NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

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

December 10, 2021

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

RE: Tower Share Application
1000 Old County Circle, Windsor Locks, CT 06096
Latitude: 41.910250
Longitude: -72.661778
Site# 842876_Crown_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 1000 Old County Circle in Windsor Locks, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900/2100 MHz antenna and six (6) RRUs, at the 75-foot level of the existing 101-foot monopole tower, one (1) Fiber cables will also be installed as well as an antenna platform mount. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Infinigy, dated December 1, 2021 Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated September 7, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. This facility was approved by the Town of Windsor Locks building department on July 26, 2000. 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 J. Christopher Kervick, First Selectman for the Town of Windsor Locks, Jennifer V. Rodriguez, Town Planner, Director of Planning and Development, as well as the tower owner (Crown Castle) and property owner (Stanley & Maria Rafalowski).

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 tower is 101-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 75-feet.

2. The proposed modifications will not result in the 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. As indicated in the attached power density calculations, the combined site operations will result in a total power density of 39.93% 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 indicates that the shared use of this facility satisfies these criteria.

A. Technical Feasibility. The existing monopole has been deemed structurally capable of supporting Dish Wireless LLC proposed loading. The structural analysis is included 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 tower in Windsor Locks. 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 75-foot level of the existing 101-foot monopole 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 monopole. 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 Windsor Locks.

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:

J. Christopher Kervick, First Selectman
50 Church Street
Windsor Locks, CT 06096

Jennifer V. Rodriguez, Town Planner, Director of Planning and Development
50 Church Street
Windsor Locks, CT 06096

Stanley & Maria Rafalowski (property owner)
1000 Old County Circle #105
Windsor Locks, CT 06096

Crown Castle, Tower Owner (tower owner)

Exhibit A

Original Facility Approval

DATE July 26, 2000
CHECK NO 8330-$790.
C.O. FEE 8331-$510. CASH

APPLICANT
NAME Brois Construction Corp.
ADDRESS 73 East Main Street
Elmsford, NY 10523

PHONE 914-592-4848 LICENSE NO.
OWNER NAME Old County Circle Industrial Park Lots 5 & 6 Association II
ADDRESS 37 Quail Hollow Road
Agawam, MA 01001

TOWN OF WINDSOR LOCKS, CT
BUILDING PERMIT
Nº 23831

ESTIMATED COST/VALUE $ 78,000.
(EXCLUDING ELECTRICAL, PLUMBING & HVAC)
FEE $ 790.

Construction of an unmanned wireless communications site consisting of a (32' x 55' 6") fenced compound containing a prefab. equipment shelter & a (98') High monopole w/ antennas at 1000 Old County Circle.

All work to be done in accordance with this application and plans approved by the Building Department

Building Official

Exhibit B

Property Card

Windsor Locks, CT : Assessor Database

Property Search:

Parcel ID:	Alternate ID:	Owner 1 Name:	Street Number:	Street Name:
			1000	OLD COUNTY CIRCLE

Search Reset

Property Detail:

Parcel ID:	Alternate ID/Map Block Lot:	Card:	Card:	Street Name:	Street Number:	Zoning:	LUC:	Acres:
00324200	051-125-013-0105	1	1	OLD COUNTY CIRCLE	1000	IND1	Ind Condo	0.00

Owner Information:

Owner 1 Name:	RAFALOWSKI STANLEY & MARIA
Owner 2 Name:	
Street 1:	1000 OLD COUNTY CIRCLE #105
Street 2:	
City:	WINDSOR LOCKS
State:	CT
Zip:	06096
Volume:	196
Page:	765
Deed Date:	0000-00-00

Property Images:

Picture:

Sketch:

There is no sketch available.

Building Information:

Building Number:	1
Units:	0
Structure Type:	MFG/PROCESSING
Grade:	C
Identical Units:	0
Year Built:	1990

Valuation:

Appraised Land:	$0.00
Appraised Land PA490:	$0.00
Appraised Bldg:	$155,500.00
Appraised Total:	$155,500.00
Total Assessment:	$108,850.00

Sales History:

Book:	Page:	Sale Date:	Price:	Validity:	Sale Type:
196	765	09/17/1990			

Building Interior/Exterior Information:

Floor From:	Floor To:	Area:	Use Type:	Exterior Walls:	Contruction Type:	Heating:	A/C:	Plumbing:	Functional Utility:
M1	M1	3000	MULTI USE STORAGE	NONE	FIRE RESISTANT	UNIT HEATERS	CENTRAL	NONE	3
01	01	3375	MANUFACTURING	BRICK & CONCRETE BLOCK	FIRE RESISTANT	UNIT HEATERS	CENTRAL	NORMAL	3

Wed. November 17, 2021 : 04:06 PM : 0.22s : 10mb

Town of Windsor Locks, CT

Property

Zoom To | Share | Print | 282

1000 OLD COUNTY CIRCLE

Google Directions | Zoom

View Details

Google Maps Link

Downloadable Data

Property

Address	1000 OLD COUNTY CIRCLE
ID	051-125-012

Ownership

Name	SCHEIDLE ADOLF & HELGA
Address	218 MERIWETHER DRIVE LONGMEADOW, MA 1106

Land

Zone	IND1

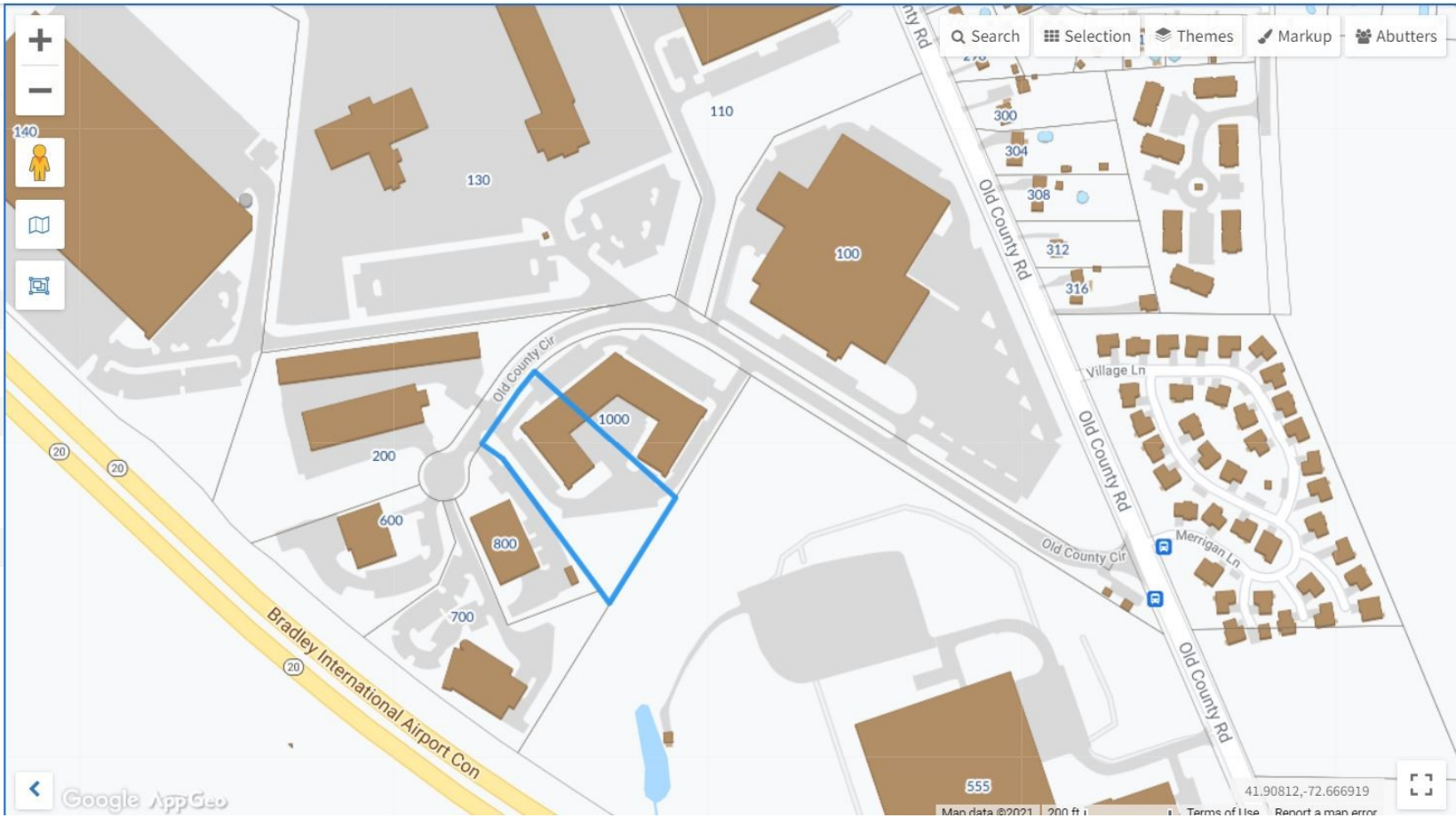


Exhibit C

Construction Drawings

DISH Wireless L.L.C. SITE ID:

BOBDL00069A

DISH Wireless L.L.C. SITE ADDRESS:

1000 OLD COUNTY CIRCLE
WINDSOR LOCKS, CT 06096

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 METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED GPS UNIT
- INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED)
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)
- INSTALL (1) PROPOSED IN EXISTING VACANT METER SOCKET

SITE PHOTO

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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	OLD COUNTY CIRCLE INSUSTR
ADDRESS:	1000 OLD COUNTY CIR 105 LOT 5-6 ASSOC WINSOR LOCKS, CT 06096
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	842876
TOWER APP NUMBER:	556623
COUNTY:	HARTFORD
LATITUDE (NAD 83):	41° 54' 36.88" N 41.910250 N
LONGITUDE (NAD 83):	72° 39' 42.43" W 72.661778 W
ZONING JURISDICTION:	CONNECTICUT SITTING COUNCIL
ZONING DISTRICT:	IND1-INDUSTRIAL ZONE 1
PARCEL NUMBER:	09003165-051-125-012
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	NORTHEAST UTILITIES
TELEPHONE COMPANY:	TBD

PROJECT DIRECTORY

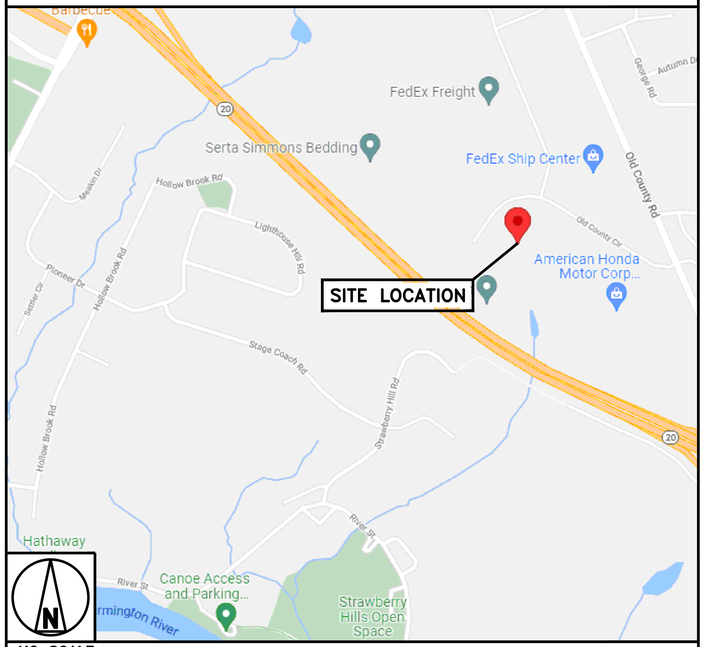
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
SITE DESIGNER:	INFINIGY 2500 W. HIGGINS RD. STE. 500 HOFFMAN ESTATES, IL 60169 (847) 648-4068
SITE ACQUISITION:	CORWIN DIXION CORWIN.DIXION@CROWNCASTLE.COM (917) 563-3682
CONSTRUCTION MANAGER:	JAVIER SOTO JAVIER.SOTO@DISH.COM (617) 839-6514
RF ENGINEER:	BOSSENER CHARLES BOSSENER.CHARLES@DISH.COM

DIRECTIONS

DIRECTIONS FROM DISH Wireless L.L.C. OFFICE/AIRPORT/DOWNTOWN:

HEAD NORTHWEST ON BRADLEY INTERNATIONAL AIRPORT TOWARD BRADLEY INTERNATIONAL AIRPORT CONNECTOR, BEAR RIGHT ONTO BRADLEY INTERNATIONAL AIRPORT CONNECTOR, TAKE THE RAMP ON THE RIGHT FOR BRADLEY INTERNATIONAL AIRPORT CONNECTOR, ROAD NAME CHANGES TO CT-20 E, TAKE THE RAMP ON THE RIGHT AND HEAD TOWARD KENNEDY RD / OLD COUNTY RD, TURN LEFT ONTO HAYDEN STATION RD, ROAD NAME CHANGES TO OLD COUNTY RD, TURN LEFT ONTO OLD COUNTY CIRCLE, TURN LEFT, TURN RIGHT, ARRIVE AT 1000 OLD COUNTY CIRCLE, WINDSOR LOCKS, CT 06096

VICINITY MAP



NO SCALE

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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

CROWN CASTLE
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WWW.INFINIGY.COM

STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
12/01/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/03/2021	ISSUED FOR REVIEW
0	12/01/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION

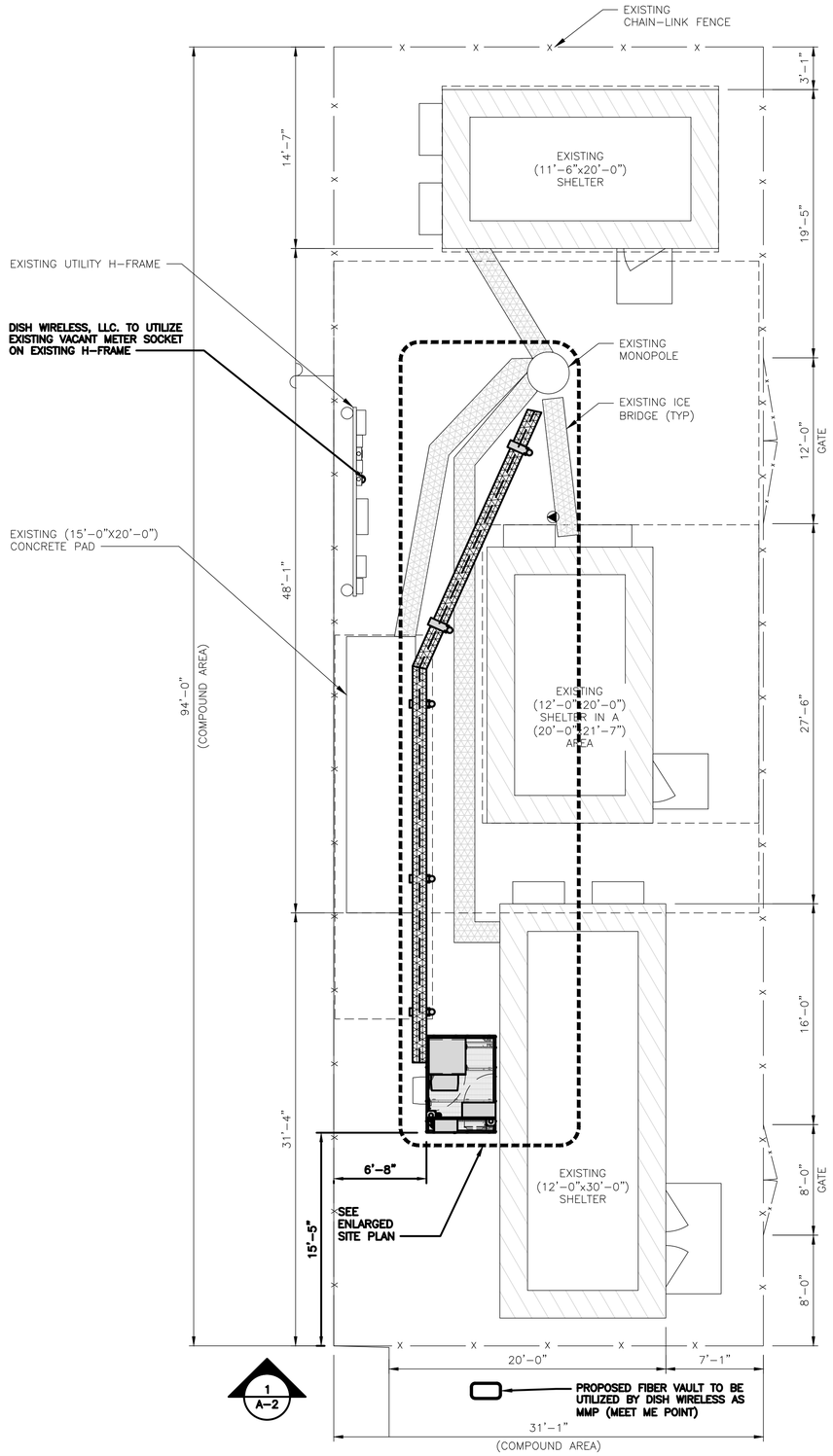
BOBDL00069A
1000 OLD COUNTY CIRCLE
WINDSOR LOCKS, CT 06096

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



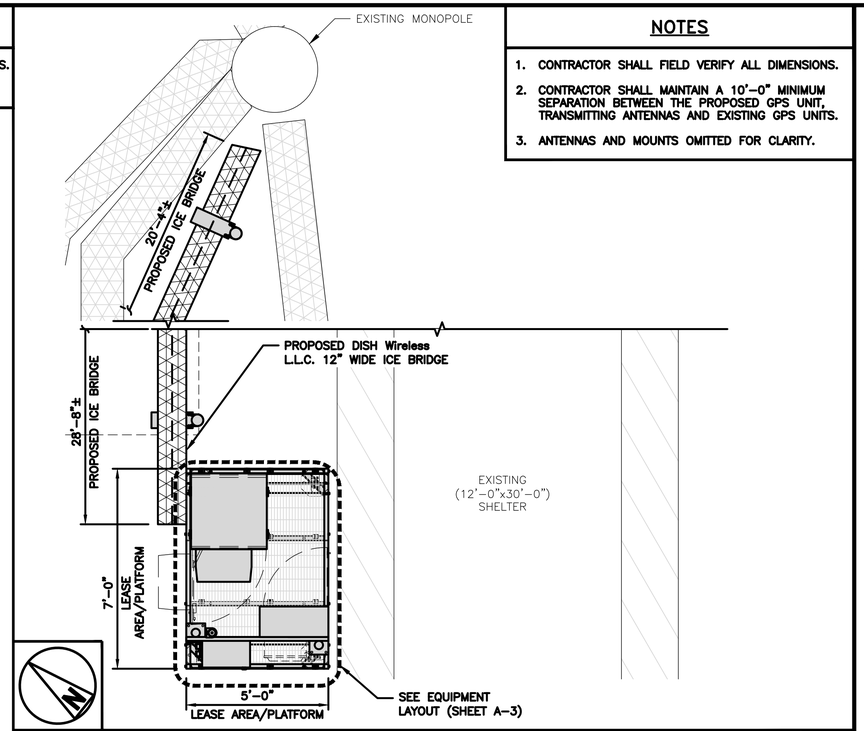
NOTES

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

OVERALL SITE PLAN

16' 12' 8' 4' 0 16' 32'
1/16"=1'-0"

1



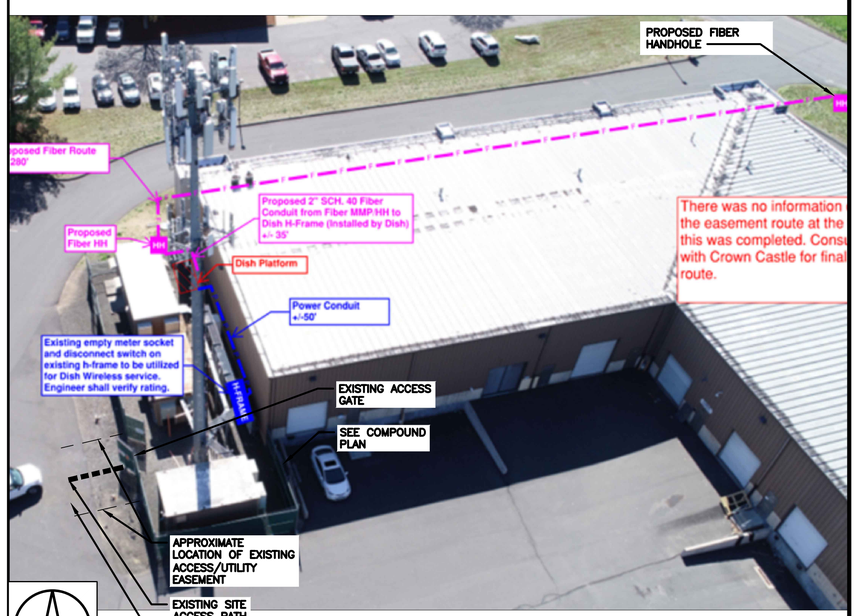
NOTES

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



SITE PLAN

30' 20' 10' 0 30' 60'
1"=30'

3

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

CROWN CASTLE
2000 CORPORATE DRIVE
CANONSBURG, PA 15317

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WWW.INFINIGY.COM

STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
12/01/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/03/2021	ISSUED FOR REVIEW
0	12/01/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

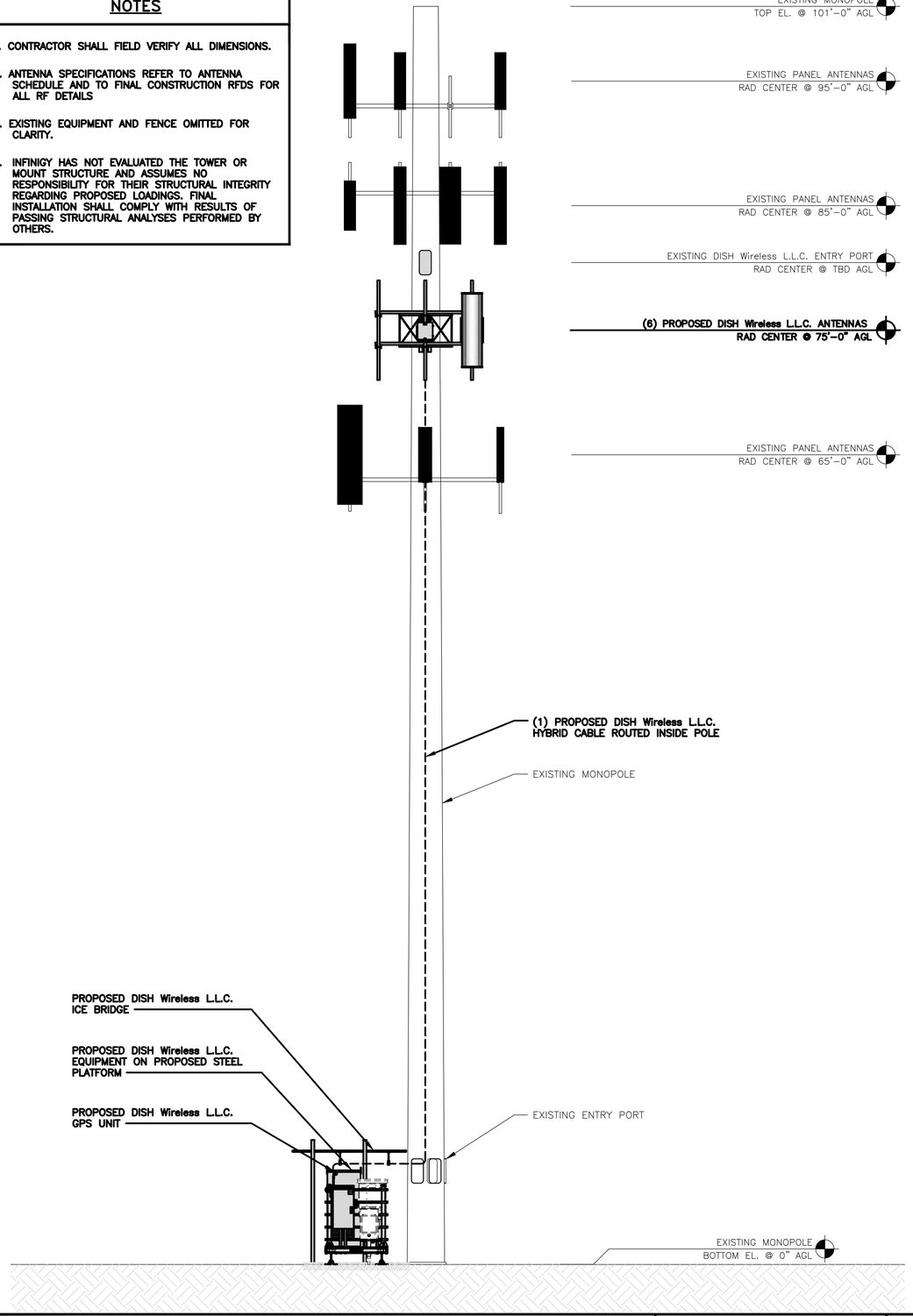
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00069A
1000 OLD COUNTY CIRCLE
WINDSOR LOCKS, CT 06096

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

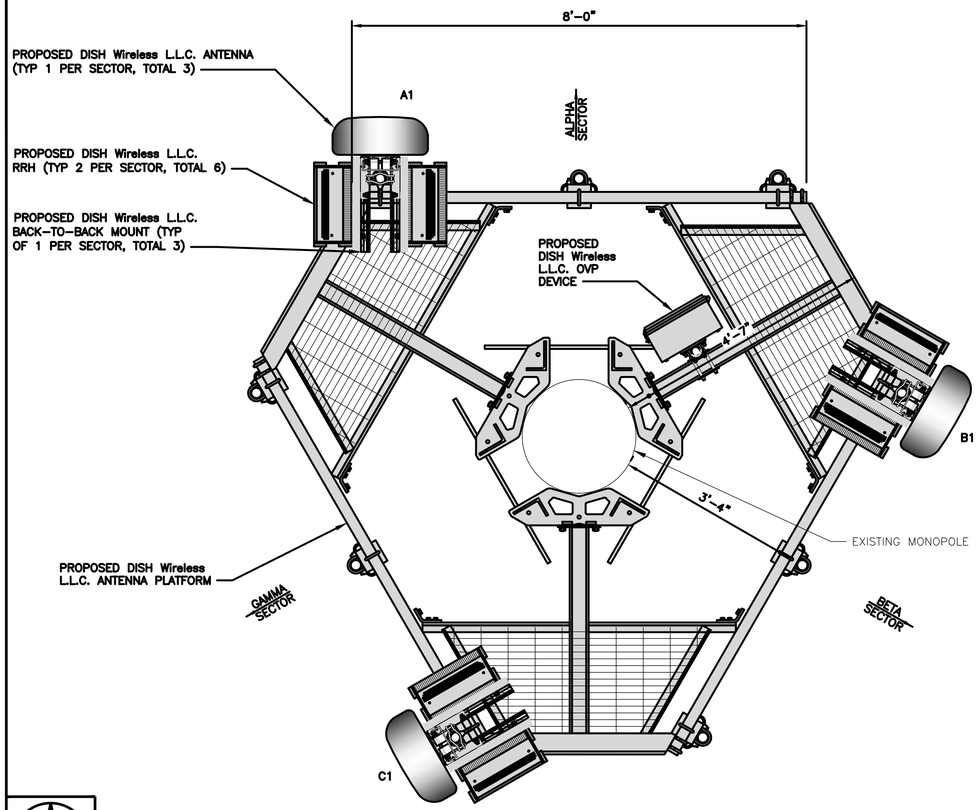
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.
4. INFINIGY HAS NOT EVALUATED THE TOWER OR MOUNT STRUCTURE AND ASSUMES NO RESPONSIBILITY FOR THEIR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



PROPOSED NORTH ELEVATION

6' 4' 2' 0 5' 10'
3/16"=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)	AZMUITH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	0°	75'-0"	(1) HIGH-CAPACITY HYBRID CABLE (137' LONG)
BETA	B1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	120°	75'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS – MX08FRO665-21	5G	72.0" x 20.0"	240°	75'-0"	

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

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

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5701 SOUTH SANTA FE DRIVE
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CROWN CASTLE
2000 CORPORATE DRIVE
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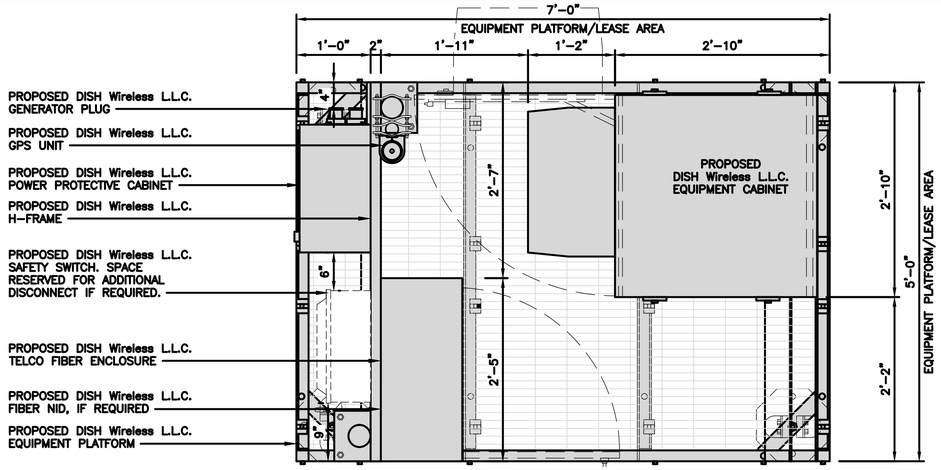
BOBDL00069A
1000 OLD COUNTY CIRCLE
WINDSOR LOCKS, CT 06096

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



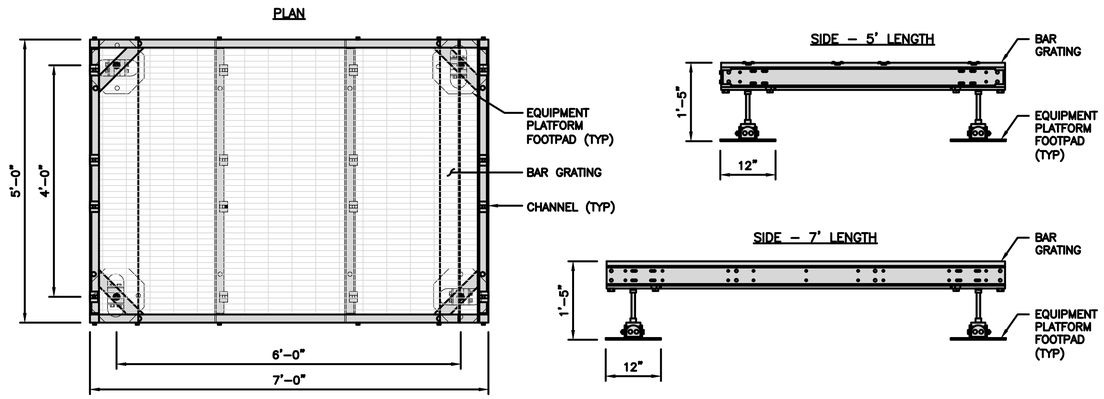
PLATFORM EQUIPMENT PLAN

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

1

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

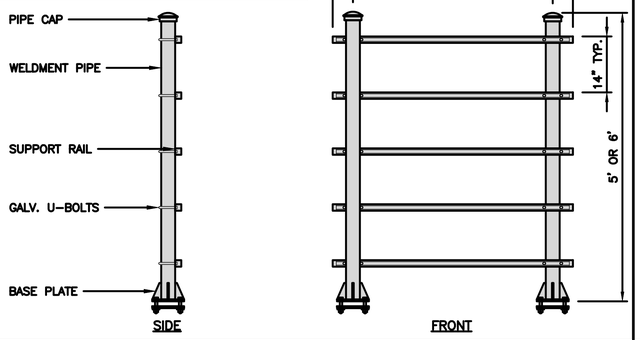
NOTE:
GC TO PROVIDE EXTENDED THREAD FOR PLATFORM IF REQUIRED HEIGHT EXCEEDS 17"



