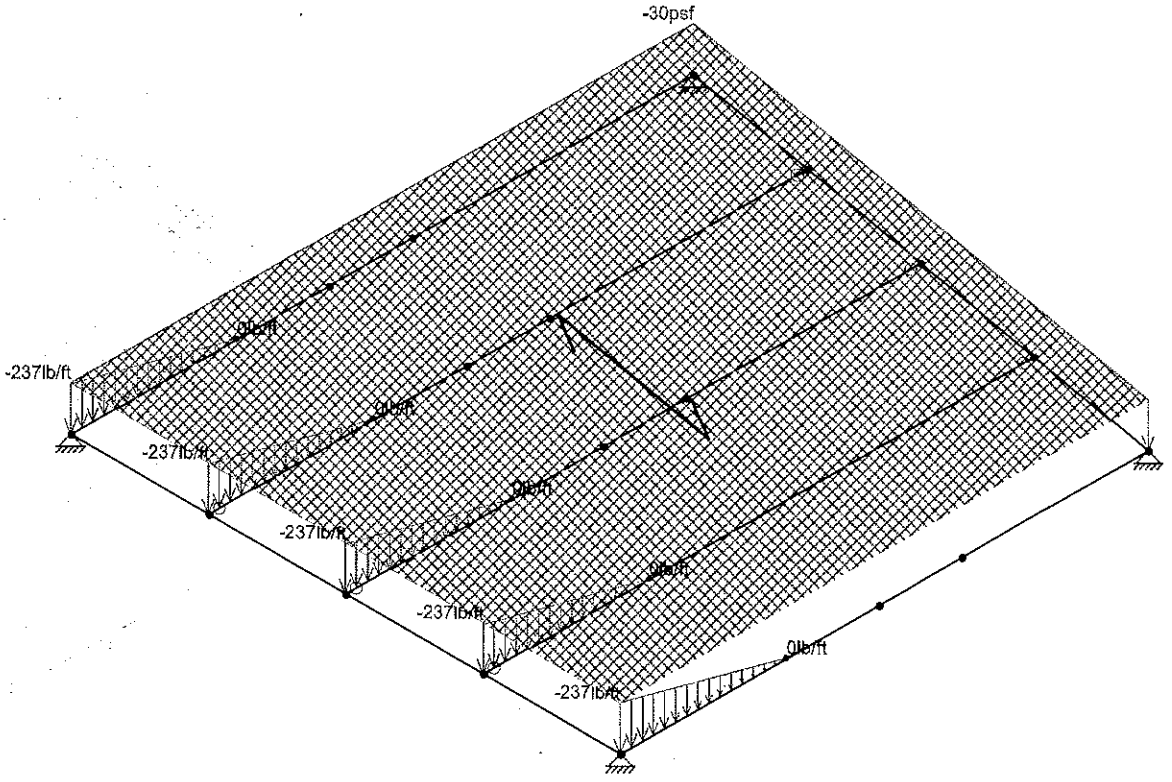
Loads: BLC 1, DL

Tectonic Engineering	Steel Beam Check	
RTK		Sept 17, 2021 at 12:39 PM
10710.NJJER01107B		Roof Steel Beam Check.r3d



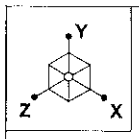
Loads: BLC 2, RLL

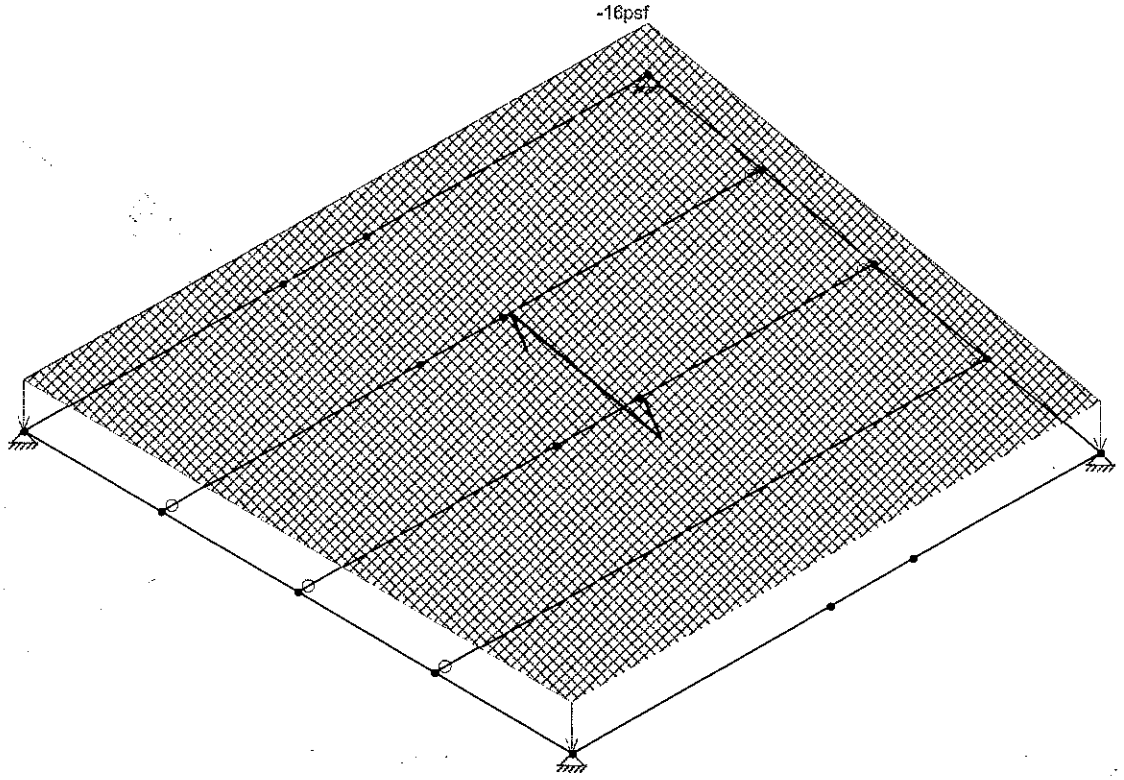
Tectonic Engineering	Steel Beam Check	
RTK		Sept 17, 2021 at 12:39 PM
10710.NJJER01107B		Roof Steel Beam Check.r3d



Loads: BLC 3, SL

Tectonic Engineering	Steel Beam Check	
RTK		Sept 17, 2021 at 12:39 PM
10710.NJJER01107B		Roof Steel Beam Check.r3d



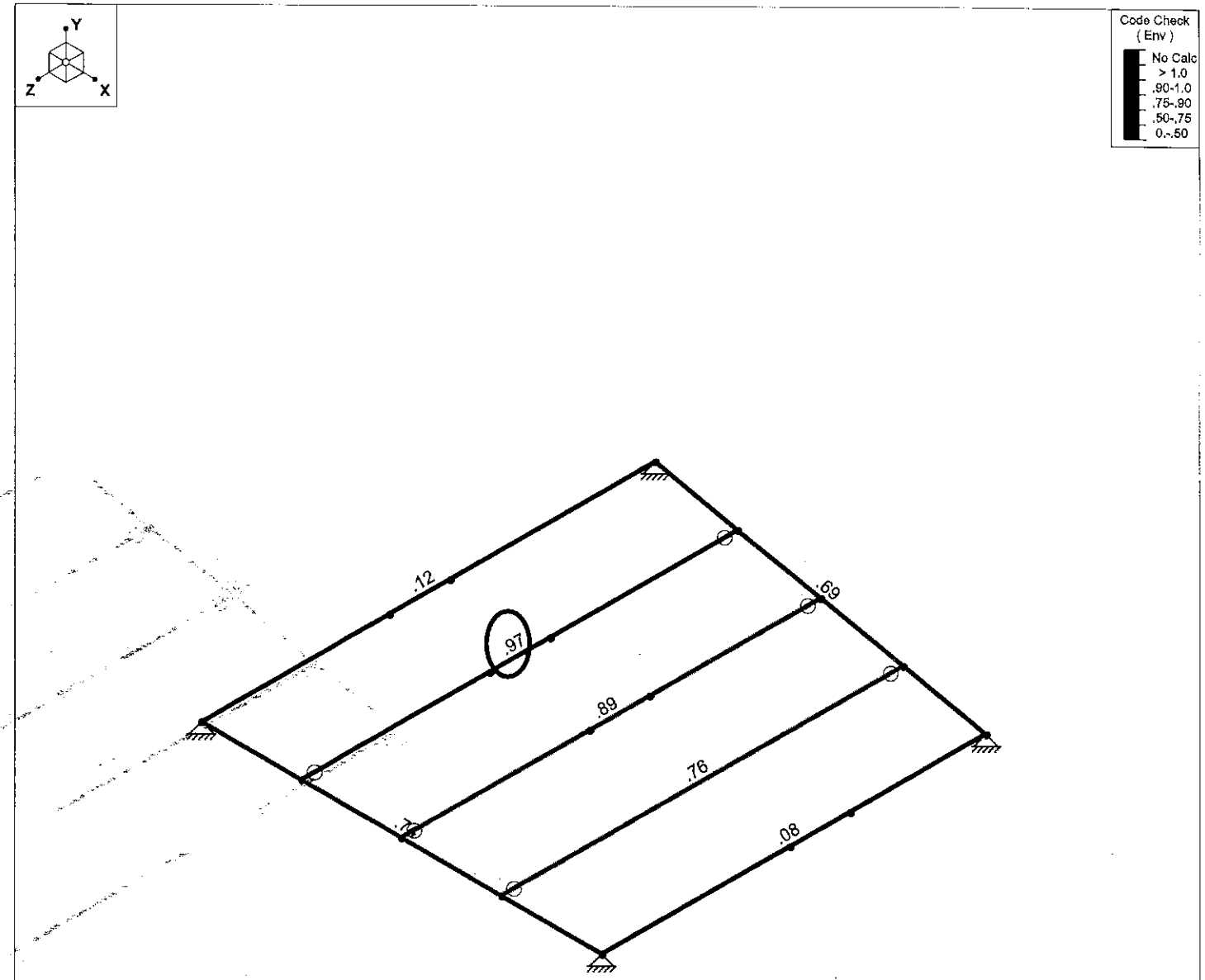


Loads: BLC 4, WL

Tectonic Engineering	Steel Beam Check	
RTK		Sept 17, 2021 at 12:39 PM
10710.NJJER01107B		Roof Steel Beam Check.r3d

APPENDIX G – STRUCTURE CHECK

SOFTWARE ANALYSIS OUTPUT



0.97 ≤ 1 Okay (See Risa 3D results for further information)

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Tectonic Engineering		
RTK	Steel Beam Check	Sept 17, 2021 at 3:04 PM
10710.NJJER01107B		Roof Steel Beam Check.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.25	65	1.15
8	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1
9	A7	29000	11154	.3	.65	.49	30	1.5	55	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	W18x35	W18X35	Beam	None	A992	Typical	10.3	15.3	510	.506
2	W18X65	W18X65	Beam	None	A992	Typical	19.1	54.8	1070	2.73
3	W14x22	W14X22	Beam	None	A992	Typical	6.49	7	199	.208
4	W8x28	W8X28	Beam	None	A992	Typical	8.25	21.7	98	.537

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	DL	DL		-1.05					1	
2	RLL	RLL							5	
3	SL	SL						5	1	
4	WL	WL							1	
5	(P) PL	OL1				4				
6	BLC 1 Transient Area...	None						67		
7	BLC 2 Transient Area...	None						40		
8	BLC 3 Transient Area...	None						67		
9	BLC 4 Transient Area...	None						67		

Load Combinations

	Description	Sol...	P...	De...	SR...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fac...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4(DL + (P) ML)	Yes	Y			DL	1.4	RLL		SL		WL		O...	1.4										
2	1.2DL + 0.5RLL +1.2 ...	Yes	Y			DL	1.2	RLL	.5	SL		WL		O...	1.2										
3	1.2DL + 0.5SL + 1.2(...	Yes	Y			DL	1.2	RLL		SL	.5	WL		O...	1.2										
4	1.2DL + 1.6RLL + 0.5...	Yes	Y			DL	1.2	RLL	1.6	SL		WL	.5	O...	1.2										
5	1.2DL + 1.6SL + 0.5...	Yes	Y			DL	1.2	RLL		SL	1.6	WL	.5	O...	1.2										
6	1.2DL + WL + 0.5RLL...	Yes	Y			DL	1.2	RLL	.5	SL		WL	1	O...	1.2										
7	1.2DL + WL + 0.5SL ...	Yes	Y			DL	1.2	RLL		SL	.5	WL	1	O...	1.2										
8	0.9DL + WL + 1.2(P) ...	Yes	Y			DL	.9	RLL		SL		WL	1	O...	.9										

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

	Member	Shape	Code Ch...	Loc[ft]	LC	Shear C...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt ...	phi*Mn ...	phi*Mn z-...	Cb	Eqn
1	M1	W18X...	.743	13.22	5	.135	0	y	5	351296....	463500	30.225	249.375	1	H1-1b
2	M2	W18X...	.115	14.688	5	.035	0	y	5	725745....	859500	84.375	498.75	1	H1-1b
3	M3	W18X...	.083	12.431	5	.031	0	y	5	761424....	859500	84.375	498.75	1	H1-1b

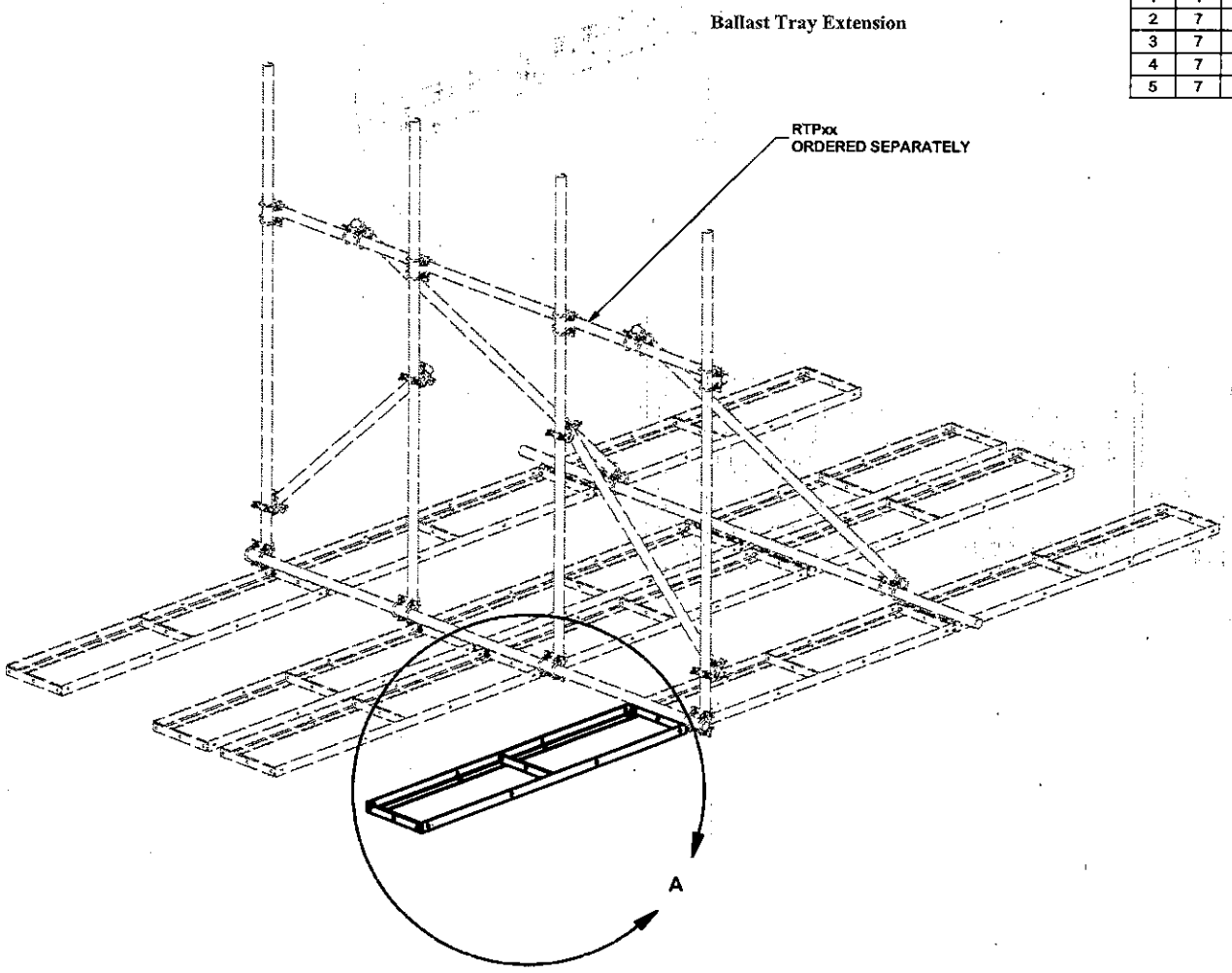
Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

	Member	Shape	Code Ch...	Loc[ft]	LC	Shear C...	Loc[ft]	Dir	LC	phi*Pnc ...	phi*Pnt ...	phi*Mn ...	phi*Mn z-...	Cb	Eqn
4	M4	W18X...	.688	13.419	5	.124	5.032	y	5	349981....	463500	30.225	249.375	1	H1-1b
5	M5	W8X28	.974	14.424	5	.210	0	y	5	177552....	371250	37.875	102	1	H1-1b
6	M6	W8X28	.894	13.559	5	.201	0	y	5	188109....	371250	37.875	102	1	H1-1b
7	M7	W8X28	.760	13.271	5	.186	0	y	5	198826....	371250	37.875	102	1	H1-1b

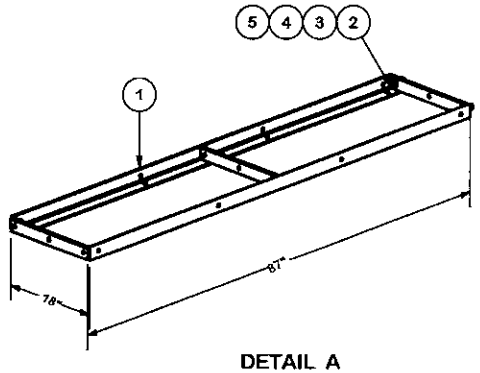
Max member stresses do not exceed 98% of the allowable capacity. Therefore the proposed ballast mounts will be adequate to support the proposed installation.

