NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Northeast Site Solutions
Denise Sabo
4 Angela's Way, Burlington CT 06013
203-435-3640
denise@northeastsitesolutions.com

May 19, 2022

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

RE: Tower Share Application
388 Norwich Road, Plainfield, CT 06374
Latitude: 41.692805
Longitude: -71.907111
Site #: CT46146-A_BOBOS00065A_SBA_DISH

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless LLC. Dish Wireless LLC plans to install antennas and related equipment to the tower site located at 388 Norwich Road, Plainfield, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900 MHz 5G antennas and six (6) RRUs, at the 125-foot level of the existing 158-foot monopole tower, one (1) Fiber cable will also be installed. Dish Wireless LLC equipment cabinets will be placed within a 7' x 5' lease area within the fenced compound. Included are plans by B+T, dated March 24, 2022, Exhibit C. Also included is a structural analysis prepared by TES, dated September 9, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. The facility was originally approved by the Plainfield Planning & Zoning Commission on July 10, 2001 and then by the Connecticut Siting Council, Petition No. 654 on January 12, 2004. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish Wireless LLC intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Kevin M. Cunningham, First Selectman, and Mary Ann Chinatti, Town Planner for the Town of Plainfield, as well as the tower owner (SBA) and property owner (Route 12 Bulk LLC).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the existing tower is 158-feet and the Dish Wireless LLC antennas will be located at a center line height of 125-feet.

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

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

4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The combined site operations will result in a total power density of 6.77% as evidenced by Exhibit F.

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

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

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

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish Wireless LLC equipment at the 125-foot level of the existing 15-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

Sincerely,

Denise Sabo

Denise Sabo
Mobile: 203-435-3640
Fax: 413-521-0558
Office: 4 Angela's Way, Burlington CT 06013
Email: denise@northeastsitesolutions.com

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments

Cc: Kevin M. Cunningham, First Selectman
Town of Plainfield
8 Community Avenue
Plainfield, CT 06374

Mary Ann Chinatti, Town Planner
Town of Plainfield
8 Community Avenue
Plainfield, CT 06374

Route 12 Bulk LLC – Property Owner
PO Box 878
Moosup, CT 06354

SBA - Tower Owner

Exhibit A

Original Facility Approval

Petition No. 654
Nextel Communications of the Mid-Atlantic, Inc.
Plainfield, Connecticut
Staff Report
January 12, 2004

On January 9, 2004, Connecticut Siting Council (Council) staff member Robert Mercier and Council member James Murphy conducted a site inspection of a proposed 160-foot monopole in Plainfield, Connecticut. Nextel Communications of the Mid-Atlantic, Inc. (Nextel) seeks a declaratory ruling from the Council that no Certificate of Environmental Compatibility and Public Need (Certificate) is required to construct this town-approved facility. Nextel representative Thomas Flynn and Plainfield Planning and Zoning Agent Ryan Brais also attended the field review.

This petition was filed in response to the Council's letter to municipalities dated January 25, 2002. The letter requested that the owners of speculation and PCS towers which received municipal approval in the period between July 10 and December 17, 2001 submit a petition to the Council for a declaratory ruling as to whether such towers have a substantial adverse environmental effect. The Plainfield Planning and Zoning Commission approved the construction of the facility at a public hearing on July 10, 2001. Abutting landowners were notified of the proposed project prior to the hearing by certified mail. Legal notice was also published in the local newspaper.

The proposed site is located on an 18-acre fuel storage facility at 388 Norwich Road (Route 12). The parcel is developed as a fuel storage and distribution facility. The tower site is located on a slight rise in the eastern portion of the parcel, immediately west of the fuel depot.

The proposed facility consists of a 160-foot monopole located within a fenced, graveled compound. The tower is designed to support five levels of antennas. Nextel would install 12 panel antennas on a platform with a center line height of 156 feet. No other carriers have signed leases to locate at the site; however, AT&T has expressed interest in the site. The facility would serve I-395 and Route 12 in Plainfield.

Abutting property includes a few residences to the west along Route 12, a farm to the north, I-395 to the east, and developed commercial property to the south. The western portion of the site parcel contains woodlands with a tree-line height of 50 feet. The woodlands provide screening to the east, west, and south.

The calculated worst-case radio frequency (RF) power density level for proposed telecommunications operations at the site would be approximately 6% of the applicable American National Standards Institute standard for exposure to uncontrolled environments.

Exhibit B

Property Card

388 NORWICH RD

Location	388 NORWICH RD	**Mblu**	016/ 0056/ 0024/ /
Acct#	00160100	**Owner**	ROUTE 12 BULK LLC
Assessment	$451,570	**Appraisal**	$645,090
PID	1781	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$167,090	$478,000	$645,090
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$116,970	$334,600	$451,570

Owner of Record

Owner	ROUTE 12 BULK LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	PO BOX 878 MOOSUP, CT 06354	**Book & Page**	0254/1225
		Sale Date	11/05/1998
		Instrument	1B

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
ROUTE 12 BULK LLC	$0		0254/1225	1B	11/05/1998
TETREAULT PHILLIP	$65,000		0244/0237	00	08/08/1997
YORK MILLARD R ESTATE OF	$0		0238/0717		11/08/1996

Building Information

Building 1 : Section 1

Year Built:	2001
Living Area:	576
Replacement Cost:	$24,768
Building Percent Good:	86

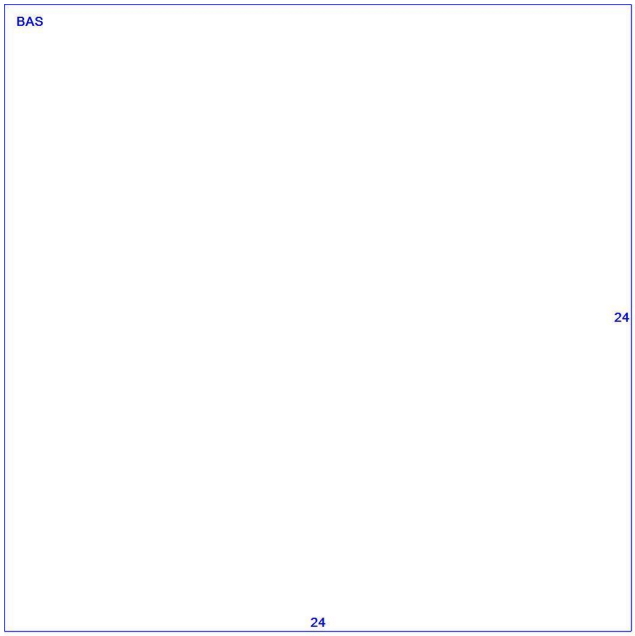
Replacement Cost
Less Depreciation: $21,300

Building Attributes	
Field	**Description**
Style:	Pre-Eng Warehs
Model	Comm/Ind
Grade	C-
Stories:	1
Occupancy	1.00
Exterior Wall 1	Pre-finsh Metl
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall 1	Wall Brd/Wood
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	COMM WHSE
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	0316
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & MIN WL
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	

Building Photo

(https://images.vgsi.com/photos/PlainfieldCTPhotos//\00\00\14\76.JPG)

Building Layout



(ParcelSketch.ashx?pid=1781&bid=1781)

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	576	576
		576	576

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Land Line Valuation

Use Code	3160	**Size (Acres)**	27.5
Description	COMM WHSE	**Frontage**	
Zone	C	**Depth**	
Neighborhood	1010	**Assessed Value**	$334,600
Alt Land Appr	No	**Appraised Value**	$478,000
Category			

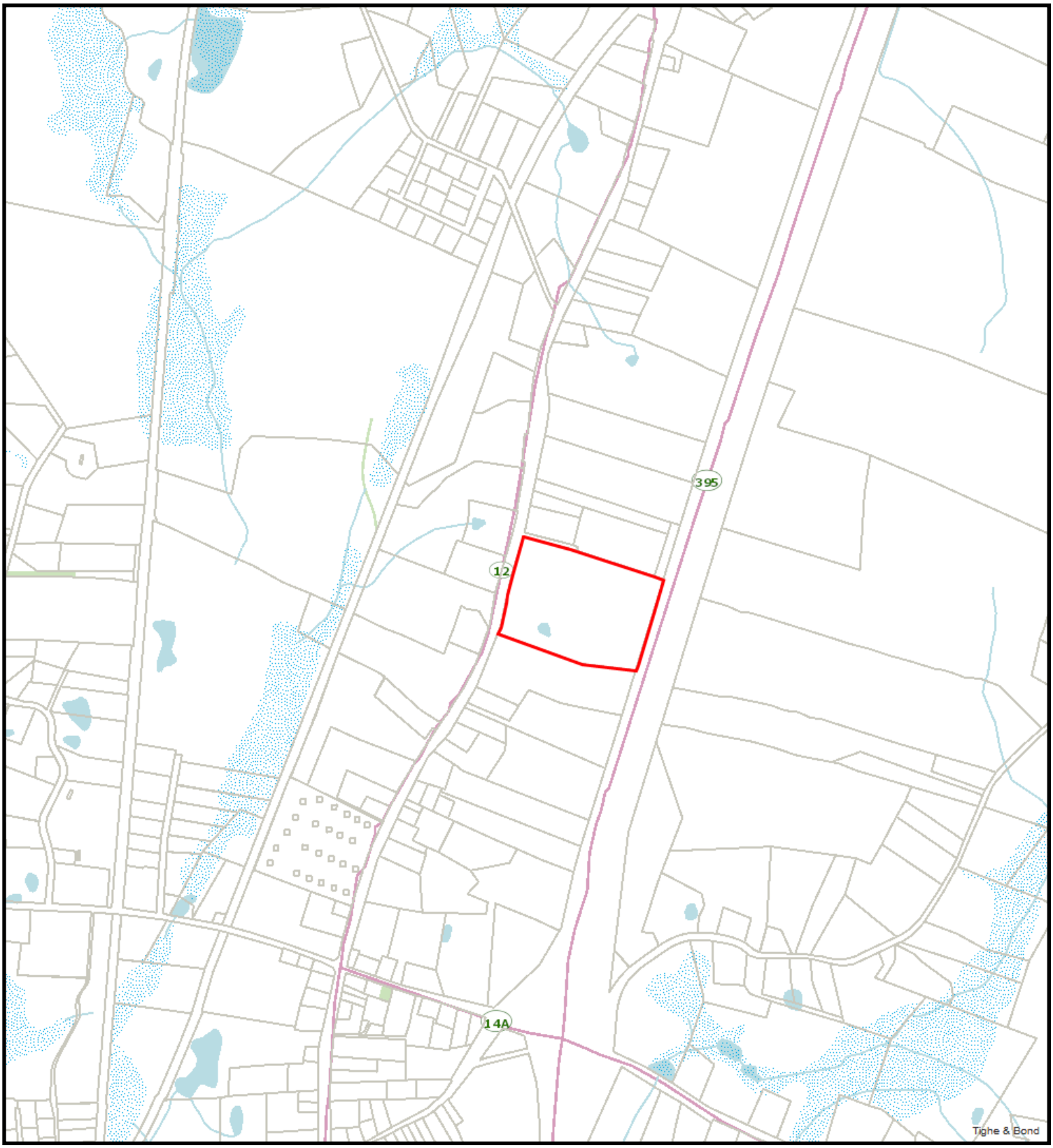
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
RG8	Metal Garage			1800.00 S.F.	$16,650	1
PAV1	Paving-Aspalt			20000.00 S.F.	$20,000	1
CNP2	Canopy Good			7276.00 S.F.	$109,140	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$167,090	$478,000	$645,090
2020	$167,090	$478,000	$645,090

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$116,970	$334,600	$451,570
2020	$116,970	$334,600	$451,570



388 NORWICH ROAD

5/19/2022 10:14:43 AM

Scale: 1"=1000'

Scale is approximate

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBOS00065A

DISH Wireless L.L.C. SITE ADDRESS:

388 NORWICH ROAD
PLAINFIELD, CT 06374

CONNECTICUT CODE OF COMPLIANCE

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

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

SCOPE OF WORK

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

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

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)

SITE PHOTO

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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	ROUTE 12 BULK LLC
ADDRESS:	PO BOX 878 MOOSUP, CT 06354
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	CT46146-A
TOWER APP NUMBER:	167054
COUNTY:	WINDHAM
LATITUDE (NAD 83):	41° 41' 34.1" N 41.69280522 N
LONGITUDE (NAD 83):	71° 54' 25.6" W 71.90711111 W
ZONING JURISDICTION:	CONNECTICUT SITING COUNCIL
ZONING DISTRICT:	COMMERCIAL
PARCEL NUMBER:	016-0056-0024
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	CONNECTICUT LIGHT & POWER CO
TELEPHONE COMPANY:	T.B.D.

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	SBA COMMUNICATAIONS CORP. 8051 CONGRESS AVENUE BOCA RATON, FL 33487 (800) 487-7483
SITE DESIGNER:	B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
SITE ACQUISITION:	RYAN LYNCH JEAN.COTTRELL@DISH.COM
CONST. MANAGER:	AARON CHANDLER AARON.CHANDLER@DISH.COM
RF ENGINEER:	ARVIN SEBASTIAN ARVIN.SEBASTIAN@DISH.COM

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:
CONTINUE TO BRADLEY INTERNATIONAL AIRPORT CON, HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT, SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT, SLIGHT LEFT, FOLLOW I-91 S, CT-2 E AND I-395 N TO CT-14A W IN PLAINFIELD. TAKE EXIT 29 FROM I-395 N, CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON, CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON, USE THE RIGHT 2 LANES TO MERGE WITH I-91 S TOWARD HARTFORD, USE THE LEFT LANE TO TAKE EXIT 30 TO MERGE WITH I-84 E, TAKE EXIT 55 FOR CT-2 E TOWARD NORWICH/NEW LONDON/I-84 E, CONTINUE ONTO CT-2 E, KEEP LEFT AT THE Y JUNCTION TO STAY ON CT-2 E, FOLLOW SIGNS FOR 2 E, TAKE EXIT 28N TO MERGE WITH I-395 N TOWARD PROVIDENCE, TAKE EXIT 29 FOR CONNECTICUT 14 ALTERNATE TOWARD PLAINFIELD/ONECO, TAKE CT-12 N TO YOUR DESTINATION, TURN LEFT ONTO CT-14A W, TURN RIGHT ONTO CT-12 N, TURN RIGHT, ARRIVING AT BOBOS00065A.

VICINITY MAP

NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA

8051 CONGRESS AVENUE
BOCA RATON, FL 33487

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

01/05/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
BLJ	BLJ	MP

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	9/10/21	ISSUED FOR REVIEW
0	01/05/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149491.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

CUSTOMER PROVIDED SITE SURVEY UNAVAILABLE AT TIME OF RELEASE

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

8051 CONGRESS AVENUE
BOCA RATON, FL 33487

B+T GRP
1717 S. BOULDER
SUITE 300
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01/05/22

B&T ENGINEERING, INC.
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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

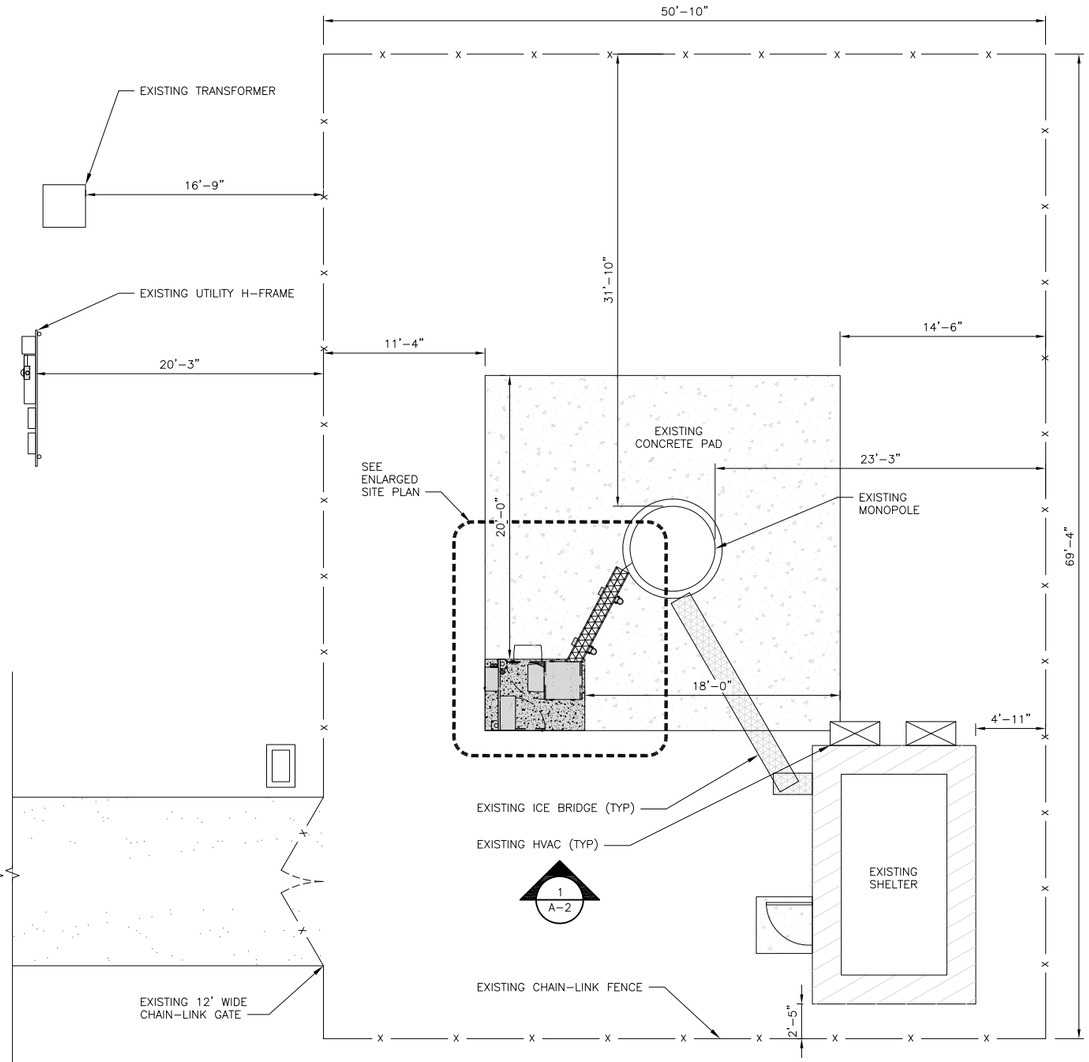
SITE SURVEY

SHEET NUMBER

LS-1

NOTES

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



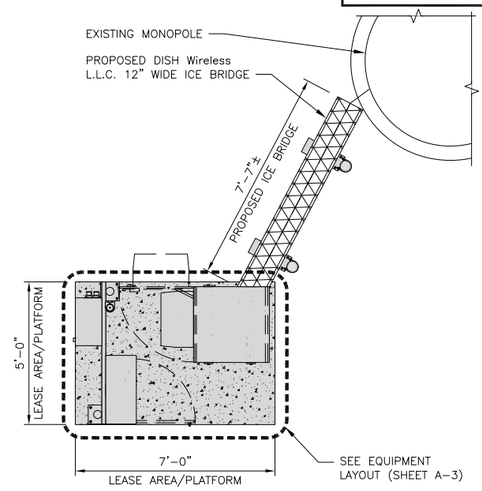
OVERALL SITE PLAN

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

1

NOTES

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



ENLARGED SITE PLAN

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

2

NOT USED

3

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

SBA
8051 CONGRESS AVENUE
BOCA RATON, FL 33487

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

STATE OF CONNECTICUT
No. 23924
LICENSED PROFESSIONAL ENGINEER
01/05/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
BLJ	BLJ	MP

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	9/10/21	ISSUED FOR REVIEW
0	01/05/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149491.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

B0BOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

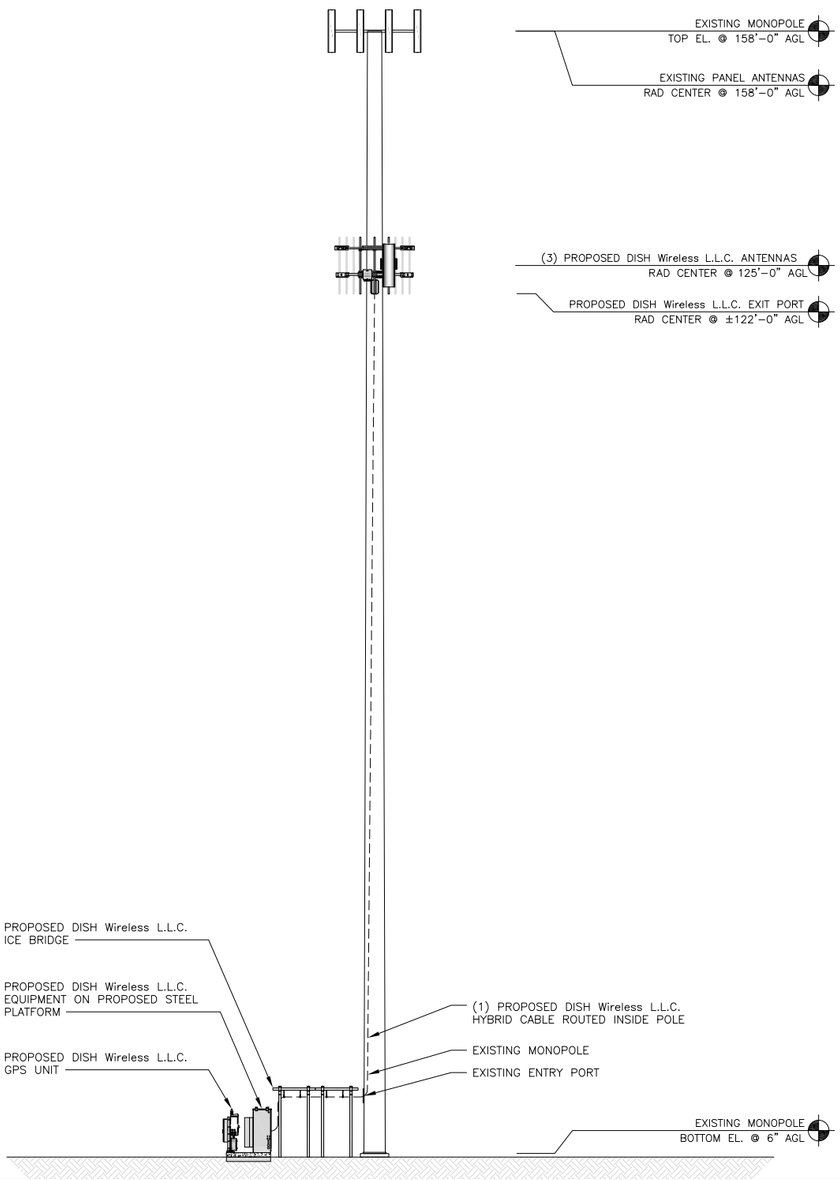
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

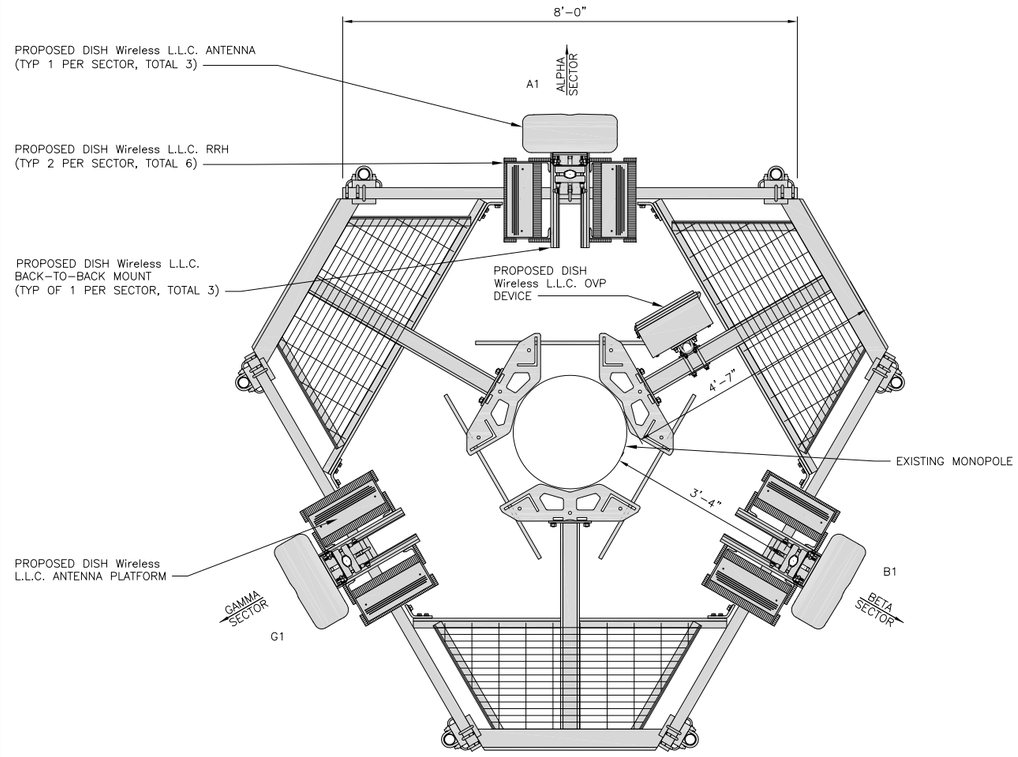
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED SOUTH ELEVATION

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

1



N

ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	COMMSCOPE – FFVV-65B-R2	5G	72.0" x 19.6"	0°	125'-0"	(1) HIGH-CAPACITY HYBRID CABLE (160' LONG)
BETA	B1	PROPOSED	COMMSCOPE – FFVV-65B-R2	5G	72.0" x 19.6"	120°	125'-0"	
GAMMA	G1	PROPOSED	COMMSCOPE – FFVV-65B-R2	5G	72.0" x 19.6"	240°	125'-0"	

SECTOR	POSITION	RRH	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
ALPHA	A1	FUJITSU – TA08025-B605	5G
	A1	FUJITSU – TA08025-B605	5G
BETA	B1	FUJITSU – TA08025-B605	5G
	B1	FUJITSU – TA08025-B605	5G
GAMMA	G1	FUJITSU – TA08025-B605	5G
	G1	FUJITSU – TA08025-B605	5G

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

SBA

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PROJECT INFORMATION

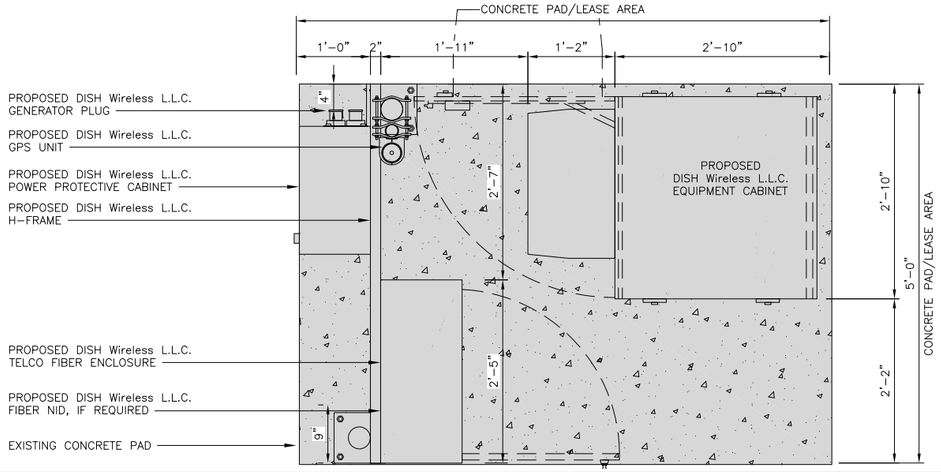
BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



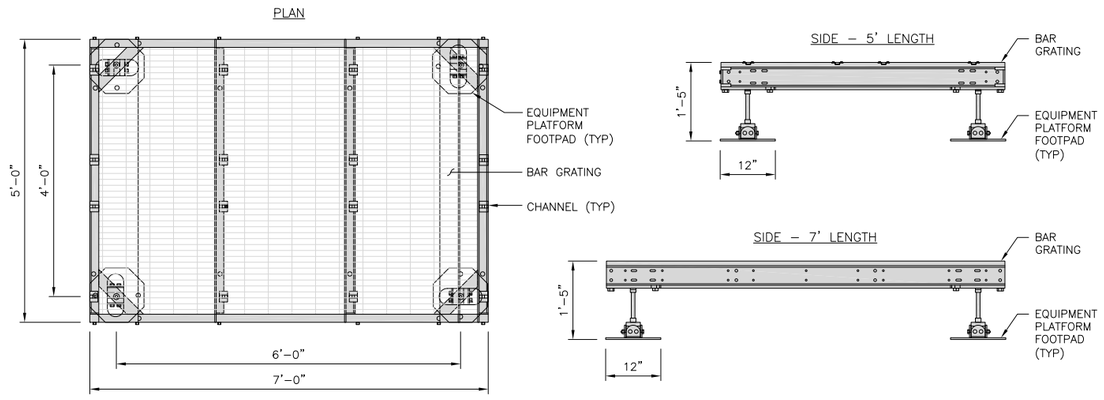
PLATFORM EQUIPMENT PLAN

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

1

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

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

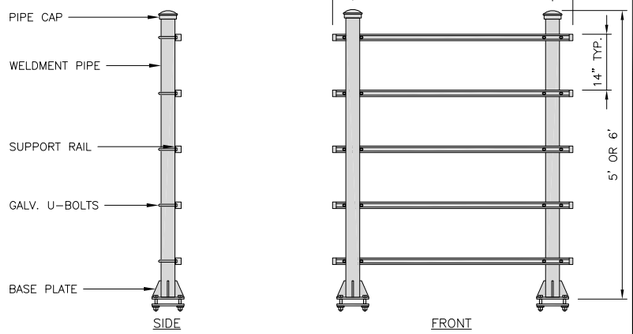


PLATFORM DETAIL

NO SCALE

2

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



H-FRAME DETAIL

NO SCALE

3

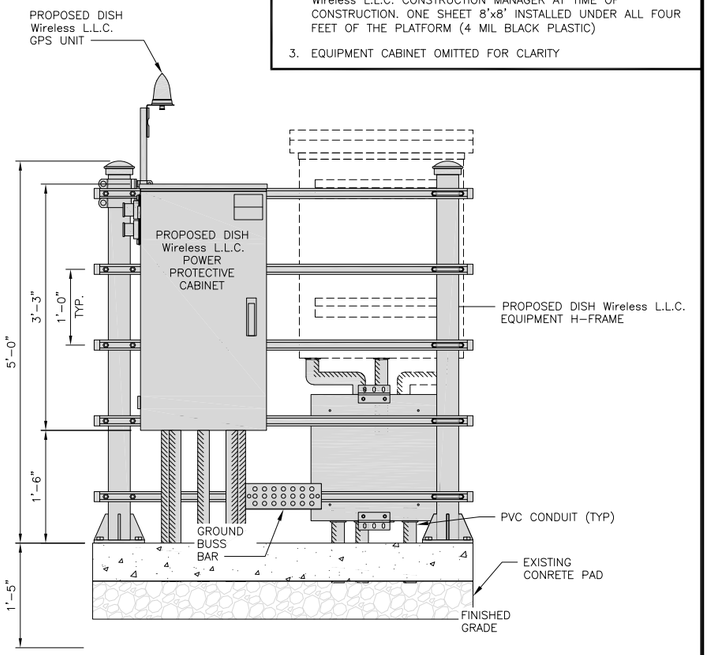
NOT USED

NO SCALE

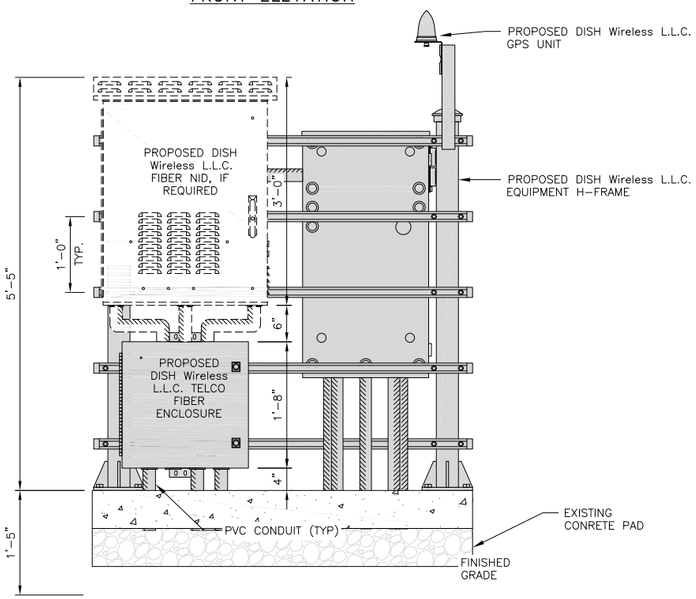
4

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 L.L.C. CONSTRUCTION MANAGER AT TIME OF CONSTRUCTION. ONE SHEET 8'x8' INSTALLED UNDER ALL FOUR FEET OF THE PLATFORM (4 MIL BLACK PLASTIC)
3. EQUIPMENT CABINET OMITTED FOR CLARITY



FRONT ELEVATION



BACK ELEVATION

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

5

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RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER

149491.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

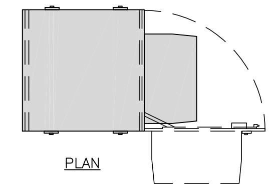
SHEET TITLE

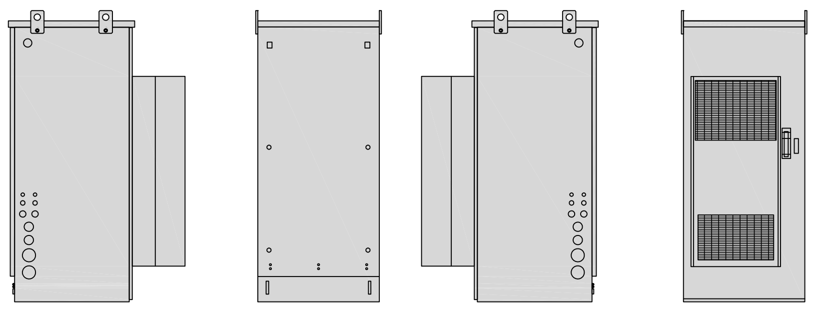
EQUIPMENT PLATFORM AND H-FRAME DETAILS

SHEET NUMBER

A-3

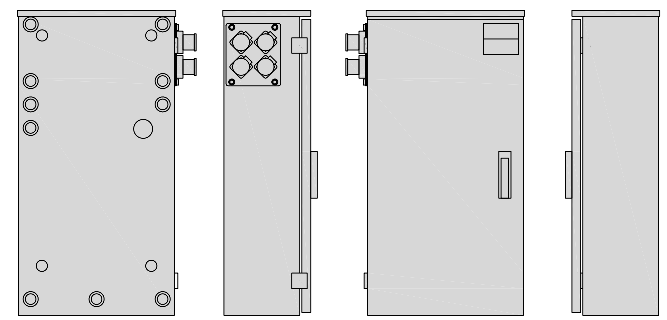
CHARLES INDUSTRY HEX CUBE–PM639155N4	
DIMENSIONS (HxWxD):	74"x32"x32"
POWER PLANT:	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 LBS





CABINET DETAIL — NO SCALE — 1

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

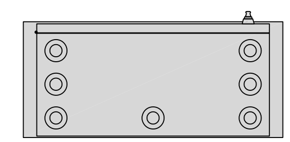


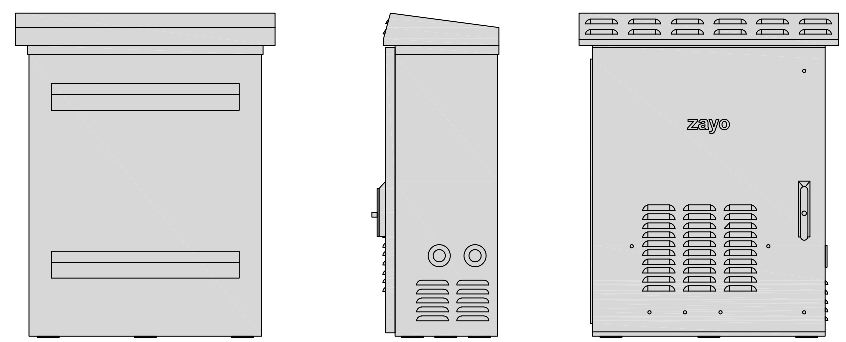
POWER PROTECTION CABINET (PPC) DETAIL — NO SCALE — 2

NOT USED — NO SCALE — 3

NOT USED — NO SCALE — 4

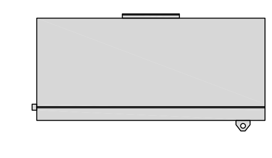
ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs

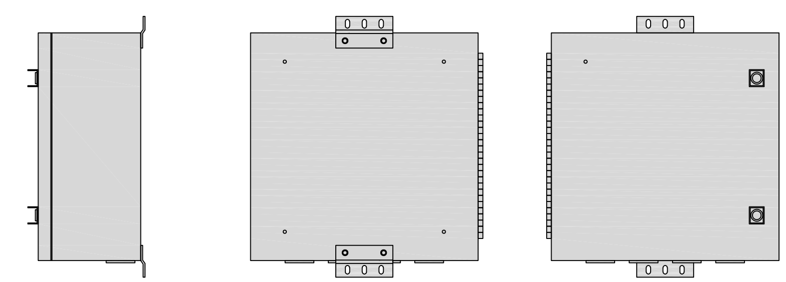




FIBER NID ENCLOSURE DETAIL — NO SCALE — 5

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

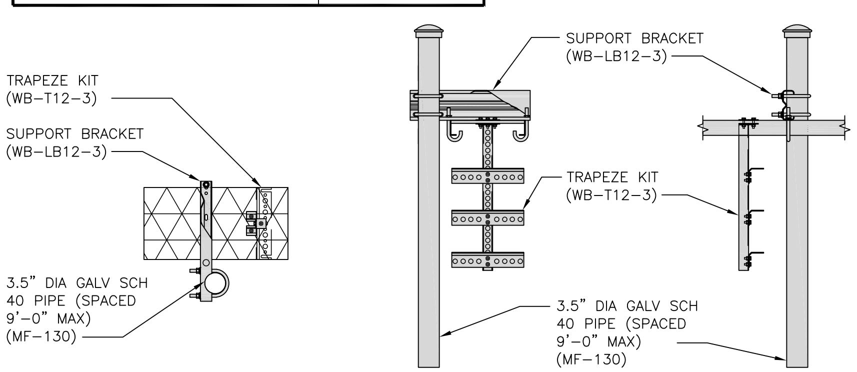




FIBER TELCO ENCLOSURE DETAIL — NO SCALE — 6

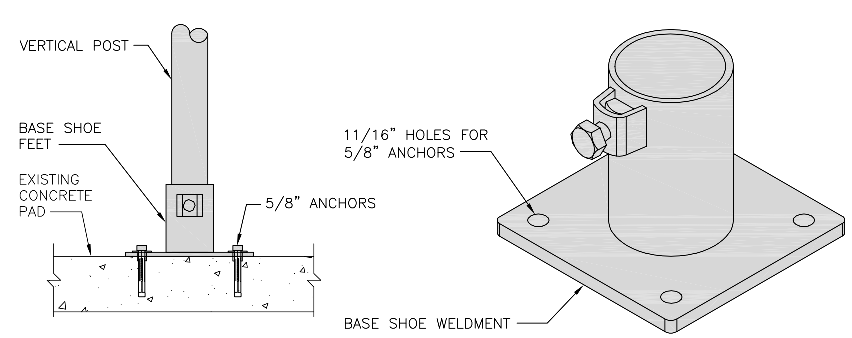
COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

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

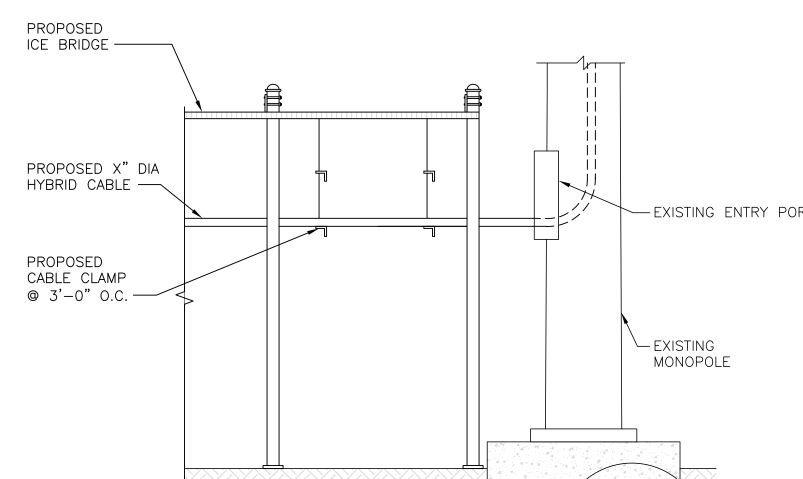


ICE BRIDGE DETAIL — NO SCALE — 7

SITEPRO1 BSF35 BASE SHOE FEET	
DIMENSIONS (HxWxL)	8"x8"x1/2"
WEIGHT	15.0 LBS
POST SIZE:	2–7/8" OR 3–1/2"



ICE BRIDGE PIPE MOUNT DETAIL — NO SCALE — 8



HYBRID CABLE RUN — NO SCALE — 9

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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.

