

PROJECT NARRATIVE

April 8, 2022

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

Re: Request of DISH Wireless LLC for an Order to Approve the Shared Use of an Existing Tower
100 Old Redding Road, Redding, CT 06896
Latitude: 41°17'13.50" / Longitude: -73°26'17.52"

Dear Ms. Bachman:

Pursuant to Connecticut General Statutes ("C.G.S.") §16-50aa, as amended, DISH Wireless LLC ("DISH") hereby requests an order from the Connecticut Siting Council ("Council") to approve the shared use by DISH of an existing telecommunication tower at 100 Old Redding Road in Redding (the "Property"). The existing 180-foot self-support tower is owned by American Tower Corporation ("ATC"). The underlying property is owned by Robert J Kaufman. DISH requests that the Council find that the proposed shared use of the ATC tower satisfies the criteria of C.G.S. §16-50aa and issue an order approving the proposed shared use. A copy of this filing is being sent to Julia Pemberton, First Selectman for the Town of Redding, Shaun Donnelly, Town of Redding Chief Building Official and Robert J Kaufman as the property owner.

Background

This facility was originally approved by the Council under Docket No. 167 on August 9, 1995. A copy of this decision is included in this filing. The existing ATC facility consists of a 180-foot self-support tower located within an existing leased area. AT&T Mobility currently maintains antennas at the 184, 18, and 15-foot levels. Verizon Wireless currently maintains antennas at the 172 and 30-foot levels. Sprint Nextel currently maintains antennas at the 164, 157, and 90-foot levels. T-Mobile currently maintains antennas at the 147-foot level. Connecticut State Polic Dept. currently maintains antennas at the 143, 142, 135, 134, 132, 131, 130, 129, 128, 125, 122, and 66-foot levels. Eversource Energy currently maintains antennas at the 120.5, 115.5, and 88-foot levels. An Other Party currently maintains antennas at the 86-foot level. Equipment associated with these antennas are located at various positions within the tower and compound.

DISH is licensed by the Federal Communications Commission ("FCC") to provide wireless services throughout the State of Connecticut. DISH and ATC have agreed to the proposed shared use of the 100 Old Redding Road tower pursuant to mutually acceptable terms and conditions. Likewise, DISH and ATC have agreed to the proposed installation of equipment cabinets on the ground within the existing compound. ATC has authorized DISH to apply for all necessary permits and approvals that may be required to share the existing tower.
(See attached Letter of Authorization)

DISH proposes to install three (3) antennas, (1) Tower platform mount, (6) Remote radio units at the 50-foot level along with, (1) over voltage protection device (OVP) and (1) Hybrid cable. DISH will install an equipment cabinet on a 5'x7' equipment platform. DISH's Construction Drawings provide project specifications for all proposed site improvement locations. The construction drawings also include specifications for DISH's proposed antenna and groundwork.

C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, "if the Council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such a shared use." DISH respectfully submits that the shared use of the tower satisfies these criteria.

A. Technical Feasibility. The existing ATC tower is structurally capable of supporting DISH's proposed improvements. The proposed shared use of this tower is, therefore, technically feasible. A Feasibility Structural Analysis Report ("Structural Report") prepared for this project confirms that this tower can support DISH's proposed loading. A copy of the Structural Report has been included in this application.

B. Legal Feasibility. Under C.G.S. § 16-50aa, the Council has been authorized to issue order approving the shared use of an existing tower such as the ATC tower. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. In addition, § 16-50x(a) directs the Council to "give such consideration to the other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility. The proposed shared use of the ATC tower would have a minimal environmental effect for the following reasons:

1. The proposed installation will have no visual impact on the area of the tower. DISH's equipment cabinet would be installed within the existing facility compound. DISH's shared use of this tower therefore will not cause any significant change or alteration in the physical or environmental characteristics of the existing site.
2. Operation of DISH's antennas at this site would not exceed the RF emissions standard adopted by the Federal Communications Commission ("FCC"). Included in the EME report of this filing are the approximation tables that demonstrate that DISH's proposed facility will operate well within the FCC RF emissions safety standards.
3. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or sanitary facilities. After construction is complete the proposed installations would not generate any increased traffic to the ATC facility other than periodic maintenance. The proposed shared use of the ATC tower, would, therefore, have a minimal environmental effect, and is environmentally feasible.

D. **Economic Feasibility.** As previously mentioned, DISH has entered into an agreement with ATC for the shared use of the existing facility subject to mutually agreeable terms. The proposed tower sharing is, therefore, economically feasible.

E. **Public Safety Concerns.** As discussed above, the tower is structurally capable of supporting DISH's full array of three (3) antennas, (1) Tower platform mount, (6) Remote radio units, (1) over voltage protection device (OVP) and (1) Hybrid cable and all related equipment. DISH is not aware of any public safety concerns relative to the proposed sharing of the existing ATC tower.

Conclusion

For the reasons discussed above, the proposed shared use of the existing ATC tower at 100 Old Redding Road satisfies the criteria stated in C.G.S. §16-50aa and advances the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant, therefore, respectfully requests that the Council issue an order approving the proposed shared use.

Sincerely,

David Hoogasian

David Hoogasian
Project Manager

LETTER OF AUTHORIZATION



LETTER OF AUTHORIZATION

I, Margaret Robinson, Senior Counsel for American Tower*, owner/operator of the tower facility located at the address identified above (the “Tower Facility”), do hereby authorize **DISH WIRELESS L.L.C.**, its successors and assigns, and/or its agent, **NETWORK BUILDING + CONSULTING** (collectively, the “Licensee”) to act as American Tower’s non-exclusive agent for the sole purpose of filing and consummating any land-use or building permit application(s) as may be required by the applicable permitting authorities for Licensee’s telecommunications’ installation.

We understand that this application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by Licensee only of conditions related to Licensee’s installation and any such conditions of approval or modifications will be Licensee’s sole responsibility.

*American Tower includes all affiliates and subsidiaries of American Tower Corporation.

Project Number	Site Address	Customer Site Number	Tower Number	Site Name
13685414	5 High Ridge Park Road, Stamford CT	NJER01080B	302515	SMFR - North
13685427	1069 Connecticut Avenue, Bridgeport CT	NJER01130A	302469	Bridgeport CT 2
13688395	25 Meridian Ridge Drive, Newton CT	NJER01081B	302518	Newtown CT 3
13699598	100 Old Redding Road, Redding CT	NJER01161A	302522	Redding
13699607	22 Titicus Mtn Road, New Fairfield CT	NJER01162A	88014	New Fairfield
13700310	2 SUNNY LANE, Westport CT	NJER01082B	411189	CRANBURYSU CT
13700315	515 Morehouse Road, Easton CT	NJER01097B	207956	Easton
13700320	100 Pocono Road, Brookfield CT	NJER01099B	209271	Brookfield 2
13700322	320 Old Stagecoach Road, Ridgefield CT	NJER01100B	209115	Ridgefield 2
13705673	20 Post Office Lane, Westport CT	NJER01139B	302511	WSPT - South



AMERICAN TOWER®
CORPORATION

13709691	180A Bayberry Lane, Westport CT	NJER01140B	310968	WSPT- WESTPORT REBUILD CT
13709692	1000 Trumbull Avenue, Bridgeport CT	NJER01150B	383598	Tartaglia
13710333	168 Catoona Lane, Stamford CT	NJER01123B	88018	Stamford (Katoona)
13712876	23 Stonybrook Road, Stratford CT	NJER02048A	283420	STONEBROOK RD CT
13735391	15 Soundview Avenue, Shelton CT	NJER02055A	415438	Brownson Country Club CT

Print Name: Margaret Robinson
Senior Counsel, American Tower*

LETTER OF AUTHORIZATION

DISH WIRELESS L.L.C., its successors and assigns, and/or its agent, NETWORK BUILDING + CONSULTING

NOTARY BLOCK

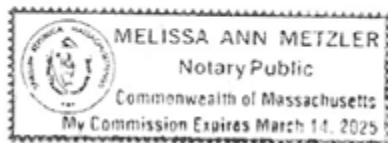
Commonwealth of MASSACHUSETTS

County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel for American Tower*, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same.

WITNESS my hand and official seal, this 19th day of November 2021.

NOTARY SEAL



Notary Public
My Commission Expires: March 14, 2025

ORIGINAL FACILITY APPROVAL

FILE
COPY

DOCKET NO. 167 - An application of Springwich Cellular } Connecticut
Limited Partnership for a Certificate of Environmental }
Compatibility and Public Need for the construction, maintenance, } Siting
and operation of a cellular telecommunications facility located }
approximately 2,000 feet east southeast of the intersection of Old } Council
Redding Road and Mountain Road with an alternate site located }
approximately 2,400 feet east of the intersection of Old Redding }
Road and Mountain Road, in the Town of Redding, Connecticut. } August 9, 1995

DECISION AND ORDER

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a cellular telecommunications tower and equipment building at the proposed prime site and the alternate access road in Redding, Connecticut, 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 (Certificate) as provided by General Statutes § 16-50k be issued to Springwich Cellular Limited Partnership (Springwich) for the construction, operation, and maintenance of a cellular telecommunications tower, associated equipment, and building at the proposed prime site located approximately 2,000 feet east southeast of the intersection of Old Redding Road and Mountain Road in the Town of Redding, Connecticut.

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 self-supporting lattice tower shall be no taller than necessary to provide the proposed communication service and the tower shall not exceed a height of 180 feet above ground level (AGL).
2. The Certificate holder shall prepare a Development and Management (D&M) Plan for this site and access road in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include detailed plans for the tower location and tower foundation, the placement of all antennas to be attached to the tower, equipment building, access road, utility line, and security fence; site clearing and tree trimming; and water drainage and erosion and sediment controls consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
3. Springwich shall provide the Council with a statement of intent and schedule to remove the existing Department of Motor Vehicle (DMV) tower on Fire Tower Road in Redding prior to submission of the D&M Plan to the Council. Springwich must arrange to have the DMV tower removed within one year of the completion of construction of Springwich's tower.
4. No salt or chemicals may be used during access road maintenance to clear snow and ice.