APPENDIX H

REFERENCES AND STRUCTURAL DETAILS



PARTS LIST						
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT
1	1	X-232696	BALLAST TRAY WELDMENT - SITE PRO 1		66.60	66.60
2	7	G12212	1/2" x 2-1/2" HDG HEX BOLT GR5	2 1/2 in	0.20	1.42
3	7	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.24
4	7	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.10
5	7	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.50
					TOTAL WT. #	68.86



DETAIL A

TOLERANCE NOTES

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

DESCRIPTION: 8' SINGLE TRAY ADD-ON KIT

SITE PRO 1 — A valmont COMPANY

Engineering Support Team: 1-888-753-7446

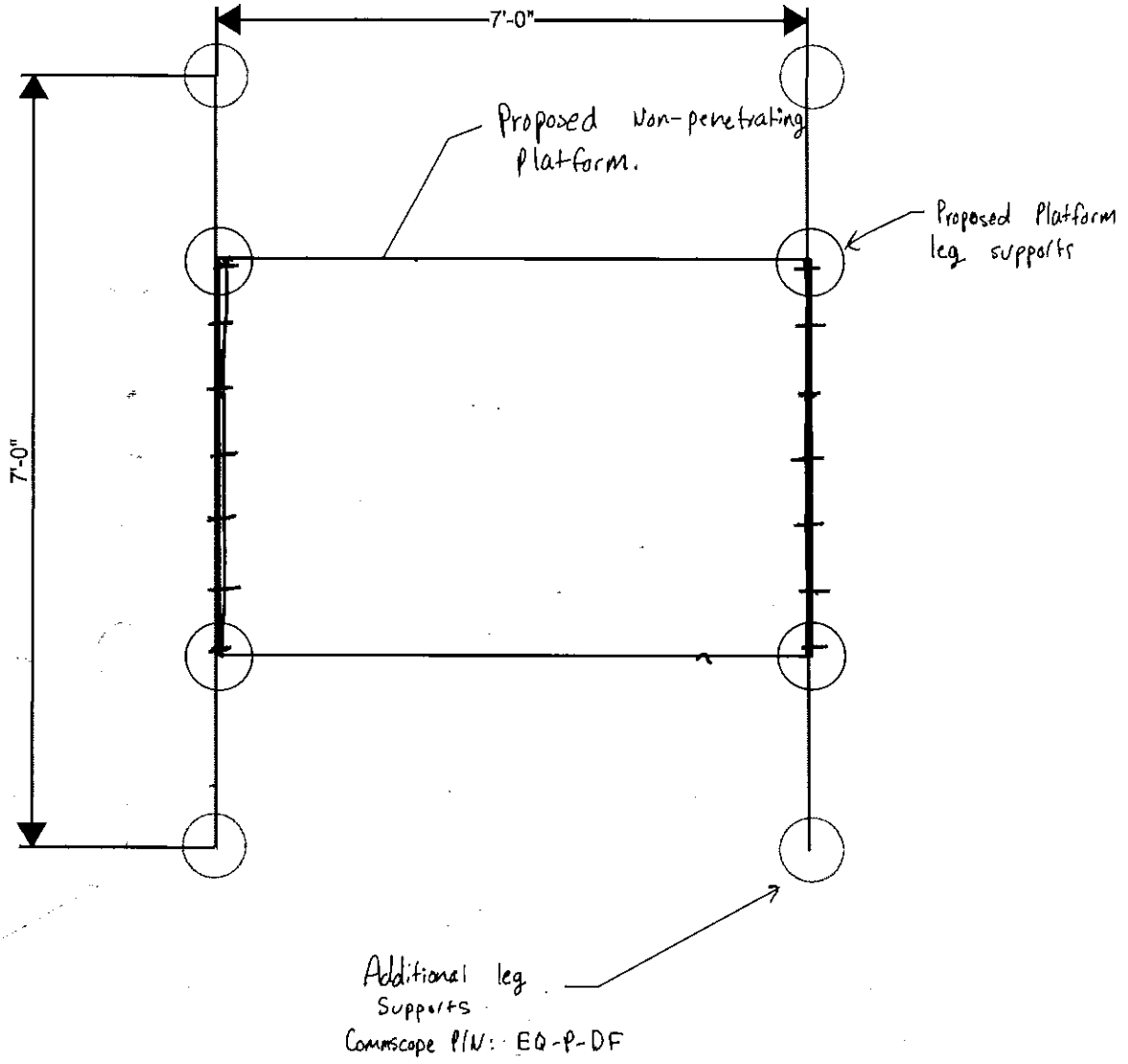
Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
SP1	KC8 12/6/2017	3RD PARTY	TA8-S

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
87	02	SHOP	BMC 7/15/2019	TA8-S

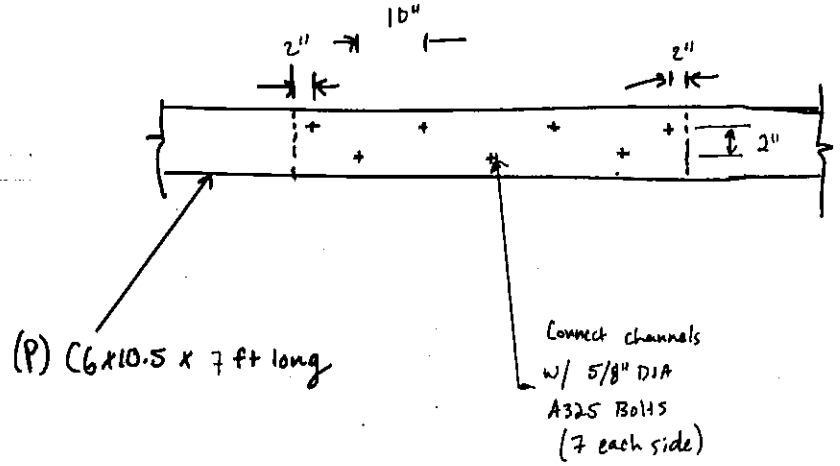
10710.NJJER01107B
9/17/212
NTS

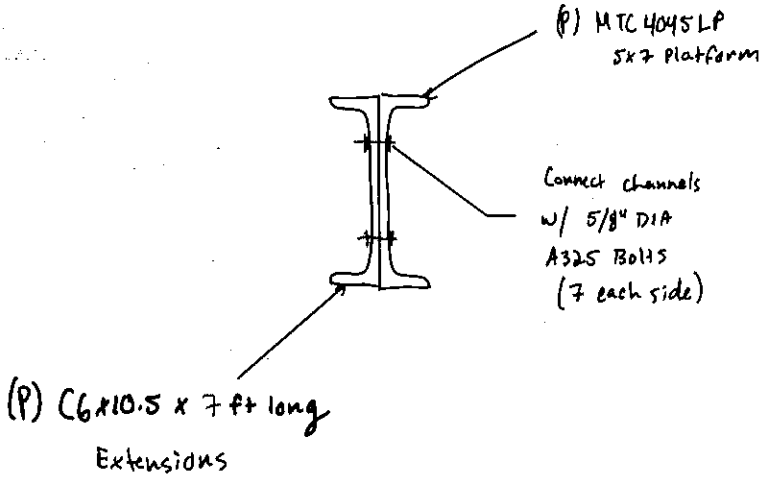
Proposed Platform Modification Details



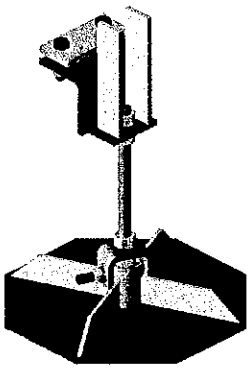
10710.NJJER01107B
9/17/212
NTS

Proposed Platform Modification Details
(connection detail)





EQ-P-DF



Weight Dispersement Leg for Equipment Platform

Product Classification

Product Type	Equipment platform system

Dimensions

Height	538.48 mm | 21.2 in
Width	393.7 mm | 15.5 in
Length	393.7 mm | 15.5 in

Material Specifications

Material Type	Hot dip galvanized steel

Packaging and Weights

Included	Legs
Packaging quantity	1
Weight, net	15.3 kg | 33.731 lb

Regulatory Compliance/Certifications

Agency	Classification
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system

ISO 9001:2015

(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS												
				Wind Design Parameters								
Municipality	**Ground Snow Load** (psf)	**MCE Spectral Accelerations** (%g)		**Ultimate Design Wind Speeds, V_{ult}** (mph)			**Nominal Design Wind Speeds, V_{asd}** (mph)			**Wind-Borne Debris Regions[1]**		**Hurricane-Prone Regions**
		S_s	S_1	Risk Cat.I	Risk Cat.II	Risk Cat III-IV	Risk Cat. I	Risk Cat. II	Risk Cat. III-IV	Risk Cat. II & III except Occup I-2	Risk Cat III Occup I-2 & Risk Cat. IV	
East Hampton	30	0.177	0.062	120	130	140	93	101	108			Yes
East Hartford	30	0.180	0.064	115	125	135	89	97	105			Yes
East Haven	30	0.182	0.062	120	130	140	93	101	108		Type B	Yes
East Lyme	30	0.164	0.059	125	135	145	97	105	112	Type B	Type A	Yes
Easton	30	0.215	0.066	110	120	130	85	93	101			Yes
East Windsor	35	0.177	0.064	115	125	135	89	97	105			Yes
Ellington	35	0.176	0.064	115	125	135	89	97	105			Yes
Enfield	35	0.176	0.065	110	125	130	85	97	101			Yes
Essex	30	0.168	0.059	120	135	145	93	105	112		Type A	Yes
Fairfield	30	0.215	0.065	115	125	135	89	97	105		Type B	Yes
Farmington	35	0.183	0.064	115	125	135	89	97	105			Yes
Franklin	30	0.171	0.061	120	130	140	93	101	108		Type A	Yes
Glastonbury	30	0.180	0.063	115	125	135	89	97	105			Yes
Goshen	40	0.181	0.065	105	115	125	81	89	97			
Granby	35	0.176	0.065	110	120	130	85	93	101			Yes
Greenwich	30	0.259	0.070	110	120	130	85	93	101			Yes
Griswold	30	0.168	0.060	125	135	145	97	105	112		Type A	Yes
Groton	30	0.160	0.058	125	135	145	97	105	112	Type B	Type A	Yes
Guilford	30	0.176	0.061	120	130	140	93	101	108		Type B	Yes
Haddam	30	0.175	0.061	120	130	140	93	101	108			Yes
Hamden	30	0.185	0.063	115	125	135	89	97	105			Yes
Hampton	35	0.172	0.062	120	130	140	93	101	108			Yes
Hartford	30	0.181	0.064	115	125	135	89	97	105			Yes
Hartland	40	0.175	0.065	110	120	125	85	93	97			Yes
Harwinton	35	0.183	0.065	110	120	130	85	93	101			Yes
Hebron	30	0.177	0.063	120	130	140	93	101	108			Yes
Kent	40	0.188	0.065	105	115	120	81	89	93			
Killingly	40	0.171	0.062	120	130	140	93	101	108			Yes
Killingworth	30	0.173	0.061	120	130	140	93	101	108			Yes
Lebanon	30	0.173	0.062	120	130	140	93	101	108			Yes
Ledyard	30	0.163	0.059	125	135	145	97	105	112		Type A	Yes
Lisbon	30	0.169	0.061	125	135	145	97	105	112		Type A	Yes
Litchfield	40	0.184	0.065	110	120	125	85	93	97			Yes
Lyme	30	0.164	0.059	125	135	145	97	105	112		Type A	Yes
Madison	30	0.173	0.060	120	130	140	93	101	108		Type B	Yes
Manchester	30	0.178	0.064	115	125	135	89	97	105			Yes
Mansfield	35	0.173	0.062	120	130	140	93	101	108			Yes
Marlborough	30	0.177	0.062	120	130	140	93	101	108			Yes
Meriden	30	0.183	0.063	115	125	135	89	97	105			Yes
Middlebury	35	0.191	0.064	110	120	130	85	93	101			Yes
Middlefield	30	0.181	0.063	115	125	135	89	97	105			Yes
Middletown	30	0.180	0.063	115	130	135	89	101	105			Yes
Milford	30	0.194	0.063	115	125	135	89	97	105		Type B	Yes
Monroe	30	0.205	0.065	110	120	130	85	93	101			Yes

Exhibit D

Emissions Report

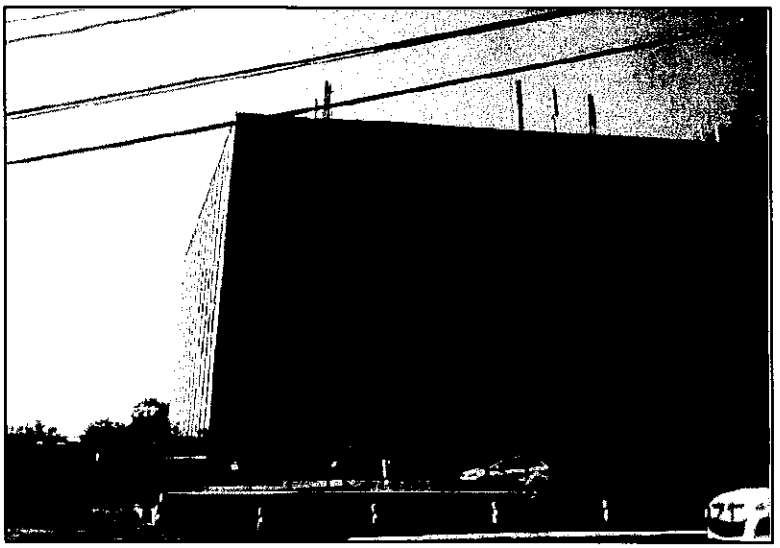
APPROVED
By Pawan Madahar at 11:48 am, Apr 27, 2022

Pinnacle Telecom Group

Professional and Technical Services

Telecom Consulting

Antenna Site FCC RF Compliance Assessment and Report for Municipal Submission



Prepared for:	DISH Wireless, LLC
Site ID:	NJJER01107B
Site Address:	411 West Putnam Avenue Greenwich, CT
Latitude:	N 41.021675
Longitude:	W 73.6409
Structure type:	Rooftop
Report date:	April 25, 2022
Compliance Conclusion:	DISH Wireless, LLC will be in compliance with the rules and regulations as described in OET Bulletin 65, following the implementation of the proposed mitigation as detailed in the report.

14 Ridgedale Avenue - Suite 260 • Cedar Knolls, NJ 07927 • 973-451-1630

Contents

Introduction and Summary

At the request of DISH Wireless LLC ("DISH"), Pinnacle Telecom Group has performed an independent assessment of radiofrequency (RF) levels and related FCC compliance for proposed wireless base station antenna operations on the roof of a building located at 411 West Putnam Avenue in Greenwich, CT. DISH refers to the site by the code "NJJER01107B" and its proposed operation involves directional panel antennas and transmission in the 600 MHz, 2000 MHz and 2100 MHz bands licensed to DISH by the FCC.

The FCC requires wireless system operators to perform an assessment of potential human exposure to radiofrequency (RF) fields emanating from all the transmitting antennas at a site whenever antenna operations are added or modified, and to ensure compliance with the Maximum Permissible Exposure (MPE) limit in the FCC regulations. In this case, the compliance assessment needs to take into account the RF effects of other existing antenna operations at the site by AT&T, Clearwire, Sprint, T-Mobile, Verizon Wireless and AMS Spectrum Holdings, Inc. Note that FCC regulations require any future antenna collocators to assess and assure continuing compliance based on the cumulative effects of all then-proposed and then-existing antennas at the site.

This report describes mathematical analyses of potential RF exposure levels associated with the antennas. The analyses both at street level and on the subject roof employ standard FCC mathematical models for calculating the effects of the antennas in a very conservative manner, in order to overstate the RF levels and to ensure "safe-side" conclusions regarding compliance with the FCC limit for safe continuous exposure of the general public.

The results of a compliance assessment can be described in layman's terms by expressing the calculated RF levels as simple percentages of the FCC MPE limit. If the normalized reference for that limit is 100 percent, then calculated RF levels higher than 100 percent indicate the MPE limit is exceeded and there is a need to mitigate the potential exposure. On the other hand, calculated RF levels consistently below 100 percent serve as a clear and sufficient demonstration of

compliance with the MPE limit. We can (and will) also describe the overall worst-case result via the "plain-English" equivalent "times-below-the-limit" factor.

The result of the RF compliance assessment in this case is as follows:

- At street level around the site, the conservatively calculated maximum RF level from the combination of proposed and existing antenna operations is 24.8906 percent of the FCC general population MPE limit – well below the 100-percent reference for compliance. In other words, the worst-case calculated RF level – even intentionally and significantly overstated by the calculations – is still more than four times below the FCC limit for safe, continuous exposure of the general public.
- A supplemental analysis of the RF levels on the subject rooftop in the vicinity of the DISH antennas yields a worst-case result of 717.35 percent of the FCC general population MPE limit.
- Calculated RF levels in front of the DISH antennas, at the same height as the antennas, indicate that the FCC MPE limit is exceeded. The maximum calculated RF level at the same height as the antennas is 4,796.26 percent of the FCC general population MPE limit.
- Per DISH guidelines and consistent with FCC guidance on rooftop compliance, barriers are to be installed at the DISH Alpha and Gamma antennas, with Caution signs on the barriers and at the antennas. Caution signs are to be installed at the DISH Beta antenna. In addition, NOC Information and Guidelines signs are to be installed at the roof access point(s).
- The results of the calculations, along with the proposed mitigation, combine to satisfy the FCC requirements and associated guidelines on RF compliance at street level around the site and on the subject roof. Moreover, because of the significant conservatism incorporated in the analysis, RF levels actually caused by the antennas will be lower than these calculations indicate.

The remainder of this report provides the following:

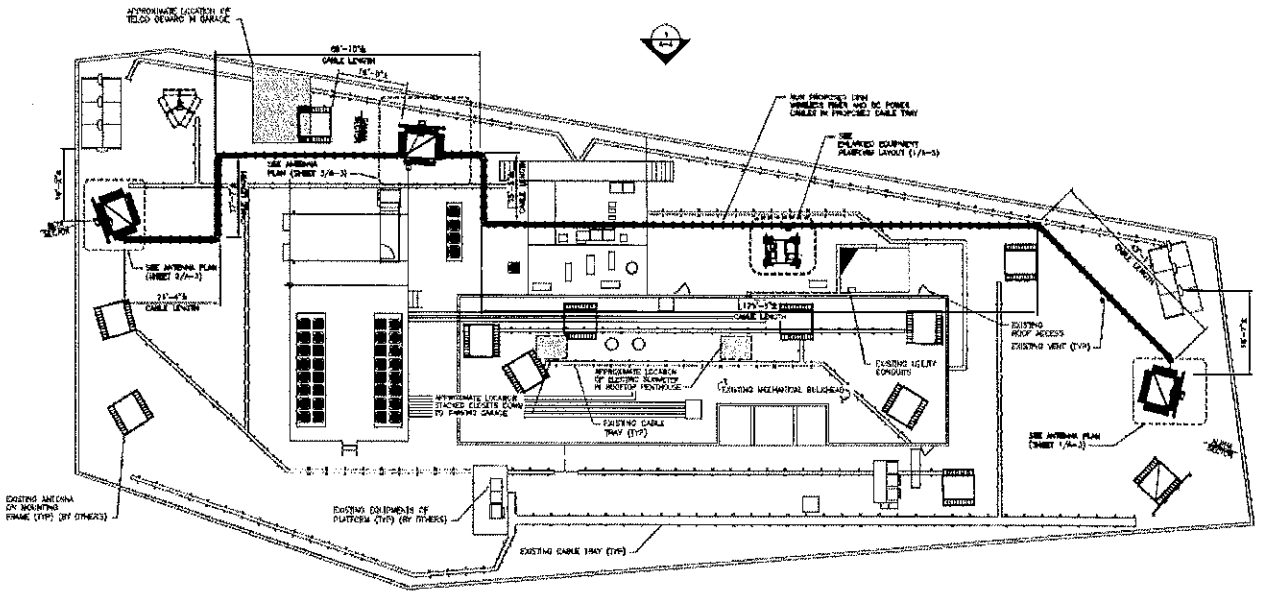
- relevant technical data on the proposed DISH antenna operations at the site, as well as on the existing antenna operations;
- a description of the applicable FCC mathematical model for calculating RF levels, and application of the relevant technical data to that model;
- analysis of the results of the calculations against the FCC MPE limit, and the compliance conclusion for the site.