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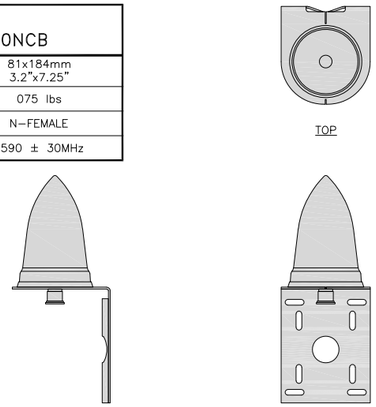
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

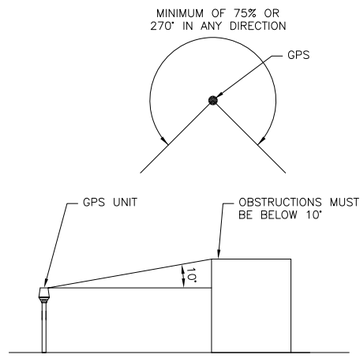
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

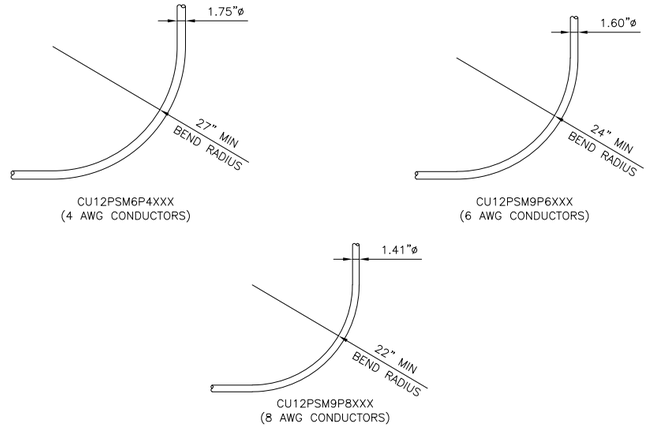
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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PROJECT INFORMATION

BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

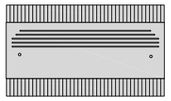
SHEET TITLE

EQUIPMENT DETAILS

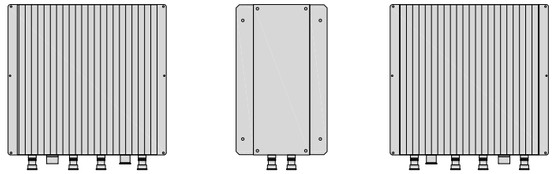
SHEET NUMBER

A-5

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



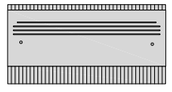
PLAN



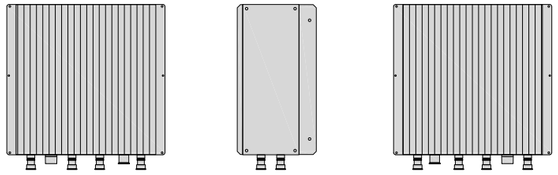
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 1

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



PLAN



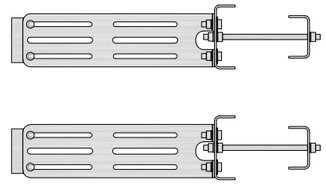
BACK SIDE FRONT

RRH DETAIL | NO SCALE | 2

COMMSCOPE RR-FA2 LARGE STABILIZER	
DIMENSIONS (HxWxD)	16.4"x8.5"x18"
WEIGHT	39.2 lbs

DESIGN NOTES:
MOUNT WILL FIT LEGS UP TO:
- 5.6" ROUND
- 6.0" 60° ANGLE
- 4.5" 90° ANGLE

PLAN



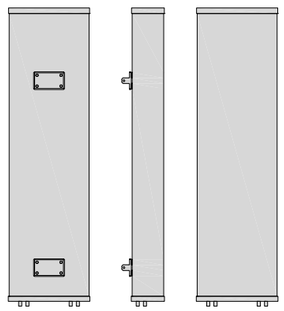
SIDE

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

RRH MOUNT DETAIL | NO SCALE | 3

COMMSCOPE FFVV-65B-R2	
DIMENSIONS (HxWxD)(MM/IN)	1828x498x197 72"x19.6"x7.8"
RF CONNECTOR INTERFACE	4.3-10 FEMALE
WEIGHT	70.8 lbs
WEIGHT WITH BRACKETS	98.1 lbs

PLAN



BACK SIDE FRONT

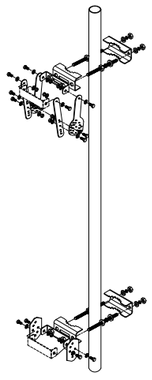
ANTENNA DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

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

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

ANTENNA BRACKET NOT PART OF KIT

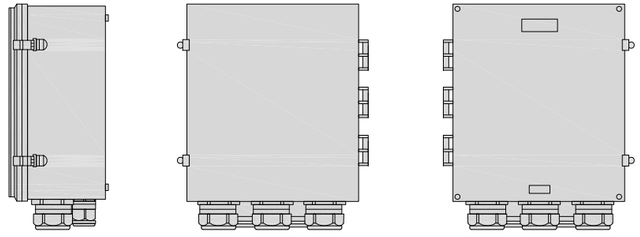


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

ANTENNA BRACKET DETAIL | NO SCALE | 6

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

PLAN

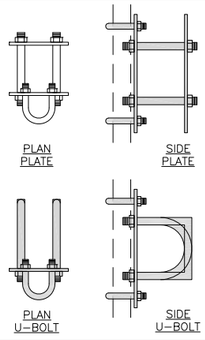


SIDE BACK FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

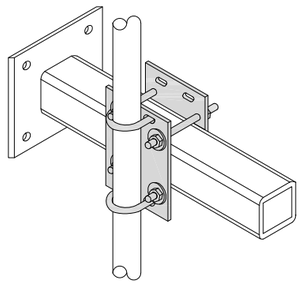
COMMSCOPE XP-2040 CROSSOVER PLATE	
DIMENSIONS (HxW)	10"x12"
WEIGHT	11 lbs

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



PLAN PLATE SIDE PLATE

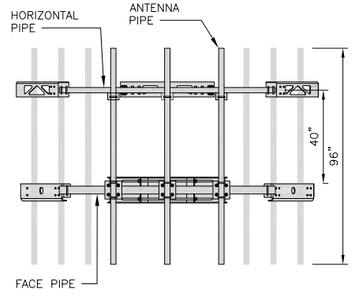
PLAN U-BOLT SIDE U-BOLT

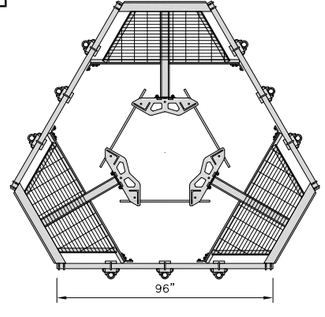


RRH/OVP MOUNT DETAIL | NO SCALE | 8

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

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





ANTENNA PLATFORM DETAIL | NO SCALE | 9

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PROJECT INFORMATION

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388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

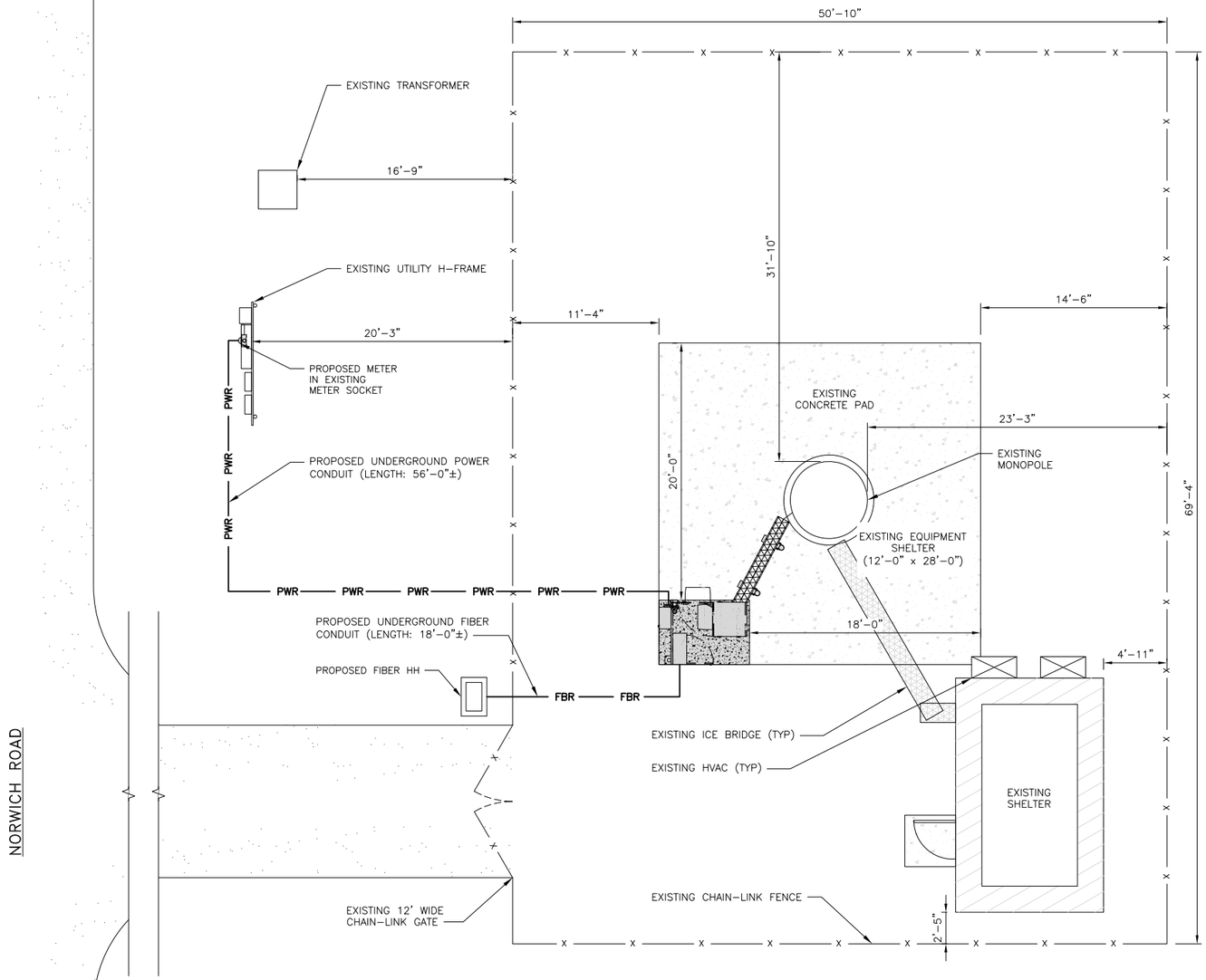
EQUIPMENT DETAILS

SHEET NUMBER

A-6

NOTES

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



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

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

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No. 23924
LICENSED PROFESSIONAL ENGINEER
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388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER

E-1

UTILITY ROUTE PLAN

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

1

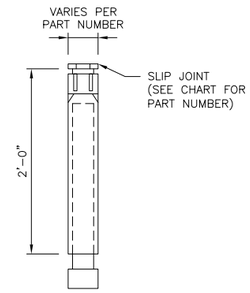
ELECTRICAL NOTES

NO SCALE

2

CARLON EXPANSION FITTINGS

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

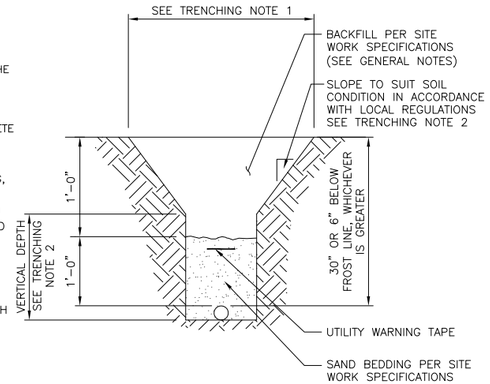


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

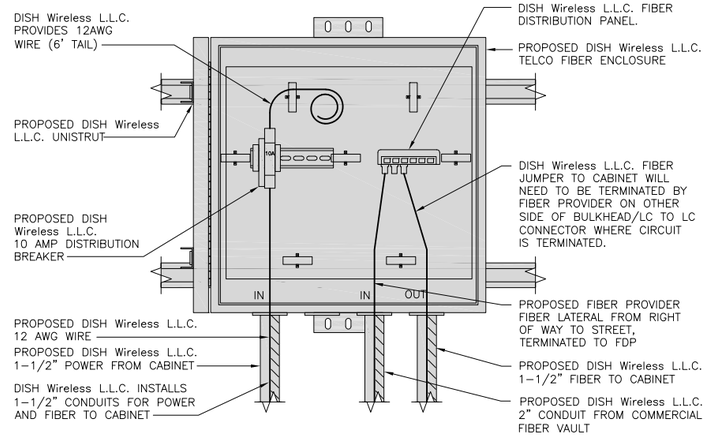
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

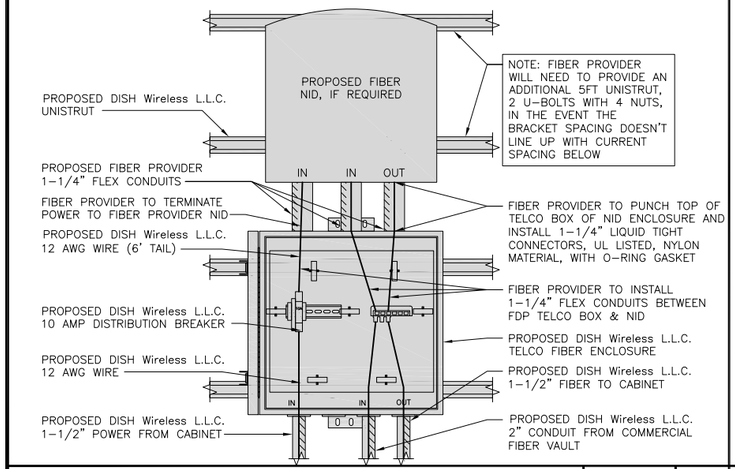
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
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RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
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0	01/05/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149491.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

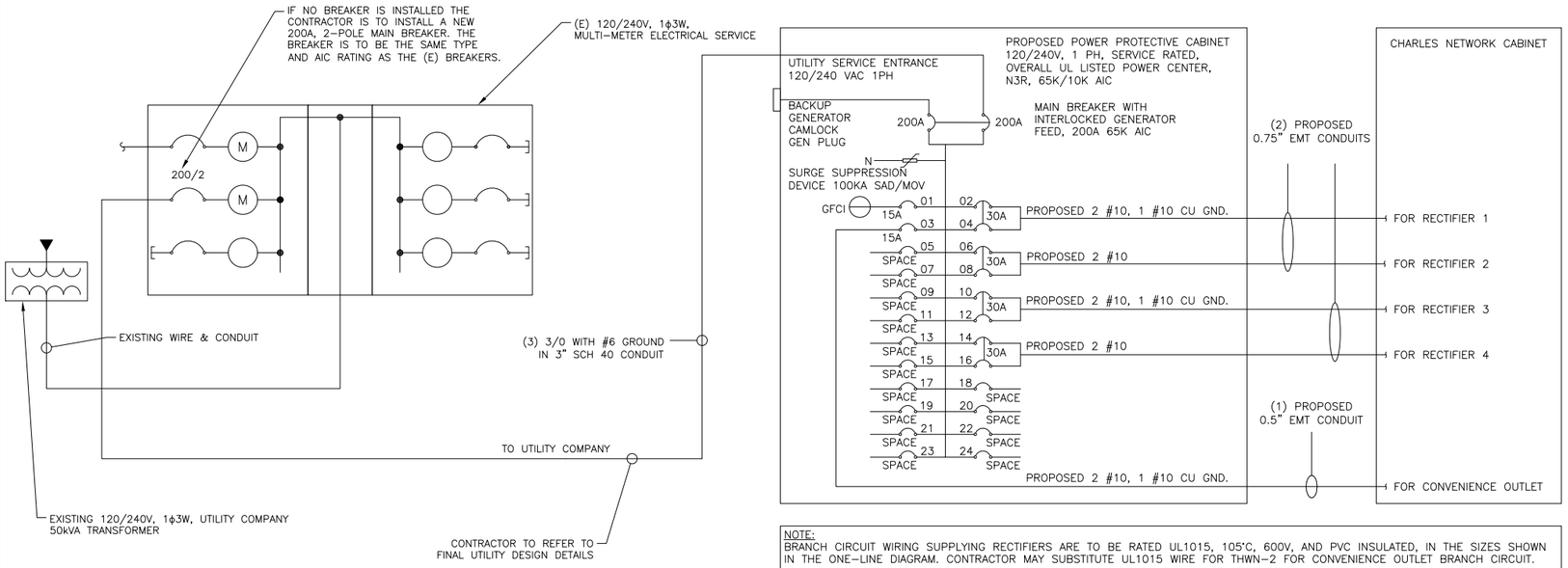
BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

ELECTRICAL DETAILS

SHEET NUMBER

E-2



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

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

NOTES

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

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

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

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

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

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

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

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

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

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

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

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

PPC ONE-LINE DIAGRAM — NO SCALE — 1

PROPOSED CHARLES PANEL SCHEDULE

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

PANEL SCHEDULE — NO SCALE — 2

NOT USED — NO SCALE — 3

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STATE OF CONNECTICUT — No. 23924 — LICENSED PROFESSIONAL ENGINEER
01/05/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
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RFDS REV #: 0

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149491.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

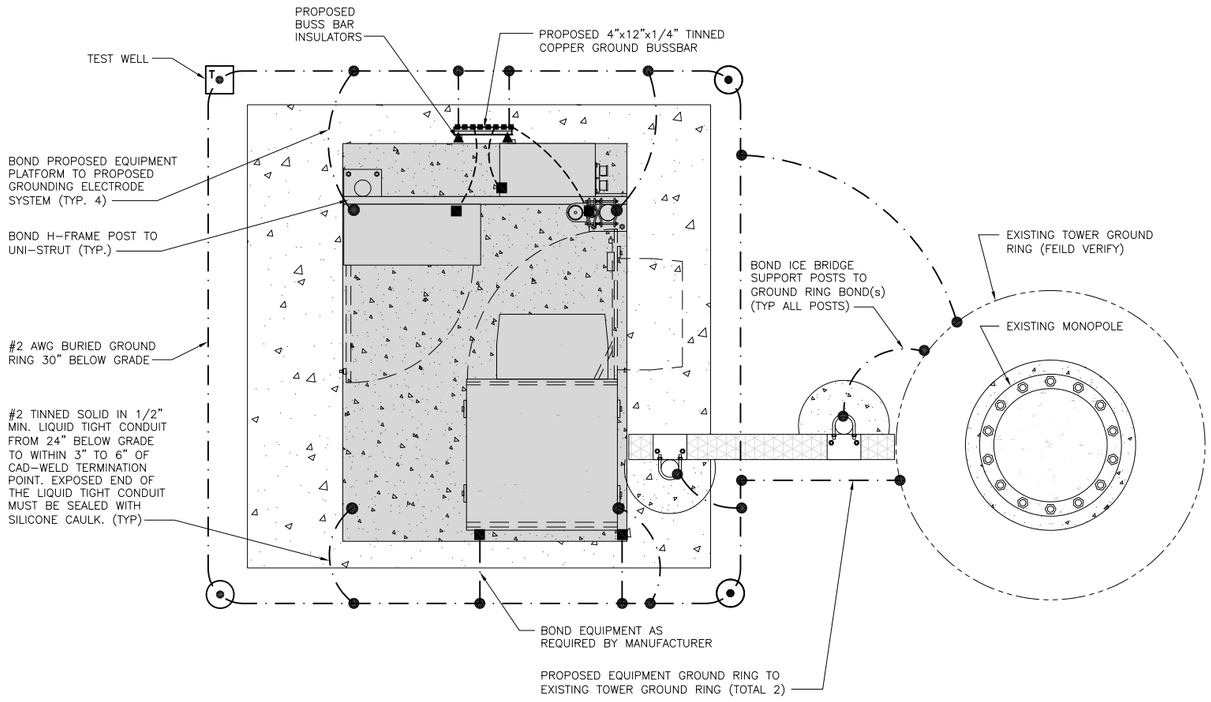
BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER

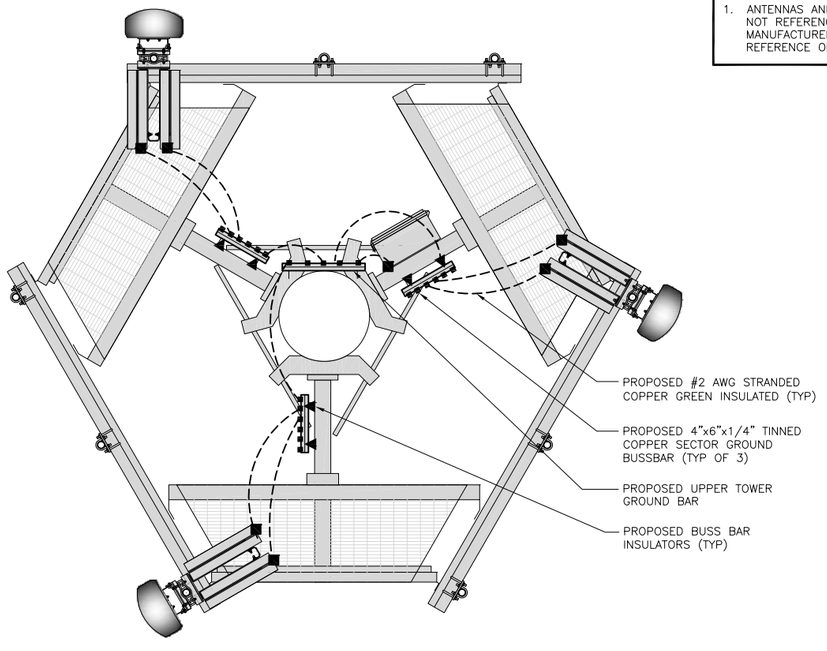
E-3



TYPICAL EQUIPMENT GROUNDING PLAN | NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES | NO SCALE | 3

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STATE OF CONNECTICUT — GREGORY BLAKE LACY — No. 23924 — LICENSED PROFESSIONAL ENGINEER
01/05/22

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CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER
149491.001.01

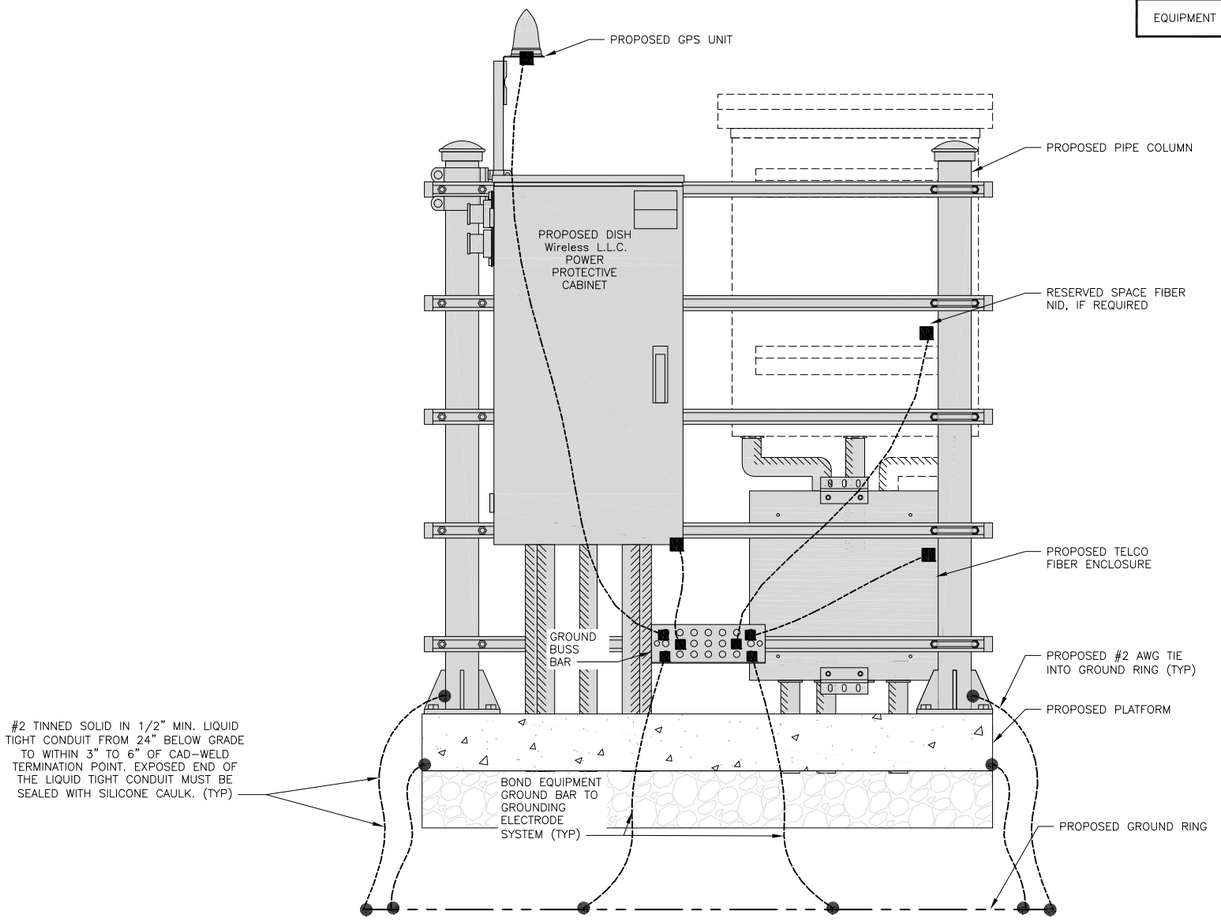
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

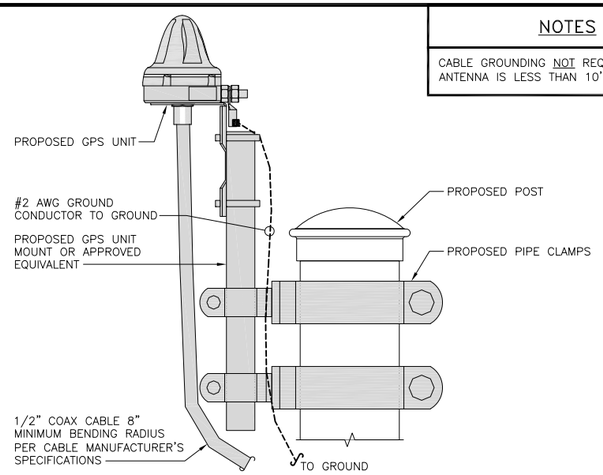
EQUIPMENT CABINET OMITTED FOR CLARITY



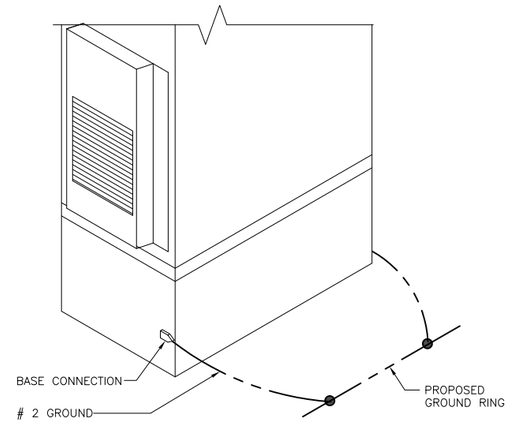
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

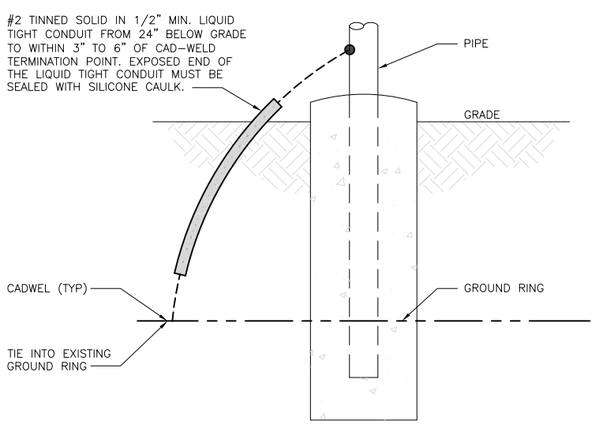
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



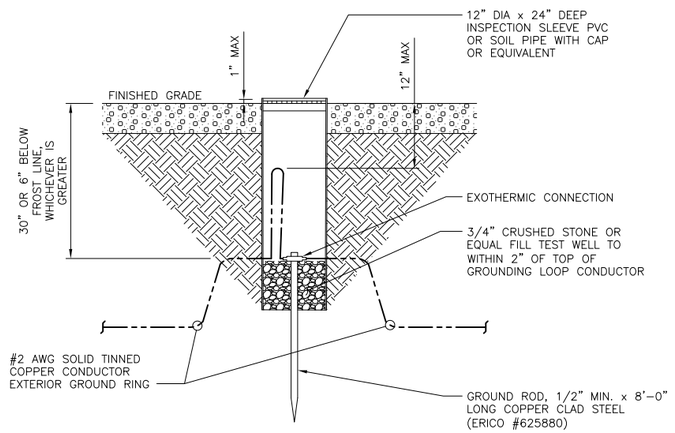
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



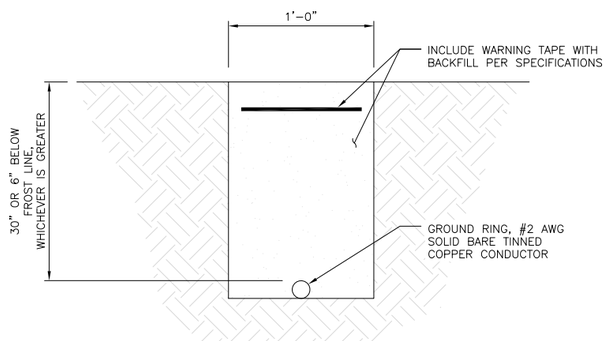
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



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



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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PROJECT INFORMATION

BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

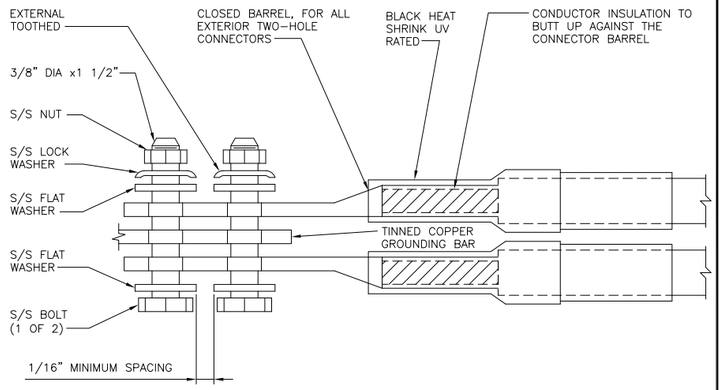
GROUNDING DETAILS

SHEET NUMBER

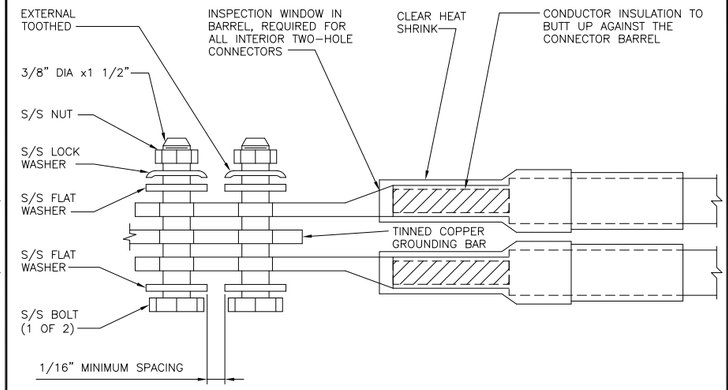
G-2

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

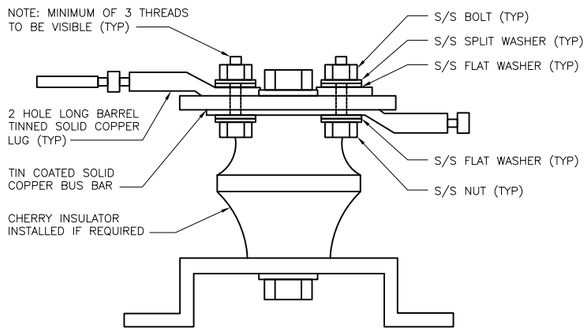
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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PROJECT INFORMATION

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388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

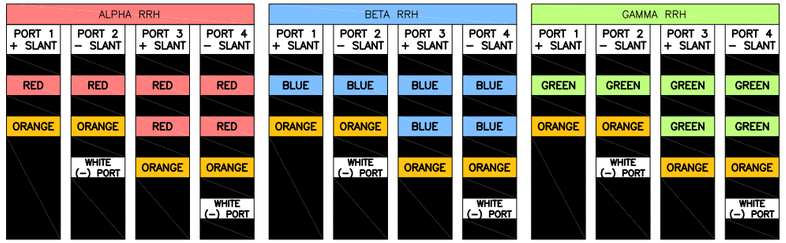
G-3

RF JUMPER COLOR CODING

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

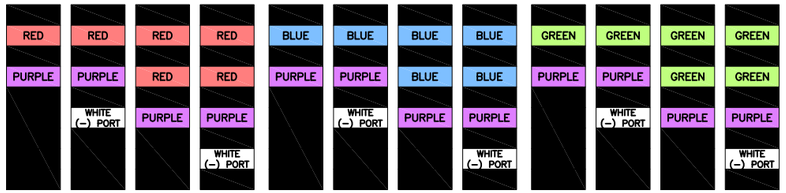
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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

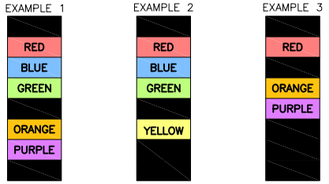


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

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

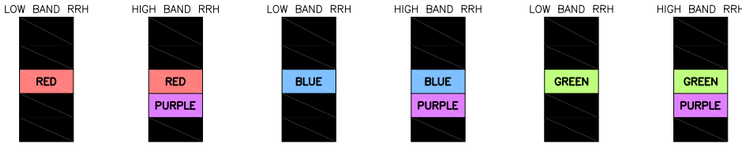
EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS
CBRS ONLY, ALL SECTORS



CONTRACTOR TO REFER TO FINAL
CONSTRUCTION RFDS FOR ALL RD DETAILS.
FINAL RFDS IS IN NEXSYSONE.

