



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

August 11, 2021

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

RE: Tower Share Application
200 Stanley Street, New Britain CT 06053
Latitude: 41.85455556
Longitude: -72.76933056
Site# 803843_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 200 Stanley Street in New Britain, Connecticut.

Dish Wireless LLC proposes to install three (3) 600/1900/2100 MHz antenna and six (6) RRUs, at the 155-foot level of the existing 192-foot monopole tower, one (1) Fiber cables will also be installed. Dish Wireless LLC equipment cabinets will be placed within 7x5 lease area. Included are plans by Infinigy, dated July 7, 2021 Exhibit C. Also included is a structural analysis prepared by Crown Castle, dated May 21, 2021, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. This facility was approved by the City of New Britain Planning and Zoning on October 12, 2001. 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 The Honorable Erin E. Stewart, Mayor for the City of New Britain, David D. Zajac, Zoning Enforcement Officer, as well as the tower owner (Crown Castle) and property owner (Downes Investments LLC).

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

1. The proposed modification will not result in an increase in the height of the existing structure. The top of the tower is 192-feet; Dish Wireless LLC proposed antennas will be located at a center line height of 155-feet.
2. The proposed modifications will not result in the increase of the site boundary as depicted on the attached site plan.
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 negligible.



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 25.46% 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 support tower in New Britain. 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 155-foot level of the existing 192-foot tower would have an insignificant visual impact on the area around the tower. Dish Wireless LLC ground equipment would be installed within the existing facility compound. Dish Wireless LLC shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

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

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



NSS

NORTHEAST
SITE SOLUTIONS

Turnkey Wireless Development

Attachments cc:

The Honorable Erin E. Stewart, Mayor (via email only to mayor@newbritainct.gov)

City of New Britain

27 West Main Street New Britain, CT 06051

David D. Zajac, Zoning Enforcement Officer

City of New Britain

27 West Main Street, Room 404 New Britain, CT 06051

Downes Investments LLC

200 Stanley Street New Britain, CT 06051

Crown Castle, Tower Owner

Exhibit A

Original Facility Approval

Date: 10/12/01

A request has been made for a Certificate of Occupancy :

Project
Location: 200 STANLEY STREET (TOWER/PLATFORM)

The Final Inspection by the Building Department is scheduled on 10/17/01 at 10:00
Please adjust your inspections accordingly.

Any comments regarding corrections please forward directly to the applicant.

Applicant: CROWN CASTLE INTERNATIONAL, LLC **Tel:** 1 860 558-3178

Applicant address: 703 HEBRON AVENUE, GLASTONBURY, CT

Prompt return of this form with your recommendation is greatly appreciated.
Thank you for your attention and consideration in this matter.

<i>Recommended</i>		<i>C.O. T.C.O Denied</i>		
<input type="checkbox"/>	James Belladonna <i>Acting Fire Marshal</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Joseph F. Corilli <i>Director of Public Works (PT)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	Kenneth A. Malinowski <i>Director of Department of Municipal Development (SS)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Hudson Birden, Jr., <i>Director of Health Department</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CT New Britain 803843



1085

TO: Frank M. Wiatr, Director, LP&I
FROM: Clarence Corbin, City Engineer *CC*
DATE: 7 Jun 01
RE: Site Plan Review - 200 Stanley Street - Tower

This site plan is approved as submitted.

cc: S. Schiller

Exhibit B

Property Card

200 STANLEY ST

Location 200 STANLEY ST

Mblu B10B/ 11///

Acct# 81300200

Owner DOWNES INVESTMENTS LLC

Assessment \$556,500

Appraisal \$795,000

PID 1486

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$626,600	\$168,400	\$795,000
Assessment			
Valuation Year	Improvements	Land	Total
2017	\$438,620	\$117,880	\$556,500

Owner of Record

Owner DOWNES INVESTMENTS LLC
Co-Owner
Address 200 STANLEY ST
 NEW BRITAIN, CT 06051

Sale Price \$327,818
Certificate 1
Book & Page 1827/0193
Sale Date 10/17/2011
Instrument 19

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
DOWNES INVESTMENTS LLC	\$327,818	1	1827/0193	19	10/17/2011
DOWNES INVESTMENTS LLC	\$0		1386/0135		10/16/2001
DOWNES INVESTMENTS LLC	\$0		1351/0908		11/03/2000
JOHN E DOWNES TRUSTEE	\$0		1104/0267		07/03/1991
DOWNES JOHN E	\$0		1105/0413		06/24/1991
	\$0		1096/0023		02/20/1991
FRANK E DOWNES	\$0		0363/0493		01/13/1953
LANDERS FRARY + CLARK	\$0		0168/0438		01/01/1900

Building Information

Building 1 : Section 1

Year Built: 1954
Living Area: 11,913
Replacement Cost: \$1,230,847
Building Percent Good: 44
Replacement Cost Less Depreciation: \$541,600

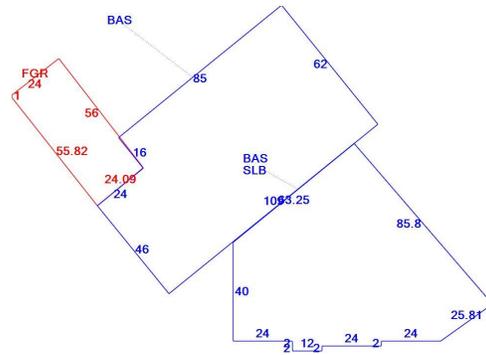
Building Attributes	
Field	Description
Style:	Office
Model	Comm/Ind
Grade	C
Stories:	1
Occupancy	1.00
Exterior Wall 1	Block/Concrete
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	T&G/Rubber
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Central Heat	Yes
AC Type	Central
Struct Class	
Bldg Use	Office Bld MDL-94
Apt Units	
Total Bedrms	00
Total Baths	0
Comm Units	1
Ind Units	
1st Floor Use:	3400
Heat/AC	Heat/AC Pkgs
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Sus-Ceil & WL
Rooms/Prtns	Average
Wall Height	12.00
% Comn Wall	

Building Photo



(<http://images.vgsi.com/photos/NewBritainCTPhotos/10010211163.JPG>)

Building Layout



(ParcelSketch.ashx?pid=1486&bid=2038)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	11,913	11,913
FGR	Garage	1,371	0
SLB	Slab	5,539	0
		18,823	11,913

Extra Features

Extra Features	<u>Legend</u>
No Data for Extra Features	

Land

Land Use

Use Code 3400
Description Office Bld MDL-94
Zone I2
Neighborhood 107H
Alt Land Appr No
Category

Land Line Valuation

Size (Acres) 2.18
Depth
Assessed Value \$117,880
Appraised Value \$168,400

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FN1	Fence - Chain			2520.00 L.F.	\$18,000	1
PAV1	Paving Asphalt			10000.00 S.F.	\$9,600	1
CB3	PreCastConcCel			240.00 S.F.	\$55,400	1
FN4	Fence-8' Chain			168.00 L.F.	\$2,100	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2020	\$626,600	\$168,400	\$795,000
2019	\$626,600	\$168,400	\$795,000
2018	\$626,600	\$168,400	\$795,000

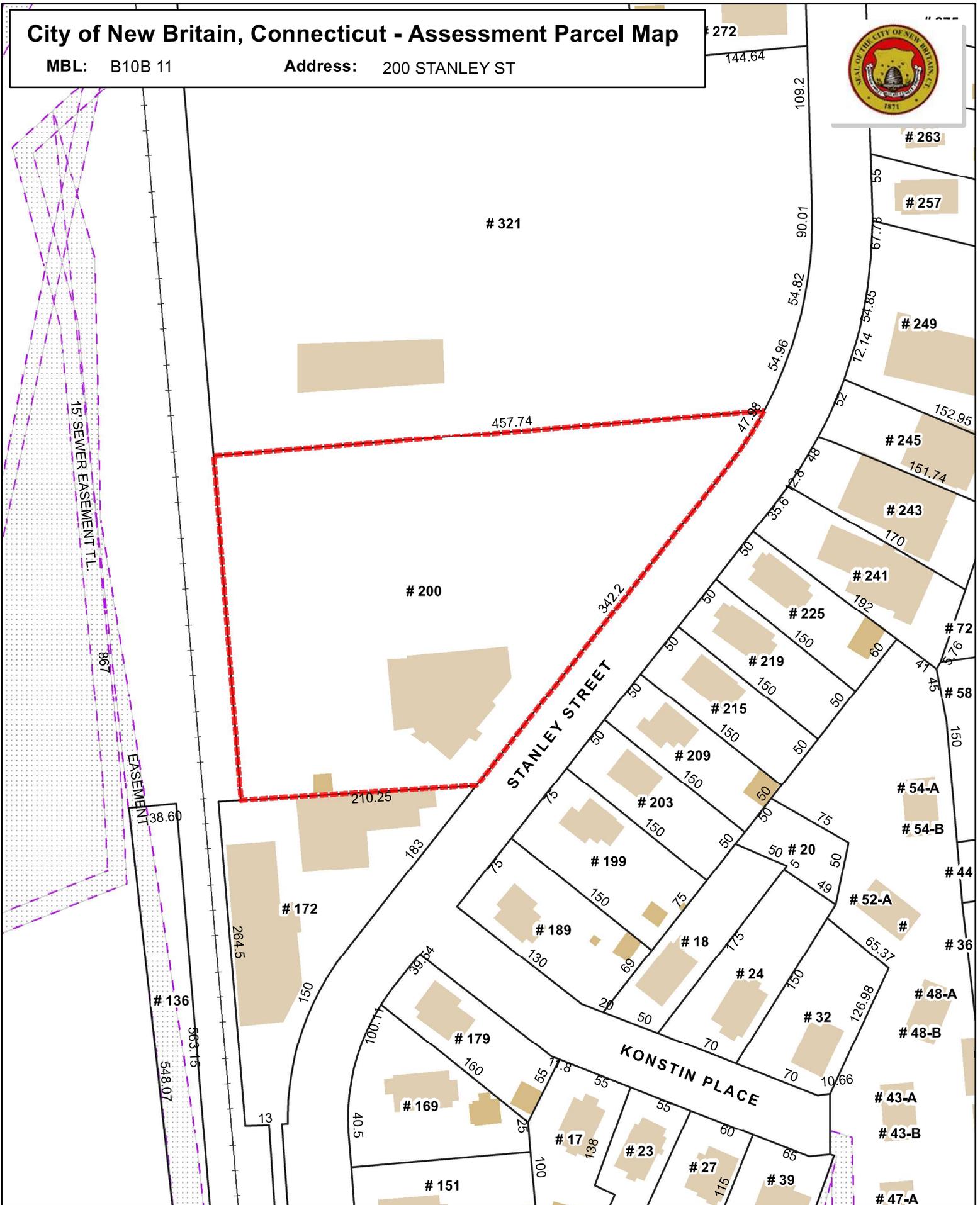
Assessment			
Valuation Year	Improvements	Land	Total
2020	\$438,620	\$117,880	\$556,500
2019	\$438,620	\$117,880	\$556,500
2018	\$438,620	\$117,880	\$556,500

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City of New Britain, Connecticut - Assessment Parcel Map

MBL: B10B 11

Address: 200 STANLEY ST



Approximate Scale:
1 inch = 100 feet

Disclaimer:
This map is for informational purposes only.
All information is subject to verification by any user.
The City of New Britain and its mapping contractors
assume no legal responsibility for the information contained herein.

Map Produced April 2020

Exhibit C

Construction Drawings



DISH Wireless L.L.C. SITE ID:

BOBDL00039A

DISH Wireless L.L.C. SITE ADDRESS:

**200 STANLEY STREET
NEW BRITAIN, CT 06053**

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: <ul style="list-style-type: none"> • INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR) • INSTALL (1) PROPOSED TOWER 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: <ul style="list-style-type: none"> • 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 FIBER NID (IF REQUIRED) • USE EXISTING METER SOCKET

SITE INFORMATION	PROJECT DIRECTORY
PROPERTY OWNER: GLOBAL SIGNAL ACQUISITION ADDRESS: PO BOX 277455 ATLANTA, GA 30384-7455	APPLICANT: DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER TYPE: MONOPOLE	TOWER OWNER: CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (877) 486-9377
TOWER CO SITE ID: 803843	SITE DESIGNER: B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
TOWER APP NUMBER: 556643	SITE ACQUISITION: APRIL PARROTT APRIL.PARROTT@DISH.COM
COUNTY: HARTFORD	CONSTRUCTION MANAGER: JAVIER SOTO JAVIER.SOTO@DISH.COM
LATITUDE (NAD 83): 41° 39' 16.40" N 41.65455556 N	RF ENGINEER: BOSSENER CHARLES BOSSENER.CHARLES@DISH.COM
LONGITUDE (NAD 83): 72° 46' 9.59" W 72.76933056 W	
ZONING JURISDICTION: CT - CONNECTICUT SITING COUNCIL	
ZONING DISTRICT: OFFICE BLD MDL-94	
PARCEL NUMBER: NBRI-000813-000000-000200	
OCCUPANCY GROUP: U	
CONSTRUCTION TYPE: II-B	
POWER COMPANY: CONNECTICUT LIGHT & POWER	
TELEPHONE COMPANY: T.B.D.	



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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



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

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

DRAWN BY: LHT	CHECKED BY: RMC	APPROVED BY: MDW
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RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	5/26/21	ISSUED FOR REVIEW
B	7/1/21	ISSUED FOR REVIEW
D	7/7/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
127879.009.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00039A
200 STANLEY STREET
NEW BRITAIN, CT 06053

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



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

GENERAL NOTES

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

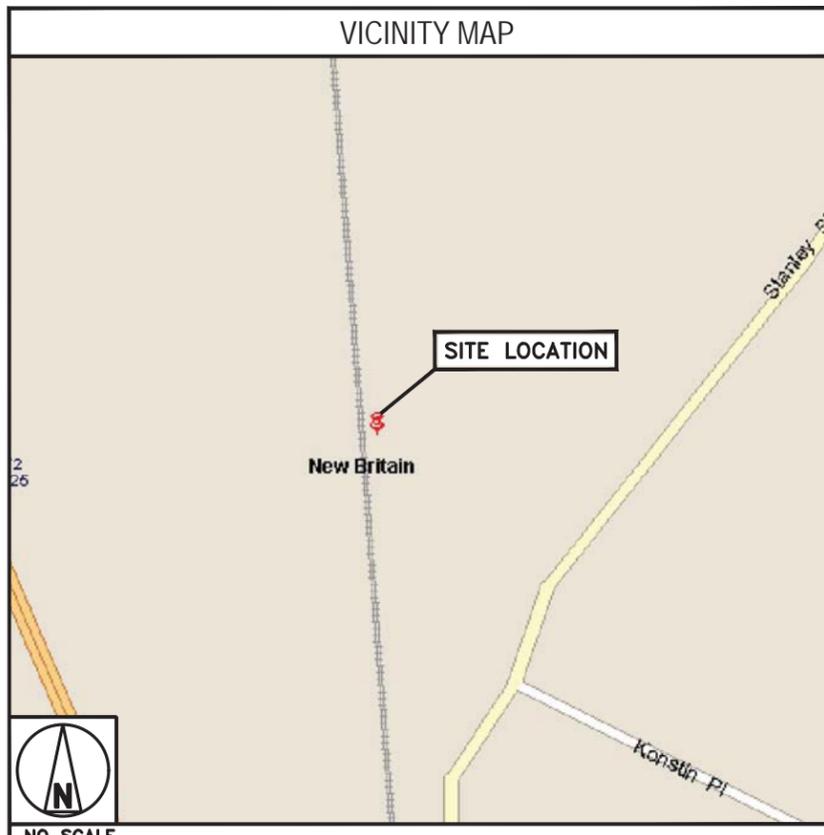
11"x17" PLOT WILL BE HALF SCALE UNLESS OTHERWISE NOTED

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

DIRECTIONS

DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:

CONTINUE TO BRADLEY INTERNATIONAL AIRPORT CON, HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT, SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT, SLIGHT LEFT, TAKE I-91 S, I-84 AND CT-9 S TO ELLIS ST IN NEW BRITAIN. TAKE EXIT 25 FROM CT-9 S, CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON, CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON, USE THE RIGHT 2 LANES TO MERGE WITH I-91 S TOWARD HARTFORD, TAKE EXIT 32A-32B FOR I-84 W TOWARD WATERBURY, MERGE WITH I-84, TAKE EXIT 39A FOR CT-9 S TOWARD NEWINGTON/NEW BRITAIN, CONTINUE ONTO CT-9 S, KEEP LEFT TO STAY ON CT-9 S, TAKE EXIT 25 FOR ELLIS ST TOWARD CT-71/KENSINGTON, CONTINUE ON ELLIS ST. DRIVE TO STANLEY ST, TURN RIGHT ONTO ELLIS ST, TURN RIGHT ONTO STANLEY ST, DESTINATION WILL BE ON THE RIGHT.



CONNECTICUT CODE COMPLIANCE

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

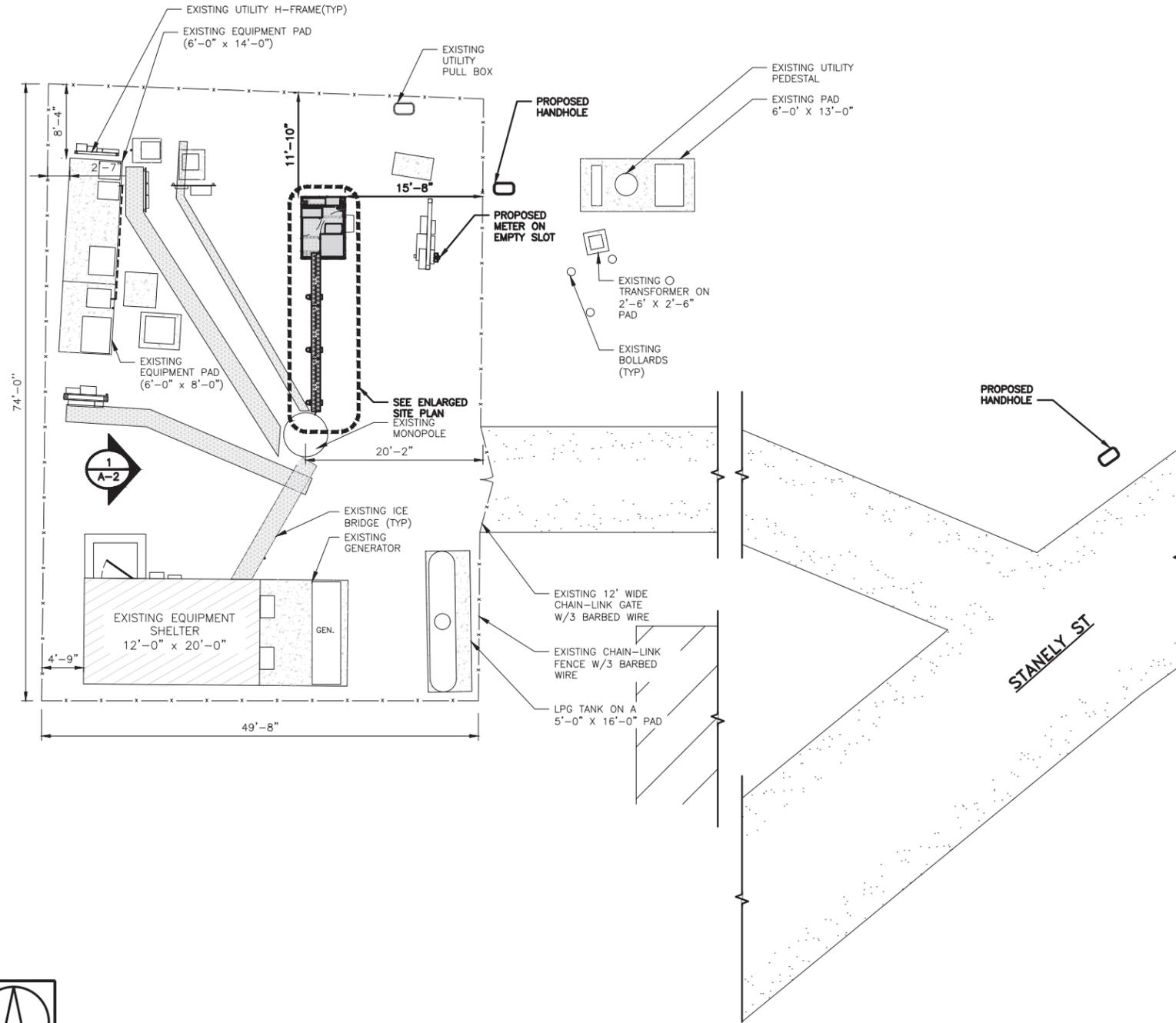
CODE TYPE	CODE
BUILDING	2018 CT STATE BUILDING CODE/2015 IBC W/ CT AMENDMENTS
MECHANICAL	2018 CT STATE BUILDING CODE/2015 IMC W/ CT AMENDMENTS
ELECTRICAL	2018 CT STATE BUILDING CODE/2017 NEC W/ CT AMENDMENTS

SHEET INDEX

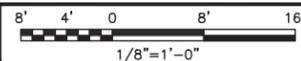
SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
A-1	OVERALL AND ENLARGED SITE PLAN
A-2	ELEVATION, ANTENNA LAYOUT AND SCHEDULE
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
A-5	EQUIPMENT DETAILS
A-6	EQUIPMENT DETAILS
E-1	ELECTRICAL/FIBER ROUTE PLAN AND NOTES
E-2	ELECTRICAL DETAILS
E-3	ELECTRICAL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

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
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.



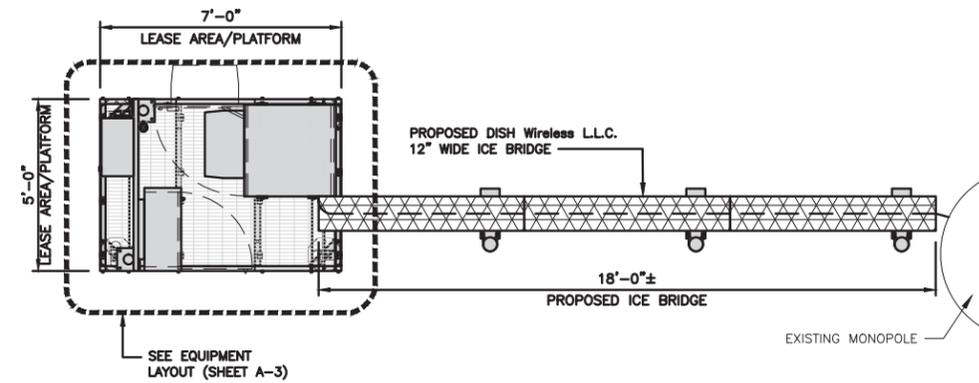
OVERALL SITE PLAN



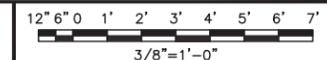
1

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



2



NOT USED

3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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



B&T ENGINEERING, INC.
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DRAWN BY:	CHECKED BY:	APPROVED BY:
LHT	RMC	MDW

RFDS REV #: 1

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A&E PROJECT NUMBER
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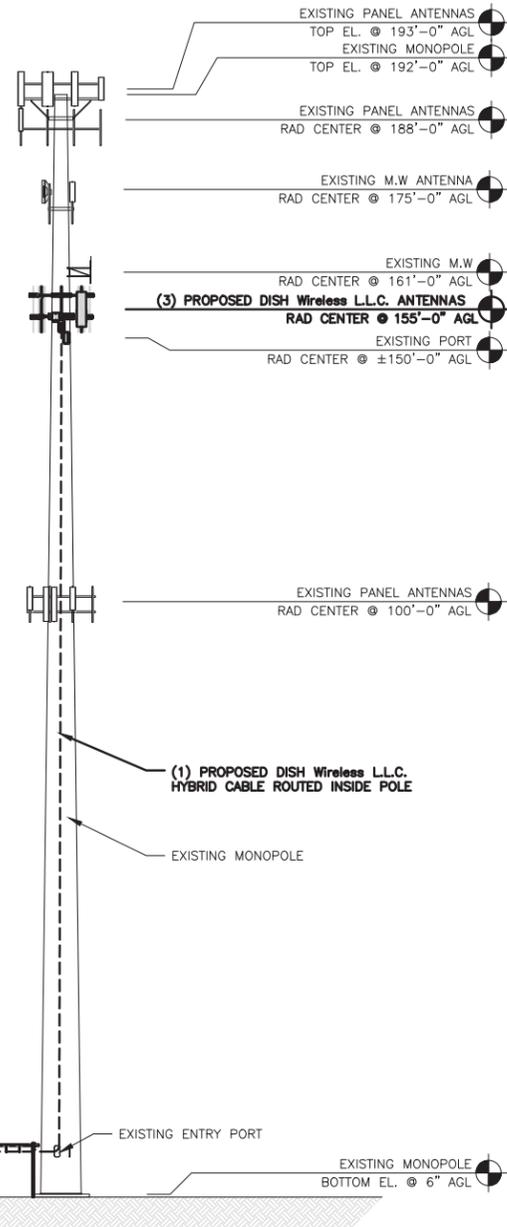
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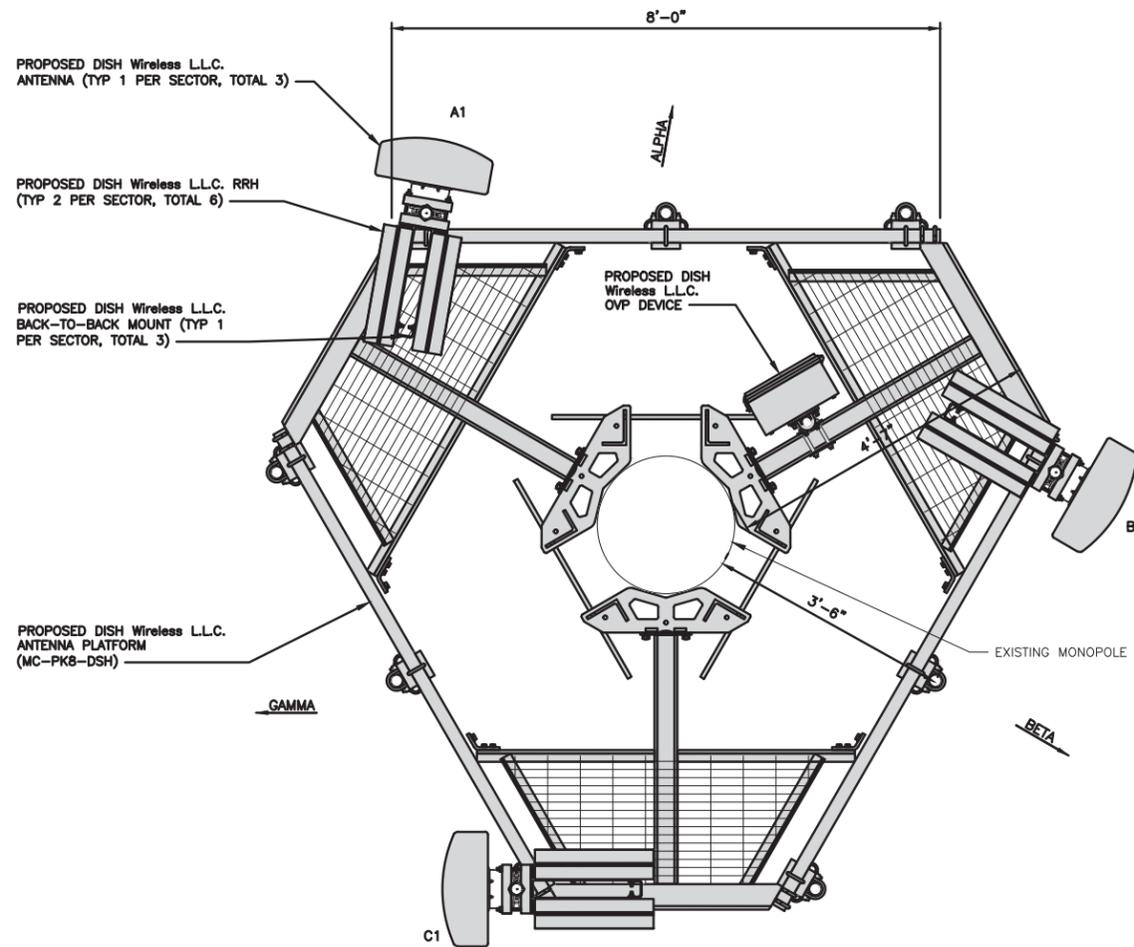
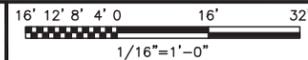
A-1

NOTES

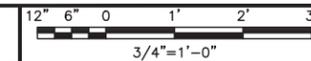
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED WEST ELEVATION



ANTENNA LAYOUT



SECTOR	POSITION	ANTENNA					TRANSMISSION CABLE	
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS-MX08FR0665-21	5G	72" x 20"	10°	155'-0"	(1) HIGH-CAPACITY HYBRID CABLE (200' LONG)
BETA	B1	PROPOSED	JMA WIRELESS-MX08FR0665-21	5G	72" x 20"	120°	155'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS-MX08FR0665-21	5G	72" x 20"	270°	155'-0"	