In addition, four Appendices are included. Appendix A provides information on the documents used to prepare the analysis. Appendix B provides background on the FCC MPE limit. Appendix C details the proposed mitigation to satisfy the FCC requirements and associated guidelines on RF compliance. Appendix D provides a summary of the qualifications of the expert certifying FCC compliance for this site.

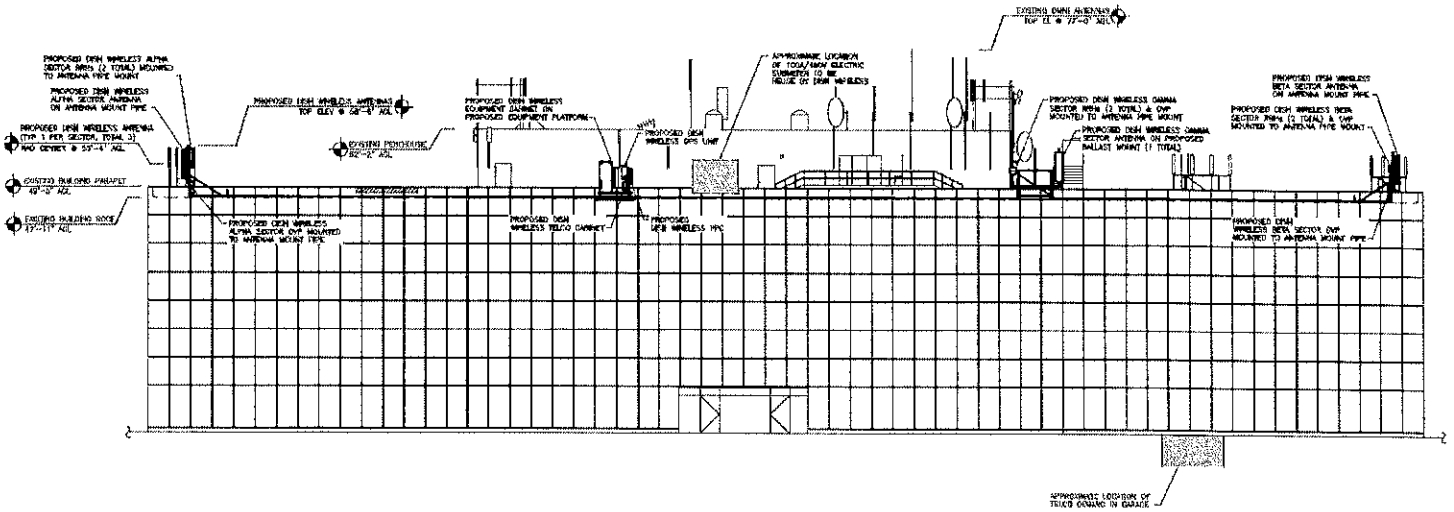
Antenna and Transmission Data

The plan and elevation views that follow, extracted from the site drawings, illustrate the mounting positions of the DISH antennas at the site.

Plan View:



Elevation View:



The table that follows summarizes the relevant data for the proposed DISH antenna operations. Note that the "Z" height references the centerline of the antenna.

Ant. ID	Carrier	Antenna Manufacturer	Antenna Model	Type	Freq (MHz)	Ant. Dim. (ft.)	Total Input Power (watts)	Total ERP (watts)	Z ARL (ft)	Z AGL (ft)	Ant. Gain (dBd)	B/W	Azimuth	EDT	MDT
❶	DISH	JMA Wireless	MX08FRO665-21	Panel	600	6	120	1637	7.6	55.5	11.46	68	70	2	0
❶	DISH	JMA Wireless	MX08FRO665-21	Panel	2000	6	160	6011	7.6	55.5	16.16	62	70	2	0
❶	DISH	JMA Wireless	MX08FRO665-21	Panel	2100	6	160	7567	7.6	55.5	16.66	64	70	2	0
❷	DISH	JMA Wireless	MX08FRO665-21	Panel	600	6	120	1637	7.6	55.5	11.46	68	220	2	0
❷	DISH	JMA Wireless	MX08FRO665-21	Panel	2000	6	160	6011	7.6	55.5	16.16	62	220	2	0
❷	DISH	JMA Wireless	MX08FRO665-21	Panel	2100	6	160	7567	7.6	55.5	16.66	64	220	2	0
❸	DISH	JMA Wireless	MX08FRO665-21	Panel	600	6	120	1637	7.6	55.5	11.46	68	330	2	0
❸	DISH	JMA Wireless	MX08FRO665-21	Panel	2000	6	160	6011	7.6	55.5	16.16	62	330	2	0
❸	DISH	JMA Wireless	MX08FRO665-21	Panel	2100	6	160	7567	7.6	55.5	16.66	64	330	2	0

The area below the antennas, at street level, is of interest in terms of potential "uncontrolled" exposure of the general public, so the antenna's vertical-plane emission characteristic is used in the calculations, as it is a key determinant of the relative amount of RF emissions in the "downward" direction.

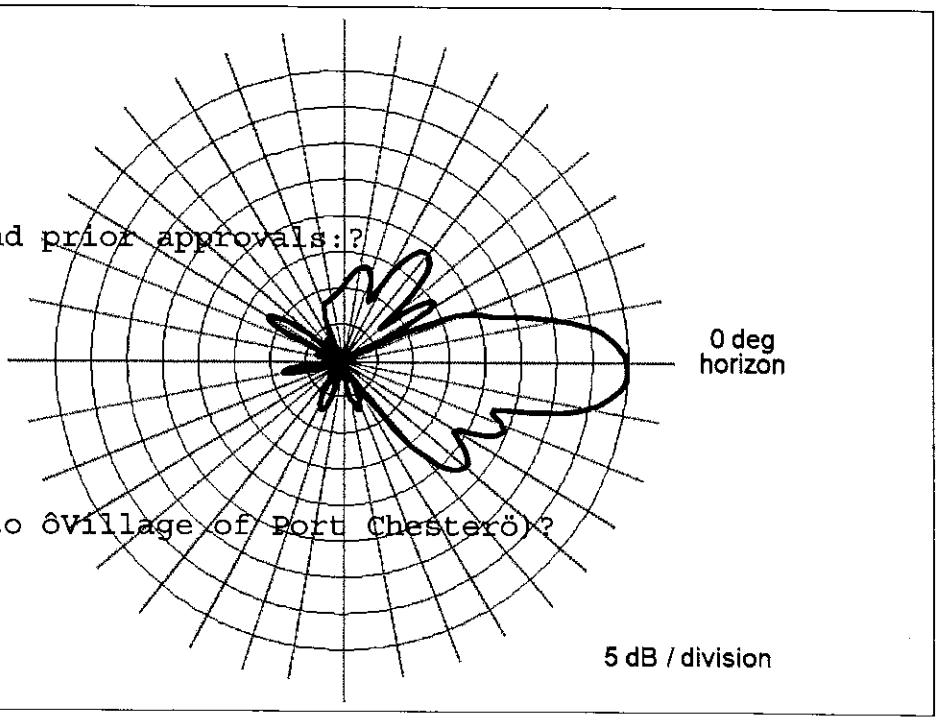
By way of illustration, Figure 1 that follows shows the vertical-plane radiation pattern of the proposed antenna model in the 600 MHz frequency band. In this type of antenna radiation pattern diagram, the antenna is effectively pointed at the three o'clock position (the horizon) and the relative strength of the pattern at different angles is described using decibel units.

Note that the use of a decibel scale to describe the relative pattern at different angles actually serves to significantly understate the actual focusing effects of the antenna. Where the antenna pattern reads 20 dB the relative RF energy emitted at the corresponding downward angle is 1/100th of the maximum that occurs in the main beam (at 0 degrees); at 30 dB, the energy is only 1/1000th of the maximum.

Finally, note that the automatic pattern-scaling feature of our internal software may skew side-by-side visual comparisons of different antenna models, or even different parties' depictions of the same antenna model.

.405W.3.Eligible Facilities Requests for
Building InspectorÆs
Port ChesterÆs Planning C
The fee for the Eligible Facilities Request is $1,750.00
ApplicantÆs Name:
Site OwnerÆs Name:
01202021?
?
?
?
?
?
Identify any relevant and prior approvals:?
?
?
?
?
?
?
?
?
?
?_ (check made payable to ôVillage of Port Chesterö)?
?
?
?
?
?
?

Figure 4. JMA Wireless MX08RO665-21 – 600 MHz Vertical-plane Pattern



As noted at the outset, there are other existing wireless antenna operations to include in the compliance assessment. For each of the wireless operators, we will conservatively assume operation with maximum channel capacity and at maximum transmitter power per channel to be used by each wireless operator in each of their respective FCC-licensed frequency bands.

The table that follows summarizes the relevant data for the existing antenna operations.

Carrier	Antenna Manufacturer	Antenna Model	Type	Freq (MHz)	Total ERP (watts)	Ant. Gain (dBd)	Azimuth
AT&T	Generic	Generic	Panel	700	4945	11.26	N/A
AT&T	Generic	Generic	Panel	850	2400	11.76	N/A
AT&T	Generic	Generic	Panel	1900	5756	15.56	N/A
AT&T	Generic	Generic	Panel	2100	5890	15.66	N/A
AT&T	Generic	Generic	Panel	2300	4131	16.16	N/A
Clearwire	Generic	Generic	Panel	2500	2972	15.70	N/A
Sprint	Generic	Generic	Panel	800	2168	13.36	N/A
Sprint	Generic	Generic	Panel	1900	6168	15.86	N/A
Sprint	Generic	Generic	Panel	2500	4669	15.90	N/A
T-Mobile	Generic	Generic	Panel	600	3163	12.96	N/A
T-Mobile	Generic	Generic	Panel	700	867	13.36	N/A
T-Mobile	Generic	Generic	Panel	1900	4123	15.36	N/A
T-Mobile	Generic	Generic	Panel	1900	1452	15.60	N/A
T-Mobile	Generic	Generic	Panel	2100	4626	15.86	N/A
T-Mobile	Generic	Generic	Panel	1900	1419	15.50	N/A
T-Mobile	Generic	Generic	Panel	2500	12804	22.35	N/A
Verizon Wireless	Generic	Generic	Panel	746	2400	11.76	N/A
Verizon Wireless	Generic	Generic	Panel	869	5166	12.36	N/A
Verizon Wireless	Generic	Generic	Panel	1900	5372	15.26	N/A
Verizon Wireless	Generic	Generic	Panel	2100	5625	15.46	N/A
AMS Spectrum Holdings	Generic	Generic	Omnidirectional	929	1000	9.0	N/A

*Generic antenna patterns have been used from a library of panel, omnidirectional, microwave and broadcast patterns that are representative of the actual antenna.

Compliance Analysis

FCC Office of Engineering and Technology Bulletin 65 ("OET Bulletin 65") provides guidelines for mathematical models to calculate the RF levels at various points around transmitting antennas. Different models apply in different areas around antennas, with one model applying to street level around a site, and another applying to the rooftop near the antennas. We will address each area of interest in turn in the subsections that follow.

Street Level Analysis

At street level around an antenna site (in what is called the "far field" of the antennas), the RF levels are directly proportional to the total antenna input power and the relative antenna gain in the downward direction of interest – and the levels are otherwise inversely proportional to the square of the straight-line distance to the antenna.

Conservative calculations also assume the potential RF exposure is enhanced by reflection of the RF energy from the intervening ground. Our calculations will assume a 100% "perfect", mirror-like reflection, which is the absolute worst-case scenario.

The formula for street-level MPE compliance calculations from any given wireless antenna operation is as follows:

$$MPE\% = (100 * TxPower * 10^{(Gmax-Vdisc)/10} * 4) / (MPE * 4\pi * R^2)$$

where

MPE%	=	RF level, expressed as a percentage of the FCC general population MPE limit
100	=	factor to convert the raw result to percentage form
TxPower	=	maximum net power into antenna sector, in milliwatts, a function of the number of channels per sector, the transmitter power per channel, and line loss

$10^{(Gmax-Vdisc)/10}$	=	numeric equivalent of the relative antenna gain in the downward direction of interest, referenced to any applied antenna mechanical downtilt
4	=	factor to account for a 100-percent-efficient energy reflection from the ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
MPE	=	FCC general population MPE limit
R	=	straight-line distance from the RF source to the point of interest, centimeters

The MPE% calculations are performed out to a distance of 500 feet from the facility to points 6.5 feet (approximately two meters, the FCC-recommended standing height) off the ground, as illustrated in Figure 2, below.

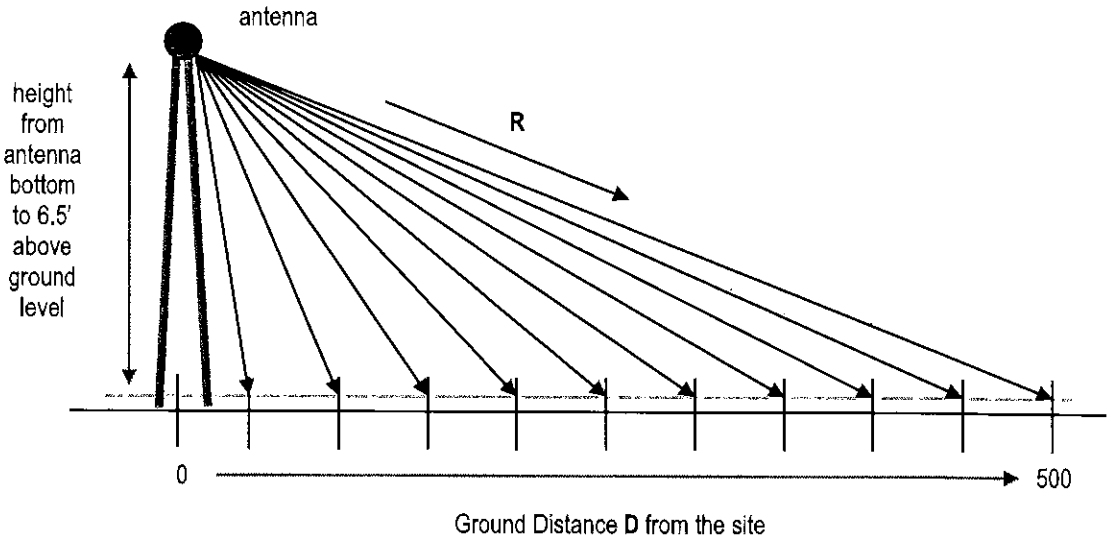


Figure 2. Street-level MPE% Calculation Geometry

It is popularly understood that the farther away one is from an antenna, the lower the RF level – which is generally but not universally correct. The results of MPE% calculations fairly close to the site will reflect the variations in the vertical-plane antenna pattern as well as the variation in straight-line distance to the antenna.

Therefore, RF levels may actually increase slightly with increasing distance within the range of zero to 500 feet from the site. As the distance approaches 500 feet and beyond, though, the antenna pattern factor becomes less significant, the RF

levels become primarily distance-controlled and, as a result, the RF levels generally decrease with increasing distance. In any case, the RF levels more than 500 feet from a wireless antenna site are well understood to be sufficiently low to be comfortably in compliance.

According to the FCC, when directional antennas (such as panels) are used, compliance assessments are based on the RF effect of a single (facing) antenna sector, as the effects of directional antennas pointed away from the point(s) of interest are considered insignificant. If the different parameters apply in the different sectors, compliance is based on the worst-case parameters.

Street-level FCC compliance for a collocated antenna site is assessed in the following manner. At each distance point along the ground, an MPE% calculation is made for each antenna operation, and the sum of the individual MPE% contributions at each point is compared to 100 percent, the normalized reference for compliance with the MPE limit. We refer to the sum of the individual MPE% contributions as "total MPE%", and any calculated total MPE% result exceeding 100 percent is, by definition, higher than the FCC limit and represents non-compliance and a need to mitigate the potential exposure. If all results are consistently below 100 percent, on the other hand, that set of results serves as a clear and sufficient demonstration of compliance with the MPE limit.

Note that the following conservative methodology and assumptions are incorporated into the MPE% calculations on a general basis:

1. The antennas are assumed to be operating continuously at maximum power and maximum channel capacity.
2. The power-attenuation effects of shadowing or other obstructions to the line-of-sight path from the antenna to the point of interest are ignored.
3. The calculations intentionally minimize the distance factor (R) by assuming a 6'6" human and performing the calculations from the bottom (rather than the centerline) of each operator's lowest-mounted antenna, as applicable.
4. The calculations also conservatively take into account, when applicable, the different technical characteristics and related RF effects of the use of

multiple antennas for transmission in the same frequency band.

5. The RF exposure at ground level is assumed to be 100-percent enhanced (increased) via a "perfect" field reflection from the intervening ground.

The net result of these assumptions is to intentionally and significantly overstate the calculated RF levels relative to the levels that will actually result from the antenna operations – and the purpose of this conservatism is to allow very "safe-side" conclusions about compliance.