5. Upon the establishment of any new State or federal radio frequency power density standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards as soon as possible.
6. The Certificate holder shall provide the Council a measurement of electromagnetic radio frequency power density at such time when Springwich, the Connecticut State Police, the DMV, and the Northwest Connecticut Public Safety Communications Center broadcast equipment is fully operational. The Certificate holder shall provide the Council a remeasured report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels originally measured.
7. The Certificate holder shall permit public or private entities to share space on the tower for fair consideration or shall provide any requesting entity with specific legal, technical, environmental, economical, or public safety reasons precluding such tower sharing.
8. If the facility does not initially provide cellular or public safety services following completion of construction or if the facility permanently ceases to provide both cellular and public safety services, this Decision and Order shall be void and the Certificate holder shall dismantle the tower, remove all associated equipment, and restore the site. Reapplication for any continued or new use shall be made to the Council before any such use is made.
9. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the approval date of this Decision and Order or within three years after all appeals to this Decision and Order have been resolved.
10. The Certificate holder shall notify the Council upon completion of construction and provide the final cost to construct the facility.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below and Notice of Issuance shall be published in the Danbury News Times and the Redding Pilot.

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. The parties and intervenors to this proceeding are:

APPLICANT

Springwich Cellular Ltd. Partnership

ITS REPRESENTATIVE

Peter J. Tyrrell, Sr. Attorney
Springwich Cellular Ltd. Partnership
227 Church St., Rm. 1021
New Haven, CT 06510

PARTIES

George Vermilyea and the Neighbors
Opposed to the Tower ("NOT")

ITS REPRESENTATIVE

c/o Marie Burroughs
11 Mine Hill Rd.
West Redding, CT 06893

and

David Silverstone, Esq.
Silverstone & Koontz, P.C.
227 Lawrence St.
Hartford, CT 06106

Town of Redding

Michael N. LaVelle, Esq.
Pullman & Comley, LLC
850 Main St., P.O. Box 7006
Bridgeport, CT 06601-7006

State of Connecticut, Department of
Public Safety, Division of State Police

Stephen R. Sarnoski
Assistant Attorney General
MacKenzie Hall
110 Sherman St.
Hartford, CT 06105

The Hon. John E. Stripp
State Representative
Legislative Office Building
Room 4200
Hartford, CT 06106-1591

The Hon. Judith G. Freedman
State Senator
Legislative office Building
Room 3100
Hartford, CT 06106-1591

INTERVENOR

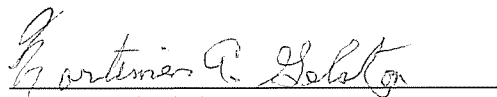
Robert J. Kaufman
100 Old Redding Rd.
West Redding, CT 06896

CERTIFICATION

The Undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in Docket No. 167, an application of Springwich Cellular Limited Partnership for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility located approximately 2,000 feet east southeast of the intersection of Old Redding Road and Mountain Road with an alternate site located approximately 2,400 feet east of the intersection of Old Redding Road and Mountain Road, in the Town of Redding, Connecticut, and voted as follows to approve the prime site:

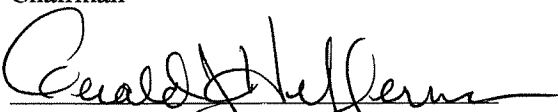
Council Members

Vote Cast



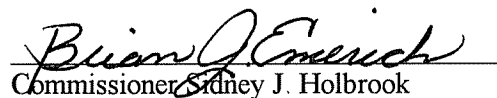
Mortimer A. Gelston
Chairman

YES



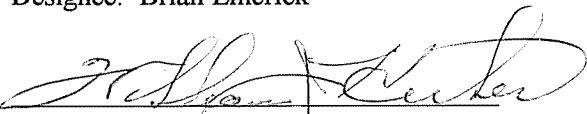
Commissioner Reginald J. Smith
Designee: Gerald J. Heffernan

YES



Commissioner Sidney J. Holbrook
Designee: Brian Emerick

YES



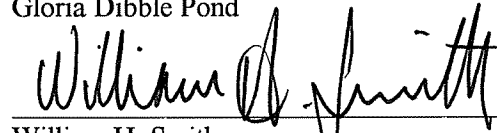
William J. Huber

ABSTAIN



Gloria Dibble Pond

NO



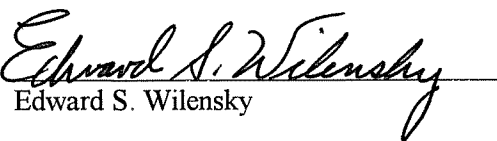
William H. Smith

YES



Colin C. Tait

NO



Edward S. Wilensky

ABSTAIN

Dana J. Wright

ABSENT

Dated at New Britain, Connecticut, August 9, 1995.

ENGINEERING DRAWINGS



DISH Wireless L.L.C. SITE ID:

NJJER01161A

DISH Wireless L.L.C. SITE ADDRESS:

**100 OLD REDDING ROAD
REDDING, CT 06896**

THE PROJECT DEPICTED IN THESE PLANS QUALIFIES AS AN ELIGIBLE FACILITIES REQUEST ENTITLED TO EXPEDITED REVIEW UNDER 47 U.S.C. 1455(A) AS A MODIFICATION OF AN EXISTING WIRELESS TOWER THAT INVOLVES THE COLLOCATION REMOVAL AND/OR REPLACEMENT OF TRANSMISSION EQUIPMENT THAT IS NOT A SUBSTANTIAL CHANGE UNDER CFR 1.61000 (B)(7).

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 (3) PROPOSED ANTENNA MOUNTS (1 PER SECTOR)
 - INSTALL PROPOSED JUMPERS
 - INSTALL (6) PROPOSED RRU's (2 PER SECTOR)
 - INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP)
 - INSTALL (1) PROPOSED HYBRID CABLE

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

SITE INFORMATION

PROPERTY OWNER: KAUFMAN ROBERT J
ADDRESS: 100 OLD REDDING ROAD
REDDING, CT 06896

TOWER TYPE: SELF-SUPPORT TOWER

TOWER CO SITE ID: 302522

TOWER APP NUMBER: 13699598

COUNTY: FAIRFIELD

LATITUDE (NAD 83): 41° 17' 13.50" N
41.28708333 N

LONGITUDE (NAD 83): 73° 26' 17.52" W
73.4381999999 W

ZONING JURISDICTION: CONNECTICUT SITING COUNCIL

ZONING DISTRICT: UNZONE

PARCEL NUMBER: 35-46

OCCUPANCY GROUP: U

CONSTRUCTION TYPE: II-B

POWER COMPANY: UNITED ILLUMINATING

TELEPHONE COMPANY: FRONTIER COMMUNICATIONS

PROJECT DIRECTORY

APPLICANT: DISH Wireless L.L.C.
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

TOWER OWNER: AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBBURN, MA 01801
(781) 926-4500

SITE DESIGNER: B+T GROUP
1717 S. BOULDER AVE, SUITE 300
TULSA, OK 74119
(918) 587-4630

SITE ACQUISITION: WILLIAM SNIDER
WILLIAM.SNIDER@DISH.COM

CONST.N MANAGER: MICHAEL NARDUCCI
MICHAEL.NARDUCCI@DISH.COM

RF ENGINEER: MURUGABIRAN JAYAPAL
MURUGABIRAN.JAYAPAL@DISH.COM

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

SITE PHOTO

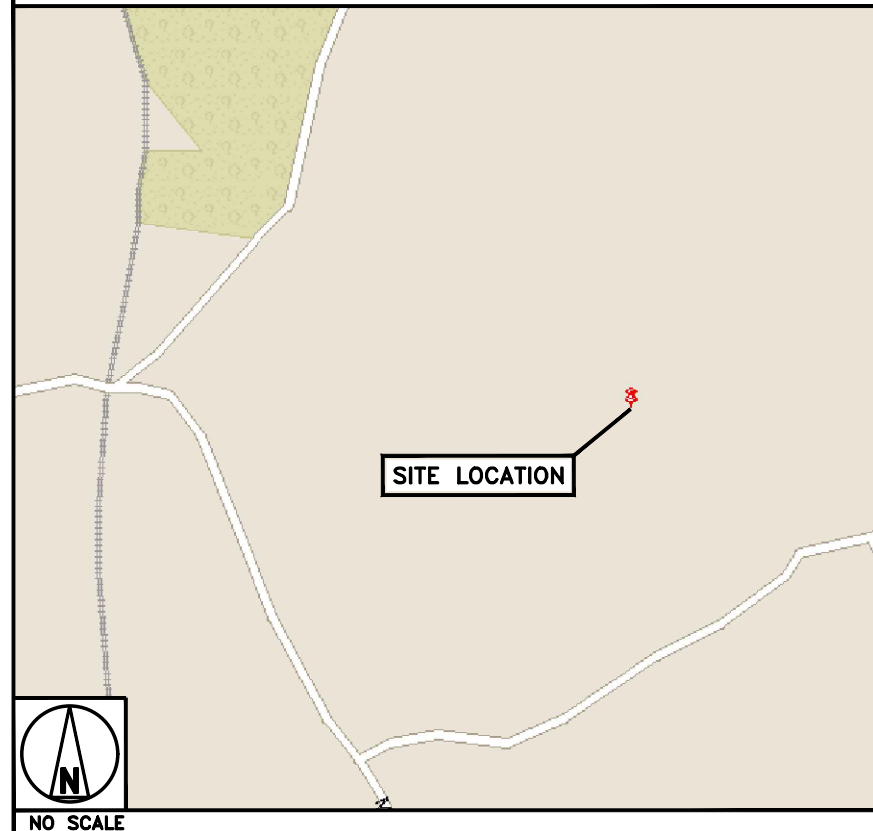


DIRECTIONS

DIRECTIONS FROM 3 ADP BLVD, ROSELAND NJ, 07068:

TURN RIGHT ONTO CR-527 (LIVINGSTON AVE.), TAKE RAMP BEARING RIGHT ONTO I-280 (I-280 E), AT EXIT 17B STAY ON I-280 N (I-95/NJ TURNPIKE), TAKE RAMP ONTO I-95, STAY ON I-95 N, AT EXIT 73, STAY ON I-95 (NJ TURNPIKE E), STAY ON I-95 (US-1 E), AT EXIT 16, STAY ON I-95 (NEW ENGLAND THROUGHWAY), STAY ON I-95 (NEW ENGLAND THROUGHWAY N-E), TURN RIGHT ONTO EXIT 15 RAMP (RD. NAME CHANGES TO US-7), TURN RIGHT (EAST) ONTO US-7 (GRIST MILL RD), TURN LEFT ONTO US-7 (MAIN AVE), TURN LEFT ONTO US-7 (CT-33), TURN RIGHT ONTO OLD REDDING RD. ARRIVE AT 100 OLD REDDING RD, REDDING CT 06896. (NJJER01161A)

VICINITY MAP



SHEET INDEX

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



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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION



GENERAL NOTES

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

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

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



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
KAS	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	7/30/21	ISSUED FOR REVIEW
0	8/27/21	ISSUED FOR CONSTRUCTION
1	9/7/21	ISSUED FOR CONSTRUCTION
2	9/14/21	ISSUED FOR CONSTRUCTION
3	9/27/21	ISSUED FOR CONSTRUCTION

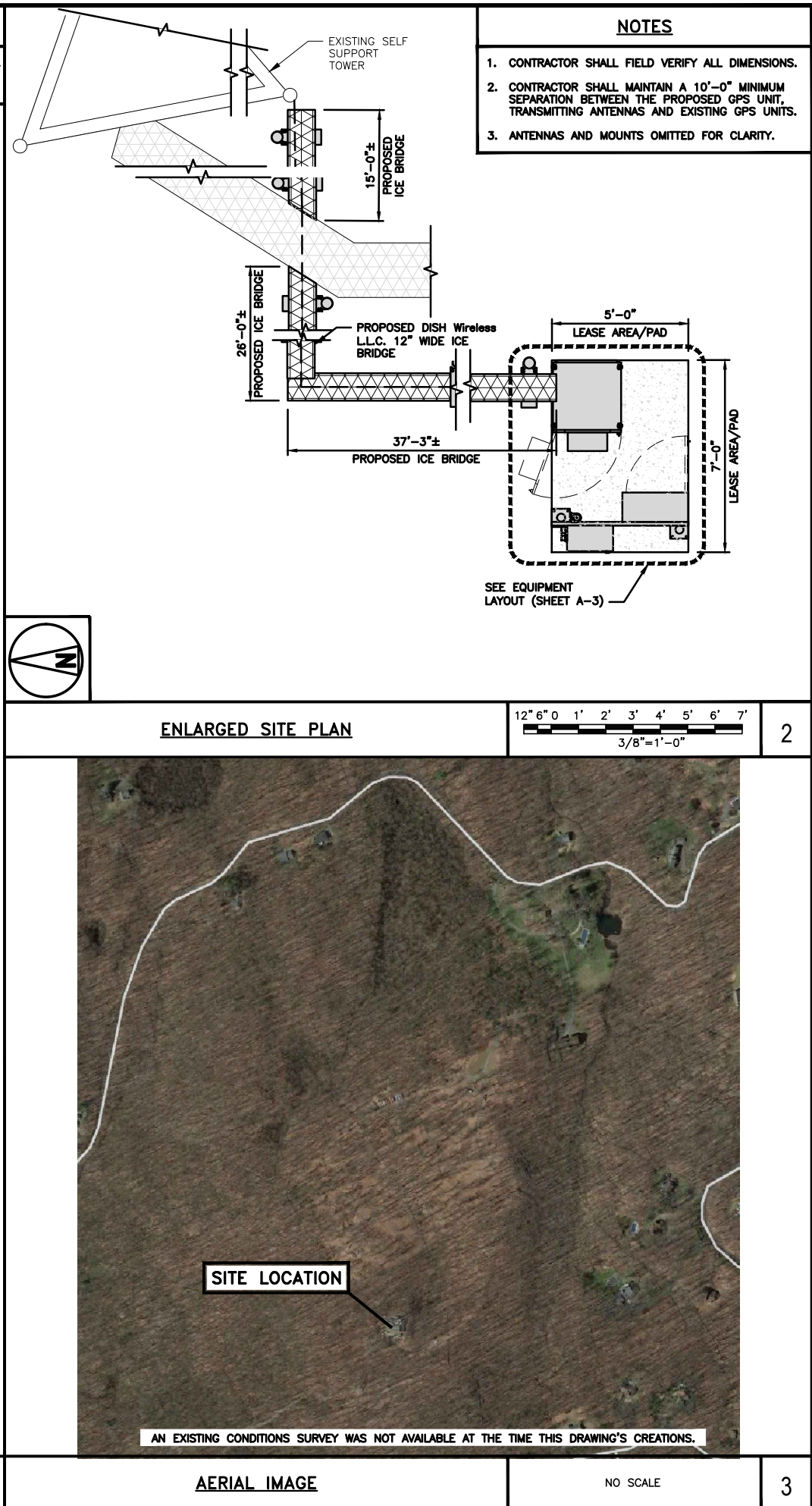
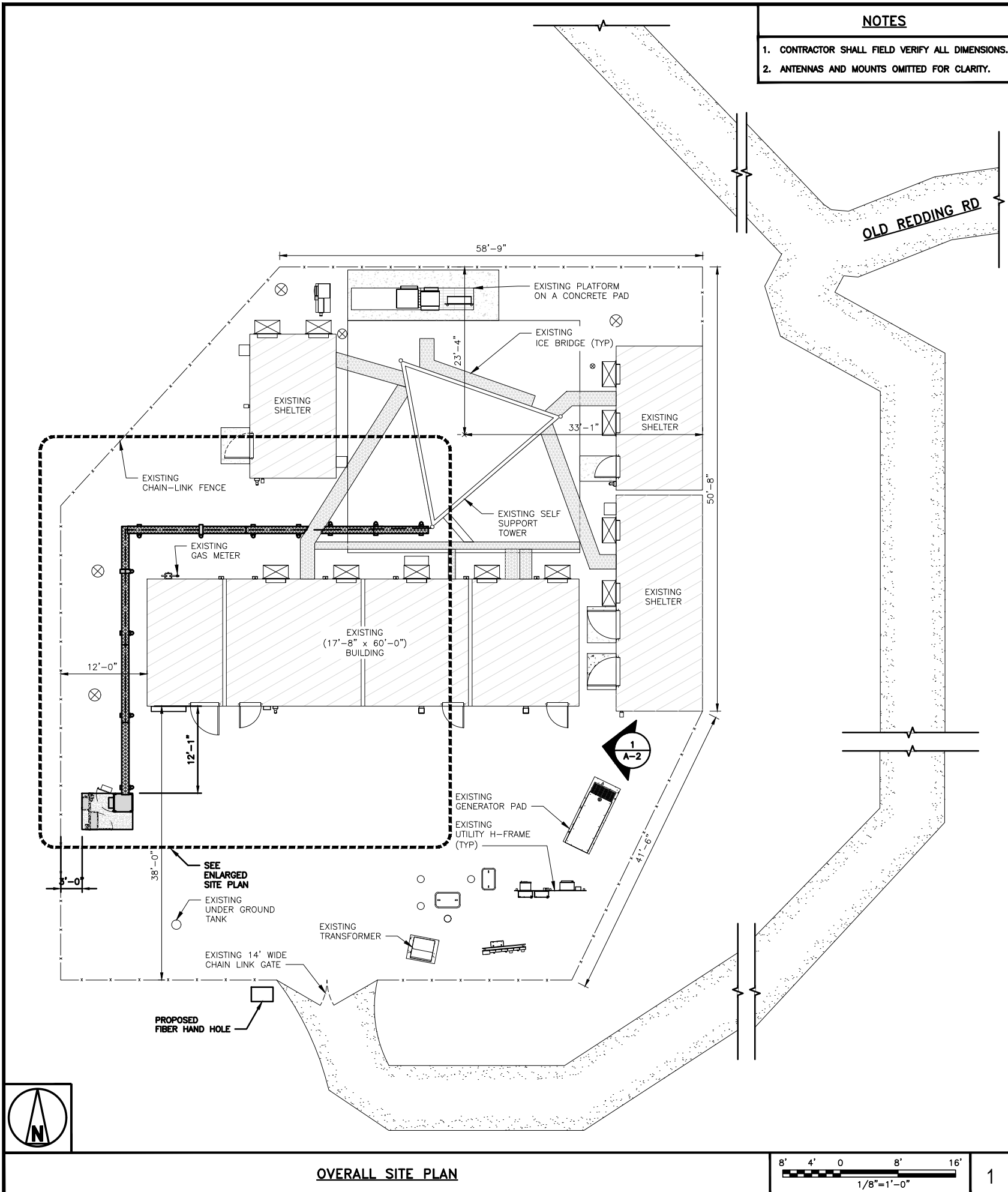
A&E PROJECT NUMBER
153701.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01161A
100 OLD REDDING ROAD
REDDING, CT 06896

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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

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

DRAWN BY:	CHECKED BY:	APPROVED BY:
KAS	YF	YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	7/30/21	ISSUED FOR REVIEW
0	8/27/21	ISSUED FOR CONSTRUCTION
1	9/7/21	ISSUED FOR CONSTRUCTION
2	9/14/21	ISSUED FOR CONSTRUCTION
3	9/27/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
153701.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01161A
100 OLD REDDING ROAD
REDDING, CT 06896