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

ANTENNA SCHEDULE

NO SCALE

3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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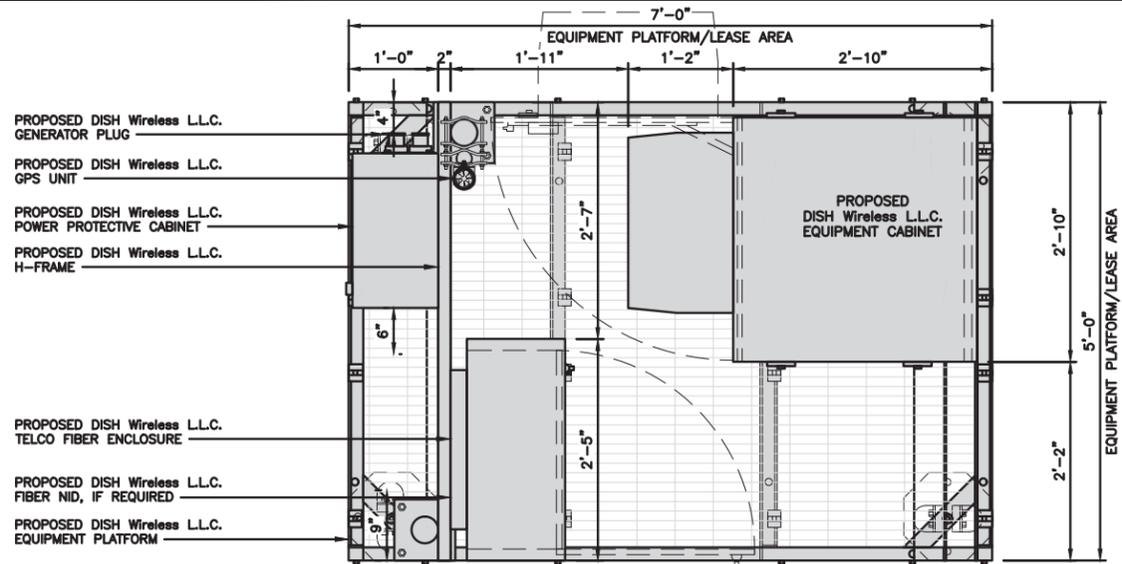
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200 STANLEY STREET
NEW BRITAIN, CT 06053

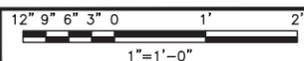
SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



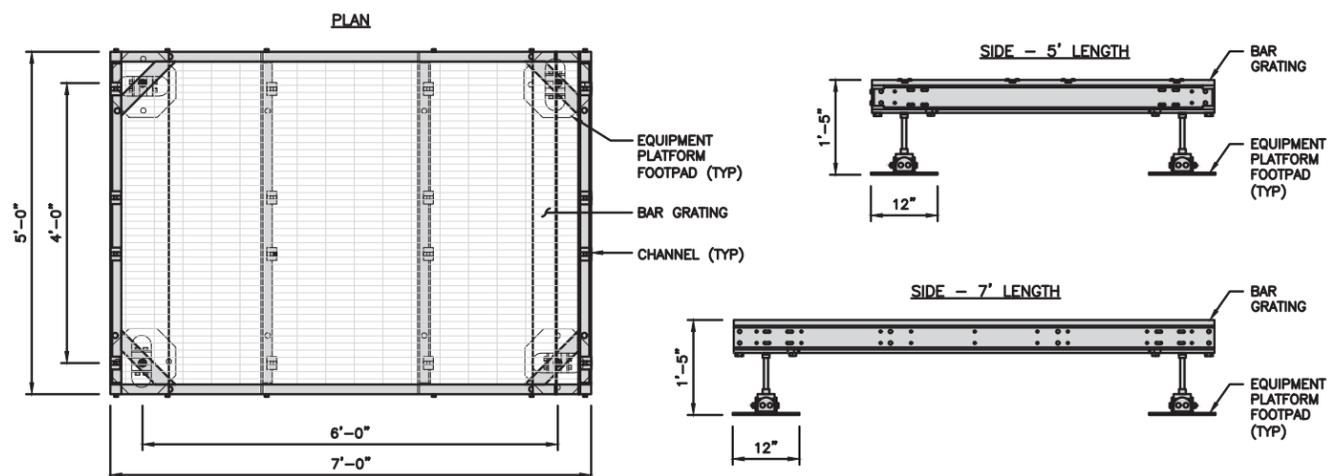
PLATFORM EQUIPMENT PLAN



1

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

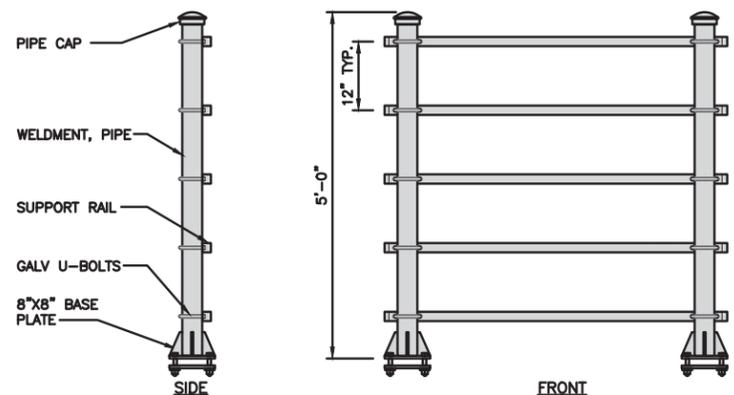
NOTE:
GC TO PROVIDE EXTENDED
THREAD FOR PLATFORM IF
REQUIRED HEIGHT EXCEEDS 17"



PLATFORM DETAIL

NO SCALE

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



H-FRAME DETAIL

NO SCALE

3

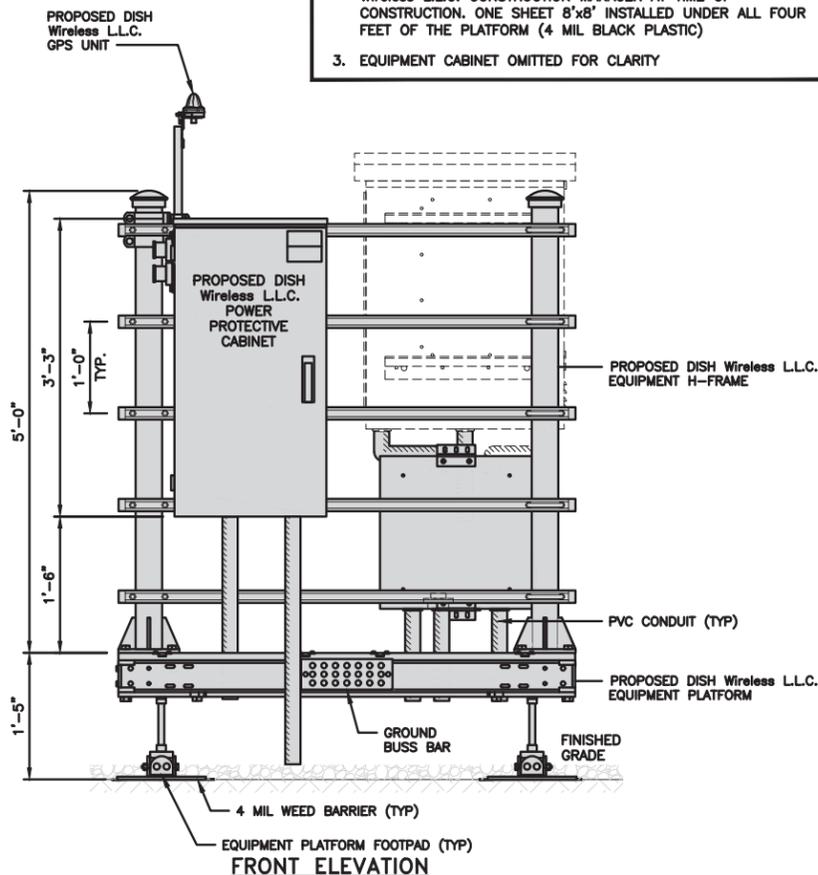
NOT USED

NO SCALE

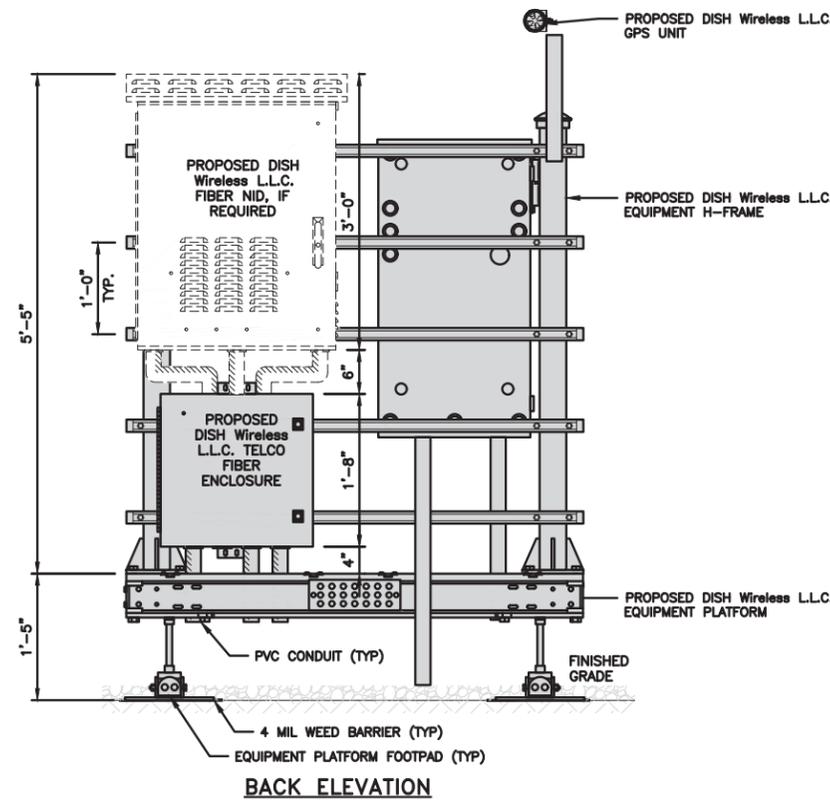
4

NOTES

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



FRONT ELEVATION



BACK ELEVATION



5



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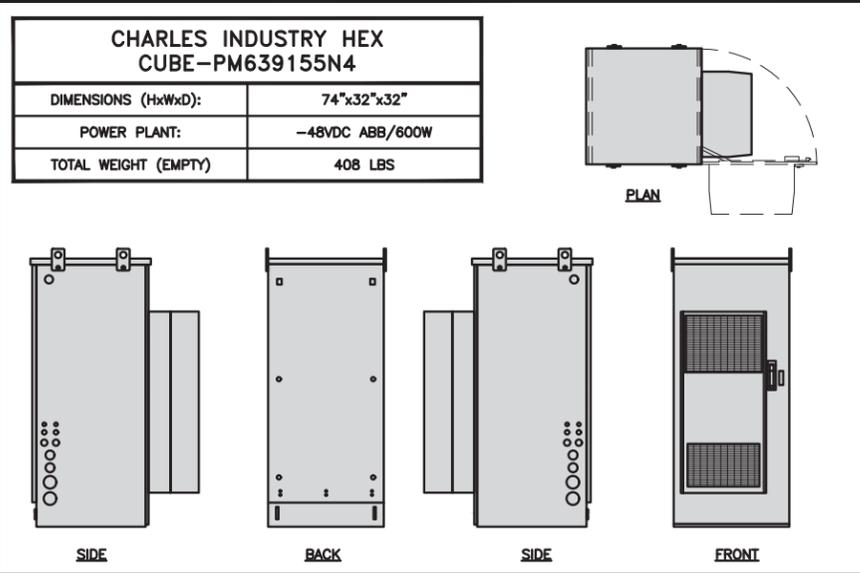
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL0039A
200 STANLEY STREET
NEW BRITAIN, CT 06053

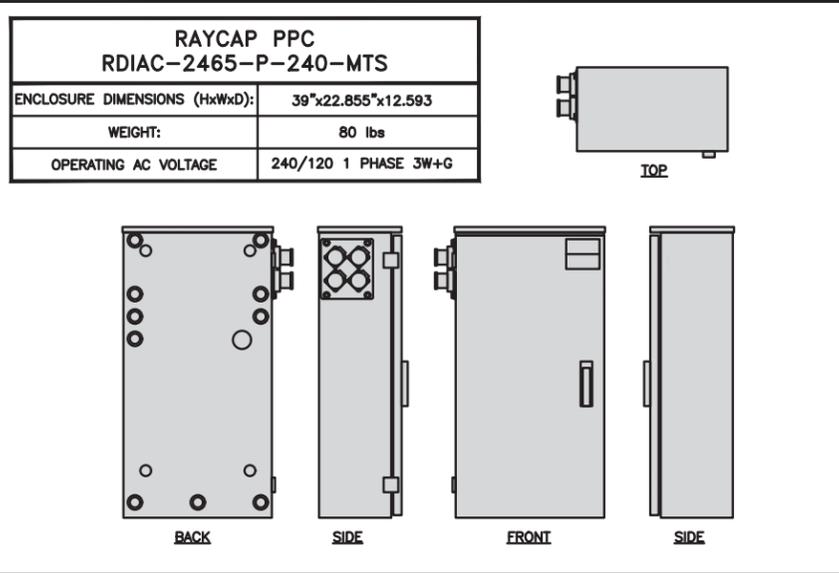
SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

A-3



CABINET DETAIL NO SCALE 1



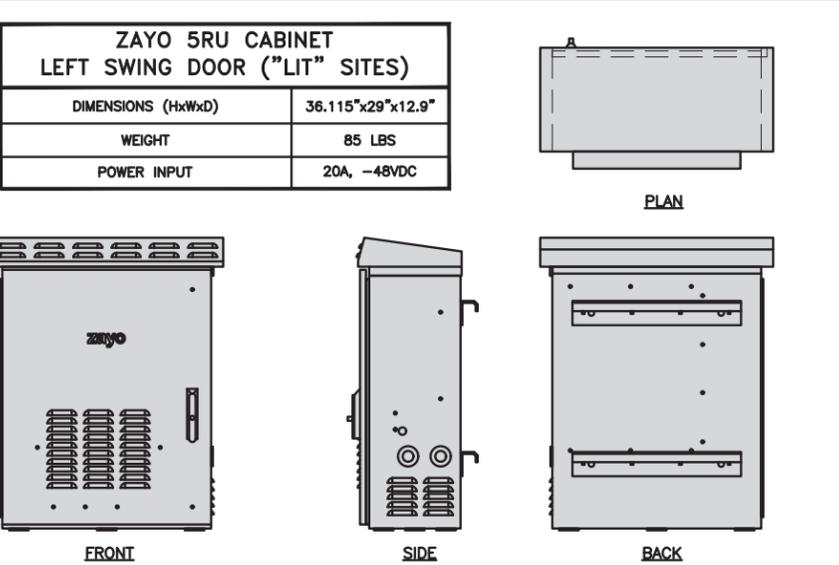
POWER PROTECTION CABINET (PPC) DETAIL NO SCALE 2



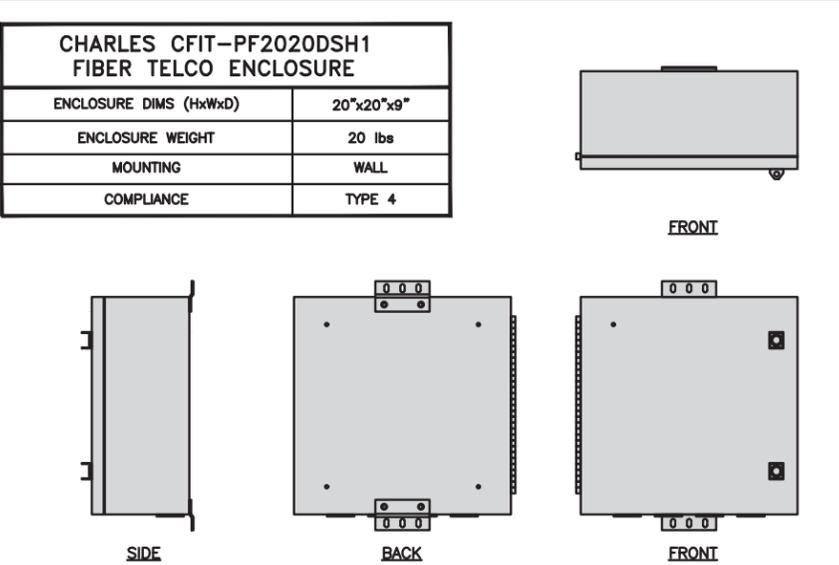
NO SCALE 3



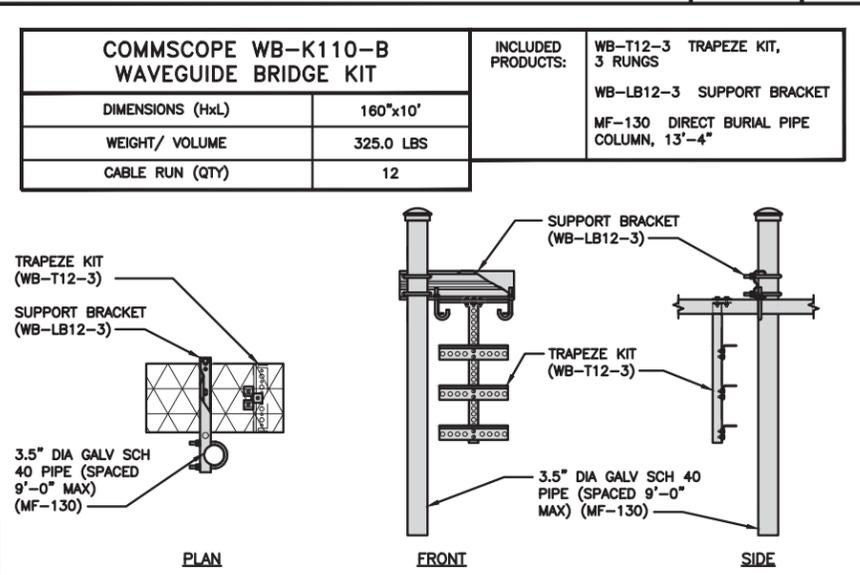
NO SCALE 4



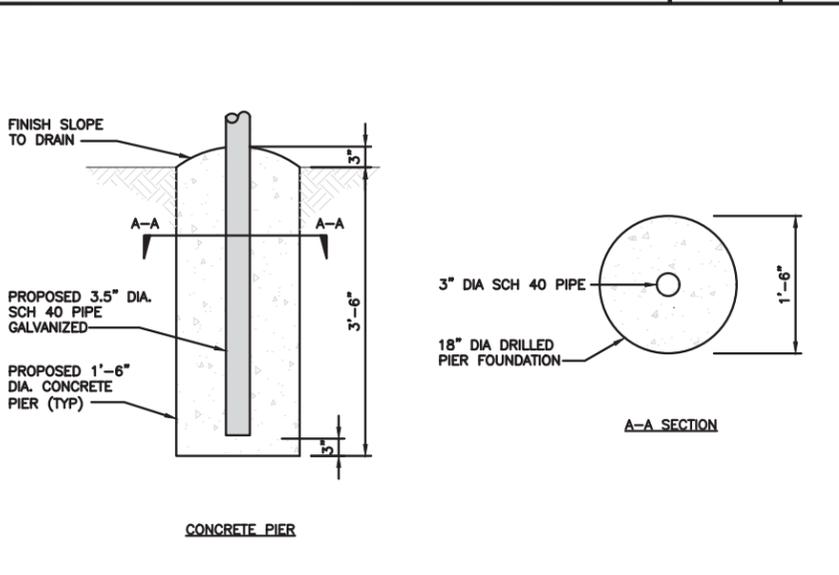
NETWORK INTERFACE UNIT DETAIL NO SCALE 5



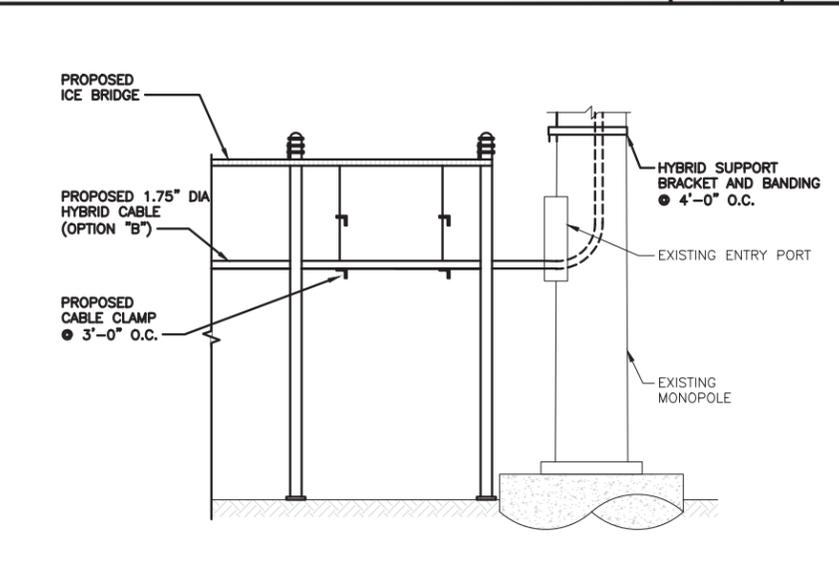
FIBER TELCO ENCLOSURE DETAIL NO SCALE 6



ICE BRIDGE DETAIL NO SCALE 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL NO SCALE 8



HYBRID CABLE RUN NO SCALE 9



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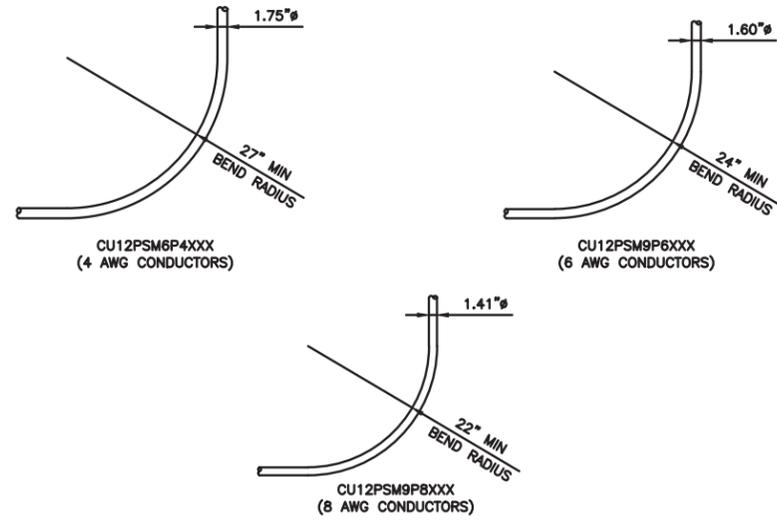
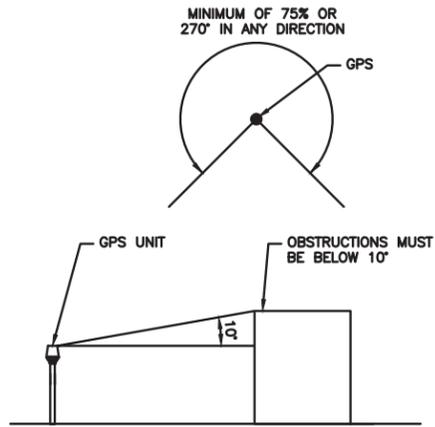
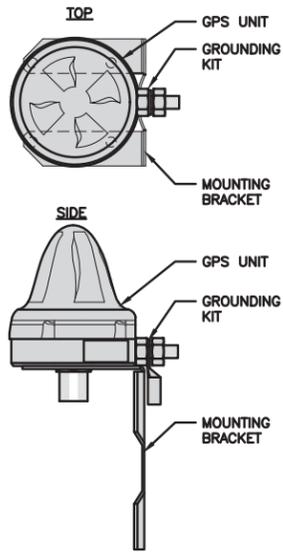
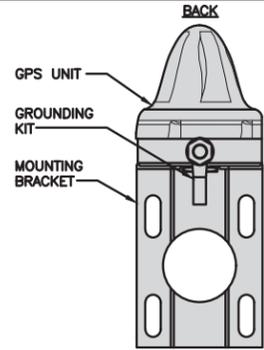
A&E PROJECT NUMBER
127879.009.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL0039A
200 STANLEY STREET
NEW BRITAIN, CT 06053

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

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



GPS ANTENNA DETAIL NO SCALE 1

GPS MINIMUM SKY VIEW REQUIREMENTS NO SCALE 2

CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUS NO SCALE 3

NOT USED

NOT USED

NOT USED

NOT USED NO SCALE 4

NOT USED NO SCALE 5

NOT USED NO SCALE 6

NOT USED

NOT USED

NOT USED

NOT USED NO SCALE 7

NOT USED NO SCALE 8

NOT USED NO SCALE 9



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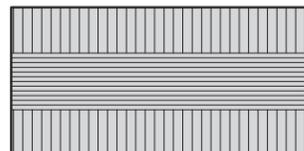
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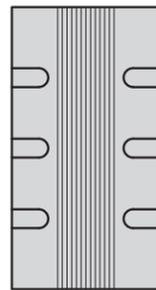
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

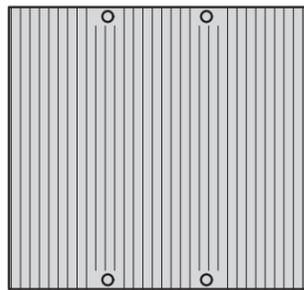
FUJITSU TA08025-B604 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x200/14.9"x15.7"x7.8"
WEIGHT(KG,LB)/ VOLUME	29kg,63.9lb/ 30L
POWER SUPPLY	DC-58~-36V



PLAN



SIDE



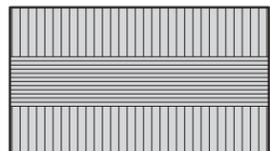
FRONT

REMOTE RADIO HEAD DETAIL

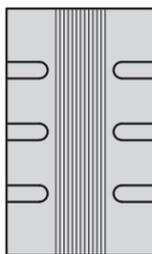
NO SCALE

1

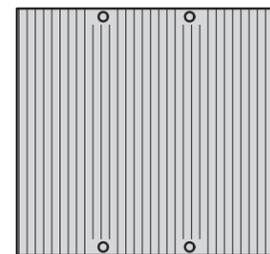
FUJITSU TA08025-B605 RRH	
DIMENSIONS (HxWxD) (KG/IN)	380x400x230/14.9"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~-36V



PLAN



SIDE



FRONT

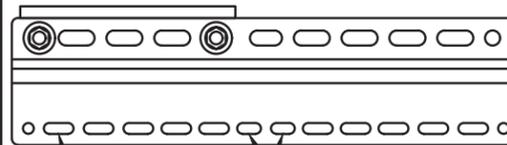
REMOTE RADIO HEAD DETAIL

NO SCALE

2

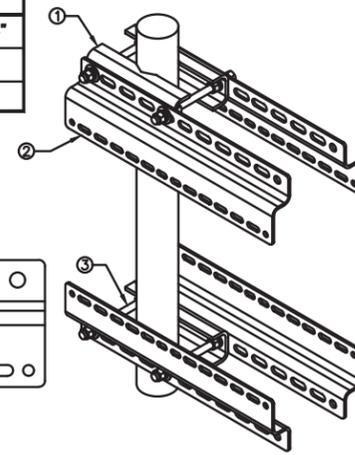
SABRE INDUSTRIES RRU BRACKET MOUNT C10123155	
DIMENSIONS (HxWxD) (1 BRACKET)	5"x20"x1-13/16"
WEIGHT (FULL ASSEMBLY)	35.79 lbs
PACKAGE QUANTITY	4

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



11MM x 30MM SLOTS
40MM ON CENTER

11MM x 24MM SLOTS



REMOTE RADIO MOUNT DETAIL

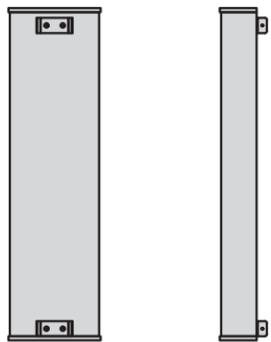
NO SCALE

3

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	64.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE



PLAN



BACK

SIDE



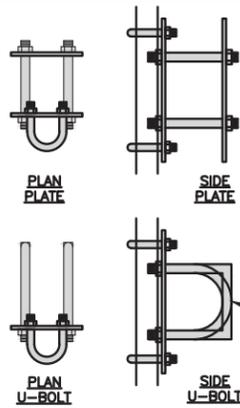
FRONT

ANTENNA DETAIL

NO SCALE

4

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

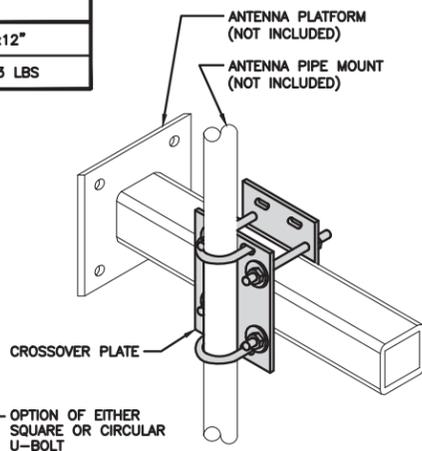


PLAN PLATE

SIDE PLATE

PLAN U-BOLT

SIDE U-BOLT



ANTENNA PLATFORM (NOT INCLUDED)

ANTENNA PIPE MOUNT (NOT INCLUDED)

CROSSOVER PLATE

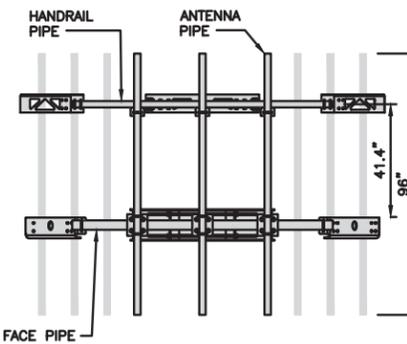
OPTION OF EITHER SQUARE OR CIRCULAR U-BOLT

RRH/OVP MOUNT DETAIL

NO SCALE

8

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



FACE PIPE

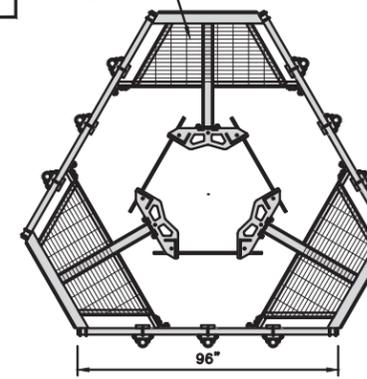
HANDRAIL PIPE

ANTENNA PIPE

41.4"