PLATFORM DETAIL — NO SCALE — 2

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

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

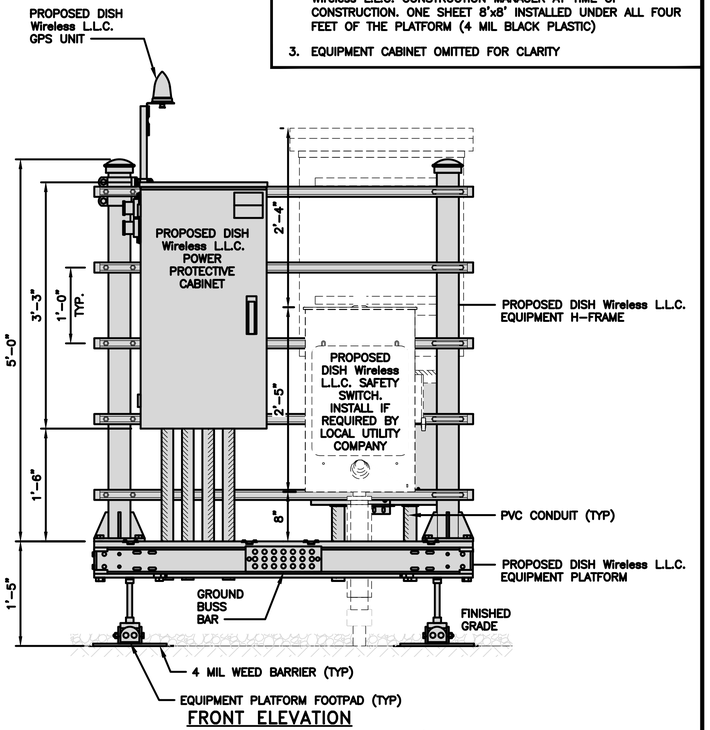


H-FRAME DETAIL — NO SCALE — 3

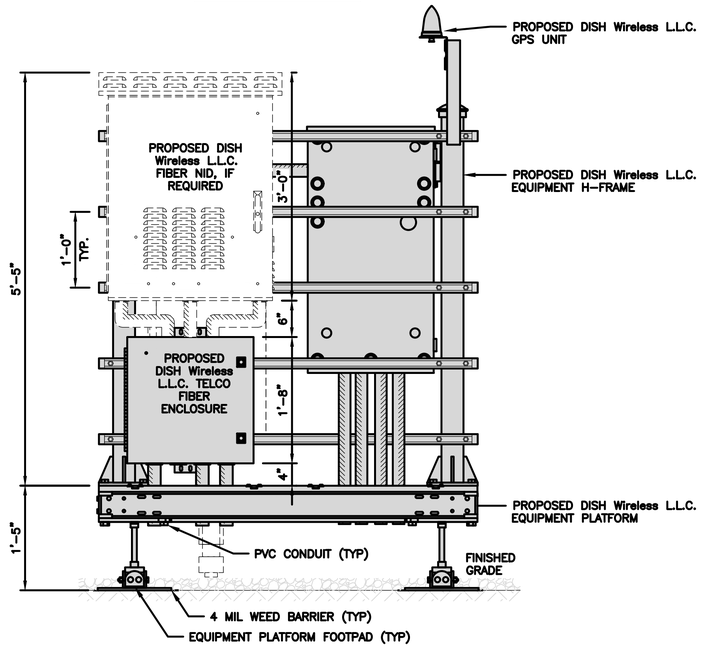
NOT USED — NO SCALE — 4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION — 12" 9" 6" 3" 0 1' 2' — 1"=1'-0" — 5

dish wireless.
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LITTLETON, CO 80120

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STATE OF CONNECTICUT
SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
12/01/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/03/2021	ISSUED FOR REVIEW
0	12/01/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
2039-Z5555C

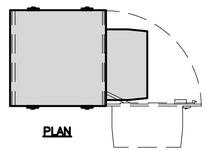
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00069A
1000 OLD COUNTY CIRCLE
WINDSOR LOCKS, CT 06096

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

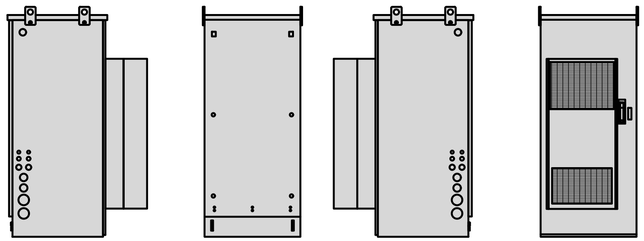
SHEET NUMBER
A-3

CHARLES INDUSTRY HEX CUBE–PM639155N4

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



PLAN



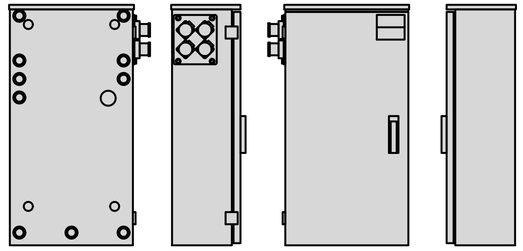
SIDE BACK SIDE FRONT

CABINET DETAIL | NO SCALE | 1

RAYCAP PPC RDIAC–2465–P–240–MTS

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

TOP

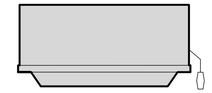


BACK SIDE FRONT SIDE

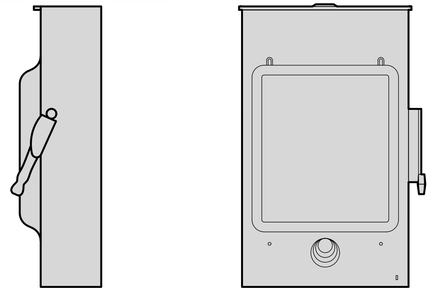
POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

SQUARE D SAFETY SWITCHES D224NRB

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



TOP



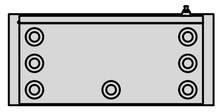
SIDE FRONT

SAFETY SWITCH DETAIL | NO SCALE | 3

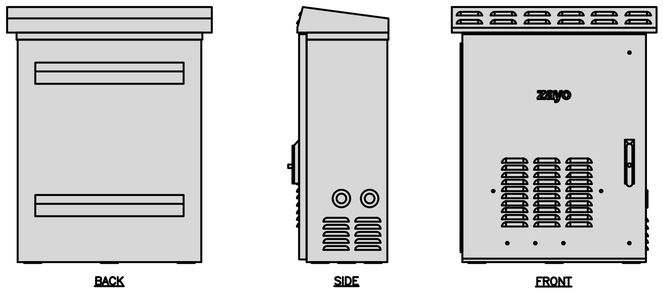
NOT USED | NO SCALE | 4

ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE

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



BOTTOM

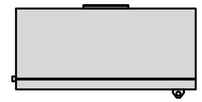


BACK SIDE FRONT

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



FRONT

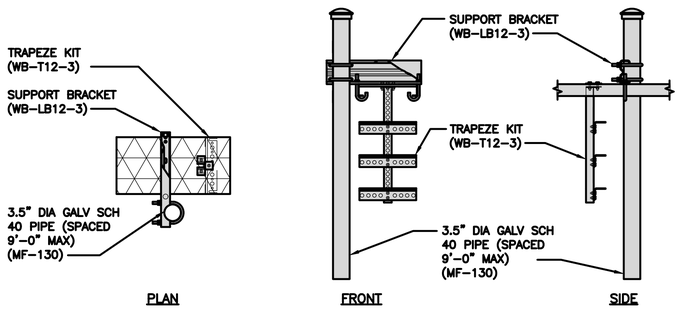
SIDE BACK FRONT

FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

COMMSCOPE WB–K110–B WAVEGUIDE BRIDGE KIT

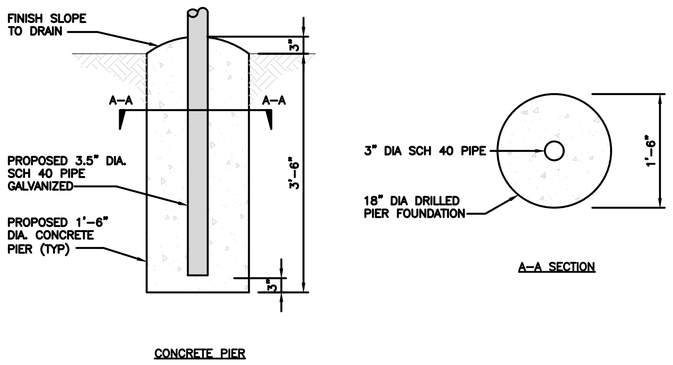
DIMENSIONS (HxL)	160"x10'
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

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



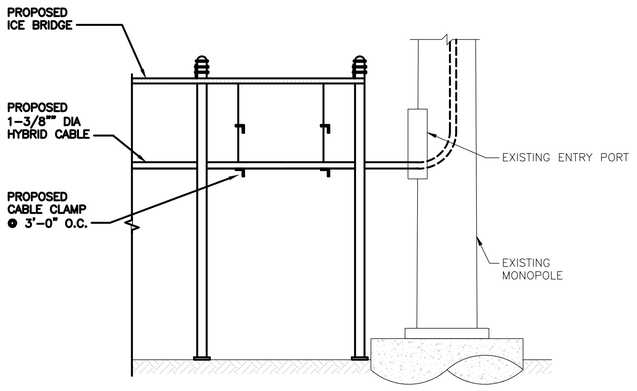
PLAN FRONT SIDE

ICE BRIDGE DETAIL | NO SCALE | 7



CONCRETE PIER A–A SECTION

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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LITTLETON, CO 80120

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CANONSBURG, PA 15317

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WINDSOR LOCKS, CT 06096

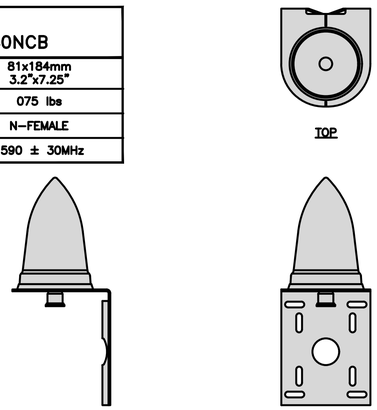
SHEET TITLE

EQUIPMENT DETAILS

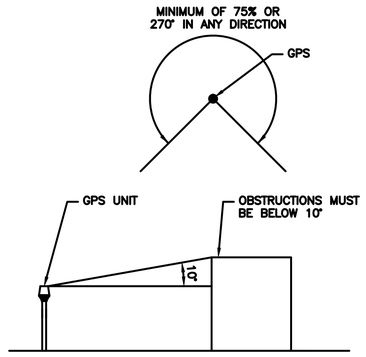
SHEET NUMBER

A-4

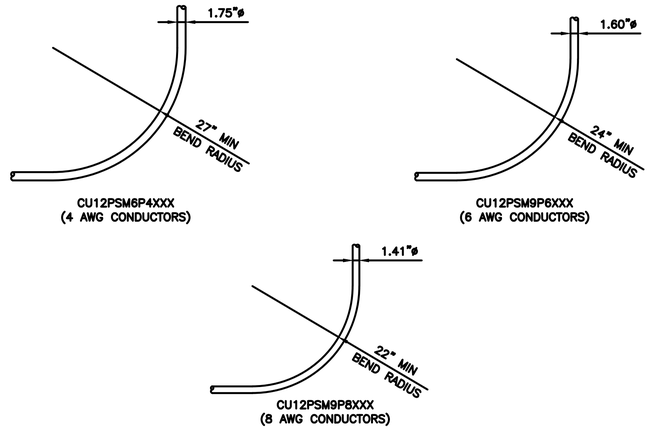
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



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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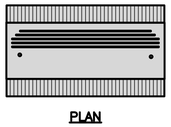
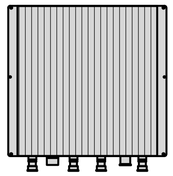
SHEET TITLE
EQUIPMENT DETAILS

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



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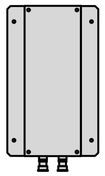
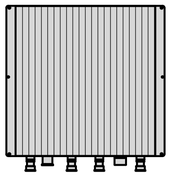


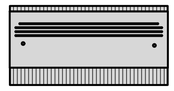
SIDE



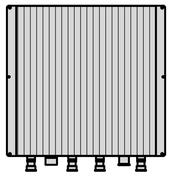
FRONT

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



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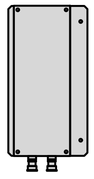
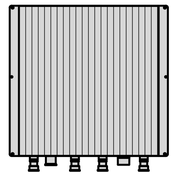


SIDE

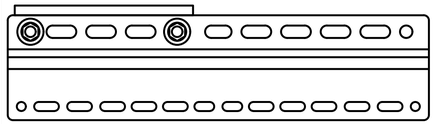


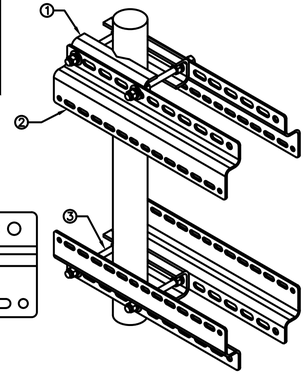
FRONT

RRH DETAIL | NO SCALE | 2

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

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



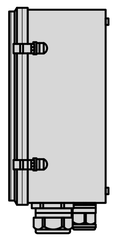


NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

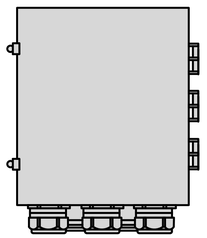
RRH MOUNT DETAIL | NO SCALE | 3

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

PLAN



SIDE



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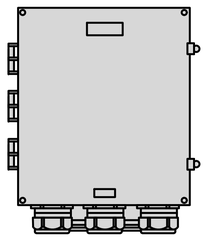
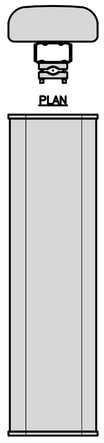


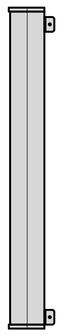
FRONT

SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 4

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



PLAN

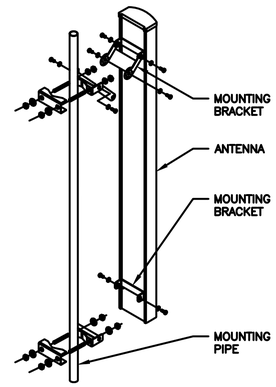


SIDE

FRONT

ANTENNA DETAIL | NO SCALE | 5

M04 MOUNTING BRACKET HPA-33R-BUU-H4-K	
WIDTH	5"
DEPTH	2"
HEIGHT	8"
TOTAL WEIGHT	1.5 lbs
HOUSING MATERIAL	ASA/ABS/ALUMINUM
RADOME COLOR	LIGHT GRAY
CONNECTOR	1x8-PIN DAISY CHAIN



NOTE:
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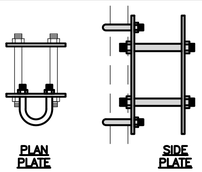
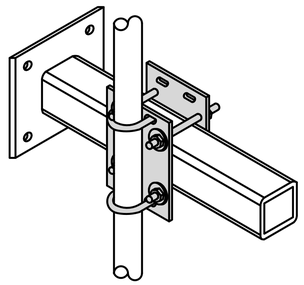
APPROVED EQUIVALENT

ANTENNA MOUNTING DETAIL | NO SCALE | 6

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

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

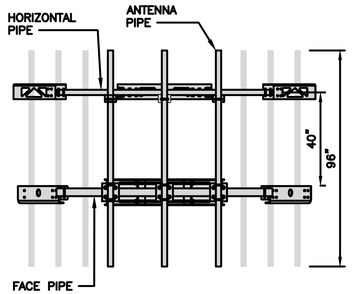


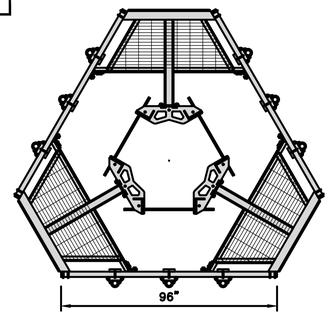


RRH/OVP MOUNT DETAIL | NO SCALE | 7

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 | 8

NOT USED | NO SCALE | 9

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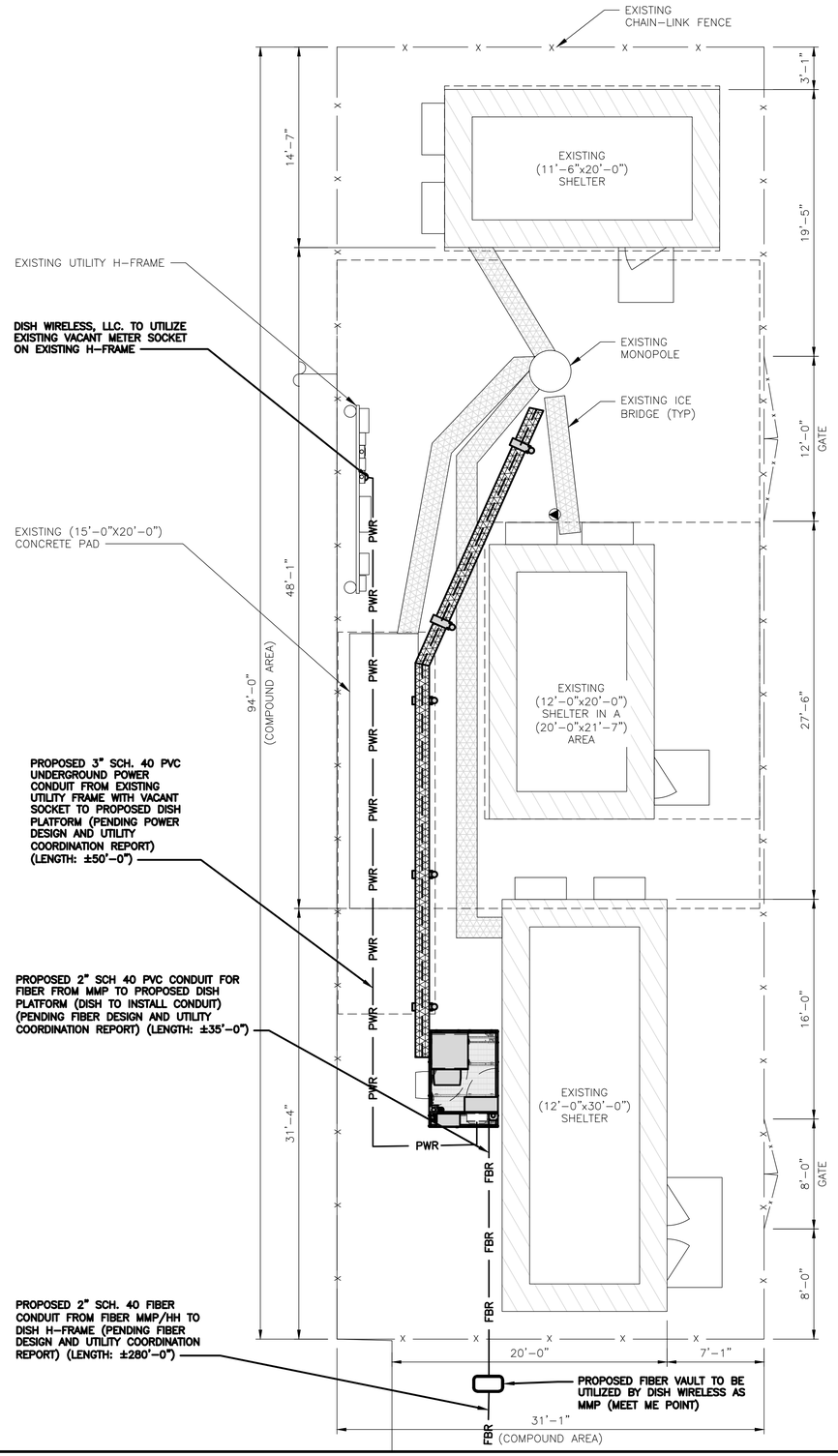


NOTES

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

UTILITY ROUTE PLAN

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

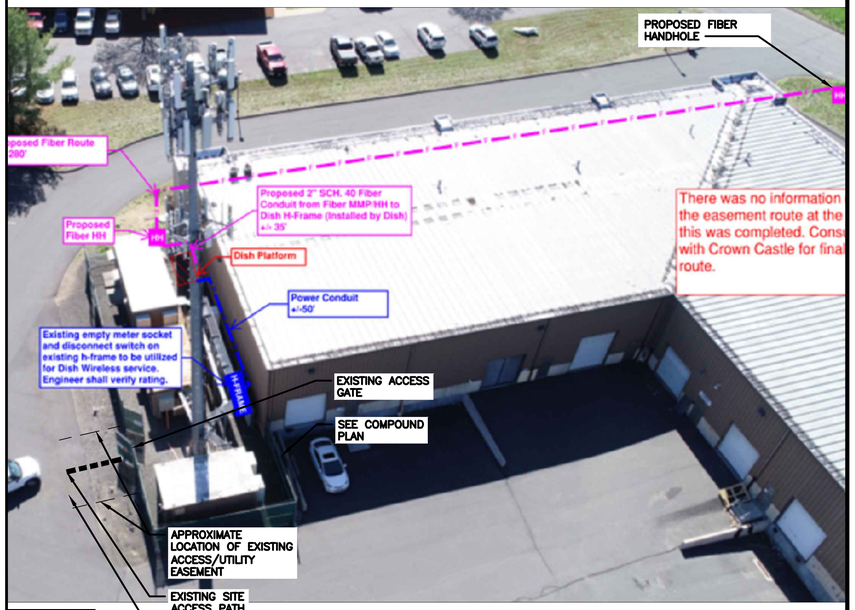
1

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

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

ELECTRICAL NOTES

2



OVERALL UTILITY ROUTE PLAN

30' 20' 10' 0 30' 60'
1"=30'

3

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SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER

12/01/2021

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

RFDS REV #: N/A

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A&E PROJECT NUMBER
2039-Z5555C

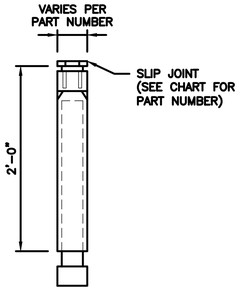
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL00069A
1000 OLD COUNTY CIRCLE
WINDSOR LOCKS, CT 06096

SHEET TITLE
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER
E-1

CARLON EXPANSION FITTINGS

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

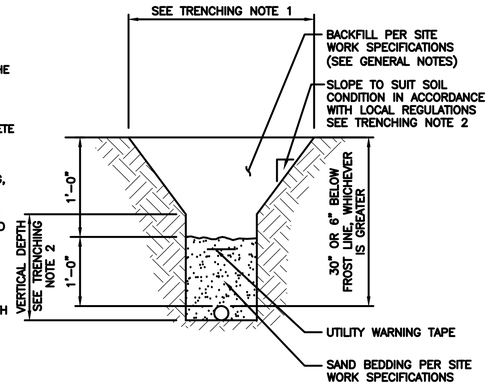


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

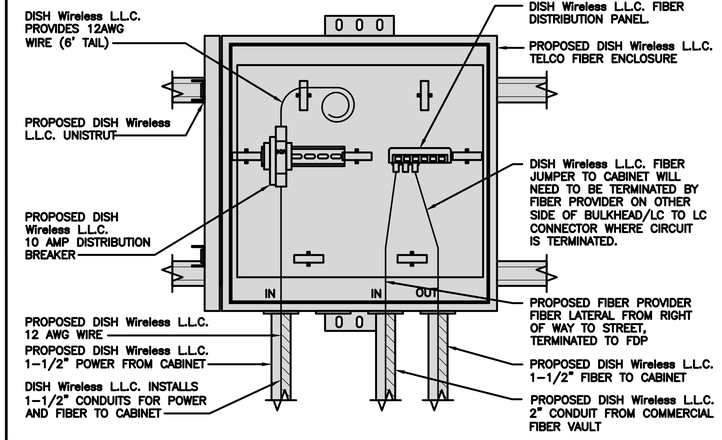
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

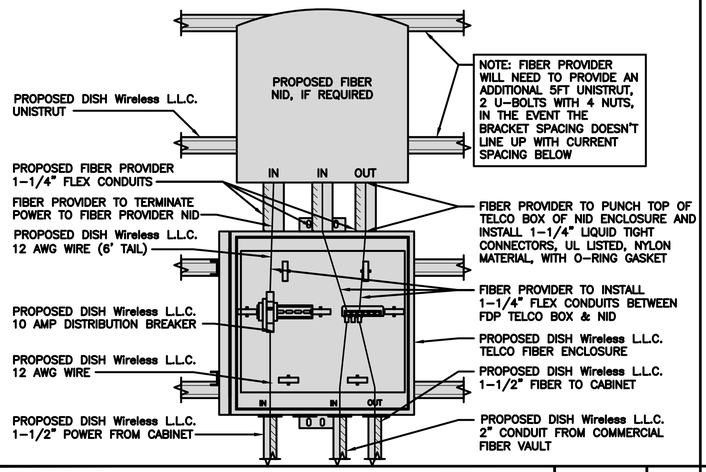
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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



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

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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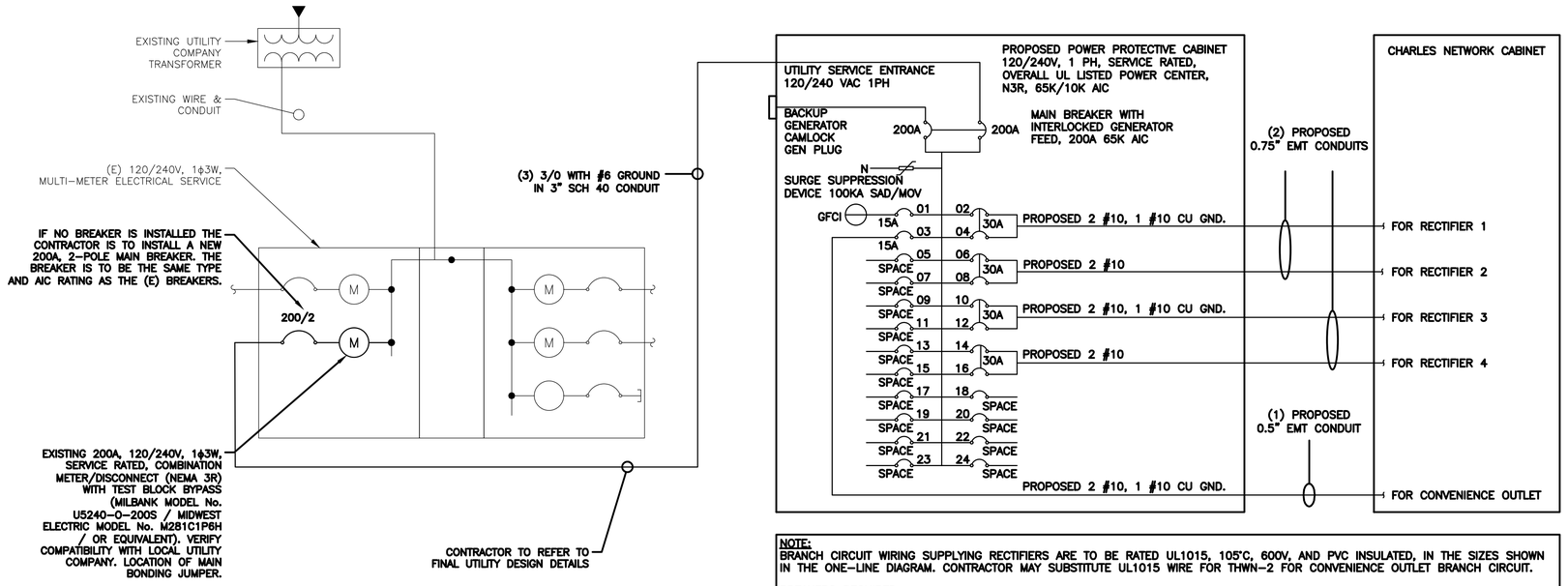
WINDSOR LOCKS, CT 06096

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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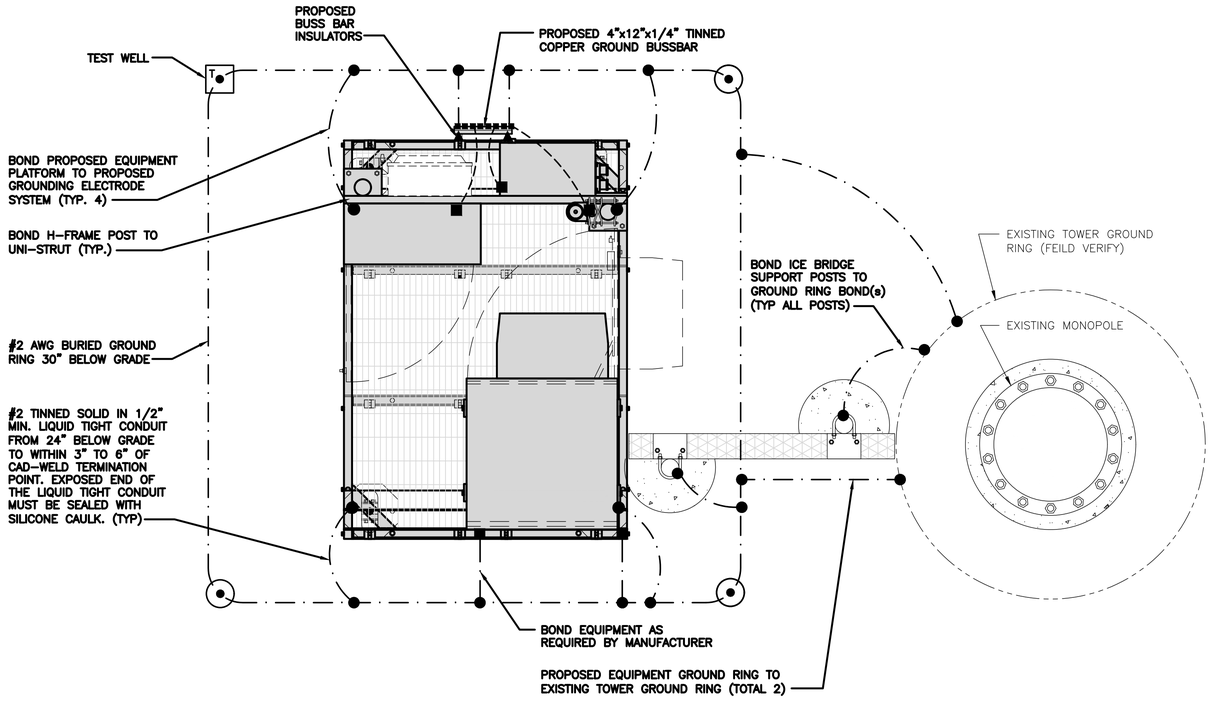
1000 OLD COUNTY CIRCLE
WINDSOR LOCKS, CT 06096

