Tectonic
PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE.

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

November 12, 2021

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

RE: **Notice of Exempt Modification to an existing 150' monopole located at 64 Codfish Hill Road, Bethel, Connecticut**

Latitude: 41° 22' 27.42" / Longitude: 73° 22' 25.21"

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Dish Wireless, LLC ("Dish"). Dish plans to install antennas and related equipment to the tower site at the existing 150'monopole tower facility located at 64 Codfish Hill Road, Bethel, Connecticut (See Original Facility Approval attached as Exhibit A) ("Facility"). The property is owned by Tarpon Towers II, LLC (See Bethel Assessor Property Card attached hereto as Exhibit B).

Dish proposes to install three (3) 600/1900/2100 MHz JMA – MX08Fr0665-21 antennas and six (6) FUJITSU TA08025 RRUs on the tower at the one hundred thirty five foot (135') centerline AGL. Dish further proposes to install one (1) 1.5" Hybrid Cable. Dish will also install its equipment cabinets on a 5' X 7' platform within its 10' X 15' lease area. The installation is shown on plans completed by Tectonic Engineering, dated September 10, 2021 and attached hereto as Exhibit C.

Dish requests that the Connecticut Siting Council ("Council") find that the proposed shared use of this Facility satisfies the criteria of C.G.S. sec. 16-50aa and accordingly issue an order approving the proposed shared use. This proposed installation constitutes an exempt modification pursuant to R.C.S.A. 16-50j-89. Pursuant to R.C.S.A. 16-50j-73, Dish is providing notice to Matthew Knickerbocker, First Selectman of the Town of Bethel, Beth Cavagna, Director of the Bethel Land Use Department and the property owner, Tarpon Towers II, LLC.

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

Dish will not change the existing 150' height of the Tower as the Dish antennas will be installed at a height of 135'.

The proposed installation will not extend the existing boundaries of the approved 75' X 75' (5,625 square feet) compound as depicted in Exhibit C;

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

The proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. The attached Exhibit F indicates that the combined site operations will result in a total power density of .9078%.

Tower

The Facility consists of a One hundred fifty foot (150') foot monopole tower located at 64 Codfish Road, Bethel, Connecticut. As indicated above, the tower is owned by Tarpon Towers II, LLC. The tower currently supports Verizon at the one hundred fifty foot (150') centerline AGL. The antenna locations are set forth on Sheet A-2 of the attached drawings in Exhibit C.

A. TECHNICAL FEASIBILTY

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

B. LEGAL FEASIBILITY

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

C. ENVIRONMENTAL FEASIBILITY

The proposed shared use of this Facility would have a minimal environmental impact. The installation of the Dish equipment at the 135' level of the existing tower would have an insignificant visual impact on the area surrounding the tower. The proposed Dish ground equipment would be installed within the

existing Facility compound. The Dish installation would not cause any significant alteration to the physical or environmental characteristics of the existing Facility. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase the radio frequency emissions to a level at or above the Federal Communications Commission safety standards.

D. ECONOMIC FEASIBILTY

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

E. PUBLIC SAFETY CONCERNS

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

For the reasons set forth herein, the proposed shared use of the existing tower at 64 Codfish Road, Bethel, satisfies the criteria stated in C.G.S. sec. 16-50aa, and supports the general goal of preventing the unnecessary proliferation of tower sites in Connecticut. Dish respectfully requests the Council issue an order approving the proposed shared use.

Respectfully submitted,
Dish Wireless, LLC

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

cc: Bethel First Selectman, Honorable Matthew Knickerbocker
1 School St.
Bethel, CT 06801
Bethel Director of Land Use Department, Beth Cavagna
1 School St.
Bethel, CT 06801
Tower Owner: Tarpon Towers, II, LLC
8916 77th Terrace East
Suite 103
Lakewood Ranch, FL 34202

Exhibit A

Original Facility Approval

DOCKET NO. 458 – Florida Tower Partners LLC d/b/a North Atlantic Towers Application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation, of a telecommunications facility at one of two locations at Bethel Tax Assessor's Map 65, Block 57, Lot 122, 62-64 Codfish Hill Road, Bethel, Connecticut.	Connecticut Siting Council September 17, 2015

Decision and Order

Pursuant to Connecticut General Statutes §16-50p and the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Florida Tower Partners LLC d/b/a North Atlantic Towers, hereinafter referred to as the Certificate Holder, for a telecommunications facility at Site 2, located at 62-64 Codfish Hill Road, Bethel, Connecticut. The Council denies certification of Site 1 located at 62-64 Codfish Hill Road, Bethel, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The Site 2 tower shall be constructed as a monopole at a height of 150 above ground level to provide the proposed wireless services, sufficient to accommodate the antennas of Cellco Partnership d/b/a Verizon Wireless and other entities, both public and private. The height of the tower may be extended after the date of this Decision and Order pursuant to regulations of the Federal Communications Commission.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for Site 2 in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Bethel for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a) final site plan(s) for development of the facility to include specifications for the tower, tower foundation, antennas, equipment compound including, but not limited to, fence with less than two inch mesh, radio equipment, access road, utility line, emergency backup generator that employ the governing standard in the State of Connecticut for tower design in accordance with the currently adopted International Building Code;
    b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended;
    c) provisions for a Turtle Protection Program for the wood turtle and box turtle that includes DEEP-recommended construction practices to reduce potential impact to turtle populations; and
    d) avoidance of tree clearing activities from April 15 through July 15.

3. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.

7. Any request for extension of the time period referred to in Condition 6 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Bethel.

8. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council within 90 days from the one year period of cessation of service. The Certificate Holder may submit a written request to the Council for an extension of the 90 day period not later than 60 days prior to the expiration of the 90 day period.

9. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.

10. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.

11. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.

12. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

13. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.

14. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.

15. This Certificate may be surrendered by the Certificate Holder upon written notification and approval by the Council.

We hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed in the Service List, dated June 29, 2015, and notice of issuance published in *The News-Times*.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

Exhibit B

Property Card

Bethel, CT : Assessor Database

Property Search:

Parcel ID:	Alternate ID:	Owner 1 Name:	Street Number:	Street Name:
				CODFISH HILL ROAD

Search Reset

Property Detail:

Parcel ID:	Alternate ID/Map Block Lot:	Card:	Card:	Street Name:	Street Number:	Zoning:	LUC:	Acres:
65 57 122-1	R07828			CODFISH HILL ROAD	62	R-80	PP FOR PUBLIC UTILITIES	0.00

Owner Information:

Owner 1 Name:	TARPON TOWERS II LLC
Owner 2 Name:	
Street 1:	6 CITYPLACE DRIVE SUITE 800
Street 2:	
City:	SAINT LOUIS
State:	MO
Zip:	63141
Volume:	992
Page:	127
Deed Date:	0000-00-00

Property Images:

Picture:

There is no picture available.

Sketch:

There is no sketch available.

Valuation:

Appraised Land:	$0.00
Appraised Land PA490:	$0.00
Appraised Bldg:	$400,000.00
Appraised Total:	$400,000.00
Total Assessment:	$280,000.00

Out-Buildings:

Code:	Description:	Units:	Year Built:	Size1:	Size2:	Area:	Grade:	Condition:
TT4	TOWER CELLULAR	1	2017	0	0	150	C	NORMAL (Comm)

Mon. September 27, 2021 : 03:19 PM : 0.04s : 10mb

Exhibit C

Project Plans

dish wireless.

DISH WIRELESS SITE ID:

NJJER01156A

DISH WIRELESS SITE ADDRESS:

64 CODFISH HILL ROAD,
BETHEL, CT 06801

CONNECTICUT CODE COMPLIANCE

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

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

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
A-1	PROPOSED SITE PLAN AND EQUIPMENT LAYOUTS
A-2	PROPOSED EQUIPMENT LAYOUT AND DETAILS
A-3	EQUIPMENT PLATFORM AND H-FRAME DETAILS
A-4	EQUIPMENT DETAILS
GN-1	LEGEND AND ABBREVIATIONS
GN-2	GENERAL NOTES

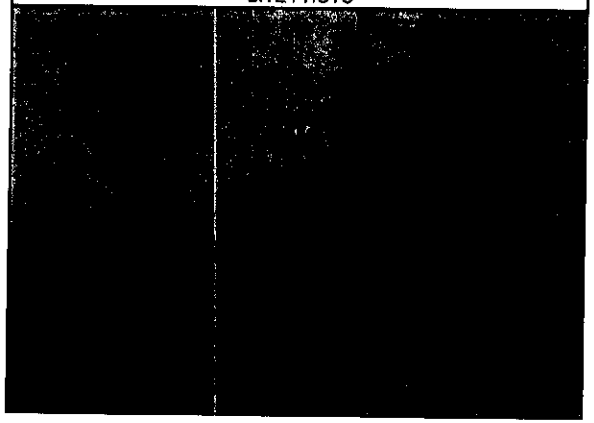
SCOPE OF WORK

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 PROPOSED JUMPERS
- INSTALL (6) PROPOSED RRUs (2 PER SECTOR)
- INSTALL (1) PROPOSED DUER VOLTAGE PROTECTION DEVICE (OVP)
- INSTALL (1) PROPOSED HYBRID CABLE

GROUND SCOPE OF WORK:
- INSTALL (1) PROPOSED METAL PLATFORM
- INSTALL (1) PROPOSED ICE BRIDGE
- INSTALL (1) PROPOSED PPC CABINET
- INSTALL (1) PROPOSED EQUIPMENT CABINET
- INSTALL (1) PROPOSED POWER CONDUIT
- INSTALL (1) PROPOSED TELCO CONDUIT
- INSTALL (1) PROPOSED TELCO-FIBER BOX
- INSTALL (1) PROPOSED DPS UNIT
- INSTALL (1) PROPOSED SAFETY SWITCH (IF REQUIRED)
- INSTALL (1) PROPOSED CIENA BOX (IF REQUIRED)
- INSTALL (1) PROPOSED METER SOCKET

SITE PHOTO



UNDERGROUND SERVICE ALERT CBYD 811
UTILITY NOTIFICATION CENTER OF CONNECTICUT
(800) 922-4455
WWW.CBYD.COM
CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

811

GENERAL NOTES

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

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

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

SITE INFORMATION

PROPERTY OWNER:	ESTATE OF CLAUDIA STONE
ADDRESS:	64 CODFISH HILL ROAD BETHEL, CT 06801
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	CT1155
TOWER APP NUMBER:	N/A
COUNTY:	FAIRFIELD COUNTY
LATITUDE (NAD 83):	41° 22' 27.42" N 41.374283° N
LONGITUDE (NAD 83):	73° 22' 25.21" W 73.373669° W
ZONING JURISDICTION:	CT SITING COUNCIL/ TOWN OF BETHEL
ZONING DISTRICT:	R-80
PARCEL NUMBER:	85-57-122
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	T.B.D.
TELEPHONE COMPANY:	LIGHT PATH

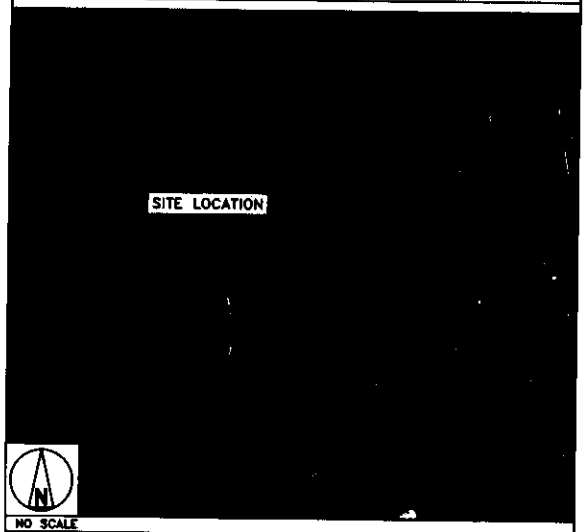
PROJECT DIRECTORY

APPLICANT:	DISH WIRELESS 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER OWNER:	TARPON TOWERS 1001 3RD AVE W, SUITE 420 BRADENTON, FL 34205 (941) 757-5010
SITE DESIGNER:	TECTONIC ENGINEERING & SURVEY CONSULTANTS P.C. 1279 ROUTE 300 NEWBURGH, NY 10853 (845) 567-4656
SITE ACQUISITION:	TECTONIC ENGINEERING (845) 567-4656
CONSTRUCTION MANAGER:	JOE DIPAZZA
RF ENGINEER:	YASHWANT VAJAE

DIRECTIONS

DIRECTIONS FROM 3 ADP BOULEVARD, ROSELAND, NJ: TURN LEFT ONTO ADP BLVD AND TURN RIGHT ONTO CHOCTAW WAY. TURN RIGHT ONTO LIVINGSTON AVE. AND PROCEED TO I-280 E. CONTINUE ON I-280 E. TAKE GARDEN STATE PKWY AND I-87 TO SAW MILL RIVER PKWY N IN ELMSFORD. MERGE ONTO SAW MILL RIVER PKWY AND GET ON I-684 N RAMP TO BREWSTER. FOLLOW I-684 N AND MERGE ONTO I-84/RT. 6 TOWARD DANBURY. TAKE EXIT 8 FROM I-84 E. CONTINUE ONTO US-6 E AND TURN RIGHT ONTO PAYNE ROAD. CONTINUE TO SHELTER ROCK ROAD AND STRAIGHT TO WALNUT HILL ROAD. TURN LEFT ONTO TAYLOR ROAD AND THEN A LEFT ONTO CT-302 E. TURN RIGHT ONTO WOLFPITS ROAD AND SLIGHT LEFT ONTO CODFISH HILL ROAD.