96"

PLATFORM



ANTENNA PLATFORM DETAIL

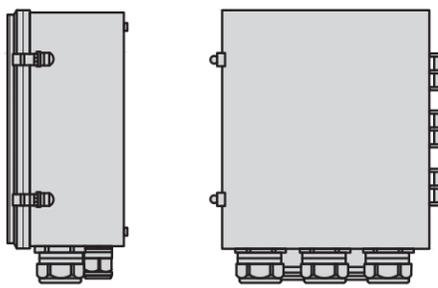
NO SCALE

9

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



PLAN



SIDE

BACK

FRONT

SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

7



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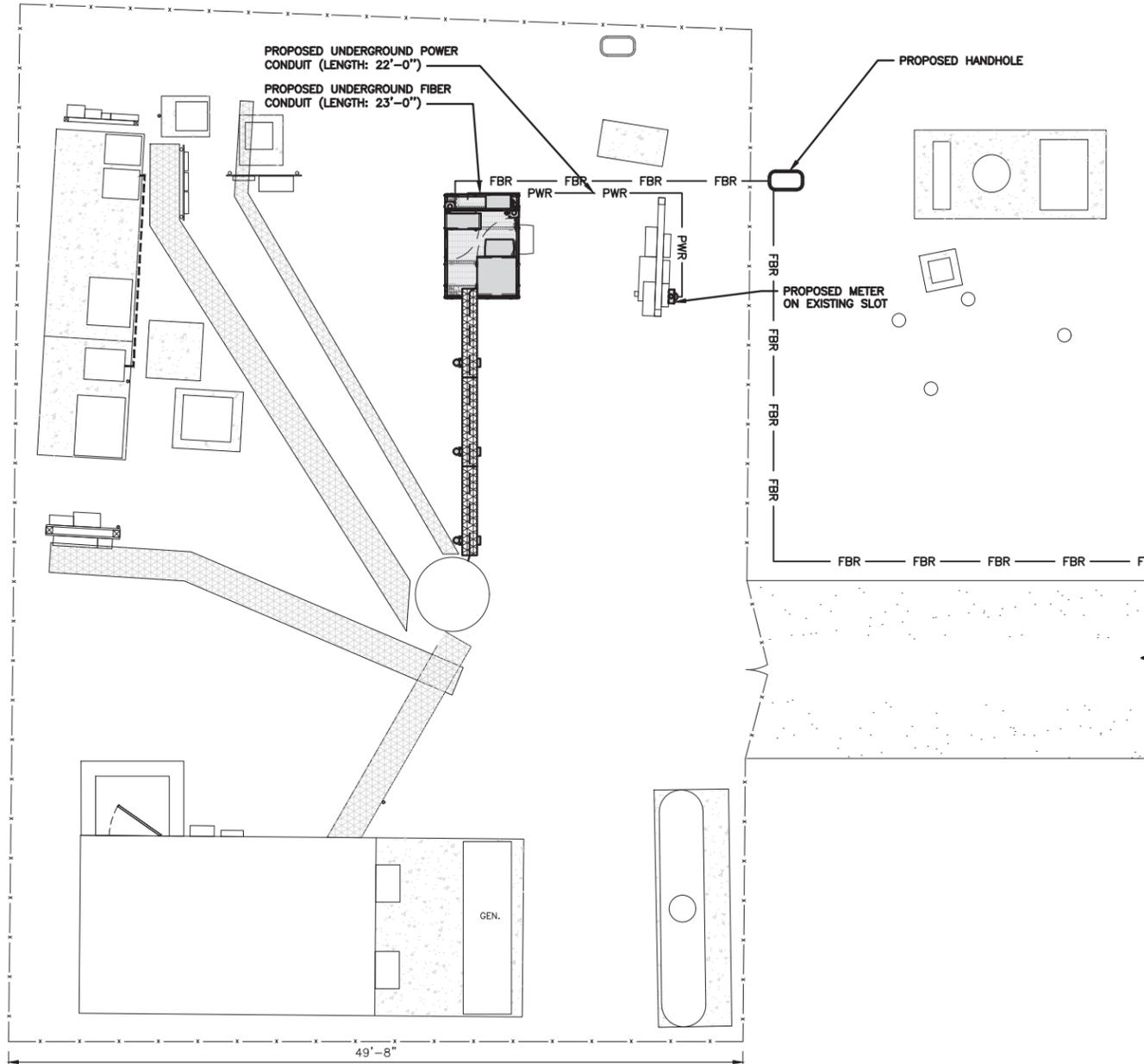
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. 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.



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

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



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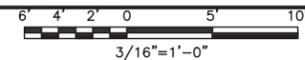
SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER

E-1



UTILITY ROUTE PLAN



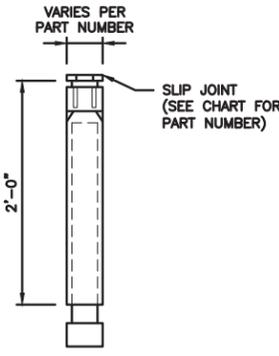
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ELECTRICAL NOTES

NO SCALE

2

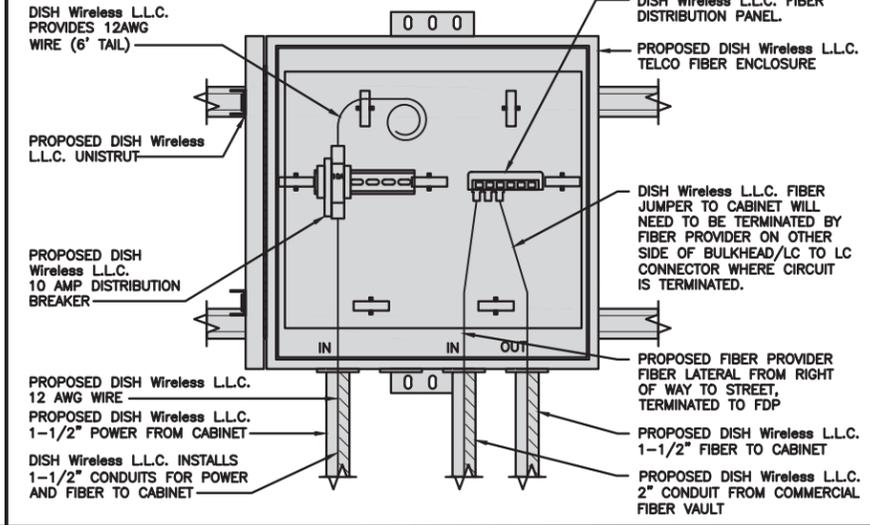
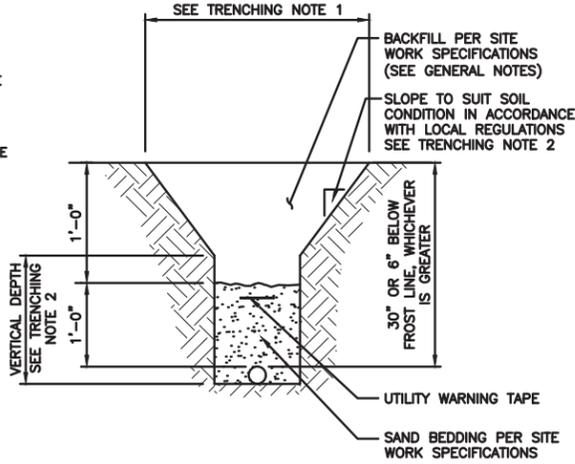
CARLON EXPANSION FITTINGS				
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"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



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

TRENCHING NOTES

- 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.
- TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT OSHA TRENCHING AND EXCAVATION SAFETY STANDARDS.
- 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.



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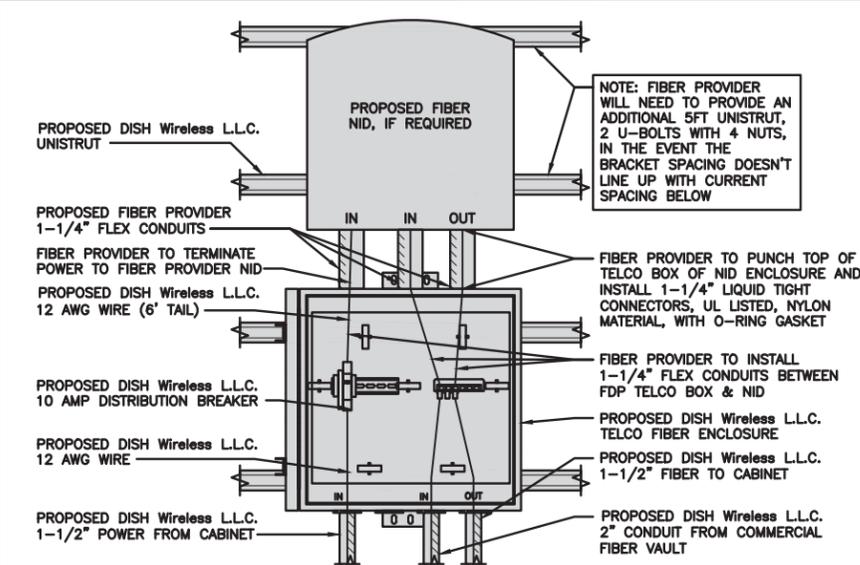


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EXPANSION JOINT DETAIL NO SCALE 1

TYPICAL UNDERGROUND TRENCH DETAIL NO SCALE 2

DARK TELCO BOX - INTERIOR WIRING LAYOUT NO SCALE 3



NOTE: FIBER PROVIDER WILL NEED TO PROVIDE AN ADDITIONAL 5FT UNISTRUT, 2 U-BOLTS WITH 4 NUTS, IN THE EVENT THE BRACKET SPACING DOESN'T LINE UP WITH CURRENT SPACING BELOW

FIBER PROVIDER TO PUNCH TOP OF TELCO BOX OF NID ENCLOSURE AND INSTALL 1-1/4" LIQUID TIGHT CONNECTORS, UL LISTED, NYLON MATERIAL, WITH O-RING GASKET

FIBER PROVIDER TO INSTALL 1-1/4" FLEX CONDUITS BETWEEN FDP TELCO BOX & NID

PROPOSED DISH Wireless L.L.C. TELCO FIBER ENCLOSURE

PROPOSED DISH Wireless L.L.C. 1-1/2" FIBER TO CABINET

PROPOSED DISH Wireless L.L.C. 2" CONDUIT FROM COMMERCIAL FIBER VAULT

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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RFDS REV #: 1

CONSTRUCTION DOCUMENTS

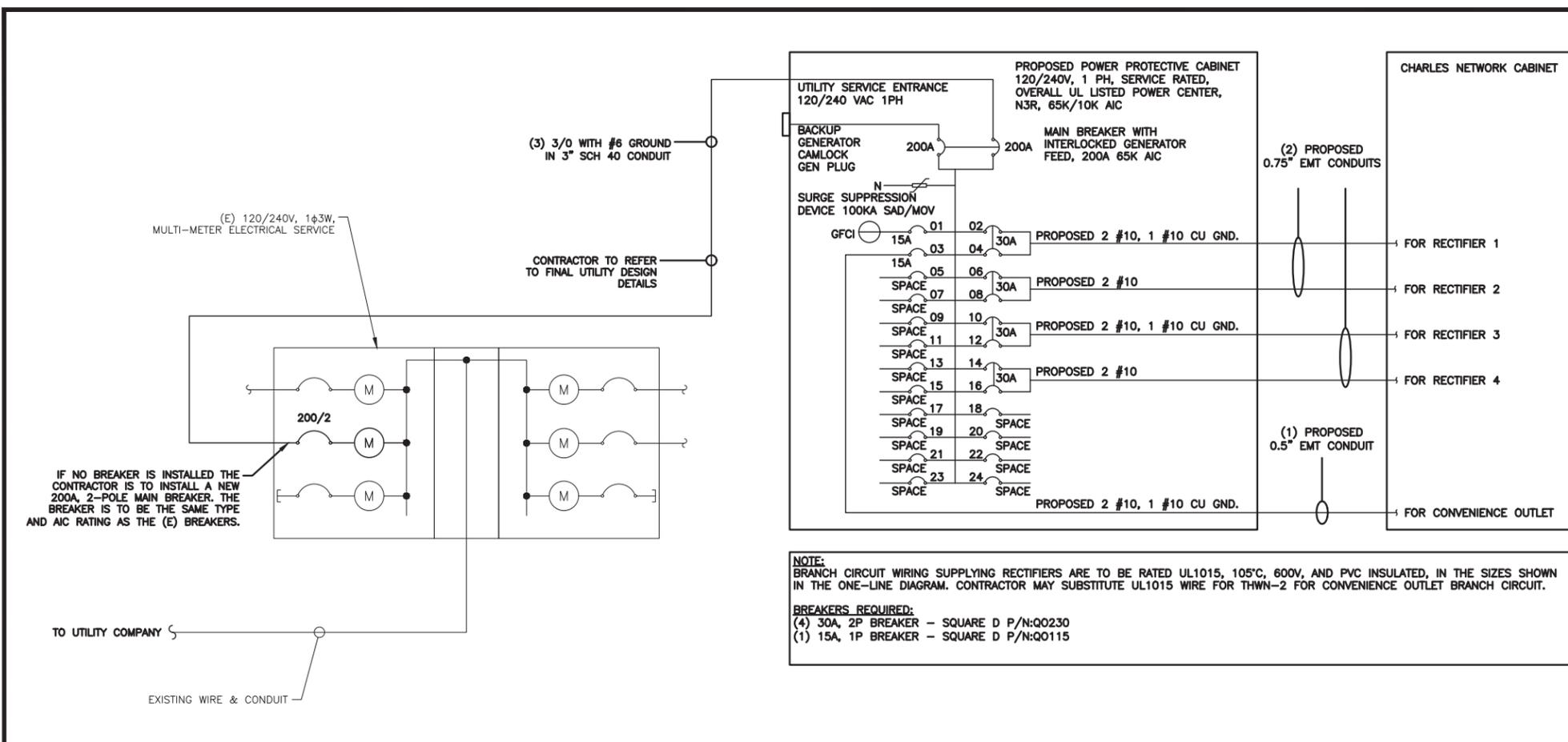
SUBMITTALS		
REV	DATE	DESCRIPTION
A	5/26/21	ISSUED FOR REVIEW
B	7/1/21	ISSUED FOR REVIEW
O	7/7/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
127879.009.01

DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL0039A
200 STANLEY STREET
NEW BRITAIN, CT 06053

SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER
E-2



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)(g) 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.

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:Q0230
 (1) 15A, 1P BREAKER - SQUARE D P/N:Q0115



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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL0039A
200 STANLEY STREET
NEW BRITAIN, CT 06053

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

SHEET NUMBER

E-3

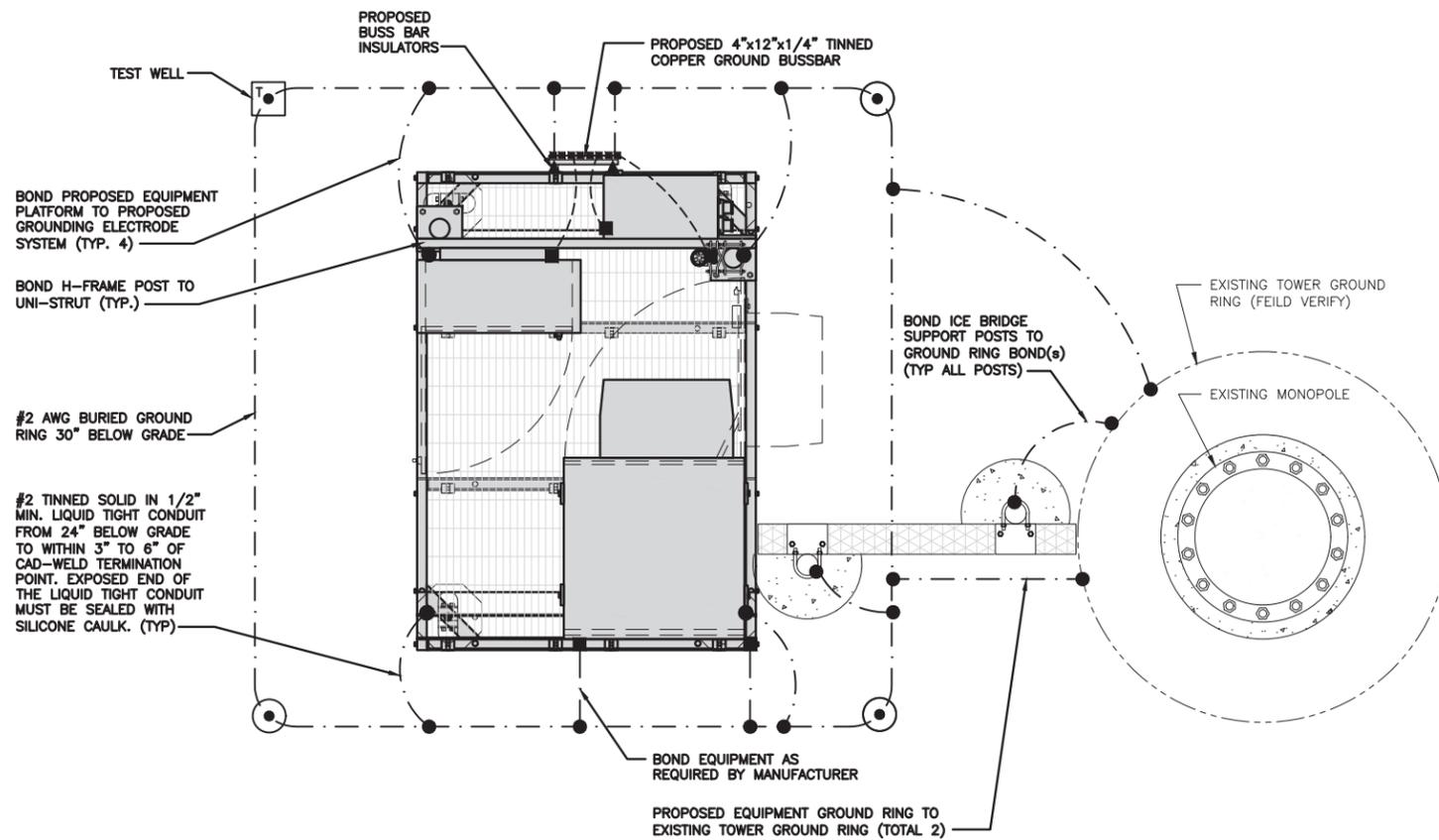
PROPOSED CHARLES PANEL SCHEDULE											
LOAD SERVED	VOLT AMPS (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS)		LOAD SERVED	
	L1	L2						L1	L2		
PPC GFCI OUTLET	180	180	15A	1	A	2	30A	2880	2880	ABB/GE INFINITY RECTIFIER 1	
CHARLES GFCI OUTLET			15A	3	B	4					
-SPACE-				5	A	6	30A	2880	2880	ABB/GE INFINITY RECTIFIER 2	
-SPACE-				7	B	8					
-SPACE-				9	A	10	30A	2880	2880	ABB/GE INFINITY RECTIFIER 3	
-SPACE-				11	B	12					
-SPACE-				13	A	14	30A	2880	2880	ABB/GE INFINITY RECTIFIER 4	
-SPACE-				15	B	16					
-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						
				98	98						
				98							
				123							

PANEL SCHEDULE

NO SCALE 2

NOT USED

NO SCALE 3

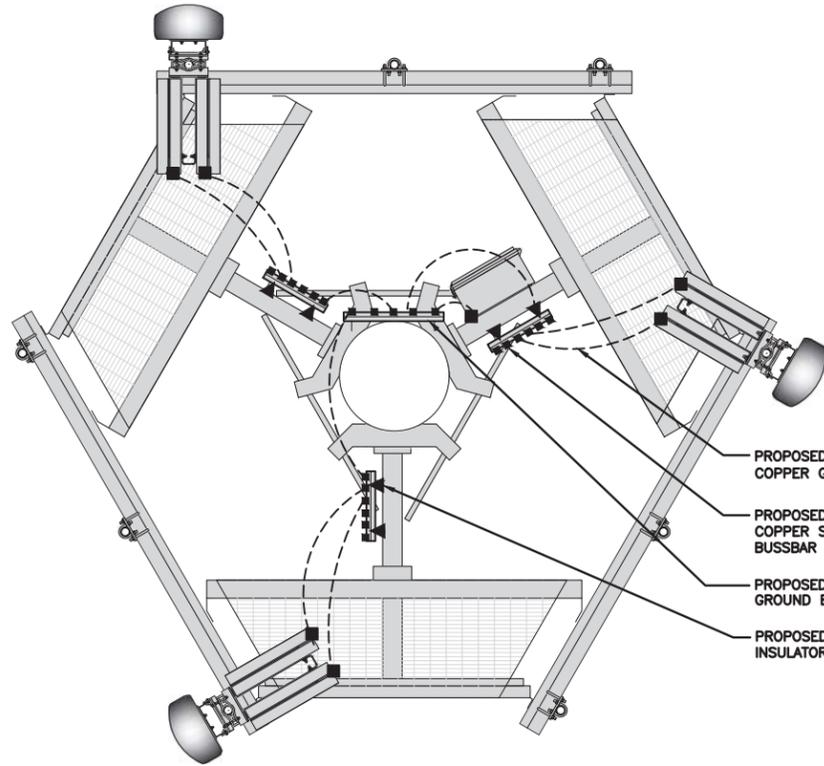


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1

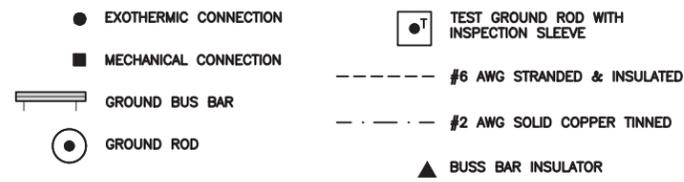
NOTES

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



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2



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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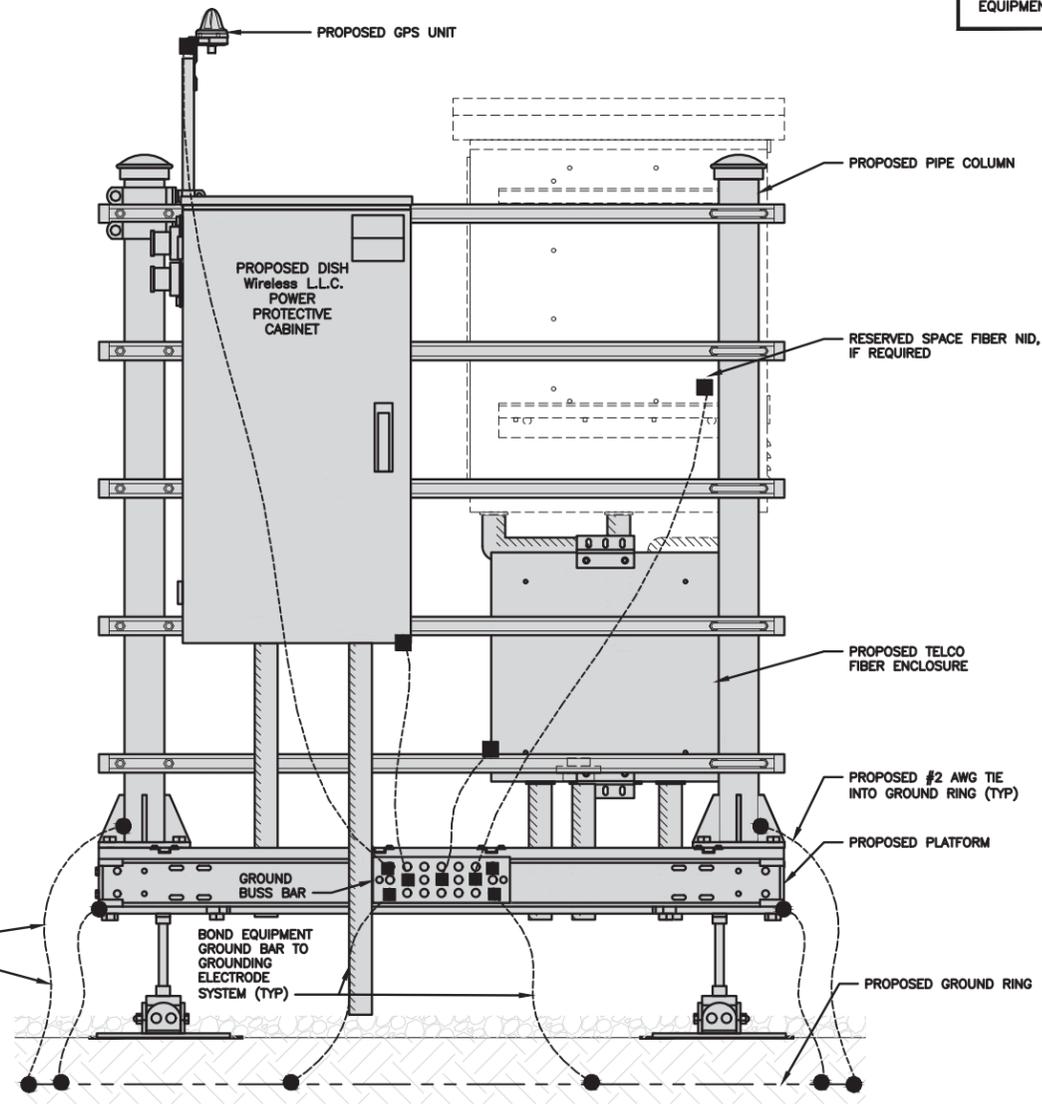
DISH Wireless L.L.C.
PROJECT INFORMATION
BOBDL0039A
200 STANLEY STREET
NEW BRITAIN, CT 06053

SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

G-1

NOTES
EQUIPMENT CABINET OMITTED FOR CLARITY

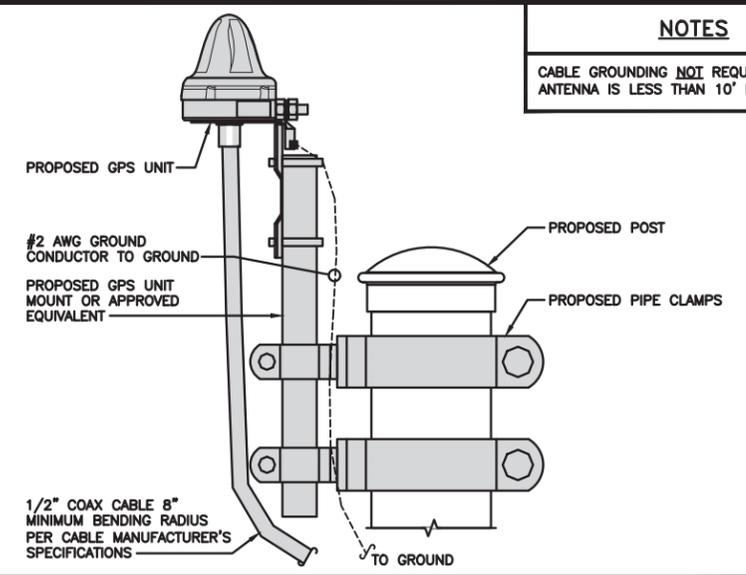


#2 TINNED SOLID IN 1/2" MIN. LIQUID TIGHT CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK. (TYP)