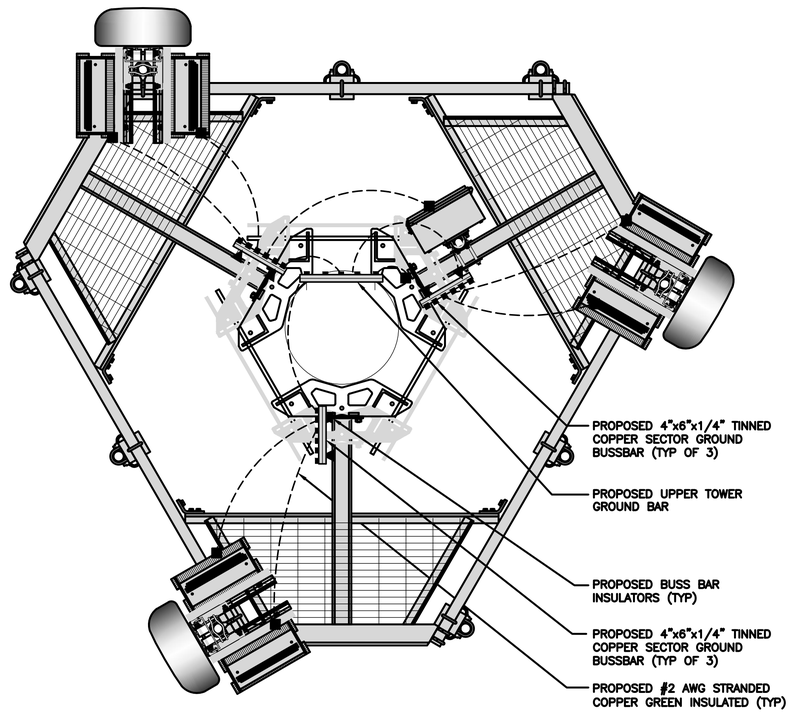
SHEET TITLE
ELECTRICAL ONE-LINE, FAULT CALCS & PANEL SCHEDULE

SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE | 1



NO SCALE | 2

NOTES

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

- 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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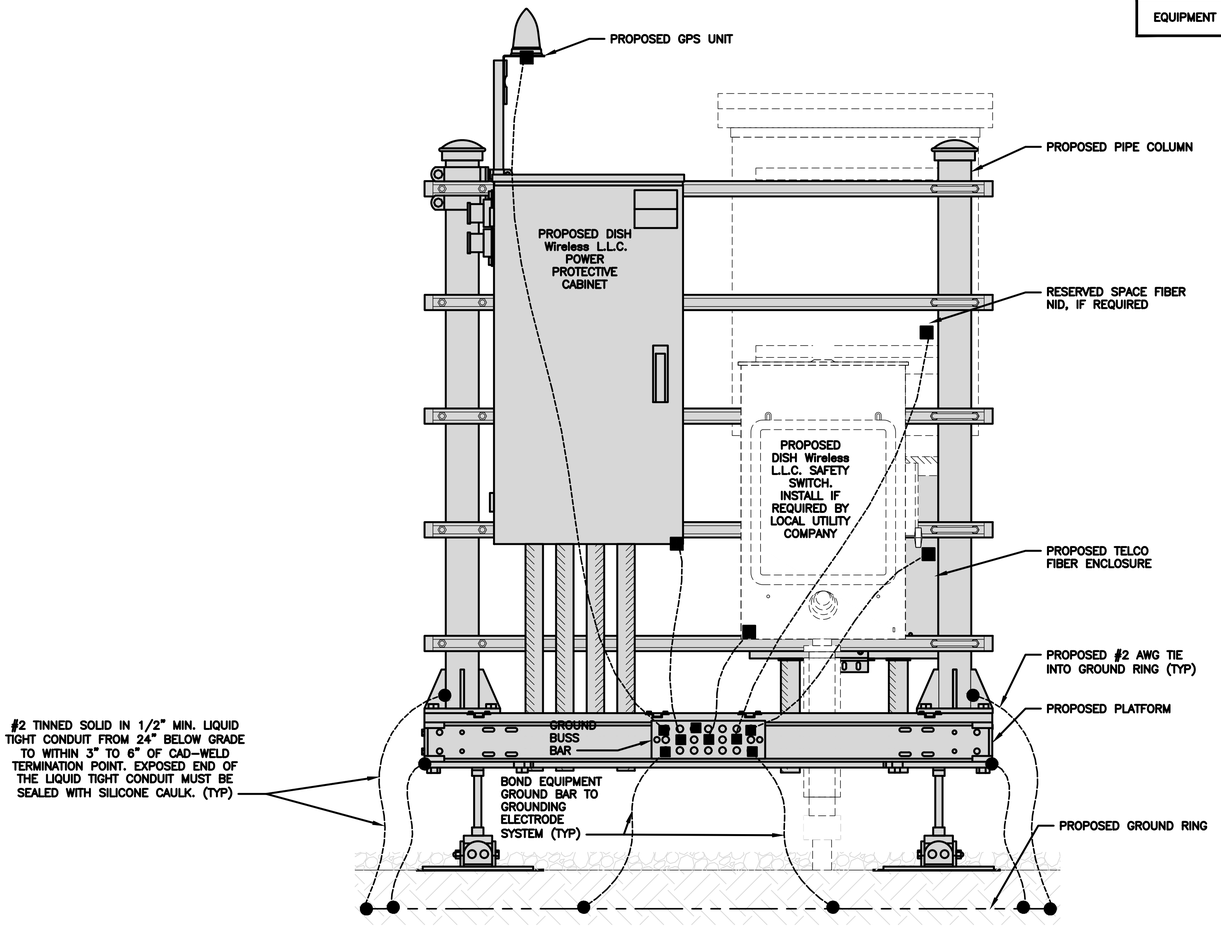
WINDSOR LOCKS, CT 06096

SHEET TITLE
GROUNDING PLANS AND NOTES

SHEET NUMBER
G-1

NOTES

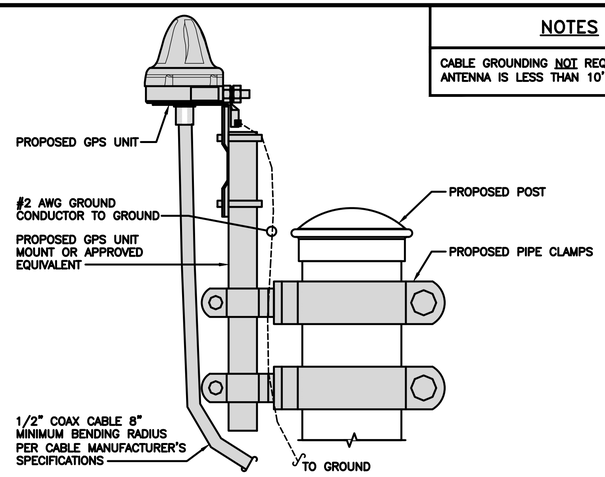
EQUIPMENT CABINET OMITTED FOR CLARITY



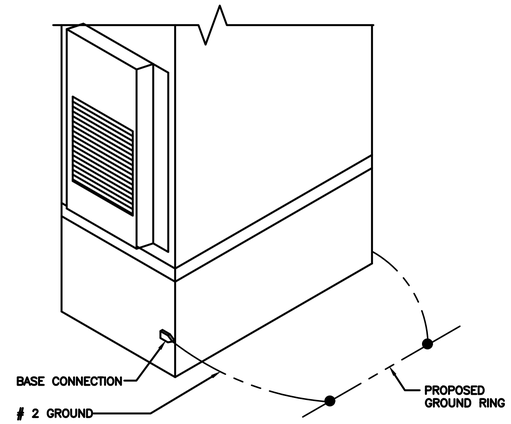
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

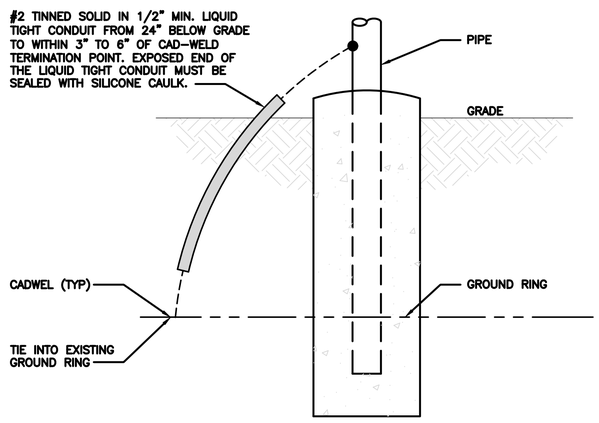
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



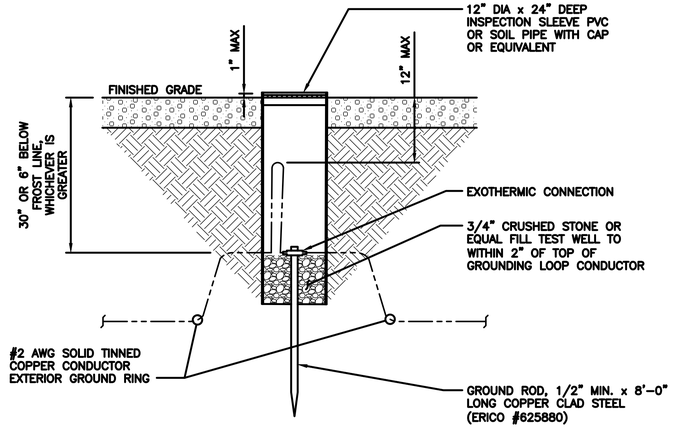
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



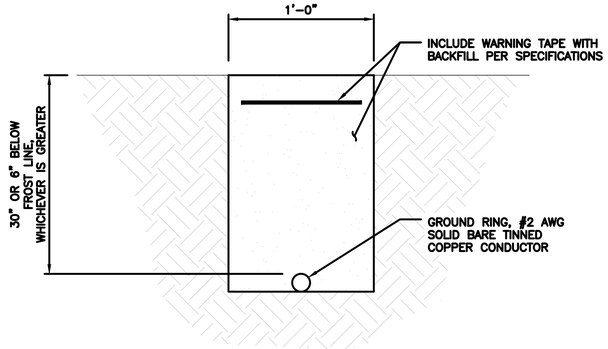
OUTDOOR CABINET GROUNDING | NO SCALE | 3



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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A	09/03/2021	ISSUED FOR REVIEW
0	12/01/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00069A
1000 OLD COUNTY CIRCLE
WINDSOR LOCKS, CT 06096

SHEET TITLE

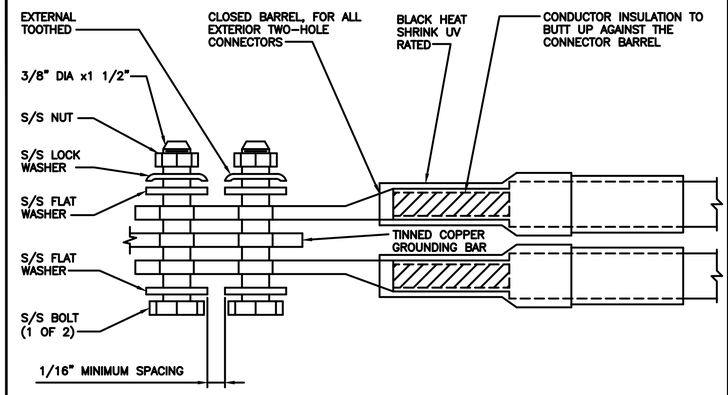
GROUNDING DETAILS

SHEET NUMBER

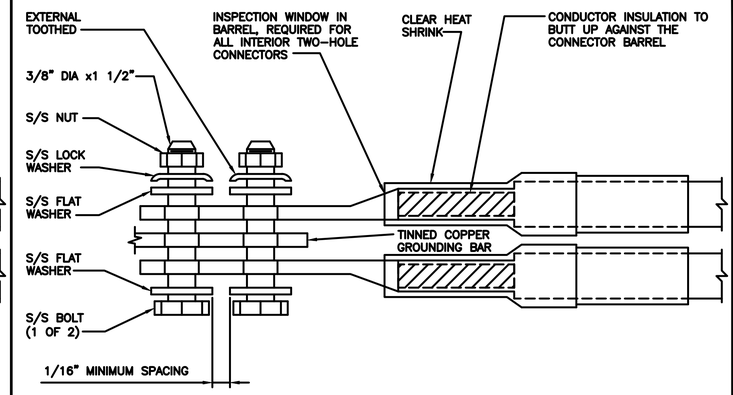
G-2

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).

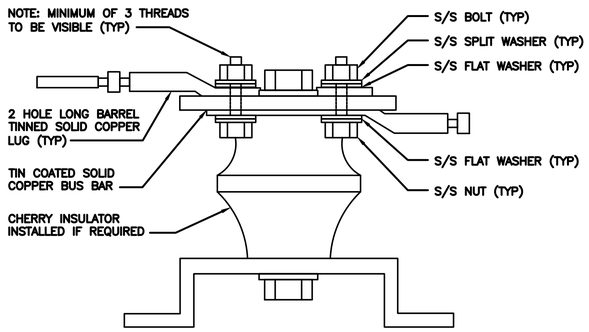
TYPICAL GROUNDING NOTES | NO SCALE | 1



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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STATE OF CONNECTICUT
SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
12/01/2021

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

RFDS REV #: N/A

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SHEET TITLE
GROUNDING DETAILS

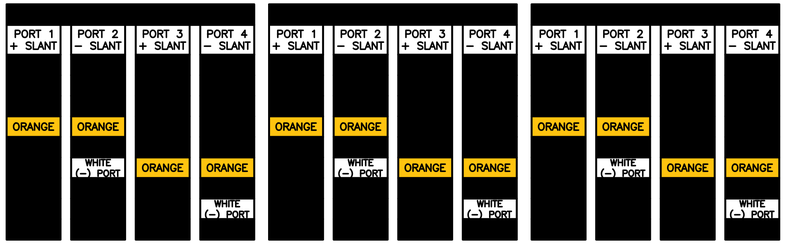
SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

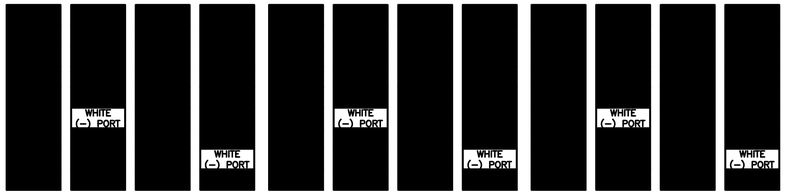
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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)

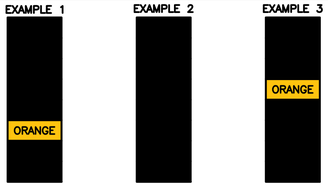


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

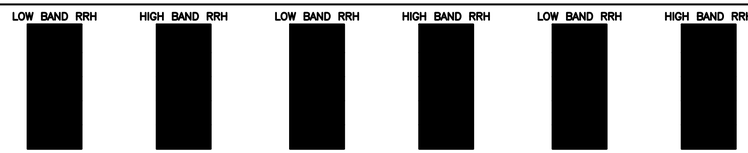
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS
ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

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



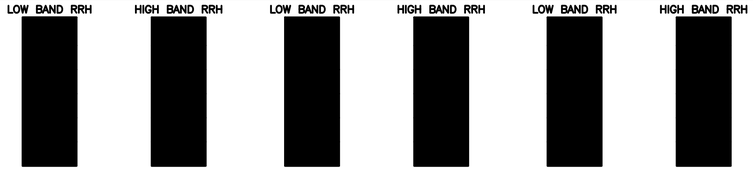
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

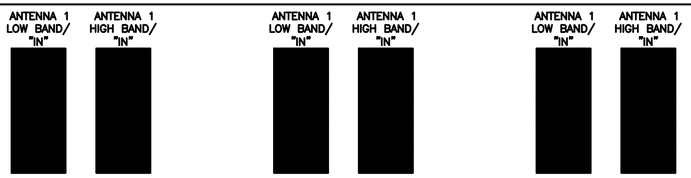


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY



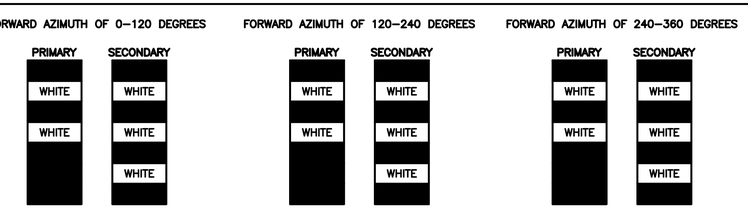
RET MOTORS AT ANTENNAS



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)

CBRS TECH
(3 GHz)

NEGATIVE SLANT PORT
ON ANT/RRH
WHITE

ALPHA SECTOR

BETA SECTOR

GAMMA SECTOR

COLOR IDENTIFIER	NO SCALE	2

NOT USED	NO SCALE	3

NOT USED	NO SCALE	4

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SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

LEGEND

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM — T

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE — T

SINGLE POLE SWITCH — $

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE — GFCI

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

SMOKE DETECTION (DC) — SD

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE — X — X — X — X

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE — W — W — W — W — W

UNDERGROUND POWER — UGP — UGP — UGP — UGP — UGP

UNDERGROUND TELCO — UGT — UGT — UGT — UGT — UGT

OVERHEAD POWER — OHP — OHP — OHP — OHP

OVERHEAD TELCO — OHT — OHT — OHT — OHT

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

ABOVE GROUND POWER — AGP — AGP — AGP — AGP — AGP

ABOVE GROUND TELCO — AGT — AGT — AGT — AGT — AGT

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

WORKPOINT — W.P.

SECTION REFERENCE — XX / X–X

DETAIL REFERENCE — XX / X–X

ABBREVIATIONS

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

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WINDSOR LOCKS, CT 06096

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.

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SHUHEI SAKAMOTO
34916
LICENSED PROFESSIONAL ENGINEER
12/01/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER

2039–Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00069A
1000 OLD COUNTY CIRCLE
WINDSOR LOCKS, CT 06096

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

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

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

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

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

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

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

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

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

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

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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SHUHEI SAKANOUE
34916
LICENSED PROFESSIONAL ENGINEER
12/01/2021

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

RFDS REV #: N/A

CONSTRUCTION DOCUMENTS

SUBMITTALS

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A	09/03/2021	ISSUED FOR REVIEW
0	12/01/2021	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER

2039-Z5555C

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00069A
1000 OLD COUNTY CIRCLE
WINDSOR LOCKS, CT 06096

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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WINDSOR LOCKS, CT 06096

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

Exhibit D

Structural Analysis Report

Date: **September 07, 2021**

Crown Castle
2000 Corporate Drive
Canonsburg. PA 15317
(724) 416-2000

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate**	
	Site Number:	BOBDL00069A
	Site Name:	CT-CCI-T-842876
Crown Castle Designation:	**BU Number:**	842876
	Site Name:	WINDSOR LOCKS
	JDE Job Number:	650060
	Work Order Number:	1972637
	Order Number:	556623 Rev. 1
Engineering Firm Designation:	**Crown Castle Project Number:**	1972637

Site Data: **1000 OLD COUNTY CIRCLE, WINDSOR LOCKS, HARTFORD County, CT**
Latitude *41° 54' 36.88"*, Longitude *-72° 39' 42.43"*
101 Foot - Monopole Tower

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity-73.8%**

This analysis utilizes an ultimate 3-second gust wind speed of 116 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Kibreab Gebremariam

Respectfully submitted by:

Maribel Dentinger
Maribel Dentinger, P.E.
Senior Project Engineer

Maribel Dentinger
Digitally signed by Maribel Dentinger
Date: 2021.09.09 17:25:55 -04'00'

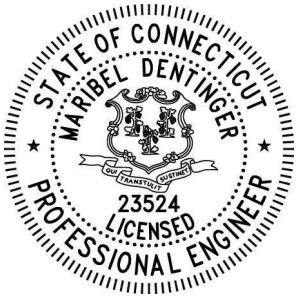


TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 101 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC..

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	116 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
75.0	75.0	3	fujitsu	TA08025-B604	1	1-3/8
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
93.0	97.0	1	raycap	DC6-48-60-18-8F	1 2 1 12	3/8 3/4 1/8 7/8
	95.0	1	andrew	SBNH-1D6565C w/ Mount Pipe		
		6	ericsson	RRUS 11		
		1	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe		
		6	powerwave technologies	7770.00 w/ Mount Pipe		
		1	powerwave technologies	P65-17-XLH-RR w/ Mount Pipe		
	94.0	12	powerwave technologies	LGP21401		
	93.0	1	tower mounts	Platform Mount [LP 601-1]		
86.0	86.0	1	tower mounts	Platform Mount [LP 601-1]	8	1-5/8
	85.0	2	antel	BXA-70080-4CF-2 w/ Mount Pipe		
		1	antel	BXA-80063-4CF-EDIN-2 w/ Mount Pipe		
		6	commscope	NHH-65B-R2B w/ Mount Pipe		
		2	raycap	RXXDC-3315-PF-48		
		3	samsung telecommunications	RFV01U-D1A		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		3	samsung telecommunications	RFV01U-D2A		
		3	vzw	Sub6 Antenna - VZS01 w/ Mount Pipe		
63.0	65.0	3	ericsson	KRY 112 144/1	11 3	7/8 1-5/8
		3	ericsson	KRY 112 489/2		
		3	ericsson	RADIO 4449 B12/B71		
		3	rfs celwave	APX16DWV-16DWV-S-E-ACU w/ Mount Pipe		
		3	rfs celwave	APXV18-206516S-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
	63.0	1	tower mounts	Platform Mount [LP 303-1_KCKR-HR-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	4291693	CCISITES
4-POST-MODIFICATION INSPECTION	9775854	CCISITES
4-POST-MODIFICATION INSPECTION	6740106	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	4713155	CCISITES
4-TOWER MANUFACTURER DRAWINGS	4713154	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	8507095	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	4964607	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

3.2) Assumptions

1) Tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	101 - 83.62	Pole	TP17.41x13x0.188	1	-3.156	604.070	15.2	Pass
L2	83.62 - 45.58	Pole	TP26.56x16.337x0.25	2	-16.018	1235.461	64.9	Pass
L3	45.58 - 0	Pole	TP37.5x25.098x0.313	3	-25.123	2265.679	68.1	Pass
							Summary	
						Pole (L3)	68.1	Pass
						Rating =	68.1	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	39.2	Pass
1	Base Plate	0	73.8	Pass
1	Base Foundation (Structure)	0	43.8	Pass
1	Base Foundation (Soil Interaction)	0	32.4	Pass

Structure Rating (max from all components) =	73.8%

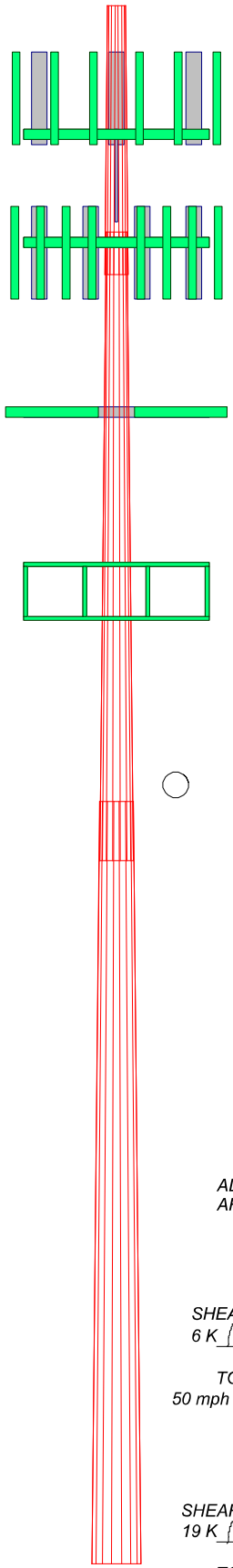
4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3					
Length (ft)	17.380	40.790	49.420					
Number of Sides	18	18	18					
Thickness (in)	0.188	0.250	0.313					
Socket Length (ft)	2.750	3.840						
Top Dia (in)	13.000	16.337	25.098					
Bot Dia (in)	17.410	26.560	37.500					
Grade	A572-65							
Weight (K)	0.5	2.3	5.2					8.0



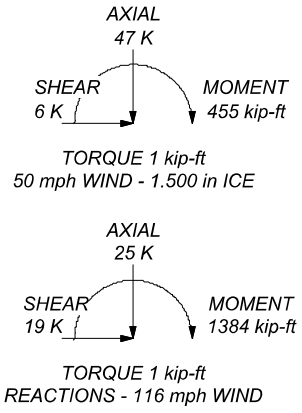
MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 116 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 68.1%

ALL REACTIONS ARE FACTORED



CROWN CASTLE
The pathway to Possible

Crown Castle
2000 Corporate Drive
Canonsburg. PA 15317
Phone: (724) 416-2000
FAX:

Job: **BU# 842876**			
Project:			
Client: Crown Castle	Drawn by: KGebremariam		App'd:
Code: TIA-222-H	Date: 09/07/21		Scale: NTS
Path: C:\Users\KGebremariam\Desktop\Work Area\842876\WO 1972637 - SA\Prod\842876.eri			Dwg No. E-1

Tower Input Data

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

- Tower is located in Hartford County, Connecticut.
- Tower base elevation above sea level: 148.000 ft.
- Basic wind speed of 116 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.000 ft.
- Nominal ice thickness of 1.500 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.000 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50.000 °F.
- Deflections calculated using a wind speed of 60 mph.
- TIA-222-H Annex S.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	101.000-83.620	17.380	2.750	18	13.000	17.410	0.188	0.750	A572-65 (65 ksi)
L2	83.620-45.580	40.790	3.840	18	16.337	26.560	0.250	1.000	A572-65 (65 ksi)
L3	45.580-0.000	49.420		18	25.098	37.500	0.313	1.250	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	13.172	7.625	158.142	4.548	6.604	23.946	316.492	3.813	1.958	10.443
	17.650	10.250	384.091	6.114	8.844	43.428	768.688	5.126	2.734	14.582
L2	17.251	12.765	417.376	5.711	8.299	50.290	835.300	6.384	2.435	9.741
	26.931	20.877	1825.774	9.340	13.492	135.318	3653.950	10.440	4.235	16.938
L3	26.415	24.584	1907.952	8.799	12.750	149.648	3818.415	12.294	3.867	12.375
	38.030	36.885	6444.442	13.202	19.050	338.291	12897.364	18.446	6.050	19.36

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 101.000-83.620				1	1	1			
L2 83.620-45.580				1	1	1			
L3 45.580-0.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
*										
LDF5-50A(7/8")	A	No	Surface Ar (CaAa)	63.000 - 0.000	9	5	0.000 0.200	1.090		0.000
HCS 6X12 4AWG(1-5/8)	A	No	Surface Ar (CaAa)	63.000 - 0.000	3	3	0.200 0.330	1.660		0.002
*										
Safety Line 3/8	B	No	Surface Ar (CaAa)	101.000 - 0.000	1	1	0.480 0.490	0.375		0.000
***										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
1266A(1/8")	C	No	No	Inside Pole	93.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
FSJ2-50(3/8")	C	No	No	Inside Pole	93.000 - 0.000	1	No Ice	0.000	0.000

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
WR-VG86T(3/4")	C	No	No	Inside Pole	93.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
AL5-50(7/8)	C	No	No	Inside Pole	93.000 - 0.000	12	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
							2" Ice	0.000	0.000
2" Rigid Conduit	C	No	No	Inside Pole	93.000 - 0.000	1	No Ice	0.000	0.003
							1/2" Ice	0.000	0.003
							1" Ice	0.000	0.003
							2" Ice	0.000	0.003
*									
HJ7-50A(1-5/8)	B	No	No	Inside Pole	86.000 - 0.000	6	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
HB158-1-08U8-S8J18(1-5/8)	B	No	No	Inside Pole	86.000 - 0.000	2	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
							2" Ice	0.000	0.001
*									
CU12PSM9P8XXX (1-3/8)	C	No	No	Inside Pole	75.000 - 0.000	1	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
							2" Ice	0.000	0.002
***									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	101.000-83.620	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.652	0.000	0.025
		C	0.000	0.000	0.000	0.000	0.067
L2	83.620-45.580	A	0.000	0.000	18.169	0.000	0.177
		B	0.000	0.000	1.427	0.000	0.345
		C	0.000	0.000	0.000	0.000	0.323
L3	45.580-0.000	A	0.000	0.000	47.540	0.000	0.464
		B	0.000	0.000	1.709	0.000	0.413
		C	0.000	0.000	0.000	0.000	0.404

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	101.000-83.620	A	1.412	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	5.562	0.000	0.078
		C		0.000	0.000	0.000	0.000	0.067
L2	83.620-45.580	A	1.361	0.000	0.000	35.014	0.000	0.529
		B		0.000	0.000	12.173	0.000	0.462
		C		0.000	0.000	0.000	0.000	0.323
L3	45.580-0.000	A	1.226	0.000	0.000	90.448	0.000	1.346
		B		0.000	0.000	14.118	0.000	0.545

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	0.000	0.000	0.404

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	101.000-83.620	0.264	0.142	1.025	0.550
L2	83.620-45.580	-1.882	-2.495	-1.022	-1.822
L3	45.580-0.000	-3.381	-4.356	-2.374	-3.454