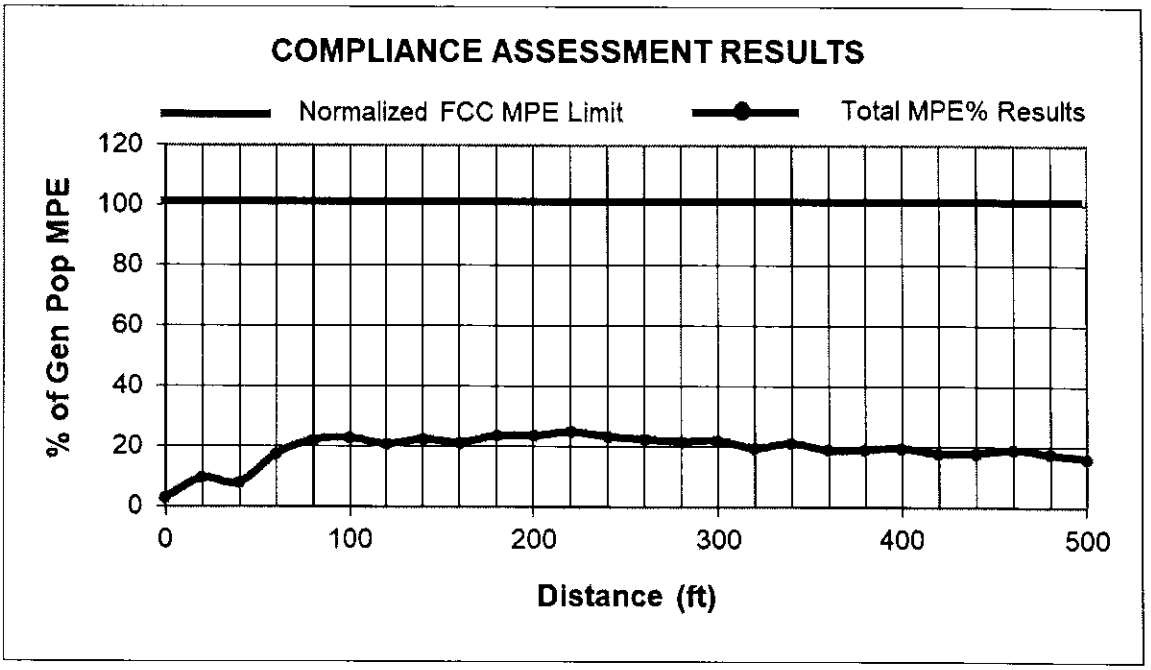
The tables that follow provide the results of the MPE% calculations for each antenna operation, with the overall worst-case calculated result highlighted in bold in the last column of the last table. Note that the parameters for each DISH antenna sector are identical, and the calculations reflect the worst-case result for any/all sectors.

Ground Distance (ft)	DISH 600 MHz MPE%	DISH 2000 MHz MPE%	DISH 2100 MHz MPE%	AT&T MPE%	Clearwire MPE%	Sprint MPE%	Subtotal MPE%
0	0.0067	0.0088	0.0002	0.5308	0.0024	0.1841	0.7330
20	0.0341	0.0889	0.0330	1.6464	0.0236	0.1206	1.9466
40	0.4201	0.0257	0.9993	2.5402	0.0040	0.4413	4.4306
60	0.5839	2.3051	1.7486	5.3702	0.0046	1.0141	11.0265
80	0.2905	0.0338	0.0831	5.8323	0.0321	0.3469	6.6187
100	0.4898	0.3859	0.2669	3.6068	0.0967	0.4452	5.2913
120	0.2603	0.2147	0.2248	1.3317	0.0118	0.5388	2.5821
140	0.1685	0.1791	0.1390	1.3107	0.0271	0.3217	2.1461
160	0.2758	0.1436	0.1280	1.9736	0.0337	0.0984	2.6531
180	0.6101	0.1786	0.2522	4.0654	0.0183	0.3361	5.4607
200	1.1193	0.0043	0.0202	4.9279	0.0233	0.5381	6.6331
220	1.3182	0.0189	0.0097	6.9374	0.0388	0.5684	8.8914
240	1.4700	0.0505	0.0542	5.8697	0.0520	0.8010	8.2974
260	1.2591	0.0433	0.0464	5.9414	0.0535	0.6448	7.9885
280	1.3725	0.0221	0.0342	6.0067	0.0464	0.8693	8.3512
300	1.4423	0.0061	0.0002	6.2991	0.0455	1.0609	8.8541
320	1.2712	0.0054	0.0002	5.5522	0.0401	0.9351	7.8042
340	1.3261	0.1346	0.1145	6.2072	0.0648	1.0199	8.8671
360	1.1851	0.1203	0.1024	5.5478	0.0579	0.9115	7.9250
380	1.2233	0.4720	0.4829	4.9876	0.0521	0.9935	8.2114
400	1.1055	0.4265	0.4365	5.8103	0.1103	0.8682	8.7573
420	1.0040	0.3874	0.3964	5.2767	0.1002	0.7885	7.9532
440	1.0041	0.8282	0.9082	4.8131	0.0914	0.9282	8.5732
460	0.9195	0.7585	0.8317	5.6005	0.1789	0.8474	9.1365
480	0.8452	0.6972	0.7644	5.1478	0.1645	0.7789	8.3980
500	0.7795	0.6430	0.7050	4.7477	0.1517	0.7183	7.7452

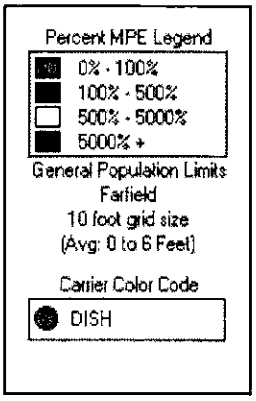
Ground Distance (ft)	Subtotal MPE%	T-Mobile MPE%	Verizon Wireless MPE%	AMS Spectrum Holdings MPE%	Total MPE%
0	0.7330	1.8093	0.1536	0.0306	2.7265
20	1.9466	6.2387	0.8749	0.3951	9.4553
40	4.4306	2.5036	0.8219	0.1672	7.9233
60	11.0265	4.4305	1.8164	0.0352	17.3086
80	6.6187	12.1716	3.2851	0.0994	22.1748
100	5.2913	15.6076	2.0020	0.0197	22.9206
120	2.5821	17.7843	0.3742	0.0878	20.8284
140	2.1461	19.9628	0.3568	0.0143	22.4800
160	2.6531	17.4895	1.1208	0.0428	21.3062
180	5.4607	15.8934	2.3654	0.0326	23.7521
200	6.6331	14.1475	2.8521	0.0040	23.6367
220	**8.8914**	**12.7100**	**3.2878**	**0.0014**	**24.8906**
240	8.2974	11.3459	3.7186	0.0064	23.3683
260	7.9885	10.4207	4.0818	0.0062	22.4972
280	8.3512	9.0349	4.3576	0.0038	21.7475
300	8.8541	8.5433	4.7011	0.0011	22.0996
320	7.8042	7.6236	4.1438	0.0002	19.5718
340	8.8671	7.8124	4.4752	0.0037	21.1584
360	7.9250	6.9826	3.9998	0.0114	18.9188
380	8.2114	7.2857	3.5960	0.0205	19.1136
400	8.7573	6.8187	3.9852	0.0186	19.5798
420	7.9532	6.1925	3.6193	0.0251	17.7901
440	8.5732	6.0134	3.3013	0.0264	17.9143
460	9.1365	6.2611	3.6730	0.0242	19.0948
480	8.3980	5.7550	3.3761	0.0223	17.5514
500	7.7452	5.3077	3.1137	0.0180	16.1846

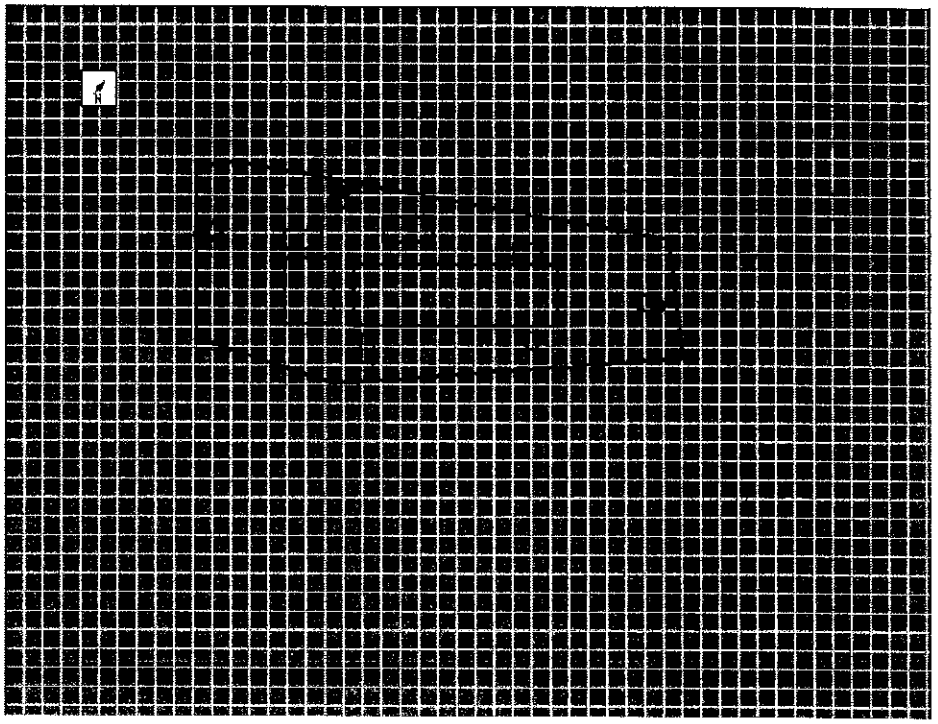
As indicated, the maximum calculated overall RF level is 24.8906 percent of the FCC MPE limit – well below the 100-percent reference for compliance.

A graph of the overall calculation results, provided on the next page, provides probably a clearer *visual* illustration of the relative insignificance of the calculated RF levels. The line representing the overall calculation shows an obviously clear, consistent margin to the FCC MPE limit.



The graphic output for the areas at street level surrounding the site is reproduced below





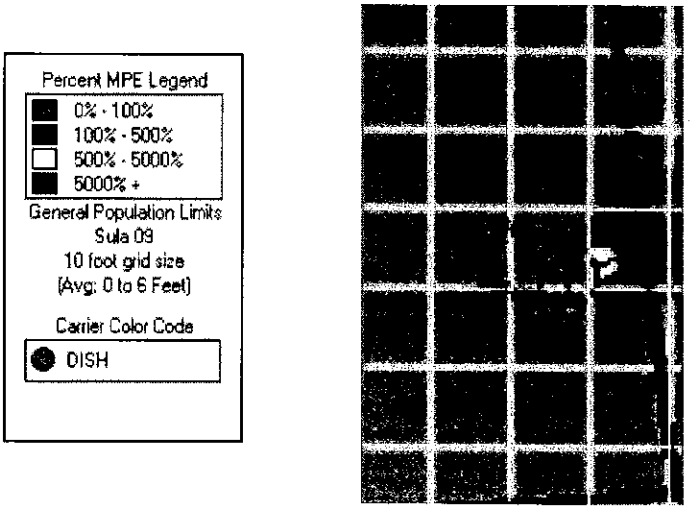
RoofMaster – Alpha / Beta / Gamma sectors

Rooftop Analysis

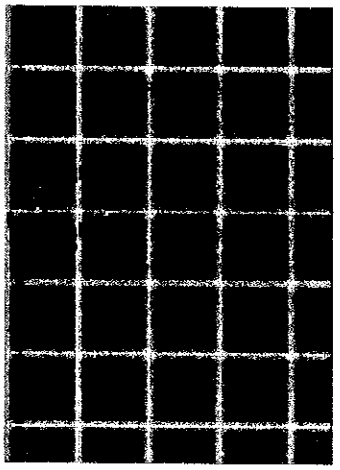
The compliance analysis for the rooftop is performed using the RoofMaster program by Waterford Consultants.

RF levels in the near field of an antenna depend on the power input to the antenna, the antenna's length and horizontal beamwidth, the mounting height of the antenna above nearby roof, and one's position and distance from the antenna. RF levels in front of a directional antenna are higher than they are to the sides or rear, and in any given horizontal direction are inversely proportional to the straight-line distance to the antenna.

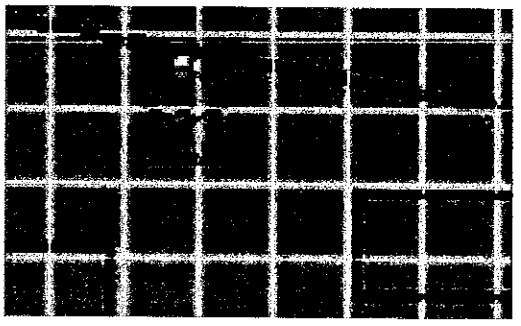
The RoofMaster graphic outputs for the areas surrounding the DISH antennas are reproduced below and on the pages that follow.



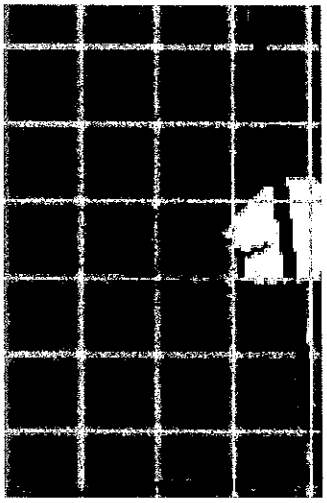
RoofMaster – Main Roof – Alpha sector



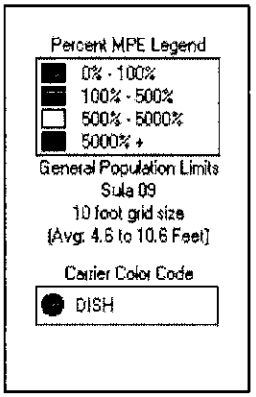
RoofMaster – Main Roof – Beta sector

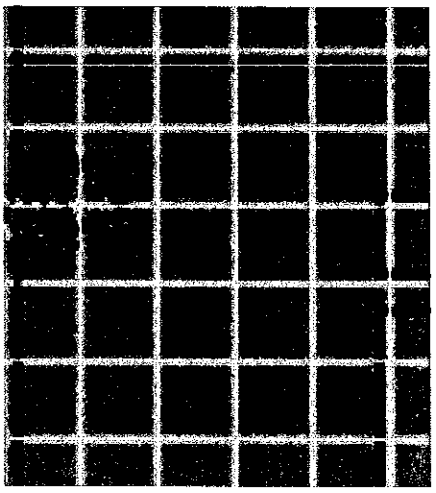


RoofMaster – Main Roof – Gamma sector

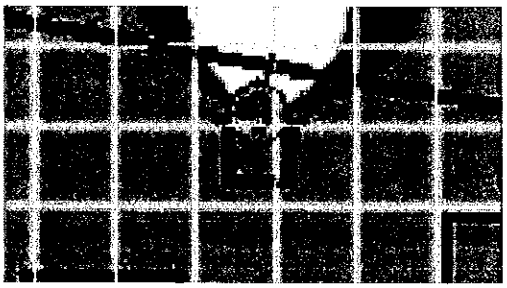


RoofMaster – Same Height as the Antennas – Alpha sector

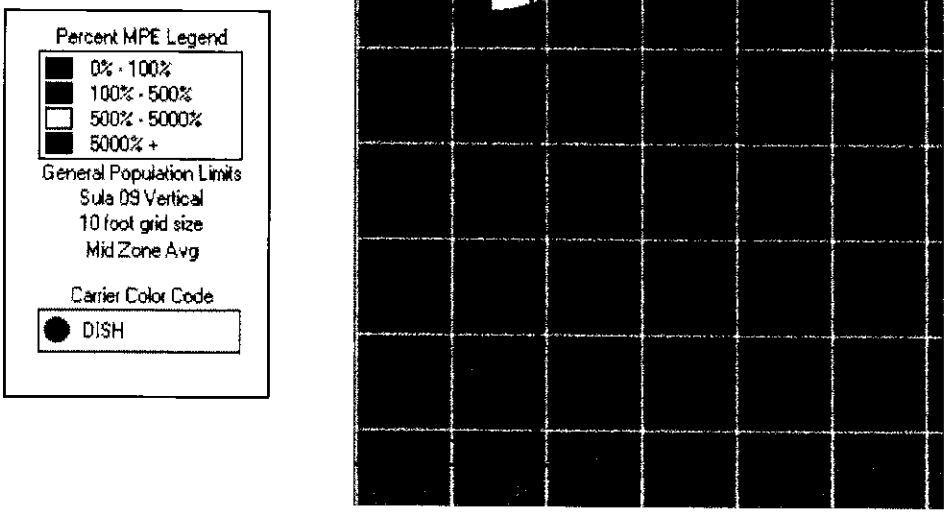




RoofMaster – Same Height as the Antennas – Beta sector



RoofMaster – Same Height as the Antennas – Gamma sector



RoofMaster – Same Height as the Antennas – Alpha / Beta / Gamma sectors

As indicated by the color coding of the main roof, the calculated RF levels satisfy the FCC general population MPE limit. The maximum RF level in any accessible area near the DISH antennas is 717.35 percent of the FCC general population MPE limit. Emissions from the proposed DISH antenna operations do not contribute more than 5% to any other antenna operations at the site where the FCC MPE limit may be exceeded.

At the same height as the DISH antennas, the FCC general population is potentially exceeded. The maximum calculated RF level at the same height as the DISH antennas is 4,796.26 percent of the FCC general population MPE limit.

Per DISH guidelines and consistent with FCC guidance on rooftop compliance, barriers are to be installed at the DISH Alpha and Gamma antennas, with Caution signs on the barriers and at the antennas. Caution signs are to be installed at the DISH Beta antenna. In addition, NOC Information and Guidelines signs are to be installed at the roof access point(s).

Compliance Conclusion

According to the FCC, the MPE limit has been constructed in such a manner that continuous human exposure to RF emissions up to and including 100 percent of the MPE limit is acceptable and safe.

The street-level analysis in this case shows a maximum RF level of 24.8906 percent of the applicable FCC general population MPE limit. The analyses indicate that the calculated RF levels at each of the DISH antenna sectors potentially exceed the FCC MPE limit. Per DISH guidelines and consistent with FCC guidance on rooftop compliance, barriers are to be installed at the DISH Alpha and Gamma antennas, with Caution signs on the barriers and at the antennas. Caution signs are to be installed at the DISH Beta antenna. In addition, NOC Information and Guidelines signs are to be installed at the roof access point(s).

The results of the calculations, along with the proposed RF mitigation, combine to satisfy the FCC's RF compliance requirements and associated guidelines at street level around the site and on the subject roof.

Moreover, because of the conservative calculation methodology and operational assumptions we applied in the analysis, RF levels actually caused by the antennas will be even less significant than the calculation results here indicate.

Certification

It is the policy of Pinnacle Telecom Group that all FCC RF compliance assessments are reviewed, approved, and signed by the firm's Chief Technical Officer who certifies as follows:

1. I have read and fully understand the FCC regulations concerning RF safety and the control of human exposure to RF fields (47 CFR 1.1301 *et seq*).
2. To the best of my knowledge, the statements and information disclosed in this report are true, complete and accurate.
3. The analysis of site RF compliance provided herein is consistent with the applicable FCC regulations, additional guidelines issued by the FCC, and industry practice.
4. The results of the analysis indicate that the subject antenna operations will be in compliance with the FCC regulations concerning the control of potential human exposure to the RF emissions from antennas.