H-FRAME GROUNDING DETAIL

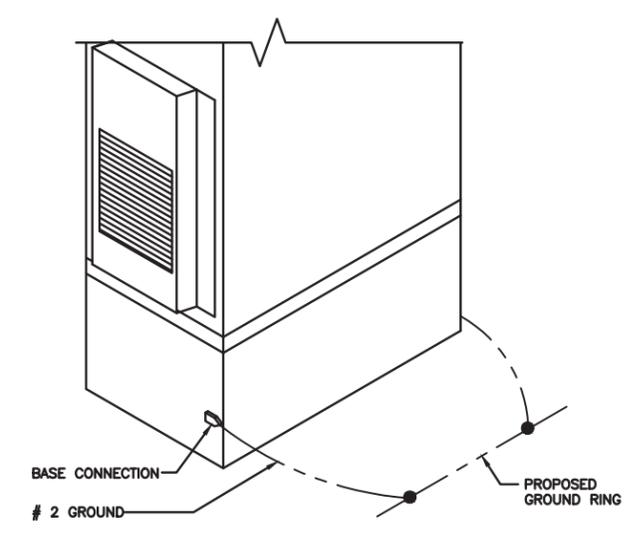
NO SCALE 1

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



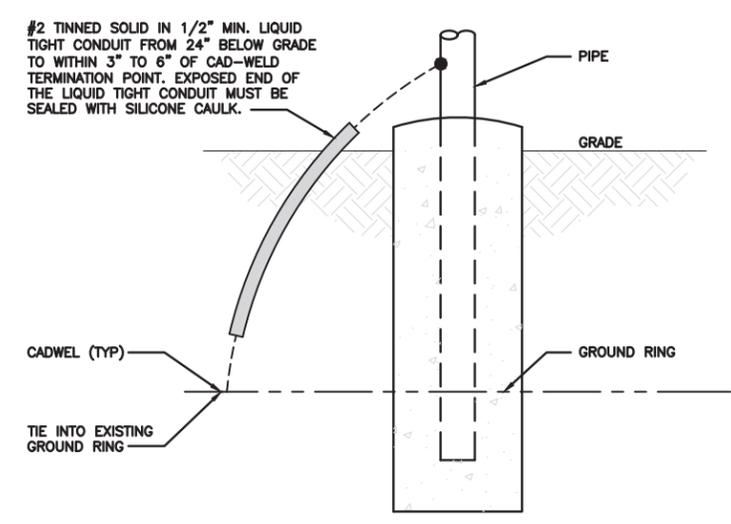
TYPICAL GPS UNIT GROUNDING

NO SCALE 2



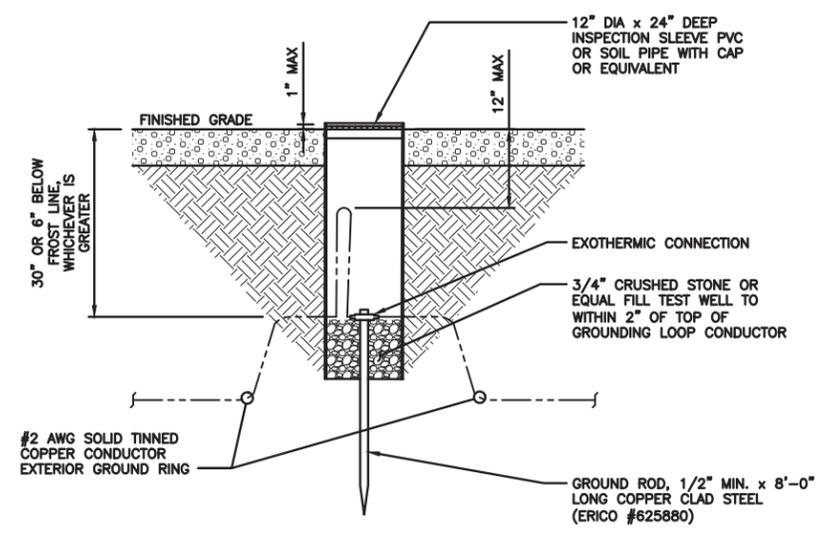
OUTDOOR CABINET GROUNDING

NO SCALE 3



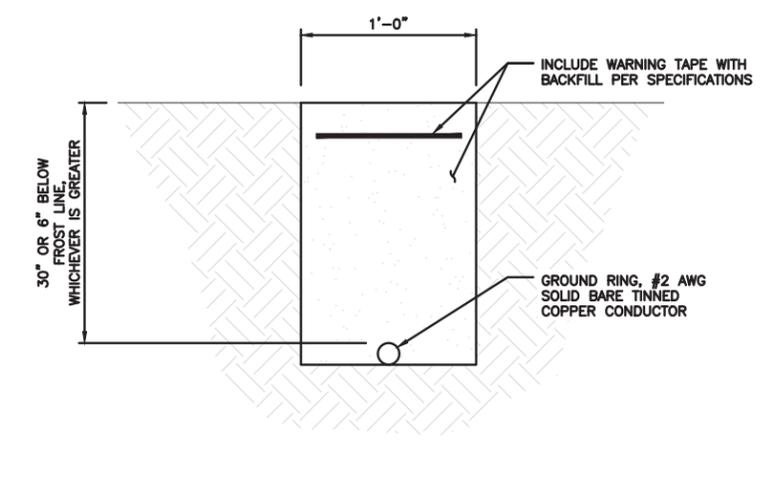
TRANSITIONING GROUND DETAIL

NO SCALE 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE 5



TYPICAL GROUND RING TRENCH

NO SCALE 6



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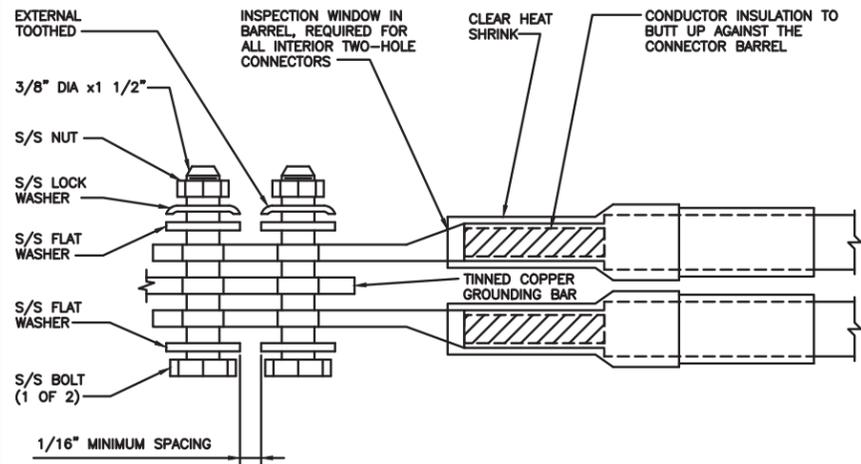
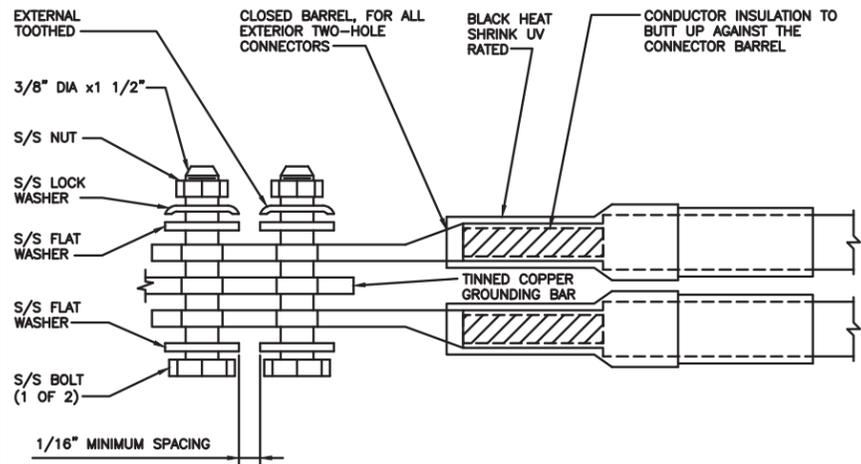
DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL0039A
200 STANLEY STREET
NEW BRITAIN, CT 06053

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2

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



TYPICAL GROUNDING NOTES

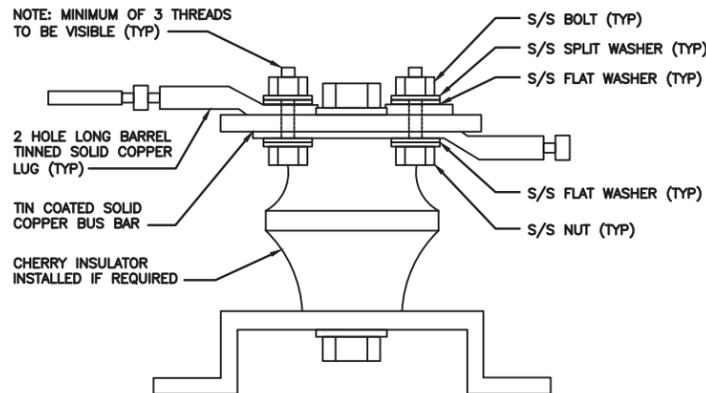
NO SCALE 1

TYPICAL EXTERIOR TWO HOLE LUG

NO SCALE 2

TYPICAL INTERIOR TWO HOLE LUG

NO SCALE 3



LUG DETAIL

NO SCALE 4

NOT USED

NO SCALE 5

NOT USED

NO SCALE 6

NOT USED

NO SCALE 7

NOT USED

NO SCALE 8

NOT USED

NO SCALE 9



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SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

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)

ALPHA RRH				BETA RRH				GAMMA RRH			
PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT	PORT 1 + SLANT	PORT 2 - SLANT	PORT 3 + SLANT	PORT 4 - SLANT
RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
ORANGE	ORANGE	RED	RED	ORANGE	ORANGE	BLUE	BLUE	ORANGE	ORANGE	GREEN	GREEN
	WHITE (-) PORT	ORANGE	ORANGE		WHITE (-) PORT	ORANGE	ORANGE		WHITE (-) PORT	ORANGE	ORANGE
			WHITE (-) PORT				WHITE (-) PORT				WHITE (-) PORT

MID-BAND RRH -
(AWS BANDS N66+N70)

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

RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
PURPLE	PURPLE	RED	RED	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
	WHITE (-) PORT	PURPLE	PURPLE		WHITE (-) PORT	PURPLE	PURPLE		WHITE (-) PORT	PURPLE	PURPLE
			WHITE (-) PORT				WHITE (-) PORT				WHITE (-) PORT

HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

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

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

EXAMPLE 1	EXAMPLE 2	EXAMPLE 3
RED	RED	RED
BLUE	BLUE	
GREEN	GREEN	ORANGE
ORANGE	YELLOW	PURPLE
PURPLE		

FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY

LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH	LOW BAND RRH	HIGH BAND RRH
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

RET MOTORS AT ANTENNAS

ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"	ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"	ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"
RED	RED	BLUE	BLUE	GREEN	GREEN
	PURPLE		PURPLE		PURPLE

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

FORWARD AZIMUTH OF 0-120 DEGREES		FORWARD AZIMUTH OF 120-240 DEGREES		FORWARD AZIMUTH OF 240-360 DEGREES	
PRIMARY	SECONDARY	PRIMARY	SECONDARY	PRIMARY	SECONDARY
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
RED	RED	BLUE	BLUE	GREEN	GREEN
WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	RED		BLUE		GREEN
	WHITE		WHITE		WHITE

RF CABLE COLOR CODES

NO SCALE

1

LOW BANDS (N71+N26)
OPTIONAL - (N29)



AWS
(N66+N70+H-BLOCK)



CBRS TECH
(3 GHz)



NEGATIVE SLANT PORT
ON ANT/RRH



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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B	7/1/21	ISSUED FOR REVIEW
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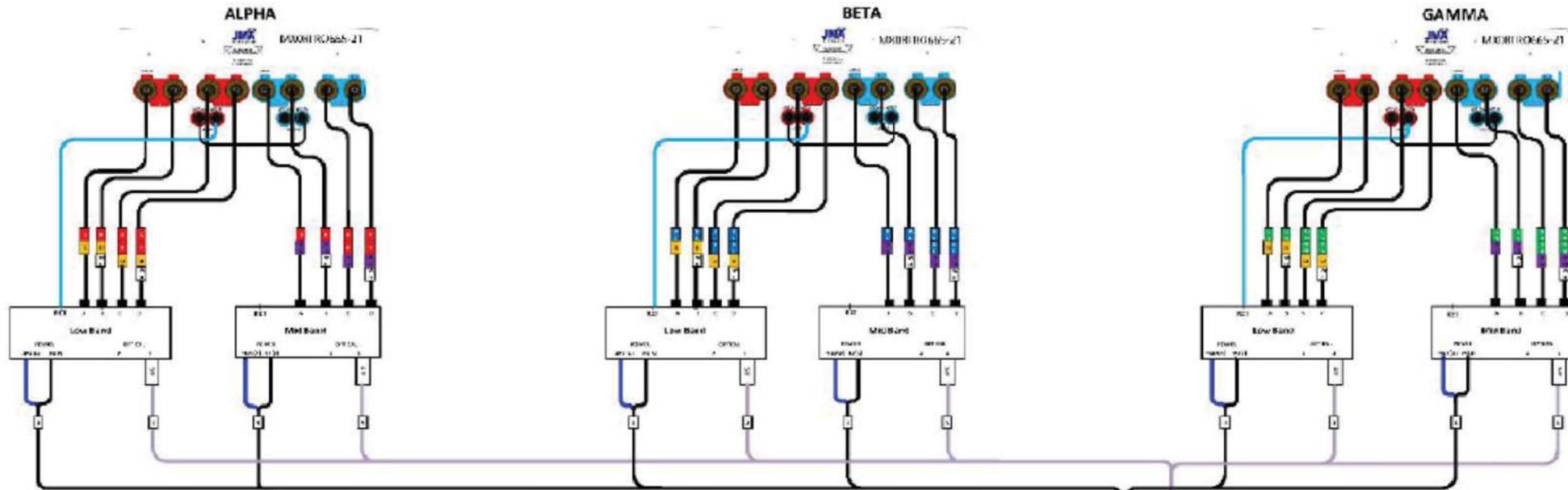
A&E PROJECT NUMBER
127879.009.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL0039A
200 STANLEY STREET
NEW BRITAIN, CT 06053

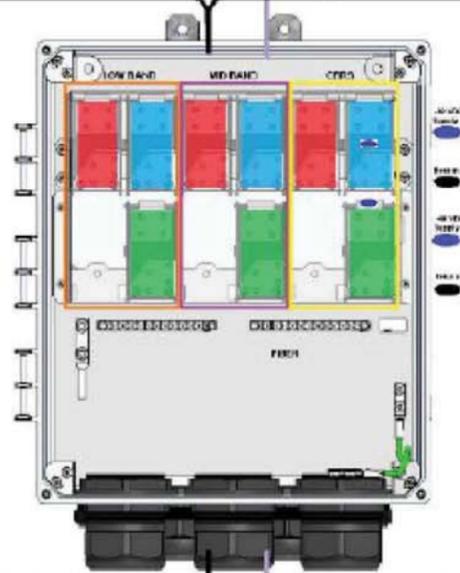
SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1



Fiber Patch Panel

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



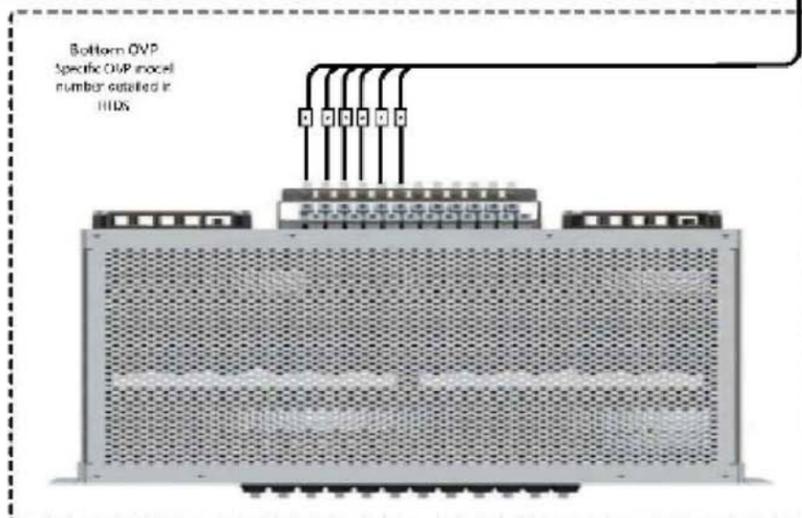
Port	Interface	Description
0	CSR000	Service
1	CSR001	CSR0 - Alpha
2	CSR002	CSR0 - Beta
3	CSR003	CSR0 - Gamma
4	CSR004	Fiber Low Band RU - Alpha
5	CSR005	Fiber Low Band RU - Beta
6	CSR006	Fiber Low Band RU - Beta
7	CSR007	Fiber Low Band RU - Beta
8	CSR008	Fiber Low Band RU - Gamma
9	CSR009	Fiber Low Band RU - Gamma
10	CSR010	Fiber RU
11	CSR011	Fiber RU
12	CSR012	Fiber RU
13	CSR013	Fiber RU
14	CSR014	CSR01
15	CSR015	CSR02
16	CSR016	CSR03
17	CSR017	SM1 - RMC
18	CSR018	SM2 - RMC
19	CSR019	SM1 - Data 1
20	CSR020	SM2 - Data 1
21	CSR021	SM1 - Data 2
22	CSR022	SM2 - Data 2
23	CSR023	Reserved (Open EDC Lock)
24	CSR024	Blank/Unused
25	CSR025	Blank/Unused
26	CSR026	Blank/Unused
27	CSR027	Blank/Unused
28	CSR028	Blank/Unused
29	CSR029	Blank/Unused

top

bottom

Bottom OVP Layout

Circuit 1	Alpha Low Band
Circuit 2	Beta Low Band
Circuit 3	Gamma Low Band
Circuit 4	Alpha Mid Band
Circuit 5	Beta Mid Band
Circuit 6	Gamma Mid Band
Circuit 7	Alpha CBR5
Circuit 8	Beta CBR5
Circuit 9	Gamma CBR5
Circuit 10	Open
Circuit 11	Open
Circuit 12	Open



	5G Plumbing Diagram (VA, MRBH0665-21 2-2-21B-FMB)		
	Rev. 1.0	1/21	1/21
Rev. 1.0	1/21	1/21	1/21

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wireless.

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LHT RMC MDW

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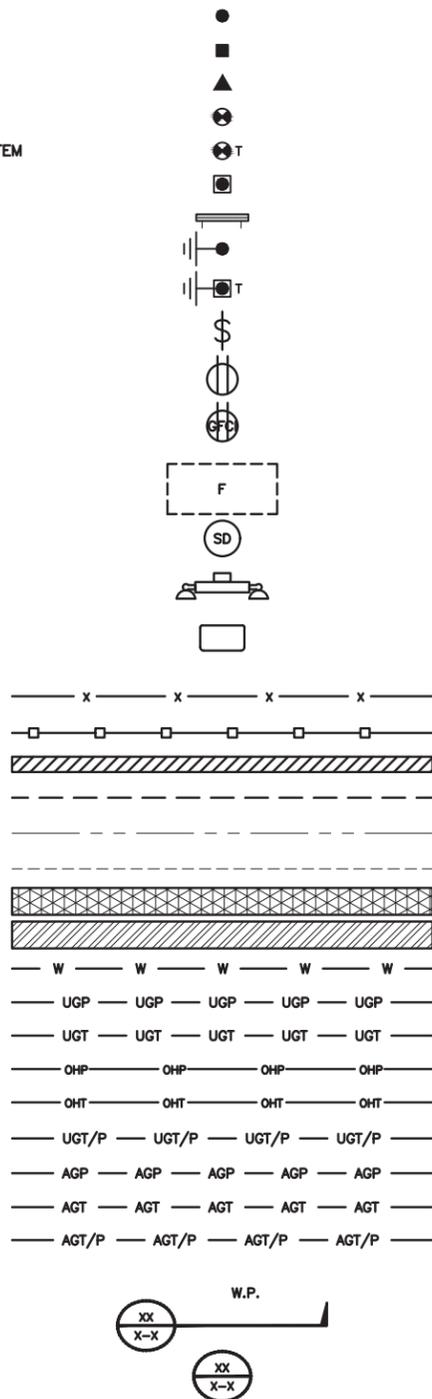
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DISH Wireless L.L.C.
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NEW BRITAIN, CT 06053

SHEET TITLE
RF
PLUMBING DIAGRAM

SHEET NUMBER
RF-2

EXOTHERMIC CONNECTION
 MECHANICAL CONNECTION
 BUSS BAR INSULATOR
 CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 EXOTHERMIC WITH INSPECTION SLEEVE
 GROUNDING BAR
 GROUND ROD
 TEST GROUND ROD WITH INSPECTION SLEEVE
 SINGLE POLE SWITCH
 DUPLEX RECEPTACLE
 DUPLEX GFCI RECEPTACLE
 FLUORESCENT LIGHTING FIXTURE
 (2) TWO LAMPS 48-T8
 SMOKE DETECTION (DC)
 EMERGENCY LIGHTING (DC)
 SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
 LED-1-25A400/51K-SR4-120-PE-DBTDX



SECTION REFERENCE
 DETAIL REFERENCE

LEGEND

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

ABBREVIATIONS



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DISH Wireless L.L.C.
 PROJECT INFORMATION
 BOBDL00039A
 200 STANLEY STREET
 NEW BRITAIN, CT 06053

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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DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL0039A
200 STANLEY STREET
NEW BRITAIN, CT 06053

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

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DRAWN BY:	CHECKED BY:	APPROVED BY:
LHT	RMC	MDW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	5/26/21	ISSUED FOR REVIEW
B	7/1/21	ISSUED FOR REVIEW
0	7/7/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
127879.009.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL00039A
200 STANLEY STREET
NEW BRITAIN, CT 06053

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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Expires 2/10/22

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DRAWN BY: CHECKED BY: APPROVED BY:

LHT RMC MDW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	5/28/21	ISSUED FOR REVIEW
B	7/1/21	ISSUED FOR REVIEW
O	7/7/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
127879.009.01

DISH Wireless L.L.C.
PROJECT INFORMATION

BOBDL0039A
200 STANLEY STREET
NEW BRITAIN, CT 06053

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

Exhibit D

Structural Analysis Report

Date: **May 21, 2021**



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

Subject: **Structural Analysis Report**

Carrier Designation: **DISH Network Co-Locate**
Site Number: BOBDL00039A
Site Name: CT-CCI-T-803843

Crown Castle Designation: **BU Number:** 803843
Site Name: CT NEW BRITAIN 4 CAC 803843
JDE Job Number: 650037
Work Order Number: 1962719
Order Number: 556643 Rev. 0

Engineering Firm Designation: **Crown Castle Project Number:** 1962719

Site Data: **200 Stanley Street, New Britain, Hartford County, CT**
Latitude 41° 39' 16.4", Longitude -72° 46' 9.59"
192 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 – 44.9%

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Matthew Schmitt

Respectfully submitted by:

Maham Barimani, P.E.
Senior Project Engineer

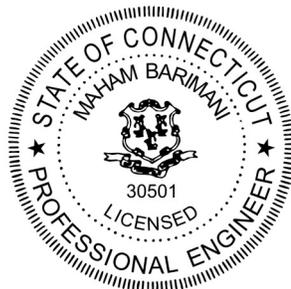


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1) INTRODUCTION

This tower is a 192 ft Monopole tower designed by Summit.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	2 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)
155.0	155.0	3	fujitsu	TA08025-B604	1	1-3/4
		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)
193.0	193.0	1	cci antennas	DMP65R-BU6D w/ Mount Pipe	6 8 2 4	1-5/8 3/4 3/8 Conduit
		2	cci antennas	DMP65R-BU8D w/ Mount Pipe		
		3	cci antennas	OPA-65R-LCUU-H8 w/ Mount Pipe		
		3	cci antennas	TPA65R-BU8D_CCIV2 w/ Mount Pipe		
		3	ericsson	RRUS 32 B30		
		3	ericsson	RRUS 4449 B5/B12		
		3	ericsson	RRUS 4478 B14		
		3	ericsson	RRUS 8843 B2/B66A		
		3	ericsson	RRUS E2 B29		
		2	raycap	DC6-48-60-0-8F		
		2	raycap	DC6-48-60-18-8F		
		1	tower mounts	Platform Mount [LP 1201-1_KCKR-HR-1]		
185.0	188.0	3	rfs celwave	APXV18-206517S-C w/ Mount Pipe	6	1-5/8
	185.0	1	tower mounts	Platform Mount [LP 1201-1_KCKR]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
175.0	179.0	1	dragonwave	HORIZON COMPACT	3 1 3 7 2	1-5/8 5/8 1/2 5/16 Conduit
	175.0	1	andrew	VHLP2-23		
		3	argus technologies	LLPX310R-V4		
		3	commscope	NNVV-65B-R4		
		1	motorola	TIMING 2000		
		3	nokia	AHCC		
		3	nokia	AHFIB_CCIV2		
		1	tower mounts	Platform Mount [LP 301-1]		
	172.0	3	samsung telecommunications	RRH-2WB		
161.0	164.0	1	sigfox	CXL 900-3LW	1	1/2
	161.0	1	sigfox	CAVITY FILTER		
		1	sigfox	LNA		
		1	tower mounts	Side Arm Mount [SO 104-3]		
		1	tower mounts	Side Arm Mount [SO 306-1]		
103.0	105.0	3	samsung telecommunications	MT6407-77A w/ Mount Pipe	8	1-5/8
	104.0	2	raycap	RRFDC-3315-PF-48		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
	103.0	6	andrew	SBNHH-1D65B w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 303-1_KCKR-HR-1]		
	101.0	3	samsung telecommunications	CBRS w/ Mount Pipe		
	100.0	2	antel	BXA-80080/4CF w/ Mount Pipe		
1		antel	BXA-80090/4CF w/ Mount Pipe			

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	2384583	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1118798	CCISITES
4-TOWER MANUFACTURER DRAWINGS	925033	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.9.0), 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	192 - 151.25	Pole	TP39.25x26x0.31	1	-17.13	2272.99	23.7	Pass
L2	151.25 - 111.25	Pole	TP51.62x36.99x0.44	2	-31.70	4185.56	26.3	Pass
L3	111.25 - 72.75	Pole	TP63.26x48.63x0.5	3	-51.99	5864.38	28.0	Pass
L4	72.75 - 35.75	Pole	TP74.29x59.66x0.56	4	-73.81	7755.19	27.7	Pass
L5	35.75 - 0	Pole	TP84.78x70.15x0.56	5	-106.15	9235.85	31.0	Pass
							Summary	
						Pole (L5)	31.0	Pass
						Rating =	31.0	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	42.3	Pass
1	Base Plate	0	34.2	Pass
1,2	Base Foundation Structural (Drilled Pier Foundation)	0	44.9	Pass
1,2	Base Foundation Soil Interaction (Drilled Pier Foundation)	0	37.3	Pass
1,2	Base Foundation Structural (Pier and Pad Foundation)	0	23.1	Pass
1,2	Base Foundation Soil Interaction (Pier and Pad Foundation)	0	42.9	Pass

Structure Rating (max from all components) =	44.9%
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Notes:

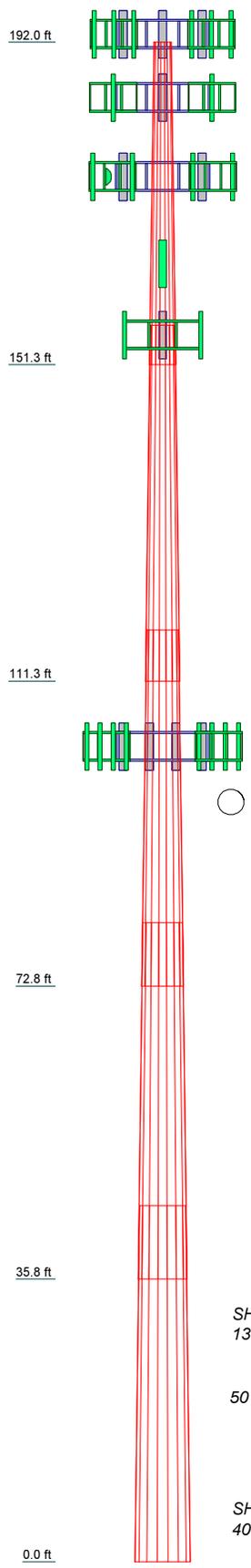
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) It is unknown whether the foundation is a drilled shaft or pier and pad. Both designs were analyzed and determined to be sufficient.