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	16	Safety Line 3/8	83.62 - 101.00	1.0000	1.0000
L2	13	LDF5-50A(7/8")	45.58 - 63.00	1.0000	1.0000
L2	14	HCS 6X12 4AWG(1-5/8)	45.58 - 63.00	1.0000	1.0000
L2	16	Safety Line 3/8	45.58 - 83.62	1.0000	1.0000
L3	13	LDF5-50A(7/8")	0.00 - 45.58	1.0000	1.0000
L3	14	HCS 6X12 4AWG(1-5/8)	0.00 - 45.58	1.0000	1.0000
L3	16	Safety Line 3/8	0.00 - 45.58	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	93.000
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	93.000
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	93.000
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	93.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
P65-17-XLH-RR w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	93.000
SBNH-1D6565C w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	93.000
(4) LGP21401	A	From Leg	4.000 0.000 1.000	0.000	93.000
(4) LGP21401	B	From Leg	4.000 0.000 1.000	0.000	93.000
(4) LGP21401	C	From Leg	4.000 0.000 1.000	0.000	93.000
(2) RRUS 11	A	From Leg	4.000 0.000 2.000	0.000	93.000
(2) RRUS 11	B	From Leg	4.000 0.000 2.000	0.000	93.000
(2) RRUS 11	C	From Leg	4.000 0.000 2.000	0.000	93.000
DC6-48-60-18-8F	B	From Leg	2.000 0.000 4.000	0.000	93.000
3' x 2" Pipe Mount	B	From Leg	4.000 0.000 2.000	0.000	93.000
6' x 2" Mount Pipe	B	From Leg	1.000 0.000 2.000	0.000	93.000
6' x 2" Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	93.000
6' x 2" Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	93.000
6' x 2" Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	93.000
(3) 6' x 2" Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	93.000
(3) 6' x 2" Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	93.000
(3) 6' x 2" Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	93.000
Platform Mount [LP 601-1]	C	None		0.000	93.000
Climbing Ladder (Flat)	A	From Leg	3.000 0.000 -3.000	0.000	93.000
*					
BXA-70080-4CF-2 w/ Mount Pipe	A	From Leg	4.000 0.000 -1.000	0.000	86.000
BXA-80063-4CF-EDIN-2 w/ Mount Pipe	B	From Leg	4.000 0.000 -1.000	0.000	86.000
BXA-70080-4CF-2 w/ Mount Pipe	C	From Leg	4.000 0.000 -1.000	0.000	86.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
RXXDC-3315-PF-48	A	From Leg	4.000 0.000 -1.000	0.000	86.000
RXXDC-3315-PF-48	C	From Leg	2.000 0.000 -1.000	0.000	86.000
(2) NHH-65B-R2B w/ Mount Pipe	A	From Leg	4.000 0.000 -1.000	0.000	86.000
(2) NHH-65B-R2B w/ Mount Pipe	B	From Leg	4.000 0.000 -1.000	0.000	86.000
(2) NHH-65B-R2B w/ Mount Pipe	C	From Leg	4.000 0.000 -1.000	0.000	86.000
Sub6 Antenna - VZS01 w/ Mount Pipe	A	From Leg	4.000 0.000 -1.000	0.000	86.000
Sub6 Antenna - VZS01 w/ Mount Pipe	B	From Leg	4.000 0.000 -1.000	0.000	86.000
Sub6 Antenna - VZS01 w/ Mount Pipe	C	From Leg	4.000 0.000 -1.000	0.000	86.000
RFV01U-D1A	A	From Leg	4.000 0.000 -1.000	0.000	86.000
RFV01U-D1A	B	From Leg	4.000 0.000 -1.000	0.000	86.000
RFV01U-D1A	C	From Leg	4.000 0.000 -1.000	0.000	86.000
RFV01U-D2A	A	From Leg	4.000 0.000 -1.000	0.000	86.000
RFV01U-D2A	B	From Leg	4.000 0.000 -1.000	0.000	86.000
RFV01U-D2A	C	From Leg	4.000 0.000 -1.000	0.000	86.000
5' x 2' Pipe Mount	C	From Leg	1.000 0.000 0.000	0.000	86.000
Platform Mount [LP 601-1] * * ** *	C	None		0.000	86.000
Commscope MC-PK8-DSH	C	None		0.000	75.000
(2) 8' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	75.000
(2) 8' x 2" Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	75.000
(2) 8' x 2" Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	75.000
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	75.000
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.000 0.000	0.000	75.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
MX08FRO665-21 w/ Mount Pipe	C	From Leg	0.000 4.000 0.000	0.000	75.000
TA08025-B604	A	From Leg	0.000 4.000 0.000	0.000	75.000
TA08025-B604	B	From Leg	0.000 4.000 0.000	0.000	75.000
TA08025-B604	C	From Leg	0.000 4.000 0.000	0.000	75.000
TA08025-B605	A	From Leg	0.000 4.000 0.000	0.000	75.000
TA08025-B605	B	From Leg	0.000 4.000 0.000	0.000	75.000
TA08025-B605	C	From Leg	0.000 4.000 0.000	0.000	75.000
RDIDC-9181-PF-48	A	From Leg	0.000 4.000 0.000	0.000	75.000
****					
APX16DWV-16DWV-S-E-ACU w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	63.000
APX16DWV-16DWV-S-E-ACU w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	63.000
APX16DWV-16DWV-S-E-ACU w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	63.000
APXV18-206516S-C-A20 w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	63.000
APXV18-206516S-C-A20 w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	63.000
APXV18-206516S-C-A20 w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	63.000
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	63.000
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	63.000
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	63.000
(3) KRY 112 144/1	A	From Leg	4.000 0.000 2.000	0.000	63.000
(3) KRY 112 489/2	B	From Leg	4.000 0.000 2.000	0.000	63.000
RADIO 4449 B12/B71	A	From Leg	4.000 0.000 2.000	0.000	63.000
RADIO 4449 B12/B71	B	From Leg	4.000 0.000 2.000	0.000	63.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
RADIO 4449 B12/B71	C	From Leg	4.000 0.000 2.000	0.000	63.000
6' x 2" Horizontal Mount Pipe	A	From Leg	2.000 0.000 2.000	0.000	63.000
6' x 2" Horizontal Mount Pipe	B	From Leg	2.000 0.000 2.000	0.000	63.000
6' x 2" Horizontal Mount Pipe	C	From Leg	2.000 0.000 2.000	0.000	63.000
6' x 2" Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	63.000
6' x 2" Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	63.000
6' x 2" Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	63.000
Platform Mount [LP 303-1_KCKR-HR-1] ****	C	None		0.000	63.000

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	101 - 83.62	Pole	Max Tension	2	0.000	0.000	-0.000
			Max. Compression	26	-8.970	-0.493	-0.192
			Max. Mx	8	-3.161	-37.641	0.120
			Max. My	2	-3.156	-0.280	37.707
			Max. Vy	8	5.008	-37.641	0.120
			Max. Vx	2	-5.034	-0.280	37.707
			Max. Torque	11			0.603
L2	83.62 - 45.58	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.203	-0.270	1.123
			Max. Mx	8	-16.026	-506.615	0.733
			Max. My	2	-16.018	-0.464	508.880
			Max. Vy	20	-16.571	506.312	0.098
			Max. Vx	2	-16.634	-0.464	508.880
			Max. Torque	21			-0.899
L3	45.58 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.045	1.361	2.288
			Max. Mx	20	-25.123	1378.663	0.519
			Max. My	2	-25.123	0.202	1383.979
			Max. Vy	20	-18.652	1378.663	0.519
			Max. Vx	2	-18.711	0.202	1383.979
			Max. Torque	23			-0.896

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	47.045	-0.005	5.855
	Max. H_x	20	25.147	18.620	-0.000
	Max. H_z	2	25.147	-0.000	18.679
	Max. M_x	2	1383.979	-0.000	18.679
	Max. M_z	8	1377.594	-18.620	0.000
	Max. Torsion	11	0.892	-16.125	-9.339
	Min. Vert	11	18.860	-16.125	-9.339
	Min. H_x	8	25.147	-18.620	0.000
	Min. H_z	14	25.147	0.000	-18.679
	Min. M_x	14	-1382.256	0.000	-18.679

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. M_z	20	-1378.663	18.620	-0.000
	Min. Torsion	23	-0.893	16.125	9.339

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	20.956	0.000	0.000	-0.682	0.440	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	25.147	0.000	-18.679	-1383.979	0.202	0.243
0.9 Dead+1.0 Wind 0 deg - No Ice	18.860	0.000	-18.679	-1366.739	0.074	0.245
1.2 Dead+1.0 Wind 30 deg - No Ice	25.147	9.310	-16.176	-1198.856	-688.814	-0.233
0.9 Dead+1.0 Wind 30 deg - No Ice	18.860	9.310	-16.176	-1183.884	-680.462	-0.232
1.2 Dead+1.0 Wind 60 deg - No Ice	25.147	16.244	-9.408	-694.276	-1195.824	-0.646
0.9 Dead+1.0 Wind 60 deg - No Ice	18.860	16.244	-9.408	-685.526	-1181.253	-0.647
1.2 Dead+1.0 Wind 90 deg - No Ice	25.147	18.620	-0.000	-1.190	-1377.594	-0.887
0.9 Dead+1.0 Wind 90 deg - No Ice	18.860	18.620	-0.000	-0.959	-1360.768	-0.888
1.2 Dead+1.0 Wind 120 deg - No Ice	25.147	16.125	9.339	690.427	-1192.786	-0.890
0.9 Dead+1.0 Wind 120 deg - No Ice	18.860	16.125	9.339	682.144	-1178.238	-0.892
1.2 Dead+1.0 Wind 150 deg - No Ice	25.147	9.310	16.176	1196.805	-688.228	-0.655
0.9 Dead+1.0 Wind 150 deg - No Ice	18.860	9.310	16.176	1182.289	-679.891	-0.657
1.2 Dead+1.0 Wind 180 deg - No Ice	25.147	-0.000	18.679	1382.256	0.873	-0.245
0.9 Dead+1.0 Wind 180 deg - No Ice	18.860	-0.000	18.679	1365.465	0.730	-0.246
1.2 Dead+1.0 Wind 210 deg - No Ice	25.147	-9.310	16.176	1197.134	689.881	0.233
0.9 Dead+1.0 Wind 210 deg - No Ice	18.860	-9.310	16.176	1182.612	681.260	0.232
1.2 Dead+1.0 Wind 240 deg - No Ice	25.147	-16.244	9.408	692.562	1196.888	0.647
0.9 Dead+1.0 Wind 240 deg - No Ice	18.860	-16.244	9.408	684.259	1182.049	0.648
1.2 Dead+1.0 Wind 270 deg - No Ice	25.147	-18.620	0.000	-0.519	1378.663	0.889
0.9 Dead+1.0 Wind 270 deg - No Ice	18.860	-18.620	0.000	-0.303	1361.568	0.890
1.2 Dead+1.0 Wind 300 deg - No Ice	25.147	-16.125	-9.339	-692.137	1193.864	0.891
0.9 Dead+1.0 Wind 300 deg - No Ice	18.860	-16.125	-9.339	-683.408	1179.043	0.893
1.2 Dead+1.0 Wind 330 deg - No Ice	25.147	-9.310	-16.176	-1198.522	689.309	0.654
0.9 Dead+1.0 Wind 330 deg - No Ice	18.860	-9.310	-16.176	-1183.558	680.699	0.656
1.2 Dead+1.0 Ice+1.0 Temp	47.045	-0.000	-0.000	-2.288	1.361	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	47.045	0.005	-5.855	-455.069	0.829	0.097
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	47.045	2.923	-5.073	-394.702	-224.606	-0.171
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	47.045	5.058	-2.932	-229.208	-389.483	-0.394
1.2 Dead+1.0 Wind 90	47.045	5.838	-0.005	-2.933	-449.623	-0.511

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	47.045	5.053	2.924	223.493	-388.912	-0.491
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	47.045	2.915	5.069	389.398	-223.620	-0.340
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	47.045	-0.005	5.855	450.330	1.964	-0.097
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	47.045	-2.923	5.073	389.964	227.394	0.171
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	47.045	-5.058	2.932	224.475	392.270	0.394
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	47.045	-5.838	0.005	-1.798	452.413	0.511
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	47.045	-5.053	-2.924	-228.225	391.707	0.491
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	47.045	-2.915	-5.069	-394.134	226.415	0.339
Dead+Wind 0 deg - Service	20.956	0.000	-4.708	-347.007	0.361	0.065
Dead+Wind 30 deg - Service	20.956	2.347	-4.077	-300.655	-172.146	-0.056
Dead+Wind 60 deg - Service	20.956	4.094	-2.371	-174.326	-299.087	-0.162
Dead+Wind 90 deg - Service	20.956	4.693	-0.000	-0.799	-344.592	-0.225
Dead+Wind 120 deg - Service	20.956	4.064	2.354	172.359	-298.324	-0.227
Dead+Wind 150 deg - Service	20.956	2.346	4.077	299.141	-172.001	-0.169
Dead+Wind 180 deg - Service	20.956	-0.000	4.708	345.577	0.528	-0.065
Dead+Wind 210 deg - Service	20.956	-2.347	4.077	299.224	173.035	0.056
Dead+Wind 240 deg - Service	20.956	-4.094	2.371	172.895	299.975	0.162
Dead+Wind 270 deg - Service	20.956	-4.693	0.000	-0.631	345.481	0.225
Dead+Wind 300 deg - Service	20.956	-4.064	-2.354	-173.789	299.213	0.227
Dead+Wind 330 deg - Service	20.956	-2.346	-4.077	-300.571	172.890	0.169

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.000	-20.956	0.000	0.000	20.956	0.000	0.000%
2	0.000	-25.147	-18.679	-0.000	25.147	18.679	0.000%
3	0.000	-18.860	-18.679	-0.000	18.860	18.679	0.000%
4	9.310	-25.147	-16.176	-9.310	25.147	16.176	0.000%
5	9.310	-18.860	-16.176	-9.310	18.860	16.176	0.000%
6	16.244	-25.147	-9.408	-16.244	25.147	9.408	0.000%
7	16.244	-18.860	-9.408	-16.244	18.860	9.408	0.000%
8	18.620	-25.147	-0.000	-18.620	25.147	0.000	0.000%
9	18.620	-18.860	-0.000	-18.620	18.860	0.000	0.000%
10	16.125	-25.147	9.339	-16.125	25.147	-9.339	0.000%
11	16.125	-18.860	9.339	-16.125	18.860	-9.339	0.000%
12	9.310	-25.147	16.176	-9.310	25.147	-16.176	0.000%
13	9.310	-18.860	16.176	-9.310	18.860	-16.176	0.000%
14	-0.000	-25.147	18.679	0.000	25.147	-18.679	0.000%
15	-0.000	-18.860	18.679	0.000	18.860	-18.679	0.000%
16	-9.310	-25.147	16.176	9.310	25.147	-16.176	0.000%
17	-9.310	-18.860	16.176	9.310	18.860	-16.176	0.000%
18	-16.244	-25.147	9.408	16.244	25.147	-9.408	0.000%
19	-16.244	-18.860	9.408	16.244	18.860	-9.408	0.000%
20	-18.620	-25.147	0.000	18.620	25.147	-0.000	0.000%
21	-18.620	-18.860	0.000	18.620	18.860	-0.000	0.000%
22	-16.125	-25.147	-9.339	16.125	25.147	9.339	0.000%
23	-16.125	-18.860	-9.339	16.125	18.860	9.339	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
24	-9.310	-25.147	-16.176	9.310	25.147	16.176	0.000%
25	-9.310	-18.860	-16.176	9.310	18.860	16.176	0.000%
26	0.000	-47.045	0.000	0.000	47.045	0.000	0.000%
27	0.005	-47.045	-5.855	-0.005	47.045	5.855	0.000%
28	2.923	-47.045	-5.073	-2.923	47.045	5.073	0.000%
29	5.058	-47.045	-2.932	-5.058	47.045	2.932	0.000%
30	5.838	-47.045	-0.005	-5.838	47.045	0.005	0.000%
31	5.053	-47.045	2.924	-5.053	47.045	-2.924	0.000%
32	2.915	-47.045	5.068	-2.915	47.045	-5.069	0.000%
33	-0.005	-47.045	5.855	0.005	47.045	-5.855	0.000%
34	-2.923	-47.045	5.073	2.923	47.045	-5.073	0.000%
35	-5.058	-47.045	2.932	5.058	47.045	-2.932	0.000%
36	-5.838	-47.045	0.005	5.838	47.045	-0.005	0.000%
37	-5.053	-47.045	-2.924	5.053	47.045	2.924	0.000%
38	-2.915	-47.045	-5.068	2.915	47.045	5.069	0.000%
39	0.000	-20.956	-4.708	-0.000	20.956	4.708	0.000%
40	2.347	-20.956	-4.077	-2.347	20.956	4.077	0.000%
41	4.094	-20.956	-2.371	-4.094	20.956	2.371	0.000%
42	4.693	-20.956	-0.000	-4.693	20.956	0.000	0.000%
43	4.064	-20.956	2.354	-4.064	20.956	-2.354	0.000%
44	2.346	-20.956	4.077	-2.346	20.956	-4.077	0.000%
45	-0.000	-20.956	4.708	0.000	20.956	-4.708	0.000%
46	-2.347	-20.956	4.077	2.347	20.956	-4.077	0.000%
47	-4.094	-20.956	2.371	4.094	20.956	-2.371	0.000%
48	-4.693	-20.956	0.000	4.693	20.956	-0.000	0.000%
49	-4.064	-20.956	-2.354	4.064	20.956	2.354	0.000%
50	-2.346	-20.956	-4.077	2.346	20.956	4.077	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00089178
3	Yes	4	0.00000001	0.00040345
4	Yes	6	0.00000001	0.00007905
5	Yes	5	0.00000001	0.00060855
6	Yes	6	0.00000001	0.00008298
7	Yes	5	0.00000001	0.00063980
8	Yes	5	0.00000001	0.00011654
9	Yes	5	0.00000001	0.00005405
10	Yes	6	0.00000001	0.00007618
11	Yes	5	0.00000001	0.00058618
12	Yes	6	0.00000001	0.00008256
13	Yes	5	0.00000001	0.00063725
14	Yes	4	0.00000001	0.00086146
15	Yes	4	0.00000001	0.00037732
16	Yes	6	0.00000001	0.00008099
17	Yes	5	0.00000001	0.00062437
18	Yes	6	0.00000001	0.00007722
19	Yes	5	0.00000001	0.00059425
20	Yes	5	0.00000001	0.00011356
21	Yes	5	0.00000001	0.00005271
22	Yes	6	0.00000001	0.00008381
23	Yes	5	0.00000001	0.00064695
24	Yes	6	0.00000001	0.00007733
25	Yes	5	0.00000001	0.00059471
26	Yes	4	0.00000001	0.00002112
27	Yes	5	0.00000001	0.00035231
28	Yes	5	0.00000001	0.00068843
29	Yes	5	0.00000001	0.00074777
30	Yes	5	0.00000001	0.00038582
31	Yes	5	0.00000001	0.00065734
32	Yes	5	0.00000001	0.00071982
33	Yes	5	0.00000001	0.00034777

34	Yes	5	0.00000001	0.00070856
35	Yes	5	0.00000001	0.00066452
36	Yes	5	0.00000001	0.00038503
37	Yes	5	0.00000001	0.00075323
38	Yes	5	0.00000001	0.00067533
39	Yes	4	0.00000001	0.00005813
40	Yes	4	0.00000001	0.00048744
41	Yes	4	0.00000001	0.00056405
42	Yes	4	0.00000001	0.00015282
43	Yes	4	0.00000001	0.00044399
44	Yes	4	0.00000001	0.00055685
45	Yes	4	0.00000001	0.00005706
46	Yes	4	0.00000001	0.00051840
47	Yes	4	0.00000001	0.00045601
48	Yes	4	0.00000001	0.00015193
49	Yes	4	0.00000001	0.00058561
50	Yes	4	0.00000001	0.00045980

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	101 - 83.62	18.057	39	1.478	0.005
L2	86.37 - 45.58	13.549	39	1.443	0.004
L3	49.42 - 0	4.325	39	0.838	0.001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
93.000	(2) 7770.00 w/ Mount Pipe	39	15.572	1.471	0.005	14586
86.000	BXA-70080-4CF-2 w/ Mount Pipe	39	13.438	1.441	0.004	7779
75.000	Commscope MC-PK8-DSH	39	10.251	1.318	0.003	4489
63.000	APX16DWV-16DWV-S-E-ACU w/ Mount Pipe	39	7.148	1.109	0.002	3071

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	101 - 83.62	72.035	2	5.901	0.022
L2	86.37 - 45.58	54.066	2	5.763	0.017
L3	49.42 - 0	17.264	2	3.346	0.004

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
93.000	(2) 7770.00 w/ Mount Pipe	2	62.128	5.873	0.019	3771
86.000	BXA-70080-4CF-2 w/ Mount Pipe	2	53.623	5.753	0.017	2006
75.000	Commscope MC-PK8-DSH	2	40.913	5.263	0.013	1145
63.000	APX16DWV-16DWV-S-E-ACU	2	28.531	4.429	0.009	777

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
	w/ Mount Pipe					

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	101 - 83.62 (1)	TP17.41x13x0.188	17.380	0.000	0.0	9.834	-3.156	575.305	0.005
L2	83.62 - 45.58 (2)	TP26.56x16.337x0.25	40.790	0.000	0.0	20.113	-16.018	1176.630	0.014
L3	45.58 - 0 (3)	TP37.5x25.098x0.313	49.420	0.000	0.0	36.885	-25.123	2157.790	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	101 - 83.62 (1)	TP17.41x13x0.188	37.845	247.417	0.153	0.000	247.417	0.000
L2	83.62 - 45.58 (2)	TP26.56x16.337x0.25	508.880	765.004	0.665	0.000	765.004	0.000
L3	45.58 - 0 (3)	TP37.5x25.098x0.313	1383.975	1968.725	0.703	0.000	1968.725	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	101 - 83.62 (1)	TP17.41x13x0.188	5.040	172.591	0.029	0.052	249.766	0.000
L2	83.62 - 45.58 (2)	TP26.56x16.337x0.25	16.634	352.989	0.047	0.244	783.571	0.000
L3	45.58 - 0 (3)	TP37.5x25.098x0.313	18.711	636.858	0.029	0.243	2108.183	0.000

Pole Interaction Design Data

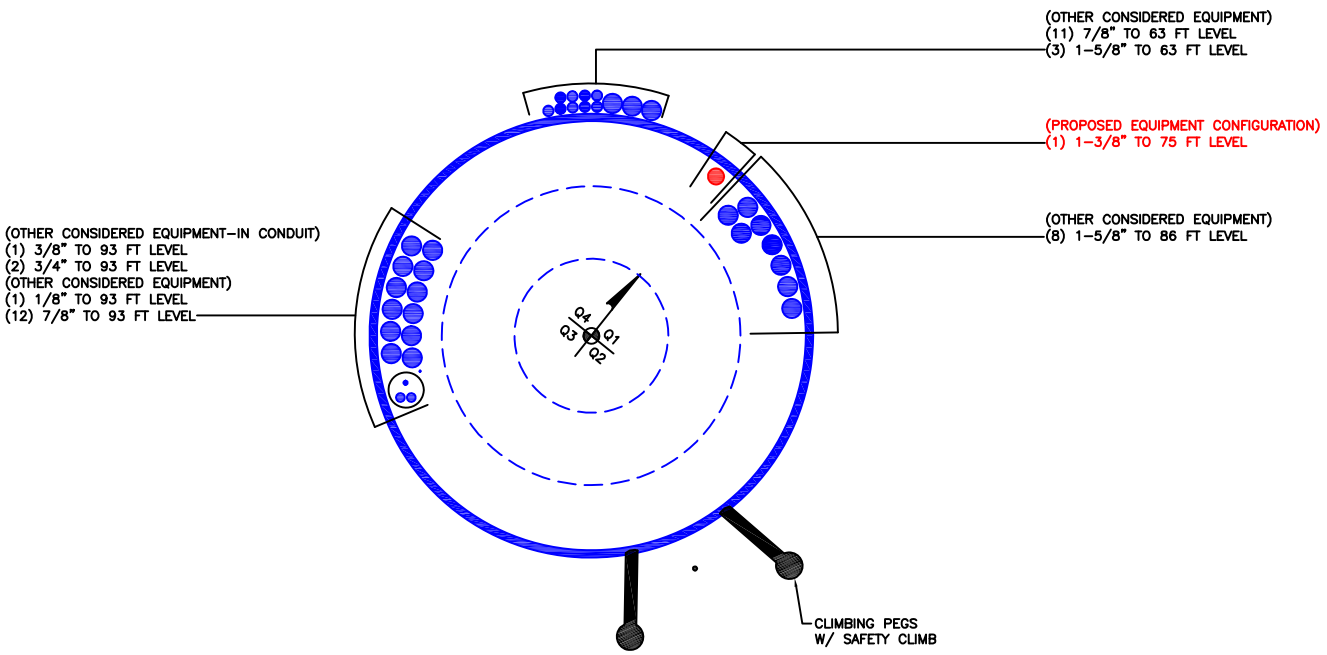
Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	101 - 83.62 (1)	0.005	0.153	0.000	0.029	0.000	0.159	1.050	4.8.2
L2	83.62 - 45.58 (2)	0.014	0.665	0.000	0.047	0.000	0.681	1.050	4.8.2
L3	45.58 - 0 (3)	0.012	0.703	0.000	0.029	0.000	0.715	1.050	4.8.2

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	101 - 83.62	Pole	TP17.41x13x0.188	1	-3.156	604.070	15.2	Pass
L2	83.62 - 45.58	Pole	TP26.56x16.337x0.25	2	-16.018	1235.461	64.9	Pass
L3	45.58 - 0	Pole	TP37.5x25.098x0.313	3	-25.123	2265.679	68.1	Pass
							Summary	
							Pole (L3) 68.1	Pass
						RATING =	**68.1**	**Pass**

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(11) 7/8" TO 63 FT LEVEL
(3) 1-5/8" TO 63 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-3/8" TO 75 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(8) 1-5/8" TO 86 FT LEVEL
(OTHER CONSIDERED EQUIPMENT-IN CONDUIT)
(1) 3/8" TO 93 FT LEVEL
(2) 3/4" TO 93 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 1/8" TO 93 FT LEVEL
(12) 7/8" TO 93 FT LEVEL
Q4
Q1
Q3
Q2
CLIMBING PEGS
W/ SAFETY CLIMB

APPENDIX C

ADDITIONAL CALCULATIONS

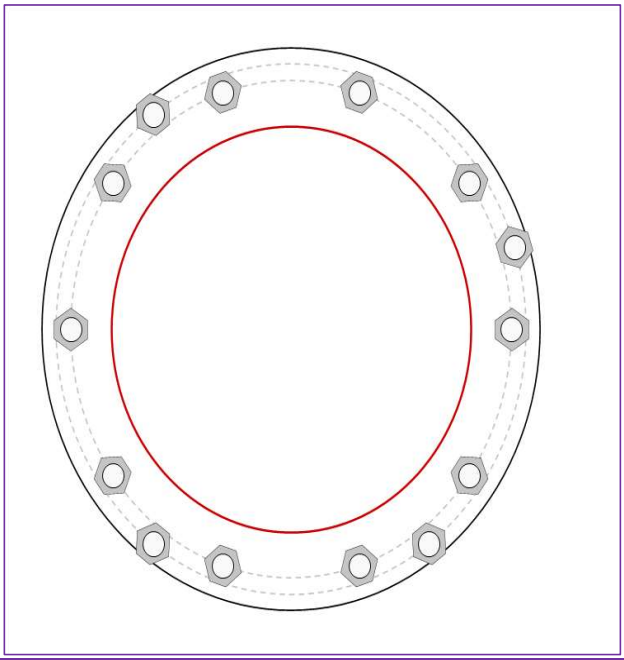
Monopole Base Plate Connection

Site Info	
BU #	842876
Site Name	
Order #	556623 Rev# 1

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	See Custom Sheet
l_{ar} (in)	See Custom Sheet

Applied Loads	
Moment (kip-ft)	1379.83
Axial Force (kips)	25.46
Shear Force (kips)	18.64

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (10) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 46" BC

GROUP 2: (4) 2-1/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 49" BC

pos. (deg): 18, 126, 234, 306

Base Plate Data

52" OD x 1.5" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Stiffener Data

N/A

Pole Data

37.5" x 0.3125" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:		
Pu_t = 100.23	ϕPn_t = 243.75	**Stress Rating**
Vu = 1.86	ϕVn = 149.1	**39.2%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 107.29	ϕPn_t = 304.69	**Stress Rating**
Vu = 0	ϕVn = 186.38	**33.5%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	41.86	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**73.8%**	**Pass**

Drilled Pier Foundation

BU # :	842876
Site Name:	WINDSOR LOCKS, CT
Order Number:	
TIA-222 Revison:	H
Tower Type:	Monopole

Check Limitation	
Apply TIA-222-H Section 15.5:	☑
N/A	☐
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	☐
Shear Design Options	
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

Go to Soil Calculations

Applied Loads	Comp.	Uplift
Moment (kip-ft)	1384	
Axial Force (kips)	25	
Shear Force (kips)	19	

Material Properties			Rebar 2, Fy Override (ksi)
Concrete Strength, f'c:	4	ksi	
Rebar Strength, Fy:	60	ksi	
Tie Yield Strength, Fyt:	60	ksi	

Pier Design Data		
Depth	21	ft
Ext. Above Grade	1	ft
Pier Section 1		
From 1' above grade to 21' below grade		
Pier Diameter	6	ft
Rebar Quantity	15	
Rebar Size	11	
Rebar Cage Diameter	61	in
Tie Size	5	
Tie Spacing	12	in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	6.48	-
Soil Safety Factor	3.91	-
Max Moment (kip-ft)	1490.17	-
Rating*	*32.4%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	248.81	-
End Bearing (kips)	1272.35	-
Weight of Concrete (kips)	111.97	-
Total Capacity (kips)	1521.16	-
Axial (kips)	136.97	-
Rating*	*8.6%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	6.25	-
Critical Moment (kip-ft)	1489.87	-
Critical Moment Capacity	3240.82	-
Rating*	*43.8%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	16.35	-
Critical Shear (kip)	205.40	-
Critical Shear Capacity	547.37	-
Rating*	*35.7%*	-

Structural Foundation Rating*	**43.8%**
Soil Interaction Rating*	**32.4%**

*Rating per TIA-222-H Section 15.5

Soil Profile

Groundwater Depth	30
# of Layers	4

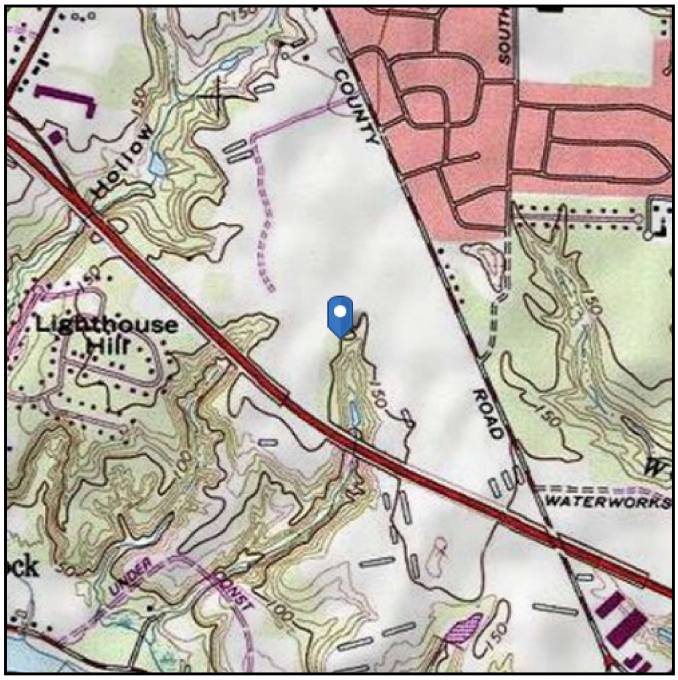
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3.33	3.33	125	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	3.33	5	1.67	125	150	0	34	0.000	0.000	0.00	0.00			Cohesionless
3	5	15	10	125	150	0	34	0.000	0.000	0.80	0.80			Cohesionless
4	15	21	6	125	150	0	34	0.000	0.000	1.60	1.60	60		Cohesionless

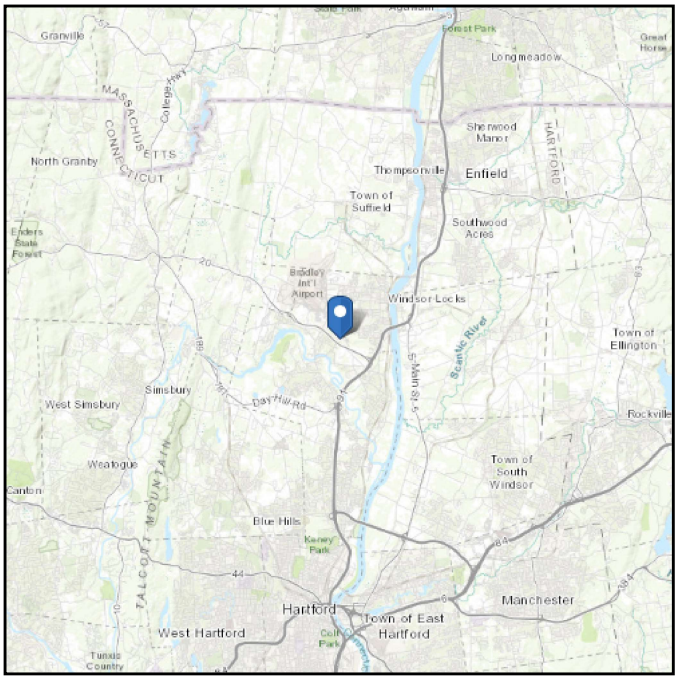
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 148.38 ft (NAVD 88)
Latitude: 41.910244
Longitude: -72.661786