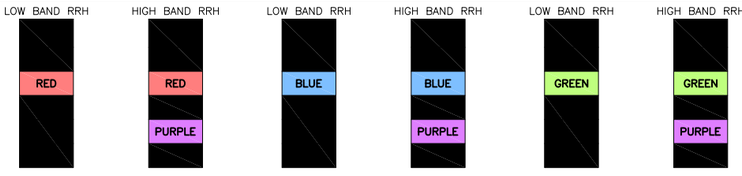
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

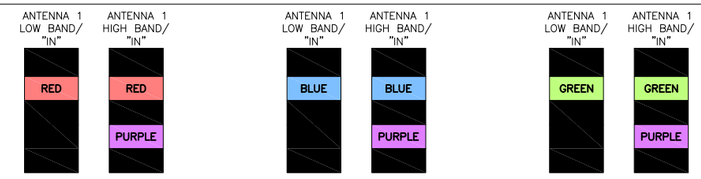


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY



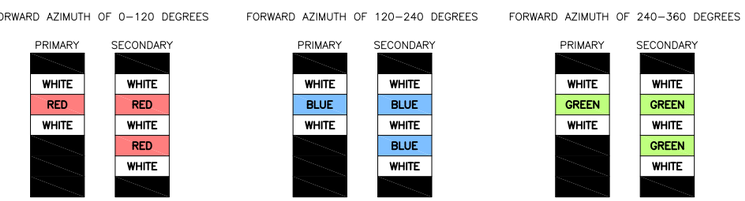
RET MOTORS AT ANTENNAS



MICROWAVE RADIO LINKS

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

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



RF CABLE COLOR CODES	NO SCALE	1

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

AWS
(N66+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH
WHITE

ALPHA SECTOR
RED

BETA SECTOR
BLUE

GAMMA SECTOR
GREEN

COLOR IDENTIFIER	NO SCALE	2

NOT USED	NO SCALE	3

NOT USED	NO SCALE	4

dish wireless.
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STATE OF CONNECTICUT
No. 23924
LICENSED
PROFESSIONAL ENGINEER
01/05/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
BLJ	BLJ	MP

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	9/10/21	ISSUED FOR REVIEW
0	01/05/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149491.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

LEGEND

Item	Symbol
EXOTHERMIC CONNECTION	
MECHANICAL CONNECTION	
BUSS BAR INSULATOR	
CHEMICAL ELECTROLYTIC GROUNDING SYSTEM	
TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM	T
EXOTHERMIC WITH INSPECTION SLEEVE	
GROUNDING BAR	
GROUND ROD	
TEST GROUND ROD WITH INSPECTION SLEEVE	T
SINGLE POLE SWITCH	$
DUPLEX RECEPTACLE	
DUPLEX GFCI RECEPTACLE	GFCI
FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8	F
SMOKE DETECTION (DC)	SD
EMERGENCY LIGHTING (DC)	
SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED–1–25A400/51K–SR4–120–PE–DDBTXD	
CHAIN LINK FENCE	— x — x — x — x —
WOOD/WROUGHT IRON FENCE	
WALL STRUCTURE	
LEASE AREA	
PROPERTY LINE (PL)	
SETBACKS	
ICE BRIDGE	
CABLE TRAY	
WATER LINE	— W — W — W — W — W —
UNDERGROUND POWER	— UGP — UGP — UGP — UGP — UGP —
UNDERGROUND TELCO	— UGT — UGT — UGT — UGT — UGT —
OVERHEAD POWER	— OHP — OHP — OHP — OHP —
OVERHEAD TELCO	— OHT — OHT — OHT — OHT —
UNDERGROUND TELCO/POWER	— UGT/P — UGT/P — UGT/P — UGT/P —
ABOVE GROUND POWER	— AGP — AGP — AGP — AGP — AGP —
ABOVE GROUND TELCO	— AGT — AGT — AGT — AGT — AGT —
ABOVE GROUND TELCO/POWER	— AGT/P — AGT/P — AGT/P — AGT/P —
WORKPOINT	W.P.
SECTION REFERENCE	XX / X–X
DETAIL REFERENCE	XX / X–X

ABBREVIATIONS

AB	ANCHOR BOLT
ABV	ABOVE
AC	ALTERNATING CURRENT
ADDL	ADDITIONAL
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AIC	AMPERAGE INTERRUPTION CAPACITY
ALUM	ALUMINUM
ALT	ALTERNATE
ANT	ANTENNA
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BM	BEAM
BTC	BARE TINNED COPPER CONDUCTOR
BOF	BOTTOM OF FOOTING
CAB	CABINET
CANT	CANTILEVERED
CHG	CHARGING
CLG	CEILING
CLR	CLEAR
COL	COLUMN
COMM	COMMON
CONC	CONCRETE
CONSTR	CONSTRUCTION
DBL	DOUBLE
DC	DIRECT CURRENT
DEPT	DEPARTMENT
DF	DOUGLAS FIR
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DWG	DRAWING
DWL	DOWEL
EA	EACH
EC	ELECTRICAL CONDUCTOR
EL.	ELEVATION
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ENG	ENGINEER
EQ	EQUAL
EXP	EXPANSION
EXT	EXTERIOR
EW	EACH WAY
FAB	FABRICATION
FF	FINISH FLOOR
FG	FINISH GRADE
FIF	FACILITY INTERFACE FRAME
FIN	FINISH(ED)
FLR	FLOOR
FDN	FOUNDATION
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FOW	FACE OF WALL
FS	FINISH SURFACE
FT	FOOT
FTG	FOOTING
GA	GAUGE
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GLB	GLUE LAMINATED BEAM
GLV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE
HDG	HOT DIPPED GALVANIZED
HDR	HEADER
HGR	HANGER
HVAC	HEAT/VENTILATION/AIR CONDITIONING
HT	HEIGHT
IGR	INTERIOR GROUND RING
IN	INCH
INT	INTERIOR
LB(S)	POUND(S)
LF	LINEAR FEET
LTE	LONG TERM EVOLUTION
MAS	MASONRY
MAX	MAXIMUM
MB	MACHINE BOLT
MECH	MECHANICAL
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
MTS	MANUAL TRANSFER SWITCH
MW	MICROWAVE
NEC	NATIONAL ELECTRIC CODE
NM	NEWTON METERS
NO.	NUMBER
#	NUMBER
NTS	NOT TO SCALE
OC	ON–CENTER
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OPNG	OPENING
P/C	PRECAST CONCRETE
PCS	PERSONAL COMMUNICATION SERVICES
PCU	PRIMARY CONTROL UNIT
PRC	PRIMARY RADIO CABINET
PP	POLARIZING PRESERVING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PWR	POWER CABINET
QTY	QUANTITY
RAD	RADIUS
RECT	RECTIFIER
REF	REFERENCE
REINF	REINFORCEMENT
REQ'D	REQUIRED
RET	REMOTE ELECTRIC TILT
RF	RADIO FREQUENCY
RMC	RIGID METALLIC CONDUIT
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
RWY	RACEWAY
SCH	SCHEDULE
SHT	SHEET
SIAD	SMART INTEGRATED ACCESS DEVICE
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STL	STEEL
TEMP	TEMPORARY
THK	THICKNESS
TMA	TOWER MOUNTED AMPLIFIER
TN	TOE NAIL
TOA	TOP OF ANTENNA
TOC	TOP OF CURB
TOF	TOP OF FOUNDATION
TOP	TOP OF PLATE (PARAPET)
TOS	TOP OF STEEL
TOW	TOP OF WALL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORY
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
UPS	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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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

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:
BLJ	BLJ	MP

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	9/10/21	ISSUED FOR REVIEW
0	01/05/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
149491.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE
LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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01/05/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

DRAWN BY:	CHECKED BY:	APPROVED BY:
BLJ	BLJ	MP

RFDS REV #: 0

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	9/10/21	ISSUED FOR REVIEW
0	01/05/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

149491.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

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PROJECT INFORMATION

BOBOS00065A
388 NORWICH ROAD
PLAINFIELD, CT 06374

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 158 ft Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46146-A

Customer Site Name: Plainfield

Carrier Name: Dish Wireless (App#: 167054-1)

Carrier Site ID / Name: BOBOS00065A / 0

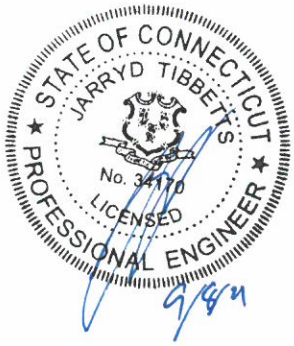
Site Location: 388 Norwich Road

Plainfield, Connecticut

Windham County

Latitude: 41.692805

Longitude: -71.907111



Analysis Result:

Max Structural Usage: 55.8% [Pass]

Max Foundation Usage: 51.0% [Pass]

Report Prepared By: Suvash Chapain

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

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Report Prepared By: Suvash Chapain

Introduction

The purpose of this report is to summarize the analysis results on the 158 ft Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Sabre Towers & Poles Job# 120565 dated 03/30/2015
Foundation Drawing	Sabre Towers & Poles Job# 120565 dated 03/30/2015
Geotechnical Report	FDH Engineering, Inc Project # 1467GS1600 dated 03/20/2001

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	97.0 mph (3-Sec. Gust) (Normal wind speed)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	S_S = 0.17, S_1 = 0.061

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	158.0	12	Andrew - DB844H90E-XY	Low Profile Platform	(12) 1 5/8"	Sprint

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	125.0	3	JMA Wireless - MX08FRO665-21	MC-PK8-DSH	(1) 1.6" Hybrid	Dish Wireless
2		3	TA08025-B605			
3		1	RDIDC-9181-PF-48			
4		3	TA08025-B604			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**54.4%**	**47.7%**	**55.8%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	2285.2	22.4	48.4

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.9608 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

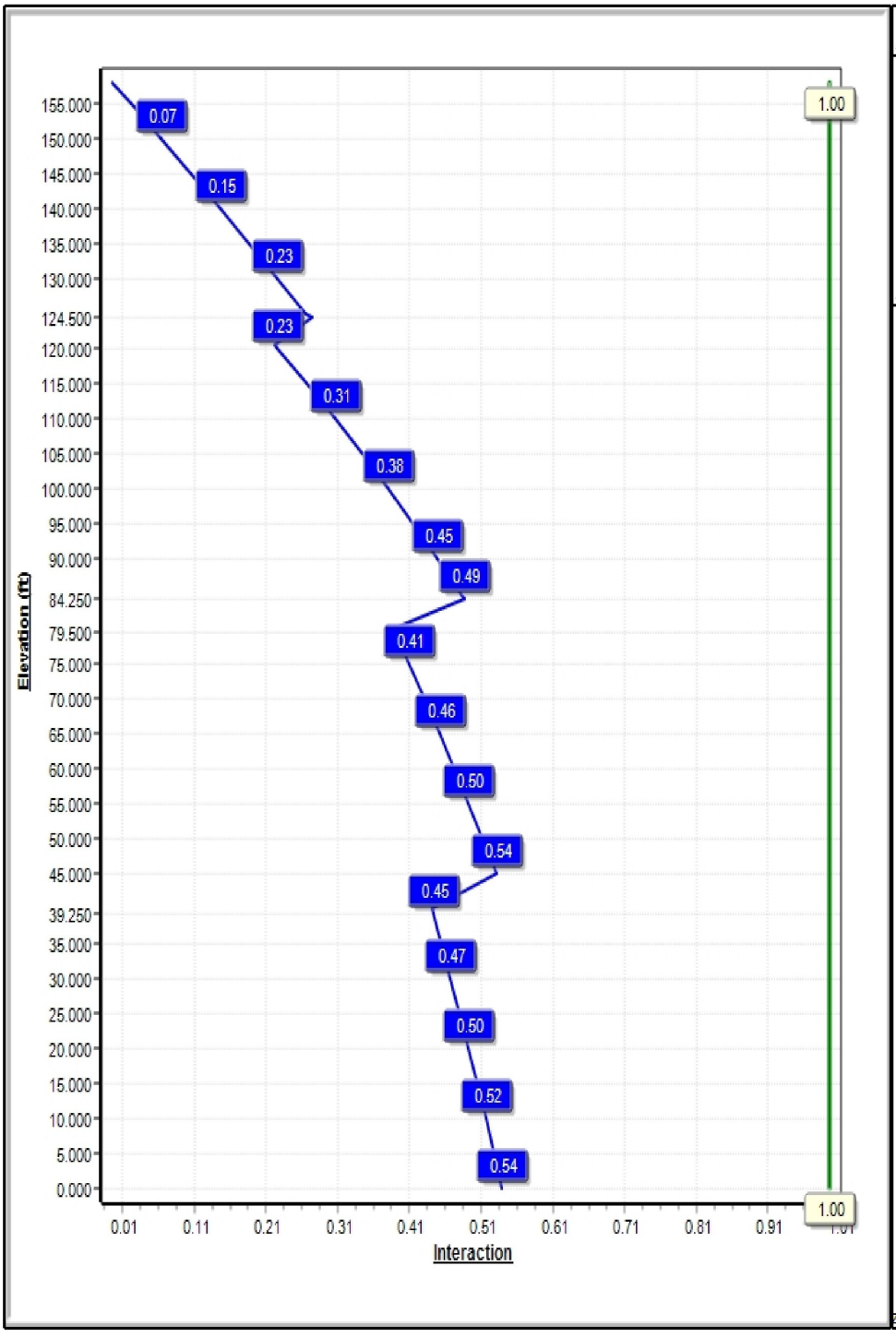
Usage Diagram - Max Ratio 54.37% at 0.0ft

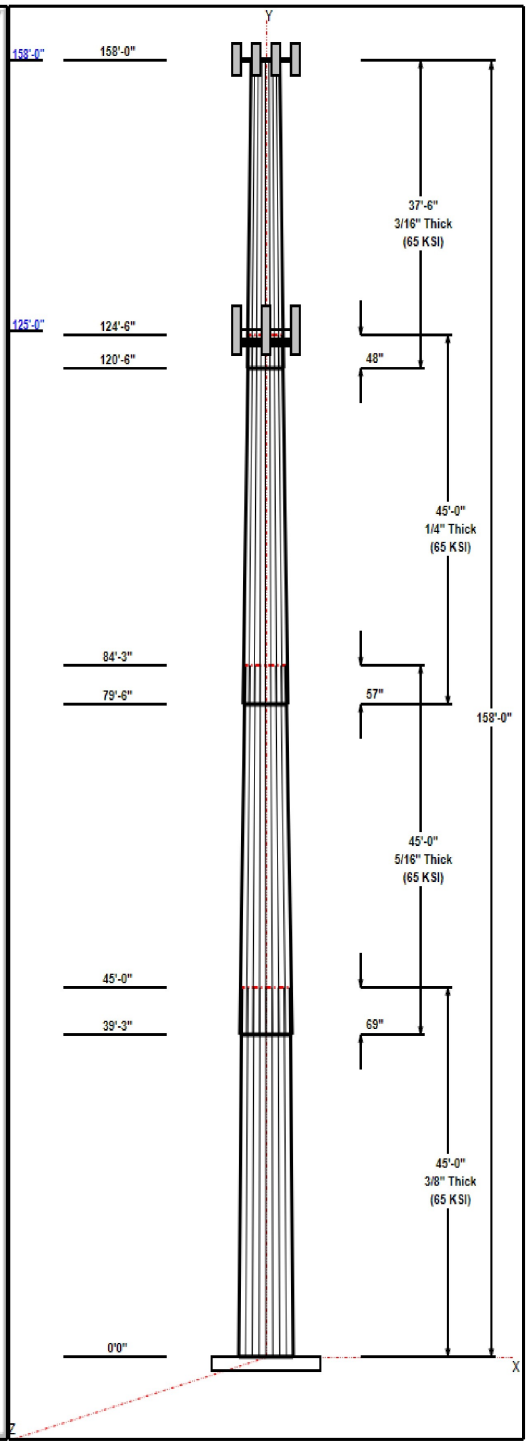
Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021
Site Name:	Plainfield	**Exposure:**	C	
Height:	158.00 (ft)	**Gh:**	1.1	
Base Elev:	0.000 (ft)			Page: 1

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	25
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 101 97 mph Wind





Structure: CT46146-A-SBA

Type: Tapered
Site Name: Plainfield
Height: 158.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.18203

9/8/2021

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	43.07	51.26	0.375		0.18203	65
2	45.00	36.55	44.74	0.313	Slip	0.18203	65
3	45.00	29.72	37.91	0.250	Slip	0.18203	65
4	37.50	24.00	30.83	0.188	Slip	0.18203	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
158.00	158.00	12	DB844H90E-XY	Sprint
158.00	158.00	1	Low Profile Platform-flat	Sprint
125.00	125.00	3	MX08FRO665-21	Dish Wireless
125.00	125.00	1	MC-PK8-DSH	Dish Wireless
125.00	125.00	3	TA08025-B605	Dish Wireless
125.00	125.00	1	RDIDC-9181-OF-48	Dish Wireless
125.00	125.00	3	TA08025-B604	Dish Wireless

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	158.00	Inside	1 5/8" Coax	Sprint
0.00	125.00	Inside	1.619" Hybrid	Dish Wireless

Anchor Bolts

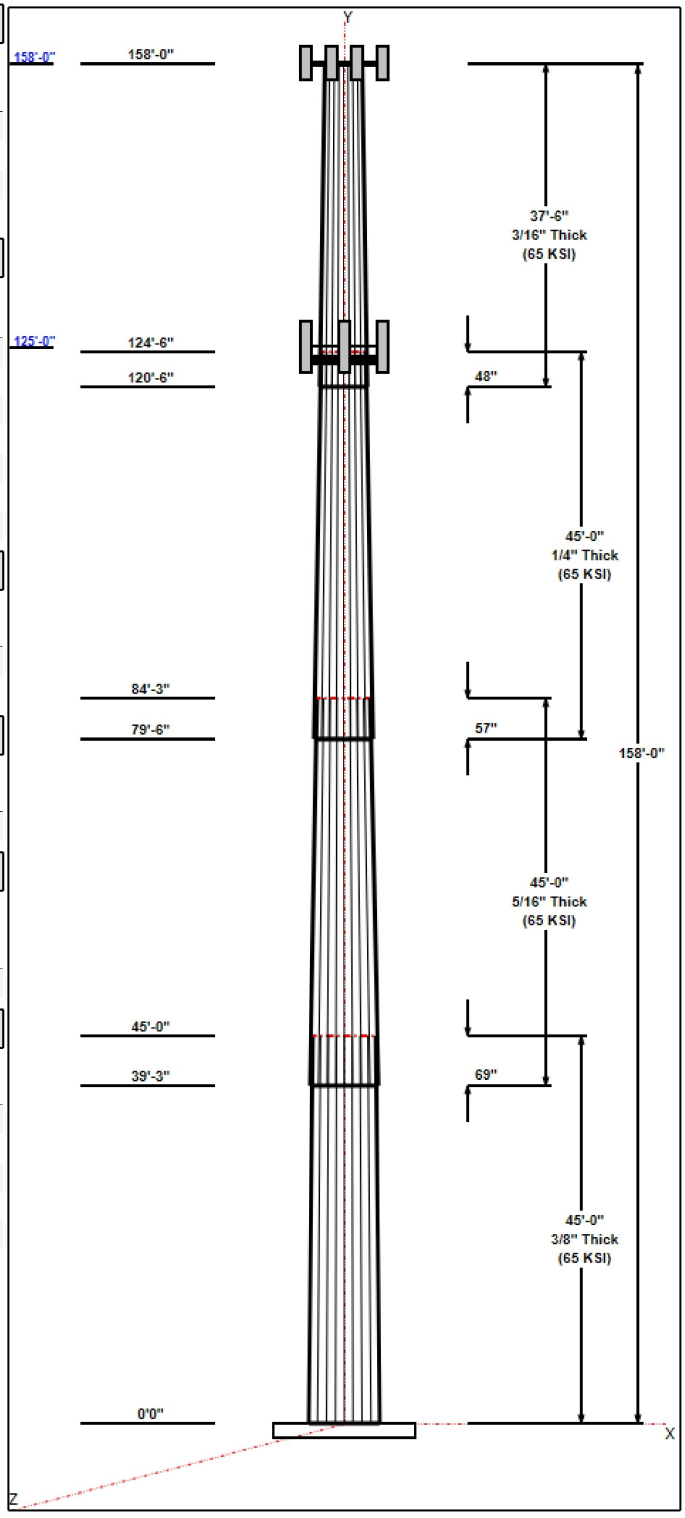
Qty	Specifications	Grade (ksi)	Arrangement
16	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	57.0	55.0	Clipped

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 101 97 mph Wind	2285.2	22.4	31.9
0.9D + 1.6W 101 97 mph Wind	2267.1	22.4	23.9
1.2D + 1.0Di + 1.0Wi 50 mph Wind	718.6	7.0	48.4
1.2D + 1.0E	101.4	0.9	31.9
0.9D + 1.0E	100.5	0.9	24.0
1.0D + 1.0W 60 mph Wind	543.9	5.3	26.6



Structure: CT46146-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Plainfield
Height: 158.00 (ft)

9/8/2021

Tower Engineering Solutions

Shaft Properties

Structure:	CT46146-A-SBA		**Code:**	EIA/TIA-222-G	9/8/2021
Site Name:	Plainfield		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 4

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	45.000	0.3750	65		0.00	8,527
2	18	45.000	0.3125	65	Slip	69.00	6,126
3	18	45.000	0.2500	65	Slip	57.00	4,079
4	18	37.500	0.1875	65	Slip	48.00	2,067
					Total Shaft Weight:		**20,799**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	51.26	0.00	60.56	19812.76	22.69	136.69	43.07	45.00	50.81	11702.3	18.84	114.8	0.182025
2	44.74	39.25	44.07	10989.17	23.83	143.17	36.55	84.25	35.94	5962.75	19.21	116.9	0.182025
3	37.91	79.50	29.89	5356.28	25.33	151.66	29.72	124.50	23.39	2566.56	19.55	118.8	0.182025
4	30.83	120.5	18.23	2162.45	27.58	164.41	24.00	158.00	14.17	1015.22	21.16	128.0	0.182025

Load Summary

Structure:	CT46146-A-SBA		**Code:**	EIA/TIA-222-G	9/8/2021
Site Name:	Plainfield		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 5

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	**Elev (ft)**	**Description**	**Qty**	**Weight (lb)**	**CaAa (sf)**	**CaAa Factor**	**Weight (lb)**	**CaAa (sf)**	**CaAa Factor**	**Hor. Ecc. (ft)**	**Vert Ecc (ft)**
1	158.00	DB844H90E-XY	12	14.00	3.05	1.12	125.39	3.927	1.12	0.00	0.00
2	158.00	Low Profile Platform-flat	1	1200.00	30.73	1.00	2252.58	56.607	1.00	0.00	0.00
3	125.00	MX08FRO665-21	3	64.50	12.49	0.74	350.12	13.928	0.74	0.00	0.00
4	125.00	MC-PK8-DSH	1	1727.00	37.59	1.00	3384.34	83.971	1.00	0.00	0.00
5	125.00	TA08025-B605	3	75.00	1.96	0.67	126.36	2.511	0.67	0.00	0.00
6	125.00	RDIDC-9181-OF-48	1	21.90	2.01	0.67	74.19	2.568	0.67	0.00	0.00
7	125.00	TA08025-B604	3	63.90	1.96	0.67	113.61	2.511	0.67	0.00	0.00
		Totals:	**24**	**3,727.10**			**8,986.00**				

Linear Appurtenances

Bottom Elev. (ft)	**Top Elev. (ft)**	**Description**	**Exposed Width**	**Exposed**
0.00	158.00	(12) 1 5/8" Coax	0.00	Inside
0.00	125.00	(1) 1.619" Hybrid	0.00	Inside

Shaft Section Properties

Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

Increment Length: **5 (ft)**

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3750	51.260	60.564	19812.8	22.69	136.69	74.7	761.3	0.0
5.00		0.3750	50.350	59.480	18768.6	22.26	134.27	75.2	734.2	1021.2
10.00		0.3750	49.440	58.397	17761.7	21.84	131.84	75.7	707.6	1002.8
15.00		0.3750	48.530	57.314	16791.5	21.41	129.41	76.2	681.5	984.3
20.00		0.3750	47.619	56.231	15857.3	20.98	126.99	76.7	655.9	965.9
25.00		0.3750	46.709	55.147	14958.4	20.55	124.56	77.2	630.8	947.5
30.00		0.3750	45.799	54.064	14094.1	20.12	122.13	77.7	606.1	929.1
35.00		0.3750	44.889	52.981	13263.8	19.70	119.70	78.2	582.0	910.6
39.25	Bot - Section 2	0.3750	44.116	52.060	12584.2	19.33	117.64	78.7	561.8	759.5
40.00		0.3750	43.979	51.898	12466.8	19.27	117.28	78.7	558.3	244.9
45.00	Top - Section 1	0.3125	43.694	43.027	10230.7	23.24	139.82	0.0	0.0	1613.5
50.00		0.3125	42.784	42.125	9600.2	22.73	136.91	74.7	442.0	724.4
55.00		0.3125	41.874	41.222	8996.1	22.22	134.00	75.3	423.2	709.0
60.00		0.3125	40.963	40.319	8418.0	21.70	131.08	75.9	404.8	693.7
65.00		0.3125	40.053	39.417	7865.1	21.19	128.17	76.5	386.8	678.3
70.00		0.3125	39.143	38.514	7337.0	20.68	125.26	77.1	369.2	662.9
75.00		0.3125	38.233	37.611	6833.1	20.16	122.35	77.7	352.0	647.6
79.50	Bot - Section 3	0.3125	37.414	36.799	6399.8	19.70	119.72	78.2	336.9	569.7
80.00		0.3125	37.323	36.708	6352.8	19.65	119.43	78.3	335.3	113.3
84.25	Top - Section 2	0.2500	37.049	29.199	4995.8	24.72	148.20	0.0	0.0	952.0
85.00		0.2500	36.913	29.091	4940.4	24.62	147.65	72.4	263.6	74.4
90.00		0.2500	36.003	28.369	4581.5	23.98	144.01	73.2	250.6	488.8
95.00		0.2500	35.093	27.647	4240.5	23.34	140.37	73.9	238.0	476.5
100.00		0.2500	34.182	26.924	3916.8	22.70	136.73	74.7	225.7	464.2
105.00		0.2500	33.272	26.202	3610.0	22.06	133.09	75.5	213.7	451.9
110.00		0.2500	32.362	25.480	3319.7	21.41	129.45	76.2	202.0	439.7
115.00		0.2500	31.452	24.758	3045.3	20.77	125.81	77.0	190.7	427.4
120.00		0.2500	30.542	24.036	2786.5	20.13	122.17	77.7	179.7	415.1
120.50	Bot - Section 4	0.2500	30.451	23.964	2761.5	20.07	121.80	77.8	178.6	40.8
124.50	Top - Section 3	0.1875	30.098	17.800	2011.9	26.89	160.52	0.0	0.0	567.5
125.00		0.1875	30.007	17.746	1993.6	26.81	160.04	69.9	130.9	30.2
130.00		0.1875	29.097	17.204	1816.6	25.95	155.18	70.9	123.0	297.3
135.00		0.1875	28.187	16.662	1650.4	25.10	150.33	71.9	115.3	288.1
140.00		0.1875	27.276	16.121	1494.6	24.24	145.47	72.9	107.9	278.9
145.00		0.1875	26.366	15.579	1349.0	23.38	140.62	73.9	100.8	269.7
150.00		0.1875	25.456	15.037	1213.1	22.53	135.77	74.9	93.9	260.5
155.00		0.1875	24.546	14.496	1086.7	21.67	130.91	75.9	87.2	251.2
158.00		0.1875	24.000	14.171	1015.2	21.16	128.00	76.5	83.3	146.3
										20798.9

Wind Loading - Shaft

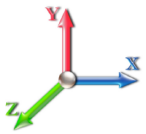
Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 7	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	387.91	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	381.02	0.650	0.000	5.00	21.495	13.97	478.3	0.0	1225.5
10.00		1.00	0.85	19.450	21.40	374.13	0.650	0.000	5.00	21.110	13.72	469.7	0.0	1203.3
15.00		1.00	0.85	19.450	21.40	367.24	0.650	0.000	5.00	20.725	13.47	461.2	0.0	1181.2
20.00		1.00	0.90	20.638	22.70	371.19	0.650	0.000	5.00	20.340	13.22	480.2	0.0	1159.1
25.00		1.00	0.95	21.630	23.79	372.75	0.650	0.000	5.00	19.955	12.97	493.8	0.0	1137.0
30.00		1.00	0.98	22.477	24.72	372.57	0.650	0.000	5.00	19.570	12.72	503.2	0.0	1114.9
35.00		1.00	1.01	23.218	25.54	371.14	0.650	0.000	5.00	19.185	12.47	509.6	0.0	1092.8
39.25	Bot - Section 2	1.00	1.04	23.785	26.16	369.17	0.650	0.000	4.25	16.004	10.40	435.5	0.0	911.5
40.00		1.00	1.04	23.880	26.27	368.76	0.650	0.000	0.75	2.835	1.84	77.5	0.0	293.9
45.00	Top - Section 1	1.00	1.07	24.479	26.93	365.64	0.650	0.000	5.00	18.679	12.14	523.1	0.0	1936.2
50.00		1.00	1.09	25.029	27.53	367.27	0.650	0.000	5.00	18.294	11.89	523.8	0.0	869.3
55.00		1.00	1.12	25.536	28.09	363.08	0.650	0.000	5.00	17.909	11.64	523.2	0.0	850.8
60.00		1.00	1.14	26.008	28.61	358.46	0.650	0.000	5.00	17.524	11.39	521.4	0.0	832.4
65.00		1.00	1.16	26.450	29.09	353.46	0.650	0.000	5.00	17.139	11.14	518.6	0.0	814.0
70.00		1.00	1.17	26.866	29.55	348.13	0.650	0.000	5.00	16.754	10.89	514.9	0.0	795.5
75.00		1.00	1.19	27.259	29.98	342.51	0.650	0.000	5.00	16.369	10.64	510.4	0.0	777.1
79.50	Bot - Section 3	1.00	1.21	27.595	30.35	337.24	0.650	0.000	4.50	14.403	9.36	454.7	0.0	683.6
80.00		1.00	1.21	27.632	30.39	336.64	0.650	0.000	0.50	1.602	1.04	50.6	0.0	136.0
84.25	Top - Section 2	1.00	1.22	27.934	30.73	331.46	0.650	0.000	4.25	13.463	8.75	430.2	0.0	1142.4
85.00		1.00	1.22	27.987	30.79	335.07	0.650	0.000	0.75	2.347	1.53	75.1	0.0	89.3
90.00		1.00	1.24	28.325	31.16	328.78	0.650	0.000	5.00	15.425	10.03	499.8	0.0	586.6
95.00		1.00	1.25	28.650	31.51	322.30	0.650	0.000	5.00	15.040	9.78	492.9	0.0	571.8
100.00		1.00	1.27	28.961	31.86	315.64	0.650	0.000	5.00	14.655	9.53	485.5	0.0	557.1
105.00		1.00	1.28	29.260	32.19	308.82	0.650	0.000	5.00	14.270	9.28	477.7	0.0	542.3
110.00		1.00	1.29	29.548	32.50	301.85	0.650	0.000	5.00	13.885	9.03	469.3	0.0	527.6
115.00		1.00	1.30	29.826	32.81	294.73	0.650	0.000	5.00	13.500	8.77	460.6	0.0	512.8
120.00		1.00	1.32	30.094	33.10	287.49	0.650	0.000	5.00	13.115	8.52	451.5	0.0	498.1
120.50	Bot - Section 4	1.00	1.32	30.120	33.13	286.76	0.650	0.000	0.50	1.290	0.84	44.5	0.0	49.0
124.50	Top - Section 3	1.00	1.33	30.328	33.36	280.87	0.650	0.000	4.00	10.311	6.70	357.7	0.0	681.0
125.00	Appurtenance(s)	1.00	1.33	30.354	33.39	283.67	0.650	0.000	0.50	1.271	0.83	44.2	0.0	36.3
130.00		1.00	1.34	30.605	33.67	276.20	0.650	0.000	5.00	12.503	8.13	437.8	0.0	356.8
135.00		1.00	1.35	30.850	33.93	268.63	0.650	0.000	5.00	12.118	7.88	427.7	0.0	345.7
140.00		1.00	1.36	31.087	34.20	260.95	0.650	0.000	5.00	11.733	7.63	417.3	0.0	334.7
145.00		1.00	1.37	31.317	34.45	253.18	0.650	0.000	5.00	11.348	7.38	406.6	0.0	323.6
150.00		1.00	1.38	31.541	34.70	245.31	0.650	0.000	5.00	10.963	7.13	395.6	0.0	312.5
155.00		1.00	1.39	31.760	34.94	237.36	0.650	0.000	5.00	10.578	6.88	384.3	0.0	301.5
158.00	Appurtenance(s)	1.00	1.39	31.888	35.08	232.55	0.650	0.000	3.00	6.162	4.01	224.8	0.0	175.6
								Totals:	**158.00**			**15,032.8**		**24,958.7**

Discrete Appurtenance Forces

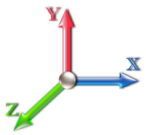
Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	158.00	DB844H90E-XY	12	31.888	35.077	1.01	0.90	36.89	201.60	0.000	0.000	2070.55	0.00	0.00
2	158.00	Low Profile Platform-flat	1	31.888	35.077	1.00	1.00	30.73	1440.00	0.000	0.000	1724.68	0.00	0.00
3	125.00	MX08FRO665-21	3	30.354	33.389	0.55	0.75	20.80	232.20	0.000	0.000	1110.97	0.00	0.00
4	125.00	MC-PK8-DSH	1	30.354	33.389	1.00	1.00	37.59	2072.40	0.000	0.000	2008.15	0.00	0.00
5	125.00	TA08025-B605	3	30.354	33.389	0.50	0.75	2.95	270.00	0.000	0.000	157.85	0.00	0.00
6	125.00	RDIDC-9181-OF-48	1	30.354	33.389	0.50	0.75	1.01	26.28	0.000	0.000	53.96	0.00	0.00
7	125.00	TA08025-B604	3	30.354	33.389	0.50	0.75	2.95	230.04	0.000	0.000	157.85	0.00	0.00
							Totals:		**4,472.52**			**7,284.01**		

Total Applied Force Summary

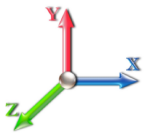
Structure:	CT46146-A-SBA		**Code:**	EIA/TIA-222-G	9/8/2021
Site Name:	Plainfield		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 9

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		478.29	1306.33	0.00	0.00
10.00		469.73	1284.21	0.00	0.00
15.00		461.16	1262.10	0.00	0.00
20.00		480.22	1239.98	0.00	0.00
25.00		493.79	1217.87	0.00	0.00
30.00		503.21	1195.75	0.00	0.00
35.00		509.58	1173.63	0.00	0.00
39.25		435.48	980.20	0.00	0.00
40.00		77.45	306.06	0.00	0.00
45.00		523.10	2017.09	0.00	0.00
50.00		523.81	950.14	0.00	0.00
55.00		523.18	931.71	0.00	0.00
60.00		521.39	913.28	0.00	0.00
65.00		518.60	894.85	0.00	0.00
70.00		514.92	876.42	0.00	0.00
75.00		510.44	857.99	0.00	0.00
79.50		454.68	756.43	0.00	0.00
80.00		50.65	144.07	0.00	0.00
84.25		430.24	1211.19	0.00	0.00
85.00		75.14	101.39	0.00	0.00
90.00		499.84	667.45	0.00	0.00
95.00		492.94	652.70	0.00	0.00
100.00		485.53	637.96	0.00	0.00
105.00		477.66	623.22	0.00	0.00
110.00		469.34	608.47	0.00	0.00
115.00		460.62	593.73	0.00	0.00
120.00		451.51	578.98	0.00	0.00
120.50		44.46	57.09	0.00	0.00
124.50		357.73	745.66	0.00	0.00
125.00	(11) attachments	3532.93	2875.29	0.00	0.00
130.00		437.77	431.66	0.00	0.00
135.00		427.67	420.60	0.00	0.00
140.00		417.26	409.54	0.00	0.00
145.00		406.56	398.48	0.00	0.00
150.00		395.58	387.42	0.00	0.00
155.00		384.33	376.37	0.00	0.00
158.00	(13) attachments	4020.02	1862.11	0.00	0.00
	Totals:	**22,316.79**	**31,947.42**	**0.00**	**0.00**