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	4	5
Length (ft)	40.75	45.00	45.00	45.00	45.00
Number of Sides	18	18	18	18	18
Thickness (in)	0.31	0.44	0.50	0.56	0.56
Socket Length (ft)	5.00	6.50	8.00	9.25	70.15
Top Dia (in)	26.00	36.99	48.63	59.66	84.78
Bot Dia (in)	39.24	51.62	63.26	74.28	84.78
Grade			A607-65		
Weight (K)	4.4	9.3	13.5	18.2	21.0



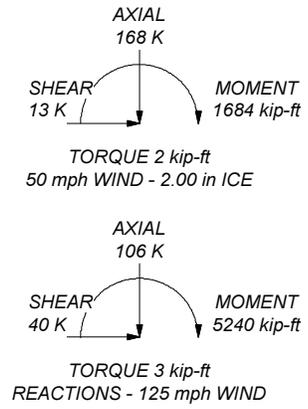
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 2.00 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 0.00 ft
8. TOWER RATING: 31%

ALL REACTIONS ARE FACTORED



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 Canonsburg, PA 15317
 Phone: (724) 416-2000
 FAX:

Job: BU# 803843			
Project:			
Client: Crown Castle	Drawn by: Matthew Schmitt	App'd:	
Code: TIA-222-H	Date: 05/21/21	Scale: NTS	
Path: C:\Work Area\803843\WO 1962719 - SAIProd\803843.ent		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: 112.00 ft.
- Basic wind speed of 125 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 2.00 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination ✓ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <div style="text-align: center; background-color: #e0e0e0; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets ✓ Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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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	192.00-151.25	40.75	5.00	18	26.00	39.24	0.31	1.25	A607-65 (65 ksi)
L2	151.25-111.25	45.00	6.50	18	36.99	51.62	0.44	1.75	A607-65 (65 ksi)
L3	111.25-72.75	45.00	8.00	18	48.63	63.26	0.50	2.00	A607-65 (65 ksi)
L4	72.75-35.75	45.00	9.25	18	59.66	74.28	0.56	2.25	A607-65 (65 ksi)
L5	35.75-0.00	45.00		18	70.15	84.78	0.56	2.25	A607-65 (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	26.35	25.48	2124.03	9.12	13.21	160.81	4250.85	12.74	4.03	12.883
	39.80	38.62	7394.88	13.82	19.94	370.92	14799.50	19.31	6.36	20.343
L2	39.15	50.76	8571.30	12.98	18.79	456.08	17153.87	25.39	5.74	13.122
	52.35	71.07	23524.06	18.17	26.22	897.06	47079.08	35.54	8.32	19.006
L3	51.45	76.39	22358.99	17.09	24.71	905.01	44747.40	38.20	7.68	15.359
	64.16	99.60	49561.27	22.28	32.14	1542.26	99187.75	49.81	10.25	20.507
L4	63.13	105.51	46553.20	20.98	30.31	1536.07	93167.66	52.76	9.51	16.907
	75.34	131.62	90378.90	26.17	37.74	2394.98	180876.73	65.82	12.08	21.483
L5	74.20	124.25	76019.76	24.70	35.64	2133.11	152139.55	62.13	11.36	20.19
	86.00	150.36	134732.99	29.90	43.07	3128.36	269643.26	75.19	13.93	24.767

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontal in	Double Angle Stitch Bolt Spacing Redundants in
L1 192.00- 151.25				1	1	1			
L2 151.25- 111.25				1	1	1			
L3 111.25- 72.75				1	1	1			
L4 72.75- 35.75				1	1	1			
L5 35.75-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Componen t Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diamete r in	Perimete r in	Weight plf
**											

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Componen t Type	Placement ft	Total Number	C _A A _A ft ² /ft	Weight plf	
Safety Line 3/8	A	No	No	CaAa (Out Of Face)	192.00 - 0.00	1	No Ice 1/2" Ice	0.04 0.14	0 1

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		CAAA ft ² /ft	Weight plf
							1" Ice	0.24	1
							2" Ice	0.44	2
5/8 rod/step	A	No	No	CaAa (Out Of Face)	192.00 - 0.00	1	No Ice	0.02	0
							1/2" Ice	0.12	1
							1" Ice	0.22	2
							2" Ice	0.42	6
**									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	192.00 - 0.00	6	No Ice	0.00	1
							1/2" Ice	0.00	1
							1" Ice	0.00	1
							2" Ice	0.00	1
FB-L98B-034-XXXXXX(3/8)	C	No	No	Inside Pole	192.00 - 0.00	2	No Ice	0.00	0
							1/2" Ice	0.00	0
							1" Ice	0.00	0
							2" Ice	0.00	0
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	192.00 - 0.00	8	No Ice	0.00	1
							1/2" Ice	0.00	1
							1" Ice	0.00	1
							2" Ice	0.00	1
2" Flexible Conduit	C	No	No	Inside Pole	192.00 - 0.00	4	No Ice	0.00	0
							1/2" Ice	0.00	0
							1" Ice	0.00	0
							2" Ice	0.00	0
*									
LCF158-50JL(1-5/8)	C	No	No	Inside Pole	185.00 - 0.00	6	No Ice	0.00	1
							1/2" Ice	0.00	1
							1" Ice	0.00	1
							2" Ice	0.00	1
*									
HJ4.5-50(5/8)	B	No	No	Inside Pole	175.00 - 0.00	1	No Ice	0.00	0
							1/2" Ice	0.00	0
							1" Ice	0.00	0
							2" Ice	0.00	0
9207(5/16)	B	No	No	Inside Pole	175.00 - 0.00	1	No Ice	0.00	1
							1/2" Ice	0.00	1
							1" Ice	0.00	1
							2" Ice	0.00	1
HB158-21U6M48-30F(1-5/8)	B	No	No	Inside Pole	175.00 - 0.00	3	No Ice	0.00	2
							1/2" Ice	0.00	2
							1" Ice	0.00	2
							2" Ice	0.00	2
7957A(5/16)	B	No	No	Inside Pole	175.00 - 0.00	6	No Ice	0.00	0
							1/2" Ice	0.00	0
							1" Ice	0.00	0
							2" Ice	0.00	0
EC4-50(1/2)	B	No	No	Inside Pole	175.00 - 0.00	3	No Ice	0.00	0
							1/2" Ice	0.00	0
							1" Ice	0.00	0
							2" Ice	0.00	0
2" Flexible Conduit	B	No	No	Inside Pole	175.00 - 0.00	2	No Ice	0.00	0
							1/2" Ice	0.00	0
							1" Ice	0.00	0
							2" Ice	0.00	0
*									
EC4-50(1/2)	B	No	No	Inside Pole	161.00 - 0.00	1	No Ice	0.00	0
							1/2" Ice	0.00	0
							1" Ice	0.00	0
							2" Ice	0.00	0
*									
CU12PSM6P4XXX(1-3/4)	C	No	No	Inside Pole	155.00 - 0.00	1	No Ice	0.00	3
							1/2" Ice	0.00	3
							1" Ice	0.00	3
							2" Ice	0.00	3
*									
HB158-21U6S12-XXXM-01(1-5/8)	C	No	No	Inside Pole	103.00 - 0.00	2	No Ice	0.00	2
							1/2" Ice	0.00	2
							1" Ice	0.00	2
							2" Ice	0.00	2

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} A _{AA} ft ² /ft	Weight plf
LDF7-50A(1-5/8)	C	No	No	Inside Pole	103.00 - 0.00	6	No Ice	0.00	1
							1/2" Ice	0.00	1
							1" Ice	0.00	1
							2" Ice	0.00	1

**

Feed Line/Linear Appurtenances Section Areas

Tower Section n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} A _{AA} In Face ft ²	C _{AA} A _{AA} Out Face ft ²	Weight K
L1	192.00-151.25	A	0.000	0.000	0.000	2.343	0.02
		B	0.000	0.000	0.000	0.000	0.23
		C	0.000	0.000	0.000	0.000	0.57
L2	151.25-111.25	A	0.000	0.000	0.000	2.300	0.02
		B	0.000	0.000	0.000	0.000	0.39
		C	0.000	0.000	0.000	0.000	0.68
L3	111.25-72.75	A	0.000	0.000	0.000	2.214	0.02
		B	0.000	0.000	0.000	0.000	0.38
		C	0.000	0.000	0.000	0.000	0.91
L4	72.75-35.75	A	0.000	0.000	0.000	2.127	0.02
		B	0.000	0.000	0.000	0.000	0.36
		C	0.000	0.000	0.000	0.000	0.95
L5	35.75-0.00	A	0.000	0.000	0.000	2.056	0.02
		B	0.000	0.000	0.000	0.000	0.35
		C	0.000	0.000	0.000	0.000	0.92

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section n	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} A _{AA} In Face ft ²	C _{AA} A _{AA} Out Face ft ²	Weight K
L1	192.00-151.25	A	2.003	0.000	0.000	0.000	34.997	0.33
		B		0.000	0.000	0.000	0.000	0.23
		C		0.000	0.000	0.000	0.000	0.57
L2	151.25-111.25	A	1.951	0.000	0.000	0.000	34.353	0.32
		B		0.000	0.000	0.000	0.000	0.39
		C		0.000	0.000	0.000	0.000	0.68
L3	111.25-72.75	A	1.883	0.000	0.000	0.000	32.252	0.30
		B		0.000	0.000	0.000	0.000	0.38
		C		0.000	0.000	0.000	0.000	0.91
L4	72.75-35.75	A	1.786	0.000	0.000	0.000	29.991	0.27
		B		0.000	0.000	0.000	0.000	0.36
		C		0.000	0.000	0.000	0.000	0.95
L5	35.75-0.00	A	1.595	0.000	0.000	0.000	27.600	0.25
		B		0.000	0.000	0.000	0.000	0.35
		C		0.000	0.000	0.000	0.000	0.92

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
L1	192.00-151.25	0.00	-0.52	0.00	-3.29
L2	151.25-111.25	0.00	-0.53	0.00	-3.58

Section	Elevation	CP _x	CP _z	CP _x Ice	CP _z Ice
	ft	in	in	in	in
L3	111.25-72.75	0.00	-0.53	0.00	-3.68
L4	72.75-35.75	0.00	-0.53	0.00	-3.70
L5	35.75-0.00	0.00	-0.53	0.00	-3.63

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

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz Lateral	Vert						ft
OPA-65R-LCUU-H8 w/ Mount Pipe	A	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	11.93	8.06	0.10
							1/2" Ice	12.88	8.96	0.19
							Ice	13.84	9.89	0.29
							1" Ice	15.82	11.78	0.54
							2" Ice			
OPA-65R-LCUU-H8 w/ Mount Pipe	B	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	11.93	8.06	0.10
							1/2" Ice	12.88	8.96	0.19
							Ice	13.84	9.89	0.29
							1" Ice	15.82	11.78	0.54
							2" Ice			
OPA-65R-LCUU-H8 w/ Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	11.93	8.06	0.10
							1/2" Ice	12.88	8.96	0.19
							Ice	13.84	9.89	0.29
							1" Ice	15.82	11.78	0.54
							2" Ice			
TPA65R-BU8D_CCIV2 w/ Mount Pipe	A	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	15.89	7.89	0.12
							1/2" Ice	16.81	8.74	0.23
							Ice	17.76	9.60	0.36
							1" Ice	19.70	11.37	0.66
							2" Ice			
TPA65R-BU8D_CCIV2 w/ Mount Pipe	B	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	15.89	7.89	0.12
							1/2" Ice	16.81	8.74	0.23
							Ice	17.76	9.60	0.36
							1" Ice	19.70	11.37	0.66
							2" Ice			
TPA65R-BU8D_CCIV2 w/ Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	15.89	7.89	0.12
							1/2" Ice	16.81	8.74	0.23
							Ice	17.76	9.60	0.36
							1" Ice	19.70	11.37	0.66
							2" Ice			
DMP65R-BU8D w/ Mount Pipe	A	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	15.89	7.89	0.14
							1/2" Ice	16.81	8.74	0.25
							Ice	17.76	9.60	0.38
							1" Ice	19.70	11.37	0.68
							2" Ice			
DMP65R-BU8D w/ Mount Pipe	B	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	15.89	7.89	0.14
							1/2" Ice	16.81	8.74	0.25
							Ice	17.76	9.60	0.38
							1" Ice	19.70	11.37	0.68
							2" Ice			
DMP65R-BU6D w/ Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	11.96	5.97	0.11
							1/2" Ice	12.70	6.63	0.20
							Ice	13.46	7.30	0.30
							1" Ice	15.02	8.69	0.53
							2" Ice			
RRUS 32 B30	A	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	2.69	1.57	0.06
							1/2" Ice	2.91	1.76	0.08
							Ice	3.14	1.95	0.10

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						ft
						ft ²	ft ²	K		
RRUS 32 B30	B	From Centroid-Leg	4.00	0.00	0.00	193.00	1" Ice	3.61	2.35	0.16
							2" Ice			
							No Ice	2.69	1.57	0.06
							1/2" Ice	2.91	1.76	0.08
RRUS 32 B30	C	From Centroid-Leg	4.00	0.00	0.00	193.00	1" Ice	3.61	2.35	0.16
							2" Ice			
							No Ice	2.69	1.57	0.06
							1/2" Ice	2.91	1.76	0.08
RRUS E2 B29	A	From Centroid-Leg	4.00	0.00	0.00	193.00	Ice	3.14	1.95	0.10
							1" Ice	3.61	2.35	0.16
							2" Ice			
							No Ice	2.69	1.57	0.06
RRUS E2 B29	B	From Centroid-Leg	4.00	0.00	0.00	193.00	1/2" Ice	2.91	1.76	0.08
							Ice	3.14	1.95	0.10
							1" Ice	3.61	2.35	0.16
							2" Ice			
RRUS E2 B29	C	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	3.15	1.29	0.06
							1/2" Ice	3.36	1.44	0.08
							Ice	3.59	1.60	0.11
							1" Ice	4.07	1.95	0.17
RRUS 4478 B14	A	From Centroid-Leg	4.00	0.00	0.00	193.00	2" Ice			
							No Ice	3.15	1.29	0.06
							1/2" Ice	3.36	1.44	0.08
							Ice	3.59	1.60	0.11
RRUS 4478 B14	B	From Centroid-Leg	4.00	0.00	0.00	193.00	1" Ice	4.07	1.95	0.17
							2" Ice			
							No Ice	3.15	1.29	0.06
							1/2" Ice	3.36	1.44	0.08
RRUS 4478 B14	C	From Centroid-Leg	4.00	0.00	0.00	193.00	Ice	3.59	1.60	0.11
							1" Ice	4.07	1.95	0.17
							2" Ice			
							No Ice	3.15	1.29	0.06
RRUS 4478 B14	A	From Centroid-Leg	4.00	0.00	0.00	193.00	1/2" Ice	3.36	1.44	0.08
							Ice	3.59	1.60	0.11
							1" Ice	4.07	1.95	0.17
							2" Ice			
RRUS 4478 B14	B	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	1.84	1.06	0.06
							1/2" Ice	2.01	1.20	0.08
							Ice	2.19	1.34	0.09
							1" Ice	2.57	1.66	0.14
RRUS 4478 B14	C	From Centroid-Leg	4.00	0.00	0.00	193.00	2" Ice			
							No Ice	1.84	1.06	0.06
							1/2" Ice	2.01	1.20	0.08
							Ice	2.19	1.34	0.09
RRUS 8843 B2/B66A	A	From Centroid-Leg	4.00	0.00	0.00	193.00	1" Ice	2.57	1.66	0.14
							2" Ice			
							No Ice	1.84	1.06	0.06
							1/2" Ice	2.01	1.20	0.08
RRUS 8843 B2/B66A	B	From Centroid-Leg	4.00	0.00	0.00	193.00	Ice	2.19	1.34	0.09
							1" Ice	2.57	1.66	0.14
							2" Ice			
							No Ice	1.84	1.06	0.06
RRUS 8843 B2/B66A	C	From Centroid-Leg	4.00	0.00	0.00	193.00	1/2" Ice	2.01	1.20	0.08
							Ice	2.19	1.34	0.09
							1" Ice	2.57	1.66	0.14
							2" Ice			
RRUS 4449 B5/B12	A	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	1.64	1.35	0.07
							1/2" Ice	1.80	1.50	0.09
							Ice	1.97	1.65	0.11
							1" Ice	2.32	1.99	0.16
RRUS 4449 B5/B12	B	From Centroid-Leg	4.00	0.00	0.00	193.00	2" Ice			
							No Ice	1.64	1.35	0.07
							1/2" Ice	1.80	1.50	0.09
							Ice	1.97	1.65	0.11
RRUS 4449 B5/B12	C	From Centroid-Leg	4.00	0.00	0.00	193.00	1" Ice	2.32	1.99	0.16
							2" Ice			
							No Ice	1.64	1.35	0.07
							1/2" Ice	1.80	1.50	0.09
RRUS 4449 B5/B12	A	From Centroid-Leg	4.00	0.00	0.00	193.00	Ice	1.97	1.65	0.11
							1" Ice	2.32	1.99	0.16
							2" Ice			
							No Ice	1.64	1.35	0.07
RRUS 4449 B5/B12	B	From Centroid-Leg	4.00	0.00	0.00	193.00	1/2" Ice	1.80	1.50	0.09
							Ice	1.97	1.65	0.11
							1" Ice	2.32	1.99	0.16
							2" Ice			
RRUS 4449 B5/B12	C	From Centroid-Leg	4.00	0.00	0.00	193.00	No Ice	1.97	1.41	0.07
							1/2" Ice	2.14	1.56	0.09
							Ice	2.33	1.73	0.11
							1" Ice	2.72	2.07	0.16
RRUS 4449 B5/B12	A	From Centroid-Leg	4.00	0.00	0.00	193.00	2" Ice			
							No Ice	1.97	1.41	0.07
							1/2" Ice	2.14	1.56	0.09
							Ice	2.33	1.73	0.11

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft ²	ft ²	K	
RRUS 4449 B5/B12	C	From Centroid-Leg	4.00	0.00	0.00	193.00	1" Ice	2.72	2.07	0.16
							2" Ice			
							No Ice	1.97	1.41	0.07
							1/2" Ice	2.14	1.56	0.09
							Ice	2.33	1.73	0.11
(2) DC6-48-60-0-8F	A	From Centroid-Leg	4.00	0.00	0.00	193.00	1" Ice	2.72	2.07	0.16
							2" Ice			
							No Ice	0.92	0.92	0.03
							1/2" Ice	1.46	1.46	0.05
							Ice	1.64	1.64	0.07
DC6-48-60-18-8F	A	From Centroid-Leg	4.00	0.00	0.00	193.00	1" Ice	2.04	2.04	0.12
							2" Ice			
							No Ice	1.21	1.21	0.02
							1/2" Ice	1.89	1.89	0.04
							Ice	2.11	2.11	0.07
DC6-48-60-18-8F	A	From Centroid-Leg	4.00	0.00	0.00	193.00	1" Ice	2.57	2.57	0.13
							2" Ice			
							No Ice	1.21	1.21	0.02
							1/2" Ice	1.89	1.89	0.04
							Ice	2.11	2.11	0.07
Platform Mount [LP 1201-1_KCKR-HR-1]	C	None			0.00	193.00	1" Ice	2.57	2.57	0.13
							2" Ice			
							No Ice	37.61	37.61	2.63
							1/2" Ice	45.62	45.62	3.48
							Ice	53.59	53.59	4.46
* APXV18-206517S-C w/ Mount Pipe	A	From Centroid-Leg	4.00	0.00	0.00	185.00	1" Ice	6.25	5.59	0.28
							2" Ice			
							No Ice	3.79	3.16	0.05
							1/2" Ice	4.38	3.75	0.09
							Ice	4.99	4.35	0.15
APXV18-206517S-C w/ Mount Pipe	B	From Centroid-Leg	4.00	0.00	0.00	185.00	1" Ice	6.25	5.59	0.28
							2" Ice			
							No Ice	3.79	3.16	0.05
							1/2" Ice	4.38	3.75	0.09
							Ice	4.99	4.35	0.15
APXV18-206517S-C w/ Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.00	185.00	1" Ice	6.25	5.59	0.28
							2" Ice			
							No Ice	3.79	3.16	0.05
							1/2" Ice	4.38	3.75	0.09
							Ice	4.99	4.35	0.15
Platform Mount [LP 1201-1_KCKR]	C	None			0.00	185.00	1" Ice	6.25	5.59	0.28
							2" Ice			
							No Ice	29.60	29.60	2.38
							1/2" Ice	36.33	36.33	3.07
							Ice	43.26	43.26	3.86
(3) 6' x 2" Mount Pipe	A	From Centroid-Leg	4.00	0.00	0.00	185.00	1" Ice	57.72	57.72	5.75
							2" Ice			
							No Ice	1.43	1.43	0.02
							1/2" Ice	1.92	1.92	0.03
							Ice	2.29	2.29	0.05
(3) 6' x 2" Mount Pipe	B	From Centroid-Leg	4.00	0.00	0.00	185.00	1" Ice	3.06	3.06	0.09
							2" Ice			
							No Ice	1.43	1.43	0.02
							1/2" Ice	1.92	1.92	0.03
							Ice	2.29	2.29	0.05
(3) 6' x 2" Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.00	185.00	1" Ice	3.06	3.06	0.09
							2" Ice			
							No Ice	1.43	1.43	0.02
							1/2" Ice	1.92	1.92	0.03
							Ice	2.29	2.29	0.05
* LLPX310R-V4	A	From	4.00	0.00	0.00	175.00	1" Ice	3.06	3.06	0.09
							2" Ice			
							No Ice	1.43	1.43	0.02
							1/2" Ice	1.92	1.92	0.03
							Ice	2.29	2.29	0.05

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft ²	ft ²	K	
		Centroid-Leg	0.00			1/2"	4.30	1.86	0.07	
			0.00			Ice	4.74	2.24	0.10	
						1" Ice	5.68	3.06	0.17	
						2" Ice				
LLPX310R-V4	B	From Centroid-Leg	4.00		0.00	175.00	No Ice	3.87	1.49	0.04
			0.00				1/2"	4.30	1.86	0.07
			0.00				Ice	4.74	2.24	0.10
							1" Ice	5.68	3.06	0.17
							2" Ice			
LLPX310R-V4	C	From Centroid-Leg	4.00		0.00	175.00	No Ice	3.87	1.49	0.04
			0.00				1/2"	4.30	1.86	0.07
			0.00				Ice	4.74	2.24	0.10
							1" Ice	5.68	3.06	0.17
							2" Ice			
NNVV-65B-R4	A	From Centroid-Leg	4.00		0.00	175.00	No Ice	7.62	3.01	0.08
			0.00				1/2"	8.12	3.45	0.15
			0.00				Ice	8.63	3.90	0.23
							1" Ice	9.68	4.82	0.41
							2" Ice			
NNVV-65B-R4	B	From Centroid-Leg	4.00		0.00	175.00	No Ice	7.62	3.01	0.08
			0.00				1/2"	8.12	3.45	0.15
			0.00				Ice	8.63	3.90	0.23
							1" Ice	9.68	4.82	0.41
							2" Ice			
NNVV-65B-R4	C	From Centroid-Leg	4.00		0.00	175.00	No Ice	7.62	3.01	0.08
			0.00				1/2"	8.12	3.45	0.15
			0.00				Ice	8.63	3.90	0.23
							1" Ice	9.68	4.82	0.41
							2" Ice			
TIMING 2000	B	From Centroid-Leg	4.00		0.00	175.00	No Ice	0.11	0.11	0.00
			0.00				1/2"	0.15	0.15	0.00
			0.00				Ice	0.20	0.20	0.01
							1" Ice	0.33	0.33	0.01
							2" Ice			
HORIZON COMPACT	A	From Centroid-Leg	4.00		0.00	175.00	No Ice	0.72	0.37	0.01
			0.00				1/2"	0.83	0.45	0.02
			4.00				Ice	0.94	0.54	0.03
							1" Ice	1.19	0.74	0.05
							2" Ice			
AHCC	A	From Centroid-Leg	4.00		0.00	175.00	No Ice	1.63	1.14	0.05
			0.00				1/2"	1.79	1.28	0.06
			0.00				Ice	1.96	1.43	0.08
							1" Ice	2.32	1.75	0.12
							2" Ice			
AHCC	B	From Centroid-Leg	4.00		0.00	175.00	No Ice	1.63	1.14	0.05
			0.00				1/2"	1.79	1.28	0.06
			0.00				Ice	1.96	1.43	0.08
							1" Ice	2.32	1.75	0.12
							2" Ice			
AHCC	C	From Centroid-Leg	4.00		0.00	175.00	No Ice	1.63	1.14	0.05
			0.00				1/2"	1.79	1.28	0.06
			0.00				Ice	1.96	1.43	0.08
							1" Ice	2.32	1.75	0.12
							2" Ice			
AHFIB_CCIV2	A	From Centroid-Leg	4.00		0.00	175.00	No Ice	2.79	1.53	0.07
			0.00				1/2"	3.01	1.71	0.09
			0.00				Ice	3.24	1.90	0.11
							1" Ice	3.72	2.29	0.17
							2" Ice			
AHFIB_CCIV2	B	From Centroid-Leg	4.00		0.00	175.00	No Ice	2.79	1.53	0.07
			0.00				1/2"	3.01	1.71	0.09
			0.00				Ice	3.24	1.90	0.11
							1" Ice	3.72	2.29	0.17
							2" Ice			
AHFIB_CCIV2	C	From	4.00		0.00	175.00	No Ice	2.79	1.53	0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	CAAA Front ft ²	CAAA Side ft ²	Weight K
		Centroid-Leg	0.00 0.00			1/2" Ice 3.01 1" Ice 3.24 2" Ice 3.72	1.71 1.90 2.29	0.09 0.11 0.17
RRH-2WB	A	From Centroid-Leg	4.00 0.00 -3.00	0.00	175.00	No Ice 2.30 1/2" Ice 2.50 Ice 2.69 1" Ice 3.11 2" Ice	0.78 0.92 1.06 1.36	0.04 0.06 0.08 0.12
RRH-2WB	B	From Centroid-Leg	4.00 0.00 -3.00	0.00	175.00	No Ice 2.30 1/2" Ice 2.50 Ice 2.69 1" Ice 3.11 2" Ice	0.78 0.92 1.06 1.36	0.04 0.06 0.08 0.12
RRH-2WB	C	From Centroid-Leg	4.00 0.00 -3.00	0.00	175.00	No Ice 2.30 1/2" Ice 2.50 Ice 2.69 1" Ice 3.11 2" Ice	0.78 0.92 1.06 1.36	0.04 0.06 0.08 0.12
Platform Mount [LP 301-1]	C	None		0.00	175.00	No Ice 23.81 1/2" Ice 30.24 Ice 36.33 1" Ice 48.05 2" Ice	23.81 30.24 36.33 48.05	1.59 2.10 2.73 4.34
* CXL 900-3LW	C	From Face	4.00 0.00 3.00	0.00	161.00	No Ice 0.14 1/2" Ice 0.33 Ice 0.48 1" Ice 0.81 2" Ice	0.14 0.33 0.48 0.81	0.00 0.00 0.01 0.02
LNA	C	From Face	4.00 0.00 0.00	0.00	161.00	No Ice 0.14 1/2" Ice 0.19 Ice 0.25 1" Ice 0.39 2" Ice	0.05 0.09 0.13 0.24	0.00 0.00 0.00 0.01
CAVITY FILTER	C	From Face	4.00 0.00 0.00	0.00	161.00	No Ice 0.19 1/2" Ice 0.25 Ice 0.32 1" Ice 0.47 2" Ice	0.08 0.12 0.17 0.29	0.00 0.00 0.01 0.02
Side Arm Mount [SO 306-1]	C	From Face	2.00 0.00 0.00	0.00	161.00	No Ice 0.41 1/2" Ice 0.81 Ice 1.23 1" Ice 2.08 2" Ice	2.26 3.83 5.48 9.37	0.04 0.06 0.09 0.19
Side Arm Mount [SO 104-3]	C	None		0.00	161.00	No Ice 2.62 1/2" Ice 3.30 Ice 3.98 1" Ice 5.35 2" Ice	2.62 3.30 3.98 5.35	0.29 0.41 0.53 0.77
* MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	155.00	No Ice 8.01 1/2" Ice 8.52 Ice 9.04 1" Ice 10.11 2" Ice	4.23 4.69 5.16 6.12	0.11 0.19 0.29 0.52
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	155.00	No Ice 8.01 1/2" Ice 8.52 Ice 9.04 1" Ice 10.11 2" Ice	4.23 4.69 5.16 6.12	0.11 0.19 0.29 0.52
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	155.00	No Ice 8.01 1/2" Ice 8.52 Ice 9.04 1" Ice 10.11	4.23 4.69 5.16 6.12	0.11 0.19 0.29 0.52

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
TA08025-B604	A	From Leg	4.00 0.00 0.00	0.00	155.00	2" Ice			
						No Ice	1.96	0.98	0.06
						1/2"	2.14	1.11	0.08
						Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
TA08025-B604	B	From Leg	4.00 0.00 0.00	0.00	155.00	2" Ice			
						No Ice	1.96	0.98	0.06
						1/2"	2.14	1.11	0.08
						Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
TA08025-B604	C	From Leg	4.00 0.00 0.00	0.00	155.00	2" Ice			
						No Ice	1.96	0.98	0.06
						1/2"	2.14	1.11	0.08
						Ice	2.32	1.25	0.10
						1" Ice	2.71	1.55	0.15
TA08025-B605	A	From Leg	4.00 0.00 0.00	0.00	155.00	2" Ice			
						No Ice	1.96	1.13	0.08
						1/2"	2.14	1.27	0.09
						Ice	2.32	1.41	0.11
						1" Ice	2.71	1.72	0.16
TA08025-B605	B	From Leg	4.00 0.00 0.00	0.00	155.00	2" Ice			
						No Ice	1.96	1.13	0.08
						1/2"	2.14	1.27	0.09
						Ice	2.32	1.41	0.11
						1" Ice	2.71	1.72	0.16
TA08025-B605	C	From Leg	4.00 0.00 0.00	0.00	155.00	2" Ice			
						No Ice	1.96	1.13	0.08
						1/2"	2.14	1.27	0.09
						Ice	2.32	1.41	0.11
						1" Ice	2.71	1.72	0.16
RDIDC-9181-PF-48	A	From Leg	4.00 0.00 0.00	0.00	155.00	2" Ice			
						No Ice	2.31	1.29	0.02
						1/2"	2.50	1.45	0.04
						Ice	2.70	1.61	0.06
						1" Ice	3.12	1.96	0.12
Commscope MC-PK8-DSH	C	None		0.00	155.00	2" Ice			
						No Ice	34.24	34.24	1.75
						1/2"	62.95	62.95	2.10
						Ice	91.66	91.66	2.45
						1" Ice	149.08	149.08	3.15
(2) 8' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	155.00	2" Ice			
						No Ice	1.90	1.90	0.03
						1/2"	2.73	2.73	0.04
						Ice	3.40	3.40	0.06
						1" Ice	4.40	4.40	0.12
(2) 8' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	155.00	2" Ice			
						No Ice	1.90	1.90	0.03
						1/2"	2.73	2.73	0.04
						Ice	3.40	3.40	0.06
						1" Ice	4.40	4.40	0.12
(2) 8' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	155.00	2" Ice			
						No Ice	1.90	1.90	0.03
						1/2"	2.73	2.73	0.04
						Ice	3.40	3.40	0.06
						1" Ice	4.40	4.40	0.12
* (2) SBNHH-1D65B w/ Mount Pipe	A	From Centroid- Leg	4.00 0.00 0.00	0.00	103.00	2" Ice			
						No Ice	4.09	3.30	0.07
						1/2"	4.49	3.68	0.13
						Ice	4.89	4.07	0.20
						1" Ice	5.72	4.87	0.39
(2) SBNHH-1D65B w/ Mount Pipe	B	From Centroid- Leg	4.00 0.00 0.00	0.00	103.00	2" Ice			
						No Ice	4.09	3.30	0.07
						1/2"	4.49	3.68	0.13
						Ice	4.89	4.07	0.20