4/25/22

Daniel J. Collins
Chief Technical Officer
Pinnacle Telecom Group, LLC

Date

Appendix A. Documents Used to Prepare the Analysis

RFDS: RFDS-NJJER01107B-Preliminary-20211210-v.1_20211213094455

CD: NJJER01107B_PrelimCD_20220113113924

Appendix B. Background on the FCC MPE Limit

As directed by the Telecommunications Act of 1996, the FCC has established limits for maximum continuous human exposure to RF fields.

The FCC maximum permissible exposure (MPE) limits represent the consensus of federal agencies and independent experts responsible for RF safety matters. Those agencies include the National Council on Radiation Protection and Measurements (NCRP), the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the American National Standards Institute (ANSI), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). In formulating its guidelines, the FCC also considered input from the public and technical community – notably the Institute of Electrical and Electronics Engineers (IEEE).

The FCC's RF exposure guidelines are incorporated in Section 1.301 *et seq* of its Rules and Regulations (47 CFR 1.1301-1.1310). Those guidelines specify MPE limits for both occupational and general population exposure.

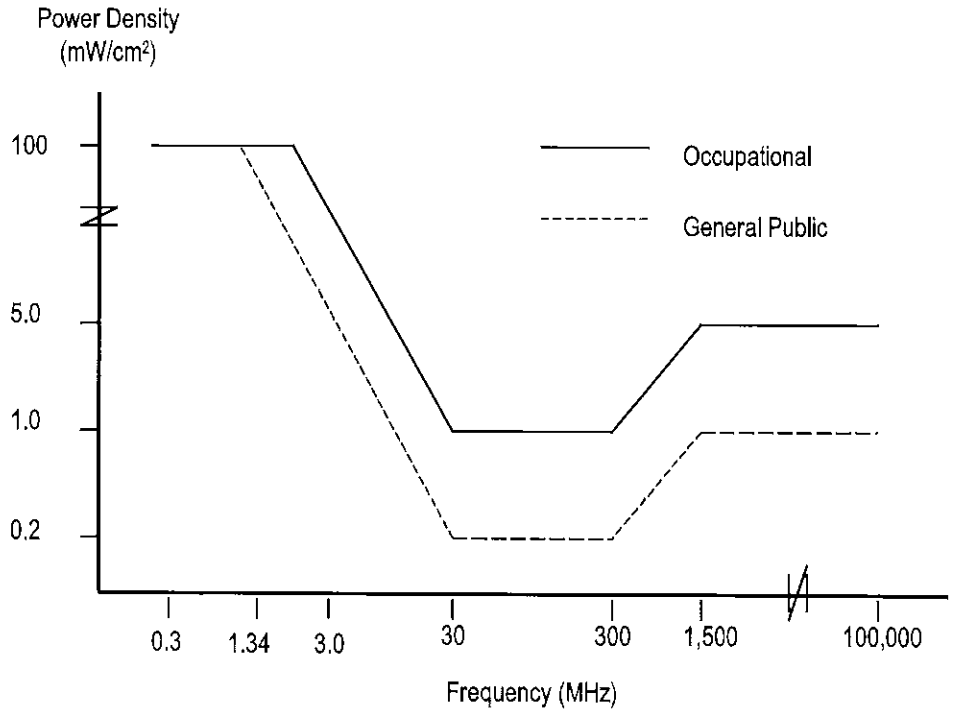
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in the form of heat). The occupational MPE guidelines incorporate a safety factor of 10 or greater with respect to RF levels known to represent a health hazard, and an additional safety factor of five is applied to the MPE limits for general population exposure. Thus, the general population MPE limit has a built-in safety factor of more than 50. The limits were constructed to appropriately protect humans of both sexes and all ages and sizes and under all conditions – and continuous exposure at levels equal to or below the applicable MPE limits is considered to result in no adverse health effects or even health risk.

The reason for *two* tiers of MPE limits is based on an understanding and assumption that members of the general public are unlikely to have had appropriate RF safety training and may not be aware of the exposures they receive; occupational exposure in controlled environments, on the other hand, is assumed to involve individuals who have had such training, are aware of the exposures, and know how to maintain a safe personal work environment.

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm^2). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm^2 reference, for the different radio frequency ranges.

Frequency Range (F) (MHz)	Occupational Exposure (mW/cm^2)	General Public Exposure (mW/cm^2)
0.3 - 1.34	100	100
1.34 - 3.0	100	$180 / F^2$
3.0 - 30	$900 / F^2$	$180 / F^2$
30 - 300	1.0	0.2
300 - 1,500	F / 300	F / 1500
1,500 - 100,000	5.0	1.0

The diagram below provides a graphical illustration of both the FCC's occupational and general population MPE limits.



Because the FCC's RF exposure limits are frequency-shaped, the exact MPE limits applicable to the instant situation depend on the frequency range used by the systems of interest.

The most appropriate method of determining RF compliance is to calculate the RF power density attributable to a particular system and compare that to the MPE limit applicable to the operating frequency in question. The result is usually expressed as a percentage of the MPE limit.

For potential exposure from multiple systems, the respective percentages of the MPE limits are added, and the total percentage compared to 100 (percent of the limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

Note that the FCC "categorically excludes" all "non-building-mounted" wireless antenna operations whose mounting heights are more than 10 meters (32.8 feet) from the routine requirement to demonstrate compliance with the MPE limit, because such operations "are deemed, individually and cumulatively, to have no significant effect on the human environment". The categorical exclusion also applies to *all* point-to-point antenna operations, regardless of the type of structure they're mounted on. Note that the FCC considers any facility qualifying for the categorical exclusion to be automatically in compliance.

In addition, FCC Rules and Regulations Section 1.1307(b)(3) describes a provision known in the industry as "the 5% rule". It describes that when a specific location – like a spot on a rooftop – is subject to an overall exposure level exceeding the applicable MPE limit, operators with antennas whose MPE% contributions at the point of interest are less than 5% are exempted from the obligation otherwise shared by all operators to bring the site into compliance, and those antennas are automatically deemed by the FCC to satisfy the rooftop compliance requirement.

FCC References on RF Compliance

47 CFR, FCC Rules and Regulations, Part 1 (Practice and Procedure), Section 1.1310 (Radiofrequency radiation exposure limits).

FCC Second Memorandum Opinion and Order and Notice of Proposed Rulemaking (FCC 97-303), *In the Matter of Procedures for Reviewing Requests for Relief From State and Local Regulations Pursuant to Section 332(c)(7)(B)(v) of the Communications Act of 1934 (WT Docket 97-192), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (ET Docket 93-62), and Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service Transmitting Facilities*, released August 25, 1997.

FCC First Memorandum Opinion and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released December 24, 1996.

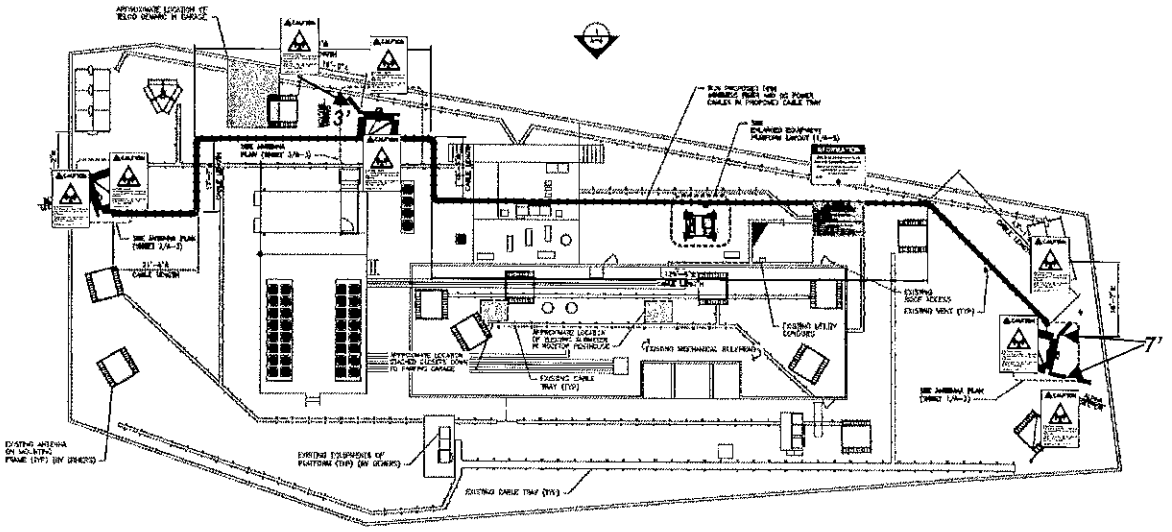
FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

FCC Report and Order, Notice of Proposed Rulemaking, Memorandum Opinion and Order (FCC 19-126), *Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields; Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies,* released December 4, 2019.

FCC Office of Engineering and Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, August 1997.

FCC Office of Engineering and Technology (OET) Bulletin 56, "Questions and Answers About Biological Effects and Potential Hazards of RF Radiation", edition 4, August 1999.

Appendix C. Proposed Signage



NOC Information Sign		Caution Sign	
Guidelines Sign		Warning Sign	
Notice Sign			

Appendix D. Summary of Expert Qualifications

Daniel J. Collins, Chief Technical Officer, Pinnacle Telecom Group, LLC

Synopsis:	• 40+ years of experience in all aspects of wireless system engineering, related regulation, and RF exposure • Has performed or led RF exposure compliance assessments on more than 20,000 antenna sites since the latest FCC regulations went into effect in 1997 • Has provided testimony as an RF compliance expert more than 1,500 times since 1997 • Have been accepted as an FCC compliance expert in New York, New Jersey, Connecticut, Pennsylvania and more than 40 other states, as well as by the FCC
Education:	• B.E.E., City College of New York (Sch. Of Eng.), 1971 • M.B.A., 1982, Fairleigh Dickinson University, 1982 • Bronx High School of Science, 1966
Current Responsibilities:	• Leads all PTG staff work involving RF safety and FCC compliance, microwave and satellite system engineering, and consulting on wireless technology and regulation
Prior Experience:	• Edwards & Kelcey, VP – RF Engineering and Chief Information Technology Officer, 1996-99 • Bellcore (a Bell Labs offshoot after AT&T's 1984 divestiture), Executive Director – Regulation and Public Policy, 1983-96 • AT&T (Corp. HQ), Division Manager – RF Engineering, and Director – Radio Spectrum Management, 1977-83 • AT&T Long Lines, Group Supervisor – Microwave Radio System Design, 1972-77
Specific RF Safety / Compliance Experience:	• Involved in RF exposure matters since 1972 • Have had lead corporate responsibility for RF safety and compliance at AT&T, Bellcore, Edwards & Kelcey, and PTG • While at AT&T, helped develop the mathematical models for calculating RF exposure levels • Have been relied on for compliance by all major wireless carriers, as well as by the federal government, several state and local governments, equipment manufacturers, system integrators, and other consulting / engineering firms
Other Background:	• Author, *Microwave System Engineering* (AT&T, 1974) • Co-author and executive editor, *A Guide to New Technologies and Services* (Bellcore, 1993) • National Spectrum Management Association (NSMA) – former three-term President and Chairman of the Board of Directors; was founding member, twice-elected Vice President, long-time member of the Board, and was named an NSMA Fellow in 1991 • Have published more than 35 articles in industry magazines

Exhibit E

Lease Agreement

Site ID: CT95623-M
Site Name: Greenwich (Putnam)

Licensee Site ID: NJJER01107B

LICENSE AGREEMENT

This license agreement ("**Agreement**") is made as of 4/4/2022 ("**Agreement Date**"), by and between:

SBA SITE MANAGEMENT, LLC, a Florida limited liability company having an office at 900 South Highway Drive, Suite 201, Fenton, Missouri 63026 ("**Licensor**" or "**SBAM**"),

AND

DISH WIRELESS L.L.C., a Colorado limited liability company having an office at 9601 South Meridian Boulevard, Englewood, Colorado 80112 ("**Licensee**").

The property which is the subject of this Agreement are those portions of the realty and/or buildings or structures located thereupon which are owned or leased by Licensor, or which Licensor has a right to the use of, known as Greenwich (Putnam) and located at 411 West Putnam Avenue, City of Greenwich, County of Fairfield, Connecticut 06830 ("**Premises**").

In consideration of the mutual covenants and obligations herein contained, Licensor and Licensee agree as follows:

1. **License.** Licensor grants to Licensee: (A) a non-exclusive right to use the Premises for the installation removal, use, testing, operation, repair, replacement, monitoring and maintenance of the communications equipment ("**Equipment**") described on Exhibit "A" attached hereto; and (B) an exclusive right to use the portion of the Premises set forth in Exhibit "D" attached hereto for the installation removal, use, testing, operation, repair, replacement, monitoring and maintenance of the Equipment. Licensee is solely responsible for determining whether the Premises are suitable for its intended use.

2. **Installation.**

A. Licensee shall be responsible for obtaining all permits, licenses and other approvals required by any municipal, county, state or Federal governmental or regulatory body or agency, including a license issued by the Federal Communications Commission ("**FCC**"), for the installation and operation of its Equipment at the Premises. Before commencing said installation or any future modifications, Licensee shall seek Licensor's approval of Licensee's plans and specifications, provided, however, that such approval shall not be required for any maintenance pertaining to Licensee's Equipment. Subject to the approval of the owner of the Premises ("**Premises' Owner**"), which Licensor shall secure prior to the Agreement Date, Licensor shall not unreasonably withhold, condition or delay its approval of said plans, and if the Underlying Agreement provides a timeline for deemed approval of plans and specifications, then Licensee's plans and specifications shall be deemed approved in accordance with the Underlying Agreement. The location at which the Equipment will be installed shall be set forth in Exhibit "D" attached hereto, in accordance with the approved plans and specifications. Licensor and Licensee agree that if the location of Licensee's Equipment set forth in Exhibit "D" differs from the location of Licensee's Equipment approved by Licensor following the Agreement Date, then Licensor and Licensee may replace Exhibit "D" upon mutual agreement of the parties (as evidenced by the initials of a representative of each party being set forth in the updated form of Exhibit "D") without requiring a formal amendment to this Agreement.

B. The Equipment shall be installed in accordance with Licensor's technical standards as set forth in Exhibit "B", and principles of good workmanship. Licensee shall notify Licensor (email being sufficient) at least forty-eight (48) hours prior to the commencement of installation of the Equipment. The Equipment and frequencies that are identified in Exhibit "A", plus any unlicensed frequencies and/or frequencies used solely in connection with any LTE antenna, satellite dish or microwave antenna used for backhaul ("**Additional Permitted Frequencies**") are the only equipment and frequencies Licensee is authorized to

use and operate under this Agreement unless and until modified by notice to Licensor, and are to be used exclusively by Licensee and/or its Affiliates. Notwithstanding the foregoing, nothing contained herein is intended to restrict Licensee from using any of its (or its Affiliates') FCC-licensed frequencies. Licensee's frequencies used at the Premises shall be identified in this Agreement solely for the purpose of reducing the likelihood of interference with those frequencies from future users at the Premises. Licensee may change or add to the frequencies used at the Premises at any time upon notice to Licensor, provided that the Parties thereafter execute an amendment to this Agreement, which amendment shall be for the purpose of recordkeeping and shall not delay Licensee's deployment and use of such frequencies.

C. Licensee may utilize the Premises for the installation, removal, use, testing, operation, repair, replacement, monitoring and maintenance of Licensee's Equipment as identified in Exhibit "A", as may be amended, and shall transmit and receive only within the Permitted Frequencies (defined below) specified in Exhibit "A" and the Additional Permitted Frequencies, as may be amended, with respect to the provision of wireless services or other services to customers or entities in connection with Licensee's deployment and use of backhaul on or to the Premises (the "**Purpose**"). The Parties expressly agree and acknowledge that the foregoing sentence shall not be deemed to limit or restrict Licensee's equipment change rights and abilities as otherwise set forth in this Agreement. Licensee's permitted use and the Purpose with respect to the Premises shall include "Wholesale Activity" as defined below. Licensee shall not engage in any Network Hosting, nor shall Licensee sublease or license its interest in this Agreement, in whole or in part either directly or through subsidiaries or affiliated entities (except as permitted under Section 20 of this Agreement). For purposes of this Agreement, the term "**Wholesale Activity**" shall include any: (i) industry standard roaming services and/or mobile virtual network service; and (ii) network slicing (the ability of Licensee to create multiple virtual networks within Licensee's common physical network infrastructure through software-defined networking (SDN), network functions virtualization (NFV), and other network virtualization technologies in order to dedicate a portion of Licensee's network to support a given use case or series of use cases). As used herein the term "**Network Hosting**" means the use of the Licensee Equipment at the Premises to operate the licensed frequencies of any person or entity, other than the Permitted Frequencies. "**Permitted Frequencies**" are defined as: (a) any frequencies for which Licensee holds the license to operate such frequencies directly from the FCC (either directly in its name or the name of an affiliate), (b) upon Licensor's prior written consent, any frequencies for which Licensee has licensed the right to operate such frequencies from the person or entity who holds the license to operate such frequencies and has filed a spectrum lease relating thereto with the FCC in an arm's length transaction at fair market value; provided that Licensor's consent shall not be required for spectrum licensed by Licensee from any person(s) or entity(ies) that: (x) holds at the applicable time Licensee enters into such spectrum license(s) the right to operate frequencies totaling less than 15 MHz of spectrum in the aggregate (as to all such persons and entities) within the collective bands between 600 MHz and 5 GHz in the given geography where the Premises is located; and (y) does not have an FCC buildout deadline with respect to such licensed spectrum within four (4) years from the date Licensee enters into such spectrum license(s) and where such buildout deadline requires the offering of retail telecommunications services (i.e. voice, text and data services) and/or broadband services to be made available to the general public; provided such spectrum shall no longer be considered a Permitted Frequency within the two (2) years preceding the end of such FCC buildout deadline (unless such FCC buildout deadline has been modified to remove the requirement to offer retail telecommunications services and/or broadband services to the general public in which event such spectrum shall remain a Permitted Frequency) or if at the time Licensee licenses such spectrum, such person(s) or entity(ies) is a tenant, or was a tenant within the previous two (2) years, at the subject Premises (unless Licensor in its sole discretion otherwise consents); (c) upon prior written Notice to Licensor, any CBRS frequencies which are considered licensed-by-rule under applicable law including, but not limited to, through General Authorized Access use as described in 47 CFR Part 96; (d) upon prior written Notice to Licensor, Licensee's utilization of spectrum where the FCC does not issue a license and such frequencies are available for use by the general public; or (e) any other frequencies that Licensor consents to in its sole discretion. All such Permitted Frequencies shall be operated solely by Licensee at the Premises.