Calculated Forces

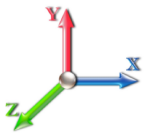
Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 101 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-31.92	-22.36	0.00	-2285.2	0.00	2285.20	4072.28	2036.14	8518.77	4265.72	0.00	0.000	0.000	0.544
5.00	-30.55	-21.97	0.00	-2173.4	0.00	2173.40	4026.39	2013.19	8271.02	4141.66	0.09	-0.160	0.000	0.532
10.00	-29.21	-21.57	0.00	-2063.5	0.00	2063.56	3979.52	1989.76	8024.75	4018.34	0.34	-0.321	0.000	0.521
15.00	-27.89	-21.18	0.00	-1955.6	0.00	1955.69	3931.66	1965.83	7780.07	3895.82	0.76	-0.482	0.000	0.509
20.00	-26.59	-20.77	0.00	-1849.7	0.00	1849.78	3882.82	1941.41	7537.09	3774.15	1.35	-0.643	0.000	0.497
25.00	-25.33	-20.33	0.00	-1745.9	0.00	1745.95	3833.01	1916.50	7295.92	3653.38	2.11	-0.804	0.000	0.485
30.00	-24.08	-19.87	0.00	-1644.3	0.00	1644.32	3782.21	1891.10	7056.68	3533.59	3.04	-0.965	0.000	0.472
35.00	-22.87	-19.40	0.00	-1544.9	0.00	1544.95	3730.43	1865.21	6819.48	3414.81	4.14	-1.126	0.000	0.459
39.25	-21.87	-18.98	0.00	-1462.4	0.00	1462.49	3685.64	1842.82	6619.54	3314.69	5.20	-1.263	0.000	0.447
40.00	-21.53	-18.93	0.00	-1448.2	0.00	1448.26	3677.66	1838.83	6584.42	3297.10	5.41	-1.288	0.000	0.445
45.00	-19.48	-18.41	0.00	-1353.6	0.00	1353.62	2868.03	1434.02	5115.73	2561.67	6.84	-1.448	0.000	0.535
50.00	-18.49	-17.92	0.00	-1261.5	0.00	1261.57	2830.76	1415.38	4942.56	2474.95	8.44	-1.607	0.000	0.516
55.00	-17.52	-17.42	0.00	-1171.9	0.00	1171.99	2792.51	1396.25	4770.53	2388.81	10.22	-1.787	0.000	0.497
60.00	-16.57	-16.92	0.00	-1084.8	0.00	1084.88	2753.27	1376.64	4599.73	2303.28	12.19	-1.965	0.000	0.477
65.00	-15.65	-16.42	0.00	-1000.2	0.00	1000.28	2713.06	1356.53	4430.29	2218.44	14.34	-2.142	0.000	0.457
70.00	-14.74	-15.91	0.00	-918.18	0.00	918.18	2671.86	1335.93	4262.32	2134.33	16.68	-2.315	0.000	0.436
75.00	-13.86	-15.41	0.00	-838.61	0.00	838.61	2629.68	1314.84	4095.93	2051.01	19.19	-2.485	0.000	0.414
79.50	-13.11	-14.94	0.00	-769.28	0.00	769.28	2590.88	1295.44	3947.61	1976.74	21.61	-2.636	0.000	0.394
80.00	-12.95	-14.90	0.00	-761.81	0.00	761.81	2586.52	1293.26	3931.22	1968.53	21.89	-2.653	0.000	0.392
84.25	-11.74	-14.43	0.00	-698.49	0.00	698.49	1900.65	950.33	2877.00	1440.64	24.31	-2.792	0.000	0.491
85.00	-11.61	-14.37	0.00	-687.67	0.00	687.67	1896.56	948.28	2860.10	1432.17	24.75	-2.817	0.000	0.487
90.00	-10.93	-13.87	0.00	-615.82	0.00	615.82	1868.76	934.38	2747.73	1375.91	27.80	-3.005	0.000	0.454
95.00	-10.26	-13.38	0.00	-546.45	0.00	546.45	1839.97	919.99	2636.06	1319.99	31.04	-3.185	0.000	0.420
100.00	-9.61	-12.88	0.00	-479.57	0.00	479.57	1810.21	905.10	2525.19	1264.47	34.47	-3.357	0.000	0.385
105.00	-8.99	-12.39	0.00	-415.16	0.00	415.16	1779.46	889.73	2415.23	1209.41	38.07	-3.520	0.000	0.349
110.00	-8.38	-11.91	0.00	-353.19	0.00	353.19	1747.73	873.86	2306.29	1154.86	41.84	-3.671	0.000	0.311
115.00	-7.79	-11.43	0.00	-293.65	0.00	293.65	1715.02	857.51	2198.49	1100.88	45.76	-3.810	0.000	0.271
120.00	-7.23	-10.95	0.00	-236.51	0.00	236.51	1681.32	840.66	2091.93	1047.52	49.81	-3.933	0.000	0.230
120.50	-7.17	-10.90	0.00	-231.03	0.00	231.03	1677.90	838.95	2081.35	1042.22	50.23	-3.945	0.000	0.226
124.50	-6.44	-10.50	0.00	-187.41	0.00	187.41	1117.68	558.84	1375.83	688.94	53.57	-4.031	0.000	0.278
125.00	-3.81	-6.78	0.00	-182.16	0.00	182.16	1115.89	557.95	1369.42	685.73	53.99	-4.042	0.000	0.269
130.00	-3.40	-6.32	0.00	-148.27	0.00	148.27	1097.42	548.71	1305.39	653.66	58.28	-4.160	0.000	0.230
135.00	-3.00	-5.87	0.00	-116.68	0.00	116.68	1077.97	538.98	1241.62	621.73	62.69	-4.263	0.000	0.191
140.00	-2.62	-5.42	0.00	-87.35	0.00	87.35	1057.53	528.77	1178.22	589.99	67.20	-4.351	0.000	0.151
145.00	-2.25	-4.99	0.00	-60.24	0.00	60.24	1036.12	518.06	1115.31	558.49	71.80	-4.422	0.000	0.110
150.00	-1.89	-4.57	0.00	-35.29	0.00	35.29	1013.72	506.86	1053.00	527.28	76.45	-4.472	0.000	0.069
155.00	-1.54	-4.15	0.00	-12.46	0.00	12.46	990.34	495.17	991.39	496.43	81.15	-4.500	0.000	0.027
158.00	0.00	-4.02	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	83.98	-4.505	0.000	0.000

Wind Loading - Shaft

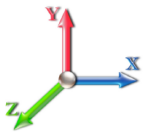
Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	387.91	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	381.02	0.650	0.000	5.00	21.495	13.97	478.3	0.0	919.1
10.00		1.00	0.85	19.450	21.40	374.13	0.650	0.000	5.00	21.110	13.72	469.7	0.0	902.5
15.00		1.00	0.85	19.450	21.40	367.24	0.650	0.000	5.00	20.725	13.47	461.2	0.0	885.9
20.00		1.00	0.90	20.638	22.70	371.19	0.650	0.000	5.00	20.340	13.22	480.2	0.0	869.3
25.00		1.00	0.95	21.630	23.79	372.75	0.650	0.000	5.00	19.955	12.97	493.8	0.0	852.7
30.00		1.00	0.98	22.477	24.72	372.57	0.650	0.000	5.00	19.570	12.72	503.2	0.0	836.2
35.00		1.00	1.01	23.218	25.54	371.14	0.650	0.000	5.00	19.185	12.47	509.6	0.0	819.6
39.25	Bot - Section 2	1.00	1.04	23.785	26.16	369.17	0.650	0.000	4.25	16.004	10.40	435.5	0.0	683.6
40.00		1.00	1.04	23.880	26.27	368.76	0.650	0.000	0.75	2.835	1.84	77.5	0.0	220.4
45.00	Top - Section 1	1.00	1.07	24.479	26.93	365.64	0.650	0.000	5.00	18.679	12.14	523.1	0.0	1452.2
50.00		1.00	1.09	25.029	27.53	367.27	0.650	0.000	5.00	18.294	11.89	523.8	0.0	651.9
55.00		1.00	1.12	25.536	28.09	363.08	0.650	0.000	5.00	17.909	11.64	523.2	0.0	638.1
60.00		1.00	1.14	26.008	28.61	358.46	0.650	0.000	5.00	17.524	11.39	521.4	0.0	624.3
65.00		1.00	1.16	26.450	29.09	353.46	0.650	0.000	5.00	17.139	11.14	518.6	0.0	610.5
70.00		1.00	1.17	26.866	29.55	348.13	0.650	0.000	5.00	16.754	10.89	514.9	0.0	596.7
75.00		1.00	1.19	27.259	29.98	342.51	0.650	0.000	5.00	16.369	10.64	510.4	0.0	582.8
79.50	Bot - Section 3	1.00	1.21	27.595	30.35	337.24	0.650	0.000	4.50	14.403	9.36	454.7	0.0	512.7
80.00		1.00	1.21	27.632	30.39	336.64	0.650	0.000	0.50	1.602	1.04	50.6	0.0	102.0
84.25	Top - Section 2	1.00	1.22	27.934	30.73	331.46	0.650	0.000	4.25	13.463	8.75	430.2	0.0	856.8
85.00		1.00	1.22	27.987	30.79	335.07	0.650	0.000	0.75	2.347	1.53	75.1	0.0	66.9
90.00		1.00	1.24	28.325	31.16	328.78	0.650	0.000	5.00	15.425	10.03	499.8	0.0	439.9
95.00		1.00	1.25	28.650	31.51	322.30	0.650	0.000	5.00	15.040	9.78	492.9	0.0	428.9
100.00		1.00	1.27	28.961	31.86	315.64	0.650	0.000	5.00	14.655	9.53	485.5	0.0	417.8
105.00		1.00	1.28	29.260	32.19	308.82	0.650	0.000	5.00	14.270	9.28	477.7	0.0	406.8
110.00		1.00	1.29	29.548	32.50	301.85	0.650	0.000	5.00	13.885	9.03	469.3	0.0	395.7
115.00		1.00	1.30	29.826	32.81	294.73	0.650	0.000	5.00	13.500	8.77	460.6	0.0	384.6
120.00		1.00	1.32	30.094	33.10	287.49	0.650	0.000	5.00	13.115	8.52	451.5	0.0	373.6
120.50	Bot - Section 4	1.00	1.32	30.120	33.13	286.76	0.650	0.000	0.50	1.290	0.84	44.5	0.0	36.7
124.50	Top - Section 3	1.00	1.33	30.328	33.36	280.87	0.650	0.000	4.00	10.311	6.70	357.7	0.0	510.7
125.00	Appurtenance(s)	1.00	1.33	30.354	33.39	283.67	0.650	0.000	0.50	1.271	0.83	44.2	0.0	27.2
130.00		1.00	1.34	30.605	33.67	276.20	0.650	0.000	5.00	12.503	8.13	437.8	0.0	267.6
135.00		1.00	1.35	30.850	33.93	268.63	0.650	0.000	5.00	12.118	7.88	427.7	0.0	259.3
140.00		1.00	1.36	31.087	34.20	260.95	0.650	0.000	5.00	11.733	7.63	417.3	0.0	251.0
145.00		1.00	1.37	31.317	34.45	253.18	0.650	0.000	5.00	11.348	7.38	406.6	0.0	242.7
150.00		1.00	1.38	31.541	34.70	245.31	0.650	0.000	5.00	10.963	7.13	395.6	0.0	234.4
155.00		1.00	1.39	31.760	34.94	237.36	0.650	0.000	5.00	10.578	6.88	384.3	0.0	226.1
158.00	Appurtenance(s)	1.00	1.39	31.888	35.08	232.55	0.650	0.000	3.00	6.162	4.01	224.8	0.0	131.7
								Totals:	**158.00**			**15,032.8**		**18,719.0**

Discrete Appurtenance Forces

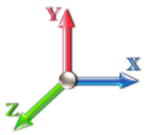
Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	158.00	DB844H90E-XY	12	31.888	35.077	1.01	0.90	36.89	151.20	0.000	0.000	2070.55	0.00	0.00
2	158.00	Low Profile Platform-flat	1	31.888	35.077	1.00	1.00	30.73	1080.00	0.000	0.000	1724.68	0.00	0.00
3	125.00	MX08FRO665-21	3	30.354	33.389	0.55	0.75	20.80	174.15	0.000	0.000	1110.97	0.00	0.00
4	125.00	MC-PK8-DSH	1	30.354	33.389	1.00	1.00	37.59	1554.30	0.000	0.000	2008.15	0.00	0.00
5	125.00	TA08025-B605	3	30.354	33.389	0.50	0.75	2.95	202.50	0.000	0.000	157.85	0.00	0.00
6	125.00	RDIDC-9181-OF-48	1	30.354	33.389	0.50	0.75	1.01	19.71	0.000	0.000	53.96	0.00	0.00
7	125.00	TA08025-B604	3	30.354	33.389	0.50	0.75	2.95	172.53	0.000	0.000	157.85	0.00	0.00
							Totals:		**3,354.39**			**7,284.01**		

Total Applied Force Summary

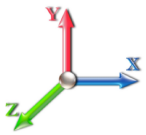
Structure:	CT46146-A-SBA		**Code:**	EIA/TIA-222-G	9/8/2021
Site Name:	Plainfield		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

Tower Engineering Solutions

Load Case: 0.9D + 1.6W 101 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		478.29	979.75	0.00	0.00
10.00		469.73	963.16	0.00	0.00
15.00		461.16	946.57	0.00	0.00
20.00		480.22	929.99	0.00	0.00
25.00		493.79	913.40	0.00	0.00
30.00		503.21	896.81	0.00	0.00
35.00		509.58	880.23	0.00	0.00
39.25		435.48	735.15	0.00	0.00
40.00		77.45	229.55	0.00	0.00
45.00		523.10	1512.82	0.00	0.00
50.00		523.81	712.60	0.00	0.00
55.00		523.18	698.78	0.00	0.00
60.00		521.39	684.96	0.00	0.00
65.00		518.60	671.14	0.00	0.00
70.00		514.92	657.31	0.00	0.00
75.00		510.44	643.49	0.00	0.00
79.50		454.68	567.32	0.00	0.00
80.00		50.65	108.05	0.00	0.00
84.25		430.24	908.39	0.00	0.00
85.00		75.14	76.04	0.00	0.00
90.00		499.84	500.59	0.00	0.00
95.00		492.94	489.53	0.00	0.00
100.00		485.53	478.47	0.00	0.00
105.00		477.66	467.41	0.00	0.00
110.00		469.34	456.35	0.00	0.00
115.00		460.62	445.30	0.00	0.00
120.00		451.51	434.24	0.00	0.00
120.50		44.46	42.82	0.00	0.00
124.50		357.73	559.24	0.00	0.00
125.00	(11) attachments	3532.93	2156.47	0.00	0.00
130.00		437.77	323.74	0.00	0.00
135.00		427.67	315.45	0.00	0.00
140.00		417.26	307.16	0.00	0.00
145.00		406.56	298.86	0.00	0.00
150.00		395.58	290.57	0.00	0.00
155.00		384.33	282.27	0.00	0.00
158.00	(13) attachments	4020.02	1396.58	0.00	0.00
	Totals:	**22,316.79**	**23,960.57**	**0.00**	**0.00**

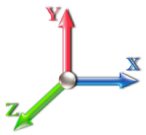
Calculated Forces

Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 14	

Load Case: 0.9D + 1.6W 101 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-23.93	-22.35	0.00	-2267.0	0.00	2267.07	4072.28	2036.14	8518.77	4265.72	0.00	0.000	0.000	0.537
5.00	-22.89	-21.93	0.00	-2155.3	0.00	2155.32	4026.39	2013.19	8271.02	4141.66	0.09	-0.159	0.000	0.526
10.00	-21.87	-21.52	0.00	-2045.6	0.00	2045.65	3979.52	1989.76	8024.75	4018.34	0.34	-0.318	0.000	0.515
15.00	-20.87	-21.11	0.00	-1938.0	0.00	1938.05	3931.66	1965.83	7780.07	3895.82	0.76	-0.477	0.000	0.503
20.00	-19.88	-20.68	0.00	-1832.4	0.00	1832.49	3882.82	1941.41	7537.09	3774.15	1.34	-0.637	0.000	0.491
25.00	-18.92	-20.23	0.00	-1729.1	0.00	1729.10	3833.01	1916.50	7295.92	3653.38	2.10	-0.797	0.000	0.478
30.00	-17.98	-19.76	0.00	-1627.9	0.00	1627.97	3782.21	1891.10	7056.68	3533.59	3.02	-0.957	0.000	0.466
35.00	-17.06	-19.28	0.00	-1529.1	0.00	1529.18	3730.43	1865.21	6819.48	3414.81	4.10	-1.116	0.000	0.452
39.25	-16.30	-18.85	0.00	-1447.2	0.00	1447.25	3685.64	1842.82	6619.54	3314.69	5.16	-1.252	0.000	0.441
40.00	-16.05	-18.79	0.00	-1433.1	0.00	1433.11	3677.66	1838.83	6584.42	3297.10	5.36	-1.276	0.000	0.439
45.00	-14.50	-18.27	0.00	-1339.1	0.00	1339.15	2868.03	1434.02	5115.73	2561.67	6.78	-1.434	0.000	0.528
50.00	-13.74	-17.77	0.00	-1247.7	0.00	1247.78	2830.76	1415.38	4942.56	2474.95	8.36	-1.591	0.000	0.509
55.00	-13.01	-17.27	0.00	-1158.9	0.00	1158.92	2792.51	1396.25	4770.53	2388.81	10.13	-1.770	0.000	0.490
60.00	-12.29	-16.76	0.00	-1072.5	0.00	1072.58	2753.27	1376.64	4599.73	2303.28	12.08	-1.946	0.000	0.470
65.00	-11.59	-16.26	0.00	-988.77	0.00	988.77	2713.06	1356.53	4430.29	2218.44	14.21	-2.120	0.000	0.450
70.00	-10.90	-15.75	0.00	-907.49	0.00	907.49	2671.86	1335.93	4262.32	2134.33	16.52	-2.292	0.000	0.429
75.00	-10.24	-15.24	0.00	-828.74	0.00	828.74	2629.68	1314.84	4095.93	2051.01	19.01	-2.460	0.000	0.408
79.50	-9.67	-14.77	0.00	-760.16	0.00	760.16	2590.88	1295.44	3947.61	1976.74	21.40	-2.609	0.000	0.388
80.00	-9.55	-14.73	0.00	-752.78	0.00	752.78	2586.52	1293.26	3931.22	1968.53	21.67	-2.626	0.000	0.386
84.25	-8.64	-14.27	0.00	-690.16	0.00	690.16	1900.65	950.33	2877.00	1440.64	24.07	-2.763	0.000	0.484
85.00	-8.54	-14.21	0.00	-679.46	0.00	679.46	1896.56	948.28	2860.10	1432.17	24.51	-2.788	0.000	0.479
90.00	-8.02	-13.71	0.00	-608.42	0.00	608.42	1868.76	934.38	2747.73	1375.91	27.53	-2.973	0.000	0.447
95.00	-7.52	-13.21	0.00	-539.86	0.00	539.86	1839.97	919.99	2636.06	1319.99	30.74	-3.151	0.000	0.413
100.00	-7.03	-12.72	0.00	-473.79	0.00	473.79	1810.21	905.10	2525.19	1264.47	34.13	-3.321	0.000	0.379
105.00	-6.56	-12.24	0.00	-410.18	0.00	410.18	1779.46	889.73	2415.23	1209.41	37.69	-3.482	0.000	0.343
110.00	-6.11	-11.76	0.00	-348.99	0.00	348.99	1747.73	873.86	2306.29	1154.86	41.42	-3.631	0.000	0.306
115.00	-5.67	-11.28	0.00	-290.22	0.00	290.22	1715.02	857.51	2198.49	1100.88	45.29	-3.768	0.000	0.267
120.00	-5.25	-10.81	0.00	-233.82	0.00	233.82	1681.32	840.66	2091.93	1047.52	49.31	-3.891	0.000	0.227
120.50	-5.20	-10.76	0.00	-228.42	0.00	228.42	1677.90	838.95	2081.35	1042.22	49.71	-3.903	0.000	0.222
124.50	-4.66	-10.37	0.00	-185.37	0.00	185.37	1117.68	558.84	1375.83	688.94	53.02	-3.988	0.000	0.274
125.00	-2.75	-6.70	0.00	-180.18	0.00	180.18	1115.89	557.95	1369.42	685.73	53.44	-3.998	0.000	0.265
130.00	-2.44	-6.25	0.00	-146.68	0.00	146.68	1097.42	548.71	1305.39	653.66	57.69	-4.115	0.000	0.227
135.00	-2.15	-5.80	0.00	-115.45	0.00	115.45	1077.97	538.98	1241.62	621.73	62.05	-4.217	0.000	0.188
140.00	-1.87	-5.36	0.00	-86.45	0.00	86.45	1057.53	528.77	1178.22	589.99	66.51	-4.304	0.000	0.148
145.00	-1.60	-4.94	0.00	-59.64	0.00	59.64	1036.12	518.06	1115.31	558.49	71.05	-4.374	0.000	0.108
150.00	-1.33	-4.52	0.00	-34.95	0.00	34.95	1013.72	506.86	1053.00	527.28	75.66	-4.424	0.000	0.068
155.00	-1.08	-4.12	0.00	-12.35	0.00	12.35	990.34	495.17	991.39	496.43	80.30	-4.451	0.000	0.026
158.00	0.00	-4.02	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	83.10	-4.456	0.000	0.000

Wind Loading - Shaft

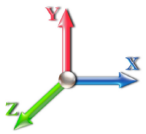
Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	22.530	27.04	153.7	401.4	1626.9
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	22.220	26.66	151.6	423.4	1626.7
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	21.880	26.26	149.3	433.5	1614.7
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	21.529	25.83	155.8	438.3	1597.4
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	21.171	25.40	160.6	440.2	1577.2
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	20.808	24.97	164.0	440.1	1554.9
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	20.442	24.53	166.5	438.5	1531.3
39.25	Bot - Section 2	1.00	1.04	6.320	6.95	0.00	1.200	1.526	4.25	17.085	20.50	142.5	370.9	1282.3
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	0.75	3.026	3.63	25.3	66.3	360.2
45.00	Top - Section 1	1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	19.969	23.96	171.4	438.4	2374.6
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	5.00	19.597	23.52	172.0	434.3	1303.6
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	5.00	19.225	23.07	172.2	429.6	1280.4
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	18.851	22.62	172.0	424.4	1256.8
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	18.477	22.17	171.4	418.8	1232.8
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	18.101	21.72	170.6	412.8	1208.4
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	17.726	21.27	169.5	406.5	1183.6
79.50	Bot - Section 3	1.00	1.21	7.332	8.07	0.00	1.200	1.638	4.50	15.631	18.76	151.3	360.5	1044.2
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	0.50	1.739	2.09	16.9	40.5	176.5
84.25	Top - Section 2	1.00	1.22	7.422	8.16	0.00	1.200	1.647	4.25	14.630	17.56	143.3	339.3	1481.8
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	0.75	2.553	3.06	25.1	59.7	149.0
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	16.807	20.17	167.0	391.1	977.7
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	5.00	16.429	19.72	165.1	383.8	955.6
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	5.00	16.052	19.26	163.0	376.3	933.4
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	15.673	18.81	160.8	368.6	911.0
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	15.295	18.35	158.5	360.8	888.4
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	14.916	17.90	156.0	352.8	865.6
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	14.537	17.44	153.4	344.6	842.7
120.50	Bot - Section 4	1.00	1.32	8.003	8.80	0.00	1.200	1.707	0.50	1.433	1.72	15.1	34.4	83.4
124.50	Top - Section 3	1.00	1.33	8.058	8.86	0.00	1.200	1.713	4.00	11.453	13.74	121.8	273.0	953.9
125.00	Appurtenance(s)	1.00	1.33	8.065	8.87	0.00	1.200	1.714	0.50	1.414	1.70	15.1	34.0	70.3
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	5.00	13.937	16.72	149.6	332.0	688.7
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	5.00	13.557	16.27	146.7	323.4	669.2
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	5.00	13.177	15.81	143.7	314.8	649.5
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	12.797	15.36	140.6	306.1	629.7
150.00		1.00	1.38	8.381	9.22	0.00	1.200	1.745	5.00	12.417	14.90	137.4	297.2	609.7
155.00		1.00	1.39	8.439	9.28	0.00	1.200	1.751	5.00	12.037	14.44	134.1	288.3	589.7
158.00	Appurtenance(s)	1.00	1.39	8.473	9.32	0.00	1.200	1.754	3.00	7.039	8.45	78.7	169.7	345.3
								Totals:	**158.00**			**5,011.5**		**37,127.0**

Discrete Appurtenance Forces

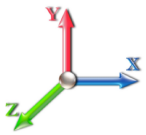
Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	158.00	DB844H90E-XY	12	8.473	9.320	1.01	0.90	47.51	1538.22	0.000	0.000	442.75	0.00	0.00
2	158.00	Low Profile Platform-flat	1	8.473	9.320	1.00	1.00	56.61	2192.58	0.000	0.000	527.58	0.00	0.00
3	125.00	MX08FRO665-21	3	8.065	8.872	0.55	0.75	23.19	887.45	0.000	0.000	205.74	0.00	0.00
4	125.00	MC-PK8-DSH	1	8.065	8.872	1.00	1.00	83.97	3356.74	0.000	0.000	744.95	0.00	0.00
5	125.00	TA08025-B605	3	8.065	8.872	0.50	0.75	3.79	386.28	0.000	0.000	33.58	0.00	0.00
6	125.00	RDIDC-9181-OF-48	1	8.065	8.872	0.50	0.75	1.29	65.87	0.000	0.000	11.45	0.00	0.00
7	125.00	TA08025-B604	3	8.065	8.872	0.50	0.75	3.79	342.89	0.000	0.000	33.58	0.00	0.00
							Totals:		**8,770.02**			**1,999.63**		

Total Applied Force Summary

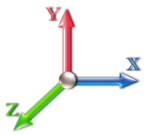
Structure:	CT46146-A-SBA		**Code:**	EIA/TIA-222-G	9/8/2021
Site Name:	Plainfield		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 17

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		153.70	1707.75	0.00	0.00
10.00		151.58	1707.58	0.00	0.00
15.00		149.26	1695.55	0.00	0.00
20.00		155.83	1678.30	0.00	0.00
25.00		160.61	1658.05	0.00	0.00
30.00		164.03	1635.80	0.00	0.00
35.00		166.47	1612.13	0.00	0.00
39.25		142.53	1351.07	0.00	0.00
40.00		25.35	372.34	0.00	0.00
45.00		171.44	2455.53	0.00	0.00
50.00		172.03	1384.46	0.00	0.00
55.00		172.18	1361.33	0.00	0.00
60.00		171.95	1337.71	0.00	0.00
65.00		171.40	1313.66	0.00	0.00
70.00		170.56	1289.24	0.00	0.00
75.00		169.47	1264.49	0.00	0.00
79.50		151.28	1116.94	0.00	0.00
80.00		16.85	184.57	0.00	0.00
84.25		143.34	1550.54	0.00	0.00
85.00		25.06	161.12	0.00	0.00
90.00		166.97	1058.56	0.00	0.00
95.00		165.09	1036.52	0.00	0.00
100.00		163.04	1014.28	0.00	0.00
105.00		160.84	991.86	0.00	0.00
110.00		158.50	969.26	0.00	0.00
115.00		156.03	946.51	0.00	0.00
120.00		153.43	923.62	0.00	0.00
120.50		15.13	91.47	0.00	0.00
124.50		121.82	1018.62	0.00	0.00
125.00	(11) attachments	1044.35	5117.63	0.00	0.00
130.00		149.60	763.62	0.00	0.00
135.00		146.69	744.04	0.00	0.00
140.00		143.67	724.34	0.00	0.00
145.00		140.56	704.54	0.00	0.00
150.00		137.37	684.63	0.00	0.00
155.00		134.08	664.62	0.00	0.00
158.00	(13) attachments	1049.06	4121.02	0.00	0.00
	Totals:	**7,011.16**	**48,413.28**	**0.00**	**0.00**

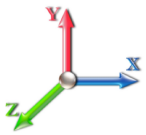
Calculated Forces

Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-48.41	-7.03	0.00	-718.61	0.00	718.61	4072.28	2036.14	8518.77	4265.72	0.00	0.000	0.000	0.180
5.00	-46.70	-6.92	0.00	-683.45	0.00	683.45	4026.39	2013.19	8271.02	4141.66	0.03	-0.050	0.000	0.177
10.00	-44.98	-6.80	0.00	-648.85	0.00	648.85	3979.52	1989.76	8024.75	4018.34	0.11	-0.101	0.000	0.173
15.00	-43.28	-6.69	0.00	-614.83	0.00	614.83	3931.66	1965.83	7780.07	3895.82	0.24	-0.151	0.000	0.169
20.00	-41.60	-6.57	0.00	-581.38	0.00	581.38	3882.82	1941.41	7537.09	3774.15	0.43	-0.202	0.000	0.165
25.00	-39.94	-6.43	0.00	-548.55	0.00	548.55	3833.01	1916.50	7295.92	3653.38	0.66	-0.253	0.000	0.161
30.00	-38.29	-6.30	0.00	-516.38	0.00	516.38	3782.21	1891.10	7056.68	3533.59	0.96	-0.303	0.000	0.156
35.00	-36.68	-6.15	0.00	-484.91	0.00	484.91	3730.43	1865.21	6819.48	3414.81	1.30	-0.354	0.000	0.152
39.25	-35.33	-6.01	0.00	-458.77	0.00	458.77	3685.64	1842.82	6619.54	3314.69	1.64	-0.397	0.000	0.148
40.00	-34.95	-6.00	0.00	-454.26	0.00	454.26	3677.66	1838.83	6584.42	3297.10	1.70	-0.405	0.000	0.147
45.00	-32.49	-5.84	0.00	-424.24	0.00	424.24	2868.03	1434.02	5115.73	2561.67	2.15	-0.455	0.000	0.177
50.00	-31.10	-5.69	0.00	-395.03	0.00	395.03	2830.76	1415.38	4942.56	2474.95	2.65	-0.505	0.000	0.171
55.00	-29.74	-5.53	0.00	-366.59	0.00	366.59	2792.51	1396.25	4770.53	2388.81	3.21	-0.561	0.000	0.164
60.00	-28.40	-5.37	0.00	-338.93	0.00	338.93	2753.27	1376.64	4599.73	2303.28	3.83	-0.617	0.000	0.157
65.00	-27.08	-5.21	0.00	-312.06	0.00	312.06	2713.06	1356.53	4430.29	2218.44	4.51	-0.672	0.000	0.151
70.00	-25.79	-5.05	0.00	-286.00	0.00	286.00	2671.86	1335.93	4262.32	2134.33	5.24	-0.726	0.000	0.144
75.00	-24.52	-4.89	0.00	-260.74	0.00	260.74	2629.68	1314.84	4095.93	2051.01	6.03	-0.779	0.000	0.136
79.50	-23.41	-4.73	0.00	-238.76	0.00	238.76	2590.88	1295.44	3947.61	1976.74	6.78	-0.826	0.000	0.130
80.00	-23.22	-4.72	0.00	-236.39	0.00	236.39	2586.52	1293.26	3931.22	1968.53	6.87	-0.831	0.000	0.129
84.25	-21.67	-4.56	0.00	-216.33	0.00	216.33	1900.65	950.33	2877.00	1440.64	7.63	-0.874	0.000	0.162
85.00	-21.51	-4.55	0.00	-212.91	0.00	212.91	1896.56	948.28	2860.10	1432.17	7.77	-0.882	0.000	0.160
90.00	-20.45	-4.39	0.00	-190.16	0.00	190.16	1868.76	934.38	2747.73	1375.91	8.72	-0.940	0.000	0.149
95.00	-19.41	-4.22	0.00	-168.24	0.00	168.24	1839.97	919.99	2636.06	1319.99	9.74	-0.995	0.000	0.138
100.00	-18.39	-4.06	0.00	-147.14	0.00	147.14	1810.21	905.10	2525.19	1264.47	10.81	-1.048	0.000	0.127
105.00	-17.40	-3.89	0.00	-126.86	0.00	126.86	1779.46	889.73	2415.23	1209.41	11.93	-1.098	0.000	0.115
110.00	-16.43	-3.73	0.00	-107.40	0.00	107.40	1747.73	873.86	2306.29	1154.86	13.11	-1.144	0.000	0.102
115.00	-15.49	-3.56	0.00	-88.77	0.00	88.77	1715.02	857.51	2198.49	1100.88	14.33	-1.186	0.000	0.090
120.00	-14.57	-3.39	0.00	-70.96	0.00	70.96	1681.32	840.66	2091.93	1047.52	15.59	-1.224	0.000	0.076
120.50	-14.47	-3.38	0.00	-69.26	0.00	69.26	1677.90	838.95	2081.35	1042.22	15.72	-1.227	0.000	0.075
124.50	-13.46	-3.24	0.00	-55.73	0.00	55.73	1117.68	558.84	1375.83	688.94	16.76	-1.253	0.000	0.093
125.00	-8.36	-2.09	0.00	-54.11	0.00	54.11	1115.89	557.95	1369.42	685.73	16.89	-1.256	0.000	0.086
130.00	-7.60	-1.93	0.00	-43.68	0.00	43.68	1097.42	548.71	1305.39	653.66	18.23	-1.291	0.000	0.074
135.00	-6.86	-1.76	0.00	-34.05	0.00	34.05	1077.97	538.98	1241.62	621.73	19.60	-1.321	0.000	0.061
140.00	-6.14	-1.61	0.00	-25.23	0.00	25.23	1057.53	528.77	1178.22	589.99	20.99	-1.347	0.000	0.049
145.00	-5.44	-1.45	0.00	-17.19	0.00	17.19	1036.12	518.06	1115.31	558.49	22.42	-1.367	0.000	0.036
150.00	-4.76	-1.30	0.00	-9.94	0.00	9.94	1013.72	506.86	1053.00	527.28	23.86	-1.381	0.000	0.024
155.00	-4.09	-1.15	0.00	-3.45	0.00	3.45	990.34	495.17	991.39	496.43	25.31	-1.389	0.000	0.011
158.00	0.00	-1.05	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	26.18	-1.391	0.000	0.000

Seismic Segment Forces (Factored)

Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	22
Gust Response Factor	1.10				**Sds**	0.18		**Ss**	0.17
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.39		**SA**	0.04	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1021.2	0.00	0.03	0.02	15.72	
10.00		1002.7	0.01	0.05	0.03	23.01	
15.00		984.35	0.02	0.06	0.04	26.46	
20.00		965.92	0.03	0.07	0.04	28.02	
25.00		947.49	0.05	0.07	0.04	28.65	
30.00		929.06	0.07	0.07	0.04	28.90	
35.00		910.63	0.09	0.07	0.04	29.03	
39.25	Bot - Section 2	759.54	0.12	0.07	0.03	24.69	
40.00		244.94	0.12	0.07	0.03	7.99	
45.00	Top - Section 1	1613.5	0.15	0.07	0.03	53.61	
50.00		724.38	0.19	0.06	0.02	24.27	
55.00		709.02	0.23	0.06	0.02	23.47	
60.00		693.67	0.27	0.05	0.01	21.88	
65.00		678.31	0.32	0.04	0.01	19.22	
70.00		662.95	0.37	0.03	0.01	15.25	
75.00		647.59	0.43	0.01	0.01	9.94	
79.50	Bot - Section 3	569.70	0.48	-0.01	0.01	3.82	
80.00		113.32	0.48	-0.01	0.01	0.64	
84.25	Top - Section 2	952.03	0.54	-0.03	0.01	-3.30	
85.00		74.38	0.55	-0.03	0.01	-0.38	
90.00		488.81	0.61	-0.06	0.02	-7.54	
95.00		476.52	0.68	-0.08	0.03	-11.32	
100.00		464.23	0.76	-0.10	0.04	-13.38	
105.00		451.95	0.83	-0.12	0.06	-13.51	
110.00		439.66	0.92	-0.12	0.09	-11.73	
115.00		427.37	1.00	-0.11	0.13	-8.16	
120.00		415.09	1.09	-0.08	0.18	-2.96	
120.50	Bot - Section 4	40.83	1.10	-0.07	0.19	-0.23	
124.50	Top - Section 3	567.46	1.17	-0.02	0.24	4.17	
125.00	Appurtenance(s)	2389.3	1.18	-0.01	0.24	21.93	
130.00		297.31	1.28	0.09	0.32	8.88	
135.00		288.10	1.38	0.25	0.41	15.83	
140.00		278.88	1.48	0.46	0.52	23.57	
145.00		269.67	1.59	0.75	0.66	31.99	
150.00		260.45	1.70	1.14	0.82	40.98	
155.00		251.24	1.82	1.63	1.01	50.44	
158.00	Appurtenance(s)	1514.3	1.89	1.98	1.14	347.00	
	Totals:	**24,526.0**				**856.8**	**Total Wind:** **22,316.8**