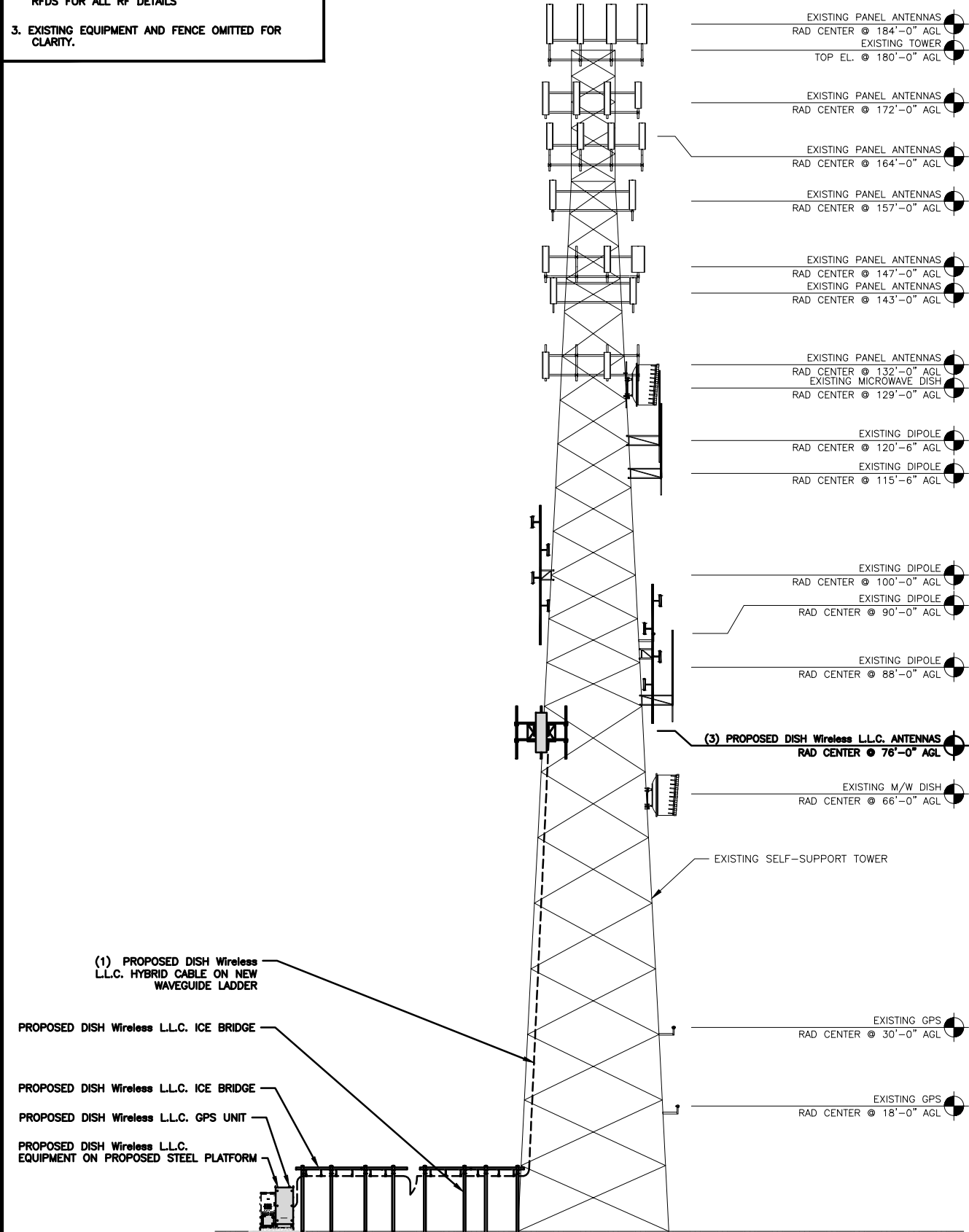
SHEET TITLE
OVERALL AND ENLARGED
SITE PLAN

SHEET NUMBER
A-1

- NOTES
1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS.

2. ANTENNA AND MW DISH SPECIFICATIONS REFER TO ANTENNA SCHEDULE AND TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS

3. EXISTING EQUIPMENT AND FENCE OMITTED FOR CLARITY.

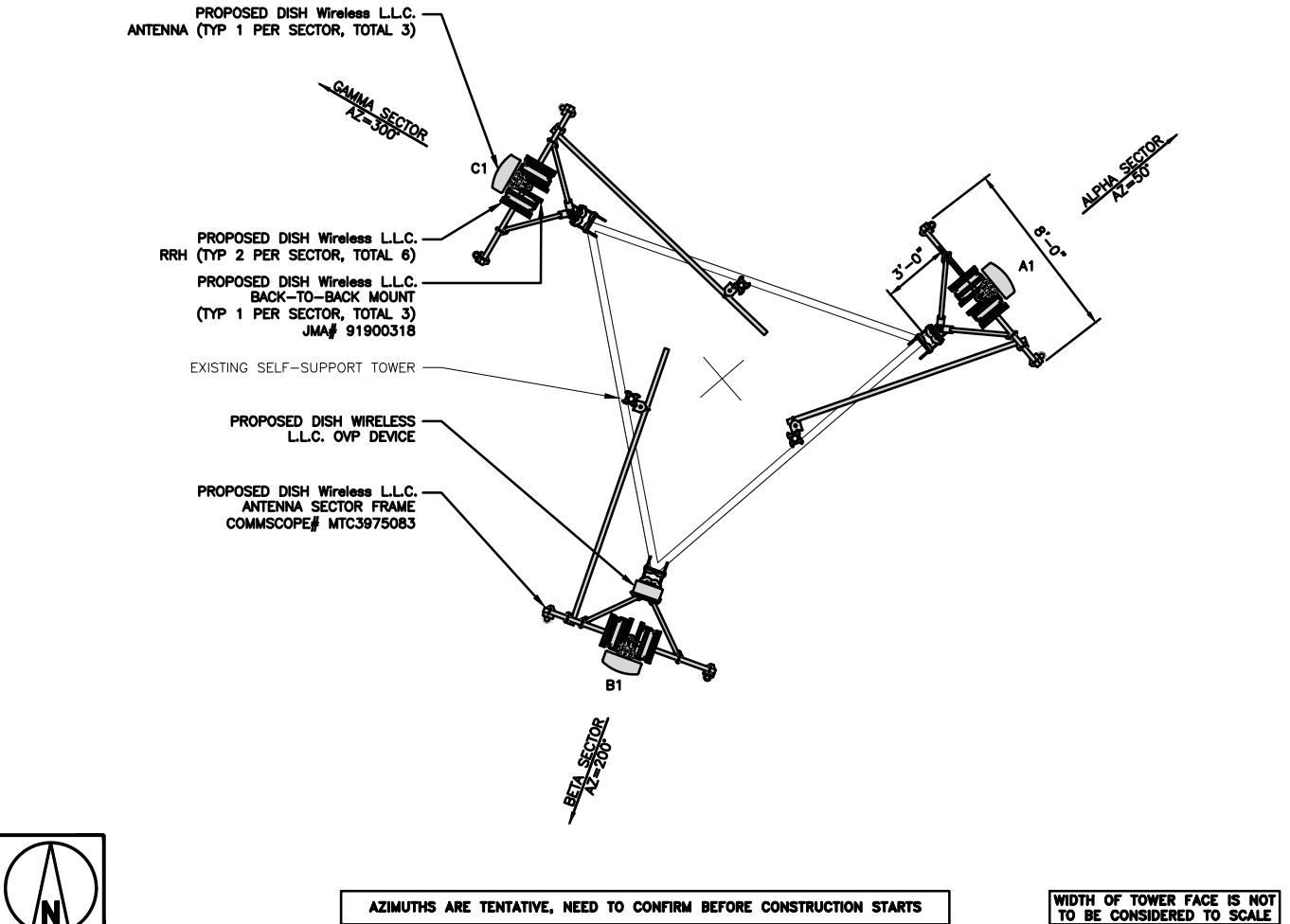


PROPOSED EAST ELEVATION

12' 8' 4' 0' 10' 20'

3/32"=1'-0"

1



ANTENNA LAYOUT								
SECTOR	POSITION	ANTENNA						TRANSMISSION CABLE
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	COMMSCOPE - FFV-65B-R2	5G	72.0" x 20.0"	50°	76°-0"	(1) HIGH-CAPACITY HYBRID CABLE (175' LONG)
BETA	B1	PROPOSED	COMMSCOPE - FFV-65B-R2	5G	72.0" x 20.0"	200°	76°-0"	
GAMMA	C1	PROPOSED	COMMSCOPE - FFV-65B-R2	5G	72.0" x 20.0"	300°	76°-0"	

SECTOR	POSITION	RRH		NOTES
		MANUFACTURER - MODEL NUMBER	TECHNOLOGY	
ALPHA	A1	FUJITSU - TA08025-B604	5G	1. CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RF DETAILS. 2. ANTENNA AND RRH MODELS MAY CHANGE DUE TO EQUIPMENT AVAILABILITY. ALL EQUIPMENT CHANGES MUST BE APPROVED AND REMAIN IN COMPLIANCE WITH THE PROPOSED DESIGN AND STRUCTURAL ANALYSES.
	A1	FUJITSU - TA08025-B605	5G	
BETA	B1	FUJITSU - TA08025-B604	5G	
	B1	FUJITSU - TA08025-B605	5G	
GAMMA	C1	FUJITSU - TA08025-B604	5G	
	C1	FUJITSU - TA08025-B605	5G	

OVP		
EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	SIZE (HxWxD)
PROPOSED	RAYCAP-RDIDC-9181-PF-48	16"x14"x8"

ANTENNA SCHEDULE

NO SCALE

3

dish
wireless.