VICINITY MAP



NO SCALE

dish wireless.
3 ADP BOULEVARD,
ROSELAND, NJ 07068

Tectonic
Tectonic Engineering & Surveying Consultants P.C.
1279 Route 300
Newburgh, NY 12550
Phone: (845) 567-4656

STATE OF CONNECTICUT
ANTONIO A. GUALTIERI
PEN.0025406
LICENSED
PROFESSIONAL ENGINEER
6/21/21

DRAWN BY:	CHECKED BY:	APPROVED BY:
TJ	JQ	MP

RFDS REV #:

ZONING DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	06/16/21	ISSUED FOR APPROVAL

A&E PROJECT NUMBER

10710.NJJER01156A

DISH WIRELESS PROJECT INFORMATION

NJJER01156A

64 CODFISH HILL RD
BETHEL,CT 06801

SHEET TITLE

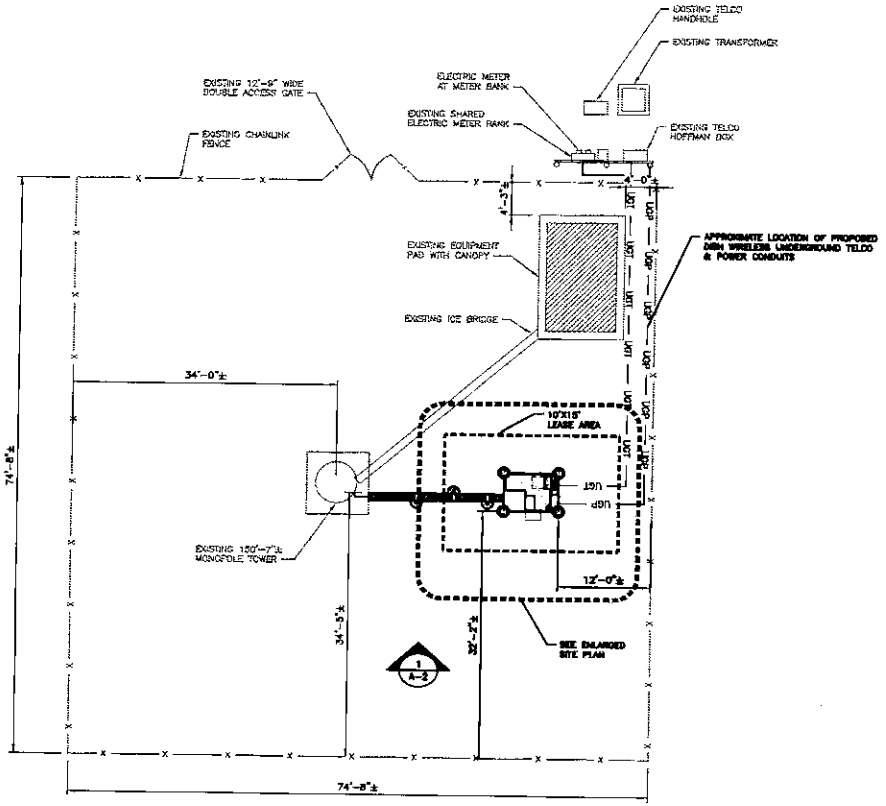
TITLE SHEET

SHEET NUMBER

T-1

NOTES

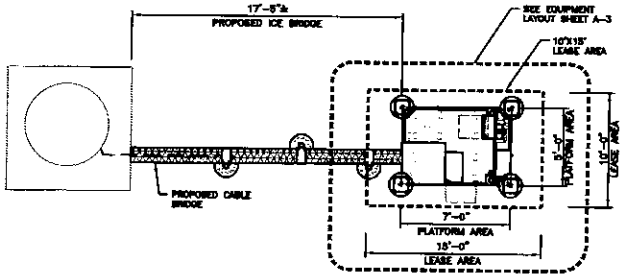
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. EXISTING STRUCTURE SHALL BE ANALYZED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT.



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.
4. EXISTING STRUCTURE SHALL BE ANALYZED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT.



ENLARGED EQUIPMENT PLAN — 3/4"=1'-0" — 2

NOT USED — 3

dish wireless.
3 ADP BOULEVARD,
ROSELAND, NJ 07068

Tectonic
Tectonic Engineering & Surveying Consultants P.C.

STATE OF CONNECTICUT
ANTONIO A. GUALTIERI
PEN.0025406
LICENSED PROFESSIONAL ENGINEER
9/24/21

DRAWN BY:	CHECKED BY:	APPROVED BY:
TJ	JQ	MP

RFDS REV #:

ZONING DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	09/16/21	ISSUED FOR APPROVAL

A&E PROJECT NUMBER
10710.NJJER01156A

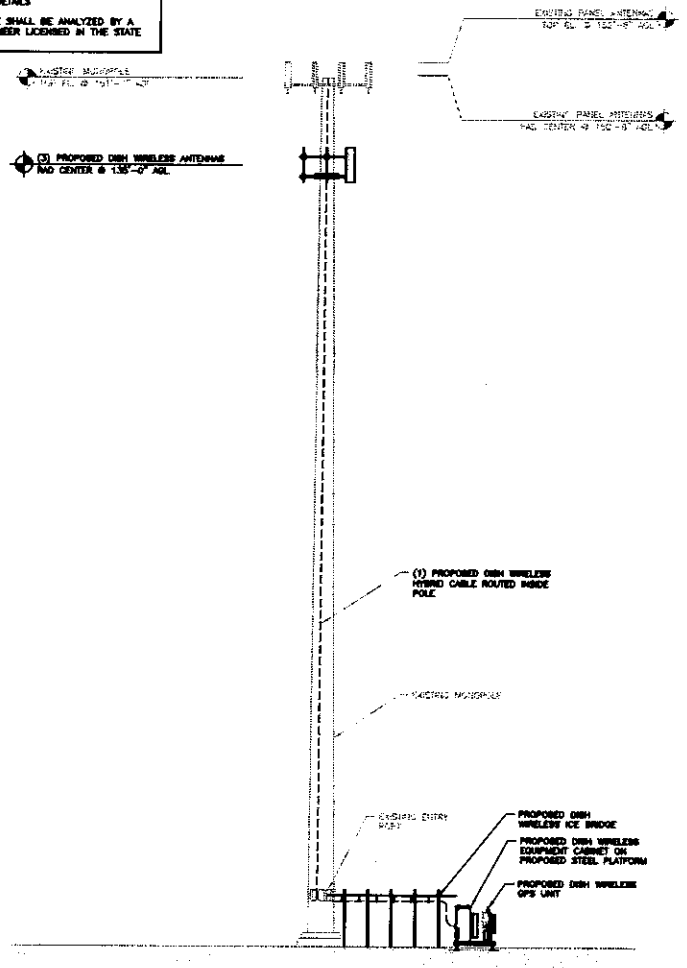
DISH WIRELESS PROJECT INFORMATION
NJJER01156A
64 CODFISH HILL RD
BETHEL,CT 06801

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

SHEET NUMBER
A-1

NOTES

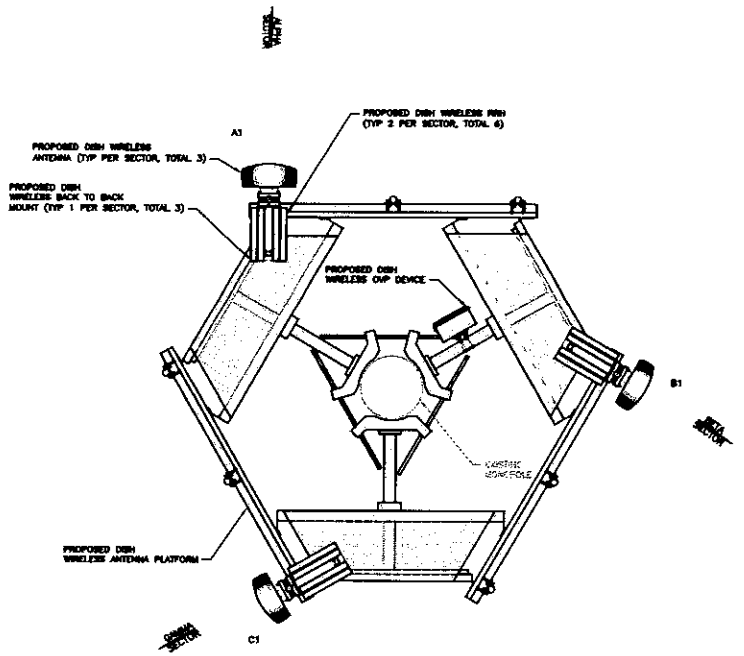
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.
2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS
3. EXISTING STRUCTURE SHALL BE ANALYZED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT.



PROPOSED NORTH ELEVATION

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

1



ANTENNA LAYOUT

12" 6" 0 1' 2' 3' 4' 5'
1/2"=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°	136'-0"	(1) 1.4" HYBRID CABLE (168'-0" LONG)
BETA	B1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" X 20.0"	120°	136'-0"	
GAMMA	C1	PROPOSED	JMA – MX08FRO665-21	5G	72.0" X 20.0"	240°	136'-0"	

SECTOR	POSITION	RRH	
		MANUFACTURER – MODEL NUMBER	TECHNOLOGY
ALPHA	A1	FUJITSU – TA08025-B604	N70/N66
	A1	FUJITSU – TA08025-B605	N71
BETA	B1	FUJITSU – TA08025-B604	N70/N66
	B1	FUJITSU – TA08025-B605	N71
GAMMA	C1	FUJITSU – TA08025-B604	N70/N66
	C1	FUJITSU – TA08025-B605	N71

NOTES

1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS.
2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.
3. AZIMUTHS ARE SUBJECT TO CHANGE AND NEED TO BE CONFIRMED WITH THE LATEST RFDS PRIOR TO THE START OF CONSTRUCTION.

ANTENNA SCHEDULE

NO SCALE

3

dish wireless.
3 ADP BOULEVARD,
ROSELAND, NJ 07068

Tectonic
Tectonic Engineering & Surveying Consultants P.C.

STATE OF CONNECTICUT
ANTONIO A. GUALTIERI
PEN.0025406
LICENSED PROFESSIONAL ENGINEER
9/24/21

DRAWN BY:	CHECKED BY:	APPROVED BY:
TJ	JQ	MP

RFDS REV #:

ZONING DOCUMENTS

SUBMITTALS

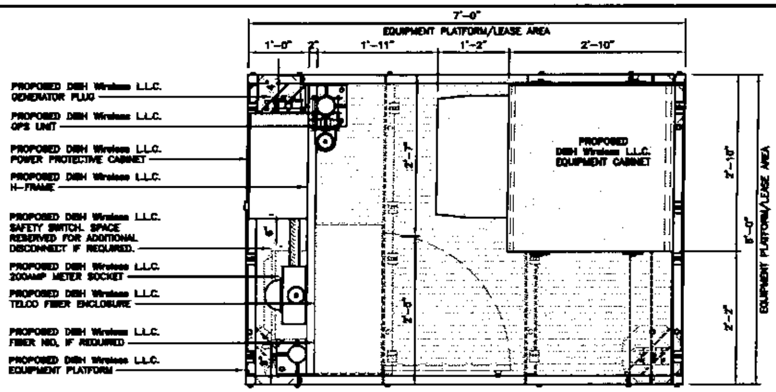
REV	DATE	DESCRIPTION
0	08/18/21	ISSUED FOR APPROVAL

A&E PROJECT NUMBER
10710.NJJER01156A

DISH WIRELESS PROJECT INFORMATION
NJJER01156A
64 CODFISH HILL RD
BETHEL,CT 06801

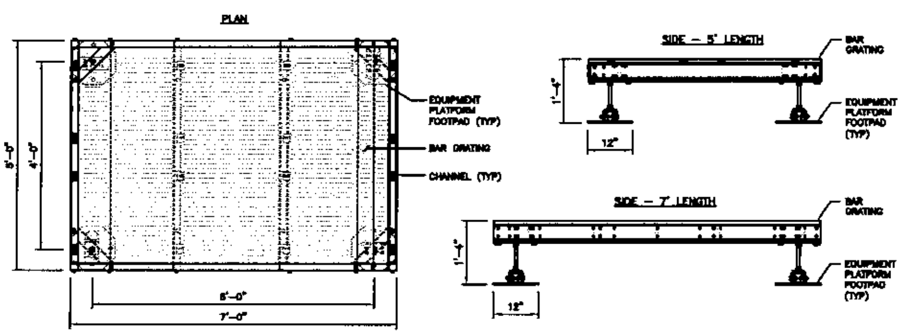
SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



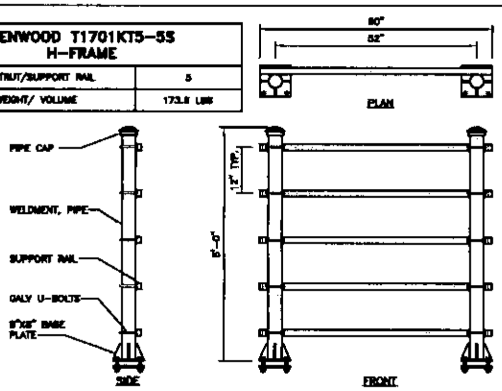
PLATFORM EQUIPMENT PLAN — 12" 9" 6" 3" 0 1' 2' — 1"=1'-0" — 1

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



PLATFORM DETAIL — NO SCALE — 2

KENWOOD T1701KT5-5S H-FRAME	
UNISTRUT/SUPPORT RAIL	5
WEIGHT/ VOLUME	173.8 LBS

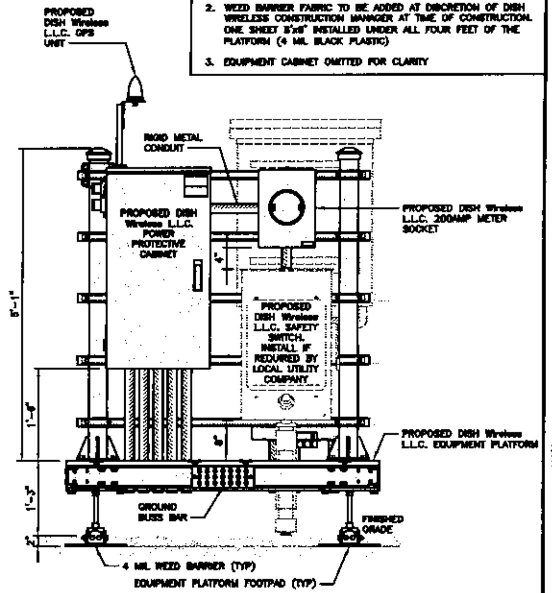


H-FRAME DETAIL — NO SCALE — 3

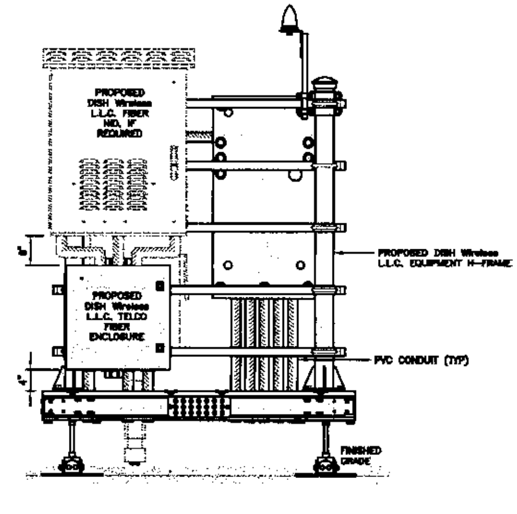
NOT USED — NO SCALE — 4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

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

dish wireless
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STATE OF CONNECTICUT — ANTONIO A. GUALTIERI — PEN.0025406 — LICENSED PROFESSIONAL ENGINEER — 9/24/21

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
TJ	JQ	MP

RFDS REV #:

ZONING DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	08/16/21	ISSUED FOR APPROVAL

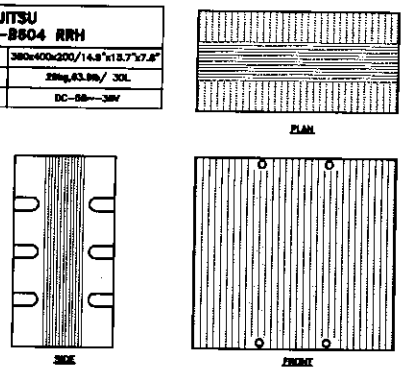
A&E PROJECT NUMBER
10710.NJJER01156A

DISH WIRELESS PROJECT INFORMATION
NJJER01156A
64 CODFISH HILL RD
BETHEL,CT 06801

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

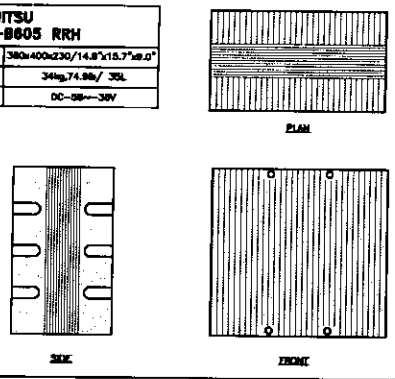
SHEET NUMBER
A-3

FUJITSU TA08025-B604 RRH	
DIMENSIONS (HxWxD) (IN/IN)	380x400x200/14.9"x15.7"x7.8"
WEIGHT(KG,LB)/ VOLUME	28kg,63.9lb/ 30L
POWER SUPPLY	DC-58~-38V