Wind

Results:

Wind Speed:	116 Vmph
10-year MRI	75 Vmph
25-year MRI	83 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Tue Sep 07 2021

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

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

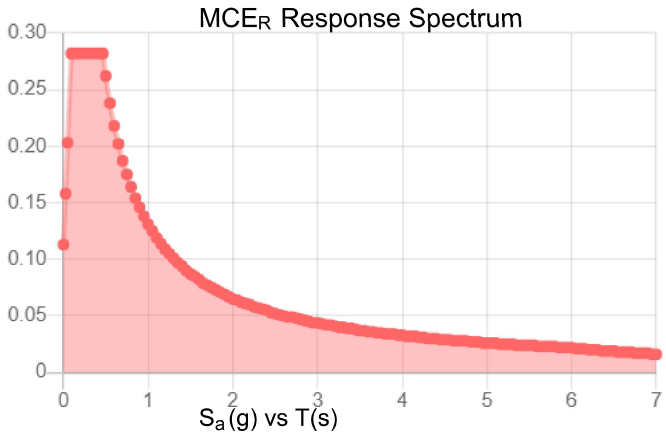
Seismic

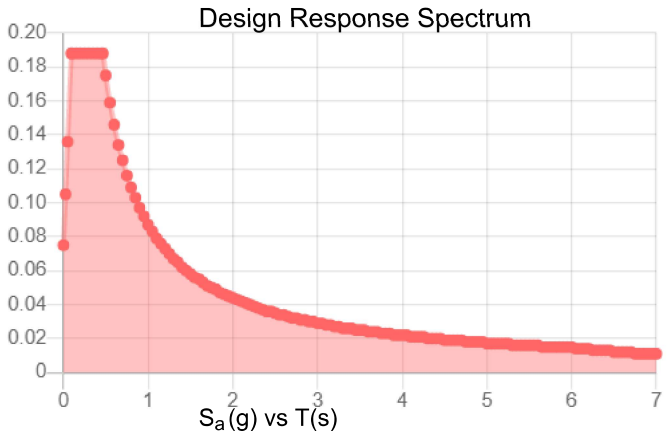
Site Soil Class: D - Stiff Soil

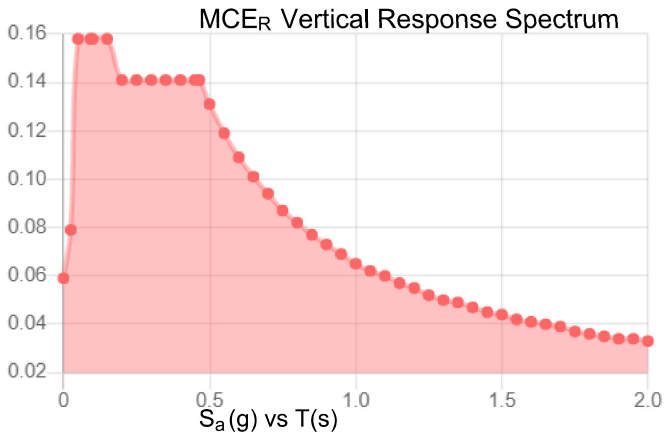
Results:

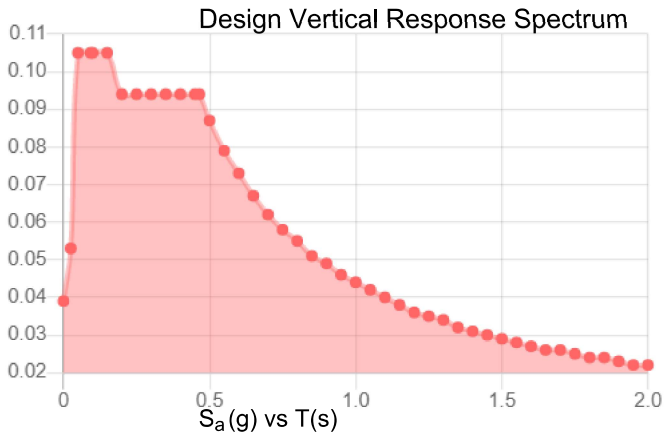
S_S :	0.176	S_{D1} :	0.087
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.093
F_v :	2.4	PGA_M :	0.149
S_{MS} :	0.282	F_{PGA} :	1.6
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.188	C_v :	0.7

Seismic Design Category B









Data Accessed: Tue Sep 07 2021

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

Ice

Results:

Ice Thickness:	1.50 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Tue Sep 07 2021

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

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

Exhibit E

Mount Analysis

Date: **September 16, 2021**

Michael McWilliams
Crown Castle
8000 Avalon Blvd, Suite 700
Alpharetta, GA 30009
(770) 375-4936

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Albany, NY 12205
518-690-0790
structural@infinigy.com

Subject:	**Mount Analysis Report**	
Carrier Designation:	**Dish Network 5G**	
	Carrier Site Number:	BOBDL00069A
	Carrier Site Name:	CT-CCI-T-842876
Crown Castle Designation:	**Crown Castle BU Number:**	842876
	Crown Castle Site Name:	Windsor Locks
	Crown Castle JDE Job Number:	650060
	Crown Castle Order Number:	556623 Rev. 1
Engineering Firm Designation:	**Infinigy Engineering, PLLC Report Designation:** 1039-Z0001-B	
Site Data:	**1000 Old County Circle, Windsor Locks, Hartford County, CT, 06096** **Latitude 41°54'36.88" Longitude -72°39'42.43"**	
Structure Information:	**Tower Height & Type:**	**101.0 ft Monopole**
	Mount Elevation:	**75.0 ft**
	Mount Type:	**8.0 ft Platform**

Dear Michael McWilliams,

Infinigy Engineering, PLLC is pleased to submit this **"Mount Analysis Report"** to determine the structural integrity of Dish Network's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

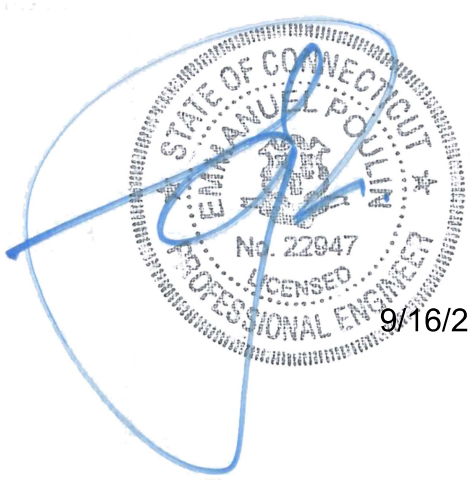
The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Platform **Sufficient**
***Sufficient upon completion of the changes listed in the 'Recommendations' section of this report.**

This analysis utilizes an ultimate 3-second gust wind speed of 116 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Robert Faber, E.I.T.

Respectfully Submitted by:
Emmanuel Poulin, P.E.
518-690-0790
structural@infinigy.com
CT PE License No. 22947



9/16/21

TABLE OF CONTENTS

1) INTRODUCTION

This is a proposed 3 sector 8.0 ft Platform, designed by Commscope.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	116 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	2.0 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.177
Seismic S_1:	0.064
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
75.0	75.0	3	JMA WIRELESS	MX08FRO665-21	8.0 ft Platform (Commscope MC-PK8-DSH)
		3	FUJITSU	TA08025-B604	
		3	FUJITSU	TA08025-B605	
		1	RAYCAP	RDIDC-9181-PF-48	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	Dish Network Application	556623 Rev. 1	CCI Sites
Mount Manufacturer Drawings	Commscope	PN: MC-PK8-DSH	Infinigy

3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

Infinigy Mount Analysis Tool V2.1.7, a tool internally developed by Infinigy, was used to calculate wind loading on all appurtenances, dishes and mount members for various loading cases. Selected output from the analysis is included in Appendix B "Software Input Calculations".

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Tower Mount Analysis* (Revision B).

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR 46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. Infinigy Engineering, PLLC 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 (Platform, All Sectors)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Mount Pipe(s)	MP4	75.0	21.8	Pass
	Horizontal(s)	H3		12.1	Pass
	Standoff(s)	S1		39.5	Pass
	Channel(s)	CA5		36.3	Pass
	Corner Plate(s)	P3		25.1	Pass
	Grating Angle(s)	GA2		22.3	Pass
	Mount Connection(s)	--		31.5	Pass

Structure Rating (max from all components) =	39.5%

Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) See additional documentation in “Appendix D – Additional Calculations” for detailed mount connection calculations.

4.1) Recommendations

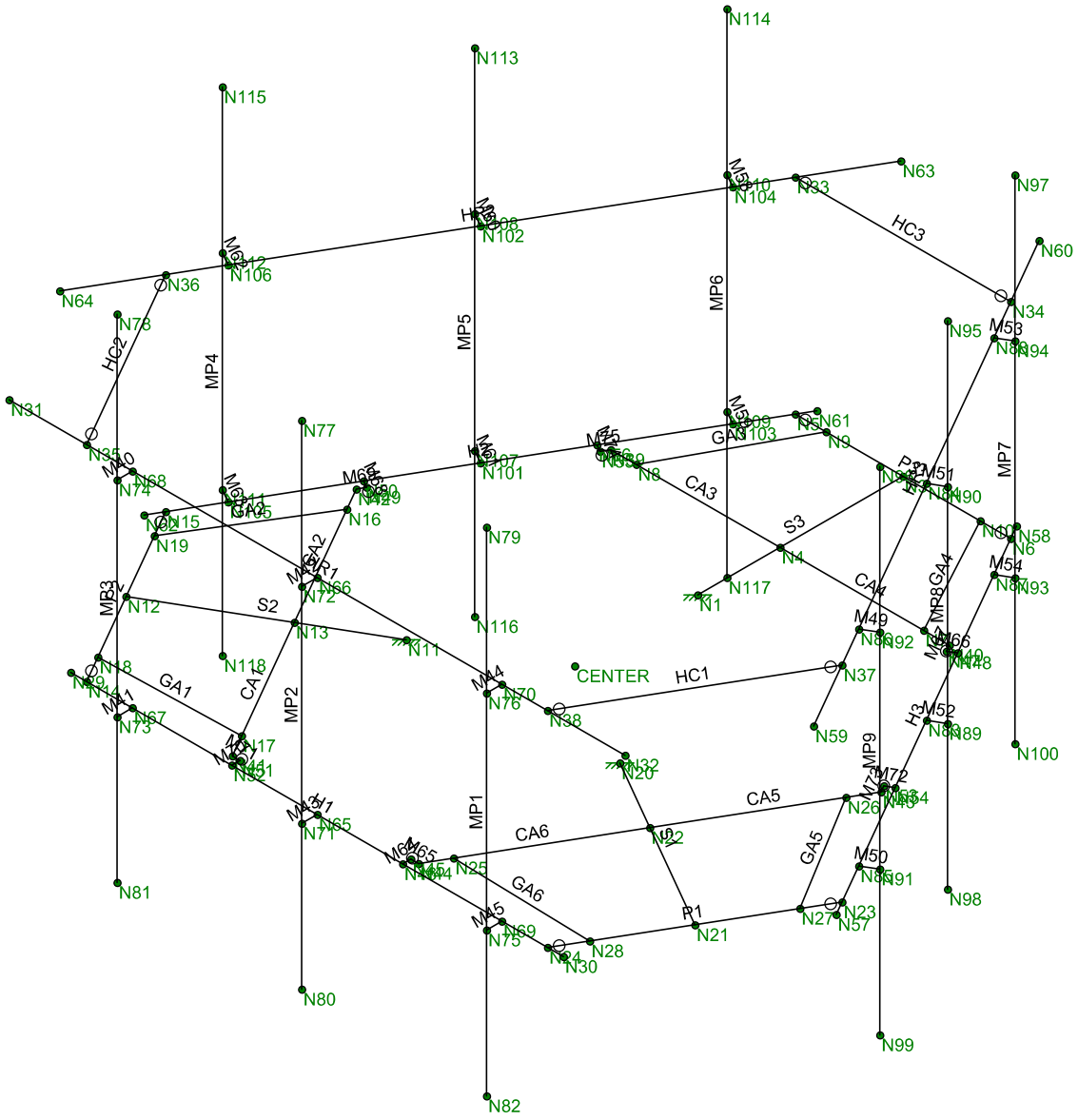
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the proposed mount listed below must be installed.

1. Commscope MC-PK8-DSH (8’ Platform).

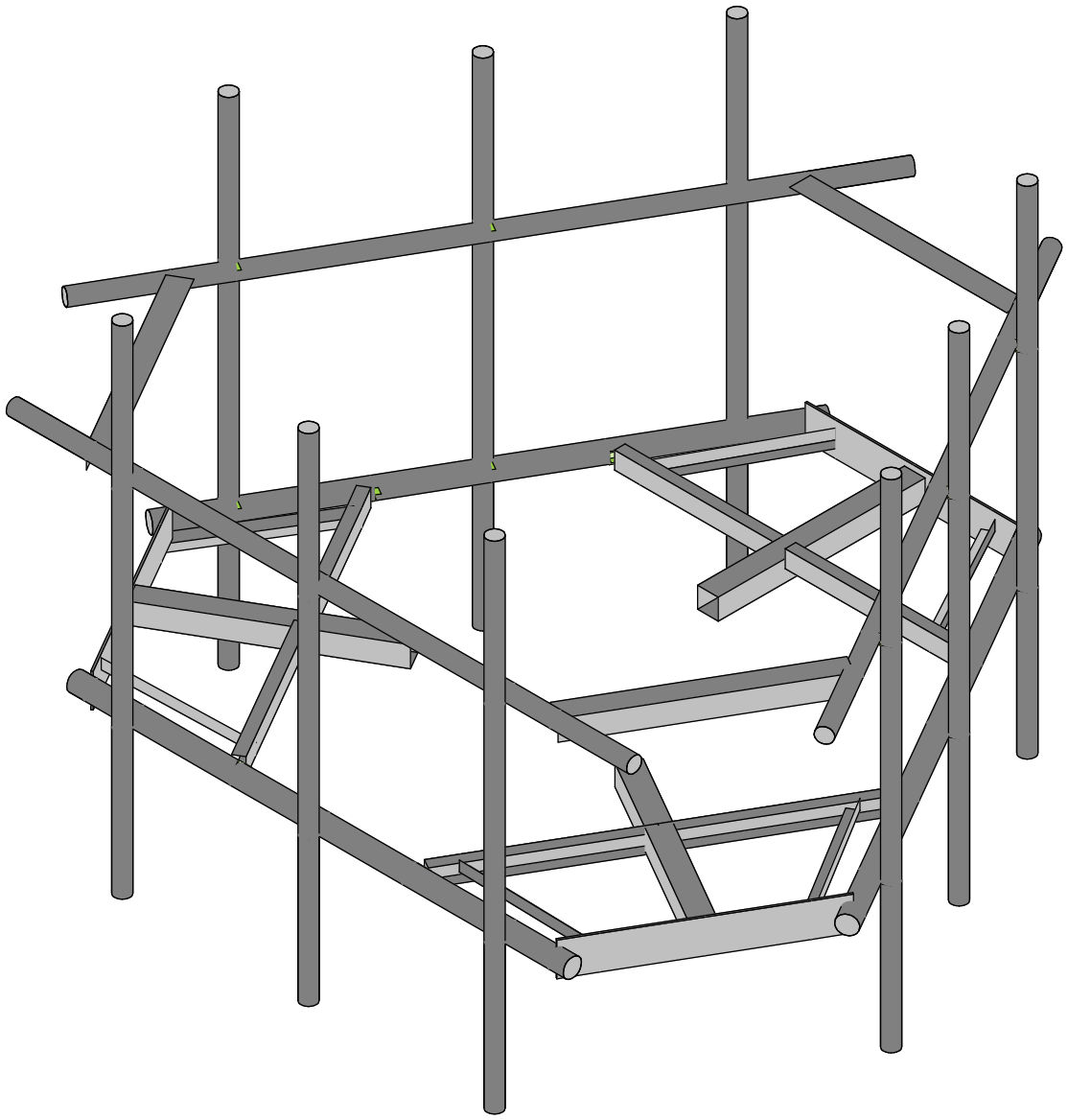
No structural modifications are required at this time, provided that the above-listed changes are implemented.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Infinigy Engineering, PLLC	842876	Wireframe
Robert Faber		Sept 16, 2021 at 10:46 AM
1039-Z0001-B		MC-PK8-DSH_loaded.r3d



Infinigy Engineering, PLLC		Render
Robert Faber	842876	Sept 16, 2021 at 10:48 AM
1039-Z0001-B		MC-PK8-DSH_loaded.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

Program Inputs

PROJECT INFORMATION	
Client:	Crown Castle
Carrier:	Dish Network
Engineer:	Robert Faber

SITE INFORMATION		
Risk Category:	II	
Exposure Category:	C	
Topo Factor Procedure:	Method 1, Category 1	
Site Class:	D - Stiff Soil (Assumed)	
Ground Elevation:	148.38	ft *Rev H

MOUNT INFORMATION		
Mount Type:	Platform	
Num Sectors:	3	
Centerline AGL:	75.00	ft
Tower Height AGL:	101.00	ft

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

FACTORS		
Directionality Fact. (K_d):	0.950	
Ground Ele. Factor (K_e):	0.995	*Rev H Only
Rooftop Speed-Up (K_s):	1.000	*Rev H Only
Topographic Factor (K_{zt}):	1.000	
Gust Effect Factor (G_h):	1.000	

CODE STANDARDS		
Building Code:	2015 IBC	
TIA Standard:	TIA-222-H	
ASCE Standard:	ASCE 7-10	

WIND AND ICE DATA		
Ultimate Wind (V_{ult}):	116	mph
Design Wind (V):	N/A	mph
Ice Wind (V_{ice}):	50	mph
Base Ice Thickness (t_i):	2	in
Flat Pressure:	77.549	psf
Round Pressure:	46.529	psf
Ice Wind Pressure:	8.645	psf

SEISMIC DATA		
Short-Period Accel. (S_s):	0.177	g
1-Second Accel. (S_1):	0.064	g
Short-Period Design (S_{DS}):	0.189	
1-Second Design (S_{D1}):	0.102	
Short-Period Coeff. (F_a):	1.600	
1-Second Coeff. (F_v):	2.400	
Amplification Factor (A_s):	3.000	
Response Mod. Coeff. (R):	2.000	

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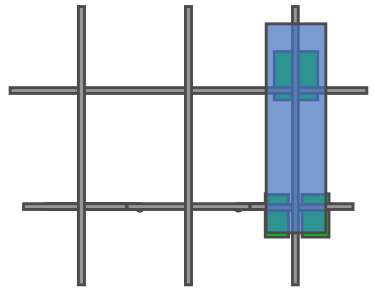
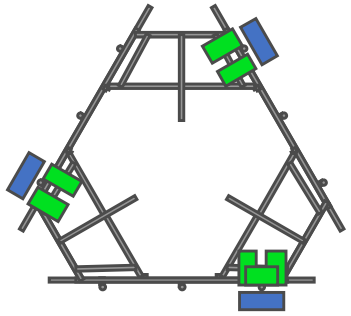
Infinigy Load Calculator V2.1.7

Program Inputs

ELEVATION VIEW



PLAN VIEW



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Infinigy Load Calculator V2.1.7

APPURTENANCE INFORMATION

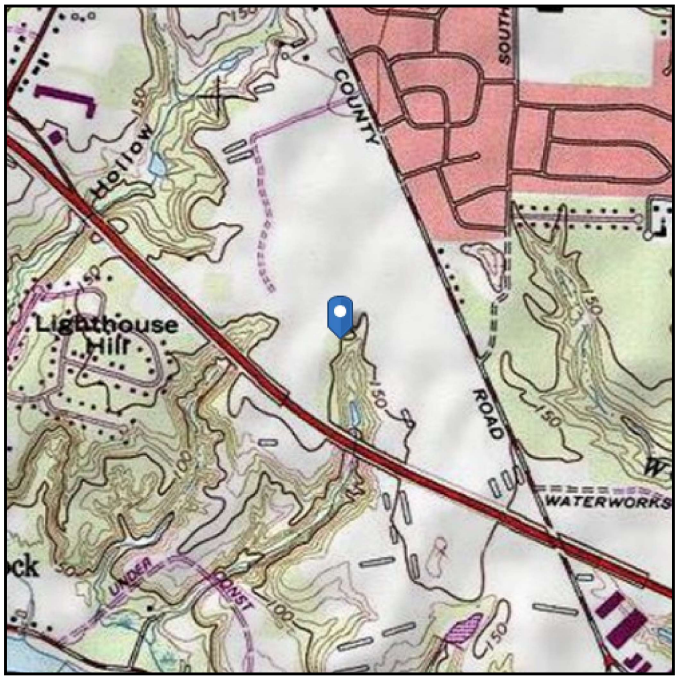
Appurtenance Name	Elevation	Qty.	K_a	q_z (psf)	EPA_N (ft^2)	EPA_T (ft^2)	Wind F_z (lbs)	Wind F_x (lbs)	Weight (lbs)	Seismic F (lbs)	Member (α sector)
JMA WIRELESS MX08FRO665-21	75.0	3	0.90	38.77	8.01	3.21	279.53	112.02	82.50	23.36	MP1
FUJITSU TA08025-B604	75.0	3	0.90	38.77	1.96	0.98	68.52	34.24	63.90	18.10	MP1
FUJITSU TA08025-B605	75.0	3	0.90	38.77	1.96	1.13	68.52	39.42	75.00	21.24	MP1
RAYCAP RDIDC-9181-PF-48	75.0	1	0.90	38.77	2.01	1.17	70.21	40.77	21.85	6.19	MP1

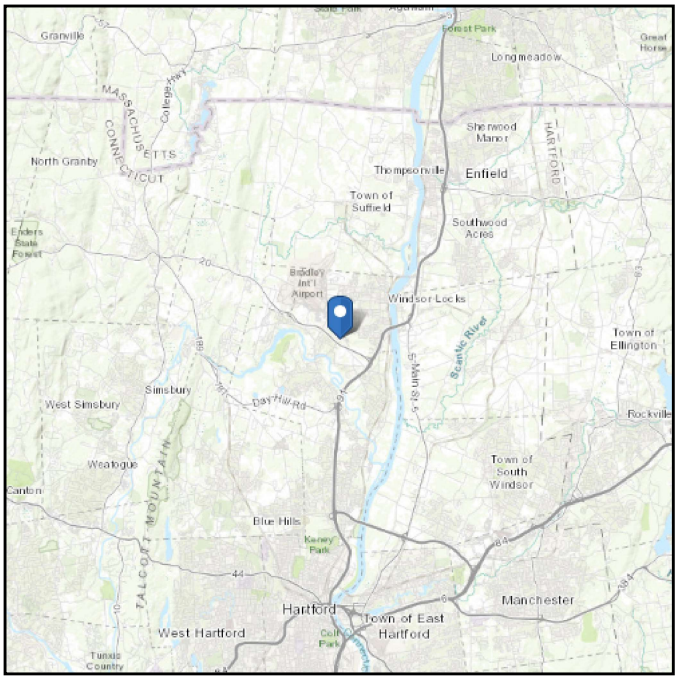
ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 148.38 ft (NAVD 88)
Latitude: 41.910244
Longitude: -72.661786





Wind

Results:

Wind Speed:	**116 Vmph per the State of Connecticut allowing ASCE 7-16 wind speeds**
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

Data Accessed: Thu Sep 16 2021

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

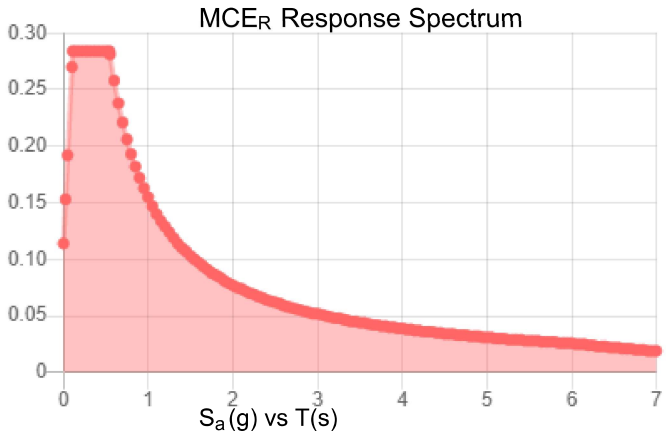
Seismic

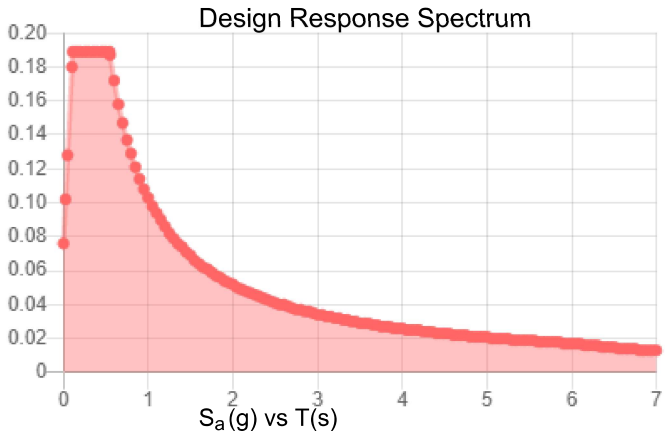
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.177	S_{DS} :	0.189
S_1 :	0.064	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.088
S_{MS} :	0.284	PGA_M :	0.141
S_{M1} :	0.155	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Thu Sep 16 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:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Thu Sep 16 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.

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(de...	Section/Shape	Type	Design List	Material	Design Rules
1	S3	N1	N3			Standoff	Beam	Tube	A500 Gr....	Typical
2	GA4	N7	N10		270	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
3	GA3	N8	N9			Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
4	P3	N5	N6			Corner Plates	Beam	RECT	A36 Gr.36	Typical
5	S2	N11	N12			Standoff	Beam	Tube	A500 Gr....	Typical
6	GA2	N16	N19		270	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
7	GA1	N17	N18			Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
8	P2	N14	N15			Corner Plates	Beam	RECT	A36 Gr.36	Typical
9	S1	N20	N21			Standoff	Beam	Tube	A500 Gr....	Typical
10	GA6	N25	N28		270	Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
11	GA5	N26	N27			Grating Angle	Beam	Single Angle	A36 Gr.36	Typical
12	P1	N23	N24			Corner Plates	Beam	RECT	A36 Gr.36	Typical
13	H1	N29	N30			Horizontal	Beam	Pipe	A53 Gr.B	Typical
14	HR1	N31	N32			Handrail	Beam	Pipe	A53 Gr.B	Typical
15	HC2	N36	N35		180	Handrail Connector	Beam	Single Angle	A36 Gr.36	Typical
16	HC3	N34	N33		180	Handrail Connector	Beam	Single Angle	A36 Gr.36	Typical
17	HC1	N38	N37		180	Handrail Connector	Beam	Single Angle	A36 Gr.36	Typical
18	CA3	N4	N39			Channel	Beam	Channel	A36 Gr.36	Typical
19	CA4	N40	N4			Channel	Beam	Channel	A36 Gr.36	Typical
20	CA1	N13	N41			Channel	Beam	Channel	A36 Gr.36	Typical
21	CA2	N42	N13			Channel	Beam	Channel	A36 Gr.36	Typical
22	CA5	N22	N43			Channel	Beam	Channel	A36 Gr.36	Typical
23	CA6	N44	N22			Channel	Beam	Channel	A36 Gr.36	Typical
24	M64	N46	N45			RIGID	None	None	RIGID	Typical
25	M65	N44	N45			RIGID	None	None	RIGID	Typical
26	M66	N48	N47			RIGID	None	None	RIGID	Typical
27	M67	N40	N47			RIGID	None	None	RIGID	Typical
28	M68	N50	N49			RIGID	None	None	RIGID	Typical
29	M69	N42	N49			RIGID	None	None	RIGID	Typical
30	M70	N52	N51			RIGID	None	None	RIGID	Typical
31	M71	N41	N51			RIGID	None	None	RIGID	Typical
32	M72	N54	N53			RIGID	None	None	RIGID	Typical
33	M73	N43	N53			RIGID	None	None	RIGID	Typical
34	M74	N56	N55			RIGID	None	None	RIGID	Typical
35	M75	N39	N55			RIGID	None	None	RIGID	Typical
36	H3	N57	N58			Horizontal	Beam	Pipe	A53 Gr.B	Typical
37	HR3	N59	N60			Handrail	Beam	Pipe	A53 Gr.B	Typical
38	H2	N61	N62			Horizontal	Beam	Pipe	A53 Gr.B	Typical
39	HR2	N63	N64			Handrail	Beam	Pipe	A53 Gr.B	Typical
40	M40	N68	N74			RIGID	None	None	RIGID	Typical
41	M41	N67	N73			RIGID	None	None	RIGID	Typical
42	M42	N66	N72			RIGID	None	None	RIGID	Typical
43	M43	N65	N71			RIGID	None	None	RIGID	Typical
44	M44	N70	N76			RIGID	None	None	RIGID	Typical
45	M45	N69	N75			RIGID	None	None	RIGID	Typical
46	MP3	N78	N81			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
47	MP2	N77	N80			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
48	MP1	N79	N82			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
49	M49	N86	N92			RIGID	None	None	RIGID	Typical
50	M50	N85	N91			RIGID	None	None	RIGID	Typical
51	M51	N84	N90			RIGID	None	None	RIGID	Typical
52	M52	N83	N89			RIGID	None	None	RIGID	Typical
53	M53	N88	N94			RIGID	None	None	RIGID	Typical
54	M54	N87	N93			RIGID	None	None	RIGID	Typical
55	MP9	N96	N99			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
56	MP8	N95	N98			Mount Pipe	Column	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(de...	Section/Shape	Type	Design List	Material	Design Rules
57	MP7	N97	N100			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
58	M58	N104	N110			RIGID	None	None	RIGID	Typical
59	M59	N103	N109			RIGID	None	None	RIGID	Typical
60	M60	N102	N108			RIGID	None	None	RIGID	Typical
61	M61	N101	N107			RIGID	None	None	RIGID	Typical
62	M62	N106	N112			RIGID	None	None	RIGID	Typical
63	M63	N105	N111			RIGID	None	None	RIGID	Typical
64	MP6	N114	N117			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
65	MP5	N113	N116			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
66	MP4	N115	N118			Mount Pipe	Column	Pipe	A53 Gr.B	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torqu...	Kyy	Kzz	Cb	Function
1	S3	Standoff	40			Lbyy						Lateral
2	GA4	Grating Angle	27.295			Lbyy						Lateral
3	GA3	Grating Angle	27.295			Lbyy						Lateral
4	P3	Corner Plates	42			Lbyy						Lateral
5	S2	Standoff	40			Lbyy						Lateral
6	GA2	Grating Angle	27.295			Lbyy						Lateral
7	GA1	Grating Angle	27.295			Lbyy						Lateral
8	P2	Corner Plates	42			Lbyy						Lateral
9	S1	Standoff	40			Lbyy						Lateral
10	GA6	Grating Angle	27.295			Lbyy						Lateral
11	GA5	Grating Angle	27.295			Lbyy						Lateral
12	P1	Corner Plates	42			Lbyy						Lateral
13	H1	Horizontal	96			Lbyy						Lateral
14	HR1	Handrail	120			Lbyy						Lateral
15	HC2	Handrail Co...	42			Lbyy						Lateral
16	HC3	Handrail Co...	42			Lbyy						Lateral
17	HC1	Handrail Co...	42			Lbyy						Lateral
18	CA3	Channel	33			Lbyy						Lateral
19	CA4	Channel	33			Lbyy						Lateral
20	CA1	Channel	33			Lbyy						Lateral
21	CA2	Channel	33			Lbyy						Lateral
22	CA5	Channel	33			Lbyy						Lateral
23	CA6	Channel	33			Lbyy						Lateral
24	H3	Horizontal	96			Lbyy						Lateral
25	HR3	Handrail	120			Lbyy						Lateral
26	H2	Horizontal	96			Lbyy						Lateral
27	HR2	Handrail	120			Lbyy						Lateral
28	MP3	Mount Pipe	96			Lbyy						Lateral
29	MP2	Mount Pipe	96			Lbyy						Lateral
30	MP1	Mount Pipe	96			Lbyy						Lateral
31	MP9	Mount Pipe	96			Lbyy						Lateral
32	MP8	Mount Pipe	96			Lbyy						Lateral
33	MP7	Mount Pipe	96			Lbyy						Lateral
34	MP6	Mount Pipe	96			Lbyy						Lateral
35	MP5	Mount Pipe	96			Lbyy						Lateral
36	MP4	Mount Pipe	96			Lbyy						Lateral