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SUITE 300
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DRAWN BY: KAS
CHECKED BY: YF
APPROVED BY: YF

RFDS REV #: 1.0

CONSTRUCTION DOCUMENTS

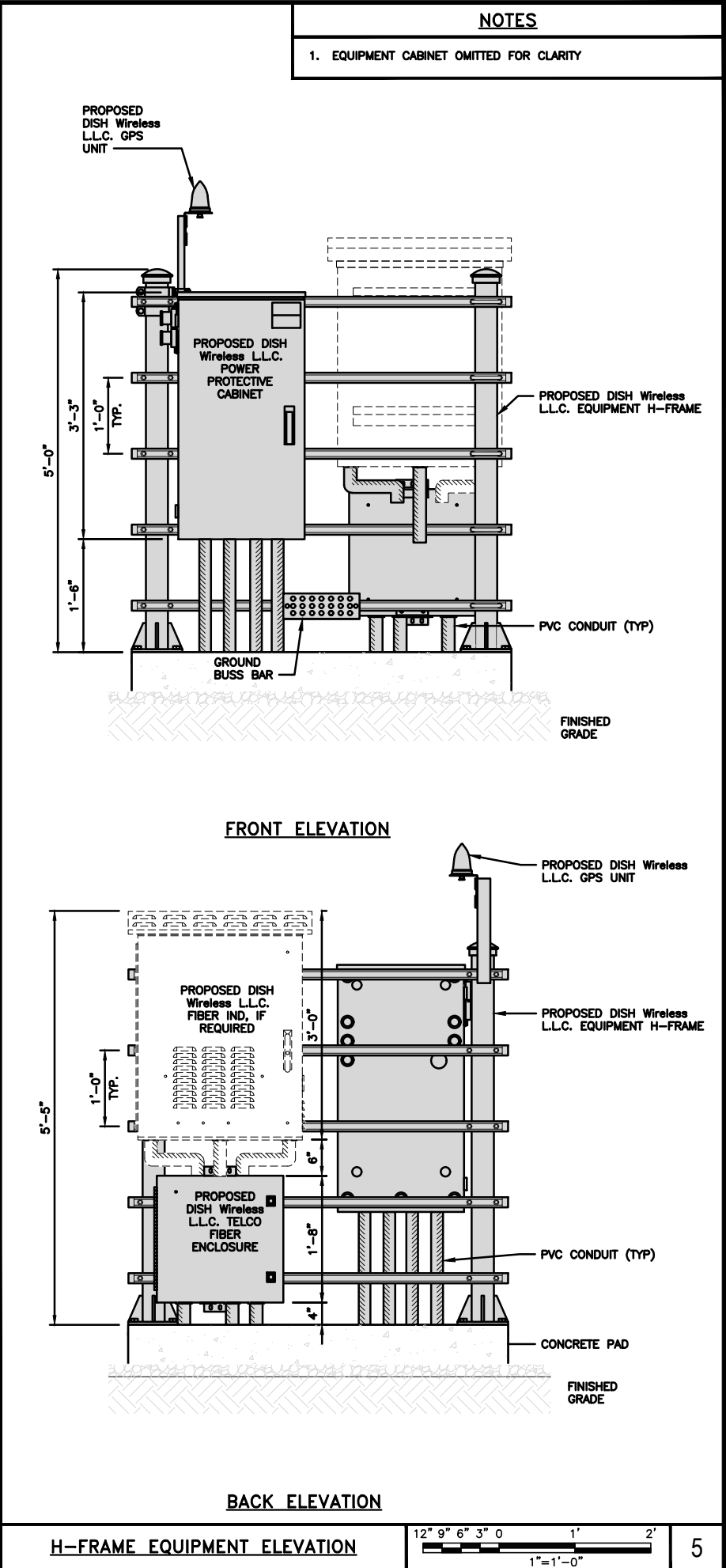
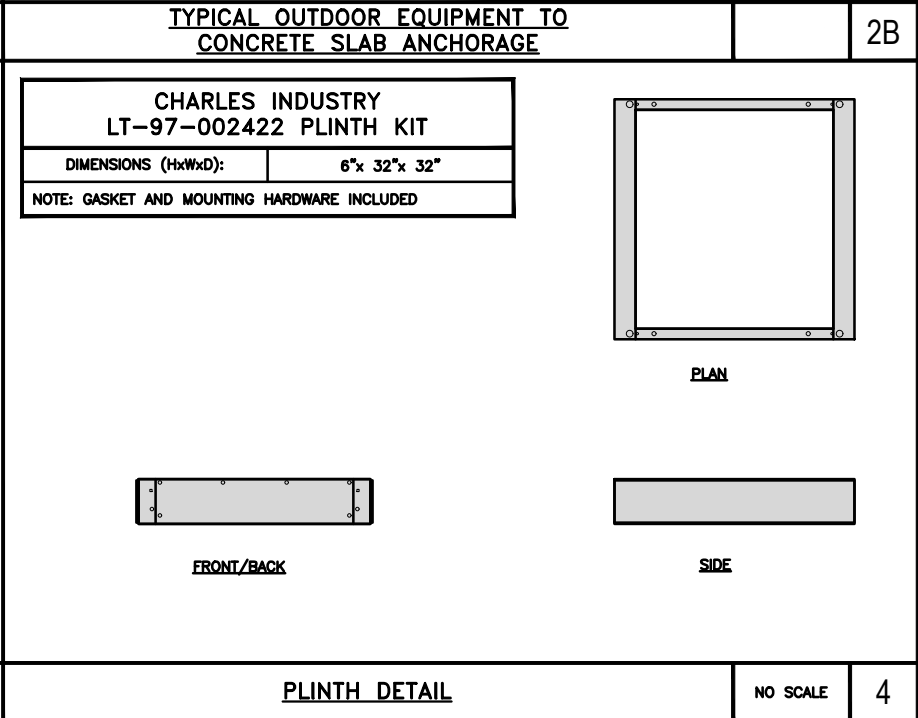
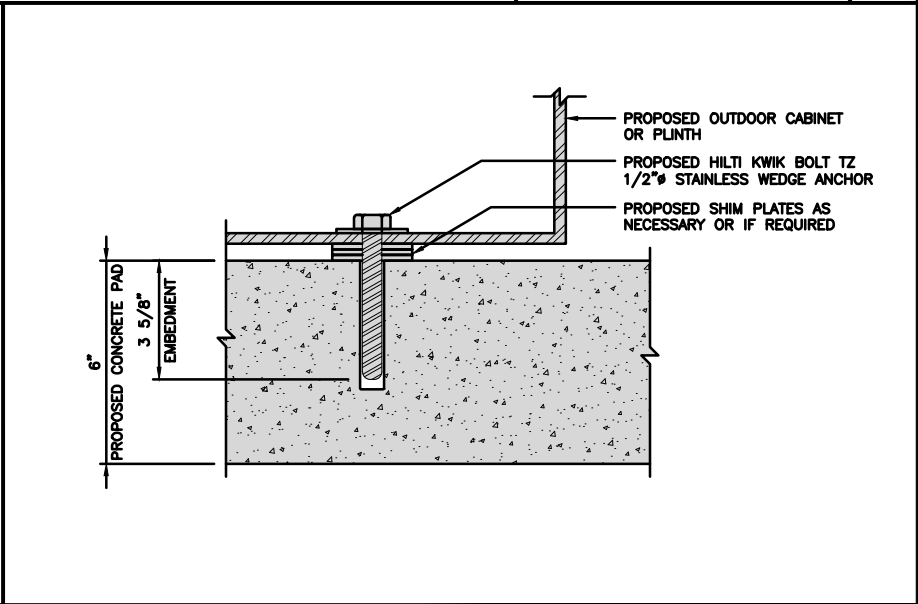
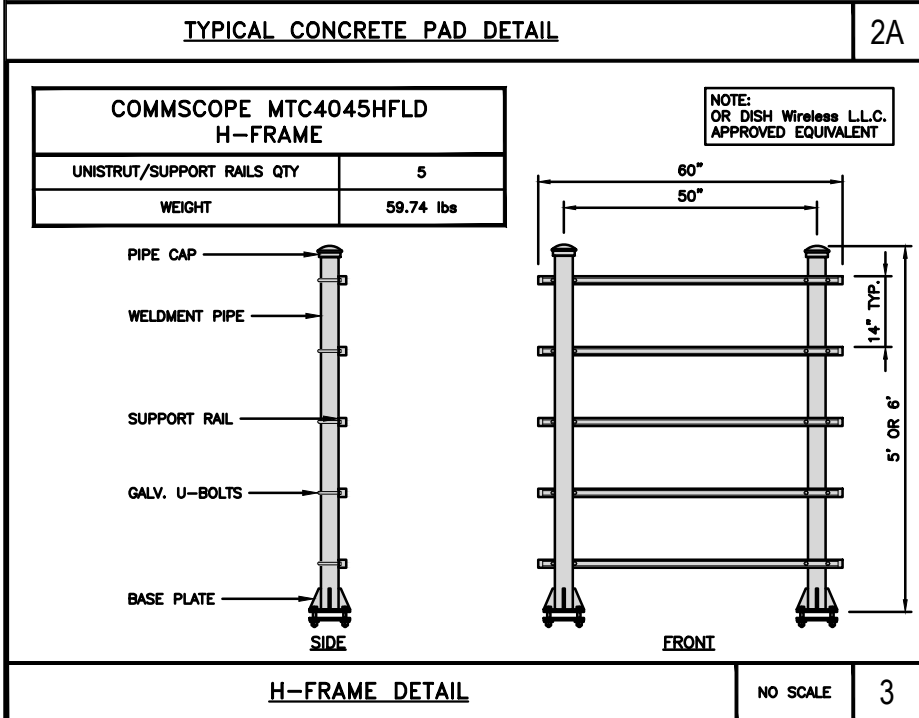
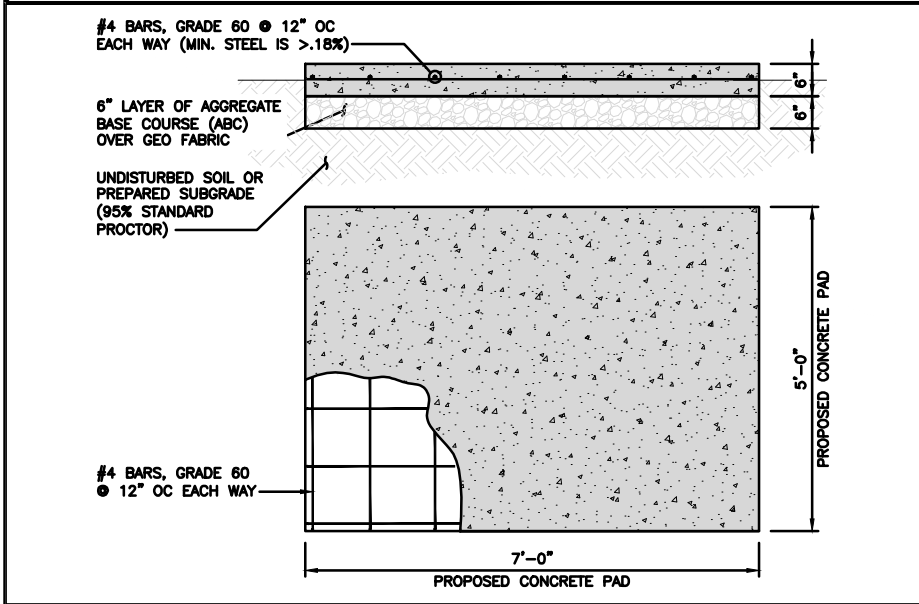
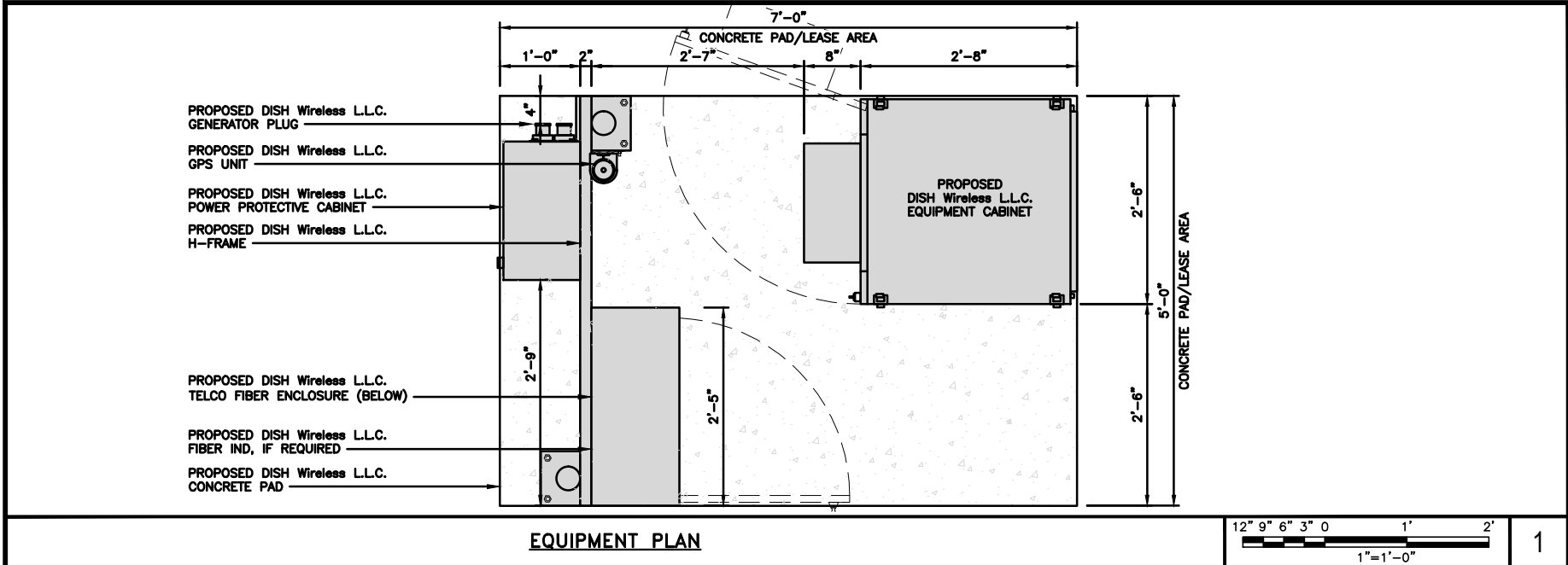
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A&E PROJECT NUMBER
153701.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01161A
100 OLD REDDING ROAD
REDDING, CT 06896

SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



dish wireless.

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REDDING, CT 06896

SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER
A-3

ENERSYS HVAC CABINET

2000005995

DIMENSIONS (HxWxD):	73"x30"x32"
WEIGHT EMPTY:	371 lbs
HVAC	600W
POWER SYSTEM	-48V ALPHA/600A

PLAN

SIDE

FRONT

SIDE

BACK

CABINET DETAIL

NO SCALE

1

RAYCAP PPC

RDIAC-2465-P-240-MTS

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

TOP

BACK

SIDE

FRONT

SIDE

POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

2

NOT USED

NO SCALE

3

SITEPRO1 BSF35

BASE SHOE FEET

DIMENSIONS (HxWxL)	8"x8"x1/2"
WEIGHT	15.0 LBS
POST SIZE:	2-7/8" OR 3-1/2"

ICE BRIDGE PIPE MOUNT DETAIL

NO SCALE

4

ZAYO 5RU (LEFT SWING DOOR)

FIBER NID ENCLOSURE

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

BOTTOM

BACK

SIDE

FRONT

FIBER NID ENCLOSURE DETAIL

NO SCALE

5

CHARLES CFIT-PF2020DSH1

FIBER TELCO ENCLOSURE

ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4

FRONT

SIDE

BACK

FRONT

FIBER TELCO ENCLOSURE DETAIL

NO SCALE

6

COMMSCOPE WB-K110-B

WAVEGUIDE BRIDGE KIT

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

INCLUDED PRODUCTS:

WB-T12-3 TRAPEZE KIT, 3 RUNGS

WB-LB12-3 SUPPORT BRACKET

MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4"

PLAN

FRONT

SIDE

ICE BRIDGE DETAIL

NO SCALE

7

FINISH SLOPE TO DRAIN

A-A

A-A

PROPOSED 3.5" DIA. SCH 40 PIPE GALVANIZED

PROPOSED 1'-6" DIA. CONCRETE PIER (TYP)

CONCRETE PIER

3" DIA SCH 40 PIPE

18" DIA DRILLED PIER FOUNDATION

A-A SECTION

1'-6"

TYPICAL ICE BRIDGE CONCRETE PIER DETAIL

NO SCALE

8

PROPOSED ICE BRIDGE

PROPOSED X" DIA HYBRID CABLE

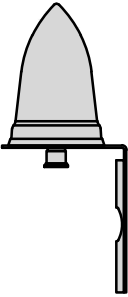
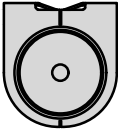
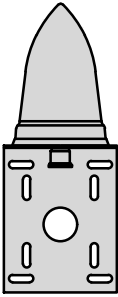
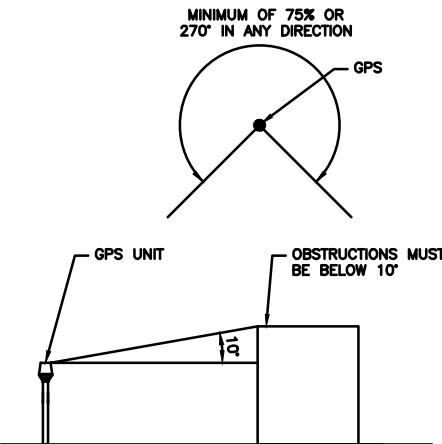
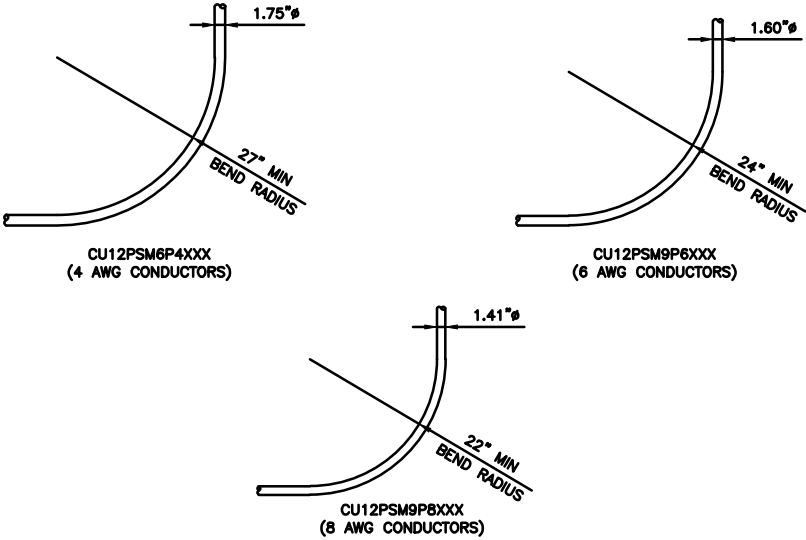
PROPOSED CABLE CLAMP @ 3'-0" O.C.