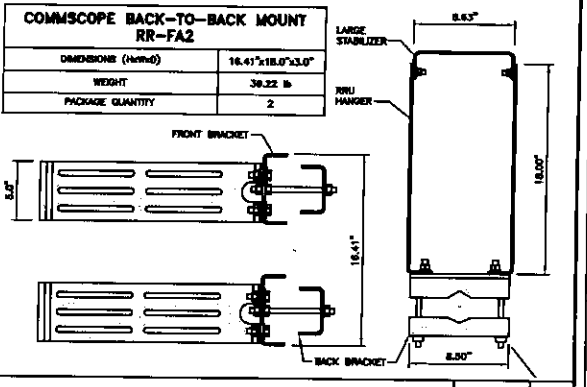
REMOTE RADIO HEAD DETAIL | NO SCALE | 1

FUJITSU TA08025-B605 RRH	
DIMENSIONS (HxWxD) (IN/IN)	380x400x230/14.8"x15.7"x9.0"
WEIGHT(KG,LB)/ VOLUME	34kg,74.9lb/ 35L
POWER SUPPLY	DC-58~-38V



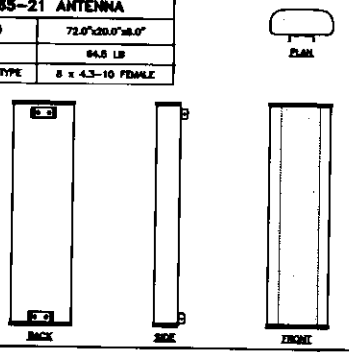
REMOTE RADIO HEAD DETAIL | NO SCALE | 2

COMMSCOPE BACK-TO-BACK MOUNT RR-FA2	
DIMENSIONS (HxWxD)	16.41"x18.0"x3.0"
WEIGHT	36.22 lb
PACKAGE QUANTITY	2

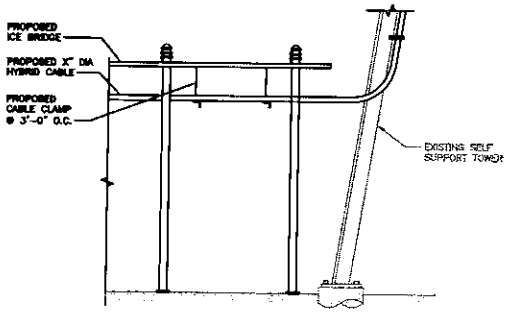


REMOTE RADIO MOUNT DETAIL | NO SCALE | 3

JMA WIRELESS MX08FRO665-21 ANTENNA	
DIMENSIONS (HxWxD)	72.0"x20.0"x8.0"
TOTAL WEIGHT	84.5 LB
RF PORTS, CONNECTOR TYPE	8 x 4.3-10 FEMALE



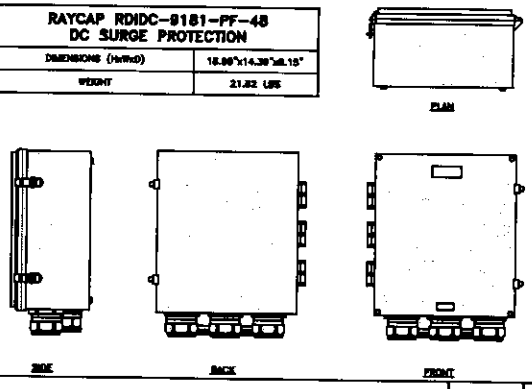
ANTENNA DETAIL | NO SCALE | 4



HYBRID CABLE RUN | NO SCALE | 5

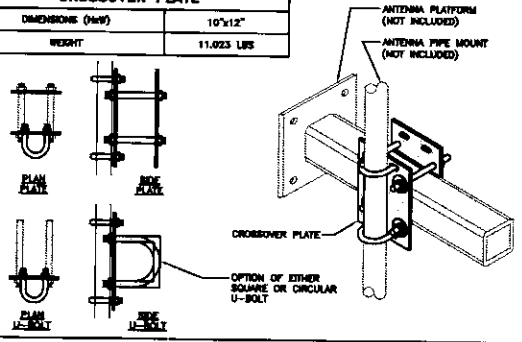
NO SCALE | 6

RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION	
DIMENSIONS (HxWxD)	18.86"x14.38"x8.15"
WEIGHT	21.82 LBS



SURGE SUPPRESSION DETAIL | NO SCALE | 7

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



RRH/OVP MOUNT DETAIL | NO SCALE | 8

JMA ANTENNA MOUNT BRACKET #91900318	
TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.16 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 | 9

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ROSELAND, NJ 07068

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Engineering & Surveying Consultants P.C.

STATE OF CONNECTICUT
ANTONIO A. GUALTIERI
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LICENSED PROFESSIONAL ENGINEER
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DISH WIRELESS PROJECT INFORMATION
NJJER01156A
64 CODFISH HILL RD
BETHEL,CT 06801

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-4

LEGEND

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

ABBREVIATIONS

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

dish wireless.

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STATE OF CONNECTICUT — ANTONIO A. GUALTIERI — PEN.0025406 — LICENSED PROFESSIONAL ENGINEER — 9/24/21

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DRAWN BY:	CHECKED BY:	APPROVED BY:
TJ	JQ	MP

RFDS REV #:

ZONING DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	09/16/21	ISSUED FOR APPROVAL

A&E PROJECT NUMBER
10710.NJJER01156A

DISH WIRELESS PROJECT INFORMATION
NJJER01156A

64 CODFISH HILL RD
BETHEL,CT 06801

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
GN-1

SITE ACTIVITY REQUIREMENTS:

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

2. "LOOK UP" – DISH WIRELESS AND TOWER OWNER SAFETY CLIMB REQUIREMENT:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH WIRELESS

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

dish wireless.

3 ADP BOULEVARD,
ROSELAND, NJ 07068

Tectonic

STATE OF CONNECTICUT
ANTONIO A. GUALTIERI
PEN.0025406
LICENSED PROFESSIONAL ENGINEER
9/24/21

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
TJ	JQ	MP

RFDS REV #:

ZONING DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
0	09/16/21	ISSUED FOR APPROVAL

A&E PROJECT NUMBER

10710.NJJER01156A

DISH WIRELESS PROJECT INFORMATION

NJJER01156A

64 CODFISH HILL RD
BETHEL,CT 06801

SHEET TITLE

ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER

GN-2

Exhibit D

Structural Analysis

Structural Analysis
150-ft Monopole

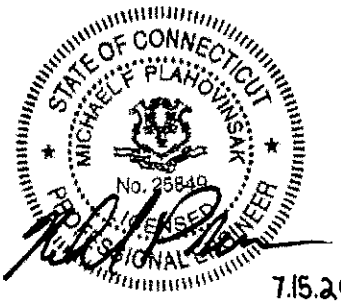
Prepared For:
Tarpon Towers II, LLC
8916 77th Terrace East, Suite 103
Lakewood Ranch, FL 34202

MFP Project #40915-143 r1a

Site Location:
CT1155 Bethel
Dish Site# NJJER01156A
Fairfield Co., CT
Lat/Long: 41°22'31", -73°22'56"

Analysis Type:
ANSI/TIA-222-G
Structure Rating - 37.6% (Anchor Rods) Passing

July 15, 2021



7.15.2021

Michael F. Plahovinsak, P.E.
18301 State Route 161 W, Plain City, OH 43064
614-398-6250 - mike@mfpeng.com

Project Summary:

I have completed a structural analysis of the existing monopole for the following new configuration:

- 135' – Dish Wireless:
  - (3) JMA MX08FRO665-21 Antennas
  - (3) Fujitsu TA08025-B605 + (3) TA08025-B604 RRH's
  - (1) Raycap RDIDC-9181-PF-48
  - (1) 1.6" Hybrid
  - MC-PK8-DSH Platform Mount

The pole has been analyzed in accordance with the requirements of the International Building Code per IBC section 3108, and the recommendations of the Telecommunications Industry Association *"Structural Standard for Steel Antenna Supporting Structures"* **ANSI/TIA-222-G.**

This analysis may be considered a "Rigorous Structural Analysis" as defined in ANSI/TIA-222-G 15.5.2.

As indicated in the conclusions of this analysis, I have determined that the existing pole and foundation have *sufficient capacity* to support the existing, reserved and proposed antenna loads as detailed herein. Based on the results of my analysis, structural modifications are not required at this time.

Source of Data:

Resource	Source	Job Number	Date
Pole and Foundation Drawings	Michael F. Plahovinsak, PE	23515-0638	10/26/15
Geotechnical Report	Dr. Clarence Welti	N/A	10/08/15
Erection Book & Anchor Steel Detail	TAPP	TP-13840	10/26/15

Analysis Criteria:

International Building Code 2006-2015 Section 3108
Structural Standards for Steel Antenna Supporting Structures **ANSI/TIA-222-G**

- TIA-222-G Wind Speed 100 mph (V_{asd} / 3-Second Gust)
- Equivalent ASCE-7-10 Wind 129 mph (V_{ult})
- TIA-222-G Wind w/ 3/4" Ice 50 mph (3-Sec Gust)
- Operational Wind Speed 60 mph (3-Sec Gust)

Structure Class	Exposure Category	Topographic Category
II (I = 1.0)	C	3

Appurtenance Listing:

Status	Elev.	Antenna / Mounting	Coax	Owner
Existing	150'	(6) Kathrein 800-10736 + (6) Amphenol WWX063X19G00 (6) ALU RRH2x60-700 + (3) RRH2x60-AWS + (3) RRH2xPCS (2) RFS DB-B1-6C-12AB-0Z Distribution Box Low Profile Platform	(2) 1 5/8" Hybrid	Verizon
Proposed*	135'	(3) JMA MX08FRO665-21 Antennas (3) Fujitsu TA08025-B605 + (3) TA08025-B604 RRH's (1) Raycap RDIDC-9181-PF-48 MC-PK8-DSH Platform Mount	(1) 1.6" Hybrid	Dish Wireless

* Analysis is based on a leased wind area of 11,000 in2. The 11,000 in2 is greater than the proposed actual equipment wind area.

All antenna lines assumed internally mounted, not exposed to the wind.

Michael F. Plahovinsak, P.E. - Since 2011

mike@mfpeng.com

Foundation Analysis:

The existing monopole foundation design was analyzed in conjunction with site specific geotechnical report. The existing foundation has sufficient capacity to support the pole with the proposed antenna configuration.

Conclusion:

I have completed a structural analysis of the existing monopole and foundation in accordance with the project specifics outlined above. My analysis indicates that the existing monopole and foundation are structurally adequate when considering the existing plus proposed loading. Please refer to the attached calculations for an itemized listing of all member stress ratios. The existing pole is safe and adequate to support the proposed loads, and no structural reinforcing is required to support the above loading.

Recommendations:

As a part of routine maintenance, I recommend periodic inspection of the pole and foundation structure for signs of fatigue or corrosion.

If you have any questions about the contents of this structural report or require any additional information, please feel free to contact my office.

Sincerely,

Michael F. Plahovinsak, P.E.

mike@mfpeng.com - 614.398-6250

Standard Conditions for Providing Structural Consulting Services on Existing Structures

1. The following standard conditions are a general overview of key issues regarding the work product supplied.

2. If the existing conditions are not as represented in this structural report or attached sketches, I should be contacted to evaluate the significance of the deviation and revise the structural assessment accordingly.

3. The structural analysis has been performed assuming that the structure is in "like new" condition. No allowance was made for excessive corrosion, damaged or missing structural members, loose bolts, etc. If there are any known deficiencies in the structure that potentially compromise structural integrity, I should be made aware of the deficiencies. If I am aware of a deficiency that exists in a structure at the time of my analysis, a general explanation of the structural concern due to the deficiency will be included in the structural report, but the deficiency will not be reflected in capacity calculations.

4. The structural analysis provided is an assessment of the primary load carrying capacity of the structure. I provide a limited scope of service in that I have not verified the capacity of every weld, plate, connection detail, etc. In most cases, structural fabrication details are unknown at the time of my analysis, and the detailed field measurement of this information is beyond the scope of my services. In instances where I have not performed connection capacity calculations, it is assumed that existing manufactured connections develop the full capacity of the primary members being connected.

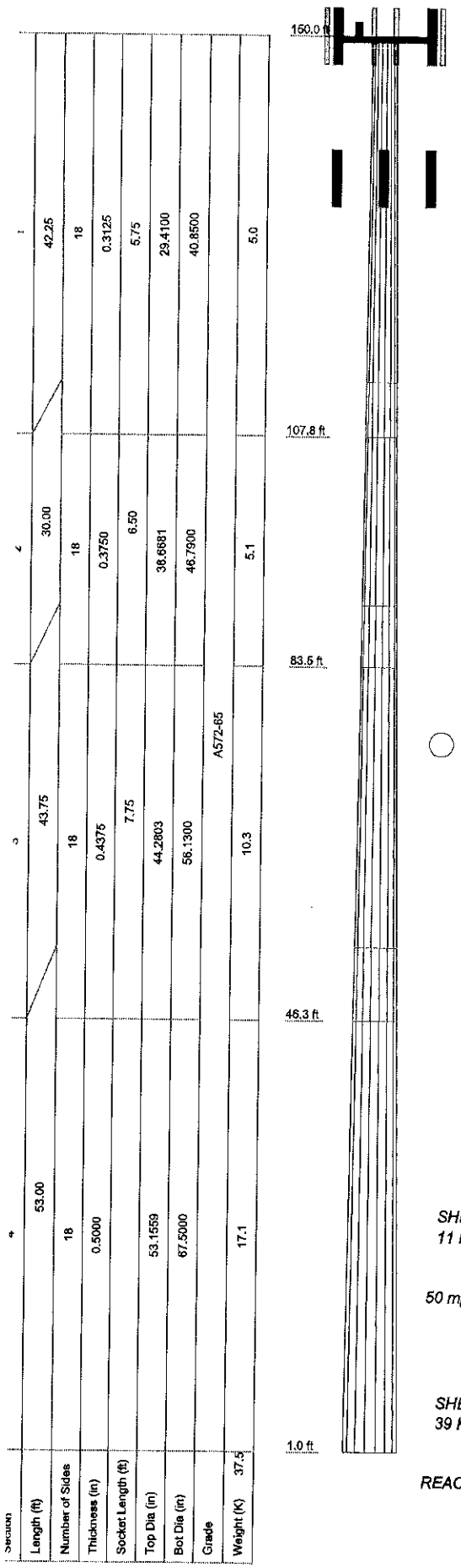
5. The structural integrity of the existing foundation system can only be verified if exact foundation sizes and soils conditions are known. I will not accept any responsibility for the adequacy of the existing foundations unless this site-specific data is supplied.