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 20

Tower Engineering Solutions

Load Case: 1.2D + 1.0E

Iterations 22

Gust Response Factor	1.10			**Sds**	0.18			**Ss**	0.17
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.39	**SA**	0.04	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-31.95	-0.93	0.00	-101.40	0.00	101.40	4072.28	2036.14	8518.77	4265.72		0.00	0.00	0.032
5.00	-30.64	-0.92	0.00	-96.75	0.00	96.75	4026.39	2013.19	8271.02	4141.66		0.00	-0.01	0.031
10.00	-29.36	-0.90	0.00	-92.16	0.00	92.16	3979.52	1989.76	8024.75	4018.34		0.02	-0.01	0.030
15.00	-28.09	-0.88	0.00	-87.66	0.00	87.66	3931.66	1965.83	7780.07	3895.82		0.03	-0.02	0.030
20.00	-26.85	-0.85	0.00	-83.28	0.00	83.28	3882.82	1941.41	7537.09	3774.15		0.06	-0.03	0.029
25.00	-25.64	-0.82	0.00	-79.03	0.00	79.03	3833.01	1916.50	7295.92	3653.38		0.09	-0.04	0.028
30.00	-24.44	-0.80	0.00	-74.91	0.00	74.91	3782.21	1891.10	7056.68	3533.59		0.14	-0.04	0.028
35.00	-23.27	-0.77	0.00	-70.92	0.00	70.92	3730.43	1865.21	6819.48	3414.81		0.19	-0.05	0.027
39.25	-22.29	-0.75	0.00	-67.65	0.00	67.65	3685.64	1842.82	6619.54	3314.69		0.23	-0.06	0.026
40.00	-21.98	-0.74	0.00	-67.09	0.00	67.09	3677.66	1838.83	6584.42	3297.10		0.24	-0.06	0.026
45.00	-19.96	-0.69	0.00	-63.39	0.00	63.39	2868.03	1434.02	5115.73	2561.67		0.31	-0.07	0.032
50.00	-19.01	-0.66	0.00	-59.95	0.00	59.95	2830.76	1415.38	4942.56	2474.95		0.38	-0.07	0.031
55.00	-18.08	-0.64	0.00	-56.63	0.00	56.63	2792.51	1396.25	4770.53	2388.81		0.46	-0.08	0.030
60.00	-17.17	-0.62	0.00	-53.42	0.00	53.42	2753.27	1376.64	4599.73	2303.28		0.55	-0.09	0.029
65.00	-16.27	-0.60	0.00	-50.32	0.00	50.32	2713.06	1356.53	4430.29	2218.44		0.65	-0.10	0.029
70.00	-15.40	-0.59	0.00	-47.30	0.00	47.30	2671.86	1335.93	4262.32	2134.33		0.76	-0.11	0.028
75.00	-14.54	-0.58	0.00	-44.36	0.00	44.36	2629.68	1314.84	4095.93	2051.01		0.88	-0.12	0.027
79.50	-13.78	-0.57	0.00	-41.75	0.00	41.75	2590.88	1295.44	3947.61	1976.74		0.99	-0.12	0.026
80.00	-13.64	-0.57	0.00	-41.46	0.00	41.46	2586.52	1293.26	3931.22	1968.53		1.00	-0.13	0.026
84.25	-12.43	-0.57	0.00	-39.02	0.00	39.02	1900.65	950.33	2877.00	1440.64		1.12	-0.13	0.034
85.00	-12.33	-0.57	0.00	-38.59	0.00	38.59	1896.56	948.28	2860.10	1432.17		1.14	-0.13	0.033
90.00	-11.66	-0.57	0.00	-35.72	0.00	35.72	1868.76	934.38	2747.73	1375.91		1.29	-0.15	0.032
95.00	-11.00	-0.58	0.00	-32.84	0.00	32.84	1839.97	919.99	2636.06	1319.99		1.45	-0.16	0.031
100.00	-10.37	-0.58	0.00	-29.97	0.00	29.97	1810.21	905.10	2525.19	1264.47		1.62	-0.17	0.029
105.00	-9.74	-0.58	0.00	-27.09	0.00	27.09	1779.46	889.73	2415.23	1209.41		1.80	-0.18	0.028
110.00	-9.14	-0.57	0.00	-24.22	0.00	24.22	1747.73	873.86	2306.29	1154.86		1.99	-0.19	0.026
115.00	-8.54	-0.57	0.00	-21.34	0.00	21.34	1715.02	857.51	2198.49	1100.88		2.19	-0.20	0.024
120.00	-7.96	-0.57	0.00	-18.47	0.00	18.47	1681.32	840.66	2091.93	1047.52		2.40	-0.21	0.022
120.50	-7.91	-0.57	0.00	-18.18	0.00	18.18	1677.90	838.95	2081.35	1042.22		2.42	-0.21	0.022
124.50	-7.16	-0.57	0.00	-15.89	0.00	15.89	1117.68	558.84	1375.83	688.94		2.60	-0.21	0.029
125.00	-4.28	-0.53	0.00	-15.61	0.00	15.61	1115.89	557.95	1369.42	685.73		2.62	-0.22	0.027
130.00	-3.85	-0.52	0.00	-12.93	0.00	12.93	1097.42	548.71	1305.39	653.66		2.85	-0.23	0.023
135.00	-3.43	-0.51	0.00	-10.31	0.00	10.31	1077.97	538.98	1241.62	621.73		3.09	-0.23	0.020
140.00	-3.02	-0.48	0.00	-7.77	0.00	7.77	1057.53	528.77	1178.22	589.99		3.34	-0.24	0.016
145.00	-2.62	-0.45	0.00	-5.35	0.00	5.35	1036.12	518.06	1115.31	558.49		3.60	-0.25	0.012
150.00	-2.24	-0.41	0.00	-3.10	0.00	3.10	1013.72	506.86	1053.00	527.28		3.86	-0.25	0.008
155.00	-1.86	-0.36	0.00	-1.07	0.00	1.07	990.34	495.17	991.39	496.43		4.13	-0.26	0.004
158.00	0.00	-0.35	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11		4.29	-0.26	0.000

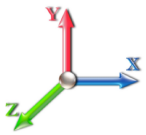
Seismic Segment Forces (Factored)

Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Gust Response Factor	1.10			**Sds**	0.18	**Iterations**	22
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10	**Ss**	0.17
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.39	**SA**	0.04	**S1**	0.06
						Seismic Importance Factor	1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1021.2	0.00	0.03	0.02	15.72	
10.00		1002.7	0.01	0.05	0.03	23.01	
15.00		984.35	0.02	0.06	0.04	26.46	
20.00		965.92	0.03	0.07	0.04	28.02	
25.00		947.49	0.05	0.07	0.04	28.65	
30.00		929.06	0.07	0.07	0.04	28.90	
35.00		910.63	0.09	0.07	0.04	29.03	
39.25	Bot - Section 2	759.54	0.12	0.07	0.03	24.69	
40.00		244.94	0.12	0.07	0.03	7.99	
45.00	Top - Section 1	1613.5	0.15	0.07	0.03	53.61	
50.00		724.38	0.19	0.06	0.02	24.27	
55.00		709.02	0.23	0.06	0.02	23.47	
60.00		693.67	0.27	0.05	0.01	21.88	
65.00		678.31	0.32	0.04	0.01	19.22	
70.00		662.95	0.37	0.03	0.01	15.25	
75.00		647.59	0.43	0.01	0.01	9.94	
79.50	Bot - Section 3	569.70	0.48	-0.01	0.01	3.82	
80.00		113.32	0.48	-0.01	0.01	0.64	
84.25	Top - Section 2	952.03	0.54	-0.03	0.01	-3.30	
85.00		74.38	0.55	-0.03	0.01	-0.38	
90.00		488.81	0.61	-0.06	0.02	-7.54	
95.00		476.52	0.68	-0.08	0.03	-11.32	
100.00		464.23	0.76	-0.10	0.04	-13.38	
105.00		451.95	0.83	-0.12	0.06	-13.51	
110.00		439.66	0.92	-0.12	0.09	-11.73	
115.00		427.37	1.00	-0.11	0.13	-8.16	
120.00		415.09	1.09	-0.08	0.18	-2.96	
120.50	Bot - Section 4	40.83	1.10	-0.07	0.19	-0.23	
124.50	Top - Section 3	567.46	1.17	-0.02	0.24	4.17	
125.00	Appurtenance(s)	2389.3	1.18	-0.01	0.24	21.93	
130.00		297.31	1.28	0.09	0.32	8.88	
135.00		288.10	1.38	0.25	0.41	15.83	
140.00		278.88	1.48	0.46	0.52	23.57	
145.00		269.67	1.59	0.75	0.66	31.99	
150.00		260.45	1.70	1.14	0.82	40.98	
155.00		251.24	1.82	1.63	1.01	50.44	
158.00	Appurtenance(s)	1514.3	1.89	1.98	1.14	347.00	
	Totals:	**24,526.0**				**856.8**	**Total Wind:** **22,316.8**

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 22

Tower Engineering Solutions

Load Case: 0.9D + 1.0E

Iterations 22

Gust Response Factor	1.10			**Sds**	0.18			**Ss**	0.17
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.06
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.39	**SA**	0.04	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-23.96	-0.93	0.00	-100.53	0.00	100.53	4072.28	2036.14	8518.77	4265.72		0.00	0.00	0.029
5.00	-22.98	-0.92	0.00	-95.88	0.00	95.88	4026.39	2013.19	8271.02	4141.66		0.00	-0.01	0.029
10.00	-22.02	-0.90	0.00	-91.29	0.00	91.29	3979.52	1989.76	8024.75	4018.34		0.01	-0.01	0.028
15.00	-21.07	-0.87	0.00	-86.81	0.00	86.81	3931.66	1965.83	7780.07	3895.82		0.03	-0.02	0.028
20.00	-20.14	-0.85	0.00	-82.44	0.00	82.44	3882.82	1941.41	7537.09	3774.15		0.06	-0.03	0.027
25.00	-19.23	-0.82	0.00	-78.21	0.00	78.21	3833.01	1916.50	7295.92	3653.38		0.09	-0.04	0.026
30.00	-18.33	-0.79	0.00	-74.11	0.00	74.11	3782.21	1891.10	7056.68	3533.59		0.13	-0.04	0.026
35.00	-17.45	-0.77	0.00	-70.15	0.00	70.15	3730.43	1865.21	6819.48	3414.81		0.18	-0.05	0.025
39.25	-16.71	-0.74	0.00	-66.90	0.00	66.90	3685.64	1842.82	6619.54	3314.69		0.23	-0.06	0.025
40.00	-16.49	-0.73	0.00	-66.34	0.00	66.34	3677.66	1838.83	6584.42	3297.10		0.24	-0.06	0.025
45.00	-14.97	-0.68	0.00	-62.67	0.00	62.67	2868.03	1434.02	5115.73	2561.67		0.30	-0.06	0.030
50.00	-14.26	-0.66	0.00	-59.27	0.00	59.27	2830.76	1415.38	4942.56	2474.95		0.38	-0.07	0.029
55.00	-13.56	-0.63	0.00	-55.98	0.00	55.98	2792.51	1396.25	4770.53	2388.81		0.46	-0.08	0.028
60.00	-12.88	-0.61	0.00	-52.81	0.00	52.81	2753.27	1376.64	4599.73	2303.28		0.55	-0.09	0.028
65.00	-12.20	-0.60	0.00	-49.74	0.00	49.74	2713.06	1356.53	4430.29	2218.44		0.64	-0.10	0.027
70.00	-11.55	-0.58	0.00	-46.76	0.00	46.76	2671.86	1335.93	4262.32	2134.33		0.75	-0.11	0.026
75.00	-10.90	-0.57	0.00	-43.86	0.00	43.86	2629.68	1314.84	4095.93	2051.01		0.87	-0.12	0.026
79.50	-10.34	-0.57	0.00	-41.29	0.00	41.29	2590.88	1295.44	3947.61	1976.74		0.98	-0.12	0.025
80.00	-10.23	-0.57	0.00	-41.00	0.00	41.00	2586.52	1293.26	3931.22	1968.53		0.99	-0.12	0.025
84.25	-9.32	-0.57	0.00	-38.59	0.00	38.59	1900.65	950.33	2877.00	1440.64		1.11	-0.13	0.032
85.00	-9.24	-0.57	0.00	-38.17	0.00	38.17	1896.56	948.28	2860.10	1432.17		1.13	-0.13	0.032
90.00	-8.74	-0.57	0.00	-35.33	0.00	35.33	1868.76	934.38	2747.73	1375.91		1.27	-0.14	0.030
95.00	-8.25	-0.57	0.00	-32.50	0.00	32.50	1839.97	919.99	2636.06	1319.99		1.43	-0.15	0.029
100.00	-7.77	-0.57	0.00	-29.66	0.00	29.66	1810.21	905.10	2525.19	1264.47		1.60	-0.17	0.028
105.00	-7.31	-0.57	0.00	-26.83	0.00	26.83	1779.46	889.73	2415.23	1209.41		1.78	-0.18	0.026
110.00	-6.85	-0.57	0.00	-23.99	0.00	23.99	1747.73	873.86	2306.29	1154.86		1.97	-0.19	0.025
115.00	-6.41	-0.57	0.00	-21.16	0.00	21.16	1715.02	857.51	2198.49	1100.88		2.17	-0.19	0.023
120.00	-5.97	-0.57	0.00	-18.32	0.00	18.32	1681.32	840.66	2091.93	1047.52		2.37	-0.20	0.021
120.50	-5.93	-0.57	0.00	-18.04	0.00	18.04	1677.90	838.95	2081.35	1042.22		2.40	-0.21	0.021
124.50	-5.37	-0.56	0.00	-15.78	0.00	15.78	1117.68	558.84	1375.83	688.94		2.57	-0.21	0.028
125.00	-3.21	-0.53	0.00	-15.50	0.00	15.50	1115.89	557.95	1369.42	685.73		2.59	-0.21	0.025
130.00	-2.89	-0.52	0.00	-12.84	0.00	12.84	1097.42	548.71	1305.39	653.66		2.82	-0.22	0.022
135.00	-2.57	-0.50	0.00	-10.24	0.00	10.24	1077.97	538.98	1241.62	621.73		3.06	-0.23	0.019
140.00	-2.27	-0.48	0.00	-7.72	0.00	7.72	1057.53	528.77	1178.22	589.99		3.31	-0.24	0.015
145.00	-1.97	-0.45	0.00	-5.32	0.00	5.32	1036.12	518.06	1115.31	558.49		3.56	-0.25	0.011
150.00	-1.68	-0.40	0.00	-3.08	0.00	3.08	1013.72	506.86	1053.00	527.28		3.82	-0.25	0.008
155.00	-1.40	-0.35	0.00	-1.06	0.00	1.06	990.34	495.17	991.39	496.43		4.09	-0.25	0.004
158.00	0.00	-0.35	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11		4.25	-0.25	0.000

Wind Loading - Shaft

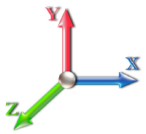
Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	239.94	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	235.68	0.650	0.000	5.00	21.495	13.97	114.4	0.0	1021.2
10.00		1.00	0.85	7.442	8.19	231.42	0.650	0.000	5.00	21.110	13.72	112.3	0.0	1002.8
15.00		1.00	0.85	7.442	8.19	227.16	0.650	0.000	5.00	20.725	13.47	110.3	0.0	984.3
20.00		1.00	0.90	7.896	8.69	229.60	0.650	0.000	5.00	20.340	13.22	114.8	0.0	965.9
25.00		1.00	0.95	8.276	9.10	230.57	0.650	0.000	5.00	19.955	12.97	118.1	0.0	947.5
30.00		1.00	0.98	8.600	9.46	230.46	0.650	0.000	5.00	19.570	12.72	120.3	0.0	929.1
35.00		1.00	1.01	8.883	9.77	229.57	0.650	0.000	5.00	19.185	12.47	121.9	0.0	910.6
39.25	Bot - Section 2	1.00	1.04	9.100	10.01	228.35	0.650	0.000	4.25	16.004	10.40	104.1	0.0	759.5
40.00		1.00	1.04	9.137	10.05	228.10	0.650	0.000	0.75	2.835	1.84	18.5	0.0	244.9
45.00	Top - Section 1	1.00	1.07	9.366	10.30	226.17	0.650	0.000	5.00	18.679	12.14	125.1	0.0	1613.5
50.00		1.00	1.09	9.576	10.53	227.18	0.650	0.000	5.00	18.294	11.89	125.3	0.0	724.4
55.00		1.00	1.12	9.770	10.75	224.58	0.650	0.000	5.00	17.909	11.64	125.1	0.0	709.0
60.00		1.00	1.14	9.951	10.95	221.72	0.650	0.000	5.00	17.524	11.39	124.7	0.0	693.7
65.00		1.00	1.16	10.120	11.13	218.63	0.650	0.000	5.00	17.139	11.14	124.0	0.0	678.3
70.00		1.00	1.17	10.279	11.31	215.34	0.650	0.000	5.00	16.754	10.89	123.1	0.0	662.9
75.00		1.00	1.19	10.430	11.47	211.86	0.650	0.000	5.00	16.369	10.64	122.1	0.0	647.6
79.50	Bot - Section 3	1.00	1.21	10.558	11.61	208.60	0.650	0.000	4.50	14.403	9.36	108.7	0.0	569.7
80.00		1.00	1.21	10.572	11.63	208.23	0.650	0.000	0.50	1.602	1.04	12.1	0.0	113.3
84.25	Top - Section 2	1.00	1.22	10.688	11.76	205.03	0.650	0.000	4.25	13.463	8.75	102.9	0.0	952.0
85.00		1.00	1.22	10.708	11.78	207.26	0.650	0.000	0.75	2.347	1.53	18.0	0.0	74.4
90.00		1.00	1.24	10.838	11.92	203.37	0.650	0.000	5.00	15.425	10.03	119.5	0.0	488.8
95.00		1.00	1.25	10.962	12.06	199.36	0.650	0.000	5.00	15.040	9.78	117.9	0.0	476.5
100.00		1.00	1.27	11.081	12.19	195.24	0.650	0.000	5.00	14.655	9.53	116.1	0.0	464.2
105.00		1.00	1.28	11.195	12.31	191.02	0.650	0.000	5.00	14.270	9.28	114.2	0.0	451.9
110.00		1.00	1.29	11.305	12.44	186.71	0.650	0.000	5.00	13.885	9.03	112.2	0.0	439.7
115.00		1.00	1.30	11.412	12.55	182.31	0.650	0.000	5.00	13.500	8.77	110.1	0.0	427.4
120.00		1.00	1.32	11.514	12.67	177.83	0.650	0.000	5.00	13.115	8.52	108.0	0.0	415.1
120.50	Bot - Section 4	1.00	1.32	11.524	12.68	177.38	0.650	0.000	0.50	1.290	0.84	10.6	0.0	40.8
124.50	Top - Section 3	1.00	1.33	11.604	12.76	173.73	0.650	0.000	4.00	10.311	6.70	85.5	0.0	567.5
125.00	Appurtenance(s)	1.00	1.33	11.614	12.78	175.47	0.650	0.000	0.50	1.271	0.83	10.6	0.0	30.2
130.00		1.00	1.34	11.710	12.88	170.85	0.650	0.000	5.00	12.503	8.13	104.7	0.0	297.3
135.00		1.00	1.35	11.803	12.98	166.16	0.650	0.000	5.00	12.118	7.88	102.3	0.0	288.1
140.00		1.00	1.36	11.894	13.08	161.41	0.650	0.000	5.00	11.733	7.63	99.8	0.0	278.9
145.00		1.00	1.37	11.982	13.18	156.61	0.650	0.000	5.00	11.348	7.38	97.2	0.0	269.7
150.00		1.00	1.38	12.068	13.27	151.74	0.650	0.000	5.00	10.963	7.13	94.6	0.0	260.5
155.00		1.00	1.39	12.152	13.37	146.82	0.650	0.000	5.00	10.578	6.88	91.9	0.0	251.2
158.00	Appurtenance(s)	1.00	1.39	12.201	13.42	143.84	0.650	0.000	3.00	6.162	4.01	53.8	0.0	146.3
								Totals:	**158.00**			**3,594.8**		**20,798.9**

Discrete Appurtenance Forces

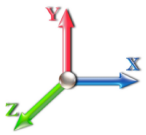
Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	158.00	DB844H90E-XY	12	12.201	13.421	1.01	0.90	36.89	168.00	0.000	0.000	495.14	0.00	0.00
2	158.00	Low Profile Platform-flat	1	12.201	13.421	1.00	1.00	30.73	1200.00	0.000	0.000	412.43	0.00	0.00
3	125.00	MX08FRO665-21	3	11.614	12.775	0.55	0.75	20.80	193.50	0.000	0.000	265.67	0.00	0.00
4	125.00	MC-PK8-DSH	1	11.614	12.775	1.00	1.00	37.59	1727.00	0.000	0.000	480.22	0.00	0.00
5	125.00	TA08025-B605	3	11.614	12.775	0.50	0.75	2.95	225.00	0.000	0.000	37.75	0.00	0.00
6	125.00	RDIDC-9181-OF-48	1	11.614	12.775	0.50	0.75	1.01	21.90	0.000	0.000	12.90	0.00	0.00
7	125.00	TA08025-B604	3	11.614	12.775	0.50	0.75	2.95	191.70	0.000	0.000	37.75	0.00	0.00
							Totals:		**3,727.10**			**1,741.84**		

Total Applied Force Summary

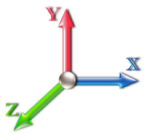
Structure:	CT46146-A-SBA		**Code:**	EIA/TIA-222-G	9/8/2021
Site Name:	Plainfield		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 25

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		114.38	1088.61	0.00	0.00
10.00		112.33	1070.18	0.00	0.00
15.00		110.28	1051.75	0.00	0.00
20.00		114.84	1033.32	0.00	0.00
25.00		118.08	1014.89	0.00	0.00
30.00		120.33	996.46	0.00	0.00
35.00		121.86	978.03	0.00	0.00
39.25		104.14	816.83	0.00	0.00
40.00		18.52	255.05	0.00	0.00
45.00		125.09	1680.91	0.00	0.00
50.00		125.26	791.78	0.00	0.00
55.00		125.11	776.42	0.00	0.00
60.00		124.68	761.07	0.00	0.00
65.00		124.01	745.71	0.00	0.00
70.00		123.13	730.35	0.00	0.00
75.00		122.06	714.99	0.00	0.00
79.50		108.73	630.36	0.00	0.00
80.00		12.11	120.06	0.00	0.00
84.25		102.89	1009.32	0.00	0.00
85.00		17.97	84.49	0.00	0.00
90.00		119.53	556.21	0.00	0.00
95.00		117.88	543.92	0.00	0.00
100.00		116.11	531.63	0.00	0.00
105.00		114.22	519.35	0.00	0.00
110.00		112.24	507.06	0.00	0.00
115.00		110.15	494.77	0.00	0.00
120.00		107.97	482.49	0.00	0.00
120.50		10.63	47.57	0.00	0.00
124.50		85.55	621.38	0.00	0.00
125.00	(11) attachments	844.84	2396.08	0.00	0.00
130.00		104.68	359.71	0.00	0.00
135.00		102.27	350.50	0.00	0.00
140.00		99.78	341.28	0.00	0.00
145.00		97.22	332.07	0.00	0.00
150.00		94.60	322.85	0.00	0.00
155.00		91.91	313.64	0.00	0.00
158.00	(13) attachments	961.32	1551.76	0.00	0.00
	Totals:	**5,336.67**	**26,622.85**	**0.00**	**0.00**

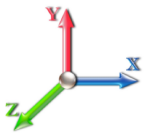
Calculated Forces

Structure:	CT46146-A-SBA	**Code:**	EIA/TIA-222-G	9/8/2021	
Site Name:	Plainfield	**Exposure:**	C		
Height:	158.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 26	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 23

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-26.62	-5.34	0.00	-543.88	0.00	543.88	4072.28	2036.14	8518.77	4265.72	0.00	0.000	0.000	0.134
5.00	-25.53	-5.25	0.00	-517.15	0.00	517.15	4026.39	2013.19	8271.02	4141.66	0.02	-0.038	0.000	0.131
10.00	-24.46	-5.15	0.00	-490.92	0.00	490.92	3979.52	1989.76	8024.75	4018.34	0.08	-0.076	0.000	0.128
15.00	-23.40	-5.05	0.00	-465.17	0.00	465.17	3931.66	1965.83	7780.07	3895.82	0.18	-0.115	0.000	0.125
20.00	-22.36	-4.95	0.00	-439.91	0.00	439.91	3882.82	1941.41	7537.09	3774.15	0.32	-0.153	0.000	0.122
25.00	-21.35	-4.84	0.00	-415.15	0.00	415.15	3833.01	1916.50	7295.92	3653.38	0.50	-0.191	0.000	0.119
30.00	-20.35	-4.73	0.00	-390.93	0.00	390.93	3782.21	1891.10	7056.68	3533.59	0.72	-0.230	0.000	0.116
35.00	-19.37	-4.62	0.00	-367.26	0.00	367.26	3730.43	1865.21	6819.48	3414.81	0.98	-0.268	0.000	0.113
39.25	-18.55	-4.52	0.00	-347.63	0.00	347.63	3685.64	1842.82	6619.54	3314.69	1.24	-0.300	0.000	0.110
40.00	-18.29	-4.50	0.00	-344.24	0.00	344.24	3677.66	1838.83	6584.42	3297.10	1.29	-0.306	0.000	0.109
45.00	-16.61	-4.38	0.00	-321.72	0.00	321.72	2868.03	1434.02	5115.73	2561.67	1.63	-0.344	0.000	0.131
50.00	-15.82	-4.26	0.00	-299.81	0.00	299.81	2830.76	1415.38	4942.56	2474.95	2.01	-0.382	0.000	0.127
55.00	-15.04	-4.14	0.00	-278.50	0.00	278.50	2792.51	1396.25	4770.53	2388.81	2.43	-0.425	0.000	0.122
60.00	-14.27	-4.02	0.00	-257.79	0.00	257.79	2753.27	1376.64	4599.73	2303.28	2.90	-0.467	0.000	0.117
65.00	-13.53	-3.90	0.00	-237.68	0.00	237.68	2713.06	1356.53	4430.29	2218.44	3.41	-0.509	0.000	0.112
70.00	-12.79	-3.78	0.00	-218.17	0.00	218.17	2671.86	1335.93	4262.32	2134.33	3.97	-0.550	0.000	0.107
75.00	-12.08	-3.66	0.00	-199.26	0.00	199.26	2629.68	1314.84	4095.93	2051.01	4.56	-0.591	0.000	0.102
79.50	-11.45	-3.55	0.00	-182.79	0.00	182.79	2590.88	1295.44	3947.61	1976.74	5.14	-0.627	0.000	0.097
80.00	-11.33	-3.54	0.00	-181.02	0.00	181.02	2586.52	1293.26	3931.22	1968.53	5.21	-0.631	0.000	0.096
84.25	-10.32	-3.43	0.00	-165.98	0.00	165.98	1900.65	950.33	2877.00	1440.64	5.78	-0.664	0.000	0.121
85.00	-10.23	-3.41	0.00	-163.41	0.00	163.41	1896.56	948.28	2860.10	1432.17	5.89	-0.670	0.000	0.120
90.00	-9.67	-3.29	0.00	-146.34	0.00	146.34	1868.76	934.38	2747.73	1375.91	6.61	-0.714	0.000	0.112
95.00	-9.13	-3.18	0.00	-129.86	0.00	129.86	1839.97	919.99	2636.06	1319.99	7.38	-0.757	0.000	0.103
100.00	-8.60	-3.06	0.00	-113.98	0.00	113.98	1810.21	905.10	2525.19	1264.47	8.20	-0.798	0.000	0.095
105.00	-8.08	-2.94	0.00	-98.68	0.00	98.68	1779.46	889.73	2415.23	1209.41	9.06	-0.837	0.000	0.086
110.00	-7.57	-2.83	0.00	-83.97	0.00	83.97	1747.73	873.86	2306.29	1154.86	9.95	-0.873	0.000	0.077
115.00	-7.08	-2.71	0.00	-69.83	0.00	69.83	1715.02	857.51	2198.49	1100.88	10.88	-0.906	0.000	0.068
120.00	-6.60	-2.60	0.00	-56.26	0.00	56.26	1681.32	840.66	2091.93	1047.52	11.85	-0.935	0.000	0.058
120.50	-6.55	-2.59	0.00	-54.96	0.00	54.96	1677.90	838.95	2081.35	1042.22	11.95	-0.938	0.000	0.057
124.50	-5.93	-2.50	0.00	-44.60	0.00	44.60	1117.68	558.84	1375.83	688.94	12.74	-0.958	0.000	0.070
125.00	-3.54	-1.61	0.00	-43.35	0.00	43.35	1115.89	557.95	1369.42	685.73	12.84	-0.961	0.000	0.066
130.00	-3.19	-1.50	0.00	-35.29	0.00	35.29	1097.42	548.71	1305.39	653.66	13.86	-0.989	0.000	0.057
135.00	-2.84	-1.40	0.00	-27.78	0.00	27.78	1077.97	538.98	1241.62	621.73	14.91	-1.014	0.000	0.047
140.00	-2.50	-1.29	0.00	-20.80	0.00	20.80	1057.53	528.77	1178.22	589.99	15.99	-1.034	0.000	0.038
145.00	-2.17	-1.19	0.00	-14.35	0.00	14.35	1036.12	518.06	1115.31	558.49	17.08	-1.051	0.000	0.028
150.00	-1.85	-1.09	0.00	-8.41	0.00	8.41	1013.72	506.86	1053.00	527.28	18.19	-1.063	0.000	0.018
155.00	-1.53	-0.99	0.00	-2.97	0.00	2.97	990.34	495.17	991.39	496.43	19.30	-1.070	0.000	0.008
158.00	0.00	-0.96	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	19.98	-1.071	0.000	0.000

Final Analysis Summary

Structure:	CT46146-A-SBA		**Code:**	EIA/TIA-222-G	9/8/2021
Site Name:	Plainfield		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 27

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 101 97 mph Wind	22.4	0.00	31.92	0.00	0.00	2285.20
0.9D + 1.6W 101 97 mph Wind	22.4	0.00	23.93	0.00	0.00	2267.07
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.0	0.00	48.41	0.00	0.00	718.61
1.2D + 1.0E	0.9	0.00	31.95	0.00	0.00	101.40
0.9D + 1.0E	0.9	0.00	23.96	0.00	0.00	100.53
1.0D + 1.0W 60 mph Wind	5.3	0.00	26.62	0.00	0.00	543.88

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 101 97 mph Wind	-31.92	-22.36	0.00	-2285.2	0.00	-2285.2	4072.28	2036.1	8518.77	4265.72	0.00	0.544
0.9D + 1.6W 101 97 mph Wind	-23.93	-22.35	0.00	-2267.0	0.00	-2267.0	4072.28	2036.1	8518.77	4265.72	0.00	0.537
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-48.41	-7.03	0.00	-718.61	0.00	-718.61	4072.28	2036.1	8518.77	4265.72	0.00	0.180
1.2D + 1.0E	-12.43	-0.57	0.00	-39.02	0.00	-39.02	1900.65	950.33	2877.00	1440.64	84.25	0.034
0.9D + 1.0E	-9.32	-0.57	0.00	-38.59	0.00	-38.59	1900.65	950.33	2877.00	1440.64	84.25	0.032
1.0D + 1.0W 60 mph Wind	-26.62	-5.34	0.00	-543.88	0.00	-543.88	4072.28	2036.1	8518.77	4265.72	0.00	0.134

Base Plate Summary

Structure:	CT46146-A-SB		**Code:**	EIA/TIA-222-G	9/8/2021
Site Name:	Plainfield		**Exposure:**	C	
Height:	158.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 28

Tower Engineering Solutions

Reactions

Original Design

Moment (kip-ft):	3115.00
Axial (kip):	31.00
Shear (kip):	28.00

Analysis (1.2D + 1.6W)

Moment (kip-ft):	2285.20
Axial (kip):	31.92
Shear (kip):	22.36

Base Plate

Yield (ksi):	55.00
Width (in):	57.00
Style:	Clipped
Polygon Sides:	4.00
Clip Length (in):	10.00
Effective Len (in):	7.82
Moment (kip-in):	408.53
Allow Stress (ksi):	74.25
Applied Stress (ksi):	41.58
Stress Ratio:	0.56

Anchor Bolts

Bolt Circle:	58.00
Number Bolts:	16.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Clustered
Cluster Dist (in):	6.00
Start Angle (deg):	45.00

Compression

Force (kip):	121.23
Allowable (kip):	260.00
Ratio:	0.48

Tension

Force (kip):	115.17
Allowable (kip):	260.00
Ratio:	0.45

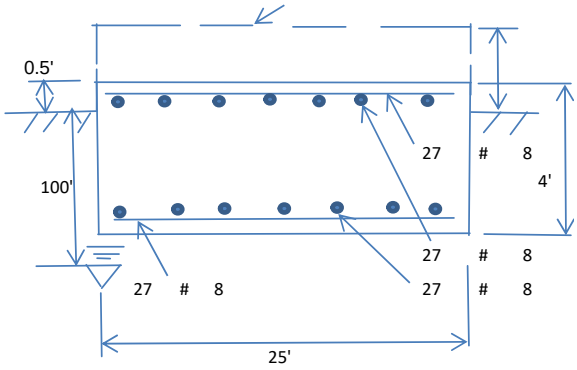
Monopole Mat Foundation Design

				Date
				7/30/2020
Customer Name:		**EIA/TIA Standard:**	EIA-222-G
Site Name:		**Structure Height (Ft.):**	300
Site Number:	194213-VZW	**Engineer Name:**	J. Tibbetts
Engr. Number:		**Engineer Login ID:**	

Foundation Info Obtained from: Mapping Operation

Structure Type: Monopole

Analysis or Design? Analysis

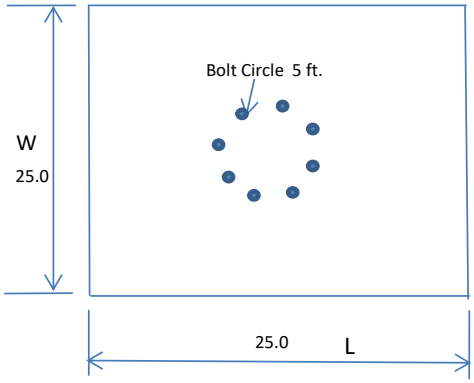


Base Reactions (Factored):

Axial Load (Kips):	31.9	Shear Force (Kips):	22.4
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2285.2
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Anchor Bolt Circle (ft.):	5.00	Depth of Base BG (ft.):	3.50
Thickness of Pad (ft):	4.00		
Length of Pad (ft.):	25	Width of Pad (ft.):	25
Final Length of pad (ft)	25.0	Final width of pad (ft):	25.0



Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Pad Rebar Yield (Ksi):	60	Tie Spacing (in):	11.0	
Pad Steel Rebar Size (#):	8			
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	27	Qty. of Rebar in Pad (W):	27	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	27	Qty. of Rebar in Pad (W):	27	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Water Table B.G.S. (ft):	100.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	32000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	0.00	Total Dry Soil Weight (Kips):	0.00
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.00	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2500.00	Total Dry Concrete Weight (Kips):	375.00
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	375.00	Total Vertical Load on Base (Kips):	406.92

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	1980	<	Allowable Factored Soil Bearing (psf): 24000	0.08	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	4617.8	>	Design Factored Momont (kips-ft): 2376	0.51	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.94	OK!			

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compresion):	0.65	Wind Load Factor on Concrete Design:	1.00

Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1096.8	>	One-Way Factored Shear (L-D. Kips):	193.7	0.18	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1096.8	>	One-Way Factored Shear (W-D., Kips)	193.7	0.18	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1309.8	>	One-Way Factored Shear (C-C, Kips):	347.1	0.26	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0016	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0016		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	4191.0	>	Moment at Bottom (L-Direct. K-Ft):	585.1	0.14	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	4191.0	>	Moment at Bottom (W-Direct. K-Ft):	585.1	0.14	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	5906.1	>	Moment at Bottom (C-C Dir. K-Ft):	827.4	0.14	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0016	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0016		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	4191.0	>	Moment at the top (L-Dir Kips-Ft):	58.8	0.01	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	4191.0	>	Moment at the top (W-Dir Kips-Ft):	58.8	0.01	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	5906.1	>	Moment at the top (C-C Direc. K-Ft):	342.4	0.06	OK!

Exhibit E

Mount Analysis

September 7, 2021

Sherri Knapik
SBA Network Services, LLC
134 Flanders Road, Suite 125
Westborough, MA 01581
(508) 251-0720 x 3805

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
towersupport@btgrp.com

Subject:	**Appurtenance Mount Analysis Report**	
Carrier Designation:	***Dish Wireless* Co-Locate**	
	Site Number:	BOBOS00065A
	Site Name:	N/A
SBA Network Services Designation:	**Site Number:**	CT46146-A
	Site Name:	Plainfield
	Application Number:	167054, v1
Engineering Firm Designation:	**B+T Group Project Number:**	149491.003.01
Site Data:	**388 Norwich Road, Plainfield, CT, 06374, Windham County** **Latitude *41.69280°*, Longitude *-71.90711°*** **Monopole** **8 ft. Platform Mount**	

Dear Ms. Knapik,

B+T Group is pleased to submit this **"Appurtenance Mount Analysis Report"** to determine the structural integrity of the antenna mount on the above-mentioned structure.