EXISTING SELF SUPPORT TOWER

HYBRID CABLE RUN


NO SCALE

9


<table><tr><td colspan="2">PCTEL GPSGL-TMG-SPI-40NCB</td></tr><tr><td>DIMENSIONS (DIAxH) MM/INCH</td><td>81x184mm 3.2"x7.25"</td></tr><tr><td>WEIGHT W/ACCESSORIES</td><td>075 lbs</td></tr><tr><td>CONNECTOR</td><td>N-FEMALE</td></tr><tr><td>FREQUENCY RANGE</td><td>1590 ± 30MHz</td></tr></table> <div><p>BACK</p></div> <div><p>TOP</p><p>SIDE</p></div>			PCTEL GPSGL-TMG-SPI-40NCB		DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"	WEIGHT W/ACCESSORIES	075 lbs	CONNECTOR	N-FEMALE	FREQUENCY RANGE	1590 ± 30MHz						
PCTEL GPSGL-TMG-SPI-40NCB																		
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"																	
WEIGHT W/ACCESSORIES	075 lbs																	
CONNECTOR	N-FEMALE																	
FREQUENCY RANGE	1590 ± 30MHz																	
GPS DETAIL		NO SCALE	1	GPS MINIMUM SKY VIEW REQUIREMENTS		NO SCALE	2	CABLES UNLIMITED HYBRID CABLE MINIMUM BEND RADIUSES		NO SCALE	3							
NOT USED			NO SCALE	4	NOT USED			NO SCALE	5	NOT USED			NO SCALE	6				
NOT USED			NO SCALE	7	NOT USED			NO SCALE	8	NOT USED			NO SCALE	9				




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KAS	YF	YF

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A&E PROJECT NUMBER
153701.001.01

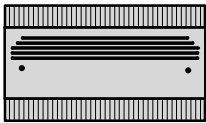
DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01161A
100 OLD REDDING ROAD
REDDING, CT 06896

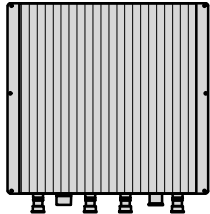
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

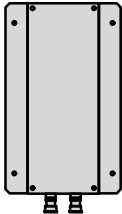
FUJITSU TRIPLE BAND TA08025-B605	
DIMENSIONS (HxWxD)	14.9"x15.7"x9"
WEIGHT	74.95 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



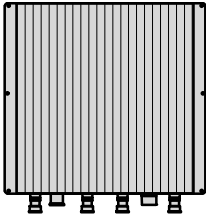
PLAN



BACK

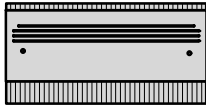


SIDE

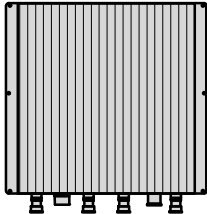


FRONT

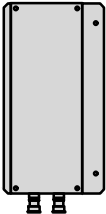
FUJITSU DUAL BAND TA08025-B604	
DIMENSIONS (HxWxD)	14.9"x15.7"x7.8"
WEIGHT	63.9 lbs
CONNECTOR TYPE	4.3-10 RF CONNECTOR
POWER SUPPLY	DC -58~-36V



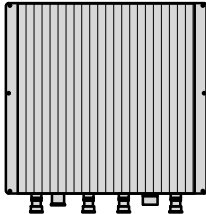
PLAN



BACK



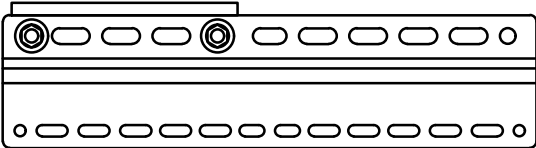
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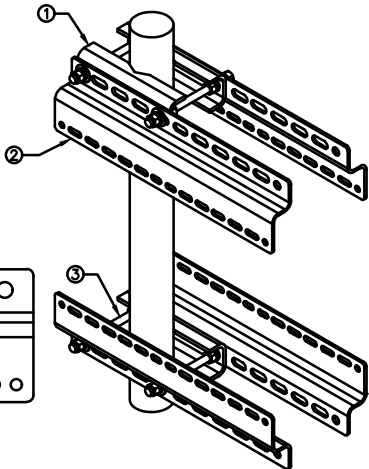
FRONT

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

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



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



RRH DETAIL

NO SCALE

1

RRH DETAIL

NO SCALE

2

RRH MOUNT DETAIL

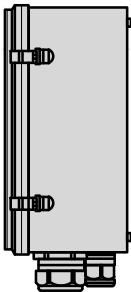
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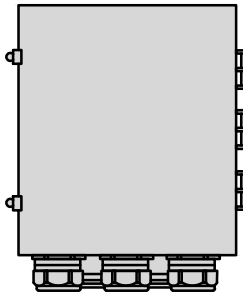
RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)	
DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS



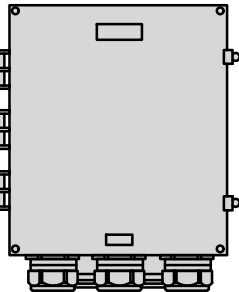
PLAN



SIDE



BACK



FRONT

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



PLAN



BACK



SIDE



FRONT

SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

4

ANTENNA DETAIL

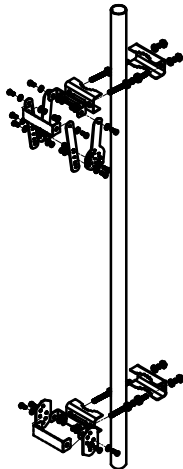
NO SCALE

5

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

NOTE:
KIT #91900318: TOP AND BOTTOM BRACKETS
FOR 4-, 6-, AND 8-FOOT ANTENNAS
ANTENNA BRACKET NOT PART OF KIT

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



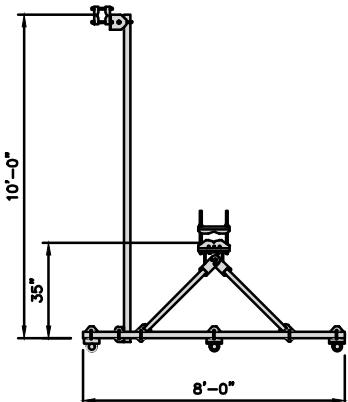
ANTENNA BRACKET DETAIL

NO SCALE

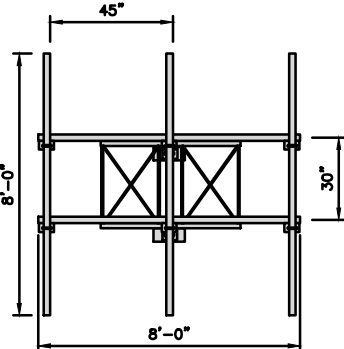
7

COMMSCOPE V-FRAME MTC3975083	
FACE SIZE	8'-0"
WEIGHT	352.136 lbs

NOTE:
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APPROVED EQUIVALENT



PLAN



FRONT

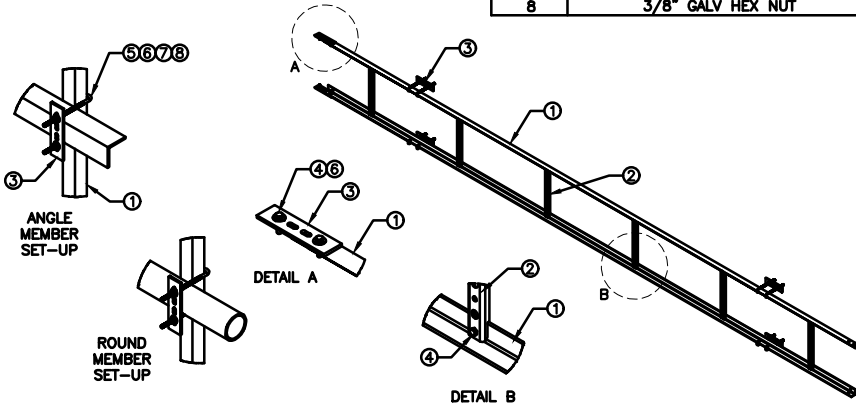
ANTENNA FRAME DETAIL

NO SCALE

8

COMMSCOPE 20' CABLE LADDER 6 HOLE RUNGS	
DIMENSIONS (WxL)	20.5"x240"
WEIGHT	84.94 lbs

ITEM#	DESCRIPTION
1	20' ANGLE SIDE RAIL
2	20' LADDER RUNG
3	BACKING PLATE
4	3/8"x1-1/2" GALV BOLT KIT
5	8" GALV J-BOLT KIT
6	3/8" GALV FLAT WASHER
7	3/8" GALV LOCK WASHER
8	3/8" GALV HEX NUT



CABLE LADDER DETAIL

NO SCALE

9

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PROJECT INFORMATION

NJJER01161A
100 OLD REDDING ROAD
REDDING, CT 06896

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-6

STIFF ARM LOCATION NOTES:

- TIE BACK SHALL BE CONNECTED PER MANUFACTURER SPECIFICATIONS. IF THE ANGLE OF ATTACHMENT DEVIATES FROM THE MANUFACTURER RANGES, A SITE SPECIFIC ANALYSIS THAT CONSIDERS THESE EFFECTS ON BOTH THE TOWER AND THE MOUNT WILL BE NEEDED.
- ACCEPTABLE STIFF ARM TO TOWER MEMBER ATTACHMENT LOCATIONS:
 - A) INTERIOR BRACING MEMBERS:
 - WITHIN 25% OF EITHER END OF THE MEMBER'S LENGTH.
 - B) TOWER LEGS:
 - WITHIN 25% OF EITHER END OF THE MEMBER'S LENGTH. IF ATTACHMENT IS NOT WITHIN 25% OF EITHER END OF THE MEMBERS LENGTH THEN ADJUST ATTACHMENT POINT TO MINIMIZE DISTANCE TO END OF MEMBER WHILE FOLLOWING MANUFACTURERS SPECIFICATIONS.