3. **Interference.** Licensee represents and warrants that the Equipment shall not (i) cause interference to the communications equipment of other users of the Premises existing on the Premises and in operation as of the date of installation of Licensee's Equipment; or (ii) create a legal nuisance at or upon the Premises. Licensee shall promptly remediate any interference with the electronic equipment and/or television or radio reception of Premises' Owner and residents/tenants of the Premises directly caused by the Equipment, following Licensee's receipt of notice thereof. Licensee shall not cause physical interference with, or otherwise obstruct the use of, the equipment of other users at or upon the Premises as of the date of installation of Licensee's Equipment. Licensee shall cooperate with Licensor to the extent reasonably necessary to determine the source of any interference believed to be emanating from Licensee's Equipment operating at the Premises. If Licensee's Equipment is determined to be the cause of any such interference, and such interference cannot be eliminated within forty-eight (48) hours after receipt of notice thereof from Licensor, Licensee shall discontinue use of the Equipment (except for intermittent operation for the purpose of testing following any remedial measures) and use diligent efforts to correct the interference until such time as Licensee, in good faith, believes that the interference has been remediated (such efforts the "**Mitigation Efforts**"). Licensor represents that all agreements executed by and between Licensor and future users of the Premises shall: (i) include language substantially similar to the foregoing; and (ii) prohibit Future Users (as defined below) from causing physical interference with or otherwise obstructing the use of Licensee's Equipment. In the event the communications equipment of a Future User causes interference to Licensee's Equipment, and the Future User's equipment was not installed on the Premises and in operation as of the date of installation of Licensee's Equipment, then Licensor shall use commercially reasonable efforts to cause such other user to engage in Mitigation Efforts. A "**Future User**" is a wireless operator operating communications equipment at the Premises pursuant to an agreement with Licensor that is fully executed after the Agreement Date.

4. **Access.**

A. Licensee and its employees, agents and contractors shall have access to the Premises between the hours of 9 A.M. and 5 P.M. Monday through Friday, or any greater timeframe as provided in the Underlying Agreement, upon at least two (2) days prior notice to Licensor (email being sufficient), for the purposes of installing, operating, maintaining, replacing, repairing and removing Licensee's Equipment. In the event of emergency or equipment malfunction, access shall be granted at any time, subject to the security, safety and identification procedures of the Premises' Owner. Notwithstanding the foregoing, Licensee's rights hereunder shall at all times be subject to the terms of any underlying Premises agreement attached hereto as Exhibit "C", as the same may be amended, modified or supplemented from time to time(the "**Underlying Agreement**"), if applicable, and Licensee shall not do or cause to be done anything that may or will violate the terms of the Underlying Agreement.

B. In the event of an emergency, Licensee and its employees, agents and contractors must notify SBAM of its emergency access requirements during emergency hours and/or emergency days (defined below) to the Premises at least two (2) hours prior to arrival. Security personnel at the Premises ("Licensor's Security Personnel"), shall be Licensor's authorized escort for emergency access. Licensor's Security Personnel's time shall be charged to SBAM at the Licensor's hourly billing rate in effect at that time. SBAM will bill Licensee and Licensee will pay SBAM for said charge.

(i) Emergency access, five (5) days per week, Monday – Friday, 5:01 PM to 7:59 AM ("Emergency Hours")
(ii) Emergency access, two (2) days per week, Saturday & Sunday, 12:00 AM to 11:59 PM ("Emergency Days")

5. **Term.**

A. This Agreement shall become effective upon the Agreement Date and shall continue in effect for a term of five (5) years (the "**Initial Term**"), unless terminated prior to the expiration of said term in

accordance with the provisions of this Agreement. For purposes of this Agreement, Licensee's rental payment obligations will commence on the date that is the first (1st) day of the month following the earlier to occur of: (A) the commencement of installation of Licensee's Equipment at the Premises; and (B) March 1, 2023 which is the date that is twelve (12) months following Licensee's receipt of the initial draft of this Agreement (in either case, the "**Commencement Date**"), but in no event earlier than the first (1st) day of the month following the Agreement Date.

B. Provided that (i) Licensee is not in default hereunder beyond any applicable cure periods; (ii) this Agreement has not been terminated; and (iii) Licensee has not notified Licensor at least one hundred eighty (180) days prior to the expiration of the then-current term of its desire not to renew the term, this Agreement shall automatically renew under the same terms and conditions for three (3) additional five (5)-year terms (each, a "**Renewal Term**"), subject to the increase in the Annual License Fee provided in Section 6 hereof. Notwithstanding the foregoing, Licensor may terminate this Agreement immediately upon the expiration or termination of the Underlying Agreement, provided that Licensor: (A) provides Licensee with the greatest amount of notice practical under the circumstances; and (B) exercises all renewal terms available to Licensor as unilateral renewal options pursuant to the Underlying Agreement (or any amendment thereto). Licensor shall not take any action that is reasonably likely to cause or accelerate termination of the Underlying Agreement, and in the event that the Underlying Agreement terminates due to the misconduct, breach or default of Licensor, the same shall be considered a material default of Licensor hereunder for which no cure period will apply (notwithstanding anything to the contrary in this Agreement). In no event shall the term of this Agreement extend beyond the term of the Underlying Agreement.

C. Except as set forth herein, Licensee shall have no right to hold over at the Premises beyond the expiration of this Agreement.

6. **License Fee.** As compensation for the rights granted hereunder, Licensee shall pay to SBAM an annual license fee of Twenty-One Thousand Sixty and No/100 Dollars ($21,060.00) (the "**Annual License Fee**") for the first year of the term. Should the Commencement Date occur in the calendar year subsequent to the year of the Agreement Date, the Annual License Fee for the first year of the term shall increase by two percent (2%) from the figure shown above, which equals Twenty-One Thousand Four Hundred Eighty-One and 20/100 Dollars ($21,481.20). The Annual License Fee (as may be adjusted in accordance with this Section 6) is payable in monthly installments of one-twelfth each (each such installment, a "**Monthly License Fee**"), beginning on the Commencement Date. In the event the Commencement Date is other than the first day of the month, the Monthly License Fee for the first and last months of the term hereof shall be apportioned accordingly. At each anniversary of the Commencement Date, during the Initial Term and any Renewal Term, the Annual License Fee payable by Licensee shall automatically increase by two percent (2%). All Monthly License Fee payments due hereunder shall be paid in advance and shall be due on or before the first day of each month. Unless hereafter changed in writing by Licensor and/or SBAM at least thirty (30) days prior to the first payment affected thereby, payments shall be made to SBAM at the following address:

SBA Site Management, LLC
P.O. Box 933547
Atlanta, Georgia 31193-3547

7. **Responsibility for Equipment.** The Equipment shall remain the personal property of Licensee, and Licensee agrees that neither Licensor nor SBAM shall have any responsibility for the care and protection thereof. Licensee shall mark all of its Equipment (including but not limited to antennas, cables and equipment cabinets) with weatherproof tags or plates identifying Licensee as the owner and/or operator thereof, and shall keep, operate and maintain said Equipment in a safe condition and in good repair. Licensee may take all reasonable actions necessary, subject to the approval of Premises' Owner as set forth in Section 2, to secure and/or restrict access to Licensee's Equipment. Licensor acknowledges and

agrees that if radio frequency signage and/or barricades are required by applicable law, Licensee shall have the right to install the same on the Property.

8. **Electrical.**

A. The electricity consumed by Licensee's Equipment shall be an expense to Licensee. Licensee shall make arrangements with the electric utility company to have a separate electric service (billed to and paid by Licensee) installed upon the Premises for the purpose of supplying electrical power to Licensee's Equipment; unless Licensee instead elects to install an electrical remote read sub-meter as set forth in Section 8(B) below. If applicable, Licensee shall provide Licensor with proof that a separate meter has been installed, including the date of installation and one or more photographs of the meter and meter number. The proposed location of the meter at the Premises shall be set forth in the proposed plans or in a separate written design plan for Licensor's prior approval at Licensor's sole discretion, but not to be unreasonably withheld, conditioned or delayed.

B. In the event a separate electric service is not installed by Licensee as set forth in Section 8(A) above, Licensee shall furnish and install an electrical remote read sub-meter at the Premises for the measurement of electrical power used by Licensee's Equipment. The proposed location of the remote read sub-meter at the Premises shall be set forth in the proposed plans or in a separate written design plan for Licensor's prior approval at Licensor's sole discretion, but not to be unreasonably withheld, conditioned or delayed. In addition, Licensee shall, at Licensee's sole cost, make arrangements for the remote read sub-meter to be read on a quarterly basis (neither Premises' Owner nor Licensor shall conduct readings). If requested by Licensor, Licensee shall provide a copy of the quarterly remote read sub-meter reading invoice to Licensor via email at utilities@sbasite.com. If Licensee uses an electrical remote read sub-meter at the Premises, Licensee shall pay Licensor directly for Licensee's electric consumption and include documentation of the usage amount and per kwh rate. If applicable, Licensee shall provide Licensor with proof that the remote read sub-meter has been installed, including the name of the third party vendor, date of installation, and one or more photographs of the meter and meter number.

C. Commencing on the Equipment installation completion date and continuing until Licensee provides proof of installation of a separate electric service (or remote read sub-meter as outlined in Section 8(B) above), Licensee agrees to pay Licensor, in addition to the Monthly License Fee, a monthly fee of Four Hundred and No/100 Dollars ($400.00) as compensation for the electricity consumed by Licensee's Equipment ("**Monthly Utility Fee**"). If a separate electric meter (or remote read sub-meter as outlined in Section 8(B) above) is not installed within twelve (12) months from the Commencement Date hereof, Licensee shall be subject to a monthly administrative fee of One Hundred and No/100 Dollars ($100.00) ("**Administrative Fee**") until Licensor receives proof of installation of the separate meter or remote read electric sub-meter installation in the manner set forth in this Section 8. In the event that the Administrative Fee applies, Licensor shall invoice Licensee, and Licensee shall make payment therefor within sixty (60) days following receipt of an undisputed invoice. Unless hereafter changed in writing by Licensor at least thirty (30) days prior to the first payment affected thereby, utility payments shall be made to Licensor at the following address:

SBA Site Management, LLC
P.O. Box 933547
Atlanta, Georgia 31193-3547

D. In the event any increase in the capacity or modification of the electrical circuits at the Premises is required for the operation of the Equipment, Licensee may, subject to the consent of Licensor at Licensor's sole discretion (but not to be unreasonably withheld, conditioned or delayed), perform such modifications at Licensee's sole cost and expense. Notwithstanding the foregoing, Licensee may not install, or authorize the installation of, any utility lines or similar facilities of any nature at the Premises, including but not limited to any electrical lines, telephone lines, backhaul lines, coaxial cable, or fiber lines, without

the prior written consent of Licensor at Licensor's sole discretion (but not to be unreasonably withheld, conditioned or delayed). If any request is made for the installation of such third party facilities at the Premises, Licensor may require the third party utility to enter a separate access agreement that governs the installation and use of the utility's facilities with Licensor in a form that is acceptable to Licensor.

9. **Compliance with Laws.** The Equipment shall, at all times during the Initial Term and any Renewal Term(s), be installed, operated and maintained by Licensee in accordance with all laws, codes, rules, regulations, orders and requirements of all local, county, state and Federal governmental and regulatory bodies and agencies, including, but not being limited to, all rules, regulations and orders of the FCC and the Occupational Safety & Health Administration ("**OSHA**"). Within ten (10) days after the Commencement Date, Licensee shall provide Licensor and SBAM with a copy of the license issued by the FCC for the frequencies that Licensee intends to use at the Premises. In addition, Licensee shall post a copy of said FCC license at the Premises, in the location designated by Licensor. Licensor shall endeavor to designate such location on or prior to the date that Licensor approves Licensee's installation plan.

10. **RF Emissions.** Licensee represents and warrants that it will use commercially reasonable efforts to avoid any act or omission that would be reasonably likely to violate the RF Standards. Licensor shall require Future Users to make substantially the same representation and warranty prior to the installation of their equipment at the Premises.

A. RF Compliance. Licensee will have the responsibility, at its sole cost and expense, for ensuring that the Equipment does not propagate Radio Frequency ("**RF**") emissions where prohibited by the FCC (the exposure limits established by the FCC as referenced herein, and the time limit within which Licensee must bring the area into compliance, shall be the "**RF Standards**"). Licensee will coordinate with other licensees that have installed equipment at the Premises as of the Agreement Date to the extent necessary to ensure compliance with the RF Standards. Licensee will ensure that Licensee and its employees, agents and contractors will have proper occupational training in the RF Standards, including, without limitation, training with regard to the risks of RF exposure and the means by which any risks may be minimized. Licensee will maintain technical information supporting its compliance with the RF Standards, and will make such information available to Licensor and SBAM promptly upon SBAM or Licensor's request.

B. Evidence of Noncompliance. In the event that Licensee discovers any noncompliance with the RF Standards at the Premises, Licensee will notify Licensor immediately. In addition, Licensee will notify SBAM and Licensor in the event that Licensee becomes aware of other licensees operating equipment at the Premises that fail to cooperate in addressing RF exposure issues. If Licensor notifies Licensee that it has determined that Licensee's installation or operation of the Equipment directly and uniquely caused the RF emissions to exceed the RF Standards at the Premises, then Licensee will take all necessary actions, including powering down the Equipment or ceasing operations, to bring the Equipment and the Premises into compliance with the RF Standards and to demonstrate such compliance to SBAM and Licensor.

C. Reduction of RF Levels. Each party will use commercially reasonable efforts to cooperate with the other party in reducing RF exposure to maintenance personnel by powering down the Equipment, or ceasing operations, as necessary in accordance with industry standards and applicable law, during periods maintenance at the Premises by Premises' Owner and/or any contractor, vendor or other building-related (non-telecom) work. Licensor shall: (a) provide Licensee with as much advance notice of any such maintenance as is reasonably available; and (b) use commercially reasonable efforts to ensure that all maintenance is performed in a manner that reduces the impact to Licensee's operations to the greatest extent practical under the circumstances.

D. RF Studies. Licensor will have the right to conduct RF studies at the Premises to ensure compliance with the RF Standards by Licensee and all other licensees at the site, provided that Licensor

provides prior written notice thereof to Licensee. In the event an RF study determines that the Premises exceeds the RF Standards, and identifies the Licensee's Equipment as the primary cause (if Licensee is the only user), or is a contributing factor of (in the case of multiple users), the Premises exceeding the RF Standards, Licensee shall compensate SBAM for the reasonable and documented out of pocket cost of the RF study (not to exceed rates assessed by SBAM against similarly situated users of the Premises or other carriers) or pay to Licensor a pro-rated portion of the reasonable and documented out of pocket cost of the RF study relative to other contributing licensees. Licensee will reimburse Licensor for such costs within sixty (60) days of receipt of an undisputed invoice and substantiating documentation from Licensor.

11. **Environmental.**

A. Neither party shall bring, use, generate, store, treat or dispose of any Hazardous Materials on, in, under or near the Premises in violation of applicable law. Licensor acknowledges and agrees that: (1) Licensee shall have the right to bring, use and keep on the Premises in customary quantities and in compliance with all applicable laws, batteries, generators, and associated fuel tanks as may be necessary to support the operation of Licensee's Equipment; and (2) Licensee shall not be liable for any Hazardous Materials on, in, under or near the Premises in violation of applicable law, except to the extent caused in connection with Licensee's operations.

B. As used herein, "**Hazardous Materials**" shall mean any material, waste or substance defined as hazardous, toxic or dangerous in any applicable local, county, state or Federal law or regulation.

12. **Insurance.**

A. At all times during the term of this Agreement Licensee shall carry, at Licensee's sole expense, insurance protecting itself, Licensor, and, if required by the Underlying Agreement, the owner of the Premises, against all claims, demands, judgments, liabilities, and losses which may arise out of or as a result, directly or indirectly, of its activities of this Agreement.

B. The insurance required to be obtained and maintained by Licensee shall meet or exceed the following:

- Commercial General Liability insurance with limits of at least One Million Dollars ($1,000,000.00) per occurrence and Two Million Dollars ($2,000,000.00) aggregate.
- Automobile Liability insurance with limits of One Million Dollars ($1,000,000.00) combined single limit per accident, covering owned, hired, and non-owned autos.
- Workers' Compensation insurance (coverage A) covering the Workers' Compensation laws applicable in the jurisdiction of the locations under this contract.
- Employers Liability insurance (coverage B) in an amount not less than One Million Dollars ($1,000,000.00).
- Umbrella and Excess Liability with limits not less than Two Million Dollars ($2,000,000.00).

C. The above coverages and limits are the minimum required and in no way limit the liability of Licensee from other obligations under this Agreement.

D. The carriers providing such insurance will have a minimum A.M. Best Rating of A- VII or better.

E. Current certificates of insurance as evidence of the required insurance coverage and the additional insured(s) as required above shall be furnished to Licensor prior to the commencement of the activities under this agreement. Renewal certificates shall be furnished during the entire term of this Agreement.

13. **Hold Harmless.**

A. Limitation of Liability. EXCEPT FOR EACH PARTY'S INDEMNIFICATION OBLIGATIONS SET FORTH BELOW IN THIS SECTION 13, NEITHER PARTY NOR ANY OF ITS AGENTS, CONTRACTORS OR EMPLOYEES, SHALL BE LIABLE TO THE OTHER PARTY OR ANY PERSON CLAIMING THROUGH THAT PARTY FOR ANY EXEMPLARY, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR ANY CAUSE WHATSOEVER, INCLUDING, WITHOUT LIMITATION, CLAIMS CAUSED BY OR RESULTING FROM THE NEGLIGENCE, GROSS NEGLIGENCE OR WILLFUL MISCONDUCT OF THAT PARTY, ITS AGENTS, CONTRACTORS OR EMPLOYEES.

B. Licensee's Indemnity. Except to the extent caused by the breach of this Agreement by Licensor or the acts or omissions of Licensor, its officers, agents, employees, contractors, or any other person or entity for whom Licensor is legally responsible, Licensee shall defend, indemnify and hold Licensor and its officers, directors, shareholders, employees, agents and representatives and Premises' Owner, if required by the Underlying Agreement ("**Licensor's Representatives**") harmless from and against any and all claims, demands, litigation, settlements, judgments, damages, liabilities, costs and expenses (including, without limitation, reasonable attorneys' fees) (individually or collectively, a "**Claim**") arising directly or indirectly out of: (i) any act or omission of Licensee, its officers, agents, employees, contractors, or any other person or entity for whom Licensee is legally responsible ("**Licensee's Representatives**") including but not limited to the installation, operation, presence, use, maintenance or removal of the Equipment at the Premises; and/or (ii) a breach of any representation, warranty or covenant of Licensee contained or incorporated in this Agreement. Licensee's obligations under this Section 13 shall survive the expiration or earlier termination of this Agreement for two (2) years.