The purpose of the analysis is to determine acceptability of the mount's stress level. Based on our analysis we have determined the stress level for the mount under the following load case to be:

Proposed Equipment Note: See Table 1 for the final loading configuration	**Sufficient Capacity** **(Passing at 81.7%)**

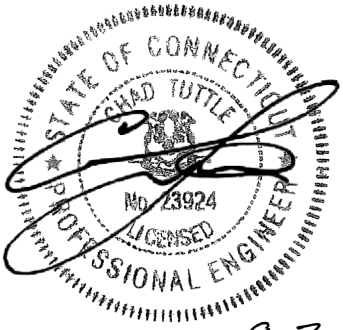
This analysis has been performed in accordance with the 2018 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 135 mph converted to a nominal 3-second gust wind speed of 105 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category C and Risk Category II were used in this analysis.

All the equipment proposed in this report shall be installed in accordance with the drawings for the determined available structural capacity to be effective.

We at *B+T Group* appreciate the opportunity of providing our continuing professional services to you and *SBA Network Services, LLC*. If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount structural analysis prepared by: Erika Ruiz

Respectfully submitted by: B&T Engineering, Inc.
COA# PEC.0001564 Expires: 02/10/2022



Chad E. Tuttle, P.E.

9-7-21

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1) INTRODUCTION

The appurtenance mount consists of Commscope platform mount, Part# MC-PK8-C at 125 ft., attached to monopole at 388 Norwich Road, Plainfield, CT, 06374, Windham County. The proposed antenna loading information was obtained from SBA Network Services, LLC. All information provided to B+T Group was assumed accurate and complete.

2) ANALYSIS CRITERIA

The structural analysis was performed for this mount in accordance with the ANSI/TIA-222-G-2-2005 Structural Standard for Antenna Supporting Structures and Antennas - Addendum 2 using a 3-second gust wind speed of 105 mph with no ice and 50 mph with 0.75 inch escalated ice thickness. Exposure Category C & Topographic Category 1 and Risk Category II were used in this analysis. In addition, the platform mount has been analyzed for various live loading conditions consisting of a 250-lb man live load applied individually at the midpoint and cantilevered ends of horizontal members as well as a 500-pound man live load applied individually at mount pipe locations using a 3-second gust of 30 mph. The mount was analyzed under 30º increments in the wind direction. The analyzed loading is detailed in Table 1.

Table 1 – Proposed Equipment Information

Loading	RAD Center Elev. (ft.)	Position	Qty.	Description	Note
Proposed	125	1	3	JMA Wireless MX08FRO665-21	1
			3	Fujitsu TA08025-B605	2
			3	Fujitsu TA08025-B604	
		-	1	Raycap RDIDC-9181-PF-48	3

Note:
(1) Proposed Antenna to be installed on the Mount Pipe.
(2) Proposed Equipment to be installed directly behind the Antenna.
(3) Proposed Equipment to be installed on the mount.

Table 2 – Documents Provided

Documents	Remarks	Reference	Source
SBA Application	Proposed Loading Mount Info	Date: 07/27/2021	SBA Network Services, LLC
RFDS	Proposed Loading	Date: 07/22/2021	

3) ANALYSIS PROCEDURE

3.1) Analysis Method

RISA-3D (Version 19.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses and deflections for various loading cases. Selected output from the analysis is included in Appendix A.

Manufacturers drawing were used to create the model.

3.2) Assumptions

1. The mount was built in accordance with the manufacturer's specifications.
2. The mount has been maintained in accordance with the manufacturer's specifications and is free of damage.
3. The configuration of antennas and other appurtenances are as specified in Table 1.
4. All mount components have been assumed to be in sufficient condition to carry their full design capacity for the analysis.

5. Mount areas and weights are determined from field measurements, standard material properties, and/or manufacturer product data.
6. Serviceability with respect to antenna twist, tilt, roll or lateral translation is not checked and is left to the carrier or tower owner to ensure conformance.
7. All prior structural modifications, if any are assumed to be correctly installed and fully effective.
8. 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.
9. The following material grades were assumed (Unless Noted Otherwise):
   a) Connection Bolts : ASTM A325
   b) Steel Pipe : ASTM A53 (GR. 35)
   c) HSS (Round) : ASTM 500 (GR. B-42)
   d) HSS (Rectangular) : ASTM 500 (GR. B-46)
   e) Channel : ASTM A36 (GR. 36)
   f) Steel Solid Rod : ASTM A36 (GR. 36)
   g) Steel Plate : ASTM A36 (GR. 36)
   h) Steel Angle : ASTM A36 (GR. 36)
   i) UNISTRUT : ASTM A570 (GR. 33)

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity

Notes	Component	Elevation (ft.)	% Capacity	Pass / Fail
-	Main Horizontals	125	14.9	Pass
-	Support Rails	125	81.7	Pass
-	Support Tubes	125	74.5	Pass
-	Support Channels	125	43.9	Pass
-	Support Angels	125	57.8	Pass
-	Mount Pipes	125	62.2	Pass
-	Connection Plates	125	27.8	Pass
-	Connection Angles	125	39.2	Pass
-	Connection Bolts	125	39.0	Pass

5) RECOMMENDATIONS

The Commscope platform mount, Part# MC-PK8-C has sufficient capacity to carry the proposed loads and is in compliance with the ANSI/TIA-222-G standard for the proposed loading. (Refer to the RISA output for the specific members).

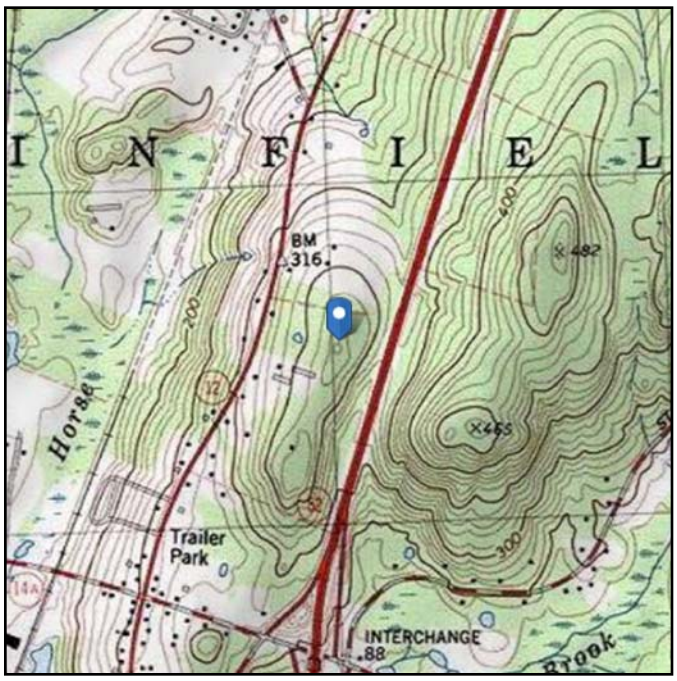
APPENDIX A

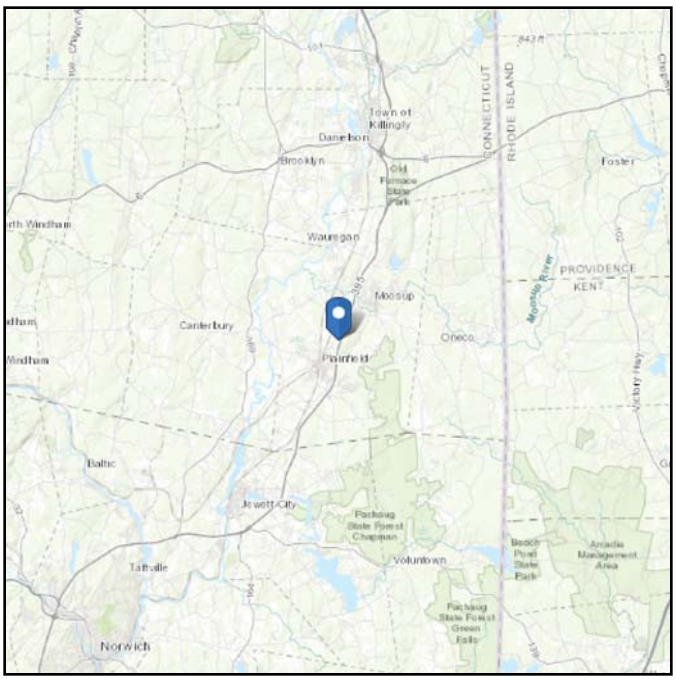
(RISA-3D Output)

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	377.31 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.6928
Soil Class:	D - Stiff Soil	**Longitude:**	-71.9071





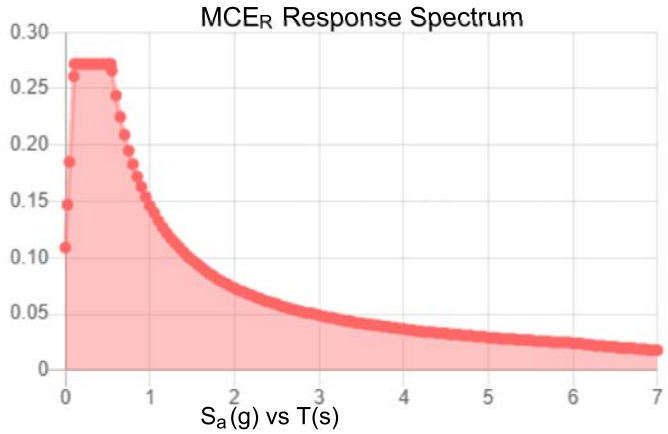
Seismic

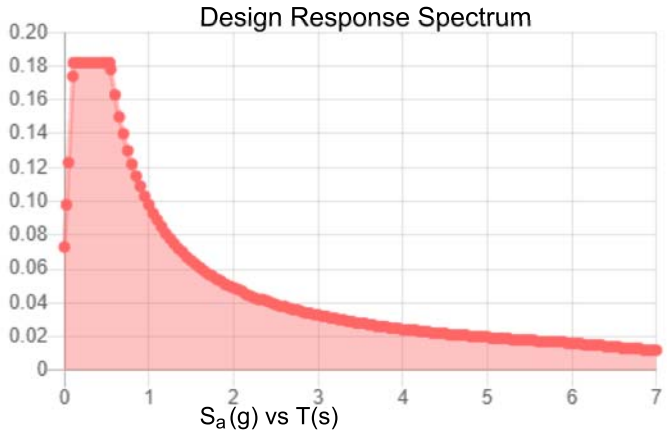
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.17	S_{DS} :	0.182
S_1 :	0.061	S_{D1} :	0.098
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.085
S_{MS} :	0.272	PGA_M :	0.136
S_{M1} :	0.146	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Sep 03 2021

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Fri Sep 03 2021

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

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

PROJECT	**149491.003.01 - Plainfield, CT**				**KSC**
SUBJECT	**Platform- Mount Analysis**				
DATE	**09/07/21**	PAGE	1	OF	5

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

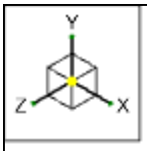
INPUT

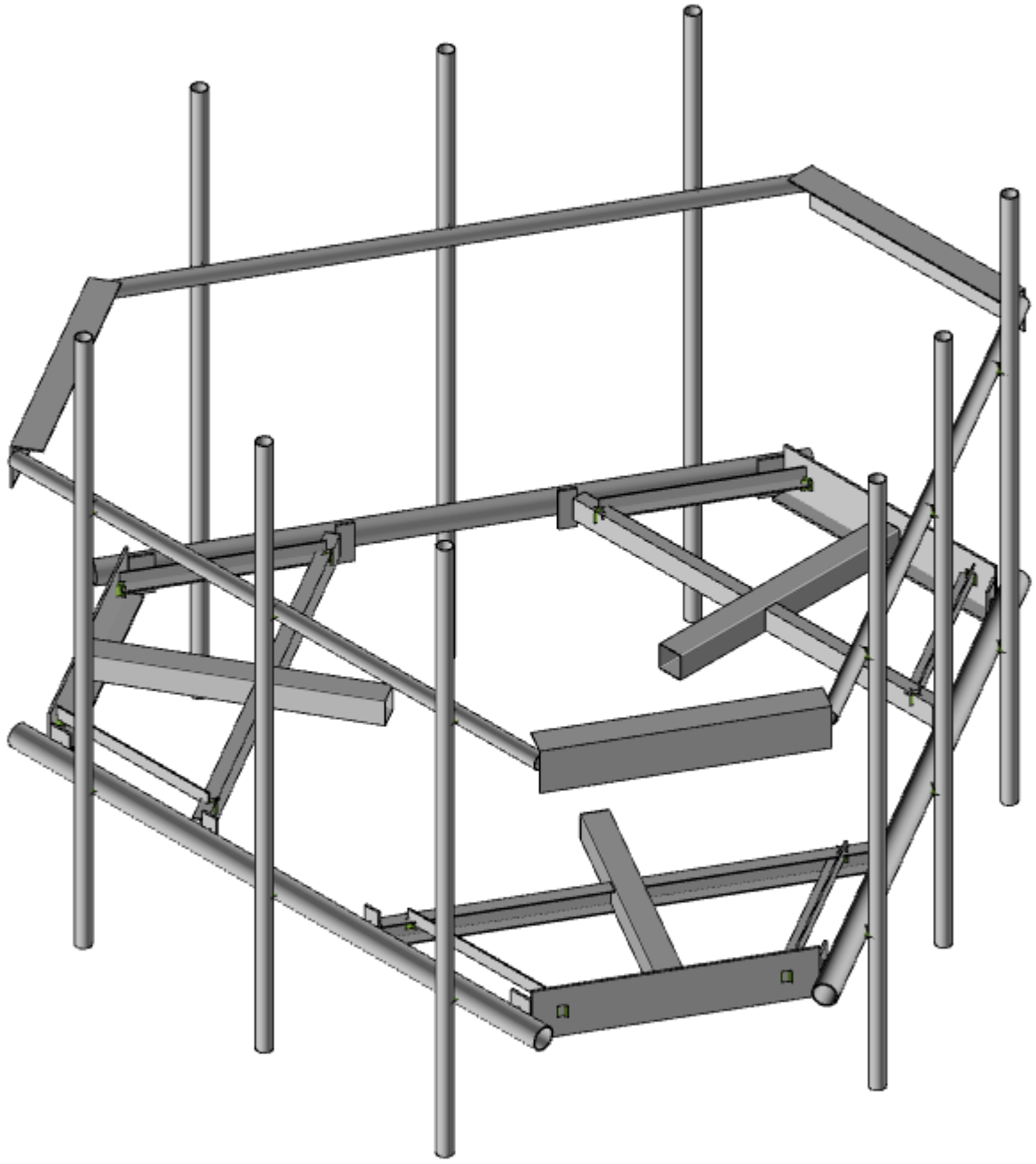
[REF: ANSI/TIA-222-G2005]

Tower Type	:	Monopole		
Tower Height	:	158	ft	
Mount Elevation	:	125	ft	
Antenna Elevation	:	125	ft	
Crest Height	:	0	ft	
Structure Class	:	II		[Table 2-1]
Exposure Category	:	C		[Sec. 2.6.5]
Topography Category	:	1		[Sec. 2.6.6.2]
Wind Velocity V	:	105	mph	[Annex B]
Ice wind Velocity V_i	:	50	mph	[Annex B]
Service Velocity V_s	:	30	mph	[Annex B]
Base Ice thickness t_i	:	0.75	in	[Annex B]

ANTENNAS

	Manufacturer	Model	Height (in)	Front Width (in)	Side Width (in)	Weight (lbs)	Shape	Quantity	Location (%)
Mount Pipe **29**									
	JMA Wireless	MX08FRO665-21	72.00	20.00	8.00	64.50	Flat	0.5	15
	JMA Wireless	MX08FRO665-21	72.00	20.00	8.00	64.50	Flat	0.5	85
	Fujitsu	TA08025-B605	15.75	14.96	9.05	74.95	Flat	1	20
	Fujitsu	TA08025-B604	15.75	14.96	7.87	63.93	Flat	1	50
Mount Pipe **89**									
	JMA Wireless	MX08FRO665-21	72.00	20.00	8.00	64.50	Flat	0.5	15
	JMA Wireless	MX08FRO665-21	72.00	20.00	8.00	64.50	Flat	0.5	85
	Fujitsu	TA08025-B605	15.75	14.96	9.05	74.95	Flat	1	20
	Fujitsu	TA08025-B604	15.75	14.96	7.87	63.93	Flat	1	50
Mount Pipe **78**									
	JMA Wireless	MX08FRO665-21	72.00	20.00	8.00	64.50	Flat	0.5	15
	JMA Wireless	MX08FRO665-21	72.00	20.00	8.00	64.50	Flat	0.5	85
	Fujitsu	TA08025-B605	15.75	14.96	9.05	74.95	Flat	1	20
	Fujitsu	TA08025-B604	15.75	14.96	7.87	63.93	Flat	1	50
Mount Pipe **31**									
	Raycap	RDIDC-9181-PF-48	16.57	14.57	8.15	21.85	Flat	1	20
Mount Pipe									
Mount Pipe									





Envelope Only Solution

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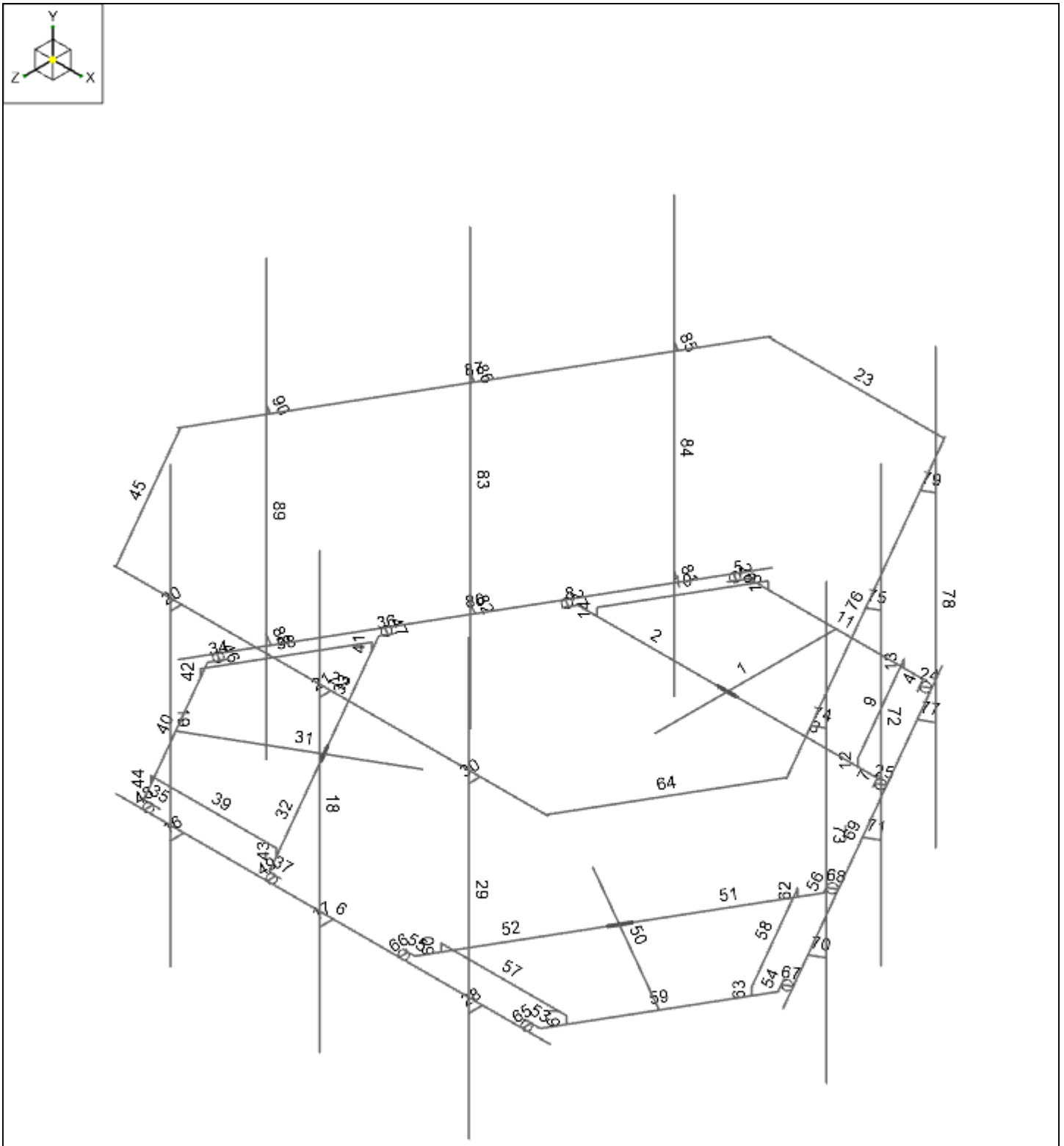

Envelope Only Solution

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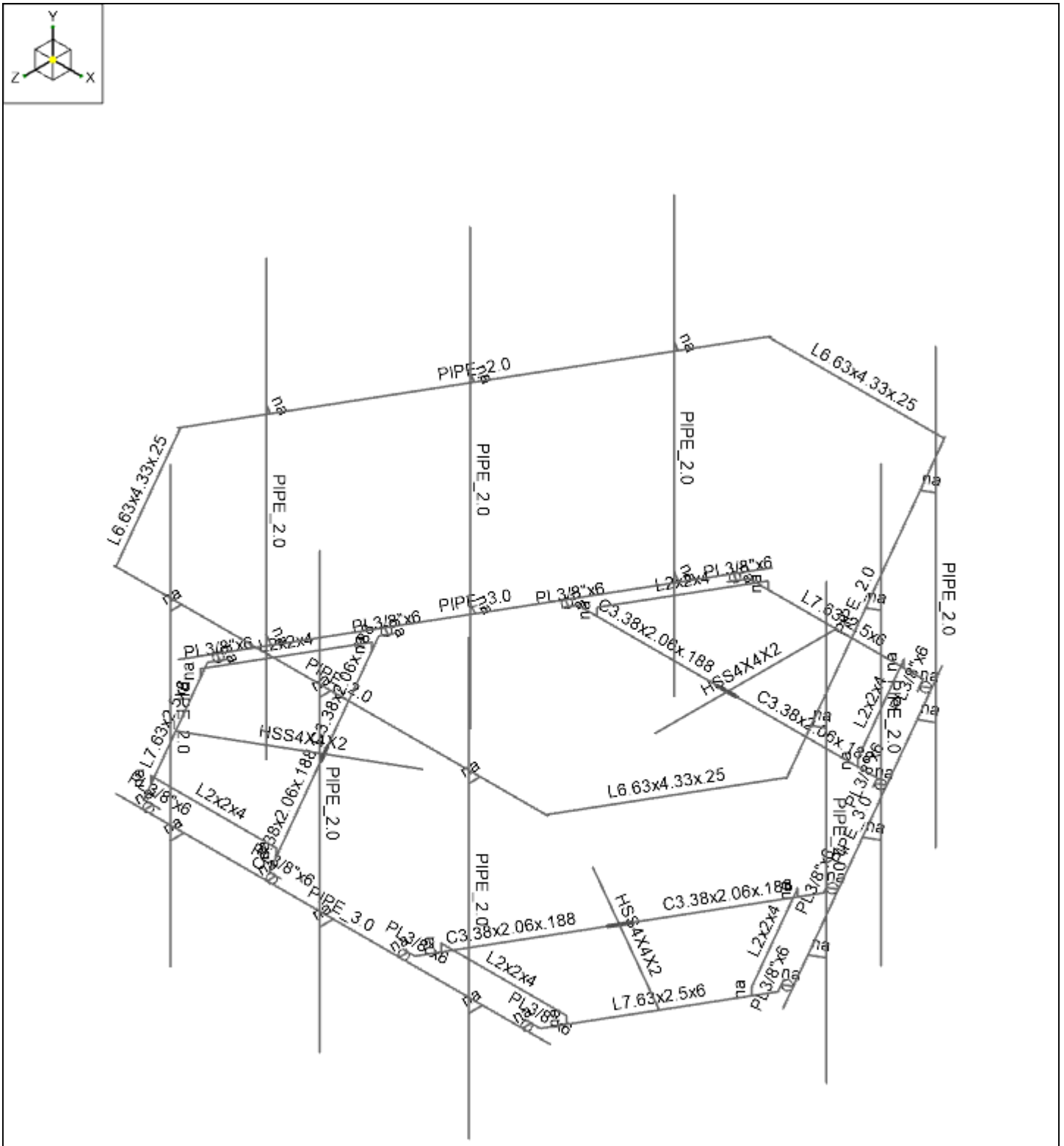

Envelope Only Solution

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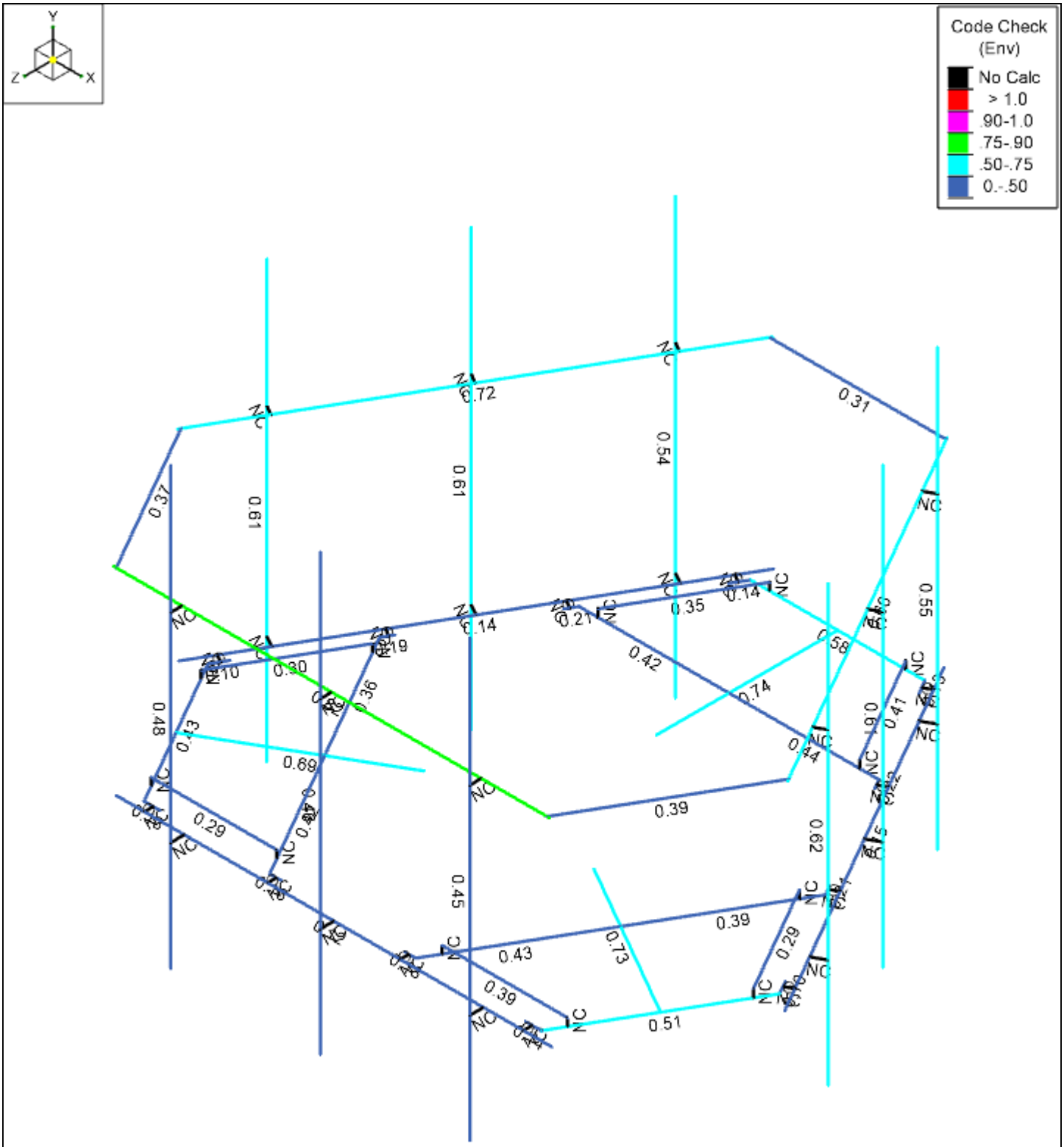

Member Code Checks Displayed (Enveloped)
Envelope Only Solution

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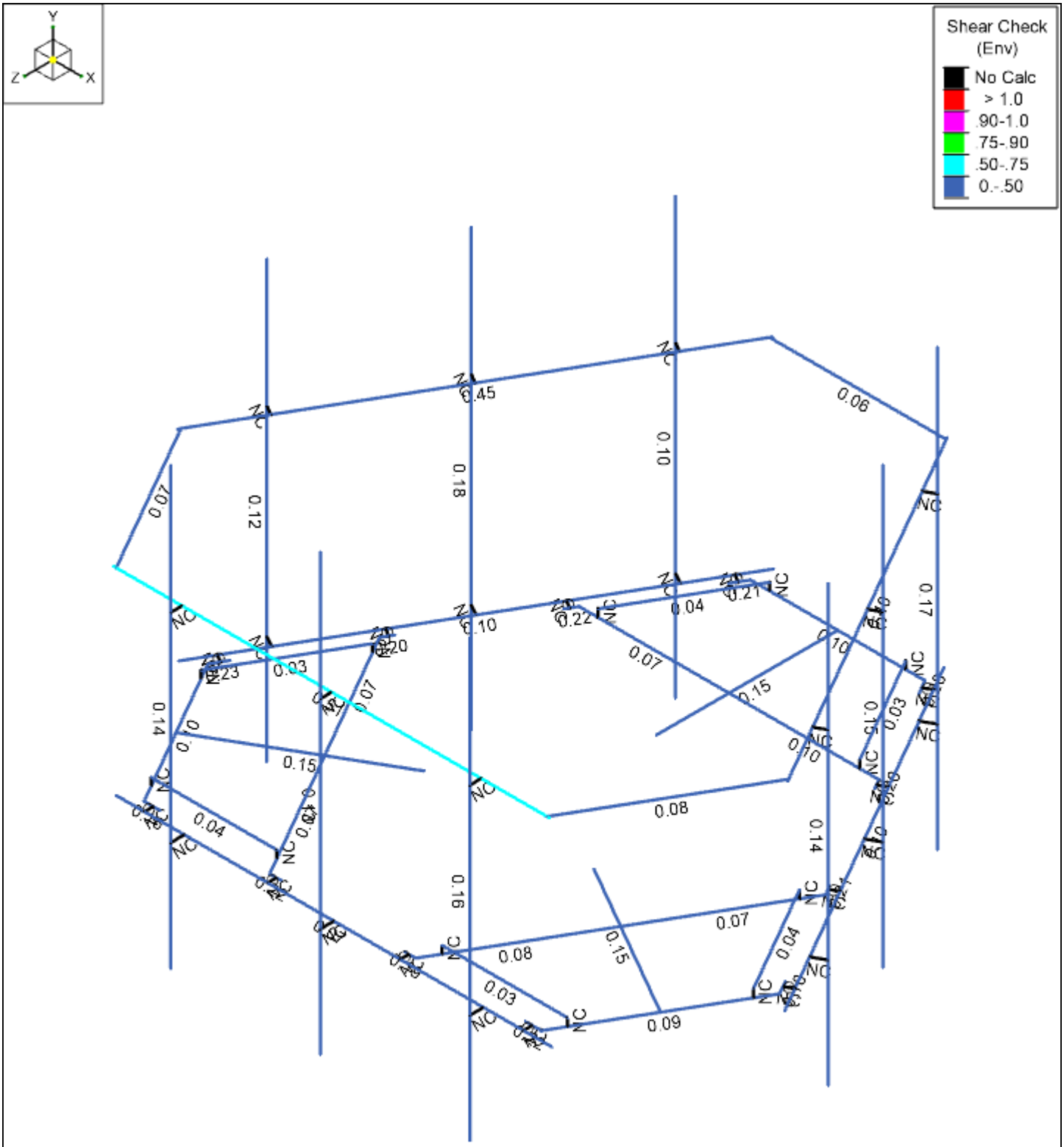


B+T Group	CT46146-A - Plainfield	SK-5
MP		Sep 04, 2021
149491.003.01		149491_003_01_Plainfield_CT.R3D

Node Coordinates

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
1	1	0	0	-1.808583	
2	2	0	0	-5.141917	
3	3	0	0	-3.141917	
4	4	2.758333	0	-3.141917	
5	5	-2.758333	0	-3.141917	
6	6	-1.603633	0	-5.141917	
7	7	1.603633	0	-5.141917	
8	8	1.749466	0	-4.889326	
9	9	-1.749466	0	-4.889326	
10	10	1.686966	0	-4.997579	
11	11	1.826792	0	-5.078307	
12	12	-1.686966	0	-4.997579	
13	13	-1.826792	0	-5.078307	
14	14	-3.999998	0	4.121202	
15	15	3.999998	0	4.121202	
16	16	2.8625	0	-2.961495	
17	17	2.820833	0	-3.033664	
18	18	2.960658	0	-3.114393	
19	19	-2.8625	0	-2.961495	
20	20	-2.820833	0	-3.033664	
21	21	-2.960658	0	-3.114393	
22	22	-1.25	0.140833	-5.141917	
23	23	-2.404701	0.140833	-3.141917	
24	24	2.404701	0.140833	-3.141917	
25	25	1.25	0.140833	-5.141917	
26	26	-1.25	0	-5.141917	
27	27	-2.404701	0	-3.141917	
28	28	2.404701	0	-3.141917	
29	29	1.25	0	-5.141917	
30	30	-2.749998	0	4.121202	
31	31	0.000002	0	4.121202	
32	32	-2.749998	0	4.371202	
33	33	0.000002	0	4.371202	
34	34	-2.749998	-2	4.371202	
35	35	0.000002	-2	4.371202	
36	36	-2.749998	6	4.371202	
37	37	0.000002	6	4.371202	
38	38	-2.749998	3.666667	4.371202	
39	39	0.000002	3.666667	4.371202	
40	40	-2.749998	3.666667	4.162868	
41	41	0.000002	3.666667	4.162868	
42	42	-4	3.666667	4.162868	
43	43	4	3.666667	4.162868	
44	44	1.625	3.666667	-5.511155	
45	45	-1.625	3.666667	-5.511155	
46	46	2.749998	0	4.121202	
47	47	2.749998	0	4.371202	
48	48	2.749998	-2	4.371202	
49	49	2.749998	6	4.371202	
50	50	2.749998	3.666667	4.371202	
51	51	2.749998	3.666667	4.162868	
52	52	0	0	0	
53	53	-1.566279	0	0.904292	
54	54	-4.45303	0	2.570958	
55	55	-2.72098	0	1.570958	
56	56	-4.100146	0	-0.817828	
57	57	-1.341813	0	3.959745	
58	58	-3.651214	0	3.959745	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
59	59	-5.254847	0	1.182172	
60	60	-5.109014	0	0.929581	
61	61	-3.359547	0	3.959745	
62	62	-5.171514	0	1.037834	
63	63	-5.311339	0	0.957106	
64	64	-3.484547	0	3.959745	
65	65	-3.484547	0	4.121202	
66	66	-3.99598	0	-0.99825	
67	67	-4.037647	0	-0.926081	
68	68	-4.177472	0	-1.006809	
69	69	-1.13348	0	3.959745	
70	70	-1.216814	0	3.959745	
71	71	-1.216814	0	4.121202	
72	72	-3.82803	0.140833	3.65349	
73	73	-1.518629	0.140833	3.65349	
74	74	-3.92333	0.140833	-0.511573	
75	75	-5.07803	0.140833	1.488427	
76	76	-3.82803	0	3.65349	
77	77	-1.518629	0	3.65349	
78	78	-3.92333	0	-0.511573	
79	79	-5.07803	0	1.488427	
80	80	-5.5853	3.666667	1.348286	
81	81	-3.9603	3.666667	4.162868	
82	82	1.566279	0	0.904292	
83	83	4.45303	0	2.570958	
84	84	2.72098	0	1.570958	
85	85	1.341813	0	3.959745	
86	86	4.100146	0	-0.817828	
87	87	5.254847	0	1.182172	
88	88	3.651214	0	3.959745	
89	89	3.359547	0	3.959745	
90	90	5.109014	0	0.929581	
91	91	3.484547	0	3.959745	
92	92	3.484547	0	4.121202	
93	93	5.171514	0	1.037834	
94	94	5.311339	0	0.957106	
95	95	1.13348	0	3.959745	
96	96	1.216814	0	3.959745	
97	97	1.216814	0	4.121202	
98	98	3.99598	0	-0.99825	
99	99	4.037647	0	-0.926081	
100	100	4.177472	0	-1.006809	
101	101	5.07803	0.140833	1.488427	
102	102	3.92333	0.140833	-0.511573	
103	103	1.518629	0.140833	3.65349	
104	104	3.82803	0.140833	3.65349	
105	105	5.07803	0	1.488427	
106	106	3.92333	0	-0.511573	
107	107	1.518629	0	3.65349	
108	108	3.82803	0	3.65349	
109	109	3.9603	3.666667	4.162868	
110	110	5.5853	3.666667	1.348286	
111	111	5.569064	0	1.403499	
112	112	1.569066	0	-5.524701	
113	113	4.944064	0	0.320967	
114	114	3.569064	0	-2.060603	
115	115	5.160571	0	0.195967	
116	116	3.785571	0	-2.185603	