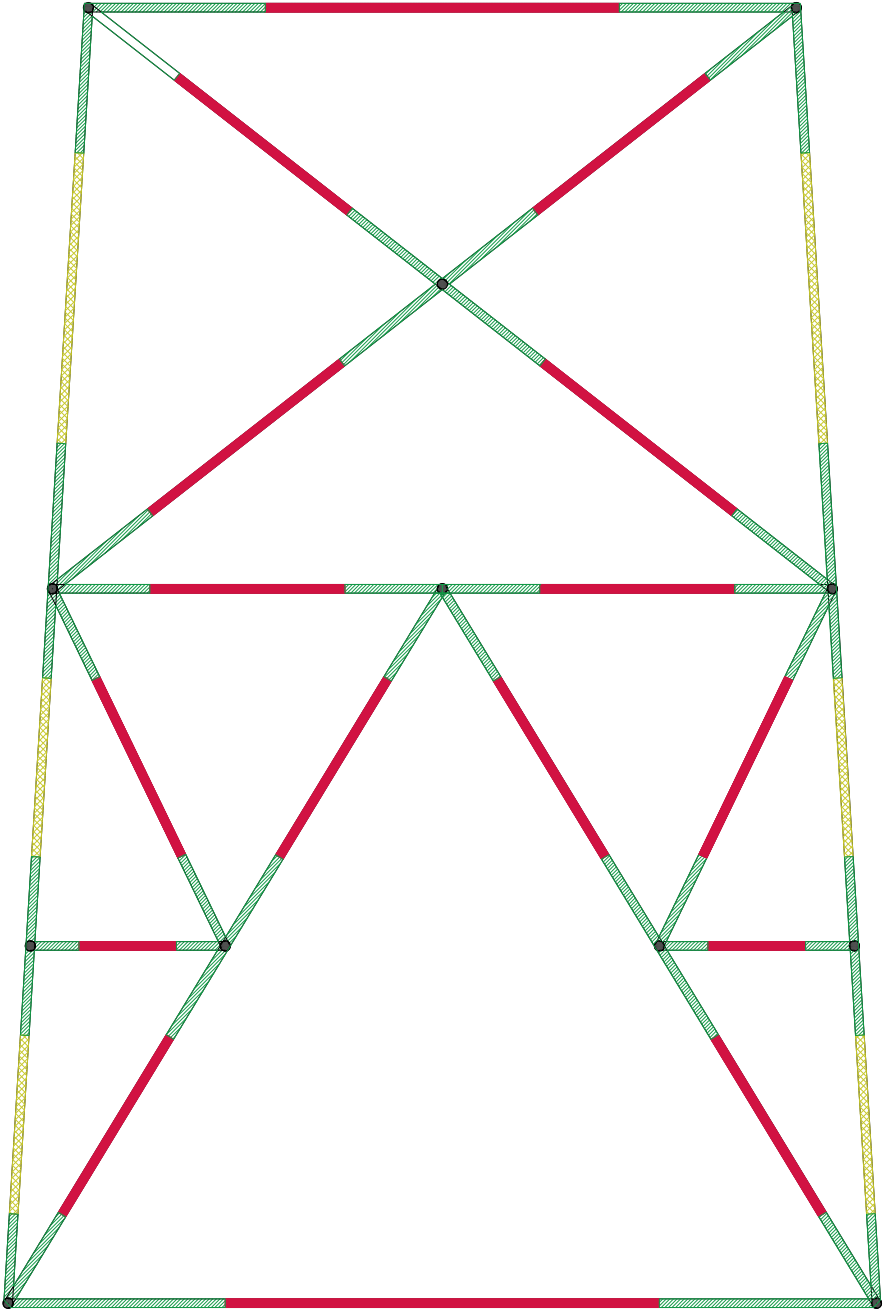
- ACCEPTABLE ATTACHMENT REGION & FORCE
- ACCEPTABLE ATTACHMENT REGION & FORCE
- DO NOT ATTACH HERE



INTERIOR BRACING



TOWER LEG



TOWER SECTION

1

STIFF ARM LOCATIONS

SCALE: NOT TO SCALE



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PROJECT INFORMATION

NJJER01161A
100 OLD REDDING ROAD
REDDING, CT 06896

SHEET TITLE
STIFF ARM
LOCATION DETAIL

SHEET NUMBER
A-7

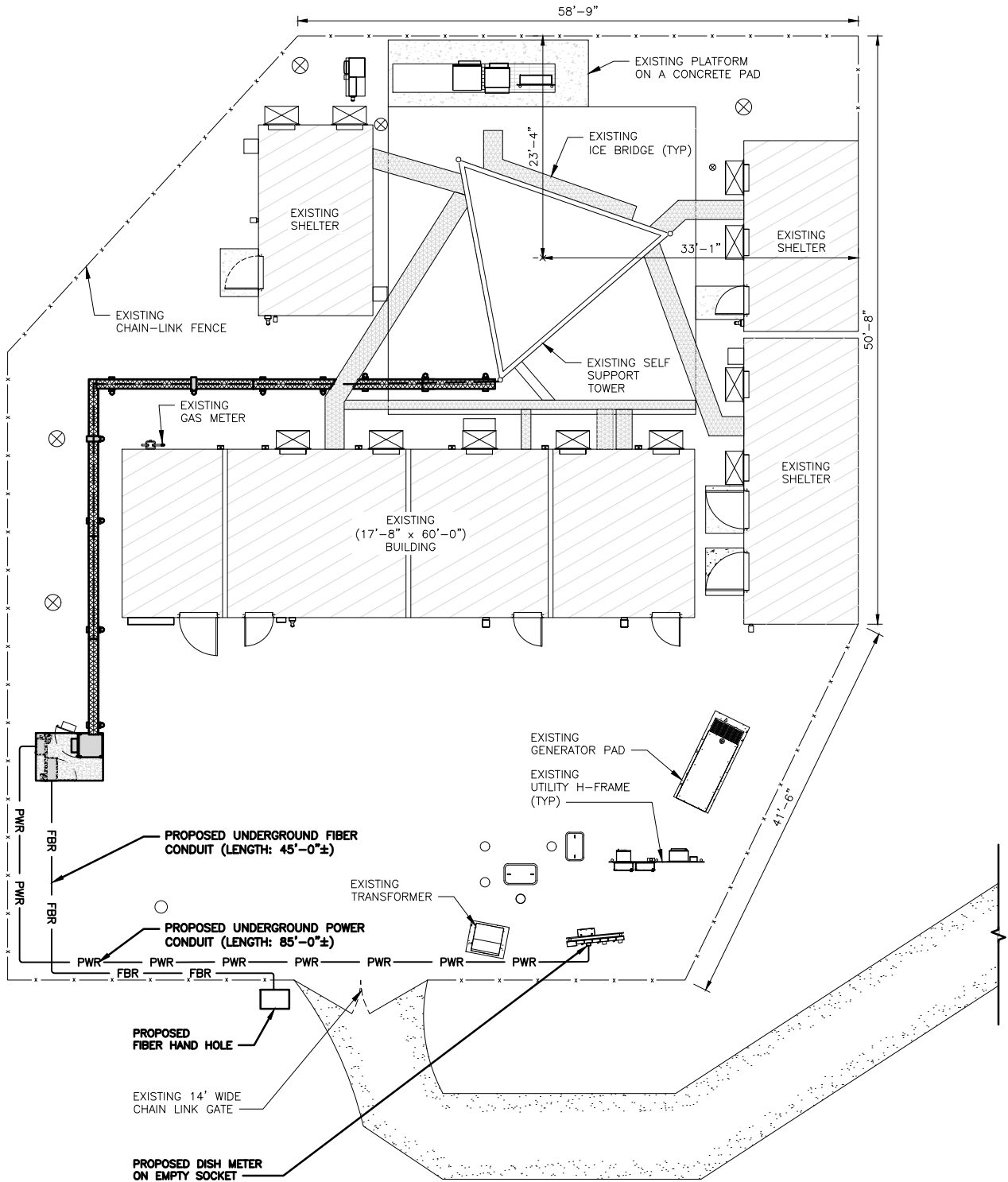
FINAL POWER OR FIBER DESIGN
NOT AVAILABLE AT TIME OF ISSUE

NOTES

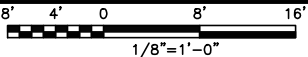
1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.

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

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



UTILITY ROUTE PLAN



1

ELECTRICAL NOTES

NO SCALE

2

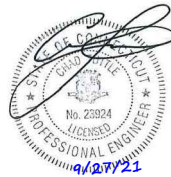


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RFDS REV #: 1.0

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A&E PROJECT NUMBER
153701.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01161A
100 OLD REDDING ROAD
REDDING, CT 06896

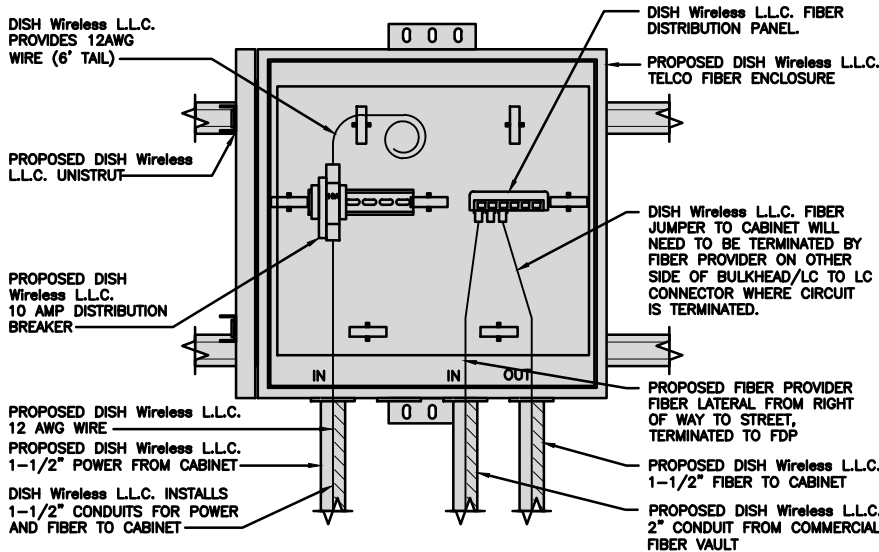
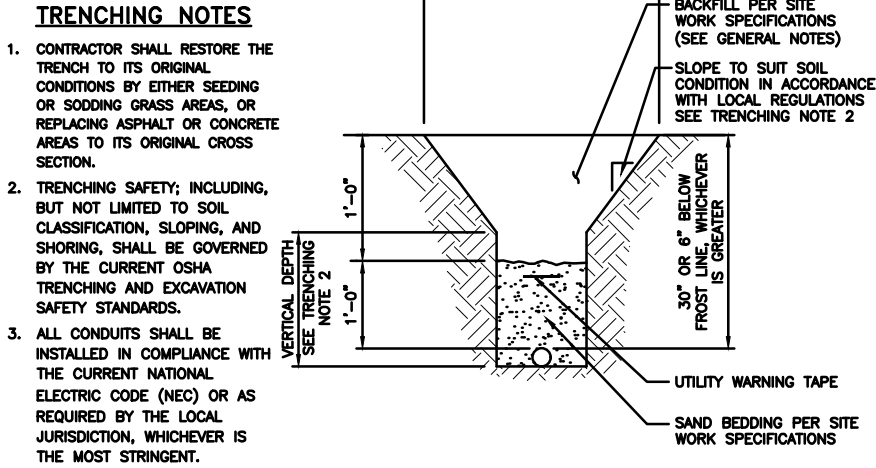