C. Licensor's Indemnity. Except to the extent caused by the breach of this Agreement by Licensee or the acts or omissions of Licensee or Licensee's Representatives, Licensor shall defend, indemnify and hold Licensee, its officers, directors, shareholders, employees, agents and representatives harmless from and against any and all Claims arising directly or indirectly out of: (i) any act or omission of Licensor, its officers, agents, employees, contractors or any other person or entity for whom Licensor is legally responsible; and/or (ii) a breach of any representation, warranty or covenant of Licensor contained or incorporated in this Agreement. Licensor's obligations under this Section 13 shall survive the expiration or earlier termination of this Agreement for two (2) years

14. **Removal and Relocation of Equipment.**

A. Subject to and in accordance with any relocation rights contained in the Underlying Agreement, Licensor has the right to relocate any or all of the Licensee's Equipment to an alternative location on the Premises up to one (1) time during the term of this Agreement; provided that (i) all costs and expenses associated with or arising out of such relocation (including, without limitation, costs associated with any required zoning approvals and other governmental approvals, costs for tests of the substitute premises, and Licensee's cost to purchase alternate or additional equipment (such as hybrid cables cut to an alternate length than those originally installed) in order to continue the operation of the Equipment at such alternate location (such equipment the "**Relocation Equipment**")) shall be paid by Licensor; and (ii) such relocation will be performed exclusively by Licensee or its employees, agents or contractors. Licensor will exercise its relocation right by delivering written notice to Licensee pursuant to the terms of this Agreement ("**Relocation Notice**"). The Relocation Notice shall identify the proposed relocation site to which Licensee may relocate its Equipment. Licensee shall have sixty (60) days from the date it receives the Relocation Notice to evaluate the proposed relocation site, during which period Licensee may conduct tests to determine the technological feasibility of the proposed relocation site and whether such relocation would result in any material degradation of performance in Licensee's operation of the Equipment, including without limitation, degradation in RF coverage or signal strength ("**Relocation Degradation**"). If the parties agree upon the proposed relocation site, Licensee shall have ninety (90) days to relocate its Equipment

following Licensee's receipt of any governmental permits and approvals required for the relocation. If Licensee disapproves of such proposed relocation site, Licensee shall, within said sixty (60) day evaluation period, notify Licensor in writing (email being sufficient). Absent such notice, the proposed site shall be deemed accepted by Licensee following the evaluation period. Should Licensee reject the proposed relocation site, Licensor shall propose another commercially reasonable relocation site by notice to Licensee in the manner set forth above. If Licensee disapproves of Licensor's second proposal by written notice as set forth above, then, at Licensee's option, Licensee may elect to either (A) terminate this Agreement with respect to the applicable Premises upon ninety (90) days' notice to Licensor; or (B) install a "cell on wheels" or a functionally equivalent mobile structure and all equipment necessary or advisable for the operation thereof in a location mutually agreeable to the parties, and subject to the approval of Premises' Owner, and invoice Licensor for all costs and expenses associated with or arising out of such relocation. Notwithstanding the foregoing, Licensor shall not require relocation in order to provide space at the Premises for any third party telecommunications service provider.

B. Licensor has the right to require Licensee to accommodate, at Licensee's sole cost and expense, required repair, maintenance or other work at the Premises ("**Roof Work**"), which may include the temporary relocation of any Equipment situated on or near the location of the Roof Work, provided that: (i) all costs and expenses associated with or arising out of such temporary relocation shall be paid by Licensee; (ii) such relocation will be performed exclusively by Licensee or its employees, agents or contractors; (iii) such relocation would not result in the cessation of the operation of the Equipment beyond a forty-eight (48) hour period of time (whether consecutive or in the aggregate); and (iv) upon the completion of the Roof Work, Licensee's Equipment is permitted to return to its original location. Licensor shall seek the reasonable cooperation of Premises' Owner to ensure that such relocation does not require Licensee to undergo re-zoning or re-permitting, and does not result in any Relocation Degradation or require the installation and use of any Relocation Equipment. If such relocation results in any Relocation Degradation, then, subject to the terms of the Underlying Agreement, Licensee may elect to install a "cell on wheels" or a functionally equivalent mobile structure and all equipment necessary or advisable for the operation thereof in a location mutually agreeable to the parties, subject to the approval of Premises' Owner. Licensor will exercise its relocation right by delivering written notice pursuant to the terms of this Agreement at least thirty (30) days prior to the date of the scheduled or anticipated Roof Work. The notice shall state the time that Licensor estimates that the repair, maintenance or replacement will take, but Licensor shall not be responsible for delays in restoration of the operation of the Equipment not caused directly by Licensor or its agents, employees, contractors, or any other person or entity for whom Licensor is legally responsible. Licensee shall have sixty (60) days from the date it receives the written notice to temporarily relocate the Equipment, provided, however, if Licensee is required to undergo re-zoning or re-permitting to operate the Equipment in the relocation site, then the aforementioned sixty (60) day period will be extended on a day-to-day basis until Licensee has obtained all necessary governmental approvals and permits to operate the Equipment in the relocation site. Notwithstanding anything to the contrary in this Section 14, in the event that the Underlying Agreement provides that the Premises' Owner, Licensor or SBAM will assume costs and/or expenses associated with relocation of equipment (whether on a permanent or temporary basis), then Licensee may invoice Licensor for all costs and expenses associated with Licensee's Equipment relocation as set forth in this Section 14, and Licensor shall make payment therefor within sixty (60) days following receipt of each such invoice.

C. Notwithstanding anything to the contrary in this Agreement, promptly following the expiration or termination of this Agreement, but in no event greater than forty-five (45) days thereafter ("**Equipment Removal Period**"), Licensee shall (i) remove the Equipment and all cables, components and other property of Licensee from the Premises; (ii) repair any damage to the Premises caused by such removal; and (iii) restore those portions of the Premises upon and/or within which the Equipment was located to substantially the condition which existed as of the date of installation of Licensee's Equipment, reasonable wear and tear excepted. Should Licensee not remove all Licensee Equipment, cabling, components or other property of Licensee from the Premises during the Equipment Removal Period, Licensee shall pay the Monthly License Fee in effect as of expiration or termination for the remaining Equipment until all Equipment is removed

from the Premises. Should Licensee fail to commence to repair any damage to the Premises or to restore the Premises to the condition required by this Section 14 within the Equipment Removal Period, Licensor may, at its option, have such repair and/or restoration performed, and Licensee shall reimburse Licensor for all such reasonable expenses incurred by Licensor.

D. Licensee must also file a decommission notice to proceed ("**Decommission NTP**") via the SBA NTP portal at https://sitentp.sbasite.com. The following documentation must be uploaded into the SBA NTP portal before Licensor will consider a decommission complete: (i) pictures or the Premises before and after Licensee's decommissioning activities, submitted in a zip file; (ii) an SBA tenant installation notification ("**TIN**"); and (iii) written proof that any and all permits related to Licensee are closed (collectively, the "**Closeout Package**"). SBAM shall approve or reject the Closeout Package in good faith within five (5) business days of submission; if rejected, SBAM shall provide a detailed explanation of any deficiency and allow Licensee to make necessary corrections. Licensee shall continue to pay the then-current Monthly License Fee, including escalations, until Licensor approves the Closeout Package. This Section 14D shall survive the expiration or termination of this Agreement.

15. **Casualty.** In the event fire or other calamity ("**Casualty**") causes a total destruction of the Premises, this Agreement shall automatically terminate as of the date of such Casualty. In the event of Casualty causing damage to the Premises comprising less than a total destruction thereof, Licensee may terminate this Agreement if, in Licensee's sole reasonable determination, the Premises are not restored to a condition which permits for the operation of the Equipment thereupon within ninety (90) days from the date of Casualty. The License Fee payable by Licensee hereunder shall abate for such period of time as Licensee is unable to use the Premises as a result of any Casualty.

16. **Condemnation.** If the Premises or any portion thereof is condemned or subjected to a taking by any governmental authority with the power of eminent domain, this Agreement shall terminate as of the date upon which Licensee is required to remove its Equipment from the Premises. Licensee shall be entitled to seek its own award from the condemning authority only to the extent such award does not result in a diminution of the awards payable to Licensor and Premises' Owner.

17. **Default.** The occurrence of either of the following events shall constitute an event of default hereunder:

A. the failure of either party to comply with any of the provisions of this Agreement or to faithfully and timely perform all of the duties and obligations of such party hereunder where the party in default has failed to cure within the cure periods as provided in Section 18 following receipt of notice from the non-defaulting party of the existence of said default, provided, however, that if the event for which the notice is given is of a nature that may not be reasonably cured within said cure period, the defaulting party shall not be in default for so long as such party promptly commences to cure the failure and diligently pursues such cure to conclusion (a "**Non-Monetary Default**"); or

B. the failure of Licensee to pay when due, the Monthly License Fee or any other amounts owed Licensor hereunder for more than thirty (30) days following Licensee's receipt of written notice (in accordance with Section 25) of such non-payment (a "**Monetary Default**").

18. **Termination.**

A. This Agreement may be terminated under the following circumstances:

(i) immediately, by the non-defaulting party, in the event of a Non-Monetary Default not otherwise referenced in this Section 18 that the party in default has failed to cure within thirty (30) days of receipt of notice from the non-defaulting party of the existence of said default, provided, however, that if the event for which the notice is given is of a nature that

may not be reasonably cured within said thirty (30) day period, the defaulting party shall not be in default for so long as such party commences to cure the failure within the thirty (30) day period and diligently pursues such cure to conclusion;

(ii) immediately, by Licensor, upon Licensee's failure to make full payment of any amounts owed hereunder within sixty (60) days of Licensee's receipt of notice from Licensor declaring Licensee to be in Monetary Default;

(iii) immediately, by either party, if Licensee is unable to eliminate any interference caused by its Equipment within a period of twenty (20) days following Licensee's receipt of notice from Licensor of the existence of such interference in accordance with the terms of Section 3 hereof, provided that Licensee may only terminate under this subsection if Licensee has used diligent efforts to correct such interference, and Licensor may only terminate under this subsection if Licensee has not used diligent efforts to correct such interference;

(iv) by Licensor, in the event the Equipment is determined to be the source of RF emissions in excess of the RF Standards and Licensee has failed to comply with Section 10(B) for a period in excess of thirty (30) days following Licensee's receipt of written notice thereof from Licensor;

(v) immediately, by Licensee, in the event of interference to Licensee's Equipment caused by the equipment of any other party as documented in an intermodulation study reasonably acceptable to Licensor, whether on the Premises or elsewhere, which is not minimized to an acceptable degree (as determined by Licensee in good faith) within twenty (20) days following Licensor's receipt of notice from Licensee of the existence of such interference;

(vi) immediately, by Licensee, in the event any license, permit or other governmental approval required for the installation or operation of the Equipment is not obtained by Licensee, or the same is withheld, revoked, materially conditioned or withdrawn, other than as a result of Licensee's acts or negligence;

(vii) in accordance with Sections 5, 15 or 16 of this Agreement;

(viii) immediately, by Licensee, in the event of changes in applicable law which prohibit or adversely affect Licensee's ability to operate Licensee's Equipment at the Premises; or

(ix) immediately, by Licensee, at any time prior to Licensee's receipt of a Notice To Proceed in the event that the location approved by SBAM and Premises' Owner for the installation of Licensee's Equipment differs from the location set forth in Exhibit "D", and such alternate location (a) is the result of either Licensor or Premises' Owner requiring a change to the Equipment location, and (b) is reasonably likely to result in any material degradation of performance in Licensee's operation of the Equipment, including without limitation, degradation in RF coverage or signal strength (as determined by Licensee in Licensee's reasonable discretion).

B. In the event of a Non-Monetary Default by either party hereunder which cannot reasonably be cured within the time period set forth in section (i) of Part A of this Section 18, the time for curing such default shall be extended for such period of time as may be reasonably necessary to complete such curing, provided the party in default proceeded promptly to cure same and thereafter diligently pursues such curing to completion.

C. Following the effective date of termination of this Agreement in accordance with any of the foregoing, neither party shall have any further obligation or liability hereunder, other than as may be

specifically set forth herein. Nothing will relieve either party from any obligations that arose prior to such termination.

19. **Contractors.**

A. Any and all contractors engaged by Licensee to install the Equipment or perform any other work at the Premises ("**Licensee's Contractors**") shall be subject to the approval of Licensor. Such approval shall not be unreasonably withheld or delayed, subject, however, to any requirements of Premises' Owner with respect to access to the Premises and/or work to be performed thereupon.

B. Each of Licensee's Contractors shall be required to obtain insurance protecting itself, Licensee, Licensor and Premises' Owner against all claims, demands, judgments, liabilities, and losses which may arise out of or as a result, directly or indirectly, of its activities pursuant to this Agreement.

C. The insurance required to be obtained and maintained by Licensee's Contractors shall meet or exceed the following:

- Commercial General Liability insurance with limits of at least One Million Dollars ($1,000,000.00) per occurrence and Two Million Dollars ($2,000,000.00) annual aggregate providing coverage for premises and operations, products and completed operations, independent contractors, and contractual liability covering obligations under this contract.
- Automobile Liability insurance with limits of One Million Dollars ($1,000,000.00) combined single limit per accident, covering owned, hired, and non-owned autos.
- Workers' Compensation insurance (coverage A) covering the Workers' Compensation laws applicable in the jurisdiction of the locations under this contract.
- Employers Liability insurance (coverage B) in an amount not less than One Million Dollars ($1,000,000.00) each accident, One Million Dollars ($1,000,000.00) for policy limit, and One Million Dollars ($1,000,000.00) occupational disease.
- Umbrella and Excess Liability with limits not less than Two Million Dollars ($2,000,000.00) covering General, Auto, and Employers Liability.

D. The carriers providing such insurance will have a minimum A.M. Best Rating of B+ IX or better, and are subject to the approval of Licensor.

E. Prior to commencing work at the Premises, each of Licensee's Contractors shall provide Licensor with current certificates of insurance, evidencing that it has obtained the requisite coverages in the mandated amounts; that Licensee, Licensor and Premises' Owner are named as additional insureds thereunder; and that such policies cannot be cancelled or amended without at least ten (10) days' prior notice to the parties named thereunder as additional insureds.

20. **Assignment.**

A. Licensor may assign its interest in this Agreement to any third party, provided that: (i) Licensor gives Licensee written notice of any such assignment within ten (10) days of the effective date thereof; (ii) Licensee's possession and use of the Premises is not disturbed or degraded in any manner without Licensee's written consent; (iii) any assignee of Licensor's interest in this Agreement agrees to assume all of Licensor's obligations hereunder; and (iv) any assignee has the financial wherewithal and industry experience to perform Licensor's obligations hereunder.

B. Provided that (i) Licensee is not in default hereunder beyond any applicable cure period; (ii) Licensee gives written notice of its intention to assign its rights hereunder at least ten (10) days prior to the effective date thereof; and (iii) the assignee agrees to assume all of Licensee's obligations hereunder (including those due and owing as of the effective date of assignment), Licensee shall have the right to

assign its interest in this Agreement, to any person or entity controlling, controlled by or under common control with Licensee (each, an "**Affiliate**"). For purposes of this Agreement, the word 'control' means: (a) the ownership, directly or indirectly, of at least fifty percent (50%) of either: (1) the voting rights attached to issued voting shares; or (2) the power to elect fifty percent (50%) of the directors of such entity; or (b) the ability to direct the actions of the entity. Notwithstanding the preceding, for purposes of this Agreement, EchoStar Corporation and its direct and indirect subsidiaries shall not be deemed to be "Affiliates" of Licensee unless after the Agreement Date any such entity qualifies as a direct or indirect subsidiary of DISH Network Corporation. Notwithstanding anything to the contrary in this Agreement, neither (y) a change in ownership of Licensee as a result of a merger, consolidation or reorganization; nor (z) the sale of all or substantially all of the assets of Licensee shall be considered an assignment under this Section 20 requiring Licensor's consent, and Licensor shall have no right to delay, alter or impede any of the foregoing transactions.

C. Any assignment hereof by Licensee other than pursuant to the terms of Part B of this Section 20 shall be subject to the written approval of Licensor. Any request for such approval shall be made in writing, at least forty-five (45) days in advance of the effective date of assignment, and shall include the net worth of the assignee as of the last day of the most recent quarter of said assignee's business year. Licensor shall not unreasonably withhold such approval, subject, however, to the assignee's agreement to accept all obligations of Licensee hereunder (including those due and owing as of the effective date of assignment).

D. Licensee shall not sublicense all or any part of its rights or obligations hereunder.

21. **Controversies and Jurisdiction**. In the event of any legal action, arbitration, litigation or other action to resolve any dispute related to this Agreement, the prevailing party in any such proceeding shall be entitled to recovery of attorneys' and administrative fees and expenses from the non-prevailing party. This Agreement shall be construed, governed and enforced in accordance with the laws of the state in which the Premises is located.

22. **Taxes.** Licensee will have the sole responsibility to pay any personal property, real estate taxes, assessments, or charges owed on such portion of the Premises licensed to Licensee, as the direct result of Licensee's use of such portion of the Premises and/or the installation, maintenance, and operation of Licensee's Equipment. In the event that the Licensor pays real estate taxes at the Premises as the direct and unique result of Licensee's use of the Premises and/or the installation, maintenance, and operation of the Equipment, then following receipt of an invoice therefor (which shall include documentation of such tax(es) paid by Licensor) Licensee shall reimburse Licensor for such in accordance with Licensee's reasonable payment processes. Licensee will also be solely responsible for the payment of any taxes, levies, assessments and other charges imposed including franchise and similar taxes imposed upon the business conducted by Licensee. Notwithstanding the foregoing, Licensee will not have the obligation to pay any tax, assessment, or charge that Licensee is disputing in good faith in appropriate proceedings prior to a final determination that such tax is properly assessed provided that no lien attaches to the applicable Premises. Licensor shall reasonably cooperate with Licensee, at Licensee's expense, in any appeal or challenge to taxes.

23. **Survival**. Any provision of this Agreement which requires performance subsequent to the termination or expiration of this Agreement, shall also survive such termination or expiration for the duration set forth herein.

24. **Confidentiality.** It is agreed by the parties hereto that the terms of this Agreement shall remain strictly confidential as between them and that, except for a Memorandum which might be recorded in the office of the County Clerk, disclosure of this Agreement shall not be made by either party or its agents to any other person or entity, except for the directors, officers, employees, Affiliates, agents, representatives, successors, heirs and assigns of the parties, or as necessary to auditors, attorneys, financial advisors,

lenders and investors, of a party or its Affiliates without first obtaining the written consent of the other party; provided, however, that notwithstanding the foregoing, Licensor and/or Licensee may provide a copy of this Agreement to, or discuss any of the terms and conditions hereof with, third parties or regulatory and other governmental authorities as is reasonably necessary for Licensor's and/or Licensee's business purposes.

