NOTICE OF MEETING

VILLAGE OF FOX POINT
PLAN COMMISSION

SCHWEMER HALL - MUNICIPAL BLDG.
7200 N. SANTA MONICA BLVD
FOX POINT, WI 53217

TUESDAY
January 3, 2023
5:45 P.M.

NOTE: THE VILLAGE BOARD WILL BE MEETING IN PERSON AT VILLAGE HALL, WITH A REMOTE ATTENDANCE OPTION, PER THE HYBRID MEETING PROCEDURES FURTHER DESCRIBED IN SECTION 19-32 D. OF THE VILLAGE CODE. THIS MEETING IS OPEN TO ALL CITIZENS IN PERSON AT VILLAGE HALL, OR THROUGH THE ZOOM PARTICIPANT INFORMATION SHOWN BELOW, SUBJECT TO THE FOLLOWING: NO ASSURANCE IS PROVIDED TO THOSE PLAN COMMISSION MEMBERS AND CITIZENS INTENDING TO ATTEND REMOTELY THAT THE TECHNOLOGY WILL PERFORM SUFFICIENTLY TO ALLOW FOR THEIR PARTICIPATION AND THE MEETING WILL PROCEDE REGARDLESS. PUBLIC OFFICIALS AND CITIZENS WISHING TO ENSURE THEY CAN PARTICIPATE ARE ENCOURAGED TO ATTEND IN PERSON. CITIZENS ARE ENCOURAGED TO SUBMIT ANY COMMENTS IN WRITING IN ADVANCE OF THE MEETING TO THE VILLAGE MANAGER AT sbotcher@villageoffoxpoint.com

Zoom Participant Information
https://us02web.zoom.us/j/84946418531
Dial: (312) 626-6799
Meeting ID: 849 4641 8531

AGENDA

1. **Roll Call.**

2. **Approval of the minutes of the November 7, 2022 Plan Commission/Building Board meeting.**

3. **Review and Recommendation Re**: **a minor modification to the exiting Wireless facility at 8615 N Port Washington Road.**

   The Plan Commission will discuss and may make a recommendation to the Village Board regarding Dish Wireless, LLC's application for a minor modification to the exiting wireless facility at 8615 N Port Washington Road.

4. **Review and Recommendation Re**: **Chapter 745-7(3)(h) Fence/Arbor Ordinance**

   The Plan Commission will discuss and may make a recommendation to the Village Board regarding increasing the height of arbors from 8'7" to 10 feet.

5. Adjourn

NEXT PLAN COMMISSION MEETING: MONDAY, February 6, 2023

PLEASE NOTE: Upon reasonable notice, efforts will be made to accommodate the needs of disabled individuals through sign language interpreters or other auxiliary aids. For additional information or to request these services, contact the Village Clerk at 351-8900. It is possible that members of, and possibly a quorum of members of, other governmental bodies of the municipality may be in attendance at the above stated meeting to gather information; no action will be taken by any governmental body at the above stated meeting other than the governmental body specifically referred to above in this notice.

VILLAGE OF FOX POINT
PLAN COMMISSION MEETING MINUTES
NOVEMBER 7, 2022

A meeting of the Fox Point Plan Commission was held by a combination of in-person and virtual attendance via telephonic and video conferencing on Monday, November 7, 2022. President Frazer called the meeting to order at 5:45 p.m. and noted there was a quorum of Plan Commission members present.

The Plan Commission roll call was taken by Village Manager, Scott Botcher:

Plan Commission:	President Douglas H. Frazer, Chairman
	Eric Fonstad, Commissioner
	Robert Smith, Commissioner (absent)
	John Crichton, Commissioner
	Russ Yale, Commissioner
	Jay Craig, Commissioner
	William Langhoff, Commissioner

Staff present included Village Manager Scott Botcher.

Notice of the meeting was provided to the North Shore Now as necessary, and to all others as required by State open meetings laws and posted on the official bulletin board at 7200 N Santa Monica Boulevard, as well as the village website at www.villageoffoxpoint.com, as per 2015 Wisconsin Act 79 and as described in Village Ordinance Chapter 116-2, 116-2(C).

Approval of the Minutes of the October 3, 2022 Plan Commission Meeting

On motion of Commissioner Frazer, seconded by Commissioner Fonstad, and carried unanimously by roll call vote, the Commission approved the minutes of the October 3, 2022 Plan Commission meeting.

Review and Recommendation Re: a minor modification to the existing wireless facility at 8615 N Port Washington Road.

On motion of Commissioner Frazer, seconded by Commissioner Fonstad, and carried unanimously by roll call vote, the Commission recommended the Village Board approve the minor modification to the existing wireless facility at 8615 N Port Washington Road.

Adjourn

On motion of Commissioner Frazer, seconded by Commissioner Fonstad and carried unanimously by roll call vote, the Plan Commission meeting adjourned at 5:52pm.

Respectfully Submitted,

Scott Botcher
Village Manager

December 15, 2022

Nathan L. Schafer
Deputy Clerk-Treasurer
Village of Fox Point
7200 N. Santa Monica Blvd
Fox Point, WI 53217

RE: Letter of Intent for Plan Commission Review – DISH Wireless Co-location
8615 Port Washington Rd., Fox Point WI Site # MWMKE00252B

Mr. Schafer

On behalf of GPD Group, Crown Castle (Tower Owner) and DISH Wireless request the necessary approvals for the addition of DISH Wireless equipment to the existing wireless telecom facility at the above referenced location.

DISH Wireless will be adding their antennas and associated equipment at 115' on the existing 130' monopole. The ground support equipment will be housed in the existing basement equipment area. There will be no increase in height to the tower, or expansion of the ground lease area. Per attached plans and letter from Crown Castle, this minor modification qualifies as an Eligible Facilities Request under 6409.

This proposed new DISH Wireless Network co-location will be unmanned and only requires use of existing power and fiber already at the site. There will be no traffic generated by this proposed use. It will be remotely monitored 24/7 and serviced approximately once a month by a technician in a small pick-up or van.

The proposed site will help build the DISH Wireless 5G Internet Network in the Village of Fox Point area. This technology will keep customers connected to the internet. From driverless cars to the millions of wearables, devices, and sensors currently in use, DISH Wireless will help run the Smart Cities of the future and the "Internet of Things". *See attached Quick Facts and Dish Story

We have requested to have this project reviewed/approved at the January 3, 2023, Plan Commission Meeting.

Thank you very much in advance for your help with this project.

Regards,

Tony Phillips

Tony Phillips
Zoning & Permitting Manager
Kendall Communications for GPD Group
tony@kendallcommunications.net
847-331-3659

CROWN CASTLE

9045 River Rd,
Indianapolis, IN 46240

Phone: (317) 249-2028
www.crowncastle.com

December 15, 2022

WI – Village of Fox Point
Nathan L. Schafer - Deputy Clerk
7200 N. Santa Monica Blvd
Fox Point, WI 53217

************NOTICE OF ELIGIBLE FACILITIES REQUEST************

RE: Request for Minor Modification to Existing Wireless Facility – Section 6409
Site Address: 8615 Port Washington Rd., Fox Point, WI 53217
Crown Site Number: 827008/ Crown Site Name: 827008
Customer Site Number: MWMKE00252B

Attn Planning & Zoning Dept.

On behalf of DISH Wireless L.L.C. ("Dish Wireless" or "Applicant"), Crown Castle USA Inc. ("Crown Castle") is pleased to submit this request to modify the existing wireless facility noted above through the collocation, replacement and/or removal of the Applicant's equipment as an eligible facilities request for a minor modification under Section 6409[1] and the rules of the Federal Communications Commission ("FCC").[2]

Section 6409 mandates that state and local governments must approve any eligible facilities request for the modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station. Under Section 6409, to toll the review period, if the reviewing authority determines that the application is incomplete, it must provide written notice to the applicant within 30 days, which clearly and specifically delineates all missing documents or information reasonably related to whether the request meets the federal requirements.[3] Additionally, if a state or local government, fails to issue any approvals required for this request within 60 days, these approvals are deemed granted. The FCC has clarified that the 30-day and 60-day deadlines begins when an applicant: (1) takes the first step required under state or local law; and (2) submits information sufficient to inform the jurisdiction that this modification qualifies under the federal law[4]. Please note that with the submission of this letter and enclosed items, the thirty and sixty-day review periods have started. Based on this filing, the deadline for written notice of incomplete application is January 15, 2022, and the deadline for issuance of approval is February 15 2023.

[1] Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6409 (2012) (codified at 47 U.S.C. § 1455).
[2] *Acceleration of Broadband Deployment by Improving Wireless Facility Siting Policies*, 29 FCC Rcd. 12865 (2014) (codified at 47 CFR § 1.6100); and *Implementation of State & Local Governments' Obligation to Approve Certain Wireless Facility Modification Requests Under Section 6409(a) of the Spectrum Act of 2012*, WT Docket No. 19-250 (June 10, 2020).
[3] *See* 47 CFR § 1.6100 (c)(3). [4] *See* 2020 Upgrade Order at paragraph 16.

CROWN CASTLE

9045 River Rd,
Indianapolis, IN 46240

Phone: (317) 249-2028
www.crowncastle.com

Proposed Scope of work will be: Addition of New DISH Wireless Equipment to existing wireless telecom facility. Antennas and ancillary equipment added at 115' on existing 130' monopole. Ground support equipment to be located within existing equipment area.

At the end of this letter is a checklist of the applicable substantial change criteria under Section 6409. Additionally, please find enclosed the following information in support of this request:

(1) Letter of Intent
(2) Construction Drawings;
(3) Structural Analysis; and
(4) Section 6409 Substantial Change Checklist.

As these documents indicate, (i) the modification involves the collocation, removal or replacement of transmission equipment; and (ii) such modification will not substantially change the physical dimensions of such tower or base station. As such, it is an "eligible facilities request" as defined in the FCC's rules to which the 60-day deadline for approval applies. Accordingly, Applicant requests all authorization necessary for this proposed minor modification under Section 6409.

Our goal is to work with you to obtain approvals earlier than the deadline. We will respond promptly to any request for related information you may have in connection with this request. Please let us know how we can work with you to expedite the approval process. We look forward to working with you on this important project, which will improve wireless telecommunication services in your community using collocation on existing infrastructure. If you have any questions, please do not hesitate to contact me.

Regards,

Tony Phillips

Tony Phillips
Agent for Applicant
847-331-3659
Tony@KendallCommunications.net

CROWN CASTLE

9045 River Rd,
Indianapolis, IN 46240

Phone: (317) 249-2028
www.crowncastle.com

Section 6409 Substantial Change Checklist
Towers Outside of the Public Right of Way

The Federal Communications Commission has determined that a modification substantially changes the physical dimension of a wireless tower or base station under 47 U.S.C. § 1455(a) if it meets one of six enumerated criteria under 47 C.F.R. § 1.6100.

Criteria for Towers Outside the Public Rights of Way

YES/NO **NO**	Does the modification increase the height of the tower by more than the greater of: (a) 10% (b) or, the height of an additional antenna array plus separation of up to 20 feet from the top of the nearest existing antenna?
YES/NO **NO**	Does the modification add an appurtenance to the body of the tower that would protrude from the edge of the tower more than 20 feet or more than the width of the tower structure at the level of the appurtenance, whichever is greater?
YES/NO **NO**	Does the modification involve the installation of more than the standard number of new equipment cabinets for the technology involved or add more than four new equipment cabinets?
YES/NO **NO**	Does the modification entail any excavation or deployment outside the current site by more than 30 feet in any direction, not including any access or utility easements?
YES/NO **NO**	Does the modification defeat the concealment elements of the eligible support structure?
YES/NO **NO**	Does the modification violate conditions associated with the siting approval with the prior approval the tower or base station other than as specified in 47 C.F.R. § 1.6100(c)(7)(i) – (iv)?

If all questions in the above section are answered "NO," then the modification does not constitute a substantial change to the existin

Quick Facts

Provides services to approximately 19 million customers

Offers the highest quality service and value on the market

Annual revenue of more than $17 billion

Publicly traded on the NASDAQ Exchange, ticker symbol DISH

Delivers consumer wireless services through Boost Mobile and other brands

Building America's First Smart Network™ to redefine the way people and things conect.

Employs more than 14,000 people in the U.S.

Headquartered in Englewood, Colo.

Our Story

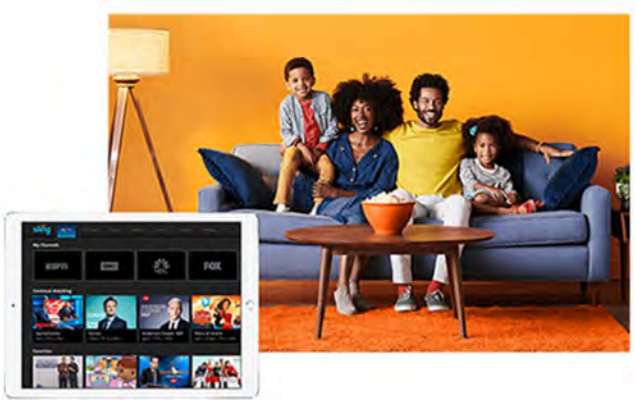
Our journey began with a bold idea: to bring TV to rural America.

DISH was founded on adventure and an unshakable desire to win. It's what drove us to launch satellites into space when people said we couldn't. To take on the world's largest industrial corporation when people said we shouldn't. And to connect millions of Americans to the TV they love when the cable companies wouldn't.

We created a connectivity company that's built to serve and transform.

We believe TV- and technology-loving families shouldn't have to work in IT to operate a remote, mortgage the house to pay for cable, or jump through hoops to watch the shows they love. It's why we invented the world's first DVR, introduced the 2-Year TV Price Guarantee, developed the voice remote and launched Remote Finder. It's why we gave our customers the power to watch TV anywhere and skip the commercials. And it's why our customer satisfaction scores are some of the highest in the industry.

We even disrupted pay TV, the very industry we created.



Embracing adventure means embracing change and finding opportunity. We have a storied history of thinking long term and fearlessly innovating in the name of the consumer. So it wasn't long before we started planning for how the internet would revolutionize pay TV. We launched SLING TV, the world's first live TV streaming platform, in 2015. SLING TV is the leading live, over-the-top (OTT) platform, featuring a cloud DVR and robust add-on programming packages. When integrated with AirTV, SLING TV provides the best mix of live, recorded, pay-per-view and local programming on the OTT market.

Our adventure is just beginning. Our best days are ahead of us.

Over the years, we transformed how generations embrace television. From satellite delivery in rural America to people who stream in urban America.

We continue to strive to innovate our core business and are advancing upon our greatest challenge: We are going to disrupt the wireless industry and change the way the world communicates.

In 2020, we officially entered the consumer wireless industry with the acquisition of Boost Mobile, a company synonymous with value and innovation. Together, we're building a multi-brand wireless telco to upend the retail market and deliver groundbreaking new experiences for all.

We're also building the nation's first cloud-native, Open RAN-compliant 5G network to run the smart cities of the future. 5G will be the lifeblood of a new-world economy, improving quality of life, economic growth, and sustainability for all. Over the next 10 years, we'll be strategically positioned to power the smart cities of the future – smart homes, factories, driverless cars and artificial intelligence – plus the millions upon millions of wearables, sensors, devices and robots that will support them. The 5G Internet of Everything will launch an era of innovation that will revolutionize the world.

December 8, 2022

Nathan L. Schafer
Deputy Clerk-Treasurer
Village of Fox Point
7200 N. Santa Monica Blvd
Fox Point, WI 53217

RE: Planning Review Fee Submittal – DISH Wireless Co-location
8615 Port Washington Rd., Fox Point WI Site # MWMKE00252B

Mr. Schafer

Enclosed please find a $300.00 Application Fee Check for the above referenced project to be heard at the January 3, 2023 Plan Commission Meeting.

Please send me an e-mail confirmation upon receipt of this check.

Thank you very much for your help with this project.