6. Miscellaneous items such as antenna mounts, coax supports, etc. have not been designed, detailed, or specified as part of my work. It is assumed that material of adequate size and strength will be purchased from a reputable component manufacturer. The attached report and sketches are schematic in nature and should not be used to fabricate or purchase hardware and accessories to be attached to the structure. I recommend field measurement of the structure before fabricating or purchasing new hardware and accessories. I am not responsible for proper fit and clearance of hardware and accessory items in the field.

7. The structural analysis has been performed considering minimum code requirements or recommendations. If alternate wind, ice, or deflection criteria are to be considered, then I shall be made aware of the alternate criteria.

Michael F. Plahovinsak, P.E. - Since 2011

mike@mfpeng.com



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) Kathrein 800-10736 w/ mount pipe (Verizon)	150	(2) Antel WWX063x19x00 w/ mount pipe (Verizon)	150
(2) Antel WWX063x19x00 w/ mount pipe (Verizon)	150	(12) Lucent RRH2x60-850 Band 5 (Verizon)	150
(2) Kathrein 800-10736 w/ mount pipe (Verizon)	150	(2) Raycap DB-B1-6C-12Ab-0Z Box (Verizon)	150
(2) Antel WWX063x19x00 w/ mount pipe (Verizon)	150	12' Low Profile Platform (MT-196) (Verizon)	150
(2) Kathrein 800-10736 w/ mount pipe (Verizon)	150	Antennas + Equipment (EPA 11,000 in2 / 2,000 lbs) (Dish)	135

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 100 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 3 with Crest Height of 100.00 ft
8. TOWER RATING: 36.3%

ALL REACTIONS ARE FACTORED

AXIAL 78 K
SHEAR 11 K
MOMENT 964 kip-ft
TORQUE 1 kip-ft
50 mph WIND - 0.7500 in ICE

AXIAL 51 K
SHEAR 39 K
MOMENT 3540 kip-ft
TORQUE 3 kip-ft
REACTIONS - 100 mph WIND

Michael Plahovinsak, P.E.
18301 State Route 161
Plain City, OH 43064
Phone: 614-398-6250
FAX: mike@mfpeng.com

Job: *150-ft Pole - MFP #40915-143 r1a*
Project: *CT1155 Bethel*
Client: Tarpon Towers | Drawn by: JC | App'd:
Code: TIA-222-G | Date: 07/15/21 | Scale: N
Path: C:\Users\Home\Dropbox\MFP Engineering Files\Projects\40915-143\40915-143 r1a.eri | Dwg No.

Tower Input Data

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

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 100 mph.
Structure Class II.
Exposure Category C.
Topographic Category 3.
Crest Height 100.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.00-107.75	42.25	5.75	18	29.4100	40.8500	0.3125	1.2500	A572-65 (65 ksi)
L2	107.75-83.50	30.00	6.50	18	38.6681	46.7900	0.3750	1.5000	A572-65 (65 ksi)
L3	83.50-46.25	43.75	7.75	18	44.2803	56.1300	0.4375	1.7500	A572-65 (65 ksi)
L4	46.25-1.00	53.00		18	53.1559	67.5000	0.5000	2.0000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	29.8155	28.8611	3087.1763	10.3296	14.9403	206.6344	6178.4147	14.4333	4.6262	14.804
	41.4320	40.2081	8347.6701	14.3908	20.7518	402.2625	16706.3244	20.1079	6.6396	21.247
L2	40.7875	45.5783	8443.7708	13.5940	19.6434	429.8532	16898.6521	22.7935	6.1456	16.388
	47.4540	55.2455	15036.6366	16.4773	23.7693	632.6069	30093.0588	27.6280	7.5750	20.2
L3	46.6835	60.8811	14784.8115	15.5642	22.4944	657.2673	29589.0772	30.4464	7.0233	16.053
	56.9284	77.3360	30304.8801	19.7708	28.5140	1062.8056	60649.6362	38.6753	9.1089	20.82
L4	56.0286	83.5649	29272.2107	18.6928	27.0032	1084.0276	58582.9385	41.7904	8.4754	16.951
	68.4642	106.3290	60302.9815	23.7850	34.2900	1758.6171	120685.311 2	53.1746	11.0000	22

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft^2	in					in	in	in
L1 150.00-107.75				1	1	1			
L2 107.75-83.50				1	1	1			
L3 83.50-46.25				1	1	1			
L4 46.25-1.00				1	1	1			

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 plf
1 5/8" (Verizon)	C	No	Yes	Inside Pole	150.00 - 1.00	2	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92
							1" Ice	0.00	0.92
**									
1.6" (Dish)	C	No	Yes	Inside Pole	135.00 - 1.00	1	No Ice	0.00	0.92
							1/2" Ice	0.00	0.92
							1" Ice	0.00	0.92

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.00-107.75	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	0.10
L2	107.75-83.50	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	0.07
L3	83.50-46.25	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	0.10
L4	46.25-1.00	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	0.12

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	150.00-107.75	A	1.767	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	0.10
L2	107.75-83.50	A	1.759	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	0.07
L3	83.50-46.25	A	1.765	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	0.10
L4	46.25-1.00	A	1.770	0.000	0.000	0.000	0.000	0.00

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
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.12

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
(2) Kathrein 800-10736 w/ mount pipe (Verizon)	A	From Face	3.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	11.39 12.01 12.63	7.07 8.47 9.72	0.07 0.15 0.23
(2) Antel WWX063x19x00 w/ mount pipe (Verizon)	A	From Face	3.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.78 9.33 9.85	7.22 8.42 9.33	0.09 0.16 0.24
(2) Kathrein 800-10736 w/ mount pipe (Verizon)	B	From Face	3.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	11.39 12.01 12.63	7.07 8.47 9.72	0.07 0.15 0.23
(2) Antel WWX063x19x00 w/ mount pipe (Verizon)	B	From Face	3.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.78 9.33 9.85	7.22 8.42 9.33	0.09 0.16 0.24
(2) Kathrein 800-10736 w/ mount pipe (Verizon)	C	From Face	3.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	11.39 12.01 12.63	7.07 8.47 9.72	0.07 0.15 0.23
(2) Antel WWX063x19x00 w/ mount pipe (Verizon)	C	From Face	3.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.78 9.33 9.85	7.22 8.42 9.33	0.09 0.16 0.24
(12) Lucent RRH2x60-850 Band 5 (Verizon)	A	From Face	2.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	3.77 4.08 4.40	2.02 2.30 2.59	0.06 0.08 0.10
(2) Raycap DB-B1-6C-12Ab-0Z Box (Verizon)	B	From Face	2.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	3.37 3.60 3.84	2.19 2.39 2.61	0.03 0.06 0.09
12' Low Profile Platform (MT-196) (Verizon) **	C	None		0.0000	150.00	No Ice 1/2" Ice 1" Ice	10.40 10.70 11.00	10.40 10.70 11.00	0.91 1.20 1.47
Antennas + Equipment (EPA 11,000 in2 / 2,000 lbs) (Dish)	C	None		0.0000	135.00	No Ice 1/2" Ice 1" Ice	76.39 81.39 86.39	76.39 81.39 86.39	2.00 2.50 3.00

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 90 deg - No Ice
5	0.9 Dead+1.6 Wind 90 deg - No Ice
6	1.2 Dead+1.6 Wind 180 deg - No Ice
7	0.9 Dead+1.6 Wind 180 deg - No Ice
8	1.2 Dead+1.0 Ice+1.0 Temp
9	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
10	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
11	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
12	Dead+Wind 0 deg - Service
13	Dead+Wind 90 deg - Service
14	Dead+Wind 180 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	150 - 107.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-21.51	4.88	3.83
			Max. Mx	4	-10.16	-480.13	-12.91
			Max. My	2	-10.19	16.58	461.89
			Max. Vy	4	17.49	-480.13	-12.91
			Max. Vx	2	-16.88	16.58	461.89
			Max. Torque	6			-2.69
L2	107.75 - 83.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-30.02	4.91	3.86
			Max. Mx	4	-15.93	-931.07	-22.21
			Max. My	2	-15.96	25.95	898.60
			Max. Vy	4	20.94	-931.07	-22.21
			Max. Vx	2	-20.33	25.95	898.60
			Max. Torque	6			-2.69
L3	83.5 - 46.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-46.30	4.89	3.84
			Max. Mx	4	-27.56	-1794.31	-36.50
			Max. My	2	-27.58	40.29	1739.99
			Max. Vy	4	27.21	-1794.31	-36.50
			Max. Vx	2	-26.60	40.29	1739.99
			Max. Torque	6			-2.69
L4	46.25 - 1	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-77.63	4.86	3.82
			Max. Mx	4	-51.07	-3539.94	-57.35
			Max. My	2	-51.07	61.18	3453.75
			Max. Vy	4	39.23	-3539.94	-57.35
			Max. Vx	2	-38.63	61.18	3453.75
			Max. Torque	6			-2.69

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 107.75	7.587	13	0.4394	0.0024
L2	113.5 - 83.5	4.411	13	0.3679	0.0009
L3	90 - 46.25	2.765	13	0.2914	0.0005
L4	54 - 1	0.991	13	0.1688	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	(2) Kathrein 800-10736 w/ mount pipe	13	7.587	0.4394	0.0024	120752
135.00	Antennas + Equipment (EPA 11,000 in2 / 2,000 lbs)	13	6.227	0.4150	0.0017	40250

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 107.75	37.988	4	2.2138	0.0124
L2	113.5 - 83.5	22.051	4	1.8419	0.0047
L3	90 - 46.25	13.814	4	1.4572	0.0028
L4	54 - 1	4.949	4	0.8428	0.0011

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	(2) Kathrein 800-10736 w/ mount pipe	4	37.988	2.2138	0.0124	23802
135.00	Antennas + Equipment (EPA 11,000 in2 / 2,000 lbs)	4	31.159	2.0846	0.0088	7933

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in²	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	150 - 107.75 (1)	TP40.85x29.41x0.3125	42.25	0.00	0.0	38.6639	-10.16	2694.79	0.004
L2	107.75 - 83.5 (2)	TP46.79x38.6681x0.375	30.00	0.00	0.0	53.1509	-15.93	3760.52	0.004
L3	83.5 - 46.25 (3)	TP56.13x44.2803x0.4375	43.75	0.00	0.0	74.4211	-27.56	5218.03	0.005
L4	46.25 - 1 (4)	TP67.5x53.1559x0.5	53.00	0.00	0.0	106.3290	-51.07	7227.43	0.007

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	150 - 107.75 (1)	TP40.85x29.41x0.3125	480.30	2159.72	0.222	0.00	2159.72	0.000
L2	107.75 - 83.5 (2)	TP46.79x38.6681x0.375	931.34	3451.29	0.270	0.00	3451.29	0.000
L3	83.5 - 46.25 (3)	TP56.13x44.2803x0.4375	1794.68	5748.83	0.312	0.00	5748.83	0.000
L4	46.25 - 1 (4)	TP67.5x53.1559x0.5	3540.41	9961.42	0.355	0.00	9961.42	0.000

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 $\frac{M_{uy}}{\phi M_{ny}}$

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	150 - 107.75 (1)	TP40.85x29.41x0.3125	17.49	1347.39	0.013	2.44	4329.96	0.001
L2	107.75 - 83.5 (2)	TP46.79x38.6681x0.375	20.94	1880.26	0.011	2.44	6919.77	0.000
L3	83.5 - 46.25 (3)	TP56.13x44.2803x0.4375	27.21	2609.02	0.010	2.44	11525.92	0.000
L4	46.25 - 1 (4)	TP67.5x53.1559x0.5	39.23	3613.71	0.011	2.44	19969.67	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	150 - 107.75 (1)	0.004	0.222	0.000	0.013	0.001	0.226 ✔	1.000	4.8.2 ✔
L2	107.75 - 83.5 (2)	0.004	0.270	0.000	0.011	0.000	0.274 ✔	1.000	4.8.2 ✔
L3	83.5 - 46.25 (3)	0.005	0.312	0.000	0.010	0.000	0.318 ✔	1.000	4.8.2 ✔
L4	46.25 - 1 (4)	0.007	0.355	0.000	0.011	0.000	0.363 ✔	1.000	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	150 - 107.75	Pole	TP40.85x29.41x0.3125	1	-10.16	2694.79	22.6	Pass
L2	107.75 - 83.5	Pole	TP46.79x38.6681x0.375	2	-15.93	3760.52	27.4	Pass
L3	83.5 - 46.25	Pole	TP56.13x44.2803x0.4375	3	-27.56	5218.03	31.8	Pass
L4	46.25 - 1	Pole	TP67.5x53.1559x0.5	4	-51.07	7227.43	36.3	Pass
							Summary	
						Pole (L4)	36.3	Pass
						RATING =	**36.3**	**Pass**

Michael F. Plahovinsak, P.E.
18301 State Route 161 W
Plain City, OH 43064
Phone: 614-398-6250
email: mike@mfpeng.com

Job	Page
150-ft monopole - MFP #40915-143 r1a	BP-G
Project	**Date**
CT1155 Bethel	7/15/2021
Client	**Designed by**
Tarpon Towers	Mike

Anchor Rod and Base Plate Calculation

ANSI/TIA-222-G-2

Factored Base Reactions:		***Pole Shape:***	***Anchor Rods:***	***Base Plate:***
Moment:	3540 ft-kips	18-Sided	(24) 2.25 in. A615 GR. 75	2.75 in. x 81 in. Round
Shear:	39 kips	***Pole Dia. (D_f):***	Anchor Rods Evenly Spaced	fy = 50 ksi
Axial:	51 kips	67.50 in	On a 75 in Bolt Circle	

Anchor Rod Calculation According to TIA-222-G section 4.9.9

ϕ = 0.80 TIA 4.9.9
I_{bolts} = 16875.00 in^2 Momet of Inertia
P_u = 94 kips Tension Force
V_u = 2 kips Shear Force
R_{nt} = 325.00 kips Nominal Tensile Strength
η = 0.50 for detail type (d)

The following Interation Equation Shall Be Satisfied:

$$\left(\frac{P_u + \frac{V_u}{\eta}}{\phi R_{nt}} \right) \leq 1.0$$

$$0.376 \leq 1$$

Base Plate Calculation According to TIA-222-G

ϕ = 0.90 TIA 4.7
M_{PL} = 253.4 in-kip Plate Moment
L = 8.8 in Section Length
Z = 16.7 Plastic Section Modulus
M_p = 835.3 in-kip Plastic Moment
ϕM_n = 751.7 in-kip Factored Resistance

Calculated Moment vs Factored Resistance

253.38 in-kip $\leq$ 752 in-kip

Anchor Rods Are Adequate	**37.6%**	☑
Base Plate is Adequate	**33.7%**	☑

Monopole Spread Footing Calculation

ANSI/TIA-222-G-2

Factored Base Reactions:		**Footing Dimensions:**		**Concrete:**
Moment:	3540 ft-kips	28 ft x 28 ft	8 ft Square Pier	fc = 4000 psi
Shear:	39 kips	x 4 ft thick	w/6 in Reveal	Steel fy = 60 ksi
Axial:	51 kips	Bearing 10 ft B.G.	131.6 Yd3 Concrete	f = 0.75
Soil Backfill	100 pcf	Ultimate Bearing:	8000 psf	Water Table n/a