25. **Miscellaneous.**

A. This Agreement, including the exhibits attached hereto, represents the entire understanding of the parties with respect to the subject matter hereof. Except as set forth to the contrary herein, any addition, variation or modification of the terms hereof shall be effective only if made in writing, duly executed in hand and in ink by authorized representatives of both parties.

B. Any provision of this Agreement which is deemed to be invalid by any governmental or judicial body having authority hereover shall be considered deleted herefrom. Such determination shall not serve to invalidate the remaining provisions of this Agreement.

C. Subject to the provisions hereof, this Agreement shall extend to, inure to the benefit of and bind the heirs, successors and permitted assigns of the parties.

D. This Agreement shall be construed, interpreted and governed under and in accordance with the laws of the State in which the Premises is located.

E. Except as set forth to the contrary herein, all notices sent with respect to this Agreement shall be in writing and delivered to the other party via certified mail, return receipt requested, or national overnight delivery service. Notices shall be deemed to have been delivered upon the actual, verifiable date of receipt or refusal of delivery thereof by the recipient party. Notices related to exigent circumstances and requiring immediate access to the Premises shall be directed to the business hour or after hour Access Coordinator number as provided in Exhibit "B". The current addresses of the parties to which such notices should be sent are as follows:

Licensor: SBA Site Management, LLC
900 South Highway Drive, Suite 201
Fenton, Missouri 63026
Attn.: Site Administration
Email: tenantnotice@sbasite.com

With copy to: SBA Site Management, LLC
1480 Route 9 North, Suite 303
Woodbridge, New Jersey 07095
Attn.: Legal

Licensee: DISH Wireless L.L.C.
5701 South Santa Fe Boulevard
Littleton, Colorado 80120
Attn.: Lease Administration

Each of the parties may change its address as set forth above by delivering to the other written notice of such change in accordance with the foregoing.

26. **Underlying Agreement.**

A. In the event that Licensor leases the Premises pursuant to an Underlying Agreement, a redacted copy of such Underlying Agreement is attached hereto as Exhibit "C", subject to any confidentiality provision in the Underlying Agreement.

B. Except as expressly set forth herein to the contrary, this Agreement is subject and subordinate to the terms of the Underlying Agreement, and to all leases, mortgages and other rights and encumbrances to which the Underlying Agreement is subject or subordinate.

C. If Licensee shall default hereunder and not cure such default within the time permitted for cure of such default under the Underlying Agreement, Licensor shall have all remedies against Licensee available at law or in equity. If Premises' Owner shall give any notice of failure or default under the Underlying Agreement arising out of any failure by Licensee to perform any of its obligations hereunder, then Licensor shall promptly furnish Licensee with a copy thereof. Further, if Premises' Owner shall give any notice of failure or default under the Underlying Agreement directly to Licensee, then Licensee shall promptly furnish Licensor with a copy thereof. If Licensee shall fail to perform any of its obligations hereunder and such failure shall continue beyond any cure period provided for herein, or if Premises' Owner shall give any notice of failure or default under the Underlying Agreement arising out of any failure by Licensee to perform any of its obligations hereunder and Licensee shall fail to cure such default under the Underlying Agreement within the cure period provided in the Underlying Agreement, then in either case, Licensor shall have the right (but not the obligation) to perform or endeavor to perform such obligation, at Licensee's expense, and Licensee shall within forty-five (45) days of Licensee's receipt of an undisputed invoice therefor along with documentation substantiating all amounts set forth in such invoice, reimburse Licensor for all reasonable costs and expenses incurred by Licensor (without mark-up of any kind) in so doing.

27. **Remedies Cumulative.** Except as expressly set forth in this Agreement, the rights and remedies herein provided in case of Default or breach by either Licensor or Licensee are cumulative and shall not affect in any manner any other remedies that the non-breaching Party may have by reason of such default or breach. The exercise of any right or remedy herein provided shall be without prejudice to the right to exercise any other right or remedy provided herein, at law, in equity or otherwise.

[Remainder of page intentionally left blank. Signature page follows.]

Site ID: CT95623-M
Site Name: Greenwich (Putnam)

Licensee Site ID: NJJER01107B

IN WITNESS WHEREOF, the parties hereto agree to be bound by the terms of this Agreement as of the Agreement Date.

Accepted by: Licensor

SBA SITE MANAGEMENT, LLC

By: Sean Shinnen

Name: Sean Shinnen

Title: Managing Director, Site Management

Date: 4/4/2022

Attest: Christina Bernabeo

Print Name: Christina Bernabeo

Accepted by: Licensee

DISH WIRELESS L.L.C.

By: David Mayo

Name: David Mayo

Title: EVP

Date: 3/24/2022

Attest: Natalie Baker

Print Name: Natalie Baker

Legal Approver HSG SBA

STATE OF _____)
) ss.
COUNTY OF _____)

On _____, _____, before me, _____ Notary Public, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal:

_____
Signature of Notary

Commission Expiration Date:

_____
[AFFIX NOTARIAL SEAL]

STATE OF _____)
) ss.
COUNTY OF _____)

On _____, _____, before me, _____ Notary Public, personally appeared _____, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal:

_____
Signature of Notary

Commission Expiration Date:

_____
[AFFIX NOTARIAL SEAL]

[Notary page to this Agreement]

I hereby confirm that I have reviewed and approved all below pages. HSG

EXHIBIT "A"

Equipment

Note: Any Licensee Equipment not listed on this Exhibit "A" may not be installed by Licensee, unless the Agreement provides otherwise.

Antennas:	Total Three (3)
Quantity:	Three (3)
Type:	Panel
Manufacturer:	JMA Wireless
Model:	MX08FRO665-21
Dimensions:	72"x20"x8"
Weight:	64.5 lbs.
Mounting:	75'
Cables:	Total Three (3)
Number of Lines:	Three (3)
Type:	Fiber
Size:	2.5"
Mounts:	Total One (1)
Quantity:	One (1)
Manufacturer:	Sabre
Model:	C10223207HD-32788
Dimensions:	7"x3.2"x3.2"
Weight:	.8 lbs.
Mounting:	75'
Remote Radio Units:	Total Six (6)
Quantity:	Six (6)
Manufacturer:	MTI
Model:	G2021-49-01B
Dimensions:	13.9"x17"x9.84"
Weight:	64 lbs.
Mounting:	75'
Surge Suppressors:	Total Three (3)
Quantity:	Three (3)
Type:	OVP
Manufacturer:	Raycap
Model:	RDIDC-3045-PF-48
Dimensions:	14"x16"x8"
Weight:	21.9 lbs.
Mounting:	75'
Ground Space Requirements:	
Square Feet:	35
Licensee Provided Shelter:	
Dimensions:	5' x 7'
Type:	Platform

GPS Receiver:	Total One (1)
Quantity:	One (1)
Manufacturer:	PCTEL
Model:	GPSGL-TMG-SPI-40NCB
Dimensions:	7.3"x3.2"x3.2"
Weight:	.8 lbs.
Mounting:	75'

Frequencies:	
Transmit:	632-652, 1995-2020, 2155-2165, 2180-2200 MHz
Receive:	678-698, 1695-1710, 1755-1765 MHz

Total wind load surface area = 6,409.8 Square Inches** (as defined below).

Total weight of Tower/Rooftop equipment = 643.20 pounds.

For purposes of this Exhibit "A", "Square Inches**" shall be determined by multiplying the two largest dimensions of the length, width and depth of Licensee's Equipment (exclusive of any microwave equipment) located in the Premises; provided that any brackets, mounts, cabling, power cords or other similar connectors, shall not be included in the calculation of Square Inches.

EXHIBIT "B"

Technical Standards

I. General

1) All installation contractors must provide all applicable documents per the SBA Site Management ("SBAM") plan review comments for the release of Notice to Proceed. The confirmation of Notice to Proceed completion will come from SBAM. The approval of the Notice to Proceed will be needed prior to start of construction.
2) All installation contractors must have a copy of SBAM and Owner / Owner Representative signed construction drawing and the SBAM Notice to Proceed prior to construction start and during construction. Installation contractors must construct per Owner approved construction plans and adhere to all specifications in the SBAM Notice to Proceed.
3) All installed equipment must comply with and be maintained to adhere to all current federal and local regulatory codes.
4) All contractors and subcontractors must provide a valid certificate of insurance to SBAM prior to commencing any work and is a prerequisite to issuance of the NTP by SBAM.
5) All installation contractors, subcontractors and tenant technicians must be knowledgeable of current RF safety practices.
6) All installation contractors, subcontractors and tenant technicians must have had current RF safety training.
7) All installation contractors, subcontractors and tenant technicians must obey all posted RF safety signage and carry a personal RF safety monitor on RF active sites.
8) All installation contractors must adhere to OSHA safety codes.
9) All installation contractors working on towers or performing controlled descents off of rooftops must have climbing and rigging certificates.
10) SBAM must be notified at least two business days prior to install date, so SBAM can arrange for access. The notification for crane coordination is 1 week in advance minimum.
11) Installation may take place during normal business hours unless otherwise authorized.
12) All installation contractors must submit to SBAM a completed Tenant Installation Notification form ("TIN") within 10 days of equipment installation and/or removal completion.
13) All installation contractors must submit to SBAM a completed Closeout Package ("COP") within 10 days of any applicable building permit being closed.
14) All installations must be maintained in a neat and orderly manner.
15) Equipment room doors and doors to antenna spaces shall be closed and locked at all times.
16) Access to equipment and antennas shall be by authorized personnel only and only for purposes of installation, removal, service or maintenance after notification to the SBAM Access Coordinator.
17) Access During Normal Business Hours 8:30 AM – 5:00 PM Eastern Standard Time

    The SBAM Access Coordinator can be reached at 800-551-7483 x2242. The coordinator will ask the contractor or technician for a scope of work, certificate of insurance (contractors), the total number of personnel visiting and estimated duration of the site visit. Coordinator will notify the site contact and call the contractor or technician back confirming access to the site.
18) Afterhours Emergency Access (Emergencies Only)

    The afterhours emergency mailbox number is 888-950-7483 and has a message which clearly states that the caller must contact the SBAM representative at the cell number provided in the message.
19) Planning for Maintenance Window(s) Activities

    The technician or contractor shall call the SBAM Access Coordinator 48 hours in advance during normal business hours at 800-551-7483 x2242 for the coordination of maintenance window activities. The coordinator will ask the contractor or technician for a scope of work, certificate of insurance (contractors), the total number of personnel visiting and estimated duration of the site visit.
20) Tenant or Tenant Contractor(s) must comply with any applicable instructions regarding any Site security system.

a) Gates and doors will remain closed at all times unless entering and exiting the premises. When leaving a shelter or room within a building rooftop site, ensure that all doors are locked and if there is a security system, it is armed.
b) Any tower elevator may be used only after receiving proper instruction on its use, signing a waiver and receiving authorization from the Owner.
c) The tenant agreement does not guarantee parking space. If space is available, park only in designated areas. Do not park so as to block any ingress or egress except as may be necessary to load or unload equipment. Parking is for temporary use while working at a site.
d) Do not adjust or tamper with thermostats or HVAC systems.

21) Signage

a) Tenant to post 24 Hour contact information along with site tenant site identification.
b) RF MPE Notice, Caution and Warning signage to be posted per FCC guidelines.

The following will not be permitted at the antenna site without the written consent of SBAM, which will not be unreasonably withheld.

- Any equipment without FCC type acceptance.
- Change in operating frequency(s) from any that may be listed in the applicable individual site license agreement.
- Open rack mounted receivers and transmitters unless SBAM approved.
- Relocation or adding of equipment, excluding equipment within carriers' "owned" enclosed shelter.

II. Minimum RF Interference Protective Devices

1) Transmitters shielding to be properly installed.
2) Isolators and Harmonic Filters to be properly installed.
3) Duplexers or Bandpass Filters to be properly installed.
4) Equipment grounding to be properly installed.
5) All tenants must cooperate in a timely fashion with SBAM when called upon to investigate a source of interference; whether or not it can be conclusively proven that their equipment is involved.

III. Antenna and Mounts

1) Antennas must be mounted only on approved mounts.
2) No welding or drilling to any tower members will be permitted unless authorized by SBAM.
3) No welding or drilling to any water tank structure will be permitted unless authorized by SBAM.
4) All mounting hardware must be hot dipped galvanized or non-corroding metal.
5) All antennas must be tagged with weatherproof labels showing manufacturer, model, frequency range, and owner.
6) Coax cable grounding kits must be used near the antenna mount and prior to the point of entry of the radio room, shelter or exterior equipment cabinet. All installed grounding kits must be bonded to the tower or rooftop ground system. All antenna mounts must be bonded to the ground system by using a minimum of #2 AWG conductors.
7) Antennas with corroded or oxidized elements must be repaired or replaced.
8) Unless otherwise authorized by SBAM, all antennas must be enclosed in fiberglass radomes.
9) Mounting pipes should not extend above top of antenna by more than 6 inches.
10) Any rusted, corroded or damaged hardware must be replaced. No inoperative, abandoned antennas can remain after upgrade.
11) All antennas and associated hardware must be removed upon termination or expiration of license.

IV. Structure

1) Only authorized and approved contractors shall do antenna installation or removal work.
2) No modifications to the licensed structure beyond Owner approved construction plans.

V. Cable

1) All antenna transmission lines must conform to Owner approved construction plans.
2) All cables used on FAA marked / painted structures must be painted to adhere to FAA painted structure banding colors before completion of the installation.
3) All antenna cables must be secured to cable supports or cable trays, using metal clamps designed for the cable.
4) Where no cable supports, troughs or cable trays exist, all cable must be secured at not less than 3' intervals.
5) Interconnecting cables must conform to Owner approved construction plans.
6) All transmission lines must be grounded. (See III. Antennas/Mounts; Line 6)
7) Drip loops shall be incorporated in the runs to prevent water from trickling down the lines into the buildings or shelters.
8) All antenna cables will be tagged within 12" of the termination of the main feeder cable at both ends, at the entrance to the building, at the base station cabinet(s) and at all multicoupler /combiner ports.
9) No unused cables will be permitted, unused cables must be removed.
10) All cables and associated hardware must be removed upon termination or expiration of license.

VI. Receivers / Transmitters

1) All chassis shields must be in place.
2) Equipment must meet FCC type acceptance.
3) Monitor speakers will be disabled except when maintenance is being performed.
4) Must be tagged with User's name, equipment model, and serial number and operating frequency.
5) All power amplifiers must be shielded.
6) Copy of User's FCC license must be posted.
7) Unlicensed frequencies must be SBAM approved, operators to post contact information on their equipment enclosures.

VII. Cabinets

1) Must be grounded to master ground system.
2) All doors must be on and closed.
3) All unused non-original holes larger than 1" must be covered with copper screen or solid metal plates or other appropriate enclose authorized, specified or suggested by the applicable manufacturer and approved by SBAM.
4) Must be securely attached to platforms or in case of tenant shelters, appropriately installed.

EXHIBIT "C"

Underlying Agreement

(See attached)

Exhibit F

Mailing Receipts

LTR 1 OF 1

FROM:
LEV MAYZLER
(203) 488-0712
CONSTRUCTION SERVICES OF BRANF
63-3 NORTH BRANFORD ROAD
BRANFORD CT 06405-2848

SHIP TO:

DIRECTOR OF PLANNING AND ZONING
MS. KATIE DELUCA
101 FIELD POINT RD.
GREENWICH CT 06830

CT 069 9-01

UPS 2ND DAY AIR **2**
TRACKING #: 1Z E05 345 02 6306 7979

BILLING: P/P

WS 22.0.17 SHARP MX-3070 17.0A 04/2022

Fold here and place in label pouch

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number
1ZE053450263067979

Service

UPS 2nd Day Air®

Delivered On

05/02/2022 9:33 A.M.

Delivered To

GREENWICH, CT, US
Received By

CALABRECE

Left At

Mail Room

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 05/03/2022 6:46 A.M. EST

LTR 1 OF 1

FROM:
LEV MAYZLER
(203) 488-0712
CONSTRUCTION SERVICES OF BRANF
63-3 NORTH BRANFORD ROAD
BRANFORD CT 06405-2848

SHIP TO:
SBA SITE MANAGEMENT, LLC
(561) 226-9534
SUITE 201
900 S. HIGHWAY DRIVE
FENTON MO 63026

MO 630 9-12

UPS 2ND DAY AIR **2**
TRACKING #: 1Z E05 345 02 6267 6750

BILLING: P/P

WS 22.0.17 SHARP MX-3070 17.0A 04/2022

Fold here and place in label pouch

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number
1ZE053450262676750

Service

UPS 2nd Day Air®

Delivered On

05/03/2022 11:27 A.M.

Delivered To
FENTON, MO, US
Received By

FAULKNER

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 05/03/2022 2:33 P.M. EST

LTR 1 OF 1

FROM:
LEV MAYZLER
(203) 488-0712
CONSTRUCTION SERVICES OF BRANF
63-3 NORTH BRANFORD ROAD
BRANFORD CT 06405-2848

CT 069 9-01

SHIP TO:

WEST PUTNAM OWNER, LLC
411 W. PUTNAM AVE.
GREENWICH CT 06830

UPS 2ND DAY AIR **2**

TRACKING #: 1Z E05 345 02 6264 3786

BILLING: P/P

WS 22.0.17 SHARP MX-3070 17.0A 04/2022

Fold here and place in label pouch

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number
1ZE053450262643786

Service

UPS 2nd Day Air®

Delivered On

05/02/2022 1:00 P.M.

Delivered To

GREENWICH, CT, US

Received By

SHUAR

Left At

Receiver

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 05/03/2022 6:44 A.M. EST

LTR 1 OF 1

FROM:
LEV MAYZLER
(203) 488-0712
CONSTRUCTION SERVICES OF BRANF
63-3 NORTH BRANFORD ROAD
BRANFORD CT 06405-2848

SHIP TO:

HON. FRED CAMILLO
101 FIELD POINT RD.
GREENWICH CT 06830

CT 069 9-01

UPS 2ND DAY AIR **2**

TRACKING #: 1Z E05 345 02 6280 6967

BILLING: P/P

WS 22.0.17 SHARP MX-3070 17.0A 04/2022

Fold here and place in label pouch

Proof of Delivery

Dear Customer,

This notice serves as proof of delivery for the shipment listed below.

Tracking Number
1ZE053450262806967

Service

UPS 2nd Day Air®

Delivered On

05/02/2022 9:33 A.M.

Delivered To

GREENWICH, CT, US
Received By

CALABRECE

Left At
Mail Room

Thank you for giving us this opportunity to serve you. Details are only available for shipments delivered within the last 120 days. Please print for your records if you require this information after 120 days.

Sincerely,

UPS

Tracking results provided by UPS: 05/03/2022 6:46 A.M. EST