Regards,

Tony Phillips

Tony Phillips
Zoning & Permitting Manager
Kendall Communications for GPD Group
tony@kendallcommunications.net
847-331-3659

VILLAGE OF FOX POINT
7200 N. SANTA MONICA BLVD
FOX POINT WI 53217 414-351-8900

Receipt No: 1.058404 Dec 13, 2022

8615 N Port Washington Road

Previous Balance:	.00
LICENSES & PERMITS - OTHER PERMIT	300.00
10-44540 OTHER PERMIT	
Total:	300.00
CHECK Check No: 2336	300.00
Payor: Kendall Communications	
Total Applied:	300.00
Change Tendered:	.00

12/13/2022 1:35 PM

DISH Wireless L.L.C. SITE ID:

MWMKE00252B

DISH Wireless L.L.C. SITE ADDRESS:

8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

WISCONSIN 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	WISCONSIN CBC/2015 IBC W/ WI AMENDMENTS
MECHANICAL	WISCONSIN CBC/2015 IMC W/ WI AMENDMENTS
ELECTRICAL	WISCONSIN ELECTRICAL CODE/2017 NEC W/ WI AMENDMENTS

SHEET INDEX

SCOPE OF WORK

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

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

GROUND SCOPE OF WORK:
-
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT RACK
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED FIBER NID (IF REQUIRED)
- INSTALL (1) PROPOSED METER

SITE PHOTO

UNDERGROUND SERVICE ALERT - DIGGERS HOTLINE
UTILITY NOTIFICATION CENTER OF WISCONSIN
(800) 242-8511
WWW.DIGGERSHOTLINE.COM

CALL 3 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	NORTH SHORE CENTERS PART
ADDRESS:	555 W BROWN DEER RD #220 BAYSIDE, WI 53217
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	827008
TOWER APP NUMBER:	579464
COUNTY:	MILWAUKEE
LATITUDE (NAD 83):	43° 10' 33.63" N 43.176008 N
LONGITUDE (NAD 83):	87° 54' 54.28" W 87.915078 W
ZONING JURISDICTION:	VILLAGE OF FOX POINT, WI
ZONING DISTRICT:	D
PARCEL NUMBER:	0538989001
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	COMED
TELEPHONE COMPANY:	AT&T

PROJECT DIRECTORY

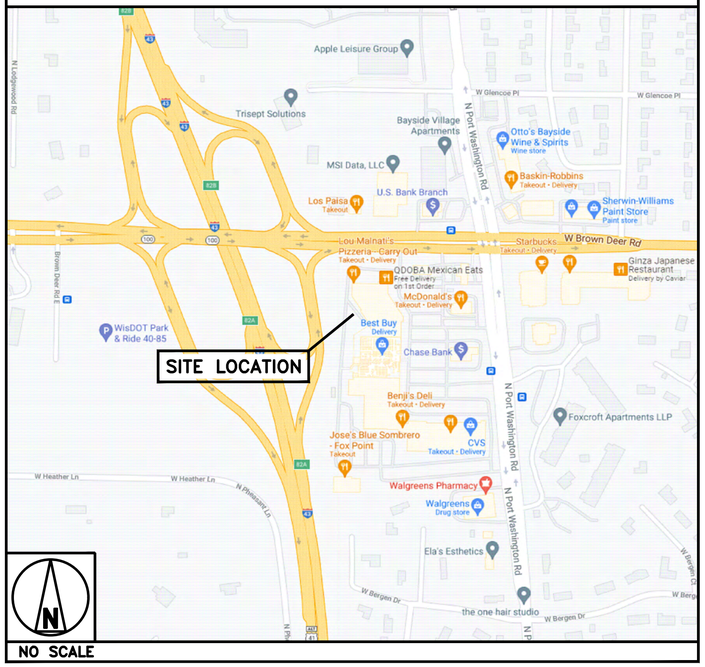
APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (303) 274-6568
SITE DESIGNER:	GPD GROUP, INC. 520 S MAIN ST, SUITE 2534 AKRON, OH 44311 (330) 572-2100
SITE ACQUISITION:	SARAH PARSONS SARAH.PARSONS@CROWNCASTLE.COM
CONSTRUCTION MANAGER:	TBD
RF ENGINEER:	TBD

DIRECTIONS

DIRECTIONS FROM GENERAL MITCHELL INTERNATIONAL AIRPORT:

HEAD EAST TOWARD ARRIVALS / BAGGAGE CLAIM. USE THE LEFT 2 LANES TO TURN SLIGHTLY LEFT ONTO ARRIVALS / BAGGAGE CLAIM. TAKE I-43 N TO W BROWN DEER RD IN BAYSIDE. TAKE EXIT 82A FROM I-43 N. CONTINUE ON W BROWN DEER RD TO YOUR DESTINATION IN RIVER HILLS. MERGE ONTO W BROWN DEER RD. TURN RIGHT. TURN RIGHT. TURN LEFT. DESTINATION WILL BE ON THE LEFT

VICINITY MAP



NO SCALE

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

GPD GROUP, INC.®

520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

DRAWN BY:	CHECKED BY:	APPROVED BY:
ACM	CJM	MRL

RFDS REV #: ---

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/08/2022	ISSUED FOR REVIEW

A&E PROJECT NUMBER

2021724.75.827008.02

DISH Wireless L.L.C.
PROJECT INFORMATION

MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE

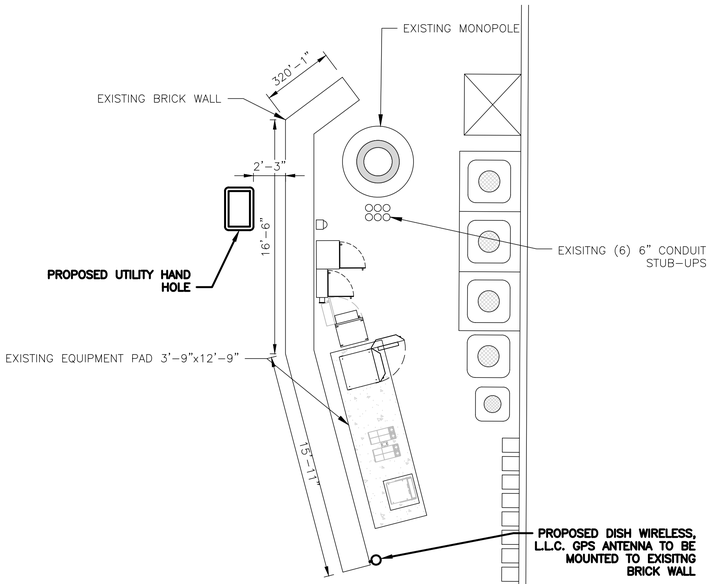
TITLE SHEET

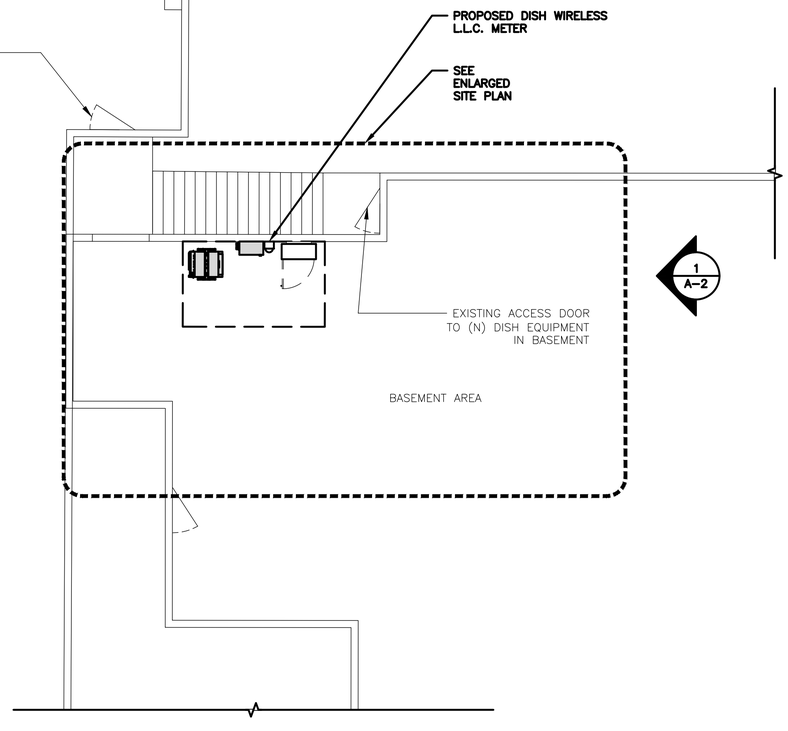
SHEET NUMBER

T-1

NOTES

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



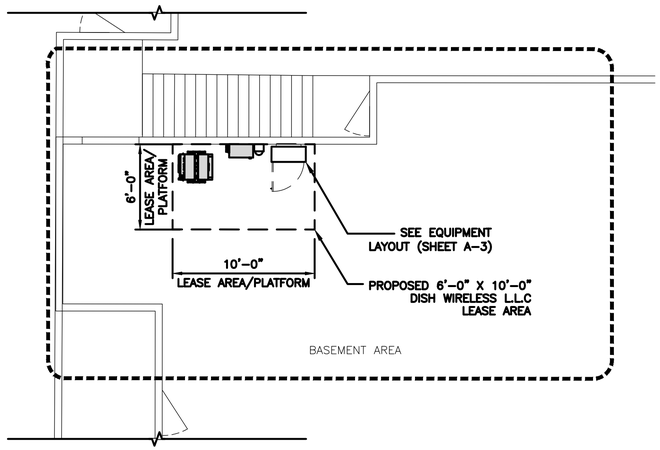


OVERALL SITE PLAN

3/16"=1'-0" | 1

NOTES

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



ENLARGED SITE PLAN

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

DETAIL NOT USED

NO SCALE | 3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

GPD GROUP, INC.

520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

DRAWN BY:	CHECKED BY:	APPROVED BY:
ACM	CJM	MRL

RFDS REV #: ---

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/08/2022	ISSUED FOR REVIEW

A&E PROJECT NUMBER

2021724.75.827008.02

DISH Wireless L.L.C.
PROJECT INFORMATION

MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE

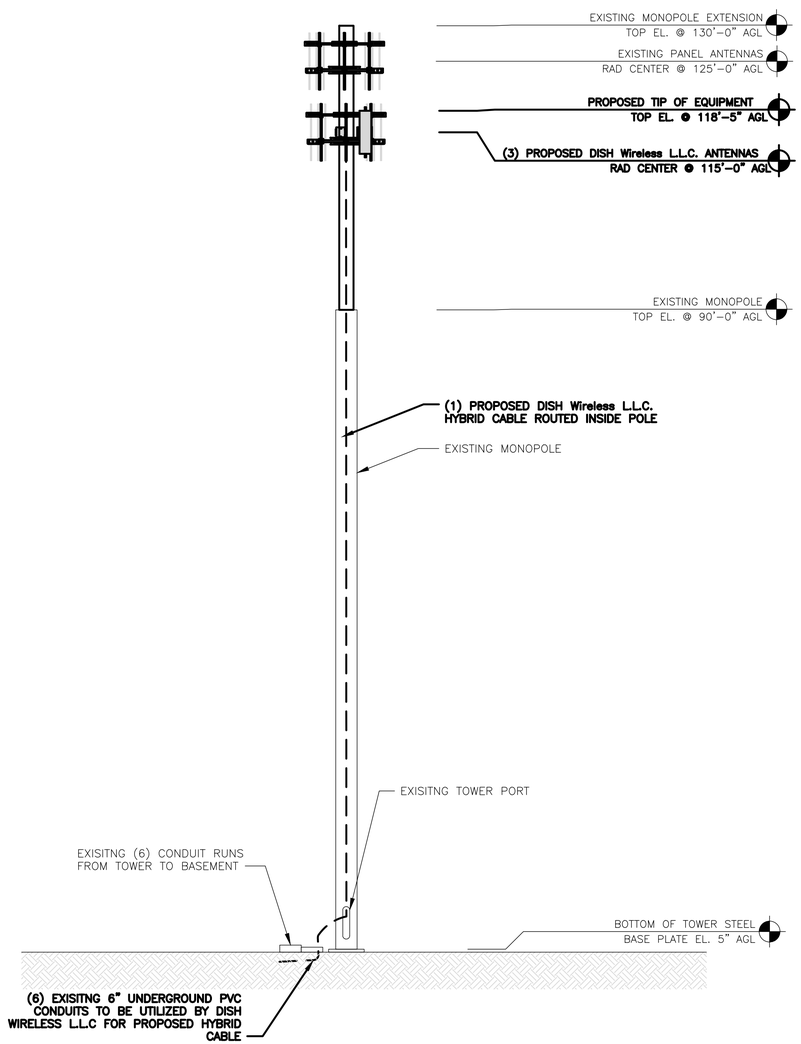
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER

A-1

NOTES

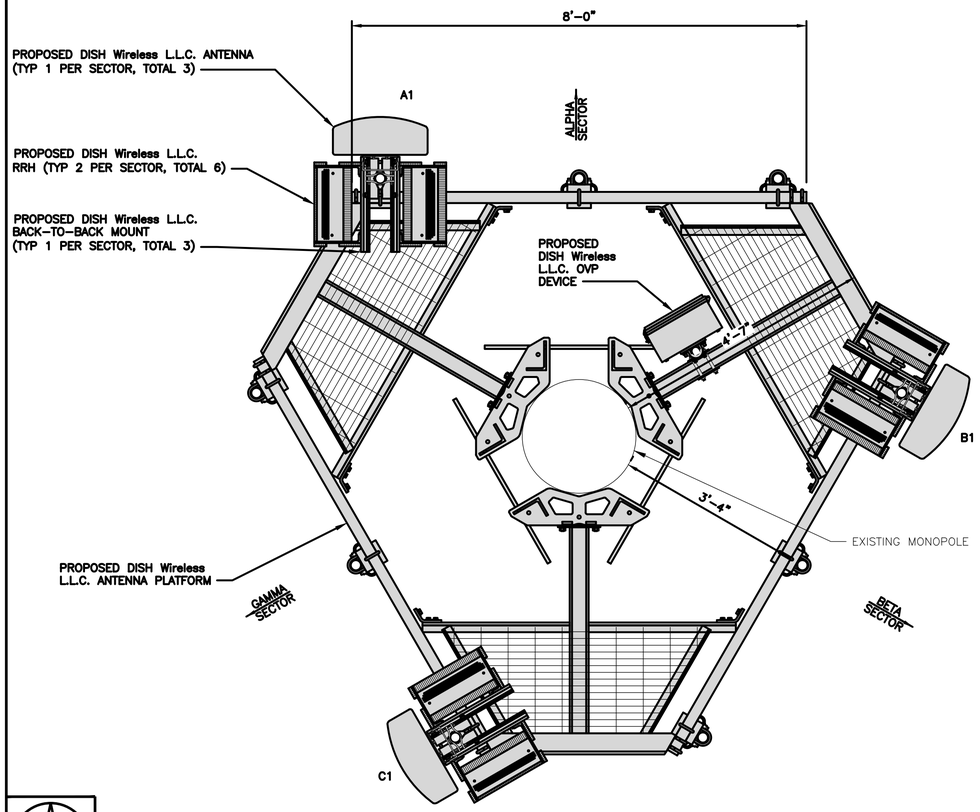
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.