Foundation Weight

Weight of Pole	51.0 kips
Weight of Concrete	532.8 kips
Weight of Soil	432 kips
Bouyancy of Water	0.0 kips
Total	1015.8 kips

Overturning Resistance:

Overturning Moment (M_u)	3949.5 ft-kips	3540 ft-kips + (39 kips x 10.5 ft)
Resisting Moment (R_s)	14221.2 ft-kips	1015.8 kips x 28 ft / 2
$\phi \times R_s > M_u$	$M_{overturning} / f M_{resist}$	**37.0%** **OK**

Soil Bearing Pressure:

Eccentricity (e)	3.89 ft	3949.5 ft-kips / 1015.8 kips
6(e)	23.3 ft <	28.0 ft OK
Maximum Soil Bearing	2375.1549 psf	Calculated across corners
Soil Overburden	-1000 psf	
Net Soil Bearing	1375.1549 psf	
Resisting Soil Bearing (R_s)	8000 psf	
Net Soil Bearing < $\phi \times R_s$	Net Bearing / f R_s	**22.9%** **OK**

Bending Moment in Pier:

Bending Moment	3793.5 ft-kips	3540 ft-kips + (39 kips x 6.5 ft)
Pier Steel Req'd (Loads)	73.40 in^2	
Min. Pier Steel	46.08 in^2	1/2% (Based on Square Pier)

Bending Moment in Footing:

Max Bending Moment	2232.3463 ft-kips	Σ Moments about pier face
Footing Steel Req'd (Loads)	0.64 in^2/ft	
Min. Footing Steel	1.04 in^2/ft	0.18%

Exhibit E

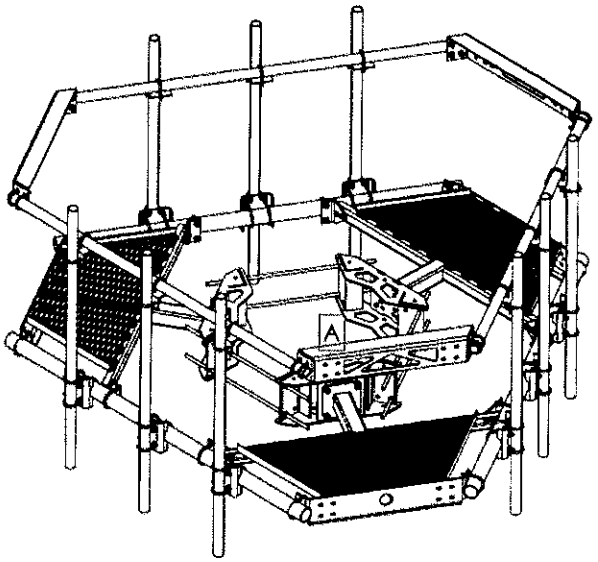
Mount Analysis

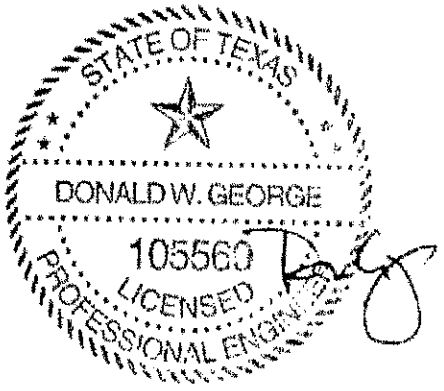
COMMSCOPE®

MONOPOLE PLATFORM

MC-PK8-C

STRUCTURAL ANALYSIS REPORT





Date: 2/18/2021

CommScope Inc.

11312 S. Pipeline Road

Euless, TX 76040

Steel Products (SteelProducts@commscope.com)

COMMSCOPE®

1 SUMMARY

Analysis of monopole platform was performed to determine the structural integrity of mounting system with the proposed loads. The purpose of the analysis is to determine acceptability of the mount stress level.

2 DESIGN CRITERIA

TIA Standard	ANSI/TIA-222-G and ANSI/TIA-222-H
Wind Speed	140 mph (3-Second Gust, VASD) / 180 mph (3-Second Gust, VULT)
Wind Speed w/ ice	60 mph (3-Second Gust, VASD) w/ 2" ice
Structure Class	I or II
Exposure Category	B or C
Topographic Category	1
Max. Mount Height	175ft
*Antenna Information	(1)JMA MX08FIT865-20 & (2)Fujitsu RRU / Each Antenna Pipe
Mount Material	CommScope mount material are using mill certified steel with minimum or exceeding the following ASTM specification.
Round Pipe/Tube Rectangular/Square Tube Solid Rod Angles	ASTM A500 Grade C (46Ksi) ASTM A500 Grade C (46 Ksi) ASTM A529 (50 Ksi) ASTM A529 (50 Ksi)

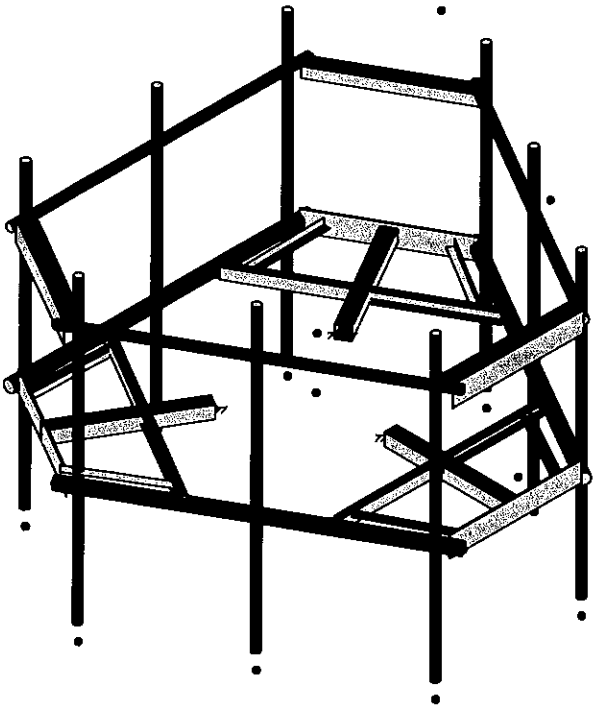
*Loaded two antenna pipe position per sector. For three antenna positions per sector, upgrade antenna pipes to 27/8" OD
** Code allowed shielding considered

3 ANALYSIS PROCEDURE

RISA-3D (Version No. 17.0.0), a commercially available software package, was used to create a three-dimensional model of the mount and calculate member stresses for various loading cases.

4 ANALYSIS RESULTS

The mount model MC-PK8-C when installed as per instruction listed in assembly drawing has sufficient capacity to carry above mentioned equipment loads with stated design criteria without the need for additional structural supporting/ modification.



Envelope Only Solution

CommScope	MC-PK8-C	Rendered View
		Feb 3, 2021 at 2:26 PM
		MC-PK8.r3d

JMA WIRELESS

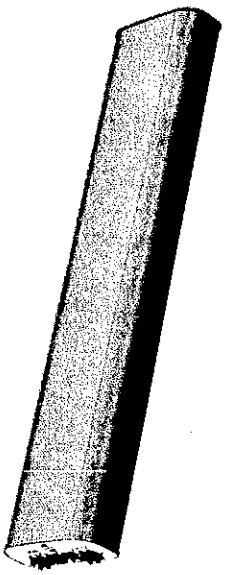
MX08FIT865-20

NWAV™ X-Pol 8-Port Antenna

X-Pol 8-Port 8 ft 65° with Smart Bias-Ts:

4 ports 617-894 MHz and 4 ports 1695-2200 MHz

- Excellent passive intermodulation (PIM) performance reduces harmful interference.
- Fully integrated (iRETs) with Smart Bias-Ts & independent RET control for low and high bands for ease of network optimization
- SON-Ready array spacing supports beamforming capabilities.
- High total power handling to maximize network efficiency
- Supports 4X4 MIMO in all bands



nwav™

Electrical specification (minimum/maximum)	Ports 1, 2, 3, 4		Ports 5, 6, 7, 8		
Frequency bands, MHz	617-698	698-894	1695-1880	1850-1990	1920-2200
Polarization	± 45°		± 45°		
Average gain over all tilts, dBi	15.3	16.1	17.5	17.8	18.6
Horizontal beamwidth (HBW), degrees[1]	68	62	69	66	62
Front-to-back ratio, co-polar power @180°± 30°, dB	>27	>29	>30	>30	>30
Vertical beamwidth (VBW), degrees[1]	10.3	8.8	5.4	5.2	4.9
Electrical downtilt (EDT) range, degrees	2-13		2-12		
First upper side lobe (USLS) suppression, dB[1]	≤-18.0	≤-16.5	≤-18.0	≤-18.0	≤-20.0
Minimum cross-polar isolation, port-to-port, dB[1]	25	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0		1.5:1 / -14.0		
Max passive intermodulation (PIM), 2x20W carrier, dBc	-153		-153		
Max input power per any port, watts	300		250		
Total composite power all ports (1-12), watts	1500				

[1] Typical value over frequency and tilt

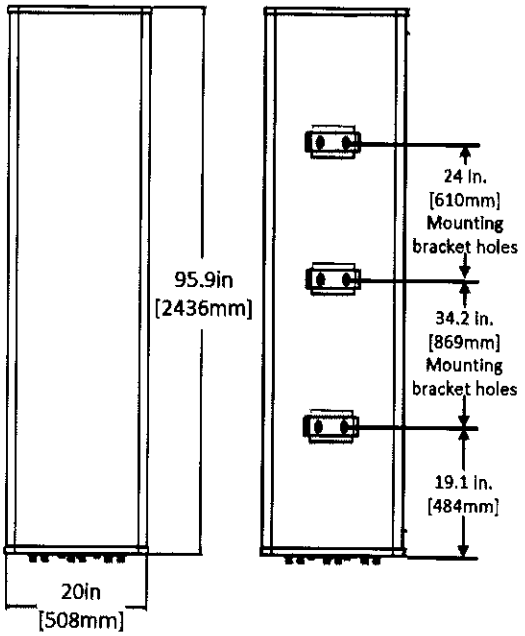
MX08FIT865-20 *NWAV™*

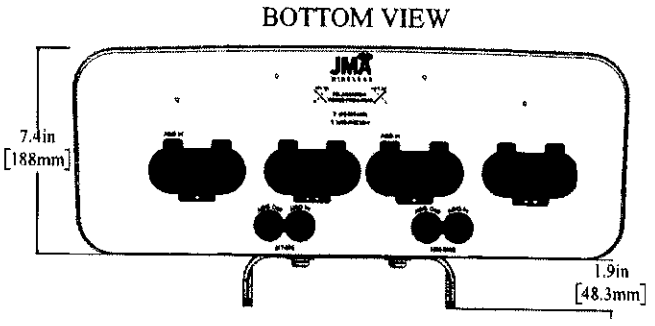
X-Pol 8-Port Antenna

Electrical specification (minimum/maximum)	Ports 1, 2, 3, 4		Ports 5, 6, 7, 8		
Frequency bands, MHz	617-698	698-894	1695-1880	1850-1990	1920-2200
Average gain over all tilts, dBi (Gaine Tolerance)	14.8±0.5	15.7±0.5	17.1±0.4	17.3±0.4	18.2±0.5
Horizontal beamwidth tolerance (HBW), degrees[1]	±5	±4.5	±4.5	±4.0	±5.0
Vertical beamwidth tolerance (VBW), degrees	±0.6	±0.5	±0.5	±0.5	±0.5
Front-to-back ratio, co-polar power @180°± 30°, dB	>27	>25	>25	>26	>24
X-Pol discrimination (CPR) at boresight, dB	>23	>25	>25	>22	>24
First upper side lobe (USLS) suppression boresight to 20°, dB[1]	≤-16	≤-15	≤-16	≤-16	≤-16

Mechanical specifications	
Dimensions height/width/depth, inches (mm)	95.9/ 20.0/ 7.4 (2436/ 508.0/ 188.0)
Shipping dimensions length/width/height, inches (mm)	100.6/ 23.8/ 14.5 (2555/ 605/ 368)
No. of RF input ports, connector type, and location	8 x 4.3-10 female, bottom
RF connector torque	96 lbf·in (10.85 N·m or 8 lbf·ft)
Net antenna weight, lb (kg)	101 (45.8)
Shipping weight, lb (kg)	151 (68.5)
Antenna mounting and downtilt kit included with antenna	91900318, 91900319 (middle bracket)
Net weight of the mounting and downtilt kit, lb (kg)	26 (11.8)
Range of mechanical up/down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal, lateral, and rear wind loading @ 150 km/h, lbf (N)	247.4 (1101), 55.3 (246), 373.7 (1662)
Equivalent flat plate @ 100 mph and Cd=2, sq ft	4.98

Front view **Back view** **Bottom view**





JMA WIRELESS

MX08FIT865-20 *NWAV™*

X-Pol 8-Port Antenna

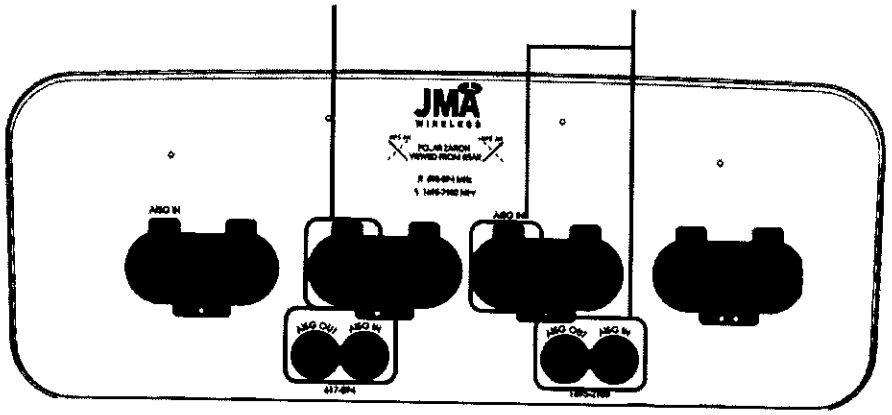
Remote electrical tilt (RET 1000) information	
RET location	Integrated into antenna
RET interface connector type	8-pin AISG connector per IEC 60130-9 or RF port bias-t
RET connector torque	Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight)
RET interface connector quantity	2 pairs of AISG male/female connectors and 2 RF port bias-ts
RET interface connector location	Bottom of the antenna
Total no. of internal RETs 698-894 MHz	1
Total no. of internal RETs 1695-2200 MHz	1
RET input operating voltage, vdc	10-30
RET max power consumption, idle state, W	≤ 2.0
RET max power consumption, normal operating conditions, W	≤ 13.0
RET communication protocol	AISG 2.0 / 3GPP

RET and RF connector topology

Each RET device can be controlled either via the designated external AISG connector or RF port as shown below:

Band	RF port
617-894	1-4

Band	RF port
1695-2200	5-8

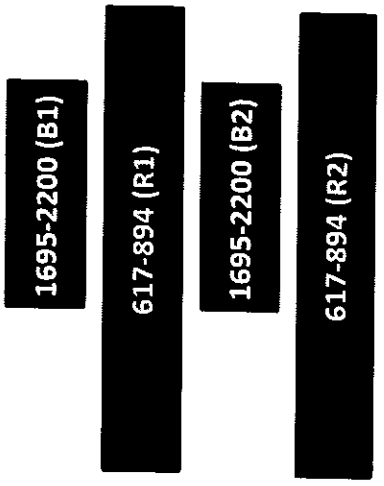


Array topology

6 sets of radiating arrays

R1: 617-894 MHz
R2: 617-894 MHz
B1: 1695-2200 MHz
B2: 1695-2200 MHz

Band	RF port
617-894	1-2
617-894	3-4
1695-2200	5-6
1695-2200	7-8



Fujitsu – DiSH Triple-band RU Technical Specifications

RU General Specification	
Part number	TA08025-B605
TRX Configuration	4T4R
Operating Frequency	n71 & n29 & n26 Frequencies (Triple-Band)
Instantaneous Bandwidth	n71: 35MHz n29: 11MHz n26: 7MHz
Operation Bandwidth (3GPP)	n71: 35MHz n29: 10MHz n26: 5MHz
CC BW	5/10/20 MHz
Capacity	n71:2Cr(5/10/20MHz)/NB-IOT n26:1Cr(5MHz)/NB-IOT n29:2Cr(5/10MHz)
Interface to DU	ORAN 7.2x / 10G optical IF
TX Specification	
Output Power per TX	n71: 30W per port n29: 40W per port n26: 10 W per port
ACLR	Compliant with 3GPP TS 38.104
Transmitter Spurious Emissions	Compliant with 3GPP TS 38.104
EVM	Compliant with 3GPP TS 38.104
RX Specification	
Noise Figure	2.5dB (normal condition 2.2dB)
Blocking Features	Compliant with 3GPP TS 38.104
Receiver spurious emissions	Compliant with 3GPP TS 38.104
Mechanical Specification	
Volume	35 L
Dimension	W:400mm, H: 380mm, D: 230mm
Antenna Connector Type	4.3-10 RF connector
Antenna Control Interface	AISG
Power Supply	DC -58~-36V
Power Consumption	<1300W
Weight	34 kg
Environmental	
Humidity (Absolute humidity)	0.03 g/m3 ~ 30 g/m3
Atmospheric Pressure	Between 70 kPa and 106 kPa
Operating Temperature	-40°C ~ +55°C
IP Rating	IP65
Cooling	Passive

Mounting Options	
Pole	TBD
Wall	TBD

Exhibit F

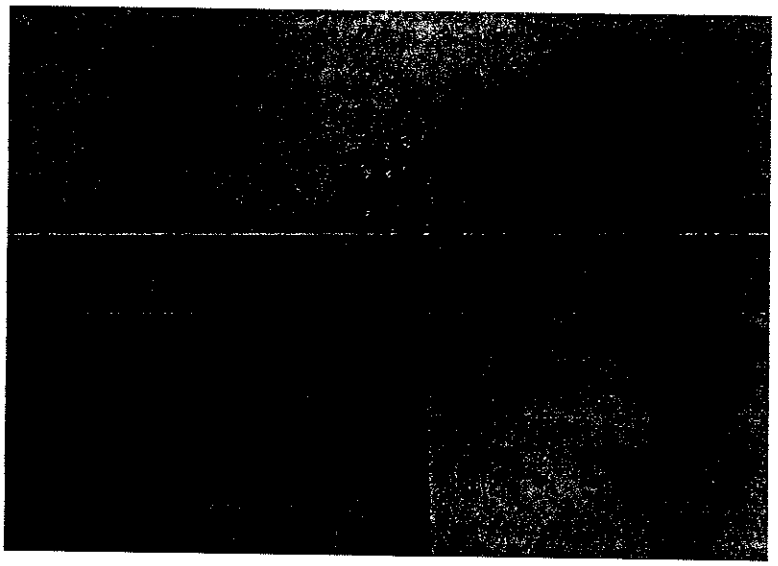
Emissions Report

Pinnacle Telecom Group

Professional and Technical Services

Telecom Consulting

Antenna Site FCC RF Compliance Assessment and Report for Municipal Submission



Prepared for:	Dish Wireless, LLC
Site ID:	NJJER01156A
Site Address:	64 Codfish Hill Road Bethel, CT
Latitude:	N 41.2420
Longitude:	W 73.3644
Structure type:	Monopole
Report date:	September 24, 2021
Compliance Conclusion:	Dish Wireless, LLC will be in compliance with the rules and regulations as described in OET Bulletin 65, following the implementation of the proposed mitigation as detailed in the report.

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

Contents

Introduction and Summary

At the request of Dish Wireless, LLC ("Dish"), Pinnacle Telecom Group has performed an independent expert assessment of radiofrequency (RF) levels and related FCC compliance for proposed wireless base station antenna operations on an existing monopole located at 64 Codfish Hill Road in Bethel, CT. Dish refers to the antenna site by the code "NJJER01156A", and its proposed operation involves directional panel antennas and transmission in the 600 MHz, 2000 MHz, and 2100 MHz frequency bands licensed to it by the FCC.

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

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

The results of a compliance assessment can be described in layman's terms by expressing the calculated RF levels as simple percentages of the FCC MPE limit. If the normalized reference for that limit is 100 percent, then calculated RF levels higher than 100 percent indicate the MPE limit is exceeded and there is a need to mitigate the potential exposure. On the other hand, calculated RF levels consistently below 100 percent serve as a clear and sufficient demonstration of compliance with the MPE limit. We can (and will) also describe the overall worst-case result via the "plain-English" equivalent "times-below-the-limit" factor.

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

- At street level, the conservatively calculated maximum RF level from the combination of proposed and existing antenna operations at the site is 0.9078 percent of the FCC general population MPE limit – well below the 100-percent reference for compliance. In other words, the worst-case calculated RF level – intentionally and significantly overstated by the calculations – is still more than 110 times below the FCC limit for safe, continuous exposure of the general public.
- A supplemental analysis of the RF levels at the same height as the Dish antennas indicate that the FCC MPE limit is potentially exceeded. Therefore, it is recommended that two Caution signs be installed six feet below the antennas. In addition, NOC Information signs are to be installed at the base of the monopole.
- The results of the calculations, along with the proposed mitigation, combine to satisfy the FCC requirements and associated guidelines on RF compliance at street level around the site and on the subject roof. Moreover, because of the significant conservatism incorporated in the analysis, RF levels actually caused by the antennas will be lower than these calculations indicate.

The remainder of this report provides the following:

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

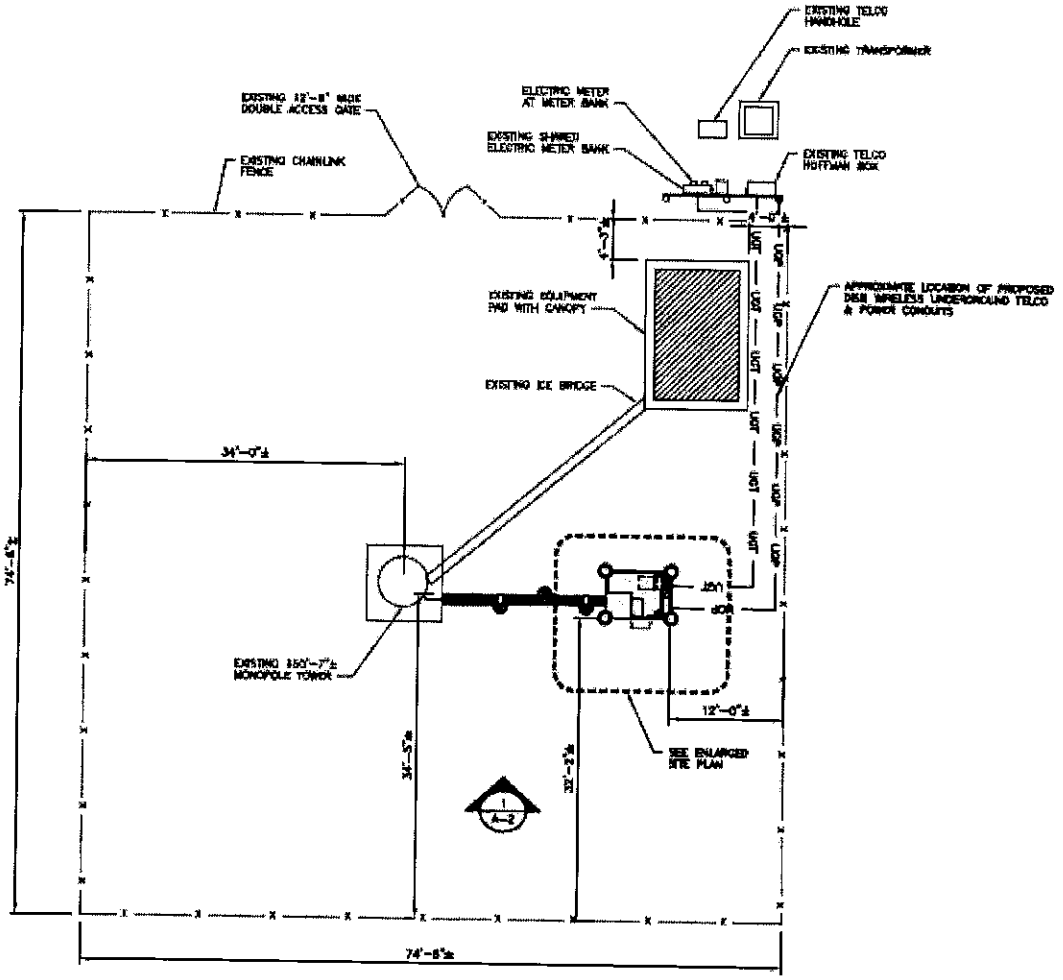
In addition, four Appendices are included. Appendix A provides information on the documents used to prepare the analysis. Appendix B provides background on the FCC MPE limit. Appendix C details the proposed mitigation to satisfy the FCC requirements and associated guidelines on RF compliance. Appendix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

a summary of the qualifications of the expert certifying FCC compliance for this site.

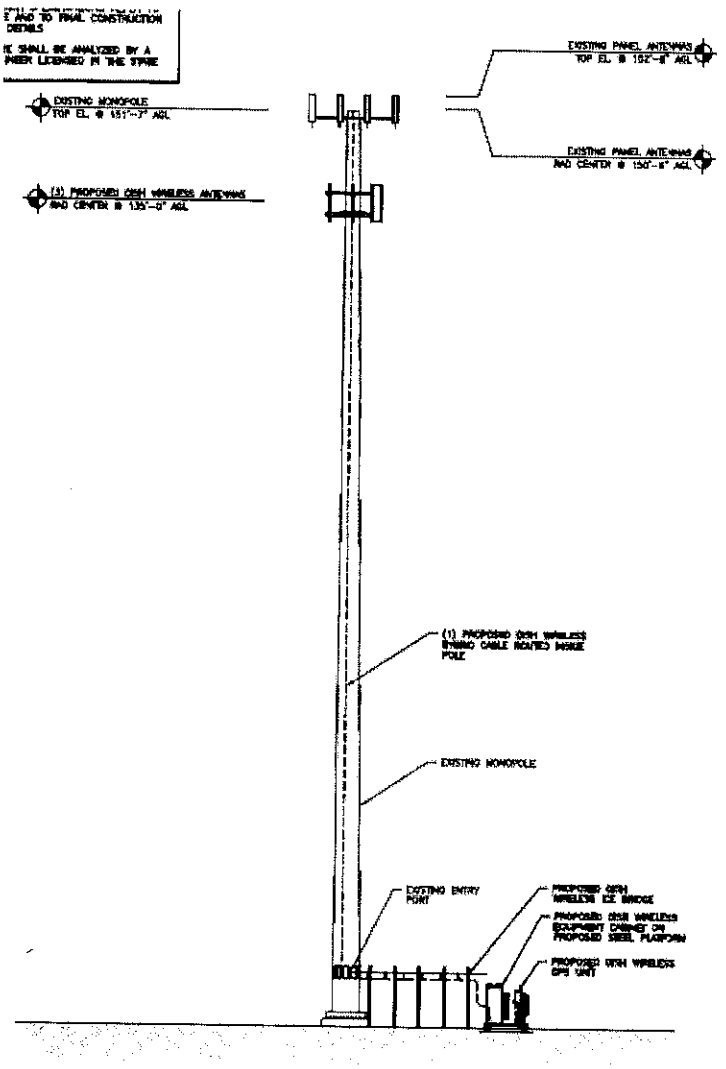
Antenna and Transmission Data

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

Plan View:



Elevation View:



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

Ant. ID	Carrier	Antenna Manufacturer	Antenna Model	Type	Freq (MHz)	Ant. Dim. (ft.)	Total ERP (watts)	Z (ft)	Ant. Gain (dBd)	B/W	Azimuth	EDT	MDT
1	Dish	JMA Wireless	MX08FRO665-21	Panel	600	6	1680	135	11.46	68	0	2	0
1	Dish	JMA Wireless	MX08FRO665-21	Panel	2000	6	6609	135	16.16	62	0	2	0
1	Dish	JMA Wireless	MX08FRO665-21	Panel	2100	6	7415	135	16.66	64	0	2	0
2	Dish	JMA Wireless	MX08FRO665-21	Panel	600	6	1680	135	11.46	68	120	2	0
2	Dish	JMA Wireless	MX08FRO665-21	Panel	2000	6	6609	135	16.16	62	120	2	0
2	Dish	JMA Wireless	MX08FRO665-21	Panel	2100	6	7415	135	16.66	64	120	2	0
3	Dish	JMA Wireless	MX08FRO665-21	Panel	600	6	1680	135	11.46	68	240	2	0
3	Dish	JMA Wireless	MX08FRO665-21	Panel	2000	6	6609	135	16.16	62	240	2	0
3	Dish	JMA Wireless	MX08FRO665-21	Panel	2100	6	7415	135	16.66	64	240	2	0

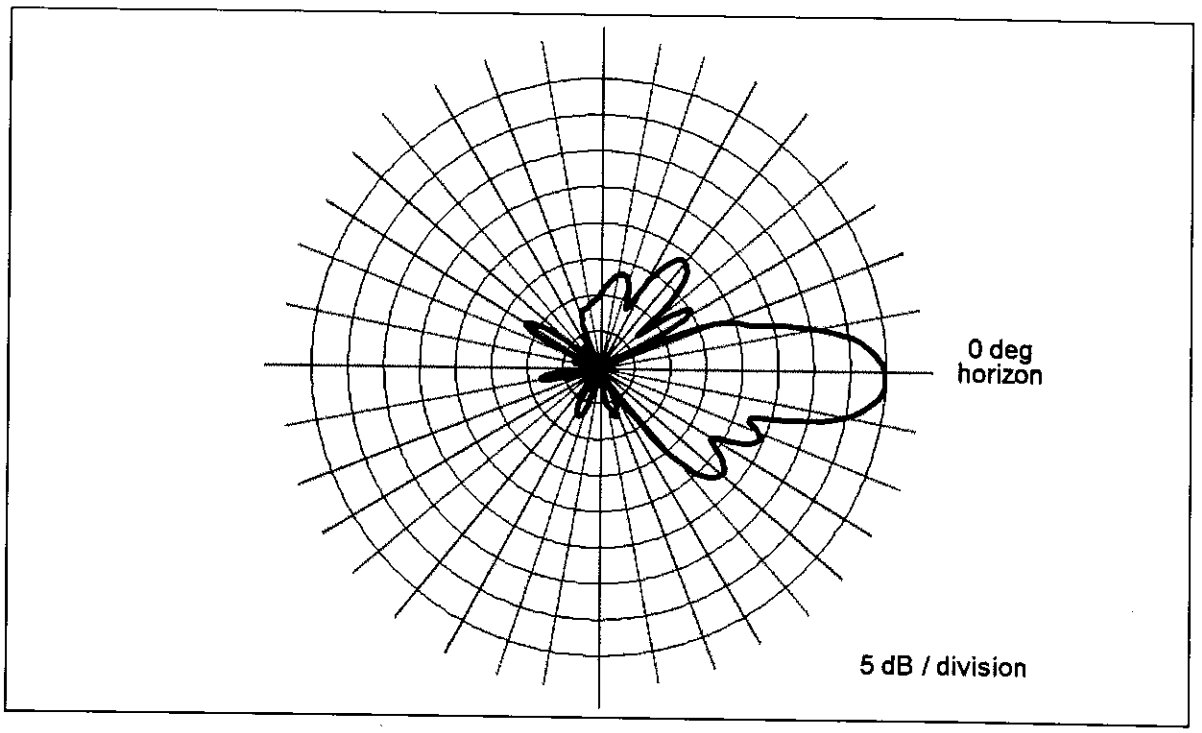
The area below the antennas, at street level, is of interest in terms of potential "uncontrolled" exposure of the general public, so the antenna's vertical-plane emission characteristic is used in the calculations, as it is a key determinant of the relative amount of RF emissions in the "downward" direction.