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} _{Front}	C _{AA} _{Side}	Weight	
			Horz	Lateral						ft
							ft ²	ft ²	K	
(2) SBNHH-1D65B w/ Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.00	103.00	1" Ice	5.72	4.87	0.39
							2" Ice			
							No Ice	4.09	3.30	0.07
							1/2" Ice	4.49	3.68	0.13
BXA-80080/4CF w/ Mount Pipe	A	From Centroid-Leg	4.00	0.00	0.00	103.00	1" Ice	4.89	4.07	0.20
							2" Ice	5.72	4.87	0.39
							No Ice	5.04	4.03	0.03
							1/2" Ice	5.42	4.65	0.08
BXA-80080/4CF w/ Mount Pipe	B	From Centroid-Leg	4.00	0.00	0.00	103.00	Ice	5.81	5.28	0.13
							1" Ice	6.62	6.56	0.25
							2" Ice			
							No Ice	5.04	4.03	0.03
BXA-80090/4CF w/ Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.00	103.00	1/2" Ice	5.42	4.65	0.08
							Ice	5.81	5.28	0.13
							1" Ice	6.62	6.56	0.25
							2" Ice			
CBRS w/ Mount Pipe	A	From Centroid-Leg	4.00	0.00	0.00	103.00	No Ice	5.04	4.03	0.03
							1/2" Ice	5.42	4.65	0.08
							Ice	5.81	5.28	0.13
							1" Ice	6.62	6.56	0.25
CBRS w/ Mount Pipe	B	From Centroid-Leg	4.00	0.00	0.00	103.00	2" Ice			
							No Ice	3.83	3.88	0.03
							1/2" Ice	4.20	4.49	0.07
							Ice	4.57	5.11	0.11
CBRS w/ Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.00	103.00	1" Ice	5.34	6.37	0.22
							2" Ice			
							No Ice	1.45	0.99	0.03
							1/2" Ice	1.67	1.18	0.05
MT6407-77A w/ Mount Pipe	A	From Centroid-Leg	4.00	0.00	0.00	103.00	Ice	1.90	1.39	0.07
							1" Ice	2.42	1.85	0.12
							2" Ice			
							No Ice	1.45	0.99	0.03
MT6407-77A w/ Mount Pipe	B	From Centroid-Leg	4.00	0.00	0.00	103.00	1/2" Ice	1.67	1.18	0.05
							Ice	1.90	1.39	0.07
							1" Ice	2.42	1.85	0.12
							2" Ice			
MT6407-77A w/ Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.00	103.00	No Ice	1.45	0.99	0.03
							1/2" Ice	1.67	1.18	0.05
							Ice	1.90	1.39	0.07
							1" Ice	2.42	1.85	0.12
RFV01U-D2A	A	From Centroid-Leg	4.00	0.00	0.00	103.00	2" Ice			
							No Ice	4.91	2.68	0.10
							1/2" Ice	5.26	3.14	0.14
							Ice	5.61	3.62	0.18
RFV01U-D2A	B	From Centroid-Leg	4.00	0.00	0.00	103.00	1" Ice	6.36	4.63	0.29
							2" Ice			
							No Ice	4.91	2.68	0.10
							1/2" Ice	5.26	3.14	0.14
RFV01U-D2A	C	From Centroid-Leg	4.00	0.00	0.00	103.00	Ice	5.61	3.62	0.18
							1" Ice	6.36	4.63	0.29
							2" Ice			
							No Ice	4.91	2.68	0.10
RFV01U-D2A	A	From Centroid-Leg	4.00	0.00	0.00	103.00	1/2" Ice	5.26	3.14	0.14
							Ice	5.61	3.62	0.18
							1" Ice	6.36	4.63	0.29
							2" Ice			
RFV01U-D2A	B	From Centroid-Leg	4.00	0.00	0.00	103.00	No Ice	1.88	1.01	0.07
							1/2" Ice	2.05	1.14	0.09
							Ice	2.22	1.28	0.11
							1" Ice	2.60	1.59	0.15
RFV01U-D2A	C	From Centroid-Leg	4.00	0.00	0.00	103.00	2" Ice			
							No Ice	1.88	1.01	0.07
							1/2" Ice	2.05	1.14	0.09
							Ice	2.22	1.28	0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	CAAA Front ft²	CAAA Side ft²	Weight K
						1" Ice 2" Ice	2.60 1.59	0.15
RFV01U-D1A	A	From Centroid-Leg	4.00 0.00 1.00	0.00	103.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	0.08 0.10 0.12
RFV01U-D1A	B	From Centroid-Leg	4.00 0.00 1.00	0.00	103.00	2" Ice No Ice 1/2" Ice Ice	1.86 1.88 2.05 2.22	0.18 0.08 0.10 0.12
RFV01U-D1A	C	From Centroid-Leg	4.00 0.00 1.00	0.00	103.00	1" Ice 2" Ice No Ice 1/2" Ice Ice	2.60 1.86 1.88 2.05 2.22	0.18 0.18 0.08 0.10 0.12
RRFDC-3315-PF-48	A	From Centroid-Leg	4.00 0.00 1.00	0.00	103.00	2" Ice No Ice 1/2" Ice Ice	3.05 3.36 3.60 3.84	0.17 0.03 0.06 0.09
RRFDC-3315-PF-48	A	From Centroid-Leg	4.00 0.00 1.00	0.00	103.00	1" Ice 2" Ice No Ice 1/2" Ice Ice	4.34 3.05 3.36 3.60 3.84	0.17 0.17 0.03 0.06 0.09
Platform Mount [LP 303-1_KCKR-HR-1]	C	None		0.00	103.00	2" Ice No Ice 1/2" Ice Ice	58.21 28.31 35.69 43.11	4.60 1.77 2.30 2.94
8' x 2" Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.00	103.00	1" Ice 2" Ice No Ice 1/2" Ice Ice	4.40 4.40 1.90 2.73 3.40	0.12 0.12 0.03 0.04 0.06
8' x 2" Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00	0.00	103.00	1" Ice 2" Ice No Ice 1/2" Ice Ice	4.40 4.40 1.90 2.73 3.40	0.12 0.12 0.03 0.04 0.06
8' x 2" Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.00	103.00	1" Ice 2" Ice No Ice 1/2" Ice Ice	4.40 4.40 1.90 2.73 3.40	0.12 0.12 0.03 0.04 0.06

**

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft²	Weight K
VHLP2-23	C	Paraboloid w/o Radome	From Centroid-Leg	4.00 6.00 0.00	90.00		175.00	2.17	No Ice 1/2" Ice 1" Ice	0.03 0.03 0.04

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K	
									2" Ice	4.94	0.07

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
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	192 - 151.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.18	-0.11	2.41
			Max. Mx	8	-17.14	-472.41	-5.34
			Max. My	14	-17.14	-4.11	-474.73
			Max. Vy	8	16.56	-472.41	-5.34
			Max. Vx	14	16.60	-4.11	-474.73
L2	151.25 - 111.25	Pole	Max. Torque	16			-1.64
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.58	-0.11	3.65
			Max. Mx	8	-31.71	-1298.00	-15.67
			Max. My	14	-31.71	-11.20	-1303.04
			Max. Vy	8	23.55	-1298.00	-15.67
L3	111.25 - 72.75	Pole	Max. Vx	14	23.63	-11.20	-1303.04
			Max. Torque	16			-1.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-98.73	-0.21	5.71
			Max. Mx	8	-52.00	-2322.45	-25.72
			Max. My	14	-52.00	-18.31	-2332.04
L4	72.75 - 35.75	Pole	Max. Vy	8	31.14	-2322.45	-25.72
			Max. Vx	14	31.31	-18.31	-2332.04
			Max. Torque	20			-2.15
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-127.22	-0.21	6.45
			Max. Mx	8	-73.82	-3511.08	-35.89
L5	35.75 - 0	Pole	Max. My	14	-73.81	-25.39	-3526.58
			Max. Vy	8	35.26	-3511.08	-35.89
			Max. Vx	14	35.42	-25.39	-3526.58
			Max. Torque	20			-2.34
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-168.12	-0.21	7.47
			Max. Mx	8	-106.15	-5205.63	-48.49
			Max. My	14	-106.15	-34.17	-5228.49
			Max. Vy	8	39.99	-5205.63	-48.49
			Max. Vx	14	40.15	-34.17	-5228.49
			Max. Torque	20			-2.58

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	168.12	-0.00	0.00
	Max. H _x	20	106.15	39.90	0.08
	Max. H _z	2	106.15	0.06	40.05
	Max. M _x	2	5216.67	0.06	40.05
	Max. M _z	8	5205.63	-39.97	-0.28
	Max. Torsion	6	2.29	-34.48	19.94
	Min. Vert	19	79.62	34.49	-19.93
	Min. H _x	8	106.15	-39.97	-0.28
	Min. H _z	14	106.15	-0.19	-40.13
	Min. M _x	14	-5228.49	-0.19	-40.13
	Min. M _z	20	-5193.33	39.90	0.08
	Min. Torsion	20	-2.58	39.90	0.08

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	88.46	0.00	0.00	-0.98	0.11	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	106.15	-0.06	-40.05	-5216.67	11.24	-0.63
0.9 Dead+1.0 Wind 0 deg - No Ice	79.62	-0.06	-40.05	-5183.66	11.12	-0.63
1.2 Dead+1.0 Wind 30 deg - No Ice	106.15	19.88	-34.64	-4509.30	-2583.69	-1.72
0.9 Dead+1.0 Wind 30 deg - No Ice	79.62	19.88	-34.64	-4480.73	-2567.54	-1.72
1.2 Dead+1.0 Wind 60 deg - No Ice	106.15	34.48	-19.94	-2592.94	-4484.87	-2.29
0.9 Dead+1.0 Wind 60 deg - No Ice	79.62	34.48	-19.94	-2576.39	-4456.80	-2.28
1.2 Dead+1.0 Wind 90 deg - No Ice	106.15	39.97	0.28	48.49	-5205.63	-1.46
0.9 Dead+1.0 Wind 90 deg - No Ice	79.62	39.97	0.28	48.45	-5173.02	-1.45
1.2 Dead+1.0 Wind 120 deg - No Ice	106.15	34.62	20.23	2643.34	-4508.53	-1.11
0.9 Dead+1.0 Wind 120 deg - No Ice	79.62	34.62	20.23	2627.05	-4480.30	-1.11
1.2 Dead+1.0 Wind 150 deg - No Ice	106.15	20.08	34.82	4538.50	-2619.00	-0.42
0.9 Dead+1.0 Wind 150 deg - No Ice	79.62	20.08	34.82	4510.34	-2602.60	-0.42
1.2 Dead+1.0 Wind 180 deg - No Ice	106.15	0.19	40.13	5228.49	-34.17	0.67
0.9 Dead+1.0 Wind 180 deg - No Ice	79.62	0.19	40.13	5196.02	-33.96	0.67
1.2 Dead+1.0 Wind 210 deg - No Ice	106.15	-19.74	34.80	4535.21	2559.96	2.23
0.9 Dead+1.0 Wind 210 deg - No Ice	79.62	-19.74	34.80	4507.08	2543.91	2.22
1.2 Dead+1.0 Wind 240 deg - No Ice	106.15	-34.49	19.93	2589.86	4485.50	2.27
0.9 Dead+1.0 Wind 240 deg - No Ice	79.62	-34.49	19.93	2573.95	4457.36	2.26
1.2 Dead+1.0 Wind 270 deg - No Ice	106.15	-39.90	-0.08	-15.98	5193.33	2.58
0.9 Dead+1.0 Wind 270 deg - No Ice	79.62	-39.90	-0.08	-15.55	5160.75	2.57
1.2 Dead+1.0 Wind 300 deg - No Ice	106.15	-34.61	-20.08	-2618.56	4508.04	2.13
0.9 Dead+1.0 Wind 300 deg - No Ice	79.62	-34.61	-20.08	-2601.83	4479.74	2.13
1.2 Dead+1.0 Wind 330 deg - No Ice	106.15	-20.03	-34.74	-4527.77	2611.66	0.76
0.9 Dead+1.0 Wind 330 deg - No Ice	79.62	-20.03	-34.74	-4499.08	2595.24	0.76
1.2 Dead+1.0 Ice+1.0 Temp	168.12	0.00	-0.00	-7.47	-0.21	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	168.12	-0.01	-12.72	-1681.14	1.69	-0.12
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	168.12	6.35	-11.01	-1455.34	-835.48	-1.29
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	168.12	11.01	-6.34	-841.47	-1448.53	-2.10
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	168.12	12.75	0.06	2.45	-1678.18	-2.18
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	168.12	11.04	6.40	836.30	-1453.20	-1.86
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	168.12	6.39	11.04	1445.90	-842.32	-1.03
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	168.12	0.04	12.74	1668.41	-7.22	0.13
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	168.12	-6.32	11.04	1445.69	829.77	1.40
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	168.12	-11.01	6.34	825.48	1448.16	2.10
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	168.12	-12.73	-0.01	-10.64	1674.98	2.42

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
deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 300	168.12	-11.04	-6.37	-846.19	1452.58	2.08
deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 330	168.12	-6.38	-11.03	-1458.87	840.21	1.11
deg+1.0 Ice+1.0 Temp Dead+Wind 0 deg - Service	88.46	-0.01	-8.70	-1129.41	2.51	-0.14
Dead+Wind 30 deg - Service	88.46	4.32	-7.52	-976.37	-558.92	-0.39
Dead+Wind 60 deg - Service	88.46	7.49	-4.33	-561.75	-970.25	-0.52
Dead+Wind 90 deg - Service	88.46	8.68	0.06	9.72	-1126.19	-0.34
Dead+Wind 120 deg - Service	88.46	7.52	4.39	571.14	-975.37	-0.26
Dead+Wind 150 deg - Service	88.46	4.36	7.56	981.18	-566.55	-0.10
Dead+Wind 180 deg - Service	88.46	0.04	8.71	1130.46	-7.30	0.15
Dead+Wind 210 deg - Service	88.46	-4.29	7.56	980.46	553.96	0.50
Dead+Wind 240 deg - Service	88.46	-7.49	4.33	559.58	970.56	0.51
Dead+Wind 270 deg - Service	88.46	-8.66	-0.02	-4.20	1123.70	0.58
Dead+Wind 300 deg - Service	88.46	-7.52	-4.36	-567.29	975.43	0.48
Dead+Wind 330 deg - Service	88.46	-4.35	-7.54	-980.36	565.13	0.18

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-88.46	0.00	0.00	88.46	0.00	0.000%
2	-0.06	-106.15	-40.05	0.06	106.15	40.05	0.000%
3	-0.06	-79.62	-40.05	0.06	79.62	40.05	0.000%
4	19.88	-106.15	-34.64	-19.88	106.15	34.64	0.000%
5	19.88	-79.62	-34.64	-19.88	79.62	34.64	0.000%
6	34.48	-106.15	-19.94	-34.48	106.15	19.94	0.000%
7	34.48	-79.62	-19.94	-34.48	79.62	19.94	0.000%
8	39.97	-106.15	0.28	-39.97	106.15	-0.28	0.000%
9	39.97	-79.62	0.28	-39.97	79.62	-0.28	0.000%
10	34.62	-106.15	20.23	-34.62	106.15	-20.23	0.000%
11	34.62	-79.62	20.23	-34.62	79.62	-20.23	0.000%
12	20.08	-106.15	34.82	-20.08	106.15	-34.82	0.000%
13	20.08	-79.62	34.82	-20.08	79.62	-34.82	0.000%
14	0.19	-106.15	40.13	-0.19	106.15	-40.13	0.000%
15	0.19	-79.62	40.13	-0.19	79.62	-40.13	0.000%
16	-19.74	-106.15	34.80	19.74	106.15	-34.80	0.000%
17	-19.74	-79.62	34.80	19.74	79.62	-34.80	0.000%
18	-34.49	-106.15	19.93	34.49	106.15	-19.93	0.000%
19	-34.49	-79.62	19.93	34.49	79.62	-19.93	0.000%
20	-39.90	-106.15	-0.08	39.90	106.15	0.08	0.000%
21	-39.90	-79.62	-0.08	39.90	79.62	0.08	0.000%
22	-34.61	-106.15	-20.08	34.61	106.15	20.08	0.000%
23	-34.61	-79.62	-20.08	34.61	79.62	20.08	0.000%
24	-20.03	-106.15	-34.74	20.03	106.15	34.74	0.000%
25	-20.03	-79.62	-34.74	20.03	79.62	34.74	0.000%
26	0.00	-168.12	0.00	-0.00	168.12	0.00	0.000%
27	-0.01	-168.12	-12.72	0.01	168.12	12.72	0.000%
28	6.35	-168.12	-11.01	-6.35	168.12	11.01	0.000%
29	11.01	-168.12	-6.34	-11.01	168.12	6.34	0.000%
30	12.75	-168.12	0.06	-12.75	168.12	-0.06	0.000%
31	11.04	-168.12	6.40	-11.04	168.12	-6.40	0.000%
32	6.39	-168.12	11.04	-6.39	168.12	-11.04	0.000%
33	0.04	-168.12	12.74	-0.04	168.12	-12.74	0.000%
34	-6.32	-168.12	11.04	6.32	168.12	-11.04	0.000%
35	-11.01	-168.12	6.34	11.01	168.12	-6.34	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
36	-12.73	-168.12	-0.01	12.73	168.12	0.01	0.000%
37	-11.04	-168.12	-6.37	11.04	168.12	6.37	0.000%
38	-6.38	-168.12	-11.03	6.38	168.12	11.03	0.000%
39	-0.01	-88.46	-8.70	0.01	88.46	8.70	0.000%
40	4.32	-88.46	-7.52	-4.32	88.46	7.52	0.000%
41	7.49	-88.46	-4.33	-7.49	88.46	4.33	0.000%
42	8.68	-88.46	0.06	-8.68	88.46	-0.06	0.000%
43	7.52	-88.46	4.39	-7.52	88.46	-4.39	0.000%
44	4.36	-88.46	7.56	-4.36	88.46	-7.56	0.000%
45	0.04	-88.46	8.71	-0.04	88.46	-8.71	0.000%
46	-4.29	-88.46	7.56	4.29	88.46	-7.56	0.000%
47	-7.49	-88.46	4.33	7.49	88.46	-4.33	0.000%
48	-8.66	-88.46	-0.02	8.66	88.46	0.02	0.000%
49	-7.52	-88.46	-4.36	7.52	88.46	4.36	0.000%
50	-4.35	-88.46	-7.54	4.35	88.46	7.54	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	0.00011852
3	Yes	4	0.00000001	0.00006596
4	Yes	5	0.00000001	0.00003984
5	Yes	4	0.00000001	0.00084261
6	Yes	5	0.00000001	0.00004286
7	Yes	4	0.00000001	0.00090843
8	Yes	4	0.00000001	0.00011201
9	Yes	4	0.00000001	0.00006017
10	Yes	5	0.00000001	0.00004188
11	Yes	4	0.00000001	0.00088694
12	Yes	5	0.00000001	0.00004242
13	Yes	4	0.00000001	0.00089831
14	Yes	4	0.00000001	0.00011101
15	Yes	4	0.00000001	0.00005925
16	Yes	5	0.00000001	0.00004323
17	Yes	4	0.00000001	0.00091670
18	Yes	5	0.00000001	0.00003934
19	Yes	4	0.00000001	0.00083241
20	Yes	4	0.00000001	0.00017291
21	Yes	4	0.00000001	0.00010961
22	Yes	5	0.00000001	0.00004358
23	Yes	4	0.00000001	0.00092359
24	Yes	5	0.00000001	0.00004164
25	Yes	4	0.00000001	0.00088127
26	Yes	4	0.00000001	0.00006222
27	Yes	5	0.00000001	0.00013909
28	Yes	5	0.00000001	0.00014402
29	Yes	5	0.00000001	0.00014392
30	Yes	5	0.00000001	0.00013846
31	Yes	5	0.00000001	0.00014324
32	Yes	5	0.00000001	0.00014295
33	Yes	5	0.00000001	0.00013699
34	Yes	5	0.00000001	0.00014219
35	Yes	5	0.00000001	0.00014207
36	Yes	5	0.00000001	0.00013815
37	Yes	5	0.00000001	0.00014454
38	Yes	5	0.00000001	0.00014462
39	Yes	4	0.00000001	0.00001879
40	Yes	4	0.00000001	0.00002641
41	Yes	4	0.00000001	0.00002855
42	Yes	4	0.00000001	0.00001879
43	Yes	4	0.00000001	0.00002710
44	Yes	4	0.00000001	0.00002752
45	Yes	4	0.00000001	0.00001877

46	Yes	4	0.00000001	0.00002877
47	Yes	4	0.00000001	0.00002619
48	Yes	4	0.00000001	0.00001954
49	Yes	4	0.00000001	0.00002879
50	Yes	4	0.00000001	0.00002714

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	192 - 151.25	10.66	50	0.56	0.00
L2	156.25 - 111.25	6.80	44	0.45	0.00
L3	117.75 - 72.75	3.68	44	0.31	0.00
L4	80.75 - 35.75	1.68	44	0.20	0.00
L5	45 - 0	0.53	44	0.10	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
193.00	OPA-65R-LCUU-H8 w/ Mount Pipe	50	10.66	0.56	0.00	93883
185.00	APXV18-206517S-C w/ Mount Pipe	50	9.86	0.54	0.00	67059
175.00	VHLP2-23	44	8.75	0.51	0.00	27612
161.00	CXL 900-3LW	44	7.27	0.47	0.00	15142
155.00	MX08FRO665-21 w/ Mount Pipe	44	6.68	0.45	0.00	13394
103.00	(2) SBNHH-1D65B w/ Mount Pipe	44	2.78	0.26	0.00	18596

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	192 - 151.25	49.33	12	2.56	0.01
L2	156.25 - 111.25	31.48	12	2.09	0.00
L3	117.75 - 72.75	17.04	12	1.45	0.00
L4	80.75 - 35.75	7.77	12	0.91	0.00
L5	45 - 0	2.43	12	0.48	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
193.00	OPA-65R-LCUU-H8 w/ Mount Pipe	12	49.33	2.56	0.01	20489
185.00	APXV18-206517S-C w/ Mount Pipe	12	45.67	2.48	0.01	14635
175.00	VHLP2-23	12	40.51	2.35	0.00	6025
161.00	CXL 900-3LW	12	33.66	2.16	0.00	3303
155.00	MX08FRO665-21 w/ Mount Pipe	12	30.92	2.07	0.00	2920
103.00	(2) SBNHH-1D65B w/ Mount Pipe	12	12.86	1.22	0.00	4018

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

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio P _u / φP _n
	ft		ft	ft		in ²	K	K	
L1	192 - 151.25 (1)	TP39.25x26x0.31	40.75	0.00	0.0	37.00	-17.13	2164.75	0.008
L2	151.25 - 111.25 (2)	TP51.62x36.99x0.44	45.00	0.00	0.0	68.14	-31.70	3986.25	0.008
L3	111.25 - 72.75 (3)	TP63.26x48.63x0.5	45.00	0.00	0.0	95.47	-51.99	5585.12	0.009
L4	72.75 - 35.75 (4)	TP74.29x59.66x0.56	45.00	0.00	0.0	126.25	-73.81	7385.90	0.010
L5	35.75 - 0 (5)	TP84.78x70.15x0.56	45.00	0.00	0.0	150.36	-106.15	8796.05	0.012

Pole Bending Design Data

Section No.	Elevation	Size	M _{ux}	φM _{nx}	Ratio M _{ux} / φM _{nx}	M _{uy}	φM _{ny}	Ratio M _{uy} / φM _{ny}
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
L1	192 - 151.25 (1)	TP39.25x26x0.31	476.37	1979.46	0.241	0.00	1979.46	0.000
L2	151.25 - 111.25 (2)	TP51.62x36.99x0.44	1307.40	4884.23	0.268	0.00	4884.23	0.000
L3	111.25 - 72.75 (3)	TP63.26x48.63x0.5	2338.75	8215.23	0.285	0.00	8215.23	0.000
L4	72.75 - 35.75 (4)	TP74.29x59.66x0.56	3535.42	12590.33	0.281	0.00	12590.33	0.000
L5	35.75 - 0 (5)	TP84.78x70.15x0.56	5239.95	16713.83	0.314	0.00	16713.83	0.000

Pole Shear Design Data

Section No.	Elevation	Size	Actual V _u	φV _n	Ratio V _u / φV _n	Actual T _u	φT _n	Ratio T _u / φT _n
	ft		K	K		kip-ft	kip-ft	
L1	192 - 151.25 (1)	TP39.25x26x0.31	16.68	649.42	0.026	0.40	2121.79	0.000
L2	151.25 - 111.25 (2)	TP51.62x36.99x0.44	23.70	1195.87	0.020	0.19	5139.13	0.000
L3	111.25 - 72.75 (3)	TP63.26x48.63x0.5	31.37	1675.54	0.019	0.21	8827.42	0.000
L4	72.75 - 35.75 (4)	TP74.29x59.66x0.56	35.48	2215.77	0.016	0.30	13722.17	0.000
L5	35.75 - 0 (5)	TP84.78x70.15x0.56	40.21	2638.81	0.015	0.42	19462.17	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L1	192 - 151.25 (1)	0.008	0.241	0.000	0.026	0.000	0.249	1.050	4.8.2
L2	151.25 - 111.25 (2)	0.008	0.268	0.000	0.020	0.000	0.276	1.050	4.8.2
L3	111.25 - 72.75 (3)	0.009	0.285	0.000	0.019	0.000	0.294	1.050	4.8.2
L4	72.75 - 35.75 (4)	0.010	0.281	0.000	0.016	0.000	0.291	1.050	4.8.2
L5	35.75 - 0 (5)	0.012	0.314	0.000	0.015	0.000	0.326	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	192 - 151.25	Pole	TP39.25x26x0.31	1	-17.13	2272.99	23.7	Pass
L2	151.25 - 111.25	Pole	TP51.62x36.99x0.44	2	-31.70	4185.56	26.3	Pass
L3	111.25 - 72.75	Pole	TP63.26x48.63x0.5	3	-51.99	5864.38	28.0	Pass
L4	72.75 - 35.75	Pole	TP74.29x59.66x0.56	4	-73.81	7755.19	27.7	Pass
L5	35.75 - 0	Pole	TP84.78x70.15x0.56	5	-106.15	9235.85	31.0	Pass
Summary								
Pole (L5)							31.0	Pass
RATING =							31.0	Pass

APPENDIX B
BASE LEVEL DRAWING

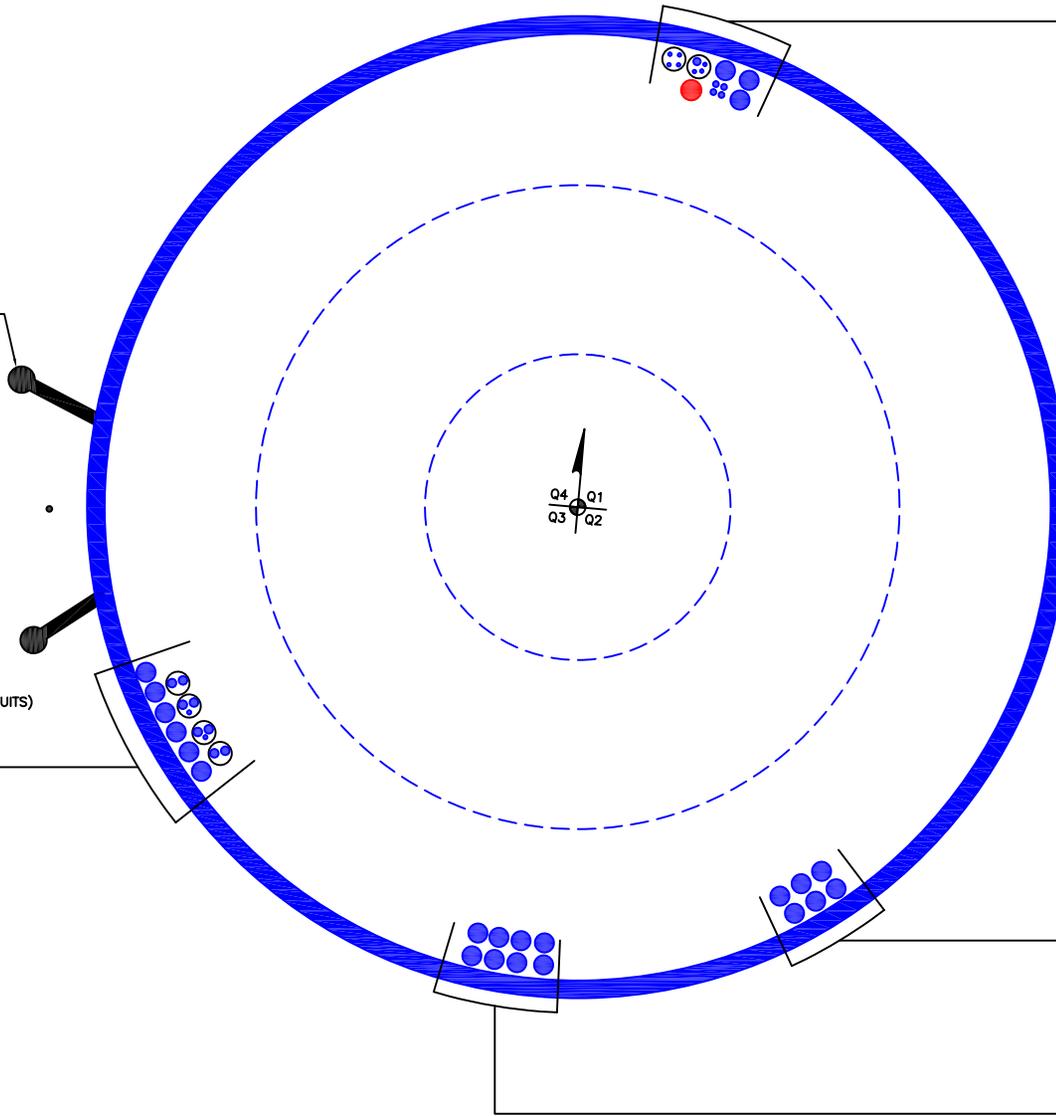


(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-3/4" TO 155 FT LEVEL

(OTHER CONSIDERED EQUIPMENT—IN CONDUIT)
(7) 5/16" TO 175 FT LEVEL
(1) 5/8" TO 175 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(3) 1/2" TO 175 FT LEVEL
(3) 1-5/8" TO 175 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 161 FT LEVEL