PROPOSED NORTHEAST ELEVATION

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

1



ANTENNA LAYOUT

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

2

SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	0°	115'-0"	(1) HIGH-CAPACITY HYBRID CABLE (200' LONG)
BETA	B1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	120°	115'-0"	
GAMMA	C1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" x 20.0"	240°	115'-0"	

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

NOTES

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

ANTENNA SCHEDULE

NO SCALE

3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

GPD GROUP, INC.®

520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

DRAWN BY:	CHECKED BY:	APPROVED BY:
ACM	CJM	MRL

RFDS REV #: ---

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/08/2022	ISSUED FOR REVIEW

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2021724.75.827008.02

DISH Wireless L.L.C.
PROJECT INFORMATION

MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE

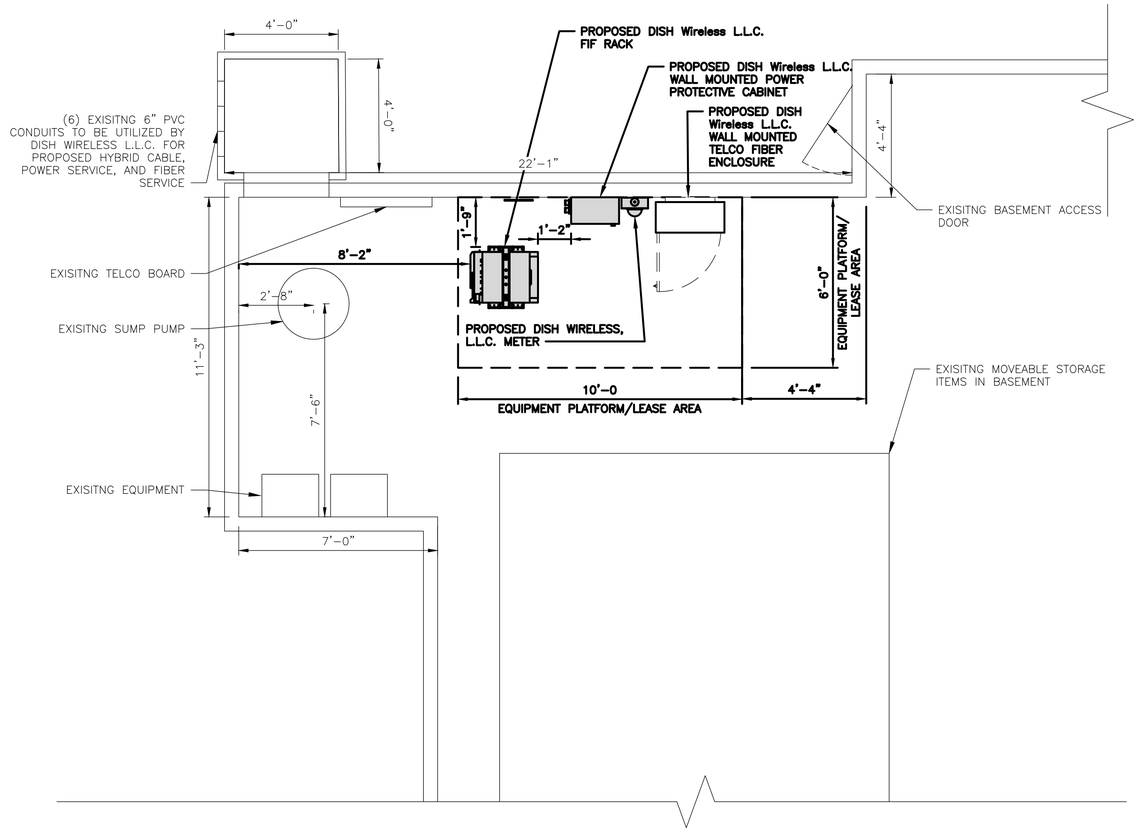
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

A-2

NOTES

1. CONTRACTOR TO RELOCATED MOVEABLE STORAGE ITEMS TO CLEAR SPACE FOR (N) DISH Wireless L.L.C LEASE AREA AND EQUIPMENT



EQUIPMENT PLAN — 12" 6" 0 1' 2' 3' 4' 5' 6' 7' (3/8"=1'-0") — 1

DETAIL NOT USED — 2

DETAIL NOT USED — 3

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

GPD GROUP, INC.®

520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

DRAWN BY:	CHECKED BY:	APPROVED BY:
ACM	CJM	MRL

RFDS REV #: ---

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/08/2022	ISSUED FOR REVIEW

A&E PROJECT NUMBER

2021724.75.827008.02

DISH Wireless L.L.C.
PROJECT INFORMATION

MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE

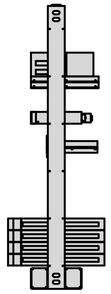
EQUIPMENT PLAN

SHEET NUMBER

A-3

FIF RACK LOADED	
DIMENSIONS (HxWxD):	83.99"x26"x28.5"
WEIGHT:	±800 lbs

PLAN



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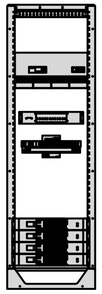
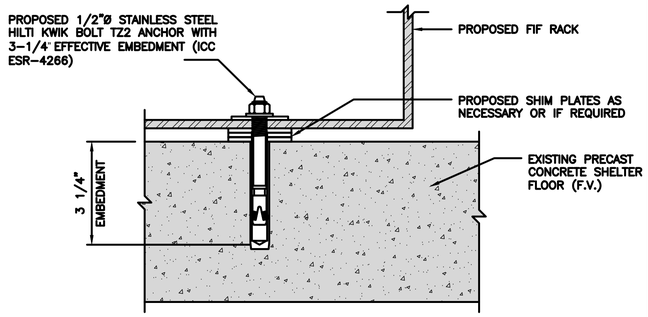


FRONT

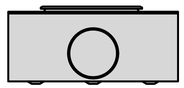
FIF RACK DETAIL | NO SCALE | 1



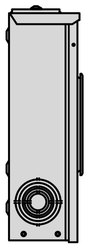
FIF RACK ANCHORAGE | NO SCALE | 2

NOT USED | NO SCALE | 3

EATON METER SOCKET UNRRS213BEUSE	
METER SOCKET TYPE	RING
ENCLOSURE DIM (HxWxD)	16"x12"x6"
MAIN AMPERE RATING	200A
WEIGHT	18 LBS



PLAN



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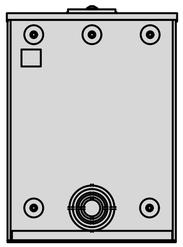

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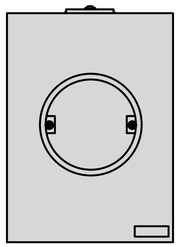
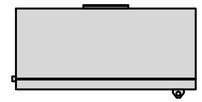


FRONT

METER SOCKET DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

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



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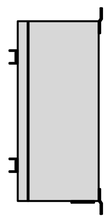

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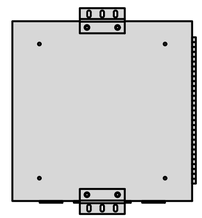

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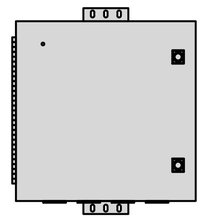
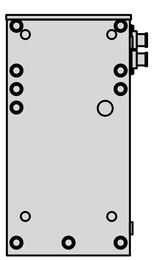


FRONT

FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

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

TOP



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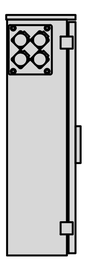

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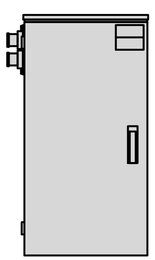

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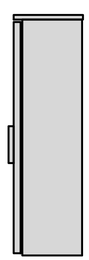

SIDE

POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

REFERENCE ONLY

DRAWN BY:	CHECKED BY:	APPROVED BY:
ACM	CJM	MRL

RFDS REV #: ---

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DISH Wireless L.L.C.
PROJECT INFORMATION

MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE

EQUIPMENT DETAILS

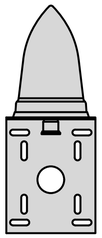
SHEET NUMBER

A-4

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

TOP

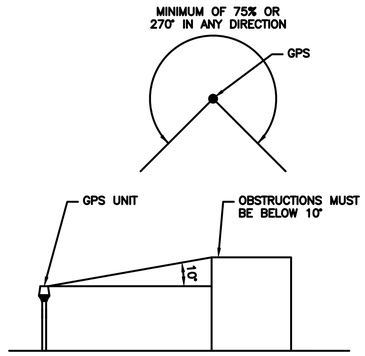
BACK



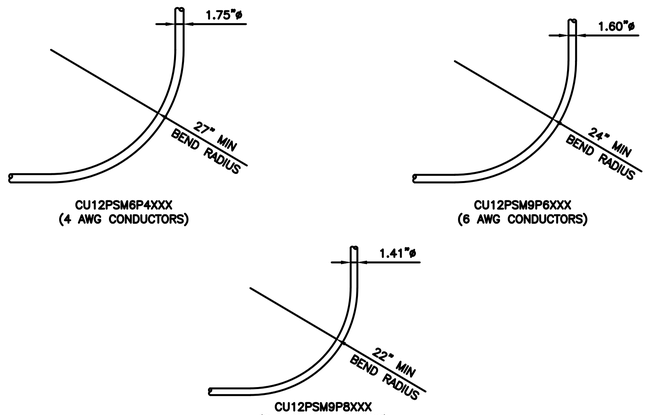
SIDE

THIS DETAIL HAS NOT BEEN REVIEWED BY THE STAMPING PARTY. THEREFORE, THE STAMPING PARTY MAKES NO REPRESENTATION(S) WITH RESPECT TO ITS CONTENTS, AND SHALL NOT BE LIABLE FOR SUCH. THIS DETAIL IS FOR REFERENCE ONLY. ANY RELIANCE ON THIS DETAIL SHALL BE AT THE RELYING PARTY(IES)'S OWN RISK AND HEREBY WAIVES ANY AND ALL CLAIM(S) RELATED TO THE EXISTENCE OF THE STAMP OR OTHERWISE.

GPS DETAIL | NO SCALE | 1



GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

NOT USED | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

dish wireless.

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DISH Wireless L.L.C.
PROJECT INFORMATION

MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

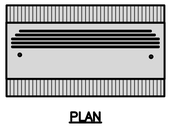
SHEET TITLE

EQUIPMENT DETAILS

SHEET NUMBER

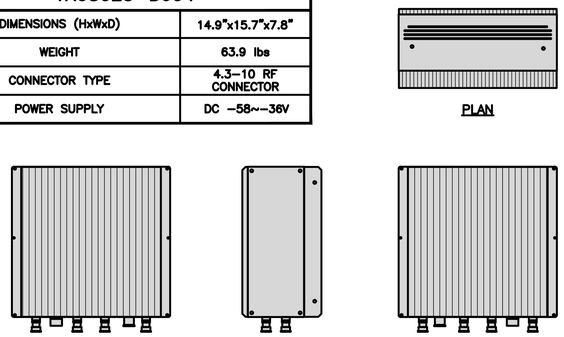
A-5

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



RRH DETAIL | NO SCALE | 1

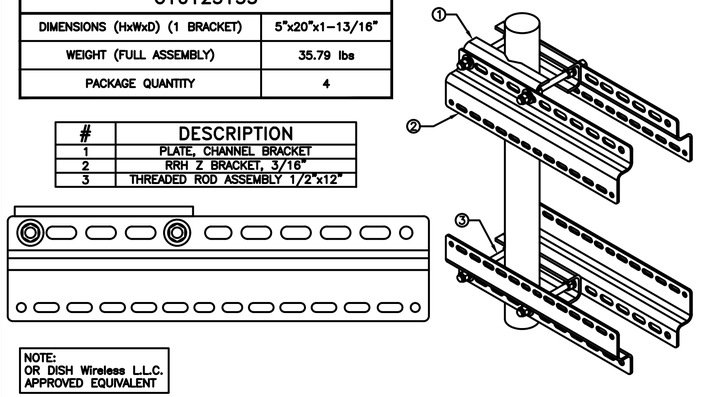
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



RRH DETAIL | NO SCALE | 2

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

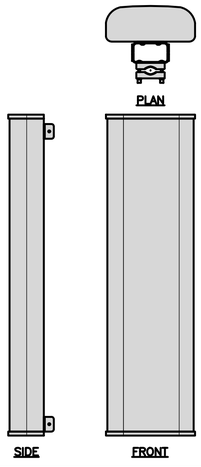
#	DESCRIPTION
1	PLATE, CHANNEL BRACKET
2	RRH Z BRACKET, 3/16"
3	THREADED ROD ASSEMBLY 1/2"x12"



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

RRH MOUNT DETAIL | NO SCALE | 3

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



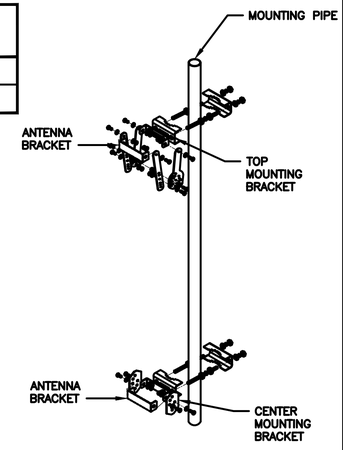
ANTENNA DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

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

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

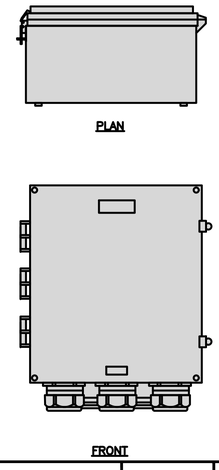
ANTENNA BRACKET NOT PART OF KIT



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

ANTENNA BRACKET DETAIL | NO SCALE | 6

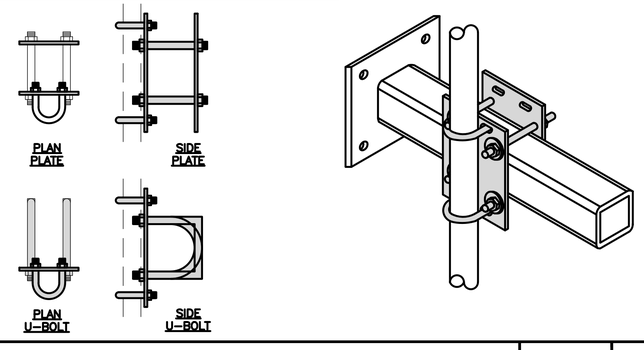
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 7

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

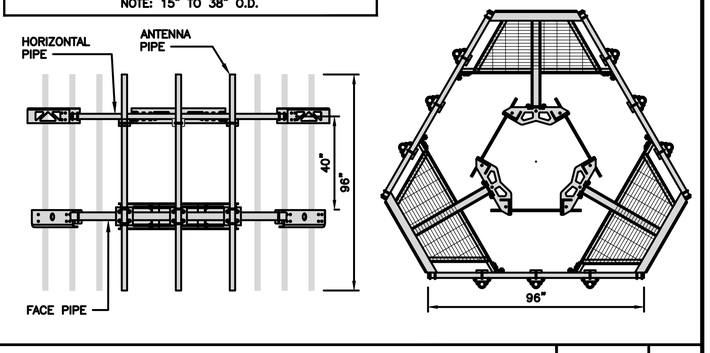
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT



RRH/OVP MOUNT DETAIL | NO SCALE | 8

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

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



ANTENNA PLATFORM DETAIL | NO SCALE | 9

dish wireless.
5701 SOUTH SANTA FE DRIVE
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520 South Main Street, Suite 2531
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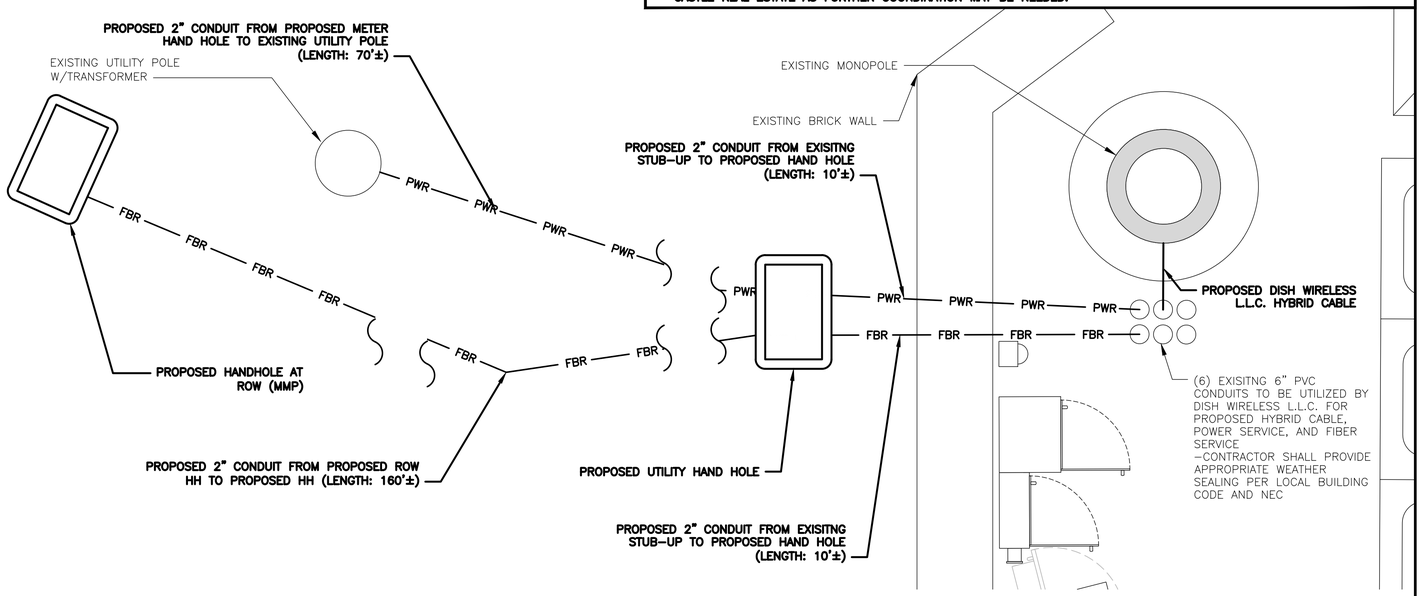
FOX POINT, WI 53217