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

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

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

Figure 1. JMA Wireless MX08FRO665-21 – 600 MHz Vertical-plane Pattern



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

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

Carrier	Antenna Manufacturer	Antenna Model	Type	Freq (MHz)	Total ERP (watts)	Z (AGL) (ft)	Ant. Gain (dBd)	Azimuth
Verizon Wireless	Unknown	Unknown	Panel	746	2400	150.5	11.76	N/A
Verizon Wireless	Unknown	Unknown	Panel	869	5166	150.5	12.36	N/A
Verizon Wireless	Unknown	Unknown	Panel	1900	5372	150.5	15.26	N/A
Verizon Wireless	Unknown	Unknown	Panel	2100	5625	150.5	15.46	N/A

Compliance Analysis

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

Street Level Analysis

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

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

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

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

where

MPE%	=	RF level, expressed as a percentage of the MPE limit applicable to continuous exposure of the general public
100	=	factor to convert the raw result to a percentage
Chans	=	maximum number of RF channels per sector
TxPower	=	maximum transmitter power per channel, in milliwatts

$10^{(Gmax-Vdisc/10)}$	=	numeric equivalent of the relative antenna gain in the downward direction of interest; data on the antenna vertical-plane pattern is taken from manufacturer specifications
4	=	factor to account for a 100-percent-efficient energy reflection from the ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
MPE	=	FCC general population MPE limit
R	=	straight-line distance from the RF source to the point of interest, centimeters

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

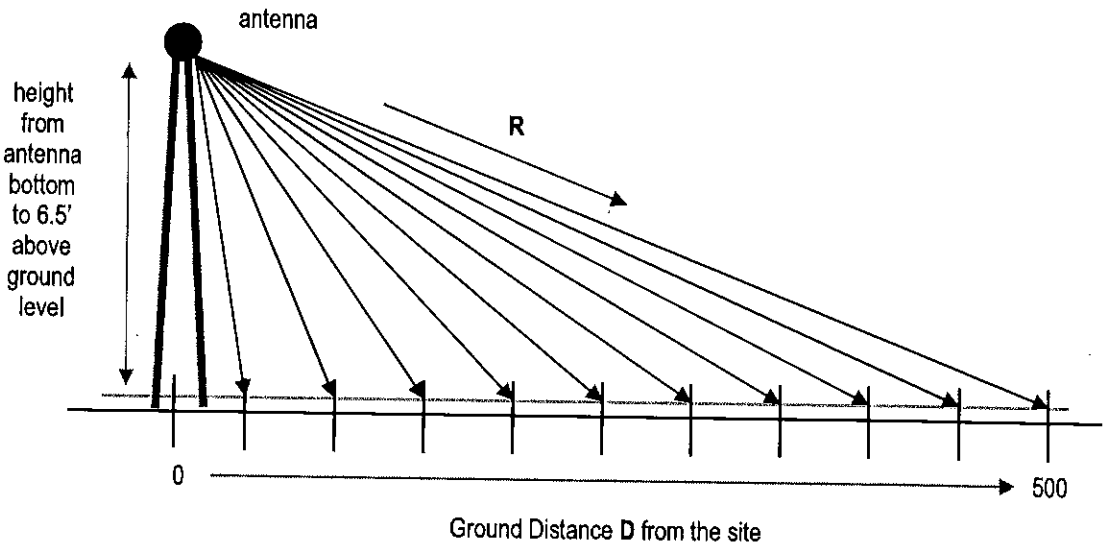


Figure 2. Street-level MPE% Calculation Geometry

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

Therefore, RF levels may actually increase slightly with increasing distance within

the range of zero to 500 feet from the site. As the distance approaches 500 feet and beyond, though, the antenna pattern factor becomes less significant, the RF levels become primarily distance-controlled and, as a result, the RF levels generally decrease with increasing distance. In any case, the RF levels more than 500 feet from a wireless antenna site are well understood to be sufficiently low to be comfortably in compliance.

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

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

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

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

4. The calculations also conservatively take into account, when applicable, the different technical characteristics and related RF effects of the use of multiple antennas for transmission in the same frequency band.
5. The RF exposure at ground level is assumed to be 100-percent enhanced (increased) via a "perfect" field reflection from the intervening ground.

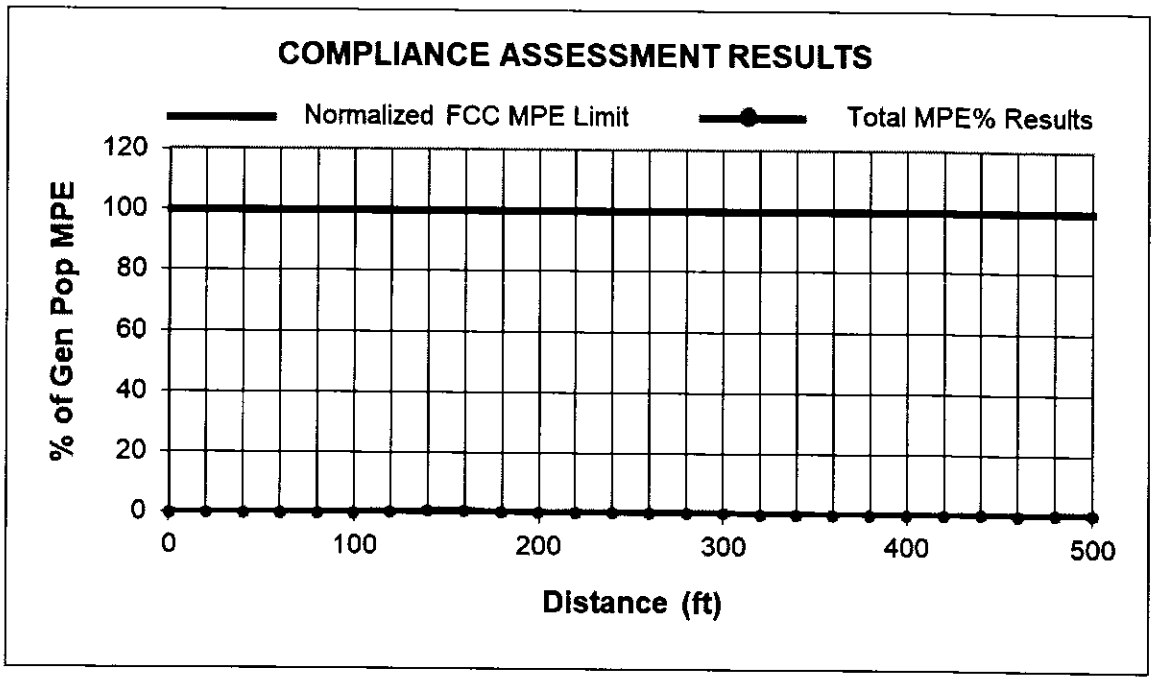
The net result of these assumptions is to intentionally and significantly overstate the calculated RF levels relative to the levels that will actually result from the antenna operations – and the purpose of this conservatism is to allow very "safe-side" conclusions about compliance.

The table that follows provides the results of the MPE% calculations for each antenna operation, with the overall worst-case calculated result highlighted in bold in the last column.

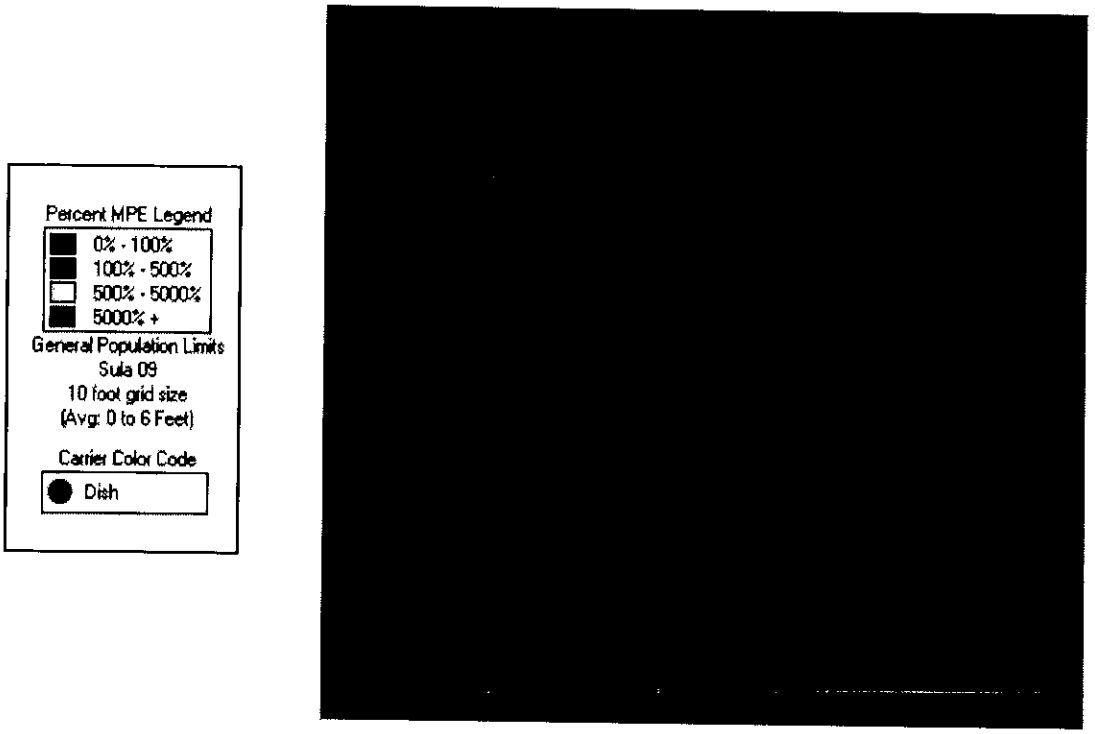
Ground Distance (ft)	Dish 600 MHz MPE%	Dish 2000 MHz MPE%	Dish 2100 MHz MPE%	Verizon Wireless MPE%	Total MPE%
0	0.0009	0.0012	0.0000	0.0169	0.0190
20	0.0028	0.0050	0.0017	0.0212	0.0307
40	0.0064	0.0178	0.0107	0.0408	0.0757
60	0.0031	0.0124	0.0049	0.0899	0.1103
80	0.0019	0.0088	0.0202	0.1178	0.1487
100	0.0220	0.0067	0.0288	0.1220	0.1795
120	0.0821	0.0036	0.2140	0.0908	0.3905
140	0.1135	0.1152	0.3246	0.1366	0.6899
160	0.0885	0.3114	0.2775	0.2304	**0.9078**
180	0.0427	0.0703	0.0329	0.2011	0.3470
200	0.0280	0.0090	0.0082	0.2113	0.2565
220	0.0386	0.0045	0.0110	0.3220	0.3761
240	0.0547	0.0402	0.0064	0.3641	0.4654
260	0.0664	0.0757	0.0397	0.3458	0.5276
280	0.0630	0.0497	0.0344	0.2813	0.4284
300	0.0536	0.0022	0.0073	0.2221	0.2852
320	0.0428	0.0104	0.0144	0.1293	0.1969
340	0.0327	0.0270	0.0283	0.0797	0.1677
360	0.0252	0.0322	0.0307	0.0415	0.1296
380	0.0228	0.0243	0.0188	0.0206	0.0865
400	0.0274	0.0168	0.0103	0.0214	0.0759
420	0.0398	0.0207	0.0185	0.0396	0.1186
440	0.0620	0.0294	0.0354	0.0781	0.2049
460	0.0571	0.0271	0.0326	0.0720	0.1888
480	0.0855	0.0250	0.0354	0.1244	0.2703
500	0.0792	0.0232	0.0328	0.1956	0.3308

As indicated, the maximum calculated overall RF level is 0.9078 percent of the FCC MPE limit – well below the 100-percent reference for compliance.

A graph of the overall calculation results, shown below, perhaps provides a clearer *visual* illustration of the relative compliance of the calculated RF levels. The line representing the overall calculation results barely rises above the graph's baseline, and shows an obviously clear, consistent margin to the FCC MPE limit.



The graphic output for the areas at street level surrounding the site is reproduced on the next page.

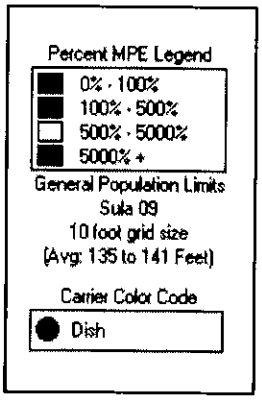


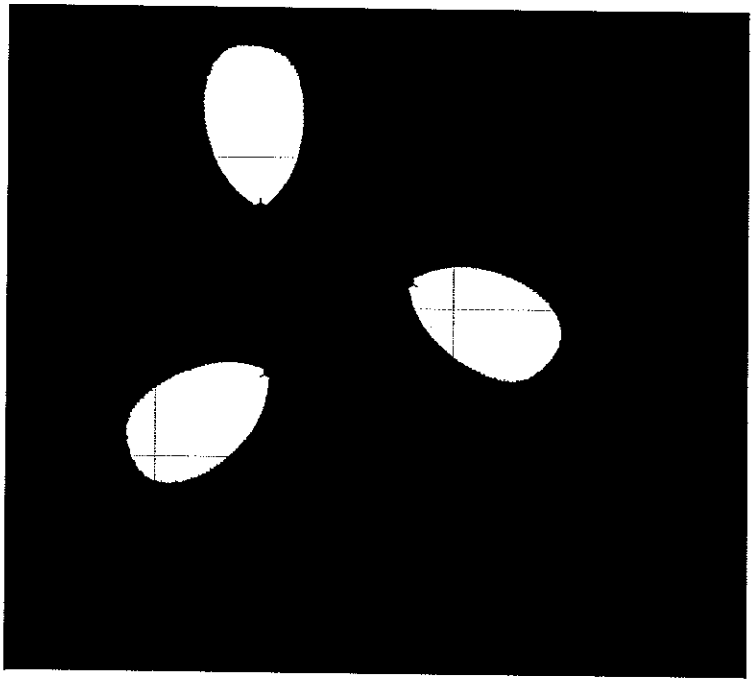
Near-field Analysis

The compliance analysis for the same height as the antennas is performed using the RoofMaster program by Waterford Consultants.