CLIMBING PEGS
W/ SAFETY CLIMB



(OTHER CONSIDERED EQUIPMENT—IN (4) 2" CONDUITS)
(2) 3/8" TO 195 FT LEVEL
(8) 3/4" TO 195 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(6) 1-5/8" TO 195 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(6) 1-5/8" TO 185 FT LEVEL

(OTHER CONSIDERED EQUIPMENT)
(8) 1-5/8" TO 103 FT LEVEL

APPENDIX C
ADDITIONAL CALCULATIONS

Monopole Base Plate Connection

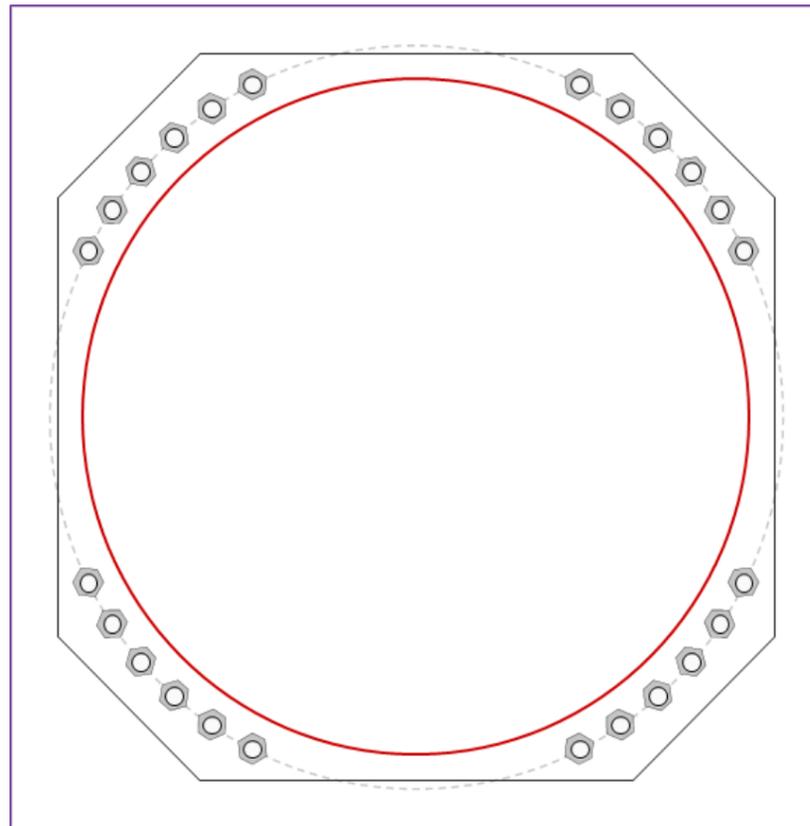


Site Info	
BU #	803843
Site Name	EW BRITAIN 4 CAC 803
Order #	556643 Rev 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.75

Applied Loads	
Moment (kip-ft)	5239.95
Axial Force (kips)	106.15
Shear Force (kips)	40.21

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
(24) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 93" BC <i>Anchor Spacing: 6 in</i>
Base Plate Data
91" W x 3.25" Plate (A572-55; $F_y=55$ ksi, $F_u=70$ ksi); Clip: 18 in
Stiffener Data
N/A
Pole Data
84.78" x 0.5625" 18-sided pole (A607-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary			<i>(units of kips, kip-in)</i>
P_{u_t} = 108.24	ϕP_{n_t} = 243.75	Stress Rating	
V_u = 1.68	ϕV_n = 149.1	42.3%	
M_u = n/a	ϕM_n = n/a	Pass	
Base Plate Summary			
Max Stress (ksi):	17.79	(Flexural)	
Allowable Stress (ksi):	49.5		
Stress Rating:	34.2%	Pass	

Drilled Pier Foundation



BU #:	803843
Site Name:	CT NEW BRITAIN 4 C
Order Number:	556643 Rev 0

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads		
	Comp.	Uplift
Moment (kip-ft)	5239.96	
Axial Force (kips)	106.15	
Shear Force (kips)	40.2	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	ksi

Pier Design Data		
Depth	28.5	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
<i>From 0.5' above grade to 28.5' below grade</i>		
Pier Diameter	10	ft
Rebar Quantity	40	
Rebar Size	11	
Clear Cover to Ties	4	in
Tie Size	5	
Tie Spacing		in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results

Soil Lateral Check	Compression	Uplift
D _{v=0} (ft from TOC)	7.71	-
Soil Safety Factor	3.40	-
Max Moment (kip-ft)	5514.55	-
Rating*	37.3%	-

Soil Vertical Check	Compression	Uplift
Skin Friction (kips)	553.71	-
End Bearing (kips)	1413.72	-
Weight of Concrete (kips)	318.82	-
Total Capacity (kips)	1967.42	-
Axial (kips)	424.97	-
Rating*	20.6%	-

Reinforced Concrete Flexure	Compression	Uplift
Critical Depth (ft from TOC)	7.40	-
Critical Moment (kip-ft)	5513.48	-
Critical Moment Capacity	14656.56	-
Rating*	35.8%	-

Reinforced Concrete Shear	Compression	Uplift
Critical Depth (ft from TOC)	20.62	-
Critical Shear (kip)	532.40	-
Critical Shear Capacity	1128.42	-
Rating*	44.9%	-

Soil Interaction Rating*	37.3%
Structural Foundation Rating*	44.9%

*Rating per TIA-222-H Section 15.5

Check Limitation	
Apply TIA-222-H Section 15.5:	<input checked="" type="checkbox"/>
N/A	<input type="checkbox"/>
Shear Design Options	
Check Shear along Depth of Pier:	<input checked="" type="checkbox"/>
Utilize Shear-Friction Methodology:	<input type="checkbox"/>
Override Critical Depth:	<input type="checkbox"/>

[Go to Soil Calculations](#)

Soil Profile

Groundwater Depth	13	# of Layers	5
-------------------	----	-------------	---

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ _{soil} (pcf)	γ _{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	5	5	115	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	5	13	8	115	150	0	30	0.000	0.000	1.00	1.00			Cohesionless
3	13	15	2	52.6	87.6	0	30	0.000	0.000	1.00	1.00			Cohesionless
4	15	23	8	70	87.6	0	34	0.000	0.000	1.00	1.00			Cohesionless
5	23	28.5	5.5	70	87.6	0	34	0.000	0.000	1.00	1.00	24		Cohesionless

Pier and Pad Foundation



BU #: 803843
Site Name: CT NEW BRITAIN
App. Number: 556643 Rev 0

TIA-222 Revision: H
Tower Type: Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	106.15	kips
Base Shear, Vu_{comp} :	40.2	kips
Moment, M_u :	5239.96	ft-kips
Tower Height, H :	192	ft
BP Dist. Above Fdn, bp_{dist} :	4	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	500.40	40.20	7.7%	Pass
<i>Bearing Pressure (ksf)</i>	4.50	1.97	41.6%	Pass
<i>Overturning (kip*ft)</i>	12958.99	5554.86	42.9%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	22137.88	5380.66	23.1%	Pass
<i>Pier Compression (kip)</i>	37491.77	155.63	0.4%	Pass
<i>Pad Flexure (kip*ft)</i>	16873.89	1770.21	10.0%	Pass
<i>Pad Shear - 1-way (kips)</i>	1374.11	213.42	14.8%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.164	0.023	13.5%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	22895.15	3228.40	13.4%	Pass

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, $dpier$:	10	ft
Ext. Above Grade, E :	0.5	ft
Pier Rebar Size, Sc :	11	
Pier Rebar Quantity, mc :	64	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	10	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

*Rating per TIA-222-H Section 15.5

Soil Rating*:	42.9%
Structural Rating*:	23.1%

Pad Properties		
Depth, D :	7	ft
Pad Width, W_1 :	32.5	ft
Pad Thickness, T :	4	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	11	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	60	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	3	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	125	pcf
Ultimate Gross Bearing, Q_{ult} :	6.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	32	degrees
SPT Blow Count, N_{blows} :	13	
Base Friction, μ :	0.5	
Neglected Depth, N :	5.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	n/a	ft

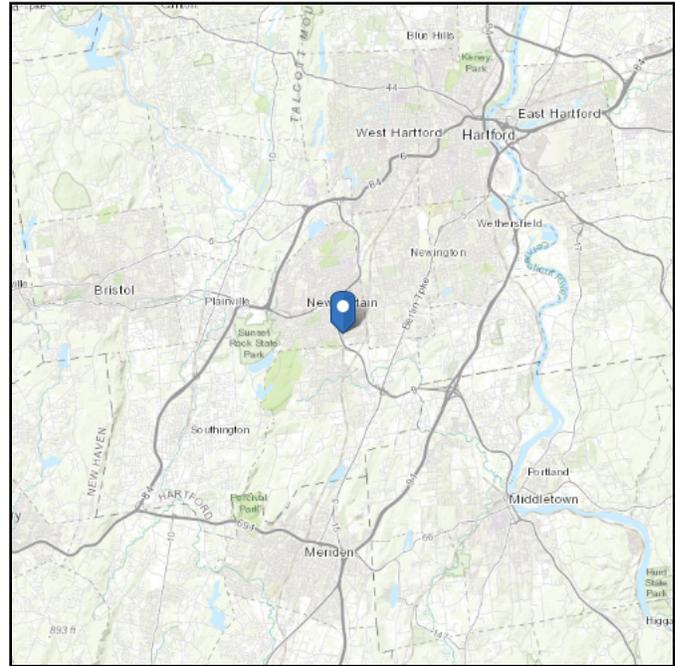
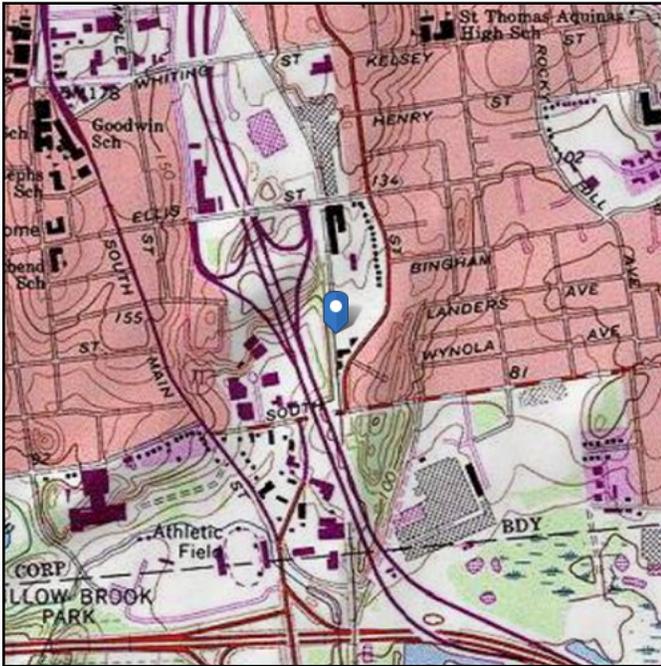
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ASCE 7 Hazards Report

Address:
No Address at This
Location

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

Elevation: 111.66 ft (NAVD 88)
Latitude: 41.654556
Longitude: -72.769331

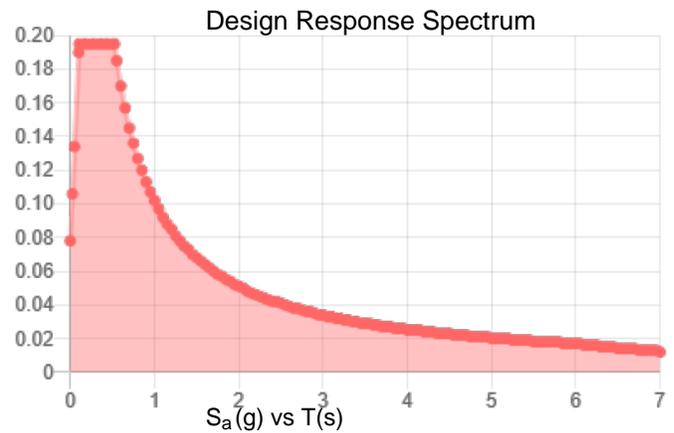
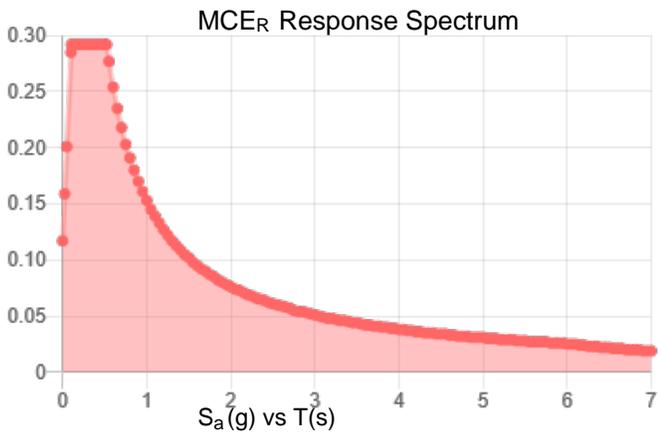


Site Soil Class: D - Stiff Soil

Results:

S_S :	0.183	S_{DS} :	0.195
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.093
S_{MS} :	0.292	PGA_M :	0.149
S_{M1} :	0.153	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Fri May 21 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: Fri May 21 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.

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

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Exhibit E

Mount Analysis

Date: **August 2, 2021**

Darcy Tarr
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
(704) 405-6589



Trylon
1825 W. Walnut Hill Lane,
Suite 302
Irving, TX 75038
214-930-1730

Subject: **Mount Replacement Analysis Report**

Carrier Designation: **Dish Network Equipment Change-Out**
Carrier Site Number: BOBDL00039A
Carrier Site Name: CT-CCI-T-803843

Crown Castle Designation: **Crown Castle BU Number:** 803843
Crown Castle Site Name: CT NEW BRITAIN 4 CAC 803843
Crown Castle JDE Job Number: 650037
Crown Castle Order Number: 556643 Rev. 0

Engineering Firm Designation: **Trylon Report Designation:** 189052

Site Data: **200 Stanely Street, New Britain, Hartford County, CT, 06053**
Latitude 41°39'16.40" Longitude -72°46'9.59"

Structure Information: **Tower Height & Type:** **192.0 ft Monopole**
Mount Elevation: **155.0 ft**
Mount Type: **8.0 ft Platform**

Dear Darcy Tarr,

Trylon is pleased to submit this **"Mount Replacement 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 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2- Analysis Criteria.

Mount analysis prepared by: Mostafa Faghihnia, P.E.

Respectfully Submitted by:
Cliff Abernathy, P.E.



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8) APPENDIX D

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9) APPENDIX E

Supplemental Drawings

1) INTRODUCTION

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

2) ANALYSIS CRITERIA

Building Code:	2015 IBC/2018 CTSBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	B
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:	0.181
Seismic S₁:	0.064
Live Loading Wind Speed:	60 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
155.0	155.0	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	556643 Rev. 0	CCI Sites
Mount Manufacturer Drawings	Commscope	MC-PK8-DSH	Trylon

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.

A tool internally developed, using Microsoft Excel, by Tylon was used to calculate wind loading on all appurtenances, dishes, and mount members for various load cases. Selected output from the analysis is included in Appendix B.

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 B-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. Tylon 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)	MP2	155.0	27.4	Pass
	Horizontal(s)	H1		11.4	Pass
	Standoff(s)	M2		60.4	Pass
	Bracing(s)	M1		49.6	Pass
	Handrail(s)	M19		10.3	Pass
	Mount Connection(s)	---		24.8	Pass

Structure Rating (max from all components) =	60.4%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
- 2) Rating per TIA-222-H, Section 15.5

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.

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

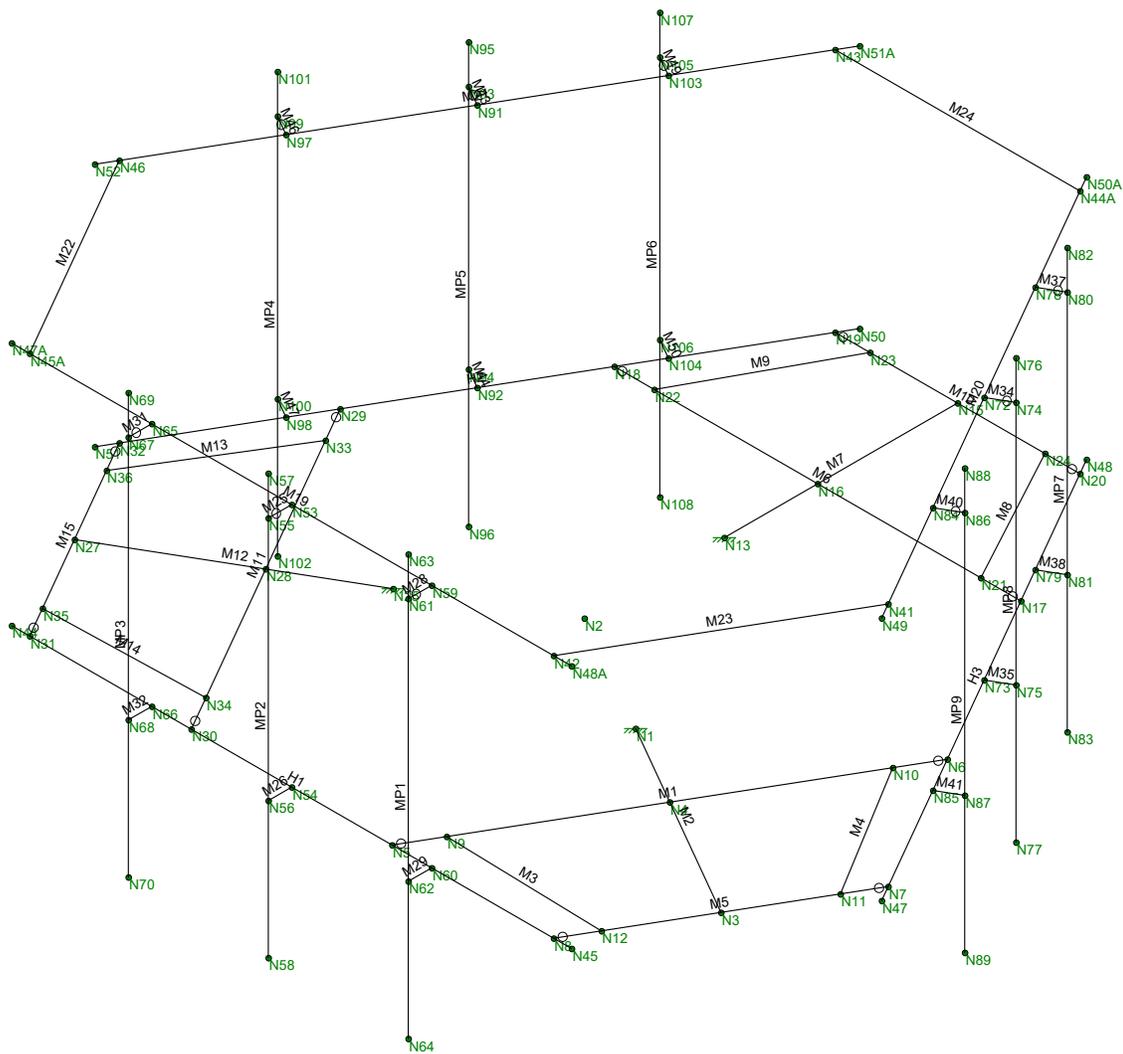
APPENDIX A
WIRE FRAME AND RENDERED MODELS

APPENDIX B
SOFTWARE INPUT CALCULATIONS

APPENDIX C
SOFTWARE ANALYSIS OUTPUT

APPENDIX D
ADDITIONAL CALCUATIONS

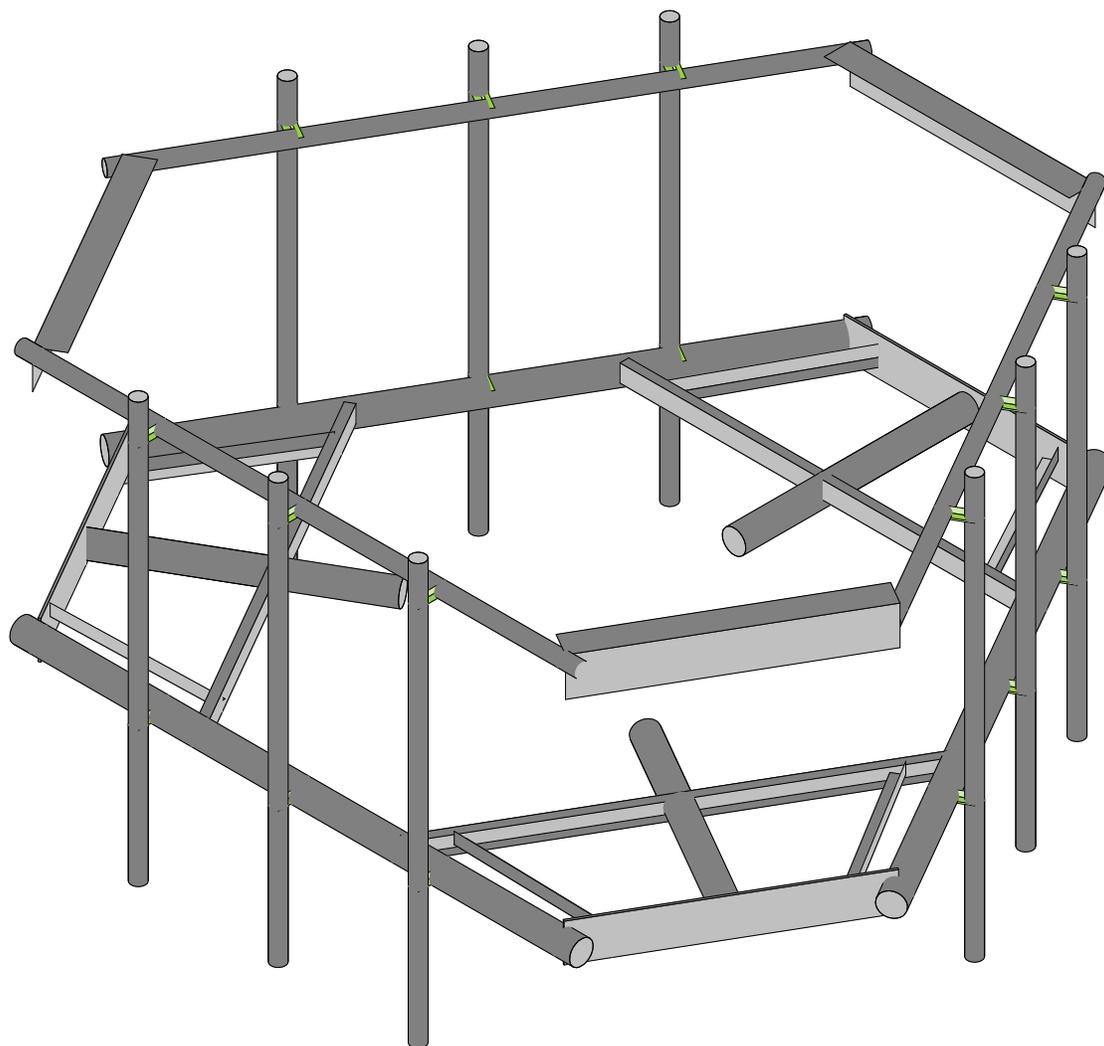
APPENDIX E
SUPPLEMENTAL DRAWINGS



Trylon
MFT
189052

803843

Wireframe
Aug 2, 2021 at 9:20 AM
CT-NEW-BRITAIN_loaded.r3d



Trylon

MFT

189052

803843

Render

Aug 2, 2021 at 9:20 AM

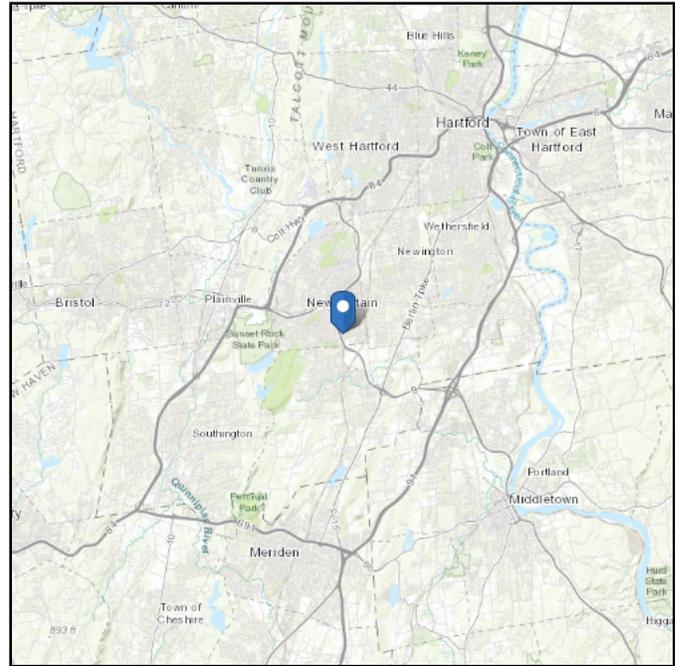
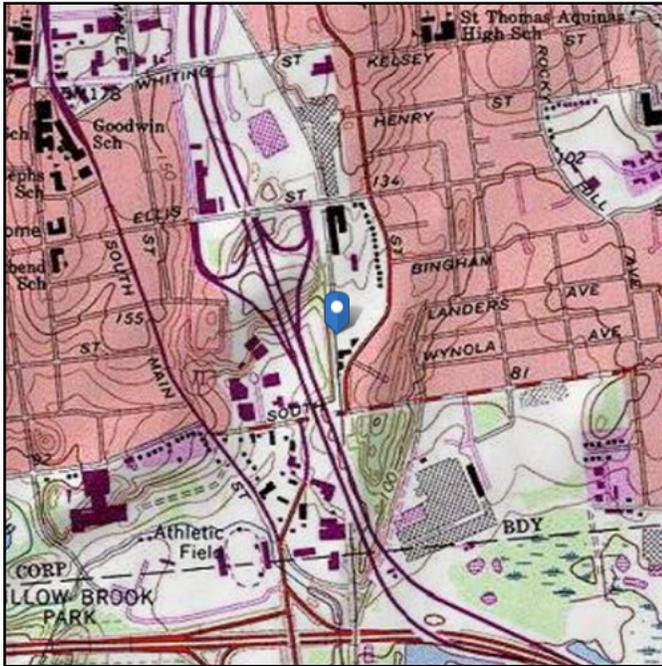
CT-NEW-BRITAIN_loaded.r3d

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 111.66 ft (NAVD 88)
Latitude: 41.654556
Longitude: -72.769331



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 Jul 29 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.

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

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.



Trylon

1825 W. Walnut Hill Lane Suite 120
Irving, TX 75038

TIA LOAD CALCULATOR 2.0

PROJECT DATA	
Job Code:	189052
Carrier Site ID:	803843
Carrier Site Name:	NEW BRITAIN 4 CAC 8038

CODES AND STANDARDS	
Building Code:	2015 IBC
Local Building Code:	2018 CTSBC
Design Standard:	TIA-222-H

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	155.0	ft.
Number of Sectors:	3	--
Structure Type:	Monopole	--
Structure Height:	192.0	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	B	--
Site Class:	D - Stiff Soil	--
Ground Elevation:	111.66	ft.