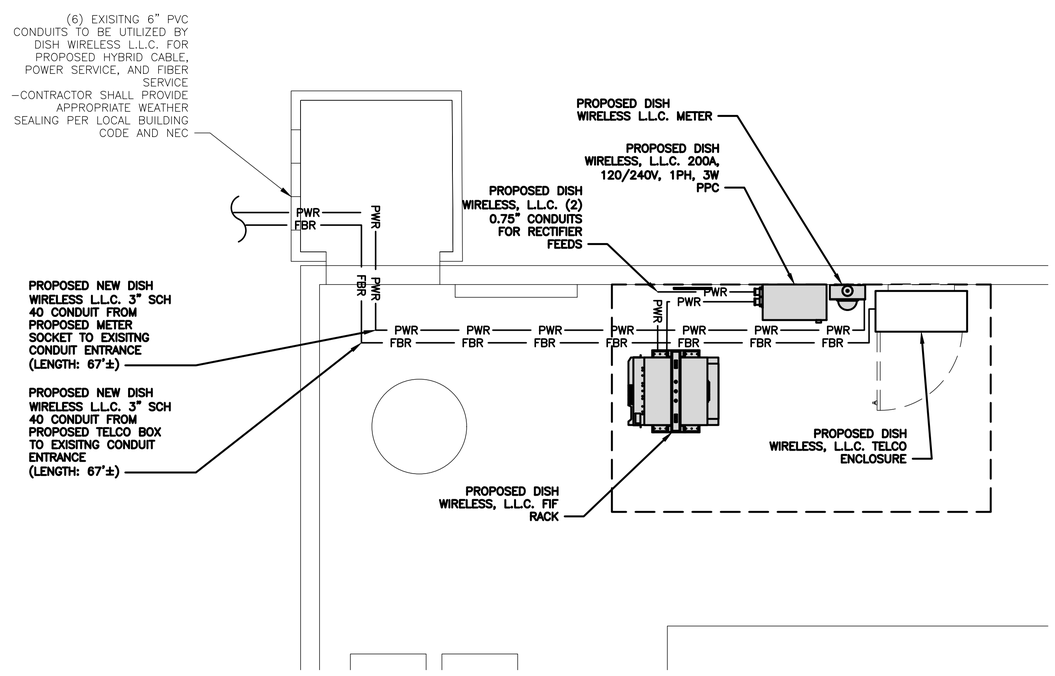
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. DUE TO UTILITY EASEMENT RIGHTS SPECIFIED IN THE GROUND LEASE, CUSTOMER MAY INSTALL EQUIPMENT WITHIN SPECIFIED UTILITY EASEMENT AREA. "PWR" AND "FBR" PATH DEPICTED ON A–1 AND E–1 REPRESENT PLANNED ROUTING BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO A SURVEY, EXHIBITS, METES AND BOUNDS OF THE UTILITY EASEMENT, 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 MATERIALLY INCONSISTENT WITH THE "PWR" AND "FBR" PATH DEPICTED ON A–1 AND E–1 AND SAID VARIANCE IS NOT NOTED ON CDS, PLEASE NOTIFY CROWN CASTLE REAL ESTATE AS FURTHER COORDINATION MAY BE NEEDED.





UTILITY ROUTE PLAN

12" 6" 0 1' 2' 3' 4' 5'
1/2"=1'–0"

1

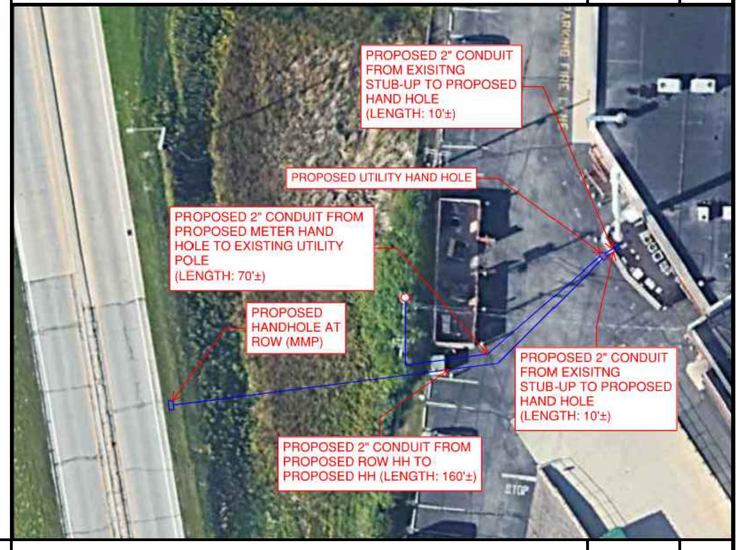
DC POWER WIRING SHALL BE COLOR CODED AT EACH END FOR IDENTIFYING +24V AND –48V CONDUCTORS. RED MARKINGS SHALL IDENTIFY +24V AND BLUE MARKINGS SHALL IDENTIFY –48V.

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

ELECTRICAL NOTES

NO SCALE

2



ARIEL ROUTE

NO SCALE

3

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SHEET TITLE

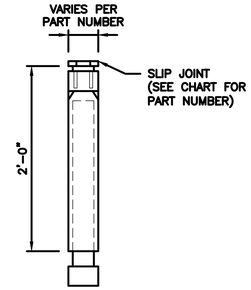
ELECTRICAL/FIBER ROUTE PLAN AND NOTES

SHEET NUMBER

E-1

CARLON EXPANSION FITTINGS

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

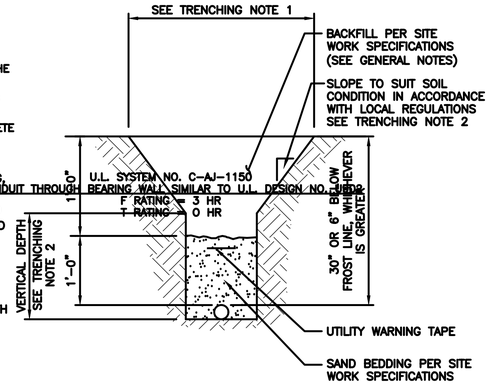


NOTE:
CONTRACTOR TO INSTALL EXPANSION FITTING SLIP JOINT AT METER CENTER CONDUIT TERMINATION, AS PER LOCAL UTILITY POLICY, ORDINANCE AND/OR SPECIFIED REQUIREMENT.

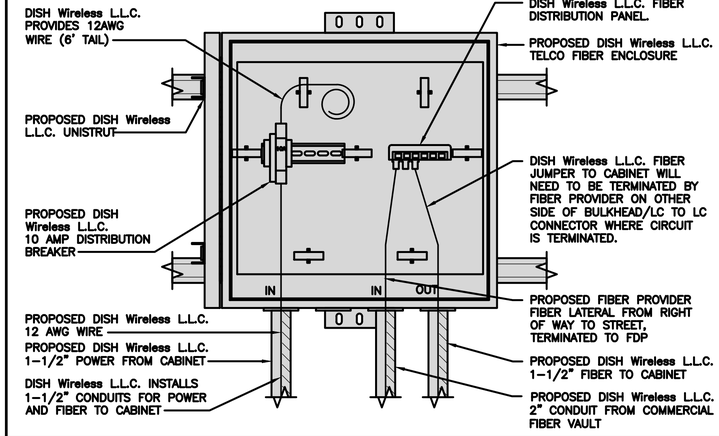
EXPANSION JOINT DETAIL | NO SCALE | 1

TRENCHING NOTES

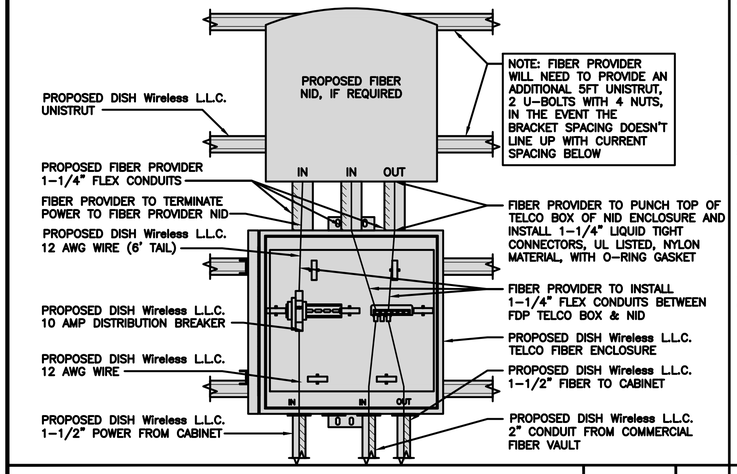
1. CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
2. TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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



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

A. FLOOR OR WALL ASSEMBLY : MINIMUM 4-1/2" THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAMETER OF OPENING IS 4". (SEE CONCRETE BLOCKS CAT2) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.

B. THROUGH PENETRATIONS : ONE METALLIC PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE ANNULAR SPACE SHALL BE MINIMUM 0". (POINT CONTACT) TO MAXIMUM 1-3/8". THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR CONDUITS MAY BE USED:
   a. STEEL PIPE-NOMINAL 6" DIAMETER (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE
   b. IRON PIPE-NOMINAL 6" DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   c. CONDUIT – NOMINAL 4" DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR NOMINAL 3-1/2" DIAMETER (OR SMALLER) STEEL CONDUIT.

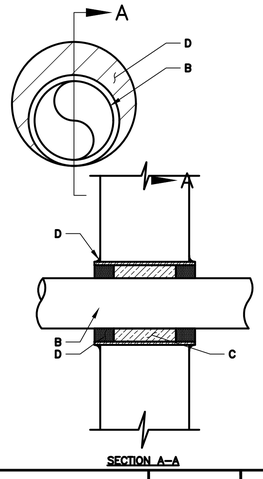
C. PACKING MATERIAL: MINIMUM 6" THICKNESS OF MIN 4.0 PCF MINERAL WOOL BATTING INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

D. FILL, VOID, OR CAVITY MATERIAL*: SEALANT: MINIMUM 1/4" THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR AND WITH BOTH SURFACES OF WALL AT THE POINT CONTACT LOCATION BETWEEN PIPE AND CONCRETE. A MINIMUM 1/2" DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE CONCRETE/PIPE INTERFACE ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL. W-RATING APPLIES ONLY WHEN CP601S OR CP604 SEALANT IS USED.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC. : CP601S, CP604, CP606, OR FS-ONE SEALANT.

* BEARING THE UL CLASSIFICATION MARK

INSTALLER NOTES:
1. IF EXISTING CONSTRUCTION VARIES FROM THIS DETAIL, AN EQUAL 3-HR U.L. PENETRATION APPROPRIATE FOR THE EXISTING WALL TYPE SHALL BE CONSTRUCTED
2. CC SHALL USE NON-SHRINKING CAULK TO WEATHERSEAL ALL PENETRATIONS INTO OR THRU SHELTER WALL.



SECTION A-A

WALL PENETRATION DETAIL | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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

GPD GROUP, INC.®
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

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PRELIMINARY DOCUMENTS

SUBMITTALS

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A&E PROJECT NUMBER
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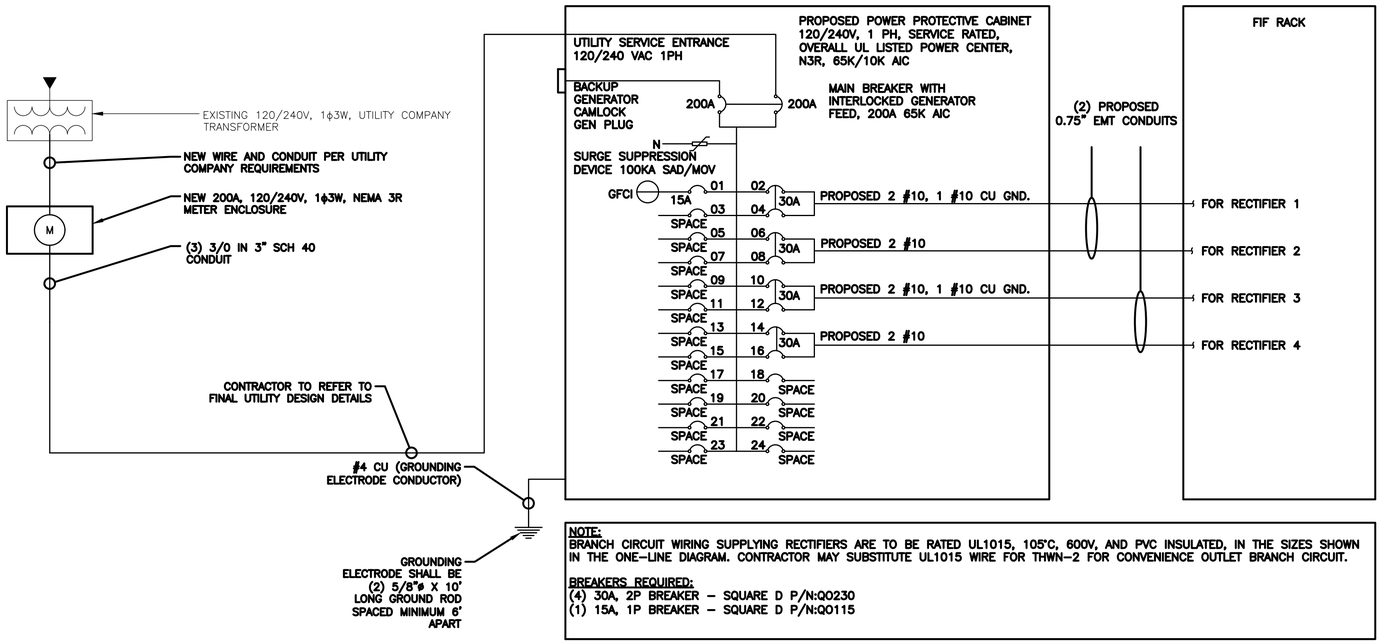
DISH Wireless L.L.C.
PROJECT INFORMATION
MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



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

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

NOTES

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

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

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

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

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

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

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

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

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

PPC ONE-LINE DIAGRAM — NO SCALE — 1

PROPOSED PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	30A	2880		ABB/GE INFINITY RECTIFIER 1
-SPACE-				3	B	4			2880	
-SPACE-				5	A	6	30A	2880		ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8			2880	
-SPACE-				9	A	10	30A	2880		ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12			2880	
-SPACE-				13	A	14	30A	2880		ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16			2880	
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	0						11520	11520	
200A MCB, 1ϕ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			11700		11700		VOLTAGE AMPS			
			98		98		AMPS			
			98				MAX AMPS			
			123				MAX 125%			

PANEL SCHEDULE — NO SCALE — 2

NOT USED — NO SCALE — 3

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

GPD GROUP, INC.®
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

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2021724.75.827008.02

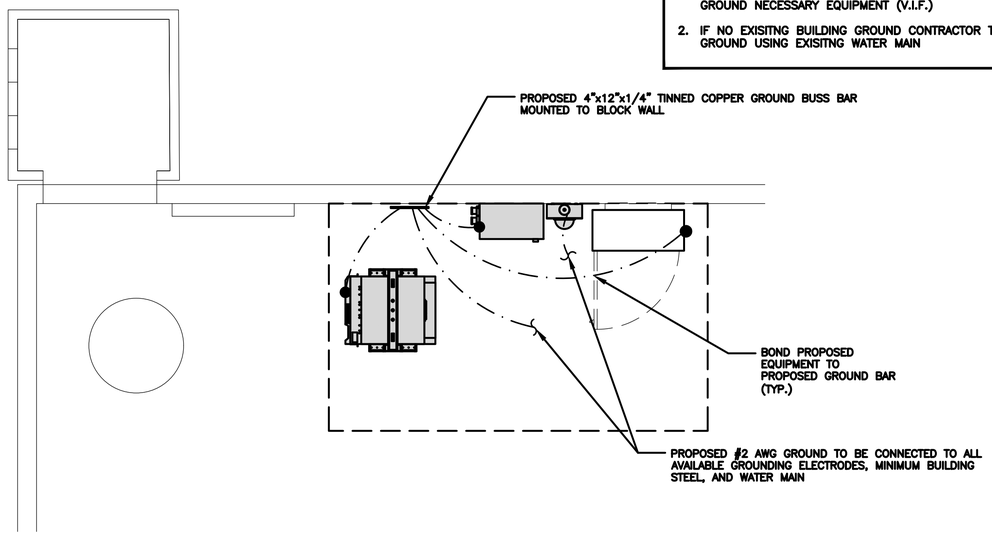
DISH Wireless L.L.C.
PROJECT INFORMATION
MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