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design R...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Corner Plates	PL6.5x0....	Beam	RECT	A36 Gr.36	Typical	2.438	.029	8.582	.11
2	Grating Angle	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	.944	.346	.346	.021
3	Horizontal	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
4	Mount Pipe	PIPE_2.5	Column	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
5	Channel	C3.38x2....	Beam	Channel	A36 Gr.36	Typical	1.75	.715	3.026	.034
6	Standoff	HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
7	Handrail Connector	L4X4X4	Beam	Single Angle	A36 Gr.36	Typical	1.93	3	3	.044
8	Handrail	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		30	72.6	0
3	Total General		30	72.6	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	C3.38x2.06x0.25	6	198	98.255
7	A36 Gr.36	L2x2x4	6	163.8	43.838
8	A36 Gr.36	PL6.5x0.375	3	126	87.09
9	A36 Gr.36	L4X4X4	3	126	68.957
10	A500 Gr.B Rect	HSS4X4X4	3	120	123.333
11	A53 Gr.B	PIPE_2.5	12	1224	558.804
12	A53 Gr.B	PIPE_3.0	3	288	169.05
13	Total HR Steel		36	2245.8	1149.327

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Self Weight	DL		-1			13		3	
2	Wind Load AZI 0	WLZ					26			
3	Wind Load AZI 30	None					26			
4	Wind Load AZI 60	None					26			
5	Wind Load AZI 90	WLX					26			
6	Wind Load AZI 120	None					26			
7	Wind Load AZI 150	None					26			
8	Wind Load AZI 180	None					26			
9	Wind Load AZI 210	None					26			
10	Wind Load AZI 240	None					26			
11	Wind Load AZI 270	None					26			
12	Wind Load AZI 300	None					26			
13	Wind Load AZI 330	None					26			
14	Distr. Wind Load Z	WLZ						66		
15	Distr. Wind Load X	WLX						66		
16	Ice Weight	OL1					13	66	3	
17	Ice Wind Load AZI 0	OL2					26			
18	Ice Wind Load AZI 30	None					26			
19	Ice Wind Load AZI 60	None					26			
20	Ice Wind Load AZI 90	OL3					26			
21	Ice Wind Load AZI 120	None					26			
22	Ice Wind Load AZI 150	None					26			
23	Ice Wind Load AZI 180	None					26			
24	Ice Wind Load AZI 210	None					26			
25	Ice Wind Load AZI 240	None					26			
26	Ice Wind Load AZI 270	None					26			
27	Ice Wind Load AZI 300	None					26			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
28	Ice Wind Load AZI 330	None					26			
29	Distr. Ice Wind Load Z	OL2						66		
30	Distr. Ice Wind Load X	OL3						66		
31	Seismic Load Z	ELZ			-.283		13			
32	Seismic Load X	ELX	-.283				13			
33	Service Live Loads	LL				1				
34	Maintenance Load 1	LL				1				
35	Maintenance Load 2	LL				1				
36	Maintenance Load 3	LL				1				
37	Maintenance Load 4	LL				1				
38	Maintenance Load 5	LL				1				
39	Maintenance Load 6	LL				1				
40	Maintenance Load 7	LL				1				
41	Maintenance Load 8	LL				1				
42	Maintenance Load 9	LL				1				
43	BLC 1 Transient Area Loads	None						9		
44	BLC 16 Transient Area Loads	None						9		

Member Point Loads (BLC 1 : Self Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-41.25	6
2	MP1	Y	-41.25	78
3	MP1	Y	-63.9	%75
4	MP1	Y	-75	%75
5	MP1	Y	-21.85	%25
6	MP4	Y	-41.25	6
7	MP4	Y	-41.25	78
8	MP4	Y	-63.9	%75
9	MP4	Y	-75	%75
10	MP7	Y	-41.25	6
11	MP7	Y	-41.25	78
12	MP7	Y	-63.9	%75
13	MP7	Y	-75	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	6
2	MP1	Z	-139.76	6
3	MP1	X	0	78
4	MP1	Z	-139.76	78
5	MP1	X	0	%75
6	MP1	Z	-68.52	%75
7	MP1	X	0	%75
8	MP1	Z	-68.52	%75
9	MP1	X	0	%25
10	MP1	Z	-70.21	%25
11	MP4	X	0	6
12	MP4	Z	-76.95	6
13	MP4	X	0	78
14	MP4	Z	-76.95	78
15	MP4	X	0	%75
16	MP4	Z	-42.81	%75
17	MP4	X	0	%75
18	MP4	Z	-46.69	%75
19	MP7	X	0	6

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
20	MP7	Z	-76.95	6
21	MP7	X	0	78
22	MP7	Z	-76.95	78
23	MP7	X	0	%75
24	MP7	Z	-42.81	%75
25	MP7	X	0	%75
26	MP7	Z	-46.69	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-59.41	6
2	MP1	Z	-102.91	6
3	MP1	X	-59.41	78
4	MP1	Z	-102.91	78
5	MP1	X	-29.97	%75
6	MP1	Z	-51.92	%75
7	MP1	X	-30.62	%75
8	MP1	Z	-53.04	%75
9	MP1	X	-31.42	%25
10	MP1	Z	-54.43	%25
11	MP4	X	-59.41	6
12	MP4	Z	-102.91	6
13	MP4	X	-59.41	78
14	MP4	Z	-102.91	78
15	MP4	X	-29.97	%75
16	MP4	Z	-51.92	%75
17	MP4	X	-30.62	%75
18	MP4	Z	-53.04	%75
19	MP7	X	-28	6
20	MP7	Z	-48.51	6
21	MP7	X	-28	78
22	MP7	Z	-48.51	78
23	MP7	X	-17.12	%75
24	MP7	Z	-29.65	%75
25	MP7	X	-19.71	%75
26	MP7	Z	-34.13	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-66.64	6
2	MP1	Z	-38.47	6
3	MP1	X	-66.64	78
4	MP1	Z	-38.47	78
5	MP1	X	-37.07	%75
6	MP1	Z	-21.4	%75
7	MP1	X	-40.44	%75
8	MP1	Z	-23.35	%75
9	MP1	X	-41.68	%25
10	MP1	Z	-24.06	%25
11	MP4	X	-121.04	6
12	MP4	Z	-69.88	6
13	MP4	X	-121.04	78
14	MP4	Z	-69.88	78
15	MP4	X	-59.34	%75
16	MP4	Z	-34.26	%75
17	MP4	X	-59.34	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
18	MP4	Z	-34.26	%75
19	MP7	X	-66.64	6
20	MP7	Z	-38.47	6
21	MP7	X	-66.64	78
22	MP7	Z	-38.47	78
23	MP7	X	-37.07	%75
24	MP7	Z	-21.4	%75
25	MP7	X	-40.44	%75
26	MP7	Z	-23.35	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-56.01	6
2	MP1	Z	0	6
3	MP1	X	-56.01	78
4	MP1	Z	0	78
5	MP1	X	-34.24	%75
6	MP1	Z	0	%75
7	MP1	X	-39.42	%75
8	MP1	Z	0	%75
9	MP1	X	-40.77	%25
10	MP1	Z	0	%25
11	MP4	X	-118.82	6
12	MP4	Z	0	6
13	MP4	X	-118.82	78
14	MP4	Z	0	78
15	MP4	X	-59.95	%75
16	MP4	Z	0	%75
17	MP4	X	-61.24	%75
18	MP4	Z	0	%75
19	MP7	X	-118.82	6
20	MP7	Z	0	6
21	MP7	X	-118.82	78
22	MP7	Z	0	78
23	MP7	X	-59.95	%75
24	MP7	Z	0	%75
25	MP7	X	-61.24	%75
26	MP7	Z	0	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-66.64	6
2	MP1	Z	38.47	6
3	MP1	X	-66.64	78
4	MP1	Z	38.47	78
5	MP1	X	-37.07	%75
6	MP1	Z	21.4	%75
7	MP1	X	-40.44	%75
8	MP1	Z	23.35	%75
9	MP1	X	-41.68	%25
10	MP1	Z	24.06	%25
11	MP4	X	-66.64	6
12	MP4	Z	38.47	6
13	MP4	X	-66.64	78
14	MP4	Z	38.47	78
15	MP4	X	-37.07	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
16	MP4	Z	21.4	%75
17	MP4	X	-40.44	%75
18	MP4	Z	23.35	%75
19	MP7	X	-121.04	6
20	MP7	Z	69.88	6
21	MP7	X	-121.04	78
22	MP7	Z	69.88	78
23	MP7	X	-59.34	%75
24	MP7	Z	34.26	%75
25	MP7	X	-59.34	%75
26	MP7	Z	34.26	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-59.41	6
2	MP1	Z	102.91	6
3	MP1	X	-59.41	78
4	MP1	Z	102.91	78
5	MP1	X	-29.97	%75
6	MP1	Z	51.92	%75
7	MP1	X	-30.62	%75
8	MP1	Z	53.04	%75
9	MP1	X	-31.42	%25
10	MP1	Z	54.43	%25
11	MP4	X	-28	6
12	MP4	Z	48.51	6
13	MP4	X	-28	78
14	MP4	Z	48.51	78
15	MP4	X	-17.12	%75
16	MP4	Z	29.65	%75
17	MP4	X	-19.71	%75
18	MP4	Z	34.13	%75
19	MP7	X	-59.41	6
20	MP7	Z	102.91	6
21	MP7	X	-59.41	78
22	MP7	Z	102.91	78
23	MP7	X	-29.97	%75
24	MP7	Z	51.92	%75
25	MP7	X	-30.62	%75
26	MP7	Z	53.04	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	6
2	MP1	Z	139.76	6
3	MP1	X	0	78
4	MP1	Z	139.76	78
5	MP1	X	0	%75
6	MP1	Z	68.52	%75
7	MP1	X	0	%75
8	MP1	Z	68.52	%75
9	MP1	X	0	%25
10	MP1	Z	70.21	%25
11	MP4	X	0	6
12	MP4	Z	76.95	6
13	MP4	X	0	78

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
14	MP4	Z	76.95	78
15	MP4	X	0	%75
16	MP4	Z	42.81	%75
17	MP4	X	0	%75
18	MP4	Z	46.69	%75
19	MP7	X	0	6
20	MP7	Z	76.95	6
21	MP7	X	0	78
22	MP7	Z	76.95	78
23	MP7	X	0	%75
24	MP7	Z	42.81	%75
25	MP7	X	0	%75
26	MP7	Z	46.69	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	59.41	6
2	MP1	Z	102.91	6
3	MP1	X	59.41	78
4	MP1	Z	102.91	78
5	MP1	X	29.97	%75
6	MP1	Z	51.92	%75
7	MP1	X	30.62	%75
8	MP1	Z	53.04	%75
9	MP1	X	31.42	%25
10	MP1	Z	54.43	%25
11	MP4	X	59.41	6
12	MP4	Z	102.91	6
13	MP4	X	59.41	78
14	MP4	Z	102.91	78
15	MP4	X	29.97	%75
16	MP4	Z	51.92	%75
17	MP4	X	30.62	%75
18	MP4	Z	53.04	%75
19	MP7	X	28	6
20	MP7	Z	48.51	6
21	MP7	X	28	78
22	MP7	Z	48.51	78
23	MP7	X	17.12	%75
24	MP7	Z	29.65	%75
25	MP7	X	19.71	%75
26	MP7	Z	34.13	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	66.64	6
2	MP1	Z	38.47	6
3	MP1	X	66.64	78
4	MP1	Z	38.47	78
5	MP1	X	37.07	%75
6	MP1	Z	21.4	%75
7	MP1	X	40.44	%75
8	MP1	Z	23.35	%75
9	MP1	X	41.68	%25
10	MP1	Z	24.06	%25
11	MP4	X	121.04	6

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
12	MP4	Z	69.88	6
13	MP4	X	121.04	78
14	MP4	Z	69.88	78
15	MP4	X	59.34	%75
16	MP4	Z	34.26	%75
17	MP4	X	59.34	%75
18	MP4	Z	34.26	%75
19	MP7	X	66.64	6
20	MP7	Z	38.47	6
21	MP7	X	66.64	78
22	MP7	Z	38.47	78
23	MP7	X	37.07	%75
24	MP7	Z	21.4	%75
25	MP7	X	40.44	%75
26	MP7	Z	23.35	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	56.01	6
2	MP1	Z	0	6
3	MP1	X	56.01	78
4	MP1	Z	0	78
5	MP1	X	34.24	%75
6	MP1	Z	0	%75
7	MP1	X	39.42	%75
8	MP1	Z	0	%75
9	MP1	X	40.77	%25
10	MP1	Z	0	%25
11	MP4	X	118.82	6
12	MP4	Z	0	6
13	MP4	X	118.82	78
14	MP4	Z	0	78
15	MP4	X	59.95	%75
16	MP4	Z	0	%75
17	MP4	X	61.24	%75
18	MP4	Z	0	%75
19	MP7	X	118.82	6
20	MP7	Z	0	6
21	MP7	X	118.82	78
22	MP7	Z	0	78
23	MP7	X	59.95	%75
24	MP7	Z	0	%75
25	MP7	X	61.24	%75
26	MP7	Z	0	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	66.64	6
2	MP1	Z	-38.47	6
3	MP1	X	66.64	78
4	MP1	Z	-38.47	78
5	MP1	X	37.07	%75
6	MP1	Z	-21.4	%75
7	MP1	X	40.44	%75
8	MP1	Z	-23.35	%75
9	MP1	X	41.68	%25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
10	MP1	Z	-24.06	%25
11	MP4	X	66.64	6
12	MP4	Z	-38.47	6
13	MP4	X	66.64	78
14	MP4	Z	-38.47	78
15	MP4	X	37.07	%75
16	MP4	Z	-21.4	%75
17	MP4	X	40.44	%75
18	MP4	Z	-23.35	%75
19	MP7	X	121.04	6
20	MP7	Z	-69.88	6
21	MP7	X	121.04	78
22	MP7	Z	-69.88	78
23	MP7	X	59.34	%75
24	MP7	Z	-34.26	%75
25	MP7	X	59.34	%75
26	MP7	Z	-34.26	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	59.41	6
2	MP1	Z	-102.91	6
3	MP1	X	59.41	78
4	MP1	Z	-102.91	78
5	MP1	X	29.97	%75
6	MP1	Z	-51.92	%75
7	MP1	X	30.62	%75
8	MP1	Z	-53.04	%75
9	MP1	X	31.42	%25
10	MP1	Z	-54.43	%25
11	MP4	X	28	6
12	MP4	Z	-48.51	6
13	MP4	X	28	78
14	MP4	Z	-48.51	78
15	MP4	X	17.12	%75
16	MP4	Z	-29.65	%75
17	MP4	X	19.71	%75
18	MP4	Z	-34.13	%75
19	MP7	X	59.41	6
20	MP7	Z	-102.91	6
21	MP7	X	59.41	78
22	MP7	Z	-102.91	78
23	MP7	X	29.97	%75
24	MP7	Z	-51.92	%75
25	MP7	X	30.62	%75
26	MP7	Z	-53.04	%75

Member Point Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-184.983	6
2	MP1	Y	-184.983	78
3	MP1	Y	-93.395	%75
4	MP1	Y	-99.264	%75
5	MP1	Y	-97.896	%25
6	MP4	Y	-184.983	6
7	MP4	Y	-184.983	78

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
8	MP4	Y	-93.395	%75
9	MP4	Y	-99.264	%75
10	MP7	Y	-184.983	6
11	MP7	Y	-184.983	78
12	MP7	Y	-93.395	%75
13	MP7	Y	-99.264	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	6
2	MP1	Z	-21.51	6
3	MP1	X	0	78
4	MP1	Z	-21.51	78
5	MP1	X	0	%75
6	MP1	Z	-8.73	%75
7	MP1	X	0	%75
8	MP1	Z	-8.73	%75
9	MP1	X	0	%25
10	MP1	Z	-8.9	%25
11	MP4	X	0	6
12	MP4	Z	-16.04	6
13	MP4	X	0	78
14	MP4	Z	-16.04	78
15	MP4	X	0	%75
16	MP4	Z	-6.89	%75
17	MP4	X	0	%75
18	MP4	Z	-7.12	%75
19	MP7	X	0	6
20	MP7	Z	-16.04	6
21	MP7	X	0	78
22	MP7	Z	-16.04	78
23	MP7	X	0	%75
24	MP7	Z	-6.89	%75
25	MP7	X	0	%75
26	MP7	Z	-7.12	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-9.84	6
2	MP1	Z	-17.05	6
3	MP1	X	-9.84	78
4	MP1	Z	-17.05	78
5	MP1	X	-4.06	%75
6	MP1	Z	-7.03	%75
7	MP1	X	-4.1	%75
8	MP1	Z	-7.1	%75
9	MP1	X	-4.21	%25
10	MP1	Z	-7.29	%25
11	MP4	X	-9.84	6
12	MP4	Z	-17.05	6
13	MP4	X	-9.84	78
14	MP4	Z	-17.05	78
15	MP4	X	-4.06	%75
16	MP4	Z	-7.03	%75
17	MP4	X	-4.1	%75
18	MP4	Z	-7.1	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
19	MP7	X	-7.11	6
20	MP7	Z	-12.32	6
21	MP7	X	-7.11	78
22	MP7	Z	-12.32	78
23	MP7	X	-3.14	%75
24	MP7	Z	-5.43	%75
25	MP7	X	-3.29	%75
26	MP7	Z	-5.7	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-13.89	6
2	MP1	Z	-8.02	6
3	MP1	X	-13.89	78
4	MP1	Z	-8.02	78
5	MP1	X	-5.96	%75
6	MP1	Z	-3.44	%75
7	MP1	X	-6.16	%75
8	MP1	Z	-3.56	%75
9	MP1	X	-6.45	%25
10	MP1	Z	-3.72	%25
11	MP4	X	-18.63	6
12	MP4	Z	-10.75	6
13	MP4	X	-18.63	78
14	MP4	Z	-10.75	78
15	MP4	X	-7.56	%75
16	MP4	Z	-4.37	%75
17	MP4	X	-7.56	%75
18	MP4	Z	-4.37	%75
19	MP7	X	-13.89	6
20	MP7	Z	-8.02	6
21	MP7	X	-13.89	78
22	MP7	Z	-8.02	78
23	MP7	X	-5.96	%75
24	MP7	Z	-3.44	%75
25	MP7	X	-6.16	%75
26	MP7	Z	-3.56	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-14.22	6
2	MP1	Z	0	6
3	MP1	X	-14.22	78
4	MP1	Z	0	78
5	MP1	X	-6.27	%75
6	MP1	Z	0	%75
7	MP1	X	-6.58	%75
8	MP1	Z	0	%75
9	MP1	X	-6.96	%25
10	MP1	Z	0	%25
11	MP4	X	-19.69	6
12	MP4	Z	0	6
13	MP4	X	-19.69	78
14	MP4	Z	0	78
15	MP4	X	-8.12	%75
16	MP4	Z	0	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
17	MP4	X	-8.19	%75
18	MP4	Z	0	%75
19	MP7	X	-19.69	6
20	MP7	Z	0	6
21	MP7	X	-19.69	78
22	MP7	Z	0	78
23	MP7	X	-8.12	%75
24	MP7	Z	0	%75
25	MP7	X	-8.19	%75
26	MP7	Z	0	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-13.89	6
2	MP1	Z	8.02	6
3	MP1	X	-13.89	78
4	MP1	Z	8.02	78
5	MP1	X	-5.96	%75
6	MP1	Z	3.44	%75
7	MP1	X	-6.16	%75
8	MP1	Z	3.56	%75
9	MP1	X	-6.45	%25
10	MP1	Z	3.72	%25
11	MP4	X	-13.89	6
12	MP4	Z	8.02	6
13	MP4	X	-13.89	78
14	MP4	Z	8.02	78
15	MP4	X	-5.96	%75
16	MP4	Z	3.44	%75
17	MP4	X	-6.16	%75
18	MP4	Z	3.56	%75
19	MP7	X	-18.63	6
20	MP7	Z	10.75	6
21	MP7	X	-18.63	78
22	MP7	Z	10.75	78
23	MP7	X	-7.56	%75
24	MP7	Z	4.37	%75
25	MP7	X	-7.56	%75
26	MP7	Z	4.37	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-9.84	6
2	MP1	Z	17.05	6
3	MP1	X	-9.84	78
4	MP1	Z	17.05	78
5	MP1	X	-4.06	%75
6	MP1	Z	7.03	%75
7	MP1	X	-4.1	%75
8	MP1	Z	7.1	%75
9	MP1	X	-4.21	%25
10	MP1	Z	7.29	%25
11	MP4	X	-7.11	6
12	MP4	Z	12.32	6
13	MP4	X	-7.11	78
14	MP4	Z	12.32	78

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
15	MP4	X	-3.14	%75
16	MP4	Z	5.43	%75
17	MP4	X	-3.29	%75
18	MP4	Z	5.7	%75
19	MP7	X	-9.84	6
20	MP7	Z	17.05	6
21	MP7	X	-9.84	78
22	MP7	Z	17.05	78
23	MP7	X	-4.06	%75
24	MP7	Z	7.03	%75
25	MP7	X	-4.1	%75
26	MP7	Z	7.1	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	6
2	MP1	Z	21.51	6
3	MP1	X	0	78
4	MP1	Z	21.51	78
5	MP1	X	0	%75
6	MP1	Z	8.73	%75
7	MP1	X	0	%75
8	MP1	Z	8.73	%75
9	MP1	X	0	%25
10	MP1	Z	8.9	%25
11	MP4	X	0	6
12	MP4	Z	16.04	6
13	MP4	X	0	78
14	MP4	Z	16.04	78
15	MP4	X	0	%75
16	MP4	Z	6.89	%75
17	MP4	X	0	%75
18	MP4	Z	7.12	%75
19	MP7	X	0	6
20	MP7	Z	16.04	6
21	MP7	X	0	78
22	MP7	Z	16.04	78
23	MP7	X	0	%75
24	MP7	Z	6.89	%75
25	MP7	X	0	%75
26	MP7	Z	7.12	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	9.84	6
2	MP1	Z	17.05	6
3	MP1	X	9.84	78
4	MP1	Z	17.05	78
5	MP1	X	4.06	%75
6	MP1	Z	7.03	%75
7	MP1	X	4.1	%75
8	MP1	Z	7.1	%75
9	MP1	X	4.21	%25
10	MP1	Z	7.29	%25
11	MP4	X	9.84	6
12	MP4	Z	17.05	6

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
13	MP4	X	9.84	78
14	MP4	Z	17.05	78
15	MP4	X	4.06	%75
16	MP4	Z	7.03	%75
17	MP4	X	4.1	%75
18	MP4	Z	7.1	%75
19	MP7	X	7.11	6
20	MP7	Z	12.32	6
21	MP7	X	7.11	78
22	MP7	Z	12.32	78
23	MP7	X	3.14	%75
24	MP7	Z	5.43	%75
25	MP7	X	3.29	%75
26	MP7	Z	5.7	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	13.89	6
2	MP1	Z	8.02	6
3	MP1	X	13.89	78
4	MP1	Z	8.02	78
5	MP1	X	5.96	%75
6	MP1	Z	3.44	%75
7	MP1	X	6.16	%75
8	MP1	Z	3.56	%75
9	MP1	X	6.45	%25
10	MP1	Z	3.72	%25
11	MP4	X	18.63	6
12	MP4	Z	10.75	6
13	MP4	X	18.63	78
14	MP4	Z	10.75	78
15	MP4	X	7.56	%75
16	MP4	Z	4.37	%75
17	MP4	X	7.56	%75
18	MP4	Z	4.37	%75
19	MP7	X	13.89	6
20	MP7	Z	8.02	6
21	MP7	X	13.89	78
22	MP7	Z	8.02	78
23	MP7	X	5.96	%75
24	MP7	Z	3.44	%75
25	MP7	X	6.16	%75
26	MP7	Z	3.56	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	14.22	6
2	MP1	Z	0	6
3	MP1	X	14.22	78
4	MP1	Z	0	78
5	MP1	X	6.27	%75
6	MP1	Z	0	%75
7	MP1	X	6.58	%75
8	MP1	Z	0	%75
9	MP1	X	6.96	%25
10	MP1	Z	0	%25

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
11	MP4	X	19.69	6
12	MP4	Z	0	6
13	MP4	X	19.69	78
14	MP4	Z	0	78
15	MP4	X	8.12	%75
16	MP4	Z	0	%75
17	MP4	X	8.19	%75
18	MP4	Z	0	%75
19	MP7	X	19.69	6
20	MP7	Z	0	6
21	MP7	X	19.69	78
22	MP7	Z	0	78
23	MP7	X	8.12	%75
24	MP7	Z	0	%75
25	MP7	X	8.19	%75
26	MP7	Z	0	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	13.89	6
2	MP1	Z	-8.02	6
3	MP1	X	13.89	78
4	MP1	Z	-8.02	78
5	MP1	X	5.96	%75
6	MP1	Z	-3.44	%75
7	MP1	X	6.16	%75
8	MP1	Z	-3.56	%75
9	MP1	X	6.45	%25
10	MP1	Z	-3.72	%25
11	MP4	X	13.89	6
12	MP4	Z	-8.02	6
13	MP4	X	13.89	78
14	MP4	Z	-8.02	78
15	MP4	X	5.96	%75
16	MP4	Z	-3.44	%75
17	MP4	X	6.16	%75
18	MP4	Z	-3.56	%75
19	MP7	X	18.63	6
20	MP7	Z	-10.75	6
21	MP7	X	18.63	78
22	MP7	Z	-10.75	78
23	MP7	X	7.56	%75
24	MP7	Z	-4.37	%75
25	MP7	X	7.56	%75
26	MP7	Z	-4.37	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	9.84	6
2	MP1	Z	-17.05	6
3	MP1	X	9.84	78
4	MP1	Z	-17.05	78
5	MP1	X	4.06	%75
6	MP1	Z	-7.03	%75
7	MP1	X	4.1	%75
8	MP1	Z	-7.1	%75

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
9	MP1	X	4.21	%25
10	MP1	Z	-7.29	%25
11	MP4	X	7.11	6
12	MP4	Z	-12.32	6
13	MP4	X	7.11	78
14	MP4	Z	-12.32	78
15	MP4	X	3.14	%75
16	MP4	Z	-5.43	%75
17	MP4	X	3.29	%75
18	MP4	Z	-5.7	%75
19	MP7	X	9.84	6
20	MP7	Z	-17.05	6
21	MP7	X	9.84	78
22	MP7	Z	-17.05	78
23	MP7	X	4.06	%75
24	MP7	Z	-7.03	%75
25	MP7	X	4.1	%75
26	MP7	Z	-7.1	%75

Member Point Loads (BLC 31 : Seismic Load Z)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Z	-11.682	6
2	MP1	Z	-11.682	78
3	MP1	Z	-18.096	%75
4	MP1	Z	-21.24	%75
5	MP1	Z	-6.188	%25
6	MP4	Z	-11.682	6
7	MP4	Z	-11.682	78
8	MP4	Z	-18.096	%75
9	MP4	Z	-21.24	%75
10	MP7	Z	-11.682	6
11	MP7	Z	-11.682	78
12	MP7	Z	-18.096	%75
13	MP7	Z	-21.24	%75

Member Point Loads (BLC 32 : Seismic Load X)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-11.682	6
2	MP1	X	-11.682	78
3	MP1	X	-18.096	%75
4	MP1	X	-21.24	%75
5	MP1	X	-6.188	%25
6	MP4	X	-11.682	6
7	MP4	X	-11.682	78
8	MP4	X	-18.096	%75
9	MP4	X	-21.24	%75
10	MP7	X	-11.682	6
11	MP7	X	-11.682	78
12	MP7	X	-18.096	%75
13	MP7	X	-21.24	%75