Node Coordinates (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Detach From Diaphragm
117	117	5.160571	-2	0.195967	
118	118	3.785571	-2	-2.185603	
119	119	5.160571	6	0.195967	
120	120	3.785571	6	-2.185603	
121	121	5.160571	3.666667	0.195967	
122	122	3.785571	3.666667	-2.185603	
123	123	4.980149	3.666667	0.300134	
124	124	3.605149	3.666667	-2.081436	
125	125	5.60515	3.666667	1.382667	
126	126	1.60515	3.666667	-5.545536	
127	127	2.194066	0	-4.442169	
128	128	2.410573	0	-4.567169	
129	129	2.410573	-2	-4.567169	
130	130	2.410573	6	-4.567169	
131	131	2.410573	3.666667	-4.567169	
132	132	2.230151	3.666667	-4.463002	
133	133	-1.569066	0	-5.524701	
134	134	-5.569064	0	1.403499	
135	135	-2.194066	0	-4.442169	
136	136	-3.569066	0	-2.060599	
137	137	-2.410573	0	-4.567169	
138	138	-3.785573	0	-2.185599	
139	139	-2.410573	-2	-4.567169	
140	140	-3.785573	-2	-2.185599	
141	141	-2.410573	6	-4.567169	
142	142	-3.785573	6	-2.185599	
143	143	-2.410573	3.666667	-4.567169	
144	144	-3.785573	3.666667	-2.185599	
145	145	-2.230151	3.666667	-4.463002	
146	146	-3.605151	3.666667	-2.081433	
147	147	-1.60515	3.666667	-5.545536	
148	148	-5.60515	3.666667	1.382667	
149	149	-4.944064	0	0.320967	
150	150	-5.160571	0	0.195967	
151	151	-5.160571	-2	0.195967	
152	152	-5.160571	6	0.195967	
153	153	-5.160571	3.666667	0.195967	
154	154	-4.980149	3.666667	0.300134	

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	2						
3	3						
4	4						
5	5						
6	16						
7	17						
8	19						
9	20						
10	22						
11	25						
12	26						
13	29						
14	53	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	54						
16	55						
17	56						

Node Boundary Conditions (Continued)

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
18	57						
19	66						
20	67						
21	69						
22	70						
23	72						
24	75						
25	76						
26	79						
27	82	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
28	83						
29	84						
30	85						
31	86						
32	95						
33	96						
34	98						
35	99						
36	101						
37	104						
38	105						
39	108						

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e^{-5}°F^{-1}]	Density [k/ft^3]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in^2]	Iyy [in^4]	Izz [in^4]	J [in^4]
1	MF-H1	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	MF-H2	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
3	SF-H1	HSS4X4X2	Beam	Tube	A500 Gr.B Rect	Typical	1.77	4.4	4.4	6.91
4	SF-H2	C3.38x2.06x.188	Beam	Channel	A36 Gr.36	Typical	1.339	0.562	2.4	0.015
5	SF-H3	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	0.944	0.346	0.346	0.021
6	SF-H4	L7.63x2.5x6	Beam	Single Angle	A36 Gr.36	Typical	3.658	1.307	22.092	0.163
7	MF-P1	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
8	MF-CP1	PL3/8"x6	Beam	RECT	A36 Gr.36	Typical	2.25	0.026	6.75	0.101
9	MF-H3	L6.63x4.33x.25	Beam	Single Angle	A36 Gr.36	Typical	2.678	4.383	12.502	0.054

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	5	3	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	3	3	4	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	4	7	8		MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	5	6	9		MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	6	14	15		MF-H1	Beam	Pipe	A53 Gr.B	Typical
7	7	16	4		MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	8	5	19		MF-CP1	Beam	RECT	A36 Gr.36	Typical
9	9	25	24		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
10	10	23	22		SF-H3	Beam	Single Angle	A36 Gr.36	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
11	11	6	7		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
12	12	28	24		RIGID	None	None	RIGID	Typical
13	13	29	25		RIGID	None	None	RIGID	Typical
14	14	27	23		RIGID	None	None	RIGID	Typical
15	15	26	22		RIGID	None	None	RIGID	Typical
16	16	32	30		RIGID	None	None	RIGID	Typical
17	17	33	31		RIGID	None	None	RIGID	Typical
18	18	37	35		MF-P1	Column	Pipe	A53 Gr.B	Typical
19	19	36	34		MF-P1	Column	Pipe	A53 Gr.B	Typical
20	20	38	40		RIGID	None	None	RIGID	Typical
21	21	39	41		RIGID	None	None	RIGID	Typical
22	22	42	43		MF-H2	Beam	Pipe	A53 Gr.B	Typical
23	23	44	45	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
24	24	11	10		RIGID	None	None	RIGID	Typical
25	25	18	17		RIGID	None	None	RIGID	Typical
26	26	13	12		RIGID	None	None	RIGID	Typical
27	27	21	20		RIGID	None	None	RIGID	Typical
28	28	47	46		RIGID	None	None	RIGID	Typical
29	29	49	48		MF-P1	Column	Pipe	A53 Gr.B	Typical
30	30	50	51		RIGID	None	None	RIGID	Typical
31	31	53	54		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
32	32	57	55	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	55	56	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	59	60		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	58	61		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	66	56		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	57	69		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	75	74		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	39	73	72		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
40	40	58	59		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
41	41	78	74		RIGID	None	None	RIGID	Typical
42	42	79	75		RIGID	None	None	RIGID	Typical
43	43	77	73		RIGID	None	None	RIGID	Typical
44	44	76	72		RIGID	None	None	RIGID	Typical
45	45	80	81	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
46	46	63	62		RIGID	None	None	RIGID	Typical
47	47	68	67		RIGID	None	None	RIGID	Typical
48	48	65	64		RIGID	None	None	RIGID	Typical
49	49	71	70		RIGID	None	None	RIGID	Typical
50	50	82	83		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
51	51	86	84	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
52	52	84	85	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
53	53	88	89		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	54	87	90		MF-CP1	Beam	RECT	A36 Gr.36	Typical
55	55	95	85		MF-CP1	Beam	RECT	A36 Gr.36	Typical
56	56	86	98		MF-CP1	Beam	RECT	A36 Gr.36	Typical
57	57	104	103		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
58	58	102	101		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
59	59	87	88		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
60	60	107	103		RIGID	None	None	RIGID	Typical
61	61	108	104		RIGID	None	None	RIGID	Typical
62	62	106	102		RIGID	None	None	RIGID	Typical
63	63	105	101		RIGID	None	None	RIGID	Typical
64	64	109	110	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
65	65	92	91		RIGID	None	None	RIGID	Typical
66	66	97	96		RIGID	None	None	RIGID	Typical
67	67	94	93		RIGID	None	None	RIGID	Typical
68	68	100	99		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
69	69	111	112		MF-H1	Beam	Pipe	A53 Gr.B	Typical
70	70	115	113		RIGID	None	None	RIGID	Typical
71	71	116	114		RIGID	None	None	RIGID	Typical
72	72	120	118		MF-P1	Column	Pipe	A53 Gr.B	Typical
73	73	119	117		MF-P1	Column	Pipe	A53 Gr.B	Typical
74	74	121	123		RIGID	None	None	RIGID	Typical
75	75	122	124		RIGID	None	None	RIGID	Typical
76	76	125	126		MF-H2	Beam	Pipe	A53 Gr.B	Typical
77	77	128	127		RIGID	None	None	RIGID	Typical
78	78	130	129		MF-P1	Column	Pipe	A53 Gr.B	Typical
79	79	131	132		RIGID	None	None	RIGID	Typical
80	80	133	134		MF-H1	Beam	Pipe	A53 Gr.B	Typical
81	81	137	135		RIGID	None	None	RIGID	Typical
82	82	138	136		RIGID	None	None	RIGID	Typical
83	83	142	140		MF-P1	Column	Pipe	A53 Gr.B	Typical
84	84	141	139		MF-P1	Column	Pipe	A53 Gr.B	Typical
85	85	143	145		RIGID	None	None	RIGID	Typical
86	86	144	146		RIGID	None	None	RIGID	Typical
87	87	147	148		MF-H2	Beam	Pipe	A53 Gr.B	Typical
88	88	150	149		RIGID	None	None	RIGID	Typical
89	89	152	151		MF-P1	Column	Pipe	A53 Gr.B	Typical
90	90	153	154		RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
1	1				Yes		None
2	2			2	Yes		None
3	3		2		Yes		None
4	4				Yes		None
5	5				Yes		None
6	6				Yes		None
7	7				Yes		None
8	8				Yes		None
9	9				Yes		None
10	10				Yes		None
11	11				Yes		None
12	12				Yes	** NA **	None
13	13				Yes	** NA **	None
14	14				Yes	** NA **	None
15	15				Yes	** NA **	None
16	16				Yes	** NA **	None
17	17				Yes	** NA **	None
18	18				Yes	** NA **	None
19	19				Yes	** NA **	None
20	20				Yes	** NA **	None
21	21				Yes	** NA **	None
22	22				Yes		None
23	23				Yes		None
24	24	OOOOOX			Yes	** NA **	None
25	25	OOOOOX			Yes	** NA **	None
26	26	OOOOOX			Yes	** NA **	None
27	27	OOOOOX			Yes	** NA **	None
28	28				Yes	** NA **	None
29	29				Yes	** NA **	None
30	30				Yes	** NA **	None
31	31				Yes	Default	None
32	32			2	Yes		None
33	33		2		Yes		None

Member Advanced Data (Continued)

	Label	I Release	I Offset [in]	J Offset [in]	Physical	Deflection Ratio Options	Seismic DR
34	34				Yes		None
35	35				Yes		None
36	36				Yes		None
37	37				Yes		None
38	38				Yes		None
39	39				Yes		None
40	40				Yes		None
41	41				Yes	** NA **	None
42	42				Yes	** NA **	None
43	43				Yes	** NA **	None
44	44				Yes	** NA **	None
45	45				Yes		None
46	46	OOOOOX			Yes	** NA **	None
47	47	OOOOOX			Yes	** NA **	None
48	48	OOOOOX			Yes	** NA **	None
49	49	OOOOOX			Yes	** NA **	None
50	50				Yes		None
51	51			2	Yes		None
52	52		2		Yes		None
53	53				Yes		None
54	54				Yes		None
55	55				Yes		None
56	56				Yes		None
57	57				Yes		None
58	58				Yes		None
59	59				Yes		None
60	60				Yes	** NA **	None
61	61				Yes	** NA **	None
62	62				Yes	** NA **	None
63	63				Yes	** NA **	None
64	64				Yes		None
65	65	OOOOOX			Yes	** NA **	None
66	66	OOOOOX			Yes	** NA **	None
67	67	OOOOOX			Yes	** NA **	None
68	68	OOOOOX			Yes	** NA **	None
69	69				Yes		None
70	70				Yes	** NA **	None
71	71				Yes	** NA **	None
72	72				Yes	** NA **	None
73	73				Yes	** NA **	None
74	74				Yes	** NA **	None
75	75				Yes	** NA **	None
76	76				Yes		None
77	77				Yes	** NA **	None
78	78				Yes	** NA **	None
79	79				Yes	** NA **	None
80	80				Yes		None
81	81				Yes	** NA **	None
82	82				Yes	** NA **	None
83	83				Yes	** NA **	None
84	84				Yes	** NA **	None
85	85				Yes	** NA **	None
86	86				Yes	** NA **	None
87	87				Yes		None
88	88				Yes	** NA **	None
89	89				Yes	** NA **	None
90	90				Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	SF-H1	3.333	Lbyy	Lateral
2	2	SF-H2	2.758	Lbyy	Lateral
3	3	SF-H2	2.758	Lbyy	Lateral
4	4	MF-CP1	0.292	Lbyy	Lateral
5	5	MF-CP1	0.292	Lbyy	Lateral
6	6	MF-H1	8	Lbyy	Lateral
7	7	MF-CP1	0.208	Lbyy	Lateral
8	8	MF-CP1	0.208	Lbyy	Lateral
9	9	SF-H3	2.309	Lbyy	Lateral
10	10	SF-H3	2.309	Lbyy	Lateral
11	11	SF-H4	3.207	Lbyy	Lateral
12	18	MF-P1	8	Lbyy	Lateral
13	19	MF-P1	8	Lbyy	Lateral
14	22	MF-H2	8	Lbyy	Lateral
15	23	MF-H3	3.25	Lbyy	Lateral
16	29	MF-P1	8	Lbyy	Lateral
17	31	SF-H1	3.333	Lbyy	Lateral
18	32	SF-H2	2.758	Lbyy	Lateral
19	33	SF-H2	2.758	Lbyy	Lateral
20	34	MF-CP1	0.292	Lbyy	Lateral
21	35	MF-CP1	0.292	Lbyy	Lateral
22	36	MF-CP1	0.208	Lbyy	Lateral
23	37	MF-CP1	0.208	Lbyy	Lateral
24	38	SF-H3	2.309	Lbyy	Lateral
25	39	SF-H3	2.309	Lbyy	Lateral
26	40	SF-H4	3.207	Lbyy	Lateral
27	45	MF-H3	3.25	Lbyy	Lateral
28	50	SF-H1	3.333	Lbyy	Lateral
29	51	SF-H2	2.758	Lbyy	Lateral
30	52	SF-H2	2.758	Lbyy	Lateral
31	53	MF-CP1	0.292	Lbyy	Lateral
32	54	MF-CP1	0.292	Lbyy	Lateral
33	55	MF-CP1	0.208	Lbyy	Lateral
34	56	MF-CP1	0.208	Lbyy	Lateral
35	57	SF-H3	2.309	Lbyy	Lateral
36	58	SF-H3	2.309	Lbyy	Lateral
37	59	SF-H4	3.207	Lbyy	Lateral
38	64	MF-H3	3.25	Lbyy	Lateral
39	69	MF-H1	8	Lbyy	Lateral
40	72	MF-P1	8	Lbyy	Lateral
41	73	MF-P1	8	Lbyy	Lateral
42	76	MF-H2	8	Lbyy	Lateral
43	78	MF-P1	8	Lbyy	Lateral
44	80	MF-H1	8	Lbyy	Lateral
45	83	MF-P1	8	Lbyy	Lateral
46	84	MF-P1	8	Lbyy	Lateral
47	87	MF-H2	8	Lbyy	Lateral
48	89	MF-P1	8	Lbyy	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Y	-0.032	%15
2	29	Y	-0.032	%85
3	29	Y	-0.075	%20
4	29	Y	-0.064	%50
5	29	Y	0	0
6	89	Y	-0.032	%15
7	89	Y	-0.032	%85

Member Point Loads (BLC 1 : Dead) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
8	89	Y	-0.075	%20
9	89	Y	-0.064	%50
10	89	Y	0	0
11	78	Y	-0.032	%15
12	78	Y	-0.032	%85
13	78	Y	-0.075	%20
14	78	Y	-0.064	%50
15	78	Y	0	0
16	31	Y	-0.022	%20
17	31	Y	0	0
18	31	Y	0	0
19	31	Y	0	0
20	31	Y	0	0

Member Point Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.222	%15
2	29	Z	-0.222	%85
3	29	Z	-0.07	%20
4	29	Z	-0.07	%50
5	29	Z	0	0
6	89	Z	-0.222	%15
7	89	Z	-0.222	%85
8	89	Z	-0.07	%20
9	89	Z	-0.07	%50
10	89	Z	0	0
11	78	Z	-0.222	%15
12	78	Z	-0.222	%85
13	78	Z	-0.07	%20
14	78	Z	-0.07	%50
15	78	Z	0	0
16	31	Z	-0.072	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.089	%15
2	29	X	-0.089	%85
3	29	X	-0.042	%20
4	29	X	-0.037	%50
5	29	X	0	0
6	89	X	-0.089	%15
7	89	X	-0.089	%85
8	89	X	-0.042	%20
9	89	X	-0.037	%50
10	89	X	0	0
11	78	X	-0.089	%15
12	78	X	-0.089	%85
13	78	X	-0.042	%20
14	78	X	-0.037	%50
15	78	X	0	0
16	31	X	-0.04	%20
17	31	X	0	0
18	31	X	0	0

Member Point Loads (BLC 3 : 90 Wind - No Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.061	%15
2	29	Z	-0.061	%85
3	29	Z	-0.024	%20
4	29	Z	-0.024	%50
5	29	Z	0	0
6	89	Z	-0.061	%15
7	89	Z	-0.061	%85
8	89	Z	-0.024	%20
9	89	Z	-0.024	%50
10	89	Z	0	0
11	78	Z	-0.061	%15
12	78	Z	-0.061	%85
13	78	Z	-0.024	%20
14	78	Z	-0.024	%50
15	78	Z	0	0
16	31	Z	-0.024	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

Member Point Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.03	%15
2	29	X	-0.03	%85
3	29	X	-0.016	%20
4	29	X	-0.015	%50
5	29	X	0	0
6	89	X	-0.03	%15
7	89	X	-0.03	%85
8	89	X	-0.016	%20
9	89	X	-0.015	%50
10	89	X	0	0
11	78	X	-0.03	%15
12	78	X	-0.03	%85
13	78	X	-0.016	%20
14	78	X	-0.015	%50
15	78	X	0	0
16	31	X	-0.016	%20
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Z	-0.018	%15
2	29	Z	-0.018	%85
3	29	Z	-0.006	%20
4	29	Z	-0.006	%50
5	29	Z	0	0
6	89	Z	-0.018	%15

Member Point Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
7	89	Z	-0.018	%85
8	89	Z	-0.006	%20
9	89	Z	-0.006	%50
10	89	Z	0	0
11	78	Z	-0.018	%15
12	78	Z	-0.018	%85
13	78	Z	-0.006	%20
14	78	Z	-0.006	%50
15	78	Z	0	0
16	31	Z	-0.006	%20
17	31	Z	0	0
18	31	Z	0	0
19	31	Z	0	0
20	31	Z	0	0

Member Point Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	X	-0.007	%15
2	29	X	-0.007	%85
3	29	X	-0.003	%20
4	29	X	-0.003	%50
5	29	X	0	0
6	89	X	-0.007	%15
7	89	X	-0.007	%85
8	89	X	-0.003	%20
9	89	X	-0.003	%50
10	89	X	0	0
11	78	X	-0.007	%15
12	78	X	-0.007	%85
13	78	X	-0.003	%20
14	78	X	-0.003	%50
15	78	X	0	0
16	31	X	-0.003	%20
17	31	X	0	0
18	31	X	0	0
19	31	X	0	0
20	31	X	0	0

Member Point Loads (BLC 8 : Ice)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	29	Y	-0.146	%15
2	29	Y	-0.146	%85
3	29	Y	-0.053	%20
4	29	Y	-0.051	%50
5	29	Y	0	0
6	89	Y	-0.146	%15
7	89	Y	-0.146	%85
8	89	Y	-0.053	%20
9	89	Y	-0.051	%50
10	89	Y	0	0
11	78	Y	-0.146	%15
12	78	Y	-0.146	%85
13	78	Y	-0.053	%20
14	78	Y	-0.051	%50
15	78	Y	0	0
16	31	Y	-0.053	%20
17	31	Y	0	0

Member Point Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
18	31	Y	0	0
19	31	Y	0	0
20	31	Y	0	0

Member Point Loads (BLC 13 : Maint LL 1)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%5

Member Point Loads (BLC 14 : Maint LL 2)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	Y	-0.25	%5

Member Point Loads (BLC 15 : Maint LL 3)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%5

Member Point Loads (BLC 16 : Maint LL 4)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	87	Y	-0.25	%5

Member Point Loads (BLC 17 : Maint LL 5)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%5

Member Point Loads (BLC 18 : Maint LL 6)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%5

Member Point Loads (BLC 19 : Maint LL 7)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	6	Y	-0.25	%95

Member Point Loads (BLC 20 : Maint LL 8)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	22	Y	-0.25	%95

Member Point Loads (BLC 21 : Maint LL 9)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	80	Y	-0.25	%95

Member Point Loads (BLC 22 : Maint LL 10)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	87	Y	-0.25	%95

Member Point Loads (BLC 23 : Maint LL 11)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	69	Y	-0.25	%95

Member Point Loads (BLC 24 : Maint LL 12)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	76	Y	-0.25	%95

Member Point Loads (BLC 25 : Maint LL 13)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	31	Y	-0.25	%95

Member Point Loads (BLC 26 : Maint LL 14)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	1	Y	-0.25	%95

Member Point Loads (BLC 27 : Maint LL 15)

	Member Label	Direction	Magnitude [k, k-ft]	Location [(ft, %)]
1	50	Y	-0.25	%95

Member Distributed Loads (BLC 2 : 0 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.017	-0.017	0	%100
2	2	Z	-0.015	-0.015	0	%100
3	3	Z	-0.015	-0.015	0	%100
4	4	Z	-0.021	-0.021	0	%100
5	5	Z	-0.021	-0.021	0	%100
6	6	Z	-0.011	-0.011	0	%100
7	7	Z	-0.021	-0.021	0	%100
8	8	Z	-0.021	-0.021	0	%100
9	9	Z	-0.01	-0.01	0	%100
10	10	Z	-0.01	-0.01	0	%100
11	11	Z	-0.029	-0.029	0	%100
12	18	Z	-0.009	-0.009	0	%100
13	19	Z	-0.009	-0.009	0	%100
14	22	Z	-0.008	-0.008	0	%100
15	23	Z	-0.026	-0.026	0	%100
16	29	Z	-0.009	-0.009	0	%100
17	31	Z	-0.017	-0.017	0	%100
18	32	Z	-0.015	-0.015	0	%100
19	33	Z	-0.015	-0.015	0	%100
20	34	Z	-0.021	-0.021	0	%100
21	35	Z	-0.021	-0.021	0	%100
22	36	Z	-0.021	-0.021	0	%100
23	37	Z	-0.021	-0.021	0	%100
24	38	Z	-0.01	-0.01	0	%100
25	39	Z	-0.01	-0.01	0	%100
26	40	Z	-0.029	-0.029	0	%100
27	45	Z	-0.026	-0.026	0	%100
28	50	Z	-0.017	-0.017	0	%100
29	51	Z	-0.015	-0.015	0	%100
30	52	Z	-0.015	-0.015	0	%100
31	53	Z	-0.021	-0.021	0	%100
32	54	Z	-0.021	-0.021	0	%100
33	55	Z	-0.021	-0.021	0	%100
34	56	Z	-0.021	-0.021	0	%100
35	57	Z	-0.01	-0.01	0	%100
36	58	Z	-0.01	-0.01	0	%100
37	59	Z	-0.029	-0.029	0	%100
38	64	Z	-0.026	-0.026	0	%100
39	69	Z	-0.011	-0.011	0	%100
40	72	Z	-0.009	-0.009	0	%100
41	73	Z	-0.009	-0.009	0	%100
42	76	Z	-0.008	-0.008	0	%100
43	78	Z	-0.009	-0.009	0	%100
44	80	Z	-0.011	-0.011	0	%100
45	83	Z	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 2 : 0 Wind - No Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
46	84	Z	-0.009	-0.009	0	%100
47	87	Z	-0.008	-0.008	0	%100
48	89	Z	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 3 : 90 Wind - No Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.017	-0.017	0	%100
2	2	X	-0.015	-0.015	0	%100
3	3	X	-0.015	-0.015	0	%100
4	4	X	-0.021	-0.021	0	%100
5	5	X	-0.021	-0.021	0	%100
6	6	X	-0.011	-0.011	0	%100
7	7	X	-0.021	-0.021	0	%100
8	8	X	-0.021	-0.021	0	%100
9	9	X	-0.01	-0.01	0	%100
10	10	X	-0.01	-0.01	0	%100
11	11	X	-0.029	-0.029	0	%100
12	18	X	-0.009	-0.009	0	%100
13	19	X	-0.009	-0.009	0	%100
14	22	X	-0.008	-0.008	0	%100
15	23	X	-0.026	-0.026	0	%100
16	29	X	-0.009	-0.009	0	%100
17	31	X	-0.017	-0.017	0	%100
18	32	X	-0.015	-0.015	0	%100
19	33	X	-0.015	-0.015	0	%100
20	34	X	-0.021	-0.021	0	%100
21	35	X	-0.021	-0.021	0	%100
22	36	X	-0.021	-0.021	0	%100
23	37	X	-0.021	-0.021	0	%100
24	38	X	-0.01	-0.01	0	%100
25	39	X	-0.01	-0.01	0	%100
26	40	X	-0.029	-0.029	0	%100
27	45	X	-0.026	-0.026	0	%100
28	50	X	-0.017	-0.017	0	%100
29	51	X	-0.015	-0.015	0	%100
30	52	X	-0.015	-0.015	0	%100
31	53	X	-0.021	-0.021	0	%100
32	54	X	-0.021	-0.021	0	%100
33	55	X	-0.021	-0.021	0	%100
34	56	X	-0.021	-0.021	0	%100
35	57	X	-0.01	-0.01	0	%100
36	58	X	-0.01	-0.01	0	%100
37	59	X	-0.029	-0.029	0	%100
38	64	X	-0.026	-0.026	0	%100
39	69	X	-0.011	-0.011	0	%100
40	72	X	-0.009	-0.009	0	%100
41	73	X	-0.009	-0.009	0	%100
42	76	X	-0.008	-0.008	0	%100
43	78	X	-0.009	-0.009	0	%100
44	80	X	-0.011	-0.011	0	%100
45	83	X	-0.009	-0.009	0	%100
46	84	X	-0.009	-0.009	0	%100
47	87	X	-0.008	-0.008	0	%100
48	89	X	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 4 : 0 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.008	-0.008	0	%100
2	2	Z	-0.007	-0.007	0	%100
3	3	Z	-0.007	-0.007	0	%100
4	4	Z	-0.015	-0.015	0	%100
5	5	Z	-0.015	-0.015	0	%100
6	6	Z	-0.003	-0.003	0	%100
7	7	Z	-0.018	-0.018	0	%100
8	8	Z	-0.018	-0.018	0	%100
9	9	Z	-0.007	-0.007	0	%100
10	10	Z	-0.007	-0.007	0	%100
11	11	Z	-0.01	-0.01	0	%100
12	18	Z	-0.002	-0.002	0	%100
13	19	Z	-0.002	-0.002	0	%100
14	22	Z	-0.002	-0.002	0	%100
15	23	Z	-0.01	-0.01	0	%100
16	29	Z	-0.002	-0.002	0	%100
17	31	Z	-0.008	-0.008	0	%100
18	32	Z	-0.007	-0.007	0	%100
19	33	Z	-0.007	-0.007	0	%100
20	34	Z	-0.015	-0.015	0	%100
21	35	Z	-0.015	-0.015	0	%100
22	36	Z	-0.018	-0.018	0	%100
23	37	Z	-0.018	-0.018	0	%100
24	38	Z	-0.007	-0.007	0	%100
25	39	Z	-0.007	-0.007	0	%100
26	40	Z	-0.01	-0.01	0	%100
27	45	Z	-0.01	-0.01	0	%100
28	50	Z	-0.008	-0.008	0	%100
29	51	Z	-0.007	-0.007	0	%100
30	52	Z	-0.007	-0.007	0	%100
31	53	Z	-0.015	-0.015	0	%100
32	54	Z	-0.015	-0.015	0	%100
33	55	Z	-0.018	-0.018	0	%100
34	56	Z	-0.018	-0.018	0	%100
35	57	Z	-0.007	-0.007	0	%100
36	58	Z	-0.007	-0.007	0	%100
37	59	Z	-0.01	-0.01	0	%100
38	64	Z	-0.01	-0.01	0	%100
39	69	Z	-0.003	-0.003	0	%100
40	72	Z	-0.002	-0.002	0	%100
41	73	Z	-0.002	-0.002	0	%100
42	76	Z	-0.002	-0.002	0	%100
43	78	Z	-0.002	-0.002	0	%100
44	80	Z	-0.003	-0.003	0	%100
45	83	Z	-0.002	-0.002	0	%100
46	84	Z	-0.002	-0.002	0	%100
47	87	Z	-0.002	-0.002	0	%100
48	89	Z	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.008	-0.008	0	%100
2	2	X	-0.007	-0.007	0	%100
3	3	X	-0.007	-0.007	0	%100
4	4	X	-0.015	-0.015	0	%100
5	5	X	-0.015	-0.015	0	%100
6	6	X	-0.003	-0.003	0	%100
7	7	X	-0.018	-0.018	0	%100

Member Distributed Loads (BLC 5 : 90 Wind - Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
8	8	X	-0.018	-0.018	0	%100
9	9	X	-0.007	-0.007	0	%100
10	10	X	-0.007	-0.007	0	%100
11	11	X	-0.01	-0.01	0	%100
12	18	X	-0.002	-0.002	0	%100
13	19	X	-0.002	-0.002	0	%100
14	22	X	-0.002	-0.002	0	%100
15	23	X	-0.01	-0.01	0	%100
16	29	X	-0.002	-0.002	0	%100
17	31	X	-0.008	-0.008	0	%100
18	32	X	-0.007	-0.007	0	%100
19	33	X	-0.007	-0.007	0	%100
20	34	X	-0.015	-0.015	0	%100
21	35	X	-0.015	-0.015	0	%100
22	36	X	-0.018	-0.018	0	%100
23	37	X	-0.018	-0.018	0	%100
24	38	X	-0.007	-0.007	0	%100
25	39	X	-0.007	-0.007	0	%100
26	40	X	-0.01	-0.01	0	%100
27	45	X	-0.01	-0.01	0	%100
28	50	X	-0.008	-0.008	0	%100
29	51	X	-0.007	-0.007	0	%100
30	52	X	-0.007	-0.007	0	%100
31	53	X	-0.015	-0.015	0	%100
32	54	X	-0.015	-0.015	0	%100
33	55	X	-0.018	-0.018	0	%100
34	56	X	-0.018	-0.018	0	%100
35	57	X	-0.007	-0.007	0	%100
36	58	X	-0.007	-0.007	0	%100
37	59	X	-0.01	-0.01	0	%100
38	64	X	-0.01	-0.01	0	%100
39	69	X	-0.003	-0.003	0	%100
40	72	X	-0.002	-0.002	0	%100
41	73	X	-0.002	-0.002	0	%100
42	76	X	-0.002	-0.002	0	%100
43	78	X	-0.002	-0.002	0	%100
44	80	X	-0.003	-0.003	0	%100
45	83	X	-0.002	-0.002	0	%100
46	84	X	-0.002	-0.002	0	%100
47	87	X	-0.002	-0.002	0	%100
48	89	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Z	-0.001	-0.001	0	%100
2	2	Z	-0.001	-0.001	0	%100
3	3	Z	-0.001	-0.001	0	%100
4	4	Z	-0.002	-0.002	0	%100
5	5	Z	-0.002	-0.002	0	%100
6	6	Z	-0.0005	-0.0005	0	%100
7	7	Z	-0.002	-0.002	0	%100
8	8	Z	-0.002	-0.002	0	%100
9	9	Z	-0.0008	-0.0008	0	%100
10	10	Z	-0.0008	-0.0008	0	%100
11	11	Z	-0.002	-0.002	0	%100
12	18	Z	-0.0003	-0.0003	0	%100
13	19	Z	-0.0003	-0.0003	0	%100
14	22	Z	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 6 : 0 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
15	23	Z	-0.002	-0.002	0	%100
16	29	Z	-0.0003	-0.0003	0	%100
17	31	Z	-0.001	-0.001	0	%100
18	32	Z	-0.001	-0.001	0	%100
19	33	Z	-0.001	-0.001	0	%100
20	34	Z	-0.002	-0.002	0	%100
21	35	Z	-0.002	-0.002	0	%100
22	36	Z	-0.002	-0.002	0	%100
23	37	Z	-0.002	-0.002	0	%100
24	38	Z	-0.0008	-0.0008	0	%100
25	39	Z	-0.0008	-0.0008	0	%100
26	40	Z	-0.002	-0.002	0	%100
27	45	Z	-0.002	-0.002	0	%100
28	50	Z	-0.001	-0.001	0	%100
29	51	Z	-0.001	-0.001	0	%100
30	52	Z	-0.001	-0.001	0	%100
31	53	Z	-0.002	-0.002	0	%100
32	54	Z	-0.002	-0.002	0	%100
33	55	Z	-0.002	-0.002	0	%100
34	56	Z	-0.002	-0.002	0	%100
35	57	Z	-0.0008	-0.0008	0	%100
36	58	Z	-0.0008	-0.0008	0	%100
37	59	Z	-0.002	-0.002	0	%100
38	64	Z	-0.002	-0.002	0	%100
39	69	Z	-0.0005	-0.0005	0	%100
40	72	Z	-0.0003	-0.0003	0	%100
41	73	Z	-0.0003	-0.0003	0	%100
42	76	Z	-0.0003	-0.0003	0	%100
43	78	Z	-0.0003	-0.0003	0	%100
44	80	Z	-0.0005	-0.0005	0	%100
45	83	Z	-0.0003	-0.0003	0	%100
46	84	Z	-0.0003	-0.0003	0	%100
47	87	Z	-0.0003	-0.0003	0	%100
48	89	Z	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	X	-0.001	-0.001	0	%100
2	2	X	-0.001	-0.001	0	%100
3	3	X	-0.001	-0.001	0	%100
4	4	X	-0.002	-0.002	0	%100
5	5	X	-0.002	-0.002	0	%100
6	6	X	-0.0005	-0.0005	0	%100
7	7	X	-0.002	-0.002	0	%100
8	8	X	-0.002	-0.002	0	%100
9	9	X	-0.0008	-0.0008	0	%100
10	10	X	-0.0008	-0.0008	0	%100
11	11	X	-0.002	-0.002	0	%100
12	18	X	-0.0003	-0.0003	0	%100
13	19	X	-0.0003	-0.0003	0	%100
14	22	X	-0.0003	-0.0003	0	%100
15	23	X	-0.002	-0.002	0	%100
16	29	X	-0.0003	-0.0003	0	%100
17	31	X	-0.001	-0.001	0	%100
18	32	X	-0.001	-0.001	0	%100
19	33	X	-0.001	-0.001	0	%100
20	34	X	-0.002	-0.002	0	%100
21	35	X	-0.002	-0.002	0	%100

Member Distributed Loads (BLC 7 : 90 Wind - Service) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
22	36	X	-0.002	-0.002	0	%100
23	37	X	-0.002	-0.002	0	%100
24	38	X	-0.0008	-0.0008	0	%100
25	39	X	-0.0008	-0.0008	0	%100
26	40	X	-0.002	-0.002	0	%100
27	45	X	-0.002	-0.002	0	%100
28	50	X	-0.001	-0.001	0	%100
29	51	X	-0.001	-0.001	0	%100
30	52	X	-0.001	-0.001	0	%100
31	53	X	-0.002	-0.002	0	%100
32	54	X	-0.002	-0.002	0	%100
33	55	X	-0.002	-0.002	0	%100
34	56	X	-0.002	-0.002	0	%100
35	57	X	-0.0008	-0.0008	0	%100
36	58	X	-0.0008	-0.0008	0	%100
37	59	X	-0.002	-0.002	0	%100
38	64	X	-0.002	-0.002	0	%100
39	69	X	-0.0005	-0.0005	0	%100
40	72	X	-0.0003	-0.0003	0	%100
41	73	X	-0.0003	-0.0003	0	%100
42	76	X	-0.0003	-0.0003	0	%100
43	78	X	-0.0003	-0.0003	0	%100
44	80	X	-0.0005	-0.0005	0	%100
45	83	X	-0.0003	-0.0003	0	%100
46	84	X	-0.0003	-0.0003	0	%100
47	87	X	-0.0003	-0.0003	0	%100
48	89	X	-0.0003	-0.0003	0	%100

Member Distributed Loads (BLC 8 : Ice)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	1	Y	-0.015	-0.015	0	%100
2	2	Y	-0.012	-0.012	0	%100
3	3	Y	-0.012	-0.012	0	%100
4	4	Y	-0.016	-0.016	0	%100
5	5	Y	-0.016	-0.016	0	%100
6	6	Y	-0.011	-0.011	0	%100
7	7	Y	-0.016	-0.016	0	%100
8	8	Y	-0.016	-0.016	0	%100
9	9	Y	-0.01	-0.01	0	%100
10	10	Y	-0.01	-0.01	0	%100
11	11	Y	-0.02	-0.02	0	%100
12	18	Y	-0.009	-0.009	0	%100
13	19	Y	-0.009	-0.009	0	%100
14	22	Y	-0.009	-0.009	0	%100
15	23	Y	-0.02	-0.02	0	%100
16	29	Y	-0.009	-0.009	0	%100
17	31	Y	-0.015	-0.015	0	%100
18	32	Y	-0.012	-0.012	0	%100
19	33	Y	-0.012	-0.012	0	%100
20	34	Y	-0.016	-0.016	0	%100
21	35	Y	-0.016	-0.016	0	%100
22	36	Y	-0.016	-0.016	0	%100
23	37	Y	-0.016	-0.016	0	%100
24	38	Y	-0.01	-0.01	0	%100
25	39	Y	-0.01	-0.01	0	%100
26	40	Y	-0.02	-0.02	0	%100
27	45	Y	-0.02	-0.02	0	%100
28	50	Y	-0.015	-0.015	0	%100

Member Distributed Loads (BLC 8 : Ice) (Continued)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
29	51	Y	-0.012	-0.012	0	%100
30	52	Y	-0.012	-0.012	0	%100
31	53	Y	-0.016	-0.016	0	%100
32	54	Y	-0.016	-0.016	0	%100
33	55	Y	-0.016	-0.016	0	%100
34	56	Y	-0.016	-0.016	0	%100
35	57	Y	-0.01	-0.01	0	%100
36	58	Y	-0.01	-0.01	0	%100
37	59	Y	-0.02	-0.02	0	%100
38	64	Y	-0.02	-0.02	0	%100
39	69	Y	-0.011	-0.011	0	%100
40	72	Y	-0.009	-0.009	0	%100
41	73	Y	-0.009	-0.009	0	%100
42	76	Y	-0.009	-0.009	0	%100
43	78	Y	-0.009	-0.009	0	%100
44	80	Y	-0.011	-0.011	0	%100
45	83	Y	-0.009	-0.009	0	%100
46	84	Y	-0.009	-0.009	0	%100
47	87	Y	-0.009	-0.009	0	%100
48	89	Y	-0.009	-0.009	0	%100