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

SHEET NUMBER
E-3

NOTES

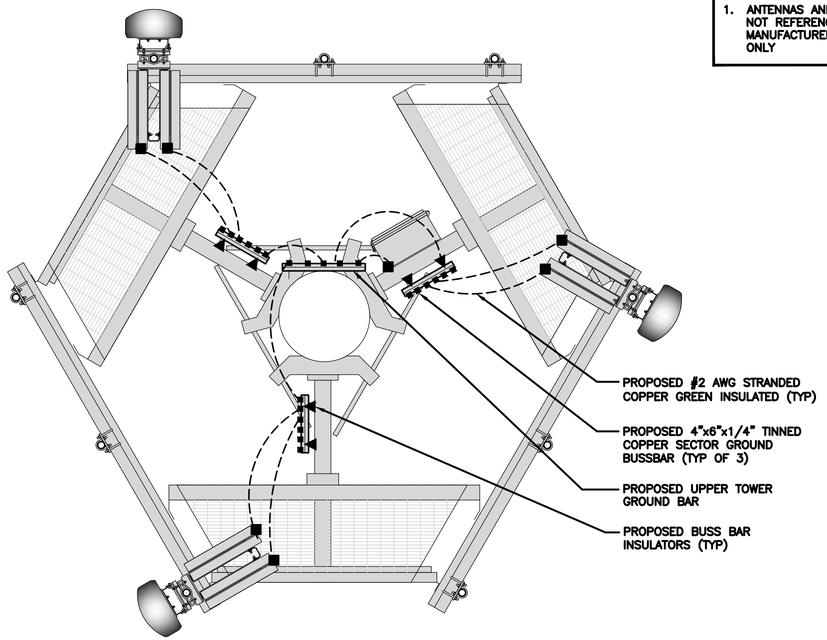
1. CONTRACTOR TO USE EXISITNG BUILDING GROUND TO GROUND NECESSARY EQUIPMENT (V.I.F.)
2. IF NO EXISITNG BUILDING GROUND CONTRACTOR TO GROUND USING EXISITNG WATER MAIN



NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2

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

GROUNDING LEGEND

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

GROUNDING KEY NOTES

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GROUNDING KEY NOTES | NO SCALE | 3

DISH Wireless L.L.C. TEMPLATE VERSION 38 – 07/23/2021

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

GPD GROUP, INC.®
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

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DISH Wireless L.L.C.
PROJECT INFORMATION

MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE

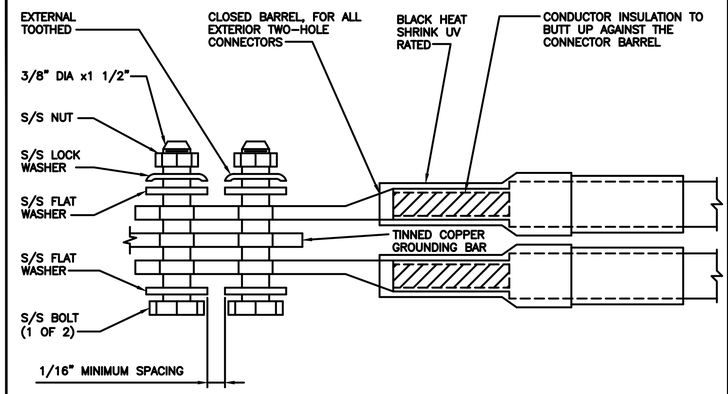
GROUNDING PLANS AND NOTES

SHEET NUMBER

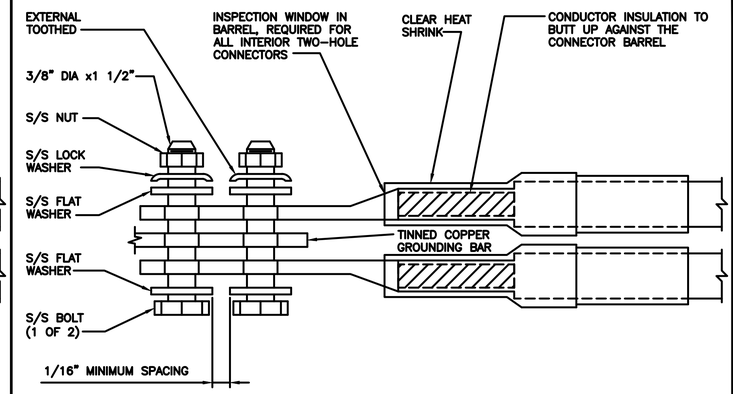
G-1

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).

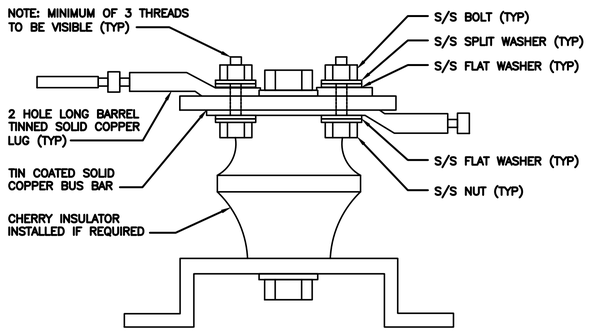
TYPICAL GROUNDING NOTES | NO SCALE | 1



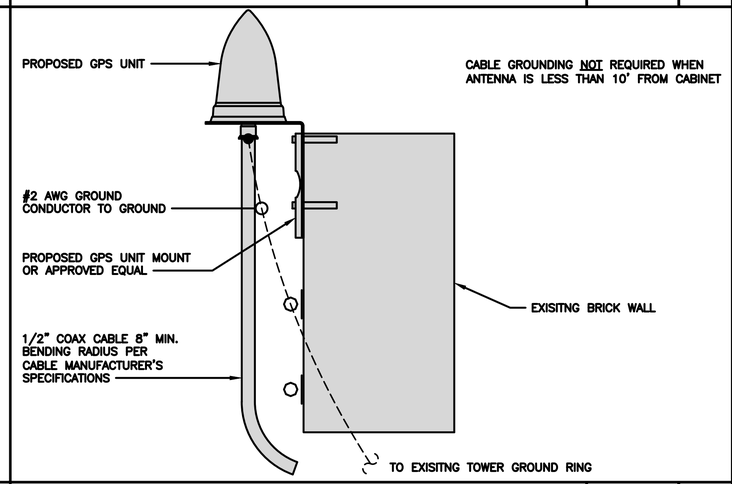
TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4



TYPICAL GPS UNIT GROUNDING | 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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8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER

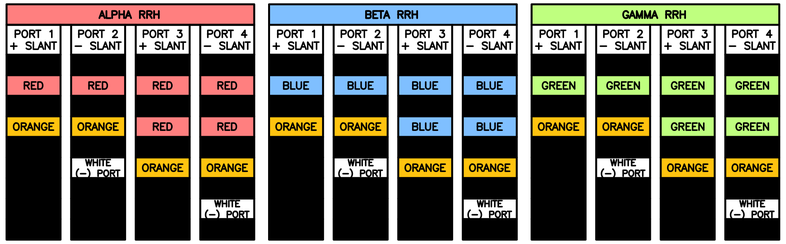
G-2

RF JUMPER COLOR CODING

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

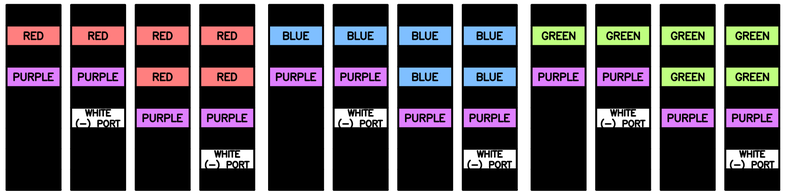
LOW-BAND RRH –
(600MHz N71 BASEBAND) +
(850MHz N26 BAND) +
(700MHz N29 BAND) – OPTIONAL PER MARKET

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



MID-BAND RRH –
(AWS BANDS N66+N70)

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

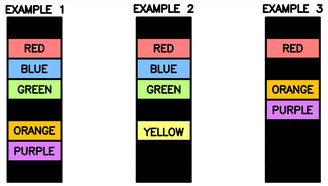


HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED
ALONG WITH FREQUENCY BANDS

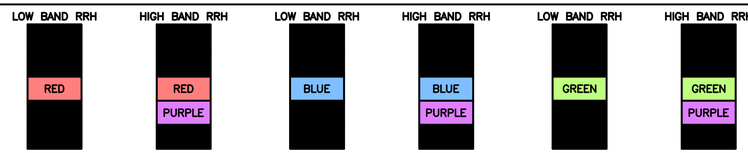
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS
ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS

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



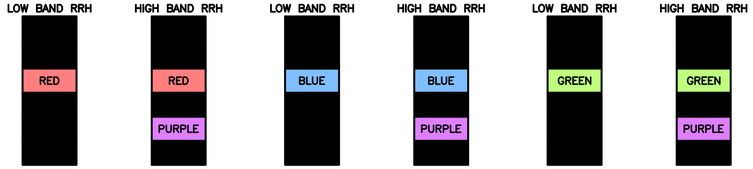
FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR
STRIPE ONLY

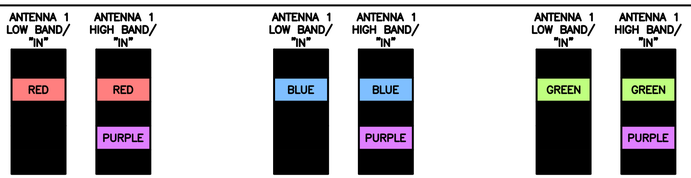


POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR
STRIPE ONLY



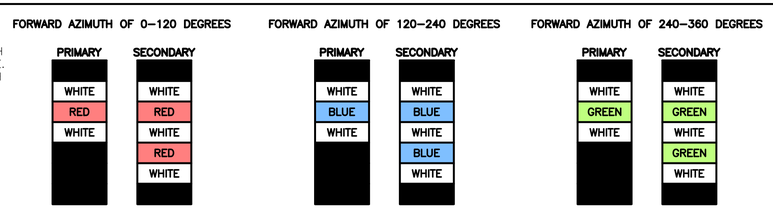
RET MOTORS AT ANTENNAS



MICROWAVE RADIO LINKS

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

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



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

AWS
(N66+N70+H-BLOCK)
PURPLE

CBRS TECH
(3 GHz)
YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH
WHITE

ALPHA SECTOR
RED

BETA SECTOR
BLUE

GAMMA SECTOR
GREEN

COLOR IDENTIFIER	NO SCALE	2

NOT USED	NO SCALE	3

RF CABLE COLOR CODES	NO SCALE	1

NOT USED	NO SCALE	4

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

GPD GROUP, INC.®

520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

FOR REFERENCE ONLY

DRAWN BY:	CHECKED BY:	APPROVED BY:
ACM	CJM	MRL

RFDS REV #: ---

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2021724.75.827008.02

DISH Wireless L.L.C.
PROJECT INFORMATION

MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE

RF
CABLE COLOR CODES

SHEET NUMBER

RF-1

EXOTHERMIC CONNECTION

MECHANICAL CONNECTION

BUSS BAR INSULATOR

CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM

EXOTHERMIC WITH INSPECTION SLEEVE

GROUNDING BAR

GROUND ROD

TEST GROUND ROD WITH INSPECTION SLEEVE

SINGLE POLE SWITCH

DUPLEX RECEPTACLE

DUPLEX GFCI RECEPTACLE

FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48–T8

SMOKE DETECTION (DC)

EMERGENCY LIGHTING (DC)

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

CHAIN LINK FENCE

WOOD/WROUGHT IRON FENCE

WALL STRUCTURE

LEASE AREA

PROPERTY LINE (PL)

SETBACKS

ICE BRIDGE

CABLE TRAY

WATER LINE

UNDERGROUND POWER

UNDERGROUND TELCO

OVERHEAD POWER

OVERHEAD TELCO

UNDERGROUND TELCO/POWER

ABOVE GROUND POWER

ABOVE GROUND TELCO

ABOVE GROUND TELCO/POWER

WORKPOINT

SECTION REFERENCE

DETAIL REFERENCE

LEGEND

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

ABBREVIATIONS

dish wireless.

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PROJECT INFORMATION

MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE

LEGEND AND ABBREVIATIONS

SHEET NUMBER

GN-1

SIGN TYPES		
TYPE	COLOR	COLOR CODE PURPOSE
INFORMATION	GREEN	"INFORMATIONAL SIGN" TO NOTIFY OTHERS OF SITE OWNERSHIP & CONTACT NUMBER AND POTENTIAL RF EXPOSURE.
NOTICE	BLUE	"NOTICE BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
CAUTION	YELLOW	"CAUTION BEYOND THIS POINT" RF FIELDS BEYOND THIS POINT MAY EXCEED THE FCC GENERAL PUBLIC EXPOSURE LIMIT. OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)
WARNING	ORANGE/RED	"WARNING BEYOND THIS POINT" RF FIELDS AT THIS SITE EXCEED FCC RULES FOR HUMAN EXPOSURE. FAILURE TO OBEY ALL POSTED SIGNS AND SITE GUIDELINES FOR WORKING IN RF ENVIRONMENTS COULD RESULT IN SERIOUS INJURY. IN ACCORDANCE WITH FEDERAL COMMUNICATIONS COMMISSION RULES ON RADIO FREQUENCY EMISSIONS 47 CFR-1.1307(b)

SIGN PLACEMENT:

- RF SIGNAGE PLACEMENT SHALL FOLLOW THE RECOMMENDATIONS OF AN EXISTING EME REPORT, CREATED BY A THIRD PARTY PREVIOUSLY AUTHORIZED BY DISH Wireless L.L.C.
- INFORMATION SIGN (GREEN) SHALL BE LOCATED ON EXISTING DISH Wireless L.L.C EQUIPMENT.
  A) IF THE INFORMATION SIGN IS A STICKER, IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C EQUIPMENT CABINET.
  B) IF THE INFORMATION SIGH IS A METAL SIGN IT SHALL BE PLACED ON EXISTING DISH Wireless L.L.C H-FRAME WITH A SECURE ATTACH METHOD.
- IF EME REPORT IS NOT AVAILABLE AT THE TIME OF CREATION OF CONSTRUCTION DOCUMENTS; PLEASE CONTACT DISH Wireless L.L.C. CONSTRUCTION MANAGER FOR FURTHER INSTRUCTION ON HOW TO PROCEED.

NOTES:

1. FOR DISH Wireless L.L.C. LOGO, SEE DISH Wireless L.L.C. DESIGN SPECIFICATIONS (PROVIDED BY DISH Wireless L.L.C.)
2. SITE ID SHALL BE APPLIED TO SIGNS USING "LASER ENGRAVING" OR ANY OTHER WEATHER RESISTANT METHOD (DISH Wireless L.L.C. APPROVAL REQUIRED)
3. TEXT FOR SIGNAGE SHALL INDICATE CORRECT SITE NAME AND NUMBER AS PER DISH Wireless L.L.C. CONSTRUCTION MANAGER RECOMMENDATIONS.
4. CABINET/SHELTER MOUNTING APPLICATION REQUIRES ANOTHER PLATE APPLIED TO THE FACE OF THE CABINET WITH WATER PROOF POLYURETHANE ADHESIVE
5. ALL SIGNS WILL BE SECURED WITH EITHER STAINLESS STEEL ZIP TIES OR STAINLESS STEEL TECH SCREWS
6. ALL SIGNS TO BE 8.5"x11" AND MADE WITH 0.04" OF ALUMINUM MATERIAL

INFORMATION

This is an access point to an area with transmitting antennas.

Obey all signs and barriers beyond this point.
Call the DISH Wireless L.L.C. NOC at 1-866-624-6874

Site ID: _____

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

NOTICE

Transmitting Antenna(s)

Radio frequency fields beyond this point MAY *EXCEED* the FCC Occupational exposure limit.

Obey all posted signs and site guidelines for working in radio frequency environments.

Call the DISH Wireless L.L.C. NOC at 1-866-624-6874 prior to working beyond this point.

Site ID: _____

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

CAUTION

Transmitting Antenna(s)

Radio frequency fields beyond this point MAY *EXCEED* the FCC Occupational exposure limit.