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	SZ	-77.549	-77.549	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
2	GA4	SZ	-77.549	-77.549	0	%100
3	GA3	SZ	-77.549	-77.549	0	%100
4	P3	SZ	-77.549	-77.549	0	%100
5	S2	SZ	-77.549	-77.549	0	%100
6	GA2	SZ	-77.549	-77.549	0	%100
7	GA1	SZ	-77.549	-77.549	0	%100
8	P2	SZ	-77.549	-77.549	0	%100
9	S1	SZ	-77.549	-77.549	0	%100
10	GA6	SZ	-77.549	-77.549	0	%100
11	GA5	SZ	-77.549	-77.549	0	%100
12	P1	SZ	-77.549	-77.549	0	%100
13	H1	SZ	-46.529	-46.529	0	%100
14	HR1	SZ	-46.529	-46.529	0	%100
15	HC2	SZ	-77.549	-77.549	0	%100
16	HC3	SZ	-77.549	-77.549	0	%100
17	HC1	SZ	-77.549	-77.549	0	%100
18	CA3	SZ	-77.549	-77.549	0	%100
19	CA4	SZ	-77.549	-77.549	0	%100
20	CA1	SZ	-77.549	-77.549	0	%100
21	CA2	SZ	-77.549	-77.549	0	%100
22	CA5	SZ	-77.549	-77.549	0	%100
23	CA6	SZ	-77.549	-77.549	0	%100
24	M64	SZ	0	0	0	%100
25	M65	SZ	0	0	0	%100
26	M66	SZ	0	0	0	%100
27	M67	SZ	0	0	0	%100
28	M68	SZ	0	0	0	%100
29	M69	SZ	0	0	0	%100
30	M70	SZ	0	0	0	%100
31	M71	SZ	0	0	0	%100
32	M72	SZ	0	0	0	%100
33	M73	SZ	0	0	0	%100
34	M74	SZ	0	0	0	%100
35	M75	SZ	0	0	0	%100
36	H3	SZ	-46.529	-46.529	0	%100
37	HR3	SZ	-46.529	-46.529	0	%100
38	H2	SZ	-46.529	-46.529	0	%100
39	HR2	SZ	-46.529	-46.529	0	%100
40	M40	SZ	0	0	0	%100
41	M41	SZ	0	0	0	%100
42	M42	SZ	0	0	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	M45	SZ	0	0	0	%100
46	MP3	SZ	-46.529	-46.529	0	%100
47	MP2	SZ	-46.529	-46.529	0	%100
48	MP1	SZ	-46.529	-46.529	0	%100
49	M49	SZ	0	0	0	%100
50	M50	SZ	0	0	0	%100
51	M51	SZ	0	0	0	%100
52	M52	SZ	0	0	0	%100
53	M53	SZ	0	0	0	%100
54	M54	SZ	0	0	0	%100
55	MP9	SZ	-46.529	-46.529	0	%100
56	MP8	SZ	-46.529	-46.529	0	%100
57	MP7	SZ	-46.529	-46.529	0	%100
58	M58	SZ	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
59	M59	SZ	0	0	0	%100
60	M60	SZ	0	0	0	%100
61	M61	SZ	0	0	0	%100
62	M62	SZ	0	0	0	%100
63	M63	SZ	0	0	0	%100
64	MP6	SZ	-46.529	-46.529	0	%100
65	MP5	SZ	-46.529	-46.529	0	%100
66	MP4	SZ	-46.529	-46.529	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	SX	-77.549	-77.549	0	%100
2	GA4	SX	-77.549	-77.549	0	%100
3	GA3	SX	-77.549	-77.549	0	%100
4	P3	SX	-77.549	-77.549	0	%100
5	S2	SX	-77.549	-77.549	0	%100
6	GA2	SX	-77.549	-77.549	0	%100
7	GA1	SX	-77.549	-77.549	0	%100
8	P2	SX	-77.549	-77.549	0	%100
9	S1	SX	-77.549	-77.549	0	%100
10	GA6	SX	-77.549	-77.549	0	%100
11	GA5	SX	-77.549	-77.549	0	%100
12	P1	SX	-77.549	-77.549	0	%100
13	H1	SX	-46.529	-46.529	0	%100
14	HR1	SX	-46.529	-46.529	0	%100
15	HC2	SX	-77.549	-77.549	0	%100
16	HC3	SX	-77.549	-77.549	0	%100
17	HC1	SX	-77.549	-77.549	0	%100
18	CA3	SX	-77.549	-77.549	0	%100
19	CA4	SX	-77.549	-77.549	0	%100
20	CA1	SX	-77.549	-77.549	0	%100
21	CA2	SX	-77.549	-77.549	0	%100
22	CA5	SX	-77.549	-77.549	0	%100
23	CA6	SX	-77.549	-77.549	0	%100
24	M64	SX	0	0	0	%100
25	M65	SX	0	0	0	%100
26	M66	SX	0	0	0	%100
27	M67	SX	0	0	0	%100
28	M68	SX	0	0	0	%100
29	M69	SX	0	0	0	%100
30	M70	SX	0	0	0	%100
31	M71	SX	0	0	0	%100
32	M72	SX	0	0	0	%100
33	M73	SX	0	0	0	%100
34	M74	SX	0	0	0	%100
35	M75	SX	0	0	0	%100
36	H3	SX	-46.529	-46.529	0	%100
37	HR3	SX	-46.529	-46.529	0	%100
38	H2	SX	-46.529	-46.529	0	%100
39	HR2	SX	-46.529	-46.529	0	%100
40	M40	SX	0	0	0	%100
41	M41	SX	0	0	0	%100
42	M42	SX	0	0	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	M45	SX	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
46	MP3	SX	-46.529	-46.529	0	%100
47	MP2	SX	-46.529	-46.529	0	%100
48	MP1	SX	-46.529	-46.529	0	%100
49	M49	SX	0	0	0	%100
50	M50	SX	0	0	0	%100
51	M51	SX	0	0	0	%100
52	M52	SX	0	0	0	%100
53	M53	SX	0	0	0	%100
54	M54	SX	0	0	0	%100
55	MP9	SX	-46.529	-46.529	0	%100
56	MP8	SX	-46.529	-46.529	0	%100
57	MP7	SX	-46.529	-46.529	0	%100
58	M58	SX	0	0	0	%100
59	M59	SX	0	0	0	%100
60	M60	SX	0	0	0	%100
61	M61	SX	0	0	0	%100
62	M62	SX	0	0	0	%100
63	M63	SX	0	0	0	%100
64	MP6	SX	-46.529	-46.529	0	%100
65	MP5	SX	-46.529	-46.529	0	%100
66	MP4	SX	-46.529	-46.529	0	%100

Member Distributed Loads (BLC 16 : Ice Weight)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	Y	-20.764	-20.764	0	%100
2	GA4	Y	-13.261	-13.261	0	%100
3	GA3	Y	-13.261	-13.261	0	%100
4	P3	Y	-23.029	-23.029	0	%100
5	S2	Y	-20.764	-20.764	0	%100
6	GA2	Y	-13.261	-13.261	0	%100
7	GA1	Y	-13.261	-13.261	0	%100
8	P2	Y	-23.029	-23.029	0	%100
9	S1	Y	-20.764	-20.764	0	%100
10	GA6	Y	-13.261	-13.261	0	%100
11	GA5	Y	-13.261	-13.261	0	%100
12	P1	Y	-23.029	-23.029	0	%100
13	H1	Y	-15.043	-15.043	0	%100
14	HR1	Y	-13.385	-13.385	0	%100
15	HC2	Y	-20.764	-20.764	0	%100
16	HC3	Y	-20.764	-20.764	0	%100
17	HC1	Y	-20.764	-20.764	0	%100
18	CA3	Y	-16.258	-16.258	0	%100
19	CA4	Y	-16.258	-16.258	0	%100
20	CA1	Y	-16.258	-16.258	0	%100
21	CA2	Y	-16.258	-16.258	0	%100
22	CA5	Y	-16.258	-16.258	0	%100
23	CA6	Y	-16.258	-16.258	0	%100
24	M64	Y	-5.759	-5.759	0	%100
25	M65	Y	-5.759	-5.759	0	%100
26	M66	Y	-5.759	-5.759	0	%100
27	M67	Y	-5.759	-5.759	0	%100
28	M68	Y	-5.759	-5.759	0	%100
29	M69	Y	-5.759	-5.759	0	%100
30	M70	Y	-5.759	-5.759	0	%100
31	M71	Y	-5.759	-5.759	0	%100
32	M72	Y	-5.759	-5.759	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
33	M73	Y	-5.759	-5.759	0	%100
34	M74	Y	-5.759	-5.759	0	%100
35	M75	Y	-5.759	-5.759	0	%100
36	H3	Y	-15.043	-15.043	0	%100
37	HR3	Y	-13.385	-13.385	0	%100
38	H2	Y	-15.043	-15.043	0	%100
39	HR2	Y	-13.385	-13.385	0	%100
40	M40	Y	-5.759	-5.759	0	%100
41	M41	Y	-5.759	-5.759	0	%100
42	M42	Y	-5.759	-5.759	0	%100
43	M43	Y	-5.759	-5.759	0	%100
44	M44	Y	-5.759	-5.759	0	%100
45	M45	Y	-5.759	-5.759	0	%100
46	MP3	Y	-13.385	-13.385	0	%100
47	MP2	Y	-13.385	-13.385	0	%100
48	MP1	Y	-13.385	-13.385	0	%100
49	M49	Y	-5.759	-5.759	0	%100
50	M50	Y	-5.759	-5.759	0	%100
51	M51	Y	-5.759	-5.759	0	%100
52	M52	Y	-5.759	-5.759	0	%100
53	M53	Y	-5.759	-5.759	0	%100
54	M54	Y	-5.759	-5.759	0	%100
55	MP9	Y	-13.385	-13.385	0	%100
56	MP8	Y	-13.385	-13.385	0	%100
57	MP7	Y	-13.385	-13.385	0	%100
58	M58	Y	-5.759	-5.759	0	%100
59	M59	Y	-5.759	-5.759	0	%100
60	M60	Y	-5.759	-5.759	0	%100
61	M61	Y	-5.759	-5.759	0	%100
62	M62	Y	-5.759	-5.759	0	%100
63	M63	Y	-5.759	-5.759	0	%100
64	MP6	Y	-13.385	-13.385	0	%100
65	MP5	Y	-13.385	-13.385	0	%100
66	MP4	Y	-13.385	-13.385	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	SZ	-15.281	-15.281	0	%100
2	GA4	SZ	-21.916	-21.916	0	%100
3	GA3	SZ	-21.916	-21.916	0	%100
4	P3	SZ	-14.41	-14.41	0	%100
5	S2	SZ	-15.281	-15.281	0	%100
6	GA2	SZ	-21.916	-21.916	0	%100
7	GA1	SZ	-21.916	-21.916	0	%100
8	P2	SZ	-14.41	-14.41	0	%100
9	S1	SZ	-15.281	-15.281	0	%100
10	GA6	SZ	-21.916	-21.916	0	%100
11	GA5	SZ	-21.916	-21.916	0	%100
12	P1	SZ	-14.41	-14.41	0	%100
13	H1	SZ	-19.37	-19.37	0	%100
14	HR1	SZ	-21.701	-21.701	0	%100
15	HC2	SZ	-15.281	-15.281	0	%100
16	HC3	SZ	-15.281	-15.281	0	%100
17	HC1	SZ	-15.281	-15.281	0	%100
18	CA3	SZ	-18.128	-18.128	0	%100
19	CA4	SZ	-18.128	-18.128	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
20	CA1	SZ	-18.128	-18.128	0	%100
21	CA2	SZ	-18.128	-18.128	0	%100
22	CA5	SZ	-18.128	-18.128	0	%100
23	CA6	SZ	-18.128	-18.128	0	%100
24	M64	SZ	0	0	0	%100
25	M65	SZ	0	0	0	%100
26	M66	SZ	0	0	0	%100
27	M67	SZ	0	0	0	%100
28	M68	SZ	0	0	0	%100
29	M69	SZ	0	0	0	%100
30	M70	SZ	0	0	0	%100
31	M71	SZ	0	0	0	%100
32	M72	SZ	0	0	0	%100
33	M73	SZ	0	0	0	%100
34	M74	SZ	0	0	0	%100
35	M75	SZ	0	0	0	%100
36	H3	SZ	-19.37	-19.37	0	%100
37	HR3	SZ	-21.701	-21.701	0	%100
38	H2	SZ	-19.37	-19.37	0	%100
39	HR2	SZ	-21.701	-21.701	0	%100
40	M40	SZ	0	0	0	%100
41	M41	SZ	0	0	0	%100
42	M42	SZ	0	0	0	%100
43	M43	SZ	0	0	0	%100
44	M44	SZ	0	0	0	%100
45	M45	SZ	0	0	0	%100
46	MP3	SZ	-21.701	-21.701	0	%100
47	MP2	SZ	-21.701	-21.701	0	%100
48	MP1	SZ	-21.701	-21.701	0	%100
49	M49	SZ	0	0	0	%100
50	M50	SZ	0	0	0	%100
51	M51	SZ	0	0	0	%100
52	M52	SZ	0	0	0	%100
53	M53	SZ	0	0	0	%100
54	M54	SZ	0	0	0	%100
55	MP9	SZ	-21.701	-21.701	0	%100
56	MP8	SZ	-21.701	-21.701	0	%100
57	MP7	SZ	-21.701	-21.701	0	%100
58	M58	SZ	0	0	0	%100
59	M59	SZ	0	0	0	%100
60	M60	SZ	0	0	0	%100
61	M61	SZ	0	0	0	%100
62	M62	SZ	0	0	0	%100
63	M63	SZ	0	0	0	%100
64	MP6	SZ	-21.701	-21.701	0	%100
65	MP5	SZ	-21.701	-21.701	0	%100
66	MP4	SZ	-21.701	-21.701	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S3	SX	-15.281	-15.281	0	%100
2	GA4	SX	-21.916	-21.916	0	%100
3	GA3	SX	-21.916	-21.916	0	%100
4	P3	SX	-14.41	-14.41	0	%100
5	S2	SX	-15.281	-15.281	0	%100
6	GA2	SX	-21.916	-21.916	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
7	GA1	SX	-21.916	-21.916	0	%100
8	P2	SX	-14.41	-14.41	0	%100
9	S1	SX	-15.281	-15.281	0	%100
10	GA6	SX	-21.916	-21.916	0	%100
11	GA5	SX	-21.916	-21.916	0	%100
12	P1	SX	-14.41	-14.41	0	%100
13	H1	SX	-19.37	-19.37	0	%100
14	HR1	SX	-21.701	-21.701	0	%100
15	HC2	SX	-15.281	-15.281	0	%100
16	HC3	SX	-15.281	-15.281	0	%100
17	HC1	SX	-15.281	-15.281	0	%100
18	CA3	SX	-18.128	-18.128	0	%100
19	CA4	SX	-18.128	-18.128	0	%100
20	CA1	SX	-18.128	-18.128	0	%100
21	CA2	SX	-18.128	-18.128	0	%100
22	CA5	SX	-18.128	-18.128	0	%100
23	CA6	SX	-18.128	-18.128	0	%100
24	M64	SX	0	0	0	%100
25	M65	SX	0	0	0	%100
26	M66	SX	0	0	0	%100
27	M67	SX	0	0	0	%100
28	M68	SX	0	0	0	%100
29	M69	SX	0	0	0	%100
30	M70	SX	0	0	0	%100
31	M71	SX	0	0	0	%100
32	M72	SX	0	0	0	%100
33	M73	SX	0	0	0	%100
34	M74	SX	0	0	0	%100
35	M75	SX	0	0	0	%100
36	H3	SX	-19.37	-19.37	0	%100
37	HR3	SX	-21.701	-21.701	0	%100
38	H2	SX	-19.37	-19.37	0	%100
39	HR2	SX	-21.701	-21.701	0	%100
40	M40	SX	0	0	0	%100
41	M41	SX	0	0	0	%100
42	M42	SX	0	0	0	%100
43	M43	SX	0	0	0	%100
44	M44	SX	0	0	0	%100
45	M45	SX	0	0	0	%100
46	MP3	SX	-21.701	-21.701	0	%100
47	MP2	SX	-21.701	-21.701	0	%100
48	MP1	SX	-21.701	-21.701	0	%100
49	M49	SX	0	0	0	%100
50	M50	SX	0	0	0	%100
51	M51	SX	0	0	0	%100
52	M52	SX	0	0	0	%100
53	M53	SX	0	0	0	%100
54	M54	SX	0	0	0	%100
55	MP9	SX	-21.701	-21.701	0	%100
56	MP8	SX	-21.701	-21.701	0	%100
57	MP7	SX	-21.701	-21.701	0	%100
58	M58	SX	0	0	0	%100
59	M59	SX	0	0	0	%100
60	M60	SX	0	0	0	%100
61	M61	SX	0	0	0	%100
62	M62	SX	0	0	0	%100
63	M63	SX	0	0	0	%100

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

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
64	MP6	SX	-21.701	-21.701	0	%100
65	MP5	SX	-21.701	-21.701	0	%100
66	MP4	SX	-21.701	-21.701	0	%100

Member Distributed Loads (BLC 43 : BLC 1 Transient Area Loads)

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

Member Distributed Loads (BLC 44 : BLC 16 Transient Area Loads)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[in,%]	End Location[in,%]
1	S2	Y	-36.949	-36.949	16.404	40
2	GA2	Y	-18.621	-18.621	3.828	27.295
3	GA1	Y	-18.621	-18.621	3.828	27.295
4	S3	Y	-36.949	-36.949	16.404	40
5	GA4	Y	-18.621	-18.621	3.828	27.295
6	GA3	Y	-18.621	-18.621	3.828	27.295
7	S1	Y	-36.949	-36.949	16.404	40
8	GA6	Y	-18.621	-18.621	3.828	27.295
9	GA5	Y	-18.621	-18.621	3.828	27.295

Load Combinations

	Description	So...	P...	S...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...
1	1.4DL	Yes	Y		1	1.4																		
2	1.2DL + 1WL AZI 0	Yes	Y		1	1.2	2	1	14	1	15													
3	1.2DL + 1WL AZI 30	Yes	Y		1	1.2	3	1	14	.866	15	.5												
4	1.2DL + 1WL AZI 60	Yes	Y		1	1.2	4	1	14	.5	15	.866												
5	1.2DL + 1WL AZI 90	Yes	Y		1	1.2	5	1	14		15	1												
6	1.2DL + 1WL AZI 120	Yes	Y		1	1.2	6	1	14	-.5	15	.866												
7	1.2DL + 1WL AZI 150	Yes	Y		1	1.2	7	1	14	-.866	15	.5												
8	1.2DL + 1WL AZI 180	Yes	Y		1	1.2	8	1	14	-1	15													
9	1.2DL + 1WL AZI 210	Yes	Y		1	1.2	9	1	14	-.866	15	-.5												
10	1.2DL + 1WL AZI 240	Yes	Y		1	1.2	10	1	14	-.5	15	-.866												
11	1.2DL + 1WL AZI 270	Yes	Y		1	1.2	11	1	14		15	-1												
12	1.2DL + 1WL AZI 300	Yes	Y		1	1.2	12	1	14	.5	15	-.866												
13	1.2DL + 1WL AZI 330	Yes	Y		1	1.2	13	1	14	.866	15	-.5												
14	0.9DL + 1WL AZI 0	Yes	Y		1	.9	2	1	14	1	15													
15	0.9DL + 1WL AZI 30	Yes	Y		1	.9	3	1	14	.866	15	.5												
16	0.9DL + 1WL AZI 60	Yes	Y		1	.9	4	1	14	.5	15	.866												
17	0.9DL + 1WL AZI 90	Yes	Y		1	.9	5	1	14		15	1												
18	0.9DL + 1WL AZI 120	Yes	Y		1	.9	6	1	14	-.5	15	.866												
19	0.9DL + 1WL AZI 150	Yes	Y		1	.9	7	1	14	-.866	15	.5												
20	0.9DL + 1WL AZI 180	Yes	Y		1	.9	8	1	14	-1	15													
21	0.9DL + 1WL AZI 210	Yes	Y		1	.9	9	1	14	-.866	15	-.5												
22	0.9DL + 1WL AZI 240	Yes	Y		1	.9	10	1	14	-.5	15	-.866												
23	0.9DL + 1WL AZI 270	Yes	Y		1	.9	11	1	14		15	-1												
24	0.9DL + 1WL AZI 300	Yes	Y		1	.9	12	1	14	.5	15	-.866												

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...
25	0.9DL + 1WL AZI 330	Yes	Y		1	.9	13	1	14	.866	15	-.5												
26	1.2D + 1.0Di	Yes	Y		1	1.2	16	1																
27	1.2D + 1.0Di +1.0Wi AZI 0	Yes	Y		1	1.2	16	1	17	1	29	1	30											
28	1.2D + 1.0Di +1.0Wi AZI 30	Yes	Y		1	1.2	16	1	18	1	29	.866	30	.5										
29	1.2D + 1.0Di +1.0Wi AZI 60	Yes	Y		1	1.2	16	1	19	1	29	.5	30	.866										
30	1.2D + 1.0Di +1.0Wi AZI 90	Yes	Y		1	1.2	16	1	20	1	29		30	1										
31	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	21	1	29	-.5	30	.866										
32	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	22	1	29	-.866	30	.5										
33	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	23	1	29	-1	30											
34	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	24	1	29	-.866	30	-.5										
35	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	25	1	29	-.5	30	-.866										
36	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	26	1	29		30	-1										
37	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	27	1	29	.5	30	-.866										
38	1.2D + 1.0Di +1.0Wi AZI ...	Yes	Y		1	1.2	16	1	28	1	29	.866	30	-.5										
39	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	1	32															
40	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	.866	32	.5														
41	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	.5	32	.866														
42	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31		32	1														
43	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	-.5	32	.866														
44	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	-.866	32	.5														
45	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	-1	32															
46	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	-.866	32	-.5														
47	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	-.5	32	-.866														
48	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31		32	-1														
49	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	.5	32	-.866														
50	(1.2 + 0.2Sds)DL + 1.0E ...	Yes	Y		1	1.2...	31	.866	32	-.5														
51	(0.9 - 0.2Sds)DL + 1.0E A...	Yes	Y		1	.862	31	1	32															
52	(0.9 - 0.2Sds)DL + 1.0E A...	Yes	Y		1	.862	31	.866	32	.5														
53	(0.9 - 0.2Sds)DL + 1.0E A...	Yes	Y		1	.862	31	.5	32	.866														
54	(0.9 - 0.2Sds)DL + 1.0E A...	Yes	Y		1	.862	31		32	1														
55	(0.9 - 0.2Sds)DL + 1.0E A...	Yes	Y		1	.862	31	-.5	32	.866														
56	(0.9 - 0.2Sds)DL + 1.0E A...	Yes	Y		1	.862	31	-.866	32	.5														
57	(0.9 - 0.2Sds)DL + 1.0E A...	Yes	Y		1	.862	31	-1	32															
58	(0.9 - 0.2Sds)DL + 1.0E A...	Yes	Y		1	.862	31	-.866	32	-.5														
59	(0.9 - 0.2Sds)DL + 1.0E A...	Yes	Y		1	.862	31	-.5	32	-.866														
60	(0.9 - 0.2Sds)DL + 1.0E A...	Yes	Y		1	.862	31		32	-1														
61	(0.9 - 0.2Sds)DL + 1.0E A...	Yes	Y		1	.862	31	.5	32	-.866														
62	(0.9 - 0.2Sds)DL + 1.0E A...	Yes	Y		1	.862	31	.866	32	-.5														
63	1.0DL + 1.5LL + 1.0SWL ...	Yes	Y		1	1	2	.268	14	.268	15		33	1.5										
64	1.0DL + 1.5LL + 1.0SWL ...	Yes	Y		1	1	3	.268	14	.232	15	.134	33	1.5										
65	1.0DL + 1.5LL + 1.0SWL ...	Yes	Y		1	1	4	.268	14	.134	15	.232	33	1.5										
66	1.0DL + 1.5LL + 1.0SWL ...	Yes	Y		1	1	5	.268	14		15	.268	33	1.5										
67	1.0DL + 1.5LL + 1.0SWL ...	Yes	Y		1	1	6	.268	14	-.134	15	.232	33	1.5										
68	1.0DL + 1.5LL + 1.0SWL ...	Yes	Y		1	1	7	.268	14	-.232	15	.134	33	1.5										
69	1.0DL + 1.5LL + 1.0SWL ...	Yes	Y		1	1	8	.268	14	-.268	15		33	1.5										
70	1.0DL + 1.5LL + 1.0SWL ...	Yes	Y		1	1	9	.268	14	-.232	15	-.134	33	1.5										
71	1.0DL + 1.5LL + 1.0SWL ...	Yes	Y		1	1	10	.268	14	-.134	15	-.232	33	1.5										
72	1.0DL + 1.5LL + 1.0SWL ...	Yes	Y		1	1	11	.268	14		15	-.268	33	1.5										
73	1.0DL + 1.5LL + 1.0SWL ...	Yes	Y		1	1	12	.268	14	.134	15	-.232	33	1.5										
74	1.0DL + 1.5LL + 1.0SWL ...	Yes	Y		1	1	13	.268	14	.232	15	-.134	33	1.5										
75	1.2DL + 1.5LL	Yes	Y		1	1.2	33	1.5																
76	1.2DL + 1.5LM-MP1 + 1S...	Yes	Y		1	1.2	34	1.5	2	.067	14	.067	15											
77	1.2DL + 1.5LM-MP1 + 1S...	Yes	Y		1	1.2	34	1.5	3	.067	14	.058	15	.033										
78	1.2DL + 1.5LM-MP1 + 1S...	Yes	Y		1	1.2	34	1.5	4	.067	14	.033	15	.058										
79	1.2DL + 1.5LM-MP1 + 1S...	Yes	Y		1	1.2	34	1.5	5	.067	14		15	.067										
80	1.2DL + 1.5LM-MP1 + 1S...	Yes	Y		1	1.2	34	1.5	6	.067	14	-.033	15	.058										
81	1.2DL + 1.5LM-MP1 + 1S...	Yes	Y		1	1.2	34	1.5	7	.067	14	-.058	15	.033										

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...
82	1.2DL + 1.5LM-MP1 + 1S...	Yes	Y		1	1.2	34	1.5	8	.067	14	-.067	15											
83	1.2DL + 1.5LM-MP1 + 1S...	Yes	Y		1	1.2	34	1.5	9	.067	14	-.058	15	-.033										
84	1.2DL + 1.5LM-MP1 + 1S...	Yes	Y		1	1.2	34	1.5	10	.067	14	-.033	15	-.058										
85	1.2DL + 1.5LM-MP1 + 1S...	Yes	Y		1	1.2	34	1.5	11	.067	14		15	-.067										
86	1.2DL + 1.5LM-MP1 + 1S...	Yes	Y		1	1.2	34	1.5	12	.067	14	.033	15	-.058										
87	1.2DL + 1.5LM-MP1 + 1S...	Yes	Y		1	1.2	34	1.5	13	.067	14	.058	15	-.033										
88	1.2DL + 1.5LM-MP2 + 1S...	Yes	Y		1	1.2	35	1.5	2	.067	14	.067	15											
89	1.2DL + 1.5LM-MP2 + 1S...	Yes	Y		1	1.2	35	1.5	3	.067	14	.058	15	.033										
90	1.2DL + 1.5LM-MP2 + 1S...	Yes	Y		1	1.2	35	1.5	4	.067	14	.033	15	.058										
91	1.2DL + 1.5LM-MP2 + 1S...	Yes	Y		1	1.2	35	1.5	5	.067	14		15	.067										
92	1.2DL + 1.5LM-MP2 + 1S...	Yes	Y		1	1.2	35	1.5	6	.067	14	-.033	15	.058										
93	1.2DL + 1.5LM-MP2 + 1S...	Yes	Y		1	1.2	35	1.5	7	.067	14	-.058	15	.033										
94	1.2DL + 1.5LM-MP2 + 1S...	Yes	Y		1	1.2	35	1.5	8	.067	14	-.067	15											
95	1.2DL + 1.5LM-MP2 + 1S...	Yes	Y		1	1.2	35	1.5	9	.067	14	-.058	15	-.033										
96	1.2DL + 1.5LM-MP2 + 1S...	Yes	Y		1	1.2	35	1.5	10	.067	14	-.033	15	-.058										
97	1.2DL + 1.5LM-MP2 + 1S...	Yes	Y		1	1.2	35	1.5	11	.067	14		15	-.067										
98	1.2DL + 1.5LM-MP2 + 1S...	Yes	Y		1	1.2	35	1.5	12	.067	14	.033	15	-.058										
99	1.2DL + 1.5LM-MP2 + 1S...	Yes	Y		1	1.2	35	1.5	13	.067	14	.058	15	-.033										
100	1.2DL + 1.5LM-MP3 + 1S...	Yes	Y		1	1.2	36	1.5	2	.067	14	.067	15											
101	1.2DL + 1.5LM-MP3 + 1S...	Yes	Y		1	1.2	36	1.5	3	.067	14	.058	15	.033										
102	1.2DL + 1.5LM-MP3 + 1S...	Yes	Y		1	1.2	36	1.5	4	.067	14	.033	15	.058										
103	1.2DL + 1.5LM-MP3 + 1S...	Yes	Y		1	1.2	36	1.5	5	.067	14		15	.067										
104	1.2DL + 1.5LM-MP3 + 1S...	Yes	Y		1	1.2	36	1.5	6	.067	14	-.033	15	.058										
105	1.2DL + 1.5LM-MP3 + 1S...	Yes	Y		1	1.2	36	1.5	7	.067	14	-.058	15	.033										
106	1.2DL + 1.5LM-MP3 + 1S...	Yes	Y		1	1.2	36	1.5	8	.067	14	-.067	15											
107	1.2DL + 1.5LM-MP3 + 1S...	Yes	Y		1	1.2	36	1.5	9	.067	14	-.058	15	-.033										
108	1.2DL + 1.5LM-MP3 + 1S...	Yes	Y		1	1.2	36	1.5	10	.067	14	-.033	15	-.058										
109	1.2DL + 1.5LM-MP3 + 1S...	Yes	Y		1	1.2	36	1.5	11	.067	14		15	-.067										
110	1.2DL + 1.5LM-MP3 + 1S...	Yes	Y		1	1.2	36	1.5	12	.067	14	.033	15	-.058										
111	1.2DL + 1.5LM-MP3 + 1S...	Yes	Y		1	1.2	36	1.5	13	.067	14	.058	15	-.033										
112	1.2DL + 1.5LM-MP4 + 1S...	Yes	Y		1	1.2	37	1.5	2	.067	14	.067	15											
113	1.2DL + 1.5LM-MP4 + 1S...	Yes	Y		1	1.2	37	1.5	3	.067	14	.058	15	.033										
114	1.2DL + 1.5LM-MP4 + 1S...	Yes	Y		1	1.2	37	1.5	4	.067	14	.033	15	.058										
115	1.2DL + 1.5LM-MP4 + 1S...	Yes	Y		1	1.2	37	1.5	5	.067	14		15	.067										
116	1.2DL + 1.5LM-MP4 + 1S...	Yes	Y		1	1.2	37	1.5	6	.067	14	-.033	15	.058										
117	1.2DL + 1.5LM-MP4 + 1S...	Yes	Y		1	1.2	37	1.5	7	.067	14	-.058	15	.033										
118	1.2DL + 1.5LM-MP4 + 1S...	Yes	Y		1	1.2	37	1.5	8	.067	14	-.067	15											
119	1.2DL + 1.5LM-MP4 + 1S...	Yes	Y		1	1.2	37	1.5	9	.067	14	-.058	15	-.033										
120	1.2DL + 1.5LM-MP4 + 1S...	Yes	Y		1	1.2	37	1.5	10	.067	14	-.033	15	-.058										
121	1.2DL + 1.5LM-MP4 + 1S...	Yes	Y		1	1.2	37	1.5	11	.067	14		15	-.067										
122	1.2DL + 1.5LM-MP4 + 1S...	Yes	Y		1	1.2	37	1.5	12	.067	14	.033	15	-.058										
123	1.2DL + 1.5LM-MP4 + 1S...	Yes	Y		1	1.2	37	1.5	13	.067	14	.058	15	-.033										
124	1.2DL + 1.5LM-MP5 + 1S...	Yes	Y		1	1.2	38	1.5	2	.067	14	.067	15											
125	1.2DL + 1.5LM-MP5 + 1S...	Yes	Y		1	1.2	38	1.5	3	.067	14	.058	15	.033										
126	1.2DL + 1.5LM-MP5 + 1S...	Yes	Y		1	1.2	38	1.5	4	.067	14	.033	15	.058										
127	1.2DL + 1.5LM-MP5 + 1S...	Yes	Y		1	1.2	38	1.5	5	.067	14		15	.067										
128	1.2DL + 1.5LM-MP5 + 1S...	Yes	Y		1	1.2	38	1.5	6	.067	14	-.033	15	.058										
129	1.2DL + 1.5LM-MP5 + 1S...	Yes	Y		1	1.2	38	1.5	7	.067	14	-.058	15	.033										
130	1.2DL + 1.5LM-MP5 + 1S...	Yes	Y		1	1.2	38	1.5	8	.067	14	-.067	15											
131	1.2DL + 1.5LM-MP5 + 1S...	Yes	Y		1	1.2	38	1.5	9	.067	14	-.058	15	-.033										
132	1.2DL + 1.5LM-MP5 + 1S...	Yes	Y		1	1.2	38	1.5	10	.067	14	-.033	15	-.058										
133	1.2DL + 1.5LM-MP5 + 1S...	Yes	Y		1	1.2	38	1.5	11	.067	14		15	-.067										
134	1.2DL + 1.5LM-MP5 + 1S...	Yes	Y		1	1.2	38	1.5	12	.067	14	.033	15	-.058										
135	1.2DL + 1.5LM-MP5 + 1S...	Yes	Y		1	1.2	38	1.5	13	.067	14	.058	15	-.033										
136	1.2DL + 1.5LM-MP6 + 1S...	Yes	Y		1	1.2	39	1.5	2	.067	14	.067	15											
137	1.2DL + 1.5LM-MP6 + 1S...	Yes	Y		1	1.2	39	1.5	3	.067	14	.058	15	.033										
138	1.2DL + 1.5LM-MP6 + 1S...	Yes	Y		1	1.2	39	1.5	4	.067	14	.033	15	.058										