Member Distributed Loads (BLC 28 : BLC 1 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	38	Y	-0.035	-0.016	0	1.155
2	38	Y	-0.016	0.0006163	1.155	2.309
3	39	Y	-0.018	-0.016	0.231	2.309
4	9	Y	-0.014	-0.016	0	2.078
5	10	Y	-0.014	-0.02	0.231	1.27
6	10	Y	-0.02	-0.026	1.27	2.309
7	57	Y	-0.014	-0.02	0	2.078
8	58	Y	0.0006164	-0.016	0	1.155
9	58	Y	-0.016	-0.035	1.155	2.309

Member Distributed Loads (BLC 29 : BLC 8 Transient Area Loads)

	Member Label	Direction	Start Magnitude [k/ft, F, ksf, k-ft/ft]	End Magnitude [k/ft, F, ksf, k-ft/ft]	Start Location [(ft, %)]	End Location [(ft, %)]
1	38	Y	-0.028	-0.013	0	1.155
2	38	Y	-0.013	0.0004931	1.155	2.309
3	39	Y	-0.014	-0.013	0.231	2.309
4	9	Y	-0.011	-0.013	0	2.078
5	10	Y	-0.011	-0.016	0.231	1.27
6	10	Y	-0.016	-0.021	1.27	2.309
7	57	Y	-0.011	-0.016	0	2.078
8	58	Y	0.0004931	-0.013	0	1.155
9	58	Y	-0.013	-0.028	1.155	2.309

Member Area Loads (BLC 1 : Dead)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	73	72	75	74	Y	Two Way	-0.01
2	23	22	25	24	Y	Two Way	-0.01
3	103	102	101	104	Y	Two Way	-0.01

Member Area Loads (BLC 8 : Ice)

	Node A	Node B	Node C	Node D	Direction	Load Direction	Magnitude [ksf]
1	73	72	75	74	Y	Two Way	-0.008
2	23	22	25	24	Y	Two Way	-0.008
3	103	102	101	104	Y	Two Way	-0.008

Node Loads and Enforced Displacements (BLC 9 : Live Load a)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	30	L	Y	-0.5
2	113	L	Y	-0.5
3	135	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 10 : Live Load b)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	31	L	Y	-0.5
2	114	L	Y	-0.5
3	136	L	Y	-0.5

Node Loads and Enforced Displacements (BLC 11 : Live Load c)

	Node Label	L, D, M	Direction	Magnitude [(k, k-ft), (in, rad), (k*s²/ft, k*s²*ft)]
1	46	L	Y	-0.5
2	127	L	Y	-0.5
3	149	L	Y	-0.5

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	48	
3	90 Wind - No Ice	WLX			20	48	
4	0 Wind - Ice	WLZ			20	48	
5	90 Wind - Ice	WLX			20	48	
6	0 Wind - Service	WLZ			20	48	
7	90 Wind - Service	WLX			20	48	
8	Ice	OL1			20	48	3
9	Live Load a	LL		3			
10	Live Load b	LL		3			
11	Live Load c	LL		3			
12	Live Load d	LL					
13	Maint LL 1	LL			1		
14	Maint LL 2	LL			1		
15	Maint LL 3	LL			1		
16	Maint LL 4	LL			1		
17	Maint LL 5	LL			1		
18	Maint LL 6	LL			1		
19	Maint LL 7	LL			1		
20	Maint LL 8	LL			1		
21	Maint LL 9	LL			1		
22	Maint LL 10	LL			1		
23	Maint LL 11	LL			1		
24	Maint LL 12	LL			1		
25	Maint LL 13	LL			1		
26	Maint LL 14	LL			1		
27	Maint LL 15	LL			1		
28	BLC 1 Transient Area Loads	None				9	
29	BLC 8 Transient Area Loads	None				9	

Load Combinations

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	0.9 D + 1.6 - 0 W	Yes	Y	1	0.9	2	1.6				
3	0.9 D + 1.6 - 30 W	Yes	Y	1	0.9	2	1.386	3	0.8		
4	0.9 D + 1.6 - 60 W	Yes	Y	1	0.9	3	1.386	2	0.8		
5	0.9 D + 1.6 - 90 W	Yes	Y	1	0.9	3	1.6				
6	0.9 D + 1.6 - 120 W	Yes	Y	1	0.9	3	1.386	2	-0.8		

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
7	0.9 D + 1.6 - 150 W	Yes	Y	1	0.9	2	-1.386	3	0.8		
8	0.9 D + 1.6 - 180 W	Yes	Y	1	0.9	2	-1.6				
9	0.9 D + 1.6 - 210 W	Yes	Y	1	0.9	2	-1.386	3	-0.8		
10	0.9 D + 1.6 - 240 W	Yes	Y	1	0.9	3	-1.386	2	-0.8		
11	0.9 D + 1.6 - 270 W	Yes	Y	1	0.9	3	-1.6				
12	0.9 D + 1.6 - 300 W	Yes	Y	1	0.9	3	-1.386	2	0.8		
13	0.9 D + 1.6 - 330 W	Yes	Y	1	0.9	2	1.386	3	-0.8		
14	1.2 D + 1.6 - 0 W	Yes	Y	1	1.2	2	1.6				
15	1.2 D + 1.6 - 30 W	Yes	Y	1	1.2	2	1.386	3	0.8		
16	1.2 D + 1.6 - 60 W	Yes	Y	1	1.2	3	1.386	2	0.8		
17	1.2 D + 1.6 - 90 W	Yes	Y	1	1.2	3	1.6				
18	1.2 D + 1.6 - 120 W	Yes	Y	1	1.2	3	1.386	2	-0.8		
19	1.2 D + 1.6 - 150 W	Yes	Y	1	1.2	2	-1.386	3	0.8		
20	1.2 D + 1.6 - 180 W	Yes	Y	1	1.2	2	-1.6				
21	1.2 D + 1.6 - 210 W	Yes	Y	1	1.2	2	-1.386	3	-0.8		
22	1.2 D + 1.6 - 240 W	Yes	Y	1	1.2	3	-1.386	2	-0.8		
23	1.2 D + 1.6 - 270 W	Yes	Y	1	1.2	3	-1.6				
24	1.2 D + 1.6 - 300 W	Yes	Y	1	1.2	3	-1.386	2	0.8		
25	1.2 D + 1.6 - 330 W	Yes	Y	1	1.2	2	1.386	3	-0.8		
26	0.9 D + 1.6 - 0 W/Ice	Yes	Y	1	0.9	4	1.6			8	1
27	0.9 D + 1.6 - 30 W/Ice	Yes	Y	1	0.9	4	1.386	5	0.8	8	1
28	0.9 D + 1.6 - 60 W/Ice	Yes	Y	1	0.9	5	1.386	4	0.8	8	1
29	0.9 D + 1.6 - 90 W/Ice	Yes	Y	1	0.9	5	1.6			8	1
30	0.9 D + 1.6 - 120 W/Ice	Yes	Y	1	0.9	5	1.386	4	-0.8	8	1
31	0.9 D + 1.6 - 150 W/Ice	Yes	Y	1	0.9	4	-1.386	5	0.8	8	1
32	0.9 D + 1.6 - 180 W/Ice	Yes	Y	1	0.9	4	-1.6			8	1
33	0.9 D + 1.6 - 210 W/Ice	Yes	Y	1	0.9	4	-1.386	5	-0.8	8	1
34	0.9 D + 1.6 - 240 W/Ice	Yes	Y	1	0.9	5	-1.386	4	-0.8	8	1
35	0.9 D + 1.6 - 270 W/Ice	Yes	Y	1	0.9	5	-1.6			8	1
36	0.9 D + 1.6 - 300 W/Ice	Yes	Y	1	0.9	5	-1.386	4	0.8	8	1
37	0.9 D + 1.6 - 330 W/Ice	Yes	Y	1	0.9	4	1.386	5	-0.8	8	1
38	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
39	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
40	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
41	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
42	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
43	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
44	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
45	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
46	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
47	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
48	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
49	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
50	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			9	1.5
51	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	9	1.5
52	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	9	1.5
53	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			9	1.5
54	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	9	1.5
55	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	9	1.5
56	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			9	1.5
57	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	9	1.5
58	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	9	1.5
59	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			9	1.5
60	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	9	1.5
61	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	9	1.5
62	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			10	1.5
63	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	10	1.5
64	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	10	1.5

Load Combinations (Continued)

	Description	Solve	PDelta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
65	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			10	1.5
66	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	10	1.5
67	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	10	1.5
68	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			10	1.5
69	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	10	1.5
70	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	10	1.5
71	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			10	1.5
72	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	10	1.5
73	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	10	1.5
74	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
75	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
76	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
77	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5
78	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
79	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
80	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
81	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
82	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
83	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
84	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
85	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
86	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
87	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
88	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
89	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
90	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
91	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
92	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
93	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
94	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
95	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
96	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
97	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
98	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					13	1.5
99	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					14	1.5
100	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					15	1.5
101	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					16	1.5
102	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					17	1.5
103	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					18	1.5
104	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					19	1.5
105	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					20	1.5
106	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					21	1.5
107	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					22	1.5
108	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					23	1.5
109	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					24	1.5
110	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					25	1.5
111	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					26	1.5
112	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					27	1.5

Envelope Node Reactions

	Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	1	max	1.616	5	2.295	14	2.024	2	5.622	14	1.628	11	0.49	85
2		min	-1.621	23	-1.077	8	-2.125	20	-3.241	8	-1.628	17	-0.273	55
3	53	max	1.676	5	2.163	42	2.123	14	1.136	12	2.073	3	1.886	12
4		min	-1.758	23	-0.676	12	-2.064	8	-2.176	18	-2.067	21	-4.107	18
5	82	max	1.558	17	2.079	46	2.327	14	1.222	3	2.09	7	3.93	22
6		min	-1.472	11	-0.707	4	-2.284	8	-2.609	21	-2.089	25	-1.945	4
7	Totals:	max	4.839	17	5.573	47	6.461	14						

Envelope Node Reactions (Continued)

Node Label		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
8		min	-4.839	11	1.589	5	-6.461	20					

Envelope AISC 13TH (360-05): LRFD Member Steel Code Checks

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X2	0.745	0	25	0.146	0	y	38	70.173	73.278	8.24	8.24	1.912	H1-1b
2	2	C3.38x2.06x.188	0.42	2.592	15	0.07	0.351	z	20	38.433	43.394	1.694	4.483	1.592	H1-1b
3	3	C3.38x2.06x.188	0.439	0	25	0.097	2.241	z	20	38.433	43.394	1.694	4.483	1.584	H1-1b
4	4	PL3/8"x6	0.126	0.164	19	0.278	0	y	14	68.856	72.9	0.57	9.113	2.957	H1-1b
5	5	PL3/8"x6	0.136	0	15	0.208	0	y	14	68.856	72.9	0.57	9.113	2.08	H1-1b
6	6	PIPE_3.0	0.12	4	19	0.075	4		17	46.291	65.205	5.749	5.749	1.561	H1-1b
7	7	PL3/8"x6	0.217	0.208	14	0.198	0.208	y	38	70.733	72.9	0.57	9.113	2.223	H1-1b
8	8	PL3/8"x6	0.211	0	25	0.217	0	y	39	70.733	72.9	0.57	9.113	2.786	H1-1b
9	9	L2x2x4	0.41	0	20	0.032	2.309	z	25	23.349	30.586	0.691	1.577	1.5	H2-1
10	10	L2x2x4	0.351	2.309	20	0.042	2.309	y	40	23.349	30.586	0.691	1.577	1.5	H2-1
11	11	L7.63x2.5x6	0.578	1.604	8	0.104	1.57	z	15	73.845	118.523	1.798	13.686	1.234	H2-1
12	18	PIPE_2.0	0.462	6	17	0.135	6		18	14.916	32.13	1.872	1.872	2.149	H1-1b
13	19	PIPE_2.0	0.48	2.333	22	0.141	6		21	14.916	32.13	1.872	1.872	2.073	H1-1b
14	22	PIPE_2.0	0.817	6.75	14	0.505	7.917		14	14.916	32.13	1.872	1.872	2.599	H3-6
15	23	L6.63x4.33x.25	0.313	3.25	6	0.061	3.25	z	24	49.975	86.751	2.311	6.976	1.5	H2-1
16	29	PIPE_2.0	0.455	6	18	0.156	2.333		21	14.916	32.13	1.872	1.872	1.933	H1-1b
17	31	HSS4X4X2	0.691	0	19	0.148	0	y	42	70.173	73.278	8.24	8.24	1.942	H1-1b
18	32	C3.38x2.06x.188	0.417	2.592	19	0.07	0.351	y	45	38.433	43.394	1.694	4.483	1.594	H1-1b
19	33	C3.38x2.06x.188	0.357	0	29	0.071	2.241	z	24	38.433	43.394	1.694	4.483	1.627	H1-1b
20	34	PL3/8"x6	0.102	0	18	0.231	0	y	19	68.856	72.9	0.57	9.113	3	H1-1b
21	35	PL3/8"x6	0.135	0	19	0.159	0	y	18	68.856	72.9	0.57	9.113	1.909	H1-1b
22	36	PL3/8"x6	0.187	0.208	19	0.195	0.208	y	42	70.733	72.9	0.57	9.113	2.408	H1-1b
23	37	PL3/8"x6	0.164	0	17	0.217	0	y	43	70.733	72.9	0.57	9.113	2.857	H1-1b
24	38	L2x2x4	0.298	0	24	0.031	0	y	51	23.349	30.586	0.691	1.577	1.5	H2-1
25	39	L2x2x4	0.293	2.309	25	0.043	0	y	44	23.349	30.586	0.691	1.577	1.5	H2-1
26	40	L7.63x2.5x6	0.428	1.604	12	0.101	1.57	z	19	73.845	118.523	1.798	13.701	1.238	H2-1
27	45	L6.63x4.33x.25	0.373	0	2	0.067	0	y	15	49.975	86.751	2.311	6.976	1.5	H2-1
28	50	HSS4X4X2	0.729	0	21	0.151	0	z	19	70.173	73.278	8.24	8.24	1.913	H1-1b
29	51	C3.38x2.06x.188	0.388	2.592	47	0.069	0.351	y	49	38.433	43.394	1.694	4.483	1.632	H1-1b
30	52	C3.38x2.06x.188	0.431	0	21	0.08	2.241	z	15	38.433	43.394	1.694	4.483	1.586	H1-1b
31	53	PL3/8"x6	0.138	0.164	15	0.222	0	y	22	68.856	72.9	0.57	9.113	3	H1-1b
32	54	PL3/8"x6	0.105	0	23	0.184	0	y	21	68.856	72.9	0.57	9.113	1.934	H1-1b
33	55	PL3/8"x6	0.18	0.085	2	0.195	0.208	y	45	70.733	72.9	0.57	9.113	1.615	H1-1b
34	56	PL3/8"x6	0.214	0	21	0.214	0	y	47	70.733	72.9	0.57	9.113	2.725	H1-1b
35	57	L2x2x4	0.389	0	15	0.033	2.309	z	20	23.349	30.586	0.691	1.577	1.5	H2-1
36	58	L2x2x4	0.287	2.309	16	0.042	2.309	y	48	23.349	30.586	0.691	1.577	1.5	H2-1
37	59	L7.63x2.5x6	0.51	1.604	3	0.088	1.604	y	84	73.845	118.523	1.798	14.091	1.326	H2-1
38	64	L6.63x4.33x.25	0.392	3.25	2	0.082	3.25	z	20	49.975	86.751	2.311	6.976	1.5	H2-1
39	69	PIPE_3.0	0.149	4	14	0.101	4		21	46.291	65.205	5.749	5.749	1.6	H1-1b
40	72	PIPE_2.0	0.614	6	21	0.151	6		21	14.916	32.13	1.872	1.872	2.098	H1-1b
41	73	PIPE_2.0	0.622	2.333	14	0.143	6		25	14.916	32.13	1.872	1.872	1.909	H1-1b
42	76	PIPE_2.0	0.658	1.25	25	0.397	1.25		25	14.916	32.13	1.872	1.872	2.16	H3-6
43	78	PIPE_2.0	0.547	6	21	0.168	2.333		25	14.916	32.13	1.872	1.872	2.082	H1-1b
44	80	PIPE_3.0	0.138	4	14	0.098	2.833		25	46.291	65.205	5.749	5.749	1.425	H1-1b
45	83	PIPE_2.0	0.608	6	25	0.179	6		14	14.916	32.13	1.872	1.872	2.209	H1-1b
46	84	PIPE_2.0	0.542	6	19	0.103	6		17	14.916	32.13	1.872	1.872	2.204	H1-1b
47	87	PIPE_2.0	0.716	6.75	21	0.448	7.917		21	14.916	32.13	1.872	1.872	2.462	H3-6
48	89	PIPE_2.0	0.611	6	14	0.118	6		18	14.916	32.13	1.872	1.872	2.069	H1-1b

APPENDIX B
(Additional Calculations)

PROJECT	**149491.003.01 - Plainfield, CT**				**KSC**
SUBJECT	**Platform Mount Analysis**				
DATE	**09/07/21**	PAGE	1	OF	1

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	2.024	k
Vertical Shear	:	2.295	k
Horizontal Shear	:	1.616	k
Torsion	:	0.49	k.ft
Moment from Horizontal Forces	:	1.628	k.ft
Moment from Vertical Forces	:	5.622	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in^2
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	2.81	k
Force from Horz. Moment	:	2.95	k
Force from Vert. Moment	:	10.18	k
Shear Load / Bolt	:	0.70	k
Tension Load / Bolt	:	0.51	k
Resultant from Moments / Bolt	:	5.30	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	**28.02%**		**OKAY**
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	**10.93%**		**OKAY**
Unity Check, Combined	:	**38.95%**		**OKAY**
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	**2.02%**		**OKAY**

PROJECT	**149491.003.01 - Plainfield, CT**				**KSC**
SUBJECT	**Platform Mount Analysis**				
DATE	**09/07/21**	PAGE	1	OF	1

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

[REF: AISC 360-05]

Connecting Member Parameters

Plate Yield Strength, F_y	:	36.00	ksi	[AISC Table 2-5]
Plate Tensile Strength, F_u	:	58.00	ksi	[AISC Table 2-5]
Plate Height	:	9.00	in	
Plate Width	:	9.00	in	
Plate Thickness	:	0.50	in	
Edge Distance	:	1.06	in	
Gross Tension Area, A_{gt}	:	4.50	in^2	
Gross Shear Area, A_{gv}	:	0.75	in^2	
Net Area for tension, A_{nv}	:	4.16	in^2	
Net Area for shear, A_{nt}	:	3.00	in^2	

Plate Check

Available Tensile Yield	:	145.80	k	[Eq. J4-1]
Available Tensile Rupture	:	180.80	k	[Eq. J4-2]
Unity Check, Plate Tension	:	**3.98%**		**OKAY**
Available Shear Yield	:	16.20	k	[Eq. J4-3]
Available Shear Rupture	:	104.40	k	[Eq. J4-4]
Unity Check, Plate Shear	:	**17.33%**		**OKAY**
Available Block Shear, ΦRn	:	77.40	k	[Eq. J4-5]
Unity Check, Block Shear	:	**3.63%**		**OKAY**

Exhibit F

Power Density/RF Emissions Report

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

Site ID: BOBOS00065A

SBA - Norwich Road
388 Norwich Road
Plainfield, CT 06374

May 5, 2022

Fox Hill Telecom Project Number: 220989

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**6.77 %**

Fox Hill Telecom

May 5, 2022

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOBOS00065A – SBA - Norwich Road**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **388 Norwich Road, Plainfield, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and antenna installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed radio system installation for **Dish** on the subject site located at **388 Norwich Road, Plainfield, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since **Dish** is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz (n71) frequency band, and the 2100 MHz (AWS 4) frequency bands at 1995-2020 MHz (n70) and 2180-2200 MHz (n66). This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Commscope FFVV-65B-R2	125
B	1	Commscope FFVV-65B-R2	125
C	1	Commscope FFVV-65B-R2	125

Table 2: Antenna Data

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

RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Commscope FFVV-65B-R2	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	12.15 / 15.95 / 16.25	12	566	17,079.80	5.87
						Sector A Composite MPE%	**5.87**
Antenna B1	Commscope FFVV-65B-R2	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	12.15 / 15.95 / 16.25	12	566	17,079.80	5.87
						Sector B Composite MPE%	**5.87**
Antenna C1	Commscope FFVV-65B-R2	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	12.15 / 15.95 / 16.25	12	566	17,079.80	5.87
						Sector C Composite MPE%	**5.87**

Table 3: Dish Emissions Levels

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

Site Composite MPE%	
Carrier	**MPE%**
Dish – Max Per Sector Value	**5.87 %**
Nextel	0.66 %
MetroPCS	0.24 %
Site Total MPE %:	**6.77 %**

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	5.87 %
Dish Sector B Total:	5.87 %
Dish Sector C Total:	5.87 %
Site Total:	6.77 %

Table 5: Site MPE Summary

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

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Dish n71 (600 MHz) 5G	4	1,008.96	125	10.25	n71 (600 MHz)	400	2.56%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,574.20	125	15.99	n70 (AWS-4 / 1995-2020)	1000	1.60%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,686.79	125	17.13	n66 (AWS-4 / 2180-2200)	1000	1.71%
						Total:	**5.87%**

Table 6: Dish Maximum Sector MPE Power Values

Summary

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

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

Dish Sector	Power Density Value (%)
Sector A:	5.87 %
Sector B:	5.87 %
Sector C:	5.87 %
Dish Maximum Total (per sector):	5.87 %
Site Total:	6.77 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **6.77 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Holden, MA 01520
(978)660-3998

Exhibit G

Letter of Authorization

SBA Letter of Authorization

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

Re: Tower Share Application

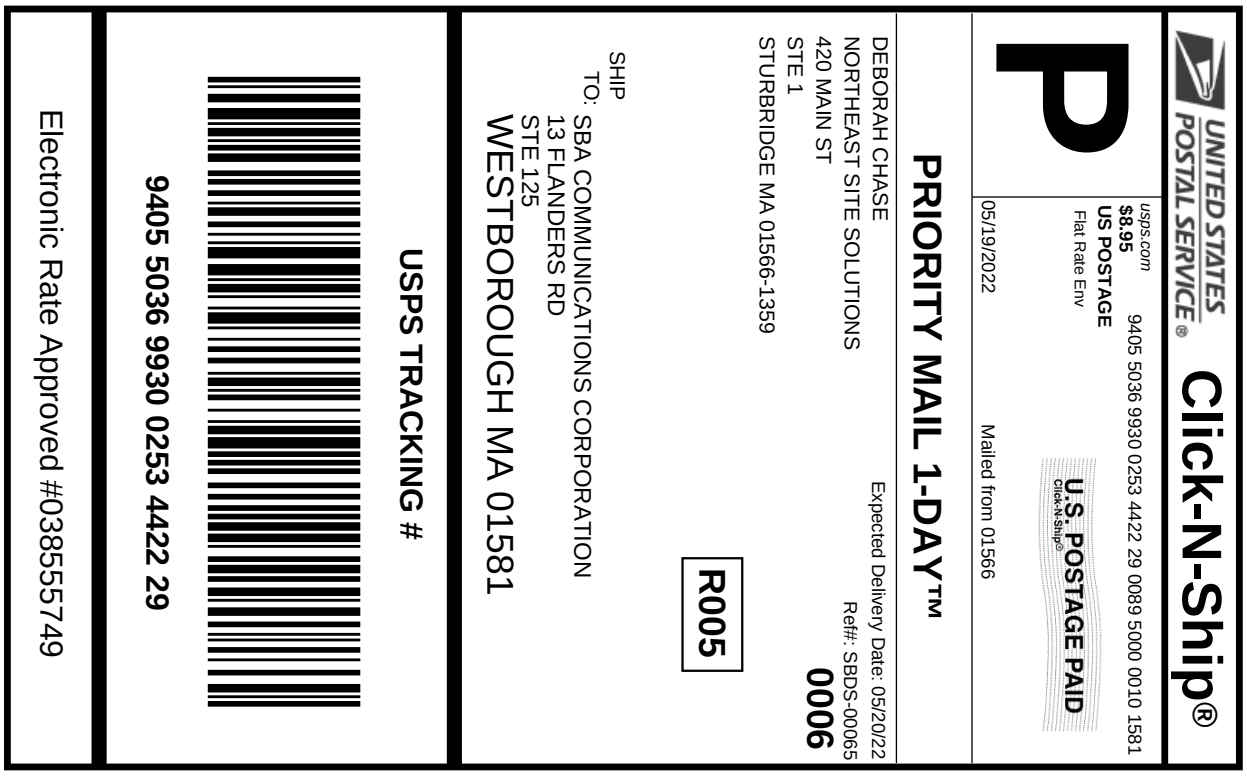
SBA COMMUNICATIONS CORPORATION hereby authorizes DISH Wireless LLC, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CONNECTICUT SITING COUNCIL for existing wireless communications towers.

Kri Pelletier
Site Development Manager
SBA COMMUNICATIONS CORPORATION
134 Flanders Road, Suite 125
Westboro, MA 01581

SBA
By: _____ Date: _____

Exhibit H

Recipient Mailings



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3. **Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.**
4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0253 4422 29

Trans. #:	563892250
Print Date:	05/19/2022
Ship Date:	05/19/2022
Expected Delivery Date:	05/20/2022

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

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

Ref#: SBDS-00065

To: SBA COMMUNICATIONS CORPORATION
13 FLANDERS RD
STE 125
WESTBOROUGH MA 01581

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

Thank you for shipping with the United States Postal Service!
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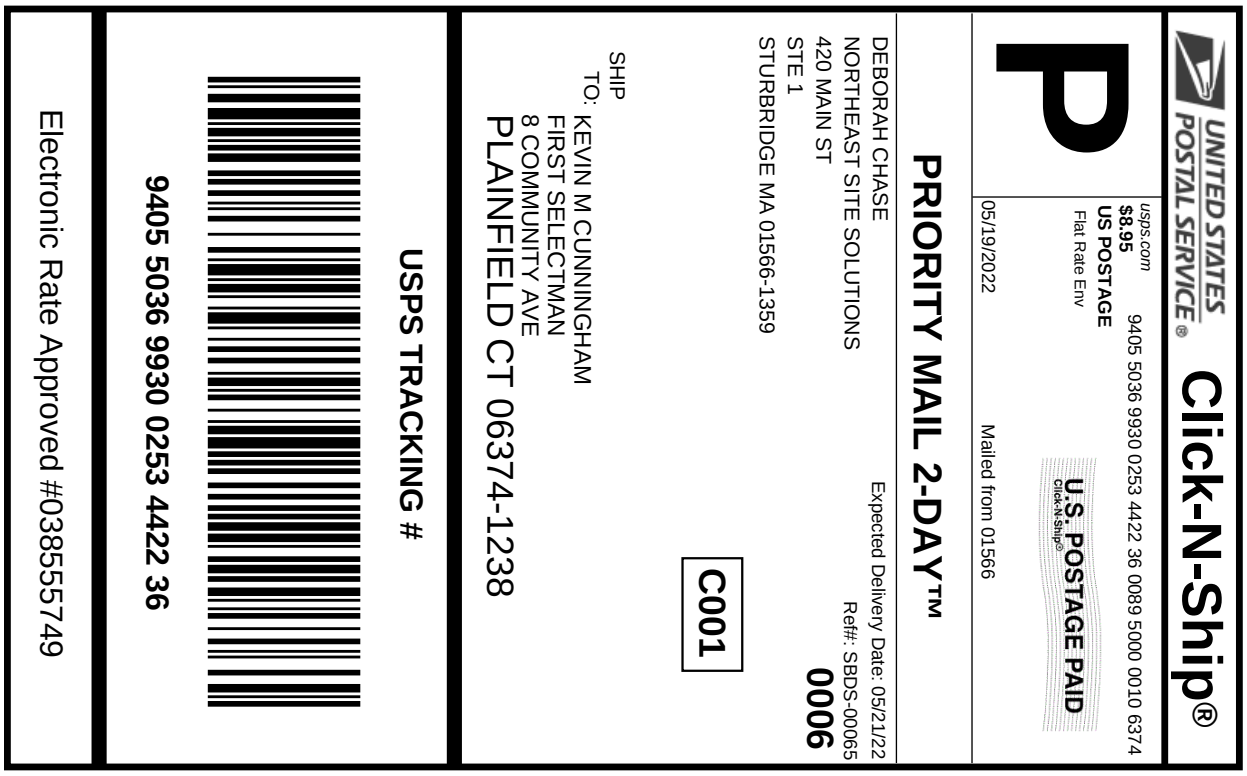

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0253 4422 36

Trans. #:	563892250
Print Date:	05/19/2022
Ship Date:	05/19/2022
Expected Delivery Date:	05/21/2022

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

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

Ref#: SBDS-00065

To: KEVIN M CUNNINGHAM
FIRST SELECTMAN
8 COMMUNITY AVE
PLAINFIELD CT 06374-1238

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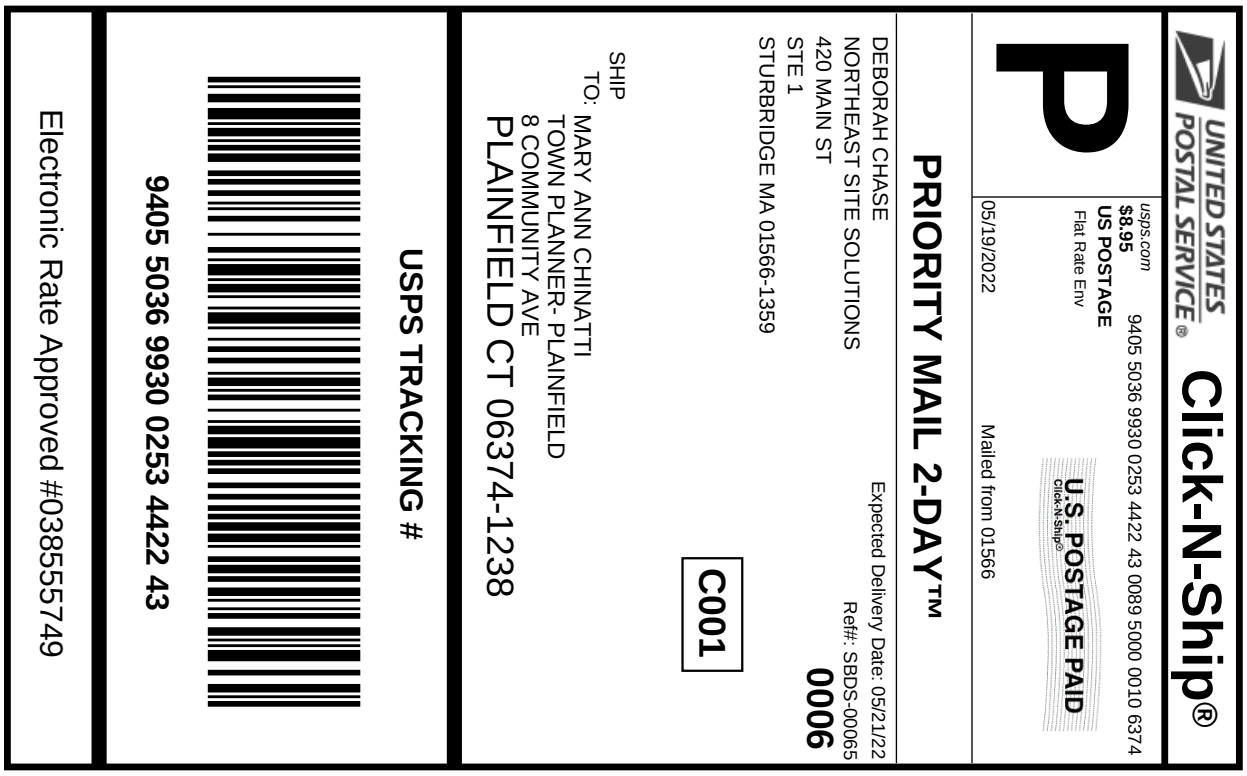

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4. **To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.**
5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0253 4422 43

Trans. #:	563892250
Print Date:	05/19/2022
Ship Date:	05/19/2022
Expected Delivery Date:	05/21/2022

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

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

Ref#: SBDS-00065

To: MARY ANN CHINATTI
TOWN PLANNER- PLAINFIELD
8 COMMUNITY AVE
PLAINFIELD CT 06374-1238

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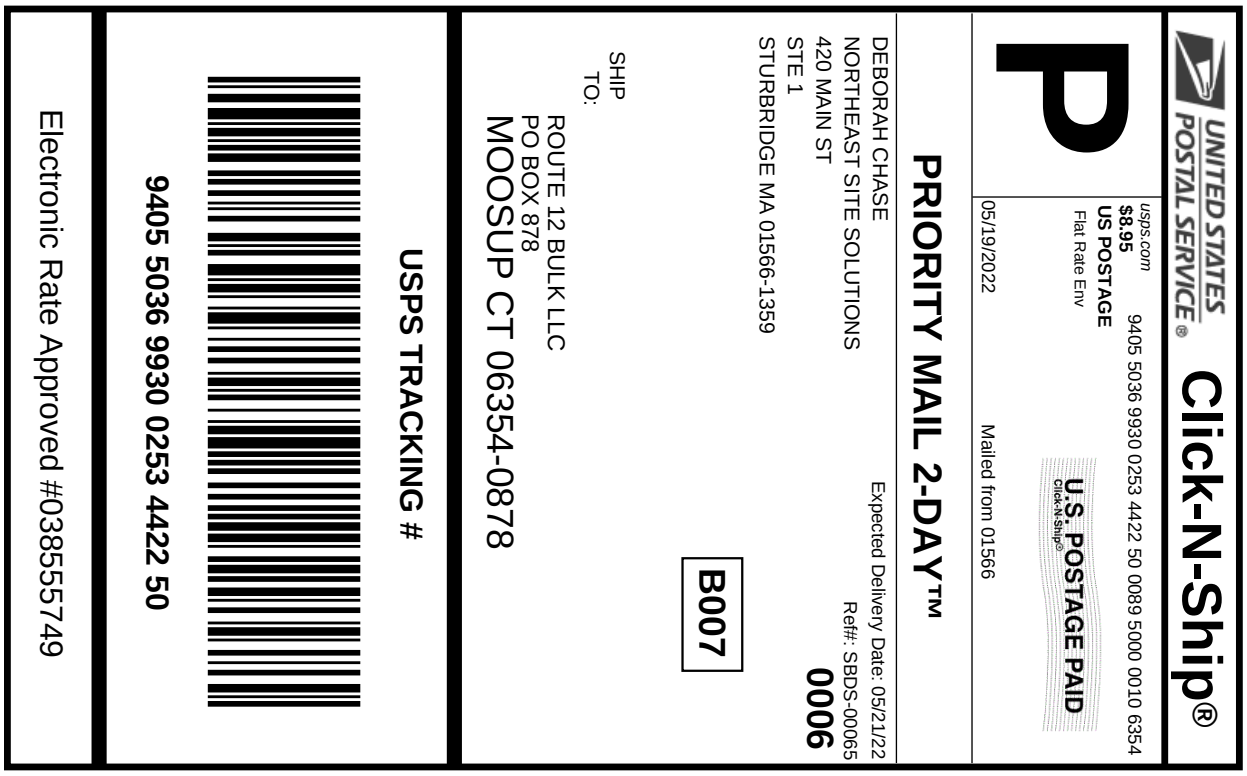

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Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0253 4422 50

Trans. #:	563892250
Print Date:	05/19/2022
Ship Date:	05/19/2022
Expected Delivery Date:	05/21/2022

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

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

Ref#: SBDS-00065

To: ROUTE 12 BULK LLC
PO BOX 878
MOOSUP CT 06354-0878

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

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

B0005000654
SBA - Dish

UNITED STATES POSTAL SERVICE.

FARMINGTON
210 MAIN ST
FARMINGTON, CT 06032-9998
(800)275-8777

05/20/2022 08:42 AM

Product	Qty	Unit Price	Price
Prepaid Mail Westborough, MA 01581 Weight: 0 lb 2.00 oz Acceptance Date: Fri 05/20/2022 Tracking #: 9405 5036 9930 0253 4422 29	1		$0.00
Prepaid Mail Moosup, CT 06354 Weight: 0 lb 11.50 oz Acceptance Date: Fri 05/20/2022 Tracking #: 9405 5036 9930 0253 4422 50	1		$0.00
Prepaid Mail Plainfield, CT 06374 Weight: 1 lb 4.90 oz Acceptance Date: Fri 05/20/2022 Tracking #: 9405 5036 9930 0253 4422 43	1		$0.00
Prepaid Mail Plainfield, CT 06374 Weight: 1 lb 14.40 oz Acceptance Date: Fri 05/20/2022 Tracking #: 9405 5036 9930 0253 4422 36	1		$0.00
Grand Total:			$0.00

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Every household in the U.S. is now eligible to receive a second set of 4 free test kits.
Go to www.covidtests.gov
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Preview your Mail
Track your Packages
Sign up for FREE @
https://informeddelivery.usps.com

All sales final on stamps and postage.
Refunds for guaranteed services only.
Thank you for your business.

Tell us about your experience.
Go to: https://postalexperience.com/Pos
or scan this code with your mobile device,