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dish

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Site ID: _____

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

RF SIGNAGE

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

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DISH Wireless L.L.C.
PROJECT INFORMATION
MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE
RF SIGNAGE

SHEET NUMBER
GN-2

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

GPD GROUP, INC.®

520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

DRAWN BY:	CHECKED BY:	APPROVED BY:
ACM	CJM	MRL

RFDS REV #: ---

PRELIMINARY DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	09/08/2022	ISSUED FOR REVIEW

A&E PROJECT NUMBER

2021724.75.827008.02

DISH Wireless L.L.C.
PROJECT INFORMATION

MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

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.

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5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

GPD GROUP, INC.®

520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

DRAWN BY:	CHECKED BY:	APPROVED BY:
ACM	CJM	MRL

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A&E PROJECT NUMBER

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DISH Wireless L.L.C.
PROJECT INFORMATION

MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-4

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.

ELECTRICAL INSTALLATION NOTES:

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

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

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

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

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

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

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

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

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

8. TIE WRAPS ARE NOT ALLOWED.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

GPD GROUP, INC.®

520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

DRAWN BY:	CHECKED BY:	APPROVED BY:
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PRELIMINARY DOCUMENTS

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A&E PROJECT NUMBER

2021724.75.827008.02

DISH Wireless L.L.C.
PROJECT INFORMATION

MWMKE00252B
8615 N PORT WASHINGTON RD
FOX POINT, WI 53217

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-5

Date: **December 10, 2021**

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***DISH Network* Co-Locate Site Number:**	MWMKE00252B
Crown Castle Designation:	**BU Number:**	827008
	Site Name:	River Point Shopping Cent
	JDE Job Number:	678778
	Work Order Number:	2052861
	Order Number:	579464 Rev. 7
Engineering Firm Designation:	**Crown Castle Project Number:**	2052861
Site Data:	**8615 N Port Washington Rd, Fox Point, Milwaukee County, WI** **Latitude *43° 10' 33.63"*, Longitude *-87° 54' 54.28"*** **130 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:

LC4.7: Proposed Equipment Configuration with Proposed Modifications **Sufficient Capacity**

This analysis utilizes an ultimate 3-second gust wind speed of 115 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Nicholas A. Palladino

Respectfully submitted by:

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

Maribel Dentinger
Digitally signed by Maribel Dentinger
Date: 2021.12.14 10:55:42 -05'00'

WISCONSIN
MARIBEL DENTINGER
E-44782-6
PITTSBURGH PA
PROFESSIONAL ENGINEER

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 130 ft Monopole tower designed by PIROD MANUFACTURES INC. The 40-ft canister section is considered to be replaced by a proposed 40-ft tower extension in this analysis, maintaining the overall tower height of 130-ft.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	115 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	40 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)
115.0	115.0	3	fujitsu	TA08025-B604	1	1-1/2
		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)
125.0	125.0	3	andrew	HBXX-6516DS-A2M w/ Mount Pipe	6 1 2	7/8 3/8 1-1/2
		2	commscope	HCS 2.0 Part 1		
		3	nokia	AEHC w/ Mount Pipe		
		3	nokia	AHFIG_TMO		
		1	tower mounts	Sabre M.O.V.E Platform		
115.0	115.0	-	-	-	6	7/8

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	3499149	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	3903109	CCISITES
4-TOWER MANUFACTURER DRAWINGS	3499150	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	9823584	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

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

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	130 - 90	Pole	P24x.375	1	-10.30	920.56	39.9	Pass
L2	90 - 60	Pole	P36x.375	2	-15.79	1564.60	35.1	Pass
L3	60 - 30	Pole	P36x.375	3	-21.39	1564.60	57.2	Pass
L4	30 - 0	Pole	P36x.375	4	-27.10	1564.60	81.4	Pass
							Summary	
						Pole (L4)	81.4	Pass
						Rating =	81.4	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC4.7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	80.8	Pass
1	Base Plate	0	88.2	Pass
1	Base Foundation (Structure)	0	42.0	Pass
1	Base Foundation (Soil Interaction)	0	17.9	Pass
1	Flange Connection	90	32.8	Pass
1	Flange Connection	60	54.4	Pass
1	Flange Connection	30	88.8	Pass

Structure Rating (max from all components) =	88.8%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

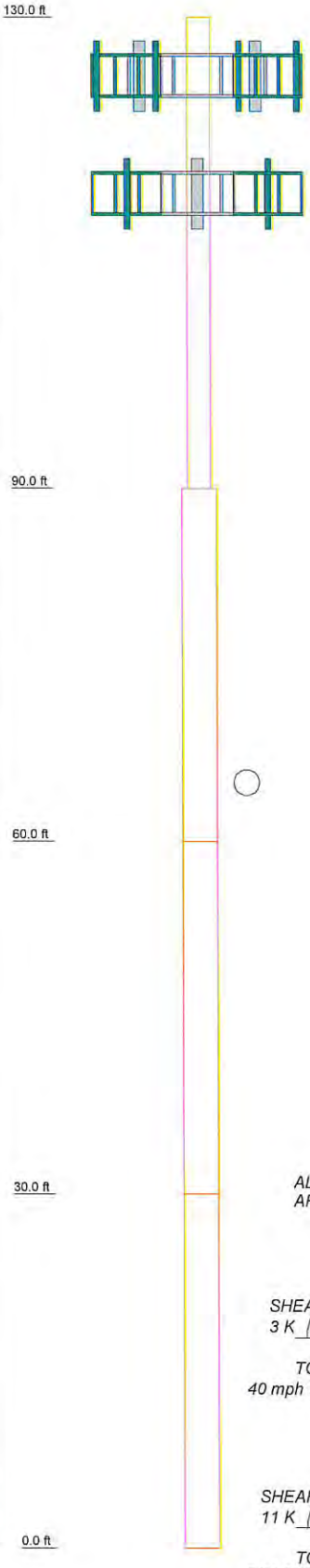
4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed load configuration once the proposed modifications are installed.

APPENDIX A

TNXTOWER OUTPUT

Section	Size	Length (ft)	Grade	Weight (K)
1	P24x.375	40.00	A53-B-35	3.8
2	P36x.375	30.00	A53-B-42	4.3
3	P36x.375	30.00		4.3
4	P36x.375	30.00		4.3
				16.6



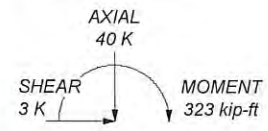
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	60 ksi	A53-B-42	42 ksi	63 ksi

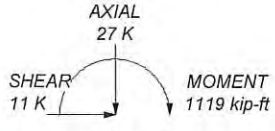
TOWER DESIGN NOTES

1. Tower is located in Milwaukee County, Wisconsin.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 115 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 40 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 81.4%

ALL REACTIONS ARE FACTORED



TORQUE 0 kip-ft
40 mph WIND - 1.5000 in ICE



TORQUE 0 kip-ft
REACTIONS - 115 mph WIND

Crown Castle
2000 Corporate Drive
Canonsburg, PA
The Pathway to Possible
Phone: (724) 416-2000
FAX:

Job: 827008			
Project:			
Client: Crown Castle	Drawn by: NPalladino		App'd:
Code: TIA-222-H	Date: 12/10/21		Scale: NTS
Path: C:\Users\NPalladino\Desktop\Local SA Production\827008\WO 2052861 - SA\Prod\827008_LC4.7.eri			Dwg No. E-1

Tower Input Data

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

- Tower is located in Milwaukee County, Wisconsin.
- Tower base elevation above sea level: 685.00 ft.
- Basic wind speed of 115 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.5000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 40 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	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	Use Clear Spans For KL/r	All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	√ Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-H Bracing Resist. Exemption
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Use TIA-222-H Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	√ Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	√ Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are Known

Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	130.00-90.00	40.00	P24x.375	A53-B-35 (35 ksi)	
L2	90.00-60.00	30.00	P36x.375	A53-B-42 (42 ksi)	
L3	60.00-30.00	30.00	P36x.375	A53-B-42 (42 ksi)	
L4	30.00-0.00	30.00	P36x.375	A53-B-42 (42 ksi)	

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 130.00-90.00				1	1	1			
L2 90.00-60.00				1	1	1			
L3 60.00-30.00				1	1	1			
L4 30.00-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
***											
**											

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF2-50(3/8)	C	No	No	Inside Pole	125.00 - 0.00	1	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
LDF5-50A(7/8)	C	No	No	Inside Pole	125.00 - 0.00	6	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
HCS 2.0 Part 3(1-1/2)	C	No	No	Inside Pole	125.00 - 0.00	2	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
***									
LDF5-50A(7/8)	C	No	No	Inside Pole	115.00 - 0.00	6	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
***									
**									
*									
CU12PSM9P6XXX (1-1/2)	C	No	No	Inside Pole	115.00 - 0.00	1	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft²/ft	Weight klf
							2" Ice	0.00	0.00

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
L1	130.00-90.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.30
L2	90.00-60.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.29
L3	60.00-30.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.29
L4	30.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.29

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
L1	130.00-90.00	A	1.438	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.30
L2	90.00-60.00	A	1.384	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.29
L3	60.00-30.00	A	1.315	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.29
L4	30.00-0.00	A	1.178	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.29

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	130.00-90.00	0.0000	0.0000	0.0000	0.0000
L2	90.00-60.00	0.0000	0.0000	0.0000	0.0000
L3	60.00-30.00	0.0000	0.0000	0.0000	0.0000
L4	30.00-0.00	0.0000	0.0000	0.0000	0.0000

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

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
***					
HBXX-6516DS-A2M w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
HBXX-6516DS-A2M w/ Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
HBXX-6516DS-A2M w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
AEHC w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
AEHC w/ Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
AEHC w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
HCS 2.0 Part 1	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
HCS 2.0 Part 1	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
AHFIG_TMO	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
AHFIG_TMO	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
AHFIG_TMO	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
(2) 2.4" Dia. x 10-ft Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
(2) 2.4" Dia. x 10-ft Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
(2) 2.4" Dia. x 10-ft Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	125.00
Sabre M.O.V.E Platform	C	None		0.0000	125.00
*** ** *					
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	115.00
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	115.00
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	115.00
TA08025-B604	A	From Leg	4.00 0.00 0.00	0.0000	115.00
TA08025-B604	B	From Leg	4.00 0.00 0.00	0.0000	115.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft
TA08025-B604	C	From Leg	4.00 0.00 0.00	0.0000	115.00
TA08025-B605	A	From Leg	4.00 0.00 0.00	0.0000	115.00
TA08025-B605	B	From Leg	4.00 0.00 0.00	0.0000	115.00
TA08025-B605	C	From Leg	4.00 0.00 0.00	0.0000	115.00
RDIDC-9181-PF-48	A	From Leg	4.00 0.00 0.00	0.0000	115.00
Commscope MC-PK8-DSH	C	None		0.0000	115.00
(2) 8' x 2" Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	115.00
(2) 8' x 2" Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	115.00
(2) 8' x 2" Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	115.00

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

Comb. No.	Description
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	130 - 90	Pole	Max Tension	2	0.00	0.00	-0.00
			Max. Compression	26	-17.95	-0.29	0.62
			Max. Mx	8	-10.30	-217.29	-0.35
			Max. My	2	-10.30	0.43	218.90
			Max. Vy	8	7.75	-217.29	-0.35
			Max. Vx	2	-7.80	0.43	218.90
			Max. Torque	23			-0.30
L2	90 - 60	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.34	-0.29	0.62
			Max. Mx	8	-15.80	-475.39	-0.79
			Max. My	2	-15.79	0.88	478.62
			Max. Vy	8	9.44	-475.39	-0.79
			Max. Vx	2	-9.50	0.88	478.62
			Max. Torque	23			-0.30
L3	60 - 30	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.64	-0.29	0.62
			Max. Mx	8	-21.39	-778.94	-1.24
			Max. My	2	-21.39	1.33	783.79
			Max. Vy	8	10.76	-778.94	-1.24
			Max. Vx	2	-10.82	1.33	783.79
			Max. Torque	23			-0.30
L4	30 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.74	-0.29	0.62
			Max. Mx	8	-27.10	-1112.66	-1.67
			Max. My	2	-27.10	1.76	1119.10
			Max. Vy	8	11.44	-1112.66	-1.67
			Max. Vx	2	-11.49	1.76	1119.10
			Max. Torque	23			-0.30

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	39.74	0.00	3.32
	Max. H_x	20	27.11	11.43	0.01

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. H_z	2	27.11	0.01	11.48
	Max. M_x	2	1119.10	0.01	11.48
	Max. M_z	8	1112.66	-11.43	-0.01
	Max. Torsion	11	0.30	-9.90	-5.75
	Min. Vert	19	20.33	9.89	-5.73
	Min. H_x	8	27.11	-11.43	-0.01
	Min. H_z	14	27.11	-0.01	-11.48
	Min. M_x	14	-1118.74	-0.01	-11.48
	Min. M_z	20	-1112.48	11.43	0.01
	Min. Torsion	23	-0.30	9.90	5.75

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	22.59	0.00	0.00	-0.14	-0.07	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	27.11	-0.01	-11.48	-1119.10	1.76	0.11
0.9 Dead+1.0 Wind 0 deg - No Ice	20.33	-0.01	-11.48	-1105.34	1.76	0.11
1.2 Dead+1.0 Wind 30 deg - No Ice	27.11	5.70	-9.93	-968.27	-554.77	-0.05
0.9 Dead+1.0 Wind 30 deg - No Ice	20.33	5.70	-9.93	-956.36	-547.96	-0.05
1.2 Dead+1.0 Wind 60 deg - No Ice	27.11	9.89	-5.73	-558.04	-962.69	-0.19
0.9 Dead+1.0 Wind 60 deg - No Ice	20.33	9.89	-5.73	-551.16	-950.87	-0.19
1.2 Dead+1.0 Wind 90 deg - No Ice	27.11	11.43	0.01	1.67	-1112.66	-0.28
0.9 Dead+1.0 Wind 90 deg - No Ice	20.33	11.43	0.01	1.70	-1099.01	-0.28
1.2 Dead+1.0 Wind 120 deg - No Ice	27.11	9.90	5.75	560.89	-964.54	-0.30
0.9 Dead+1.0 Wind 120 deg - No Ice	20.33	9.90	5.75	554.06	-952.69	-0.30
1.2 Dead+1.0 Wind 150 deg - No Ice	27.11	5.73	9.95	969.76	-557.98	-0.24
0.9 Dead+1.0 Wind 150 deg - No Ice	20.33	5.73	9.95	957.92	-551.12	-0.24
1.2 Dead+1.0 Wind 180 deg - No Ice	27.11	0.01	11.48	1118.74	-1.94	-0.11
0.9 Dead+1.0 Wind 180 deg - No Ice	20.33	0.01	11.48	1105.07	-1.89	-0.11
1.2 Dead+1.0 Wind 210 deg - No Ice	27.11	-5.70	9.93	967.91	554.60	0.05
0.9 Dead+1.0 Wind 210 deg - No Ice	20.33	-5.70	9.93	956.10	547.83	0.05
1.2 Dead+1.0 Wind 240 deg - No Ice	27.11	-9.89	5.73	557.68	962.51	0.19
0.9 Dead+1.0 Wind 240 deg - No Ice	20.33	-9.89	5.73	550.89	950.74	0.19
1.2 Dead+1.0 Wind 270 deg - No Ice	27.11	-11.43	-0.01	-2.03	1112.48	0.28
0.9 Dead+1.0 Wind 270 deg - No Ice	20.33	-11.43	-0.01	-1.96	1098.88	0.28
1.2 Dead+1.0 Wind 300 deg - No Ice	27.11	-9.90	-5.75	-561.25	964.36	0.30
0.9 Dead+1.0 Wind 300 deg - No Ice	20.33	-9.90	-5.75	-554.32	952.56	0.30
1.2 Dead+1.0 Wind 330 deg - No Ice	27.11	-5.73	-9.95	-970.12	557.80	0.24
0.9 Dead+1.0 Wind 330 deg - No Ice	20.33	-5.73	-9.95	-958.19	550.99	0.24