TOPOGRAPHIC DATA		
Topographic Category:	1.00	--
Topographic Feature:	N/A	--
Crest Point Elevation:	0.00	ft.
Base Point Elevation:	0.00	ft.
Crest to Mid-Height (L/2):	0.00	ft.
Distance from Crest (x):	0.00	ft.
Base Topo Factor (K_{zt}):	1.00	--
Mount Topo Factor (K_{zt}):	1.00	--

WIND PARAMETERS		
Design Wind Speed:	125	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	1.12	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (G_h):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	42.39	psf

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness (t_i):	2.00	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	42.39	psf
Mount Ice Thickness (t_{iz}):	2.33	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	76.30	psf
Round Member Pressure:	45.78	psf
Ice Wind Pressure:	7.63	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel. (S_s):	0.18	g
1 Second Accel. (S_1):	0.06	g
Short Period Des. (S_{DS}):	0.20	g
1 Second Des. (S_{D1}):	0.10	g
Short Period Coeff. (F_a):	1.60	--
1 Second Coeff. (F_v):	2.40	--
Response Coefficient (C_s):	0.10	--
Amplification Factor (A_S):	1.20	--

LOAD COMBINATIONS [LRFD]

#	Description
1	1.4DL
2	1.2DL + 1WL 0 AZI
3	1.2DL + 1WL 30 AZI
4	1.2DL + 1WL 45 AZI
5	1.2DL + 1WL 60 AZI
6	1.2DL + 1WL 90 AZI
7	1.2DL + 1WL 120 AZI
8	1.2DL + 1WL 135 AZI
9	1.2DL + 1WL 150 AZI
10	1.2DL + 1WL 180 AZI
11	1.2DL + 1WL 210 AZI
12	1.2DL + 1WL 225 AZI
13	1.2DL + 1WL 240 AZI
14	1.2DL + 1WL 270 AZI
15	1.2DL + 1WL 300 AZI
16	1.2DL + 1WL 315 AZI
17	1.2DL + 1WL 330 AZI
18	0.9DL + 1WL 0 AZI
19	0.9DL + 1WL 30 AZI
20	0.9DL + 1WL 45 AZI
21	0.9DL + 1WL 60 AZI
22	0.9DL + 1WL 90 AZI
23	0.9DL + 1WL 120 AZI
24	0.9DL + 1WL 135 AZI
25	0.9DL + 1WL 150 AZI
26	0.9DL + 1WL 180 AZI
27	0.9DL + 1WL 210 AZI
28	0.9DL + 1WL 225 AZI
29	0.9DL + 1WL 240 AZI
30	0.9DL + 1WL 270 AZI
31	0.9DL + 1WL 300 AZI
32	0.9DL + 1WL 315 AZI
33	0.9DL + 1WL 330 AZI
34	1.2DL + 1DLi + 1WLi 0 AZI
35	1.2DL + 1DLi + 1WLi 30 AZI
36	1.2DL + 1DLi + 1WLi 45 AZI
37	1.2DL + 1DLi + 1WLi 60 AZI
38	1.2DL + 1DLi + 1WLi 90 AZI
39	1.2DL + 1DLi + 1WLi 120 AZI
40	1.2DL + 1DLi + 1WLi 135 AZI
41	1.2DL + 1DLi + 1WLi 150 AZI

#	Description
42	1.2DL + 1DLi + 1WLi 180 AZI
43	1.2DL + 1DLi + 1WLi 210 AZI
44	1.2DL + 1DLi + 1WLi 225 AZI
45	1.2DL + 1DLi + 1WLi 240 AZI
46	1.2DL + 1DLi + 1WLi 270 AZI
47	1.2DL + 1DLi + 1WLi 300 AZI
48	1.2DL + 1DLi + 1WLi 315 AZI
49	1.2DL + 1DLi + 1WLi 330 AZI
50	(1.2+0.2Sds) + 1.0E 0 AZI
51	(1.2+0.2Sds) + 1.0E 30 AZI
52	(1.2+0.2Sds) + 1.0E 45 AZI
53	(1.2+0.2Sds) + 1.0E 60 AZI
54	(1.2+0.2Sds) + 1.0E 90 AZI
55	(1.2+0.2Sds) + 1.0E 120 AZI
56	(1.2+0.2Sds) + 1.0E 135 AZI
57	(1.2+0.2Sds) + 1.0E 150 AZI
58	(1.2+0.2Sds) + 1.0E 180 AZI
59	(1.2+0.2Sds) + 1.0E 210 AZI
60	(1.2+0.2Sds) + 1.0E 225 AZI
61	(1.2+0.2Sds) + 1.0E 240 AZI
62	(1.2+0.2Sds) + 1.0E 270 AZI
63	(1.2+0.2Sds) + 1.0E 300 AZI
64	(1.2+0.2Sds) + 1.0E 315 AZI
65	(1.2+0.2Sds) + 1.0E 330 AZI
66	(0.9-0.2Sds) + 1.0E 0 AZI
67	(0.9-0.2Sds) + 1.0E 30 AZI
68	(0.9-0.2Sds) + 1.0E 45 AZI
69	(0.9-0.2Sds) + 1.0E 60 AZI
70	(0.9-0.2Sds) + 1.0E 90 AZI
71	(0.9-0.2Sds) + 1.0E 120 AZI
72	(0.9-0.2Sds) + 1.0E 135 AZI
73	(0.9-0.2Sds) + 1.0E 150 AZI
74	(0.9-0.2Sds) + 1.0E 180 AZI
75	(0.9-0.2Sds) + 1.0E 210 AZI
76	(0.9-0.2Sds) + 1.0E 225 AZI
77	(0.9-0.2Sds) + 1.0E 240 AZI
78	(0.9-0.2Sds) + 1.0E 270 AZI
79	(0.9-0.2Sds) + 1.0E 300 AZI
80	(0.9-0.2Sds) + 1.0E 315 AZI
81	(0.9-0.2Sds) + 1.0E 330 AZI
82-88	1.2D + 1.5 Lv1

#	Description
89	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP1
90	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP1
91	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP1
92	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP1
93	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP1
94	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP1
95	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP1
96	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP1
97	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP1
98	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP1
99	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP1
100	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP1
101	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP1
102	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP1
103	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP1
104	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP1
105	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP2
106	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP2
107	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP2
108	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP2
109	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP2
110	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP2
111	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP2
112	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP2
113	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP2
114	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP2
115	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP2
116	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP2
117	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP2
118	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP2
119	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP2
120	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP2

#	Description
121	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP3
122	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP3
123	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP3
124	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP3
125	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP3
126	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP3
127	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP3
128	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP3
129	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP3
130	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP3
131	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP3
132	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP3
133	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP3
134	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP3
135	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP3
136	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP3
137	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP4
138	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP4
139	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP4
140	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP4
141	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP4
142	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP4
143	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP4
144	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP4
145	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP4
146	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP4
147	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP4
148	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP4
149	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP4
150	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP4
151	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP4
152	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP4

*This page shows an example of maintenance loads for (4) pipes, the number of mount pipe LCs may vary per site

A Ya Vyf'Dc]bh@UXg'f6 @ " % ' @j Y @ UX + fi@ tL'f' c bh]bi YXL

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BOLT TOOL 1.5.2

Project Data	
Job Code:	189052
Carrier Site ID:	803843
Carrier Site Name:	NEW BRITAIN 4 CAC 803

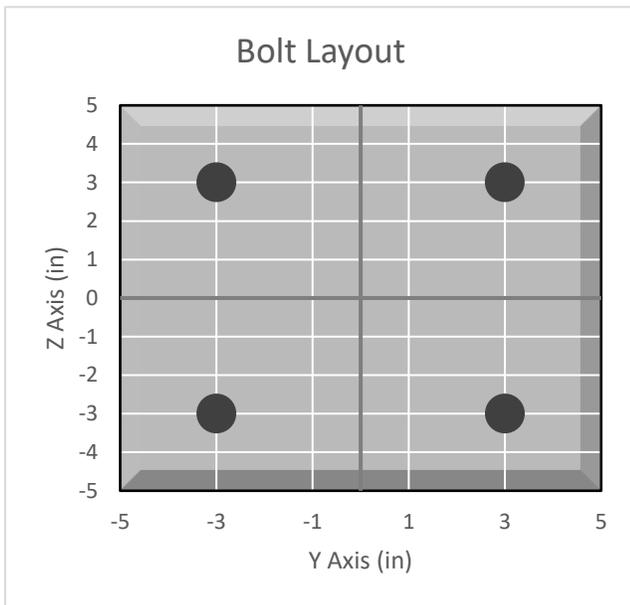
Code	
Design Standard:	TIA-222-H
Slip Check:	No
Pretension Standard:	TIA-222-H

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.625	in
Grade:	A325	--
Yield Strength (Fy):	92	ksi
Ultimate Strength (Fu):	120	ksi
Number of Bolts:	4	--
Threads Included:	Yes	--
Double Shear:	No	--
Connection Pipe Size:	-	in

Connection Description
Mount to Collar Connection

Bolt Check*		
Tensile Capacity (ϕT_n):	20340.1	lbs
Shear Capacity (ϕV_n):	13805.8	lbs
Tension Force (T_u):	5297.1	lbs
Shear Force (V_u):	757.4	lbs
Tension Usage:	24.8%	--
Shear Usage:	5.2%	--
Interaction:	24.8%	Pass
Controlling Member:	M12	--
Controlling LC:	42	--

*Rating per TIA-222-H Section 15.5

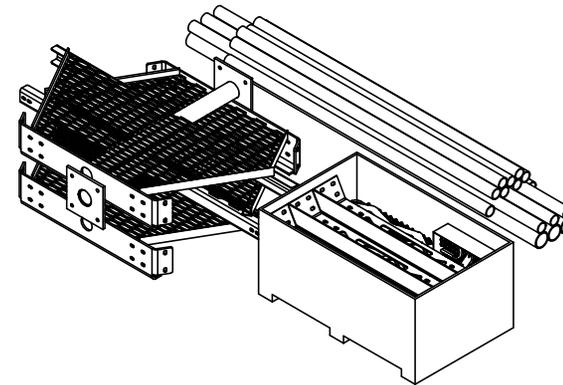


ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT	NOTE NO.
1	MTC3006SB	STEEL BUNDLE FOR SNUB NOSE PLATFORM	1	402.64 LBS	
2	MCPK8CSB	PIPE STEEL BUNDLE FOR MC-PK8-C	1	464.27 LBS	
3	MCPK8CHWK	HARDWARE KIT FOR MC-PK8-C	1	543.22 LBS	



REVISIONS				
REV.	ECN	DESCRIPTION	BY	DATE
A		INITIAL RELEASE	DRR	12/27/11
B	8000005979	CHANGE NOSE CORNER BRKT, ADD GUB-4240	MSM	11/25/14
C	8000007579	NEW RINGMOUNT WELDMENT DESIGN	RJC	04/07/15

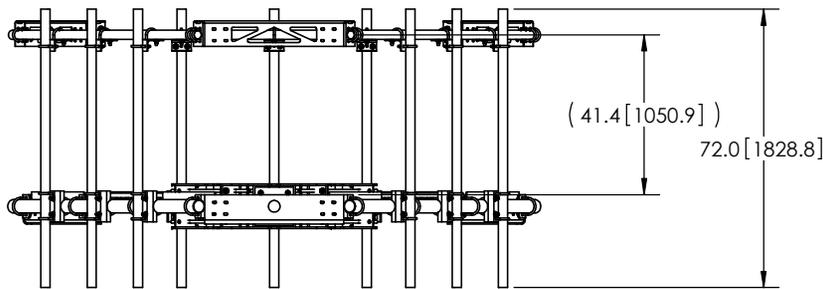
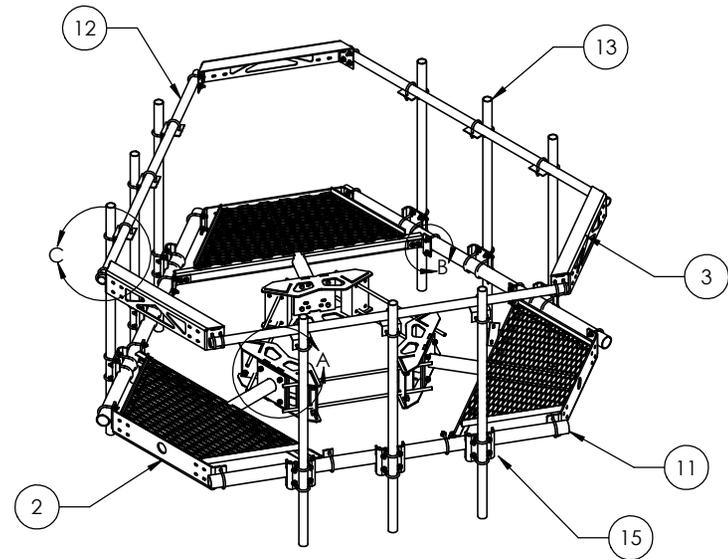
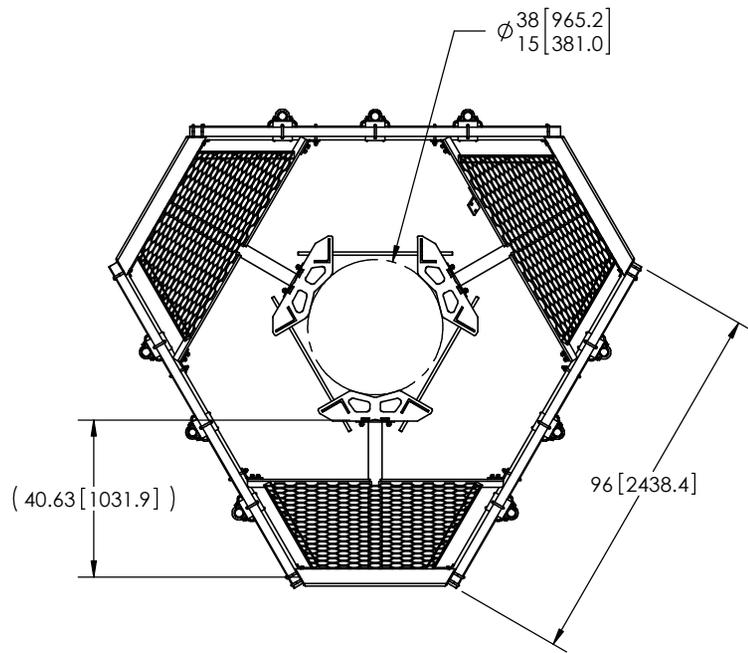
FOR BOM ENTRY ONLY



NOTES:

1. CUSTOMER ASSEMBLY SHEETS 2-3.

<small>These drawings and specifications are the proprietary property of ANDREW CORPORATION and may be used only for the specific purpose authorized in writing by Andrew Corporation.</small>			<small>DRAWN BY:</small> MSM	<small>SHEET:</small> 1 of 3	<small>PART NUMBER:</small> MC-PK8-C
<small>ALL DIMENSIONS ARE IN INCHES U.O.S. TOLERANCES UNLESS OTHERWISE SPECIFIED:</small> .X = ± .12 ANGLES ±2° .XX = ± .06 FRACTIONS ±1/32 .XXX = ± .03 REMOVE BURRS AND BREAK EDGES .005			<small>CHECKED BY:</small> TP	<small>SCALE:</small> NTS	<small>DESCRIPTION:</small> LOW PROFILE PLATFORM KIT 8' FACE
<small>DO NOT SCALE THIS PRINT</small>			<small>DATE:</small> 10/18/11	<small>MATERIAL:</small> A36, A500	<small>DRAWING TYPE:</small> ASSEMBLY DRAWING
			<small>REVISION:</small> C	<small>FINISH:</small> GALV A123	
				<small>WEIGHT:</small> 1410.14 LBS	

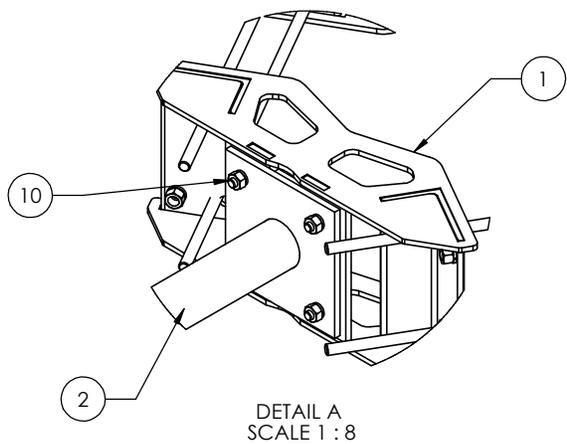


ITEM	PART NO.	DESCRIPTION	QTY.	WEIGHT
1	MC-RM1550-3	12" - 50" OD RINGMOUNT	1	230.42 LBS
2	MTC300601	Low Profile Co-Location Platform Snub Nose	3	134.21 LBS
3	MT195801	Corner Weldment Snub Nose Handrail	3	27.10 LBS
4	XA2020.01	CROSS OVER ANGLE	9	2.65 LBS
5	GUB-4356	1/2" X 3-5/8" X 6" GALV U-BOLT	18	0.82 LBS
6	GUB-4355	1/2" X 3-5/8" X 5" GALV U-BOLT	12	0.71 LBS
7	GUB-4240	1/2" X 2-1/2" X 4" GALV U-BOLT	48	0.56 LBS
8	GB-04145	1/2" X 1-1/2" GALV BOLT KIT	12	0.13 LBS
9	GWF-04	1/2" GALV FLAT WASHER	24	0.03 LBS
10	GB-0520A	5/8" X 2" GALV BOLT KIT (A325)	12	0.27 LBS
11	MT54796	3.50" OD X 96" GALV PIPE	3	60.28 LBS
12	MT-651-96	Ø2.375" OD X 96" PIPE	3	29.07 LBS
13	MT-651	2.375" OD x 72" PIPE	9	21.80 LBS
14	MT19617	MT196 Pipe Mount Plate	6	2.49 LBS
15	MT21701	PIPE MOUNT PLATE	9	7.93 LBS

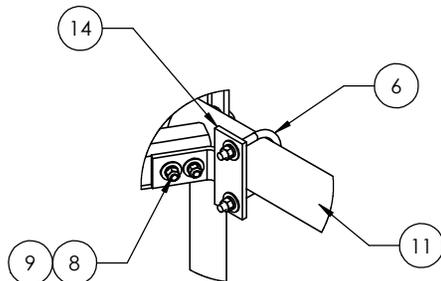
<small>These drawings and specifications are the proprietary property of ANDREW CORPORATION and may be used only for the specific purpose authorized in writing by Andrew Corporation.</small>			
<small>ALL DIMENSIONS ARE IN INCHES U.O.S. TOLERANCES UNLESS OTHERWISE SPECIFIED:</small> .X = ± .12 ANGLES ±2° .XX = ± .06 FRACTIONS ±1/32 .XXX = ± .03 REMOVE BURRS AND BREAK EDGES .005 DO NOT SCALE THIS PRINT	<small>DRAWN BY:</small> MSM <small>CHECKED BY:</small> TP <small>DATE:</small> 10/18/11 <small>REVISION:</small> C	<small>SHEET:</small> 2 of 3 <small>SCALE:</small> NTS <small>MATERIAL:</small> A36, A53 <small>FINISH:</small> GALV A123 <small>WEIGHT:</small> 1361.27 LBS	<small>PART NUMBER:</small> MC-PK8-C <small>DESCRIPTION:</small> 25" OD Snub Nose MT-196 <small>DRAWING TYPE:</small> ASSEMBLY DRAWING 
			<small>WESTCHESTER, IL. 60154 U.S.A.</small>

- NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.
 2. WILL FIT MONOPOLES 15"-38" OD.

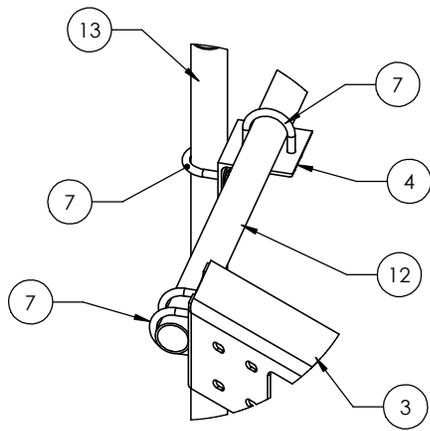
8 7 6 5 4 3 2 1



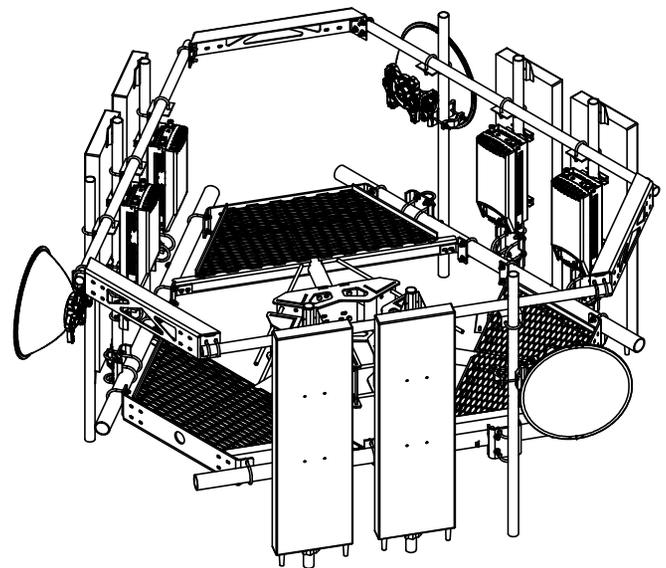
DETAIL A
SCALE 1 : 8



DETAIL B
SCALE 1 : 8



DETAIL C
SCALE 1 : 8



WITH ANTENNAS

NOTES:
1. ALL METRIC DIMENSIONS ARE IN BRACKETS.

<small>These drawings and specifications are the proprietary property of ANDREW CORPORATION and may be used only for the specific purpose authorized in writing by Andrew Corporation.</small>		<small>DRAWN BY:</small> MSM	<small>SHEET:</small> 3 of 3	<small>PART NUMBER:</small> MC-PK8-C
<small>ALL DIMENSIONS ARE IN INCHES U.O.S. TOLERANCES UNLESS OTHERWISE SPECIFIED:</small> .X = ± .12 ANGLES ±2° .XX = ± .06 FRACTIONS ±1/32 .XXX = ± .03		<small>CHECKED BY:</small> TP	<small>SCALE:</small> NTS	<small>DESCRIPTION:</small> 25" OD Snub Nose MT-196
<small>REMOVE BURRS AND BREAK EDGES .005</small> DO NOT SCALE THIS PRINT		<small>DATE:</small> 10/18/11	<small>MATERIAL:</small> A36, A53	<small>DRAWING TYPE:</small> ASSEMBLY DRAWING
		<small>REVISION:</small> C	<small>FINISH:</small> GALV A123	 WESTCHESTER, IL. 60154 U.S.A.
			<small>WEIGHT:</small> 1361.27 LBS	

8 7 6 5 4 3 2 1

Exhibit F

Power Density/RF Emissions Report

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

Dish Wireless Existing Facility

Site ID: 803843

BOBDL00039A
200 Stanley Street
New Britain, Connecticut 06053

June 24, 2021

EBI Project Number: 6221003212

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	25.46%

June 24, 2021

Dish Wireless

Emissions Analysis for Site: 803843 - BOBDL00039A

EBI Consulting was directed to analyze the proposed Dish Wireless facility located at **200 Stanley Street in New Britain, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately $400 \mu\text{W}/\text{cm}^2$ and $467 \mu\text{W}/\text{cm}^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is $1000 \mu\text{W}/\text{cm}^2$. 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 200 Stanley Street in New Britain, 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 10 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 5G 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 5G 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 10 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 10 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 155 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 #:	I	Antenna #:	I	Antenna #:	I
Make / Model:	JMA MX08FRO665-2I	Make / Model:	JMA MX08FRO665-2I	Make / Model:	JMA MX08FRO665-2I
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):	155 feet	Height (AGL):	155 feet	Height (AGL):	155 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):	36,123.20	ERP (W):	36,123.20	ERP (W):	36,123.20
Antenna AI MPE %:	7.47%	Antenna BI MPE %:	7.47%	Antenna CI MPE %:	7.47%

Site Composite MPE %	
Carrier	MPE %
Dish Wireless (Max at Sector A):	7.47%
Sigfox	0.05%
AT&T	6.12%
Clearwire	0.07%
Metro PCS	0.38%
Verizon	11.37%
Site Total MPE % :	25.46%

Dish Wireless MPE % Per Sector	
Dish Wireless Sector A Total:	7.47%
Dish Wireless Sector B Total:	7.47%
Dish Wireless Sector C Total:	7.47%
Site Total MPE % :	
	25.46%

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 ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
Dish Wireless 600 MHz 5G	4	1667.71	155.0	10.80	600 MHz 5G	400	2.70%
Dish Wireless 1900 MHz 5G	4	7363.09	155.0	47.69	1900 MHz 5G	1000	4.77%
						Total:	7.47%

• 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:	7.47%
Sector B:	7.47%
Sector C:	7.47%
Dish Wireless Maximum MPE % (Sector A):	7.47%
Site Total:	25.46%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **25.46%** 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:
200 STANLEY STREET, NEW BRITAIN, CT 06053**

CROWN ATLANTIC COMPANY 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:

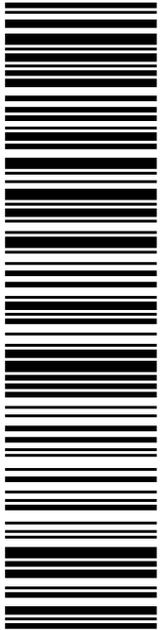
**Crown Site ID/Name: 803843/CT NEW BRITAIN 4 CAC 803843
Customer Site ID: BOBDL00039A/CT-CCI-T-803843
Site Address: 200 Stanley Street, New Britain, CT 06053**

Crown Castle

By:  Date: 7/29/2021
Richard Zajac
Site Acquisition Specialist

Exhibit H

Recipient Mailings



USPS TRACKING #

9405 5036 9930 0476 0770 93

Electronic Rate Approved #038555749

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

P

usps.com
US POSTAGE
Flat Rate Env
\$7.95
9405 5036 9930 0476 0770 93 0079 5000 0031 4586

08/17/2021

Mailed from 01566

U.S. POSTAGE PAID
click-n-ship®

PRIORITY MAIL 2-DAY™

Expected Delivery Date: 08/20/21
Re#: DS-803843
0006

R013



Click-N-Ship®

USPS TRACKING #

9405 5036 9930 0476 0770 93

Expected Delivery Date: 08/20/21
Re#: DS-803843
0006



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 0476 0770 93

Trans. #: 540982354	Priority Mail® Postage: \$7.95
Print Date: 08/17/2021	Total: \$7.95
Ship Date: 08/17/2021	
Expected Delivery Date: 08/20/2021	

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

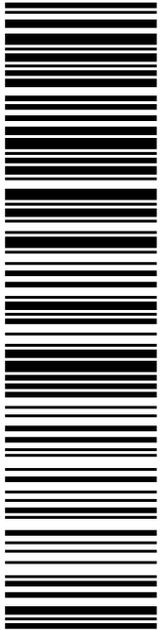
To: RICH ZAJAC
CROWN CASTLE
4545 E RIVER RD
STE 320
W HENRIETTA NY 14586-9024

Re#: DS-803843

* 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



USPS TRACKING #

9405 5036 9930 0476 0771 09

Electronic Rate Approved #038555749

SHIP TO: ERIN STEWART
MAYOR- CITY OF NEW BRITAIN
27 W MAIN ST
NEW BRITAIN CT 06051-2283

C020

P

usps.com 9405 5036 9930 0476 0771 09 0079 5000 0010 6051
US POSTAGE
 Flat Rate Env
 U.S. POSTAGE PAID
 Click-N-Ship®

08/17/2021 Mailed from 01566

PRIORITY MAIL 2-DAY™

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

Expected Delivery Date: 08/20/21
Ref#: DS-803843
0006






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Trans. #: 540982354	Priority Mail® Postage: \$7.95
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Expected Delivery Date: 08/20/2021	

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

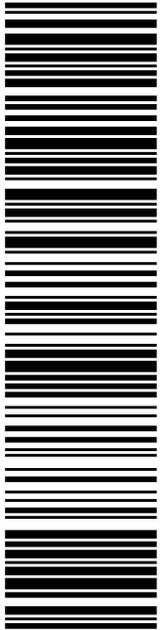
To: ERIN STEWART
MAYOR- CITY OF NEW BRITAIN
27 W MAIN ST
NEW BRITAIN CT 06051-2283

Ref#: DS-803843

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9405 5036 9930 0476 0771 23

Electronic Rate Approved #038555749

SHIP TO: DAVID D ZAJAC
ZONING ENFORCEMENT OFFICER-NEW BRITAIN
27 W MAIN ST
NEW BRITAIN CT 06051-2283

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

C020




P

USPS.com
US POSTAGE
Flat Rate Env
\$7.95

9405 5036 9930 0476 0771 23 0079 5000 0010 6051

08/17/2021

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U.S. POSTAGE PAID
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PRIORITY MAIL 2-DAY™

Expected Delivery Date: 08/20/21
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9405 5036 9930 0476 0771 23

Trans. #: 540982354	Priority Mail® Postage: \$7.95
Print Date: 08/17/2021	Total: \$7.95
Ship Date: 08/17/2021	
Expected Delivery Date: 08/20/2021	

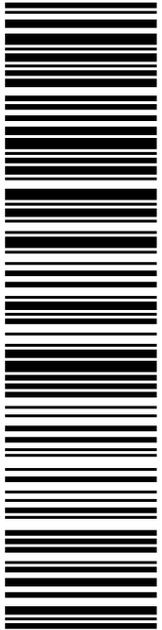
From: DEBORAH CHASE Re#: DS-803843
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

To: DAVID D ZAJAC
ZONING ENFORCEMENT OFFICER-NEW BRITAIN
27 W MAIN ST
NEW BRITAIN CT 06051-2283

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USPS TRACKING #

9405 5036 9930 0476 0771 30

Electronic Rate Approved #038555749

SHIP TO:

DOWNES INVESTMENTS LLC
200 STANLEY ST
NEW BRITAIN CT 06051-3629

P

usps.com
US POSTAGE
 Flat Rate Env
 9405 5036 9930 0476 0771 30 0079 5000 0010 6051

08/17/2021

Mailed from 01566

U.S. POSTAGE PAID
click-n-ship®

PRIORITY MAIL 2-DAY™

Expected Delivery Date: 08/20/21
 Ref#: DS-803843
0006

C066



Click-N-Ship®

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click-n-ship®

usps.com
US POSTAGE
 Flat Rate Env
 9405 5036 9930 0476 0771 30 0079 5000 0010 6051

08/17/2021

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9405 5036 9930 0476 0771 30

Trans. #: 540982354	Priority Mail® Postage: \$7.95
Print Date: 08/17/2021	Total: \$7.95
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From: DEBORAH CHASE
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 STE 1
 STURBRIDGE MA 01566-1359

Ref#: DS-803843

To: DOWNES INVESTMENTS LLC
 200 STANLEY ST
 NEW BRITAIN CT 06051-3629

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803843



FIKSDALE
458 MAIN ST
FIKSDALE, MA 01518-9998
(800)275-8777

08/18/2021

12:46 PM

Product	Qty	Unit Price	Price
---------	-----	------------	-------

Prepaid Mail	1		\$0.00
New Britain, CT 06051			
Weight: 1 lb 11.50 oz			
Acceptance Date:			
Wed 08/18/2021			
Tracking #:			
9405 5036 9930 0476 0771 23			

Prepaid Mail	1		\$0.00
New Britain, CT 06051			
Weight: 1 lb 11.60 oz			
Acceptance Date:			
Wed 08/18/2021			
Tracking #:			
9405 5036 9930 0476 0771 09			

Prepaid Mail	1		\$0.00
West Henrietta, NY 14586			
Weight: 0 lb 2.00 oz			
Acceptance Date:			
Wed 08/18/2021			
Tracking #:			
9405 5036 9930 0476 0770 93			

Prepaid Mail	1		\$0.00
New Britain, CT 06051			
Weight: 1 lb 11.60 oz			
Acceptance Date:			
Wed 08/18/2021			
Tracking #:			
9405 5036 9930 0476 0771 30			

Grand Total: \$0.00