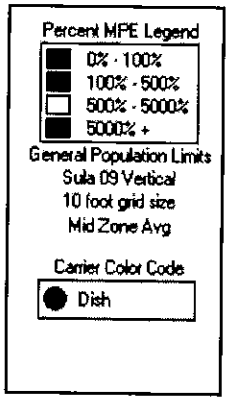
RF levels in the near field of an antenna depend on the power input to the antenna, the antenna's length and horizontal beamwidth, the mounting height of the antenna above nearby standing level, and one's position and distance from the antenna. RF levels in front of a directional antenna are higher than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

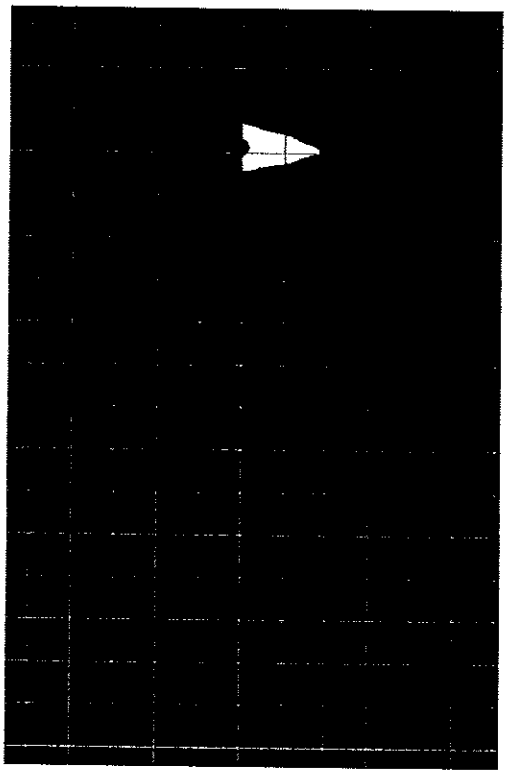
The RoofMaster graphic outputs for the same height as the Dish antennas are reproduced on the next page.





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





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

Compliance Conclusion

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

The conservative analysis in this case shows that the maximum calculated RF level from the proposed modifications to the existing antenna operations at the site is 0.9078 percent of the FCC general population MPE limit. At the same height as the antennas, the analysis shows that the calculated RF levels potentially exceed the FCC MPE limit. Per Dish guidelines, and consistent with FCC guidance on rooftop compliance, it is recommended that two Caution signs be six feet below the antennas. In addition, NOC Information signs be installed at the base of the monopole.

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

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

Certification

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

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

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

9/24/21
Date

Appendix A. Documents Used to Prepare the Analysis

RFDS: RFDS-NJJER01156A-Preliminary-20210806-v.1_20210806140800

CD: NJJER01156A_ZD_20210715114522

Appendix B. Background on the FCC MPE Limit

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

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

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

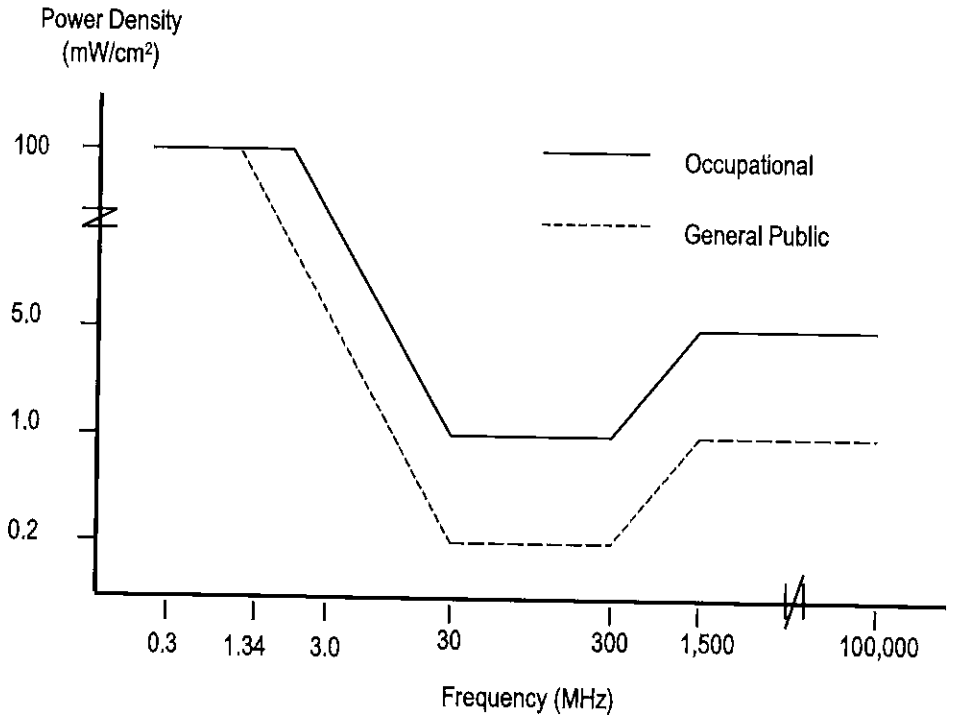
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in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

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

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

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

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



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

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

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

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

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

FCC References on RF Compliance

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

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

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

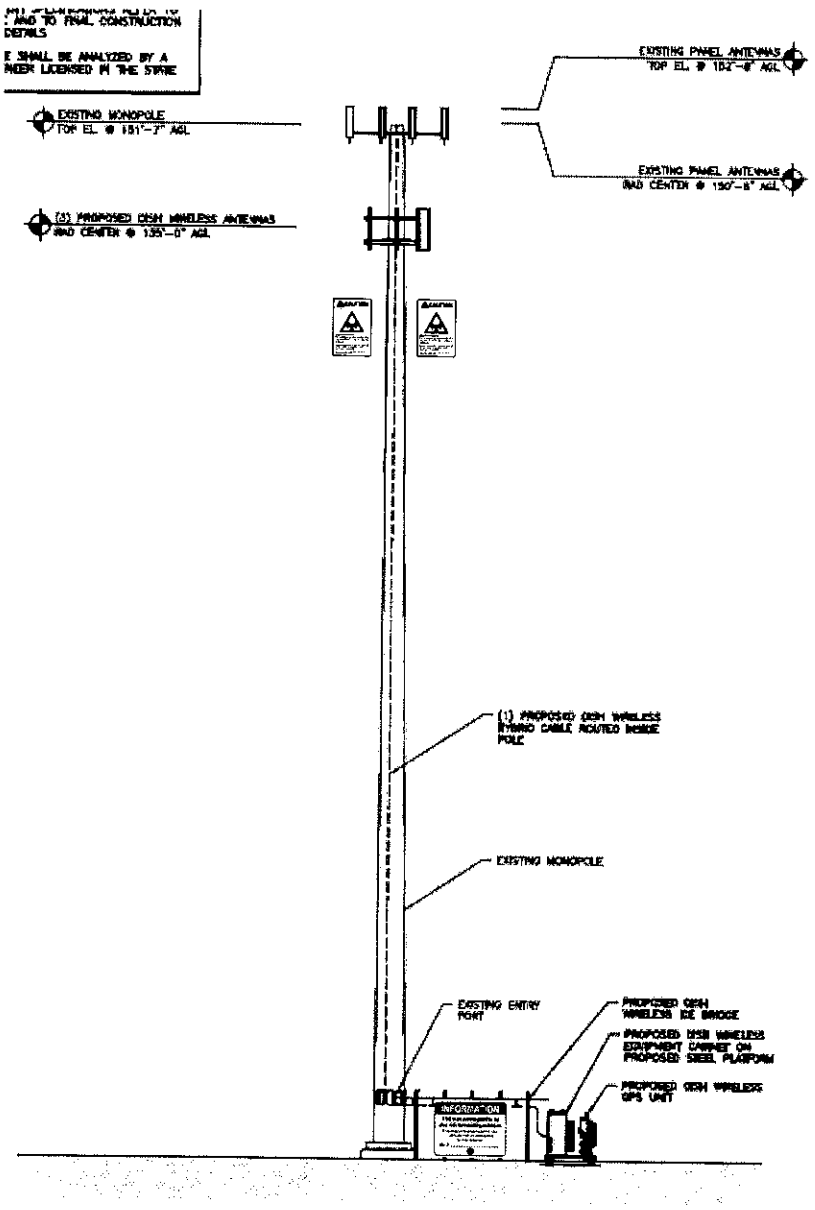
FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

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

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

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

Appendix C. Proposed Signage



NOC Information Sign		Caution Sign	
Guidelines Sign		Warning Sign	
Notice Sign			

Appendix D. Summary of Expert Qualifications

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

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

Exhibit G

Lease Agreement

Lessee Site ID: NJJER01156A
Lessor Site ID: CT1155 Bethel

SUPPLEMENT TO THE MASTER LEASE AGREEMENT

THIS SUPPLEMENT TO THE MASTER LEASE AGREEMENT ("**SLA**") is entered into as of 7/29/2021 ("**Effective Date**"), by and between Tarpon Towers II, LLC ("**Lessor**"), whose address is 8916 77th Terrace East, Suite 103, Lakewood Ranch, FL 34202 and DISH Wireless L.L.C. ("**Lessee**"), whose address is 9601 South Meridian Blvd., Englewood, Colorado, 80112. Lessor and Lessee are at times collectively referred to hereinafter as the "**Parties**" or individually as a "**Party**".

BACKGROUND

WHEREAS, Lessor and Lessee have entered into that certain Master Lease Agreement dated February 22, 2021 (the "**MLA**"). Such MLA provides that Lessor and Lessee will enter into separate SLAs on a site-by-site basis, pursuant to which Lessor will lease to Lessee certain available space at a Leased Property.

AGREEMENT

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and intending to be legally bound hereby, the Parties agree as follows:

1. Site Information. The Leased Property, as more particularly described in Section 6 hereof, means:
    a. Lessee Site ID: NJJER01156A
    b. Lessor Site ID: CT1155 Bethel
    c. Address and/or location of the Site: 64 Codfish Hill Road, Bethel, Fairfield County, Connecticut
    d. Site coordinates (NAD 83):
        i. Latitude: 41.37527500
        ii. Longitude: -73.37311944
    e. Antenna Space centerline height: one hundred thirty five feet (135')
    f. Ground Space dimensions: 10 x 15 (Length x Width)

2. Rent; Term.
    a. Rent.
        i. Commencing on the SLA Rent Commencement Date, the Basic Rent for this SLA shall be [redacted]
        ii. Basic Rent will increase in accordance with the provisions of [redacted]
        iii. Additional Rent, if any, shall be paid in accordance with the terms set forth in [redacted]
    b. Term. The term of this SLA shall be as set forth in [redacted] of the MLA, unless set forth herein as follows: Not Applicable.

3. Non-Standard Terms. [redacted]

4. Special Provisions. [redacted]

5. Unique Prime Agreement Terms. Not Applicable.

6. Site Address and Legal Description of Site. Lessor hereby leases to Lessee, and Lessee leases from Lessor, as applicable, the Site, as more particularly described in Section 1 hereof, and which is comprised of the space on the Structure, Easements (including, without limitation, a right-of-way for access) and Ground Space on the Parcel at heights and locations as more particularly set forth on **Schedule A-1** (Collocation Application), **Schedule A-2** (Structure Elevation and Site Plan), and **Schedule A-4** (Legal Description of Parcel or Survey) (together, as applicable, the "**Leased Property**"), each of which are attached hereto and incorporated herein.

7. Frequencies. As of the Effective Date, Lessee's initial Installation will use those certain frequencies, in pre-approved transmit power, as set forth on **Schedule A-1** (Collocation Application), which is attached hereto and incorporated herein by this reference.

8. MLA; Defined Terms; Incorporation of Background; Prime Agreement. [redacted]

9. Order of Precedence; Conflict. [redacted]

Lessee Site ID: NJJER01156A
Lessor Site ID: CT1155 Bethel

[redacted]

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

Lessee Site ID: NJJER01156A
Lessor Site ID: CT1155 Bethel

IN WITNESS WHEREOF, the Parties have executed this SLA as of the Effective Date.

LESSOR:

Tarpon Towers II, LLC

By: DocuSigned by: Brett Buggeln
1A54ABE01EC348C...

Name: Brett Buggeln

Title: COO

LESSEE:

DISH Wireless L.L.C.

By: DocuSigned by: Mike McGovern
7D6EB7B3E0494B5...

Name: Mike McGovern

Title: Regional Vice President

Exhibit H

Mailing Receipts

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- To qualify for the Letter rate, UPS Express Envelopes weig[illegible]

Note: Express Envelopes are n[illegible] containing sensitive personal[illegible] or cash equivalent.

LTR 1 OF 1

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

SHIP TO:
TODD BOWMAN
TARPON TOWERS
SUITE 103
8916 77TH TERRACE EAST
LAKEWOOD RANCH FL 34202

FL 335 0-02

UPS 2ND DAY AIR **2**
TRACKING #: 1Z E05 345 02 6331 9278

BILLING: P/P

WS 22.0.17 SHARP MX-3070 48.0A 07/2021

Fold here and place in label pouch

Window En[illegible]

Use this envelope with sh[illegible] or inkjet printer on plain p[illegible]

Insert under

Do not us

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UPS Sta[illegible]
UPS 3 D[illegible]
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01019

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1ZE053450263319278

Delivered On
Tuesday, November 16 **at 12:45 P.M. at Inside Delivery**

Delivered To
8916 77TH TER E
103
LAKEWOOD RANCH, FL 34202 US

Received By:
TODD

Proof of Delivery

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FROM: LTR 1 OF 1

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

SHIP TO:

HON. MATTHEW KNICKERBOCKER
06801
1 SCHOOL ST.
BETHEL CT 06801

CT 068 0-02

UPS 2ND DAY AIR **2**

TRACKING #: 1Z E05 345 02 6141 9084

BILLING: P/P

WS 22.0.17 SHARP MX-3070 48.0A 07/2021

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Your shipment
1ZE053450261419084

Delivered On
Monday, November 15 **at 1:50 P.M. at Receiver**

Delivered To
1 SCHOOL ST
BETHEL, CT 06801 US

Received By:
BERGH

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LTR 1 OF 1

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

SHIP TO:

DIRECTOR OF LAND USE DEVELOPMENT
BETH CAVAGNA
1 SCHOOL ST.
BETHEL CT 06801

CT 068 0-02

UPS 2ND DAY AIR **2**
TRACKING #: 1Z E05 345 02 6185 7691

BILLING: P/P

WS 22.0.17 SHARP MX-3070 48.0A 07/2021

Fold here and place in label pouch

Your shipment
1ZE053450261857691

Delivered On
Monday, November 15 at 1:52 P.M. at Receiver

Delivered To
1 SCHOOL ST
BETHEL, CT 06801 US

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