Load Combinations (Continued)

	Description	So..	P...	S...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...	BLC	Fa...
139	1.2DL + 1.5LM-MP6 + 1S...	Yes	Y		1	1.2	39	1.5	5	.067	14		15	.067										
140	1.2DL + 1.5LM-MP6 + 1S...	Yes	Y		1	1.2	39	1.5	6	.067	14	-.033	15	.058										
141	1.2DL + 1.5LM-MP6 + 1S...	Yes	Y		1	1.2	39	1.5	7	.067	14	-.058	15	.033										
142	1.2DL + 1.5LM-MP6 + 1S...	Yes	Y		1	1.2	39	1.5	8	.067	14	-.067	15											
143	1.2DL + 1.5LM-MP6 + 1S...	Yes	Y		1	1.2	39	1.5	9	.067	14	-.058	15	-.033										
144	1.2DL + 1.5LM-MP6 + 1S...	Yes	Y		1	1.2	39	1.5	10	.067	14	-.033	15	-.058										
145	1.2DL + 1.5LM-MP6 + 1S...	Yes	Y		1	1.2	39	1.5	11	.067	14		15	-.067										
146	1.2DL + 1.5LM-MP6 + 1S...	Yes	Y		1	1.2	39	1.5	12	.067	14	.033	15	-.058										
147	1.2DL + 1.5LM-MP6 + 1S...	Yes	Y		1	1.2	39	1.5	13	.067	14	.058	15	-.033										
148	1.2DL + 1.5LM-MP7 + 1S...	Yes	Y		1	1.2	40	1.5	2	.067	14	.067	15											
149	1.2DL + 1.5LM-MP7 + 1S...	Yes	Y		1	1.2	40	1.5	3	.067	14	.058	15	.033										
150	1.2DL + 1.5LM-MP7 + 1S...	Yes	Y		1	1.2	40	1.5	4	.067	14	.033	15	.058										
151	1.2DL + 1.5LM-MP7 + 1S...	Yes	Y		1	1.2	40	1.5	5	.067	14		15	.067										
152	1.2DL + 1.5LM-MP7 + 1S...	Yes	Y		1	1.2	40	1.5	6	.067	14	-.033	15	.058										
153	1.2DL + 1.5LM-MP7 + 1S...	Yes	Y		1	1.2	40	1.5	7	.067	14	-.058	15	.033										
154	1.2DL + 1.5LM-MP7 + 1S...	Yes	Y		1	1.2	40	1.5	8	.067	14	-.067	15											
155	1.2DL + 1.5LM-MP7 + 1S...	Yes	Y		1	1.2	40	1.5	9	.067	14	-.058	15	-.033										
156	1.2DL + 1.5LM-MP7 + 1S...	Yes	Y		1	1.2	40	1.5	10	.067	14	-.033	15	-.058										
157	1.2DL + 1.5LM-MP7 + 1S...	Yes	Y		1	1.2	40	1.5	11	.067	14		15	-.067										
158	1.2DL + 1.5LM-MP7 + 1S...	Yes	Y		1	1.2	40	1.5	12	.067	14	.033	15	-.058										
159	1.2DL + 1.5LM-MP7 + 1S...	Yes	Y		1	1.2	40	1.5	13	.067	14	.058	15	-.033										
160	1.2DL + 1.5LM-MP8 + 1S...	Yes	Y		1	1.2	41	1.5	2	.067	14	.067	15											
161	1.2DL + 1.5LM-MP8 + 1S...	Yes	Y		1	1.2	41	1.5	3	.067	14	.058	15	.033										
162	1.2DL + 1.5LM-MP8 + 1S...	Yes	Y		1	1.2	41	1.5	4	.067	14	.033	15	.058										
163	1.2DL + 1.5LM-MP8 + 1S...	Yes	Y		1	1.2	41	1.5	5	.067	14		15	.067										
164	1.2DL + 1.5LM-MP8 + 1S...	Yes	Y		1	1.2	41	1.5	6	.067	14	-.033	15	.058										
165	1.2DL + 1.5LM-MP8 + 1S...	Yes	Y		1	1.2	41	1.5	7	.067	14	-.058	15	.033										
166	1.2DL + 1.5LM-MP8 + 1S...	Yes	Y		1	1.2	41	1.5	8	.067	14	-.067	15											
167	1.2DL + 1.5LM-MP8 + 1S...	Yes	Y		1	1.2	41	1.5	9	.067	14	-.058	15	-.033										
168	1.2DL + 1.5LM-MP8 + 1S...	Yes	Y		1	1.2	41	1.5	10	.067	14	-.033	15	-.058										
169	1.2DL + 1.5LM-MP8 + 1S...	Yes	Y		1	1.2	41	1.5	11	.067	14		15	-.067										
170	1.2DL + 1.5LM-MP8 + 1S...	Yes	Y		1	1.2	41	1.5	12	.067	14	.033	15	-.058										
171	1.2DL + 1.5LM-MP8 + 1S...	Yes	Y		1	1.2	41	1.5	13	.067	14	.058	15	-.033										
172	1.2DL + 1.5LM-MP9 + 1S...	Yes	Y		1	1.2	42	1.5	2	.067	14	.067	15											
173	1.2DL + 1.5LM-MP9 + 1S...	Yes	Y		1	1.2	42	1.5	3	.067	14	.058	15	.033										
174	1.2DL + 1.5LM-MP9 + 1S...	Yes	Y		1	1.2	42	1.5	4	.067	14	.033	15	.058										
175	1.2DL + 1.5LM-MP9 + 1S...	Yes	Y		1	1.2	42	1.5	5	.067	14		15	.067										
176	1.2DL + 1.5LM-MP9 + 1S...	Yes	Y		1	1.2	42	1.5	6	.067	14	-.033	15	.058										
177	1.2DL + 1.5LM-MP9 + 1S...	Yes	Y		1	1.2	42	1.5	7	.067	14	-.058	15	.033										
178	1.2DL + 1.5LM-MP9 + 1S...	Yes	Y		1	1.2	42	1.5	8	.067	14	-.067	15											
179	1.2DL + 1.5LM-MP9 + 1S...	Yes	Y		1	1.2	42	1.5	9	.067	14	-.058	15	-.033										
180	1.2DL + 1.5LM-MP9 + 1S...	Yes	Y		1	1.2	42	1.5	10	.067	14	-.033	15	-.058										
181	1.2DL + 1.5LM-MP9 + 1S...	Yes	Y		1	1.2	42	1.5	11	.067	14		15	-.067										
182	1.2DL + 1.5LM-MP9 + 1S...	Yes	Y		1	1.2	42	1.5	12	.067	14	.033	15	-.058										

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	...	LC	phi*...	phi*...	phi*...	phi*...	Cb	Eqn
1	S1	HSS4...	.395	0	34	.161	0	y	37	133...	139...	161...	161...	2.0...	H1...
2	S2	HSS4...	.372	0	32	.144	0	y	33	133...	139...	161...	161...	2.0...	H1...
3	S3	HSS4...	.372	0	38	.145	0	y	29	133...	139...	161...	161...	2.0...	H1...
4	CA5	C3.38...	.363	0	35	.069	28.188	y	30	477...	56700	220...	575...	1.6...	H1...
5	CA1	C3.38...	.360	0	31	.068	28.188	y	27	477...	56700	220...	575...	1.6...	H1...
6	CA3	C3.38...	.352	0	27	.065	28.188	y	34	477...	56700	220...	575...	1.6...	H1...
7	CA6	C3.38...	.335	33	34	.061	33	y	38	477...	56700	220...	575...	1.6...	H1...
8	CA2	C3.38...	.326	33	30	.058	33	y	34	477...	56700	220...	575...	1.6...	H1...

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	...	LC	phi*...	phi*...	phi*...	phi*...	Cb	Eqn
9	CA4	C3.38...	.320	33	27	.057	33	y	30	477...	56700	220...	575...	1.6...	H1...
10	P3	PL6.5...	.251	21	2	.228	36.312	y	6	365...	78975	616...	791...	1.4...	H1...
11	P2	PL6.5...	.249	21	6	.238	36.312	y	9	365...	78975	616...	795...	1.4...	H1...
12	P1	PL6.5...	.237	21	36	.260	36.312	y	2	365...	78975	616...	858...	1.5...	H1...
13	GA2	L2x2x4	.223	0	5	.019	0	y	11	235...	305...	690...	157...	2.2...	H2-1
14	MP4	PIPE_...	.218	68	7	.124	68		7	300...	50715	359...	359...	2.8...	H1...
15	MP7	PIPE_...	.216	68	3	.122	68		3	300...	50715	359...	359...	3.33	H1...
16	GA6	L2x2x4	.216	0	9	.019	0	y	3	235...	305...	690...	157...	2.1...	H2-1
17	MP1	PIPE_...	.208	68	11	.117	68		11	300...	50715	359...	359...	2.7...	H1...
18	MP9	PIPE_...	.204	68	9	.122	68		9	300...	50715	359...	359...	3.1...	H1...
19	MP6	PIPE_...	.201	68	13	.131	68		2	300...	50715	359...	359...	3.6...	H1...
20	GA4	L2x2x4	.192	0	13	.017	0	z	32	235...	305...	690...	157...	2.2...	H2-1
21	MP3	PIPE_...	.192	68	5	.125	68		6	300...	50715	359...	359...	3.7...	H1...
22	GA5	L2x2x4	.168	27.295	13	.045	27.295	y	38	235...	305...	690...	157...	1.7...	H2-1
23	GA1	L2x2x4	.168	27.295	9	.043	27.295	y	34	235...	305...	690...	157...	1.68	H2-1
24	GA3	L2x2x4	.161	27.295	5	.042	27.295	y	30	235...	305...	690...	157...	1.5...	H2-1
25	MP8	PIPE_...	.156	68	9	.141	68		9	300...	50715	359...	359...	4.1...	H1...
26	MP5	PIPE_...	.155	68	13	.140	68		13	300...	50715	359...	359...	4.0...	H1...
27	MP2	PIPE_...	.147	68	5	.133	68		5	300...	50715	359...	359...	4.4...	H1...
28	H3	PIPE_...	.121	31	2	.129	48		9	462...	65205	574...	574...	2.43	H1...
29	H2	PIPE_...	.117	31	6	.128	48		13	462...	65205	574...	574...	2.4...	H1...
30	H1	PIPE_...	.116	31	10	.122	48		5	462...	65205	574...	574...	2.4...	H1...
31	HR3	PIPE_...	.112	95	9	.133	60		9	223...	50715	359...	359...	1.2...	H1...
32	HR2	PIPE_...	.112	95	13	.134	60		2	223...	50715	359...	359...	1.2...	H1...
33	HR1	PIPE_...	.109	95	5	.127	60		6	223...	50715	359...	359...	1.2...	H1...
34	HC3	L4X4X4	.030	21	8	.038	0	z	12	469...	62532	313...	652...	1.1...	H2-1
35	HC1	L4X4X4	.025	21	4	.043	42	z	8	469...	62532	313...	652...	1.1...	H2-1
36	HC2	L4X4X4	.025	21	12	.040	0	y	3	469...	62532	313...	652...	1.1...	H2-1

APPENDIX D

ADDITIONAL CALCUATIONS

INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless

Bolt Calculation Tool, V1.5.1

PROJECT DATA	
Site Name:	Windsor Locks
Site Number:	842876
Connection Description:	Platform to Monopole

MAXIMUM BOLT LOADS		
Bolt Tension:	6412.03	lbs
Bolt Shear:	1491.21	lbs

WORST CASE BOLT LOADS[1]		
Bolt Tension:	6412.03	lbs
Bolt Shear:	600.04	lbs

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

[1] *Worst case bolt loads correspond to Load combination #34 on member S1 in RISA-3D, which causes the maximum demand on the bolts.*

Member Information
I nodes of S3, S2, S1

BOLT CHECK		
Tensile Strength	20340.15	
Shear Strength	13805.83	
Max Tensile Usage	31.5%	
Max Shear Usage	10.8%	
Interaction Check (Worst Case)	0.10	***≤1.05***
Result	Pass	

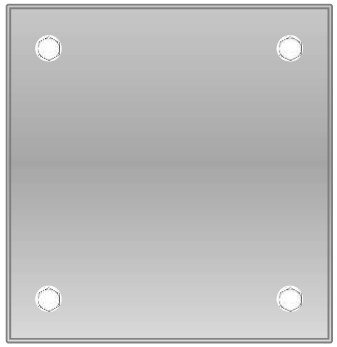


Exhibit F

Power Density/RF Emissions Report

EBI Consulting

environmental | engineering | due diligence

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

Dish Wireless Existing Facility

Site ID: BOBDL00069A

842876
100 Old County Circle
Windsor Locks, Connecticut 06096

November 18, 2021

EBI Project Number: 6221007184

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**39.93%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

November 18, 2021

Dish Wireless

Emissions Analysis for Site: BOBDL00069A - 842876

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **100 Old County Circle** in **Windsor Locks, Connecticut** for the purpose of determining whether the emissions from the Proposed Dish Wireless Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). 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.

Public 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 and 700 MHz frequency 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), 2100 MHz (AWS) and 11 GHz frequency 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 done for the proposed Dish Wireless Wireless antenna facility located at 100 Old County Circle in Windsor Locks, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since Dish Wireless is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 4 n71 channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 4 n70 channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

4) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

5) The antennas used in this modeling are the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector A, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector B, the JMA MX08FRO665-21 for the 600 MHz / 1900 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 20 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) The antenna mounting height centerline of the proposed antennas is 75 feet above ground level (AGL).

7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

Dish Wireless Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21	Make / Model:	JMA MX08FRO665-21
Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz	Frequency Bands:	600 MHz / 1900 MHz
Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd	Gain:	17.45 dBd / 22.65 dBd
Height (AGL):	75 feet	Height (AGL):	75 feet	Height (AGL):	75 feet
Channel Count:	8	Channel Count:	8	Channel Count:	8
Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts	Total TX Power (W):	280 Watts
ERP (W):	3,065.51	ERP (W):	3,065.51	ERP (W):	3,065.51
Antenna A1 MPE %:	**3.33%**	Antenna B1 MPE %:	**3.33%**	Antenna C1 MPE %:	**3.33%**

Site Composite MPE %	
Carrier	**MPE %**
Dish Wireless (Max at Sector A):	3.33%
Nextel	1.2%
Verizon	12.42%
T-Mobile	18.67%
AT&T	4.31%
Site Total MPE % :	39.93%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	3.33%
Dish Wireless Sector B Total:	3.33%
Dish Wireless Sector C Total:	3.33%
Site Total MPE % :	39.93%

Dish Wireless Maximum MPE Power Values (Sector A)

Dish Wireless Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
Dish Wireless 600 MHz n71	4	223.68	75.0	6.76	600 MHz n71	400	1.69%
Dish Wireless 1900 MHz n70	4	542.70	75.0	16.39	1900 MHz n70	1000	1.64%
						Total:	**3.33%**

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

Summary

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

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

Dish Wireless Sector	Power Density Value (%)
Sector A:	3.33%
Sector B:	3.33%
Sector C:	3.33%
Dish Wireless Maximum MPE % (Sector A):	3.33%
Site Total:	39.93%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **39.93%** 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.

Exhibit G

Letter of Authorization

4545 E River Rd, Suite 320
West Henrietta, NY 14586

Phone: (585) 445-5896
Fax: (724) 416-4461
www.crowncastle.com

Crown Castle 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
Crown Castle telecommunications site at:
1000 OLD COUNTY CIRCLE, WINDSOR LOCKS, CT 06096

NCWPCS MPL 28 - YEAR SITES TOWER HOLDINGS LLC ("Crown Castle") 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 CT - CONNECTICUT SITING COUNCIL for the existing wireless communications site described below:

Crown Site ID/Name:	**842876/WINDSOR LOCKS**
Customer Site ID:	**BOBDL00069A/CT-CCI-T-842876**
Site Address:	**1000 OLD COUNTY CIRCLE, WINDSOR LOCKS, CT 06096**
APN:	**09003165-051-125-012**

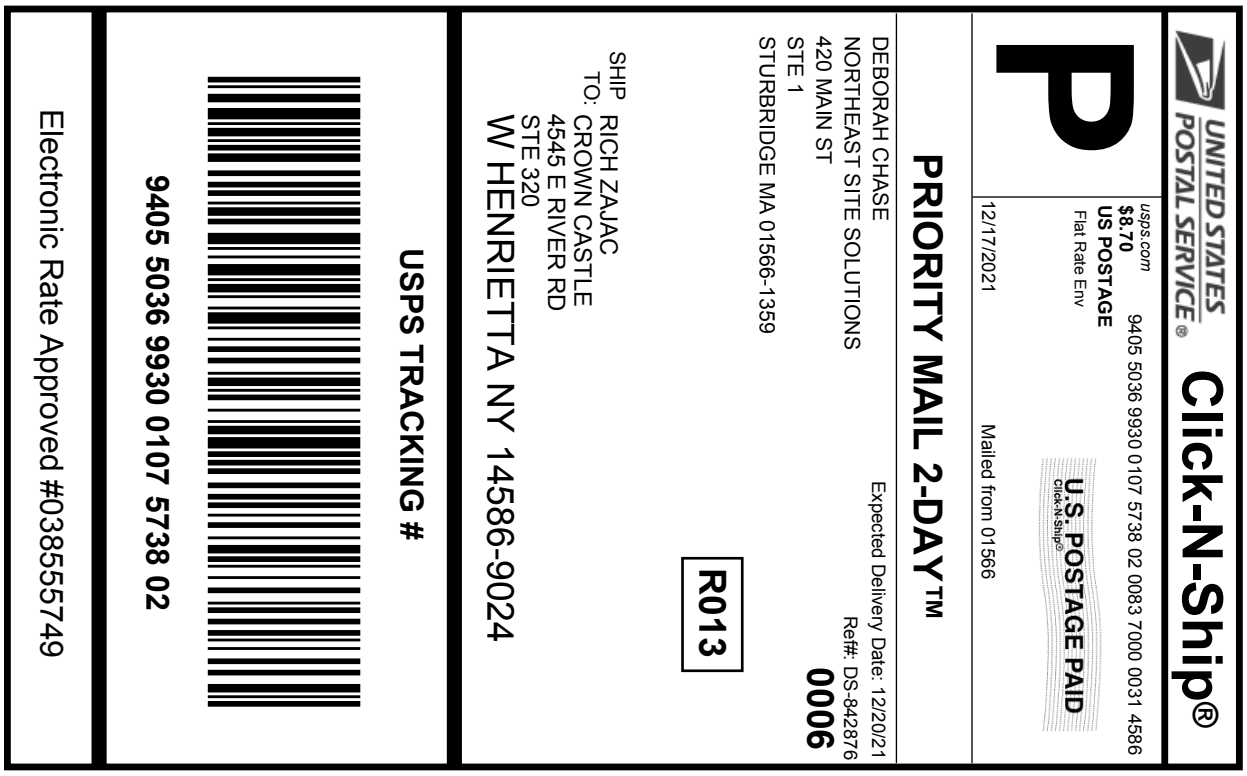
Crown Castle

By: _____ Date: 12/3/21

Richard Zajac
Site Acquisition Specialist

Exhibit H

Recipient Mailings



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0107 5738 02

Trans. #:	551717498
Print Date:	12/17/2021
Ship Date:	12/17/2021
Expected Delivery Date:	12/20/2021

Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

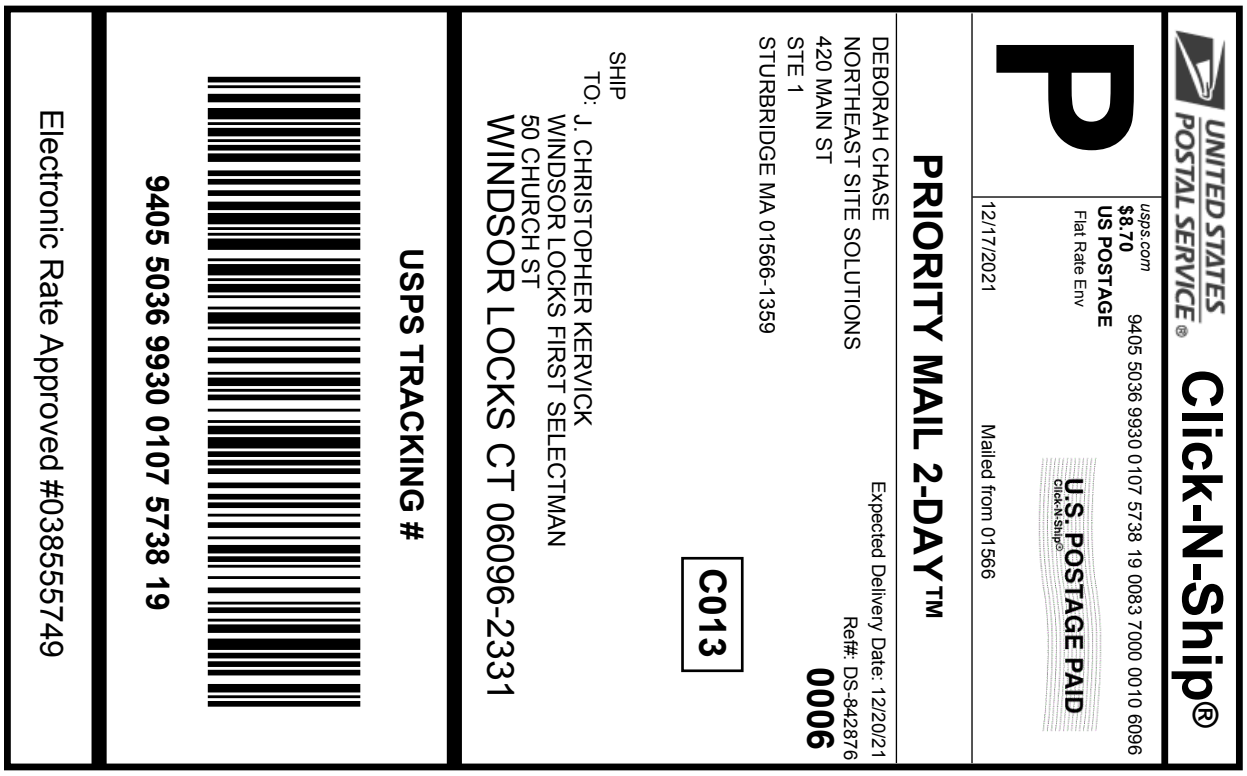
From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Ref#: DS-842876

To: RICH ZAJAC
CROWN CASTLE
4545 E RIVER RD
STE 320
W HENRIETTA NY 14586-9024

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

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



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9405 5036 9930 0107 5738 19

Trans. #:	551717498
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Ship Date:	12/17/2021
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Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

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

Ref#: DS-842876

To: J. CHRISTOPHER KERVICK
WINDSOR LOCKS FIRST SELECTMAN
50 CHURCH ST
WINDSOR LOCKS CT 06096-2331

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

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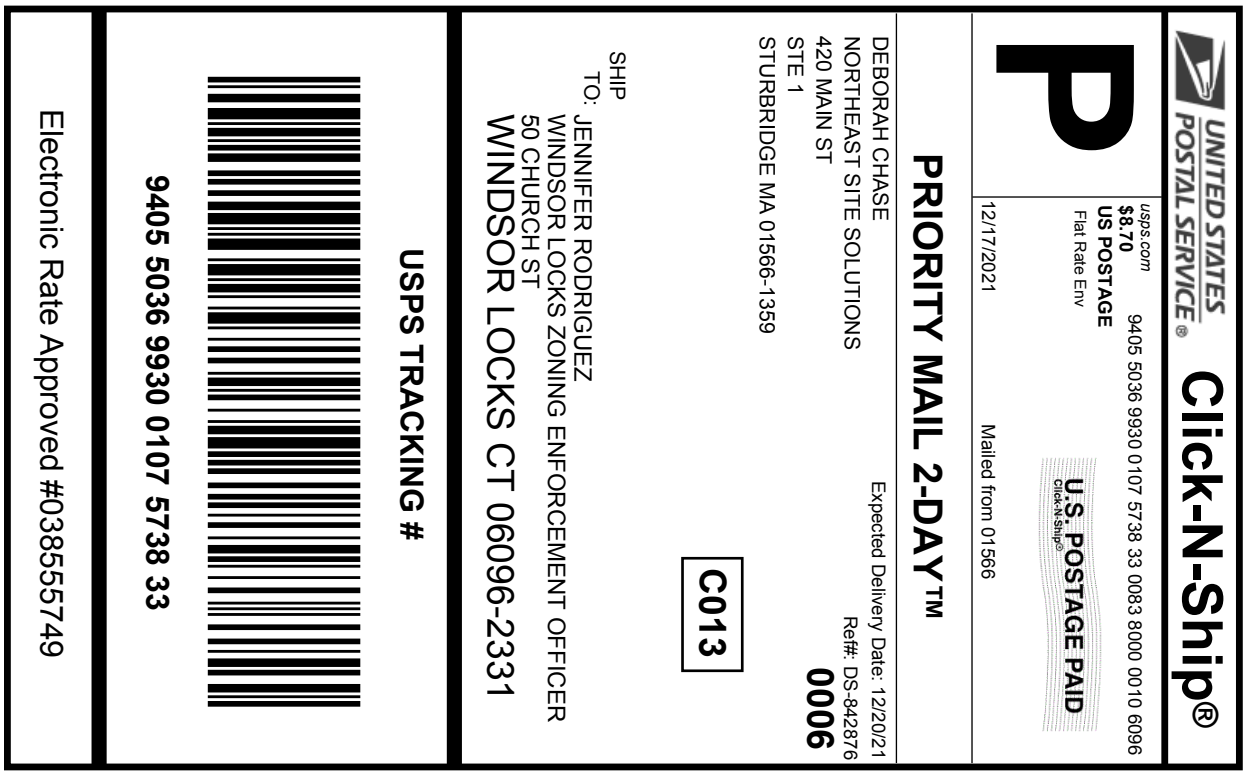

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Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0107 5738 33

Trans. #:	551717498
Print Date:	12/17/2021
Ship Date:	12/17/2021
Expected Delivery Date:	12/20/2021

Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

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

Ref#: DS-842876

To: JENNIFER RODRIGUEZ
WINDSOR LOCKS ZONING ENFORCEMENT OFFICER
50 CHURCH ST
WINDSOR LOCKS CT 06096-2331

* 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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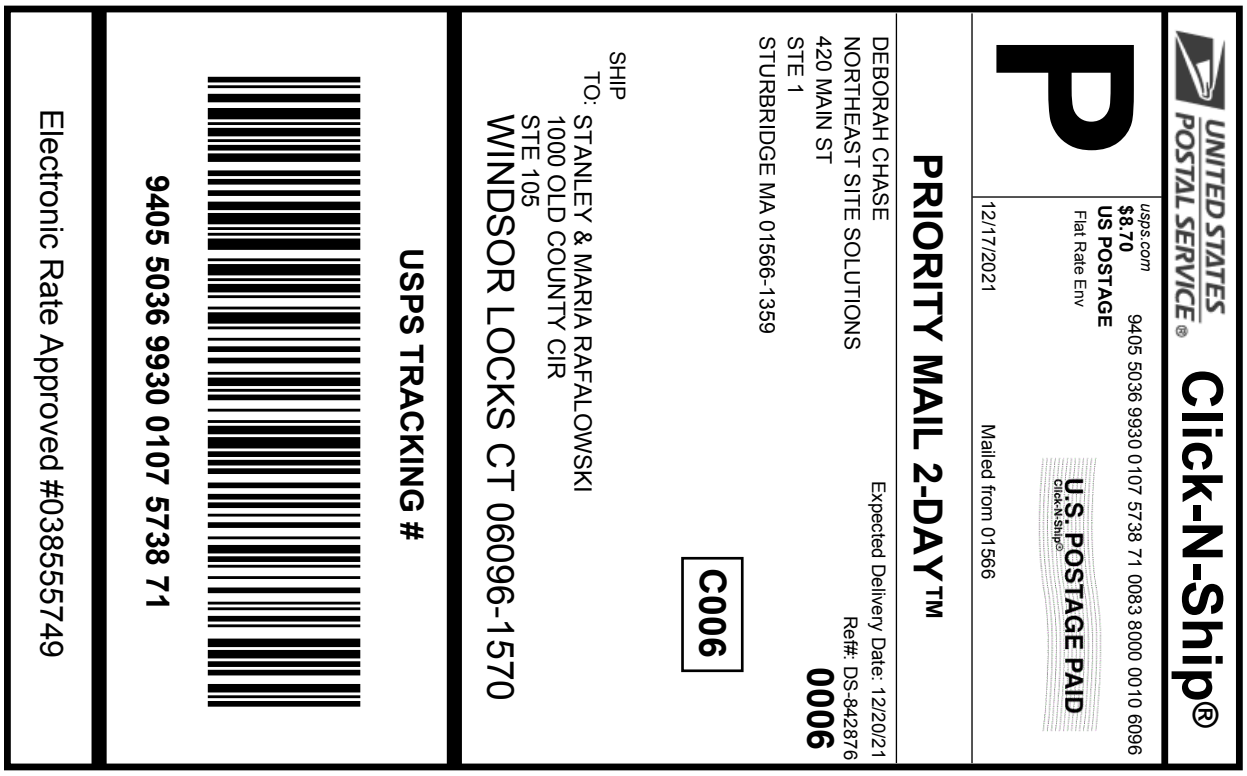

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9405 5036 9930 0107 5738 71

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Ship Date:	12/17/2021
Expected Delivery Date:	12/20/2021

Priority Mail® Postage:	**$8.70**
Total:	**$8.70**

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

Ref#: DS-842876

To: STANLEY & MARIA RAFALOWSKI
1000 OLD COUNTY CIR
STE 105
WINDSOR LOCKS CT 06096-1570

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

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84287 6

UNITED STATES POSTAL SERVICE.

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

01/06/2022 08:44 AM

Product	Qty	Unit Price	Price
Prepaid Mail West Henrietta, NY 14586 Weight: 0 lb 2.00 oz Acceptance Date: Thu 01/06/2022 Tracking #: 9405 5036 9930 0107 5738 02	1		$0.00
Prepaid Mail Windsor Locks, CT 06096 Weight: 0 lb 7.80 oz Acceptance Date: Thu 01/06/2022 Tracking #: 9405 5036 9930 0107 5738 19	1		$0.00
Prepaid Mail Windsor Locks, CT 06096 Weight: 0 lb 7.70 oz Acceptance Date: Thu 01/06/2022 Tracking #: 9405 5036 9930 0107 5738 71	1		$0.00
Prepaid Mail Windsor Locks, CT 06096 Weight: 0 lb 7.80 oz Acceptance Date: Thu 01/06/2022 Tracking #: 9405 5036 9930 0107 5738 33	1		$0.00
Grand Total:			$0.00