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
1.2 Dead+1.0 Ice+1.0 Temp	39.74	0.00	0.00	-0.62	-0.29	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	39.74	-0.00	-3.32	-323.35	-0.07	0.02
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	39.74	1.65	-2.87	-279.99	-160.98	-0.01
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	39.74	2.87	-1.66	-161.80	-278.85	-0.03
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	39.74	3.31	0.00	-0.45	-322.09	-0.04
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	39.74	2.87	1.66	160.84	-279.11	-0.05
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	39.74	1.66	2.87	278.84	-161.44	-0.04
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	39.74	0.00	3.32	321.93	-0.60	-0.02
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	39.74	-1.65	2.87	278.57	160.32	0.01
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	39.74	-2.87	1.66	160.38	278.18	0.03
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	39.74	-3.31	-0.00	-0.97	321.42	0.04
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	39.74	-2.87	-1.66	-162.26	278.45	0.05
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	39.74	-1.66	-2.87	-280.26	160.77	0.04
Dead+Wind 0 deg - Service	22.59	-0.00	-2.94	-284.81	0.40	0.03
Dead+Wind 30 deg - Service	22.59	1.46	-2.55	-246.43	-141.19	-0.01
Dead+Wind 60 deg - Service	22.59	2.54	-1.47	-142.07	-244.96	-0.05
Dead+Wind 90 deg - Service	22.59	2.93	0.00	0.32	-283.12	-0.07
Dead+Wind 120 deg - Service	22.59	2.54	1.47	142.59	-245.43	-0.08
Dead+Wind 150 deg - Service	22.59	1.47	2.55	246.61	-142.00	-0.06
Dead+Wind 180 deg - Service	22.59	0.00	2.94	284.51	-0.54	-0.03
Dead+Wind 210 deg - Service	22.59	-1.46	2.55	246.13	141.04	0.01
Dead+Wind 240 deg - Service	22.59	-2.54	1.47	141.77	244.81	0.05
Dead+Wind 270 deg - Service	22.59	-2.93	-0.00	-0.62	282.97	0.07
Dead+Wind 300 deg - Service	22.59	-2.54	-1.47	-142.89	245.28	0.08
Dead+Wind 330 deg - Service	22.59	-1.47	-2.55	-246.90	141.85	0.06

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-22.59	0.00	0.00	22.59	0.00	0.000%
2	-0.01	-27.11	-11.48	0.01	27.11	11.48	0.000%
3	-0.01	-20.33	-11.48	0.01	20.33	11.48	0.000%
4	5.70	-27.11	-9.93	-5.70	27.11	9.93	0.000%
5	5.70	-20.33	-9.93	-5.70	20.33	9.93	0.000%
6	9.89	-27.11	-5.73	-9.89	27.11	5.73	0.000%
7	9.89	-20.33	-5.73	-9.89	20.33	5.73	0.000%
8	11.43	-27.11	0.01	-11.43	27.11	-0.01	0.000%
9	11.43	-20.33	0.01	-11.43	20.33	-0.01	0.000%
10	9.90	-27.11	5.75	-9.90	27.11	-5.75	0.000%
11	9.90	-20.33	5.75	-9.90	20.33	-5.75	0.000%
12	5.73	-27.11	9.95	-5.73	27.11	-9.95	0.000%
13	5.73	-20.33	9.95	-5.73	20.33	-9.95	0.000%
14	0.01	-27.11	11.48	-0.01	27.11	-11.48	0.000%
15	0.01	-20.33	11.48	-0.01	20.33	-11.48	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
16	-5.70	-27.11	9.93	5.70	27.11	-9.93	0.000%
17	-5.70	-20.33	9.93	5.70	20.33	-9.93	0.000%
18	-9.89	-27.11	5.73	9.89	27.11	-5.73	0.000%
19	-9.89	-20.33	5.73	9.89	20.33	-5.73	0.000%
20	-11.43	-27.11	-0.01	11.43	27.11	0.01	0.000%
21	-11.43	-20.33	-0.01	11.43	20.33	0.01	0.000%
22	-9.90	-27.11	-5.75	9.90	27.11	5.75	0.000%
23	-9.90	-20.33	-5.75	9.90	20.33	5.75	0.000%
24	-5.73	-27.11	-9.95	5.73	27.11	9.95	0.000%
25	-5.73	-20.33	-9.95	5.73	20.33	9.95	0.000%
26	0.00	-39.74	0.00	0.00	39.74	0.00	0.000%
27	-0.00	-39.74	-3.32	0.00	39.74	3.32	0.000%
28	1.65	-39.74	-2.87	-1.65	39.74	2.87	0.000%
29	2.87	-39.74	-1.66	-2.87	39.74	1.66	0.000%
30	3.31	-39.74	0.00	-3.31	39.74	-0.00	0.000%
31	2.87	-39.74	1.66	-2.87	39.74	-1.66	0.000%
32	1.66	-39.74	2.87	-1.66	39.74	-2.87	0.000%
33	0.00	-39.74	3.32	-0.00	39.74	-3.32	0.000%
34	-1.65	-39.74	2.87	1.65	39.74	-2.87	0.000%
35	-2.87	-39.74	1.66	2.87	39.74	-1.66	0.000%
36	-3.31	-39.74	-0.00	3.31	39.74	0.00	0.000%
37	-2.87	-39.74	-1.66	2.87	39.74	1.66	0.000%
38	-1.66	-39.74	-2.87	1.66	39.74	2.87	0.000%
39	-0.00	-22.59	-2.94	0.00	22.59	2.94	0.000%
40	1.46	-22.59	-2.55	-1.46	22.59	2.55	0.000%
41	2.54	-22.59	-1.47	-2.54	22.59	1.47	0.000%
42	2.93	-22.59	0.00	-2.93	22.59	-0.00	0.000%
43	2.54	-22.59	1.47	-2.54	22.59	-1.47	0.000%
44	1.47	-22.59	2.55	-1.47	22.59	-2.55	0.000%
45	0.00	-22.59	2.94	-0.00	22.59	-2.94	0.000%
46	-1.46	-22.59	2.55	1.46	22.59	-2.55	0.000%
47	-2.54	-22.59	1.47	2.54	22.59	-1.47	0.000%
48	-2.93	-22.59	-0.00	2.93	22.59	0.00	0.000%
49	-2.54	-22.59	-1.47	2.54	22.59	1.47	0.000%
50	-1.47	-22.59	-2.55	1.47	22.59	2.55	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	0.00039255
3	Yes	4	0.00000001	0.00018732
4	Yes	5	0.00000001	0.00080049
5	Yes	5	0.00000001	0.00040022
6	Yes	5	0.00000001	0.00080930
7	Yes	5	0.00000001	0.00040507
8	Yes	4	0.00000001	0.00055831
9	Yes	4	0.00000001	0.00033685
10	Yes	5	0.00000001	0.00079500
11	Yes	5	0.00000001	0.00039724
12	Yes	5	0.00000001	0.00082111
13	Yes	5	0.00000001	0.00041083
14	Yes	4	0.00000001	0.00044816
15	Yes	4	0.00000001	0.00023955
16	Yes	5	0.00000001	0.00080334
17	Yes	5	0.00000001	0.00040194
18	Yes	5	0.00000001	0.00079101
19	Yes	5	0.00000001	0.00039562
20	Yes	4	0.00000001	0.00065463
21	Yes	4	0.00000001	0.00041125
22	Yes	5	0.00000001	0.00082235
23	Yes	5	0.00000001	0.00041161
24	Yes	5	0.00000001	0.00079979
25	Yes	5	0.00000001	0.00039950

26	Yes	4	0.00000001	0.00000001
27	Yes	5	0.00000001	0.00041046
28	Yes	5	0.00000001	0.00046048
29	Yes	5	0.00000001	0.00046000
30	Yes	5	0.00000001	0.00040844
31	Yes	5	0.00000001	0.00045781
32	Yes	5	0.00000001	0.00045844
33	Yes	5	0.00000001	0.00040732
34	Yes	5	0.00000001	0.00045597
35	Yes	5	0.00000001	0.00045537
36	Yes	5	0.00000001	0.00040697
37	Yes	5	0.00000001	0.00045955
38	Yes	5	0.00000001	0.00046001
39	Yes	4	0.00000001	0.00005588
40	Yes	4	0.00000001	0.00027845
41	Yes	4	0.00000001	0.00028887
42	Yes	4	0.00000001	0.00006183
43	Yes	4	0.00000001	0.00026983
44	Yes	4	0.00000001	0.00029423
45	Yes	4	0.00000001	0.00005620
46	Yes	4	0.00000001	0.00028114
47	Yes	4	0.00000001	0.00027049
48	Yes	4	0.00000001	0.00006272
49	Yes	4	0.00000001	0.00029712
50	Yes	4	0.00000001	0.00027297

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	130 - 90	13.309	39	0.7502	0.0008
L2	90 - 60	7.296	39	0.6264	0.0004
L3	60 - 30	3.670	39	0.5141	0.0003
L4	30 - 0	1.030	39	0.3096	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125.00	HBXX-6516DS-A2M w/ Mount Pipe	39	12.521	0.7348	0.0007	87270
115.00	MX08FRO665-21 w/ Mount Pipe	39	10.960	0.7040	0.0006	29090

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	130 - 90	52.327	2	2.9498	0.0031
L2	90 - 60	28.694	2	2.4638	0.0015
L3	60 - 30	14.430	2	2.0222	0.0010
L4	30 - 0	4.049	2	1.2174	0.0005

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
125.00	HBXX-6516DS-A2M w/ Mount Pipe	2	49.231	2.8894	0.0029	22335
115.00	MX08FRO665-21 w/ Mount Pipe	2	43.094	2.7686	0.0024	7444

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	130 - 90 (1)	P24x.375	40.00	0.00	0.0	27.832 5	-10.30	876.73	0.012
L2	90 - 60 (2)	P36x.375	30.00	0.00	0.0	41.969 7	-15.79	1490.10	0.011
L3	60 - 30 (3)	P36x.375	30.00	0.00	0.0	41.969 7	-21.39	1490.10	0.014
L4	30 - 0 (4)	P36x.375	30.00	0.00	0.0	41.969 7	-27.10	1490.10	0.018

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	130 - 90 (1)	P24x.375	218.90	538.74	0.406	0.00	538.74	0.000
L2	90 - 60 (2)	P36x.375	478.62	1338.81	0.357	0.00	1338.81	0.000
L3	60 - 30 (3)	P36x.375	783.79	1338.81	0.585	0.00	1338.81	0.000
L4	30 - 0 (4)	P36x.375	1119.10	1338.81	0.836	0.00	1338.81	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	130 - 90 (1)	P24x.375	7.80	263.02	0.030	0.24	546.31	0.000
L2	90 - 60 (2)	P36x.375	9.50	454.19	0.021	0.11	1094.28	0.000
L3	60 - 30 (3)	P36x.375	10.82	454.19	0.024	0.11	1094.28	0.000
L4	30 - 0 (4)	P36x.375	11.49	454.19	0.025	0.11	1094.28	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	130 - 90 (1)	0.012	0.406	0.000	0.030	0.000	0.419	1.050	4.8.2
L2	90 - 60 (2)	0.011	0.357	0.000	0.021	0.000	0.369	1.050	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L3	60 - 30 (3)	0.014	0.585	0.000	0.024	0.000	0.600	1.050	4.8.2
L4	30 - 0 (4)	0.018	0.836	0.000	0.025	0.000	0.855	1.050	4.8.2

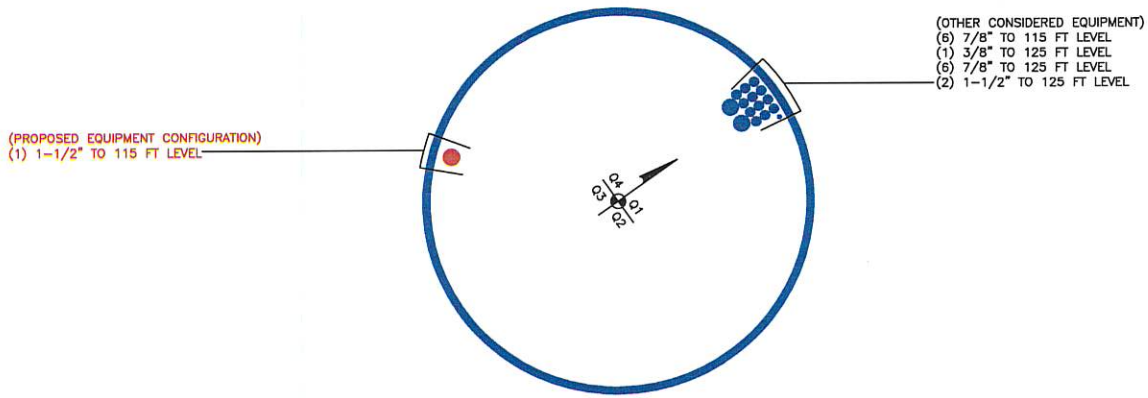
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	130 - 90	Pole	P24x.375	1	-10.30	920.56	39.9	Pass
L2	90 - 60	Pole	P36x.375	2	-15.79	1564.60	35.1	Pass
L3	60 - 30	Pole	P36x.375	3	-21.39	1564.60	57.2	Pass
L4	30 - 0	Pole	P36x.375	4	-27.10	1564.60	81.4	Pass
							Summary	
						Pole (L4)	81.4	Pass
						RATING =	**81.4**	**Pass**

***NOTE: Above stress ratios for reinforced sections are approximate. More exact calculations are presented in Appendix C.**

APPENDIX B

BASE LEVEL DRAWING


(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-1/2" TO 115 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(6) 7/8" TO 115 FT LEVEL
(1) 3/8" TO 125 FT LEVEL
(6) 7/8" TO 125 FT LEVEL
(2) 1-1/2" TO 125 FT LEVEL
Q4
Q1
Q3
Q2

APPENDIX C

ADDITIONAL CALCULATIONS

Monopole Flange Plate Connection

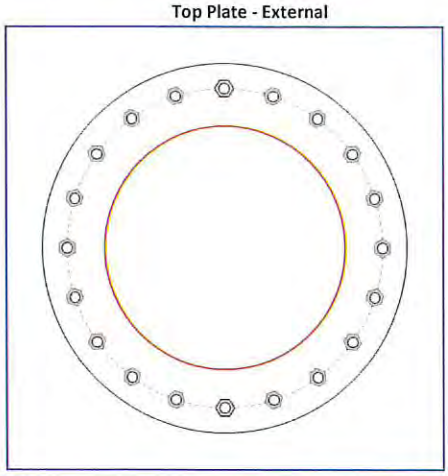
Elevation = 90 ft.

BU #	827008
Site Name	iver Point Shopping Ce
Order #	579464 Rev.7
TIA-222 Revision	H

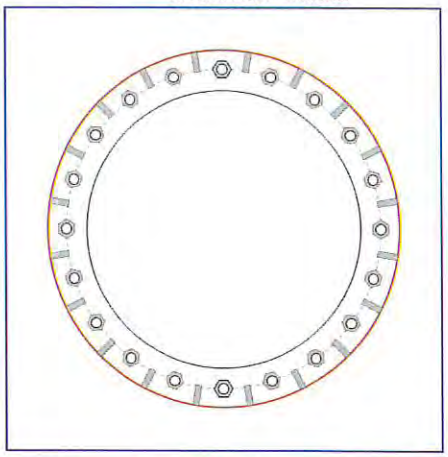
Applied Loads	
Moment (kip-ft)	218.90
Axial Force (kips)	10.30
Shear Force (kips)	7.80

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - Internal



Connection Properties

Bolt Data

(20) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 31.5" BC

Top Plate Data

36.5" OD x 2" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Plate Data

27.375" ID x 1.125" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

(20) 3.5"H x 2"W x 0.625"T, Notch: 0.5"
plate: Fy= 36 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.375" fillet
vert. weld: 0.375" fillet

Top Pole Data

24" x 0.375" round pole (A53-B-35; Fy=35 ksi, Fu=60 ksi)

Bottom Pole Data

36" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	16.16	
Allowable (kips)	54.54	
Stress Rating:	**28.2%**	Pass

Top Plate Capacity

Max Stress (ksi):	8.98	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	**19.0%**	Pass
Tension Side Stress Rating:	**13.2%**	Pass

Bottom Plate Capacity

Max Stress (ksi):	11.17	(Roark's Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**32.8%**	Pass
Tension Side Stress Rating:	**N/A**	

Top Stiffener Capacity

Horizontal Weld:	**N/A**
Vertical Weld:	**N/A**
Plate Flexure+Shear:	**N/A**
Plate Tension+Shear:	**N/A**
Plate Compression:	**N/A**

Bottom Stiffener Capacity

Horizontal Weld:	**19.6%**	Pass
Vertical Weld:	**11.8%**	Pass
Plate Flexure+Shear:	**7.8%**	Pass
Plate Tension+Shear:	**15.6%**	Pass
Plate Compression:	**21.4%**	Pass

Top Pole Capacity

Punching Shear:	**N/A**

Bottom Pole Capacity

Punching Shear:	**7.0%**	Pass

Monopole Flange Plate Connection

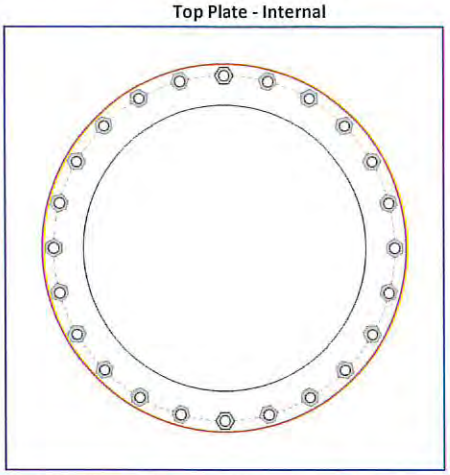
Elevation = 60 ft.

BU #	827008
Site Name	iver Point Shopping Ce
Order #	579464 Rev.7
TIA-222 Revision	H

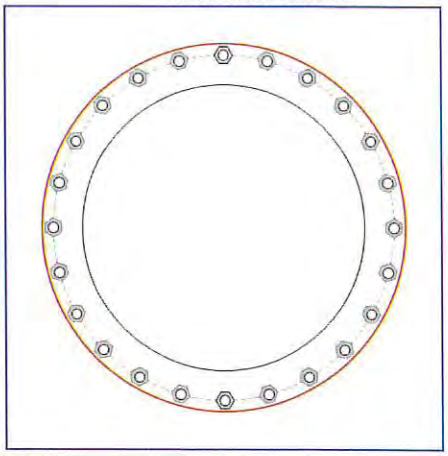
Applied Loads	
Moment (kip-ft)	478.62
Axial Force (kips)	15.79
Shear Force (kips)	9.50

**TIA-222-H Section 15.5 Applied*

Top Plate - Internal



Bottom Plate - Internal



Connection Properties

Bolt Data

(24) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 33" BC

Top Plate Data

27.375" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

27.375" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

36" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Pole Data

36" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	28.34	
Allowable (kips)	54.54	
Stress Rating:	**49.5%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	18.51	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**54.4%**	**Pass**
Tension Side Stress Rating:	**10.1%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	18.51	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**54.4%**	**Pass**
Tension Side Stress Rating:	**10.1%**	**Pass**

Monopole Flange Plate Connection

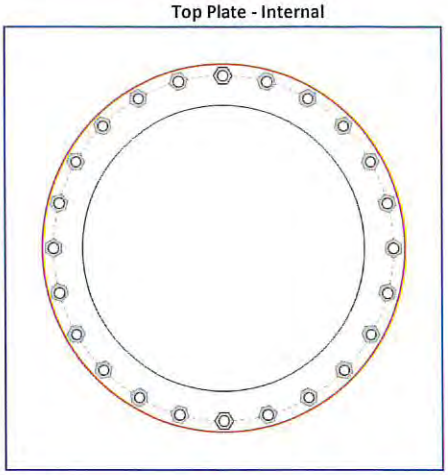
Elevation = 30 ft.

BU #	827008
Site Name	iver Point Shopping Ce
Order #	579464 Rev.7
TIA-222 Revision	H

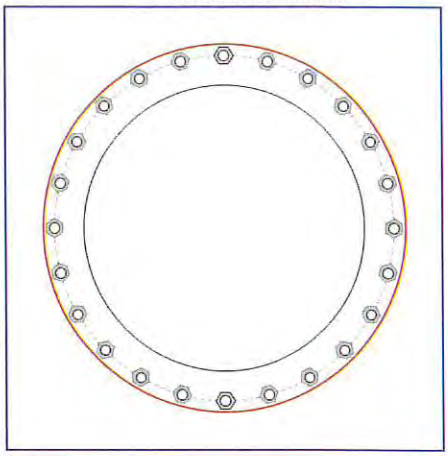
Applied Loads	
Moment (kip-ft)	783.79
Axial Force (kips)	21.39
Shear Force (kips)	10.82

**TIA-222-H Section 15.5 Applied*

Top Plate - Internal



Bottom Plate - Internal



Connection Properties

Bolt Data

(24) 1" ø bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 33" BC

Top Plate Data

27.375" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Bottom Plate Data

27.375" ID x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

36" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Bottom Pole Data

36" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	46.59	
Allowable (kips)	54.54	
Stress Rating:	**81.4%**	Pass

Top Plate Capacity

Max Stress (ksi):	30.19	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**88.8%**	Pass
Tension Side Stress Rating:	**16.6%**	Pass

Bottom Plate Capacity

Max Stress (ksi):	30.19	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**88.8%**	Pass
Tension Side Stress Rating:	**16.6%**	Pass

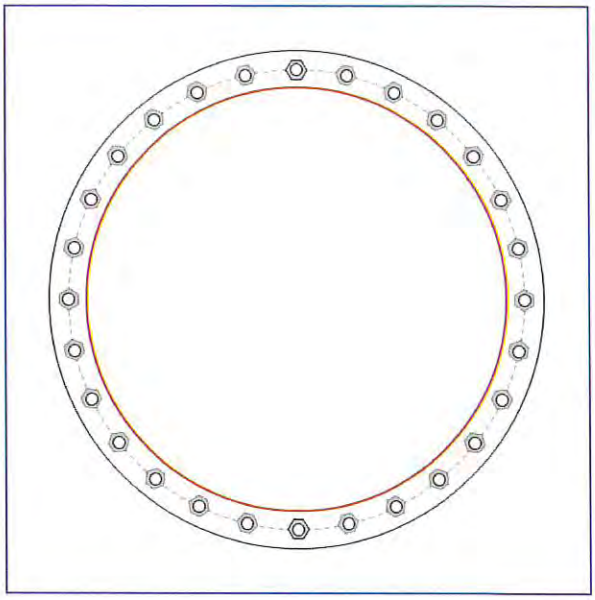
Monopole Base Plate Connection

Site Info	
BU #	827008
Site Name	iver Point Shopping Ce
Order #	579464 Rev.7

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.625

Applied Loads	
Moment (kip-ft)	1119.10
Axial Force (kips)	27.10
Shear Force (kips)	11.49

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(28) 1" ø bolts (A687 N; Fy=105 ksi, Fu=125 ksi) on 39" BC

Base Plate Data

42.375" OD x 1.25" Plate (A36; Fy=36 ksi, Fu=58 ksi)

Stiffener Data

N/A

Pole Data

36" x 0.375" round pole (A53-B-42; Fy=42 ksi, Fu=63 ksi)

Analysis Results

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

Pu_t = 48.21	ϕPn_t = 56.81	**Stress Rating**
Vu = 0.41	ϕVn = 36.82	**80.8%**
Mu = 0.43	ϕMn = 15.75	**Pass**

Base Plate Summary

Max Stress (ksi):	29.99	(Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	**88.2%**	**Pass**

Drilled Pier Foundation

BU # :	827008
Site Name:	River Point Shopping Cent
Order Number:	579464 Rev.7
TIA-222 Revison:	H
Tower Type:	Monopole

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

Go to Soil Calculations

Applied Loads	Comp.	Uplift
Moment (kip-ft)	1119.1	
Axial Force (kips)	27.11	
Shear Force (kips)	11.48	

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

Pier Design Data		
Depth	23	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 23' below grade		
Pier Diameter	4.5	ft
Rebar Quantity	24	
Rebar Size	10	
Clear Cover to Ties	3	in
Tie Size	5	
Tie Spacing	18	in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{y=0}$ (ft from TOC)	8.06	-
Soil Safety Factor	7.07	-
Max Moment (kip-ft)	1213.02	-
Rating*	*17.9%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	346.97	-
End Bearing (kips)	319.20	-
Weight of Concrete (kips)	67.28	-
Total Capacity (kips)	666.17	-
Axial (kips)	94.39	-
Rating*	*13.5%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	8.08	-
Critical Moment (kip-ft)	1213.02	-
Critical Moment Capacity	2748.42	-
Rating*	*42.0%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	19.54	-
Critical Shear (kip)	80.60	-
Critical Shear Capacity	330.97	-
Rating*	*23.2%*	-

Shear-Friction Methodology is Applied

Structural Foundation Rating*	**42.0%**
Soil Interaction Rating*	**17.9%**

*Rating per TIA-222-H Section 15.5

Soil Profile

Groundwater Depth	N/A

# of Layers	2

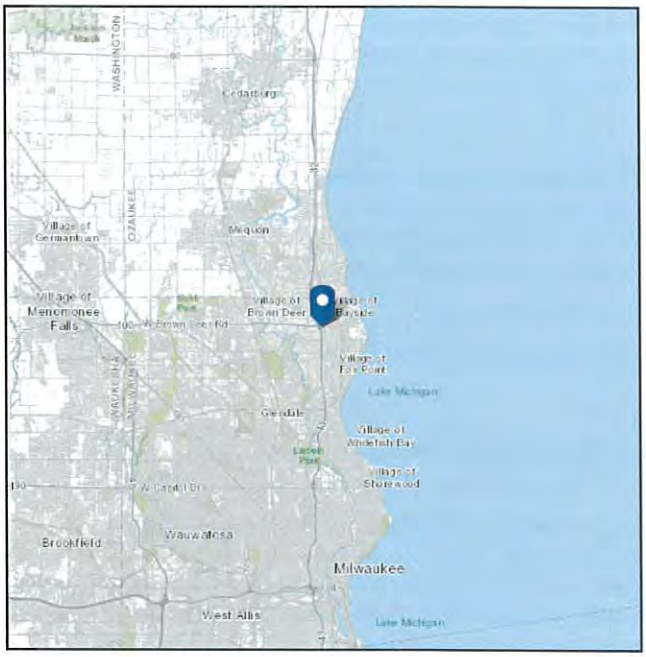
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Net Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	7	7	120	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	7	23	16	120	150	4		2.045	2.045			24		Cohesive

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 685.18 ft (NAVD 88)
Latitude: 43.176008
Longitude: -87.915078



Wind

Results:

Wind Speed:	115 Vmph
10-year MRI	76 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph

Date Accessed: Fri Mar 26 2021

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

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

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2.

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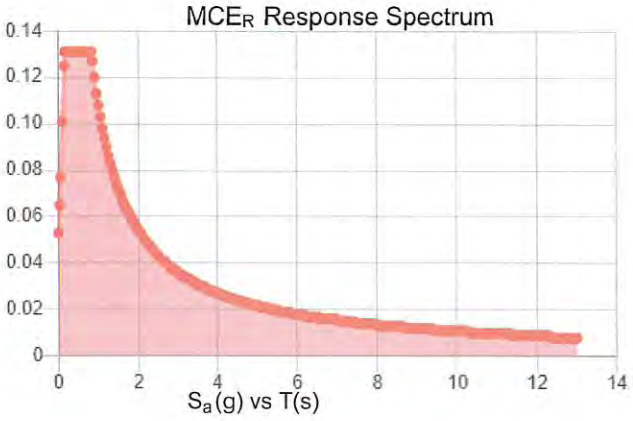
Seismic

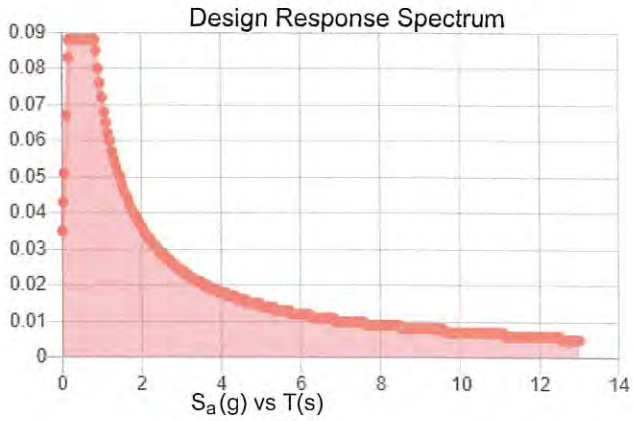
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.082	S_{DS} :	0.088
S_1 :	0.045	S_{D1} :	0.072
F_a :	1.6	T_L :	12
F_v :	2.4	PGA :	0.039
S_{MS} :	0.131	PGA_M :	0.062
S_{M1} :	0.108	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Mar 26 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.

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Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	-5 F
Gust Speed:	40 mph

Data Source: Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8

Date Accessed: Fri Mar 26 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.

STATE OF WISCONSIN VILLAGE OF FOX POINT MILWAUKEE COUNTY

ORDINANCE NO. _____

AN ORDINANCE TO AMEND SECTION 745-7B(3)(h) OF THE VILLAGE OF FOX POINT VILLAGE CODE CONCERNING ARBORS

WHEREAS, the Village Building Inspector has closely reviewed the height restrictions of arbor as an accessory use and structure as provided in the Village Code to consider the possibility of increasing the maximum permitted height; and

WHEREAS, the Village Building Inspector has provided his recommendations to the Village Manager in this regard, and the Village Manager has recommended that the Village Code be amended to permit a greater height for arbor in accordance with the recommendation described herein; and

WHEREAS, the Village Plan Commission of the Village of Fox Point has recommended to the Village Board of the Village of Fox Point that said amendments to the Zoning Code be made; and

WHEREAS, a public hearing was conducted by the Village Board of the Village of Fox Point on _____, after due notice was provided pursuant to Section 745-35 of the Fox Point Zoning Code and Wisconsin Statutes Sections 62.23(7)(2)d; and

WHEREAS, the Village Board finds that this change to the Village Zoning Code is not a down zoning ordinance because it does not decrease the development density of land and it does not reduce the permitted uses of land, and therefore the super majority requirement of Section 66.10015, Wisconsin Statutes, does not apply to this ordinance; and

WHEREAS, the Village Board of the Village of Fox Point having carefully reviewed the recommendation of the Plan Commission of the Village of Fox Point, having determined that all procedural requirements and notice requirements have been satisfied, having given the matter due consideration and having based its determination on the effect of the granting of such a Zoning Amendment on the health, safety and welfare of the community and having given due consideration to the municipal problems involved as well as the impact on the affected properties hereby determines that the public necessity, convenience, general welfare and good zoning practice requires that the Zoning Amendment be granted.

NOW, THEREFORE, the Village Board of the Village of Fox Point, Milwaukee County, Wisconsin, DOES HEREBY ORDAIN AS FOLLOWS:

SECTION 1: Chapter 745 of the Village of Fox Point Village Code entitled, “Zoning,” Section 745-7 entitled, “Accessory Uses and Structure,” Subsection B entitled “Permanent Structures.,” Subsection (3), Subsection (h) is hereby repealed and re-created as follows:

745-7(3)(h) Location and height restrictions. Subject to the following exceptions, a fence, wall, architectural screening device, driveway gate or arbor may be permitted up to the lot line in the side and rear yard of any property in Fox Point. A fence, wall, driveway gate or architectural screening device located in a rear or side yard shall not exceed a height of six feet from the finished lot grade and shall not project forward of the front line of the principal building. An arbor shall not exceed a height

of ~~eight feet seven inches~~ ten feet from the finished lot grade and shall not project forward of the front line of the principal building.

SECTION 2: CONTINUATION OF EXISTING PROVISIONS.

The provisions of this ordinance, to the extent that they are substantively the same as those of the ordinances in force immediately prior to the enactment of this ordinance, are intended as a continuation of such ordinances and not as new enactments, and the effectiveness of such provisions shall date from the date of adoption of the prior ordinances. In addition, the adoption of this ordinance shall not affect any action, prosecution or proceeding brought for the enforcement of any right or liability established, accrued or incurred under any legislative provision prior to the effective date of this ordinance for the time that such provision was in effect, and the repeal of any such provisions is stayed pending the final resolution of such actions, including appeals.

SECTION 3: SEVERABILITY

The several sections of this ordinance are declared to be severable. If any section or portion thereof shall be declared by a court of competent jurisdiction to be invalid, unlawful or unenforceable, such decision shall apply only to the specific section or portion thereof directly specified in the decision and shall not affect the validity of any other provisions, sections or portions thereof of the ordinance. The remainder of the ordinance shall remain in full force and effect. Any other ordinances whose terms are in conflict with the provisions of this ordinance are hereby repealed as to those terms that conflict.

SECTION 4: EFFECTIVE DATE

This ordinance shall take effect immediately upon passage and posting or publication as provided by law.

Dated this _____ day of _____, 2022.

Village of Fox Point

_____
Douglas H. Frazer, Village President

ATTEST:

_____
Kelly A. Meyer, Village Clerk/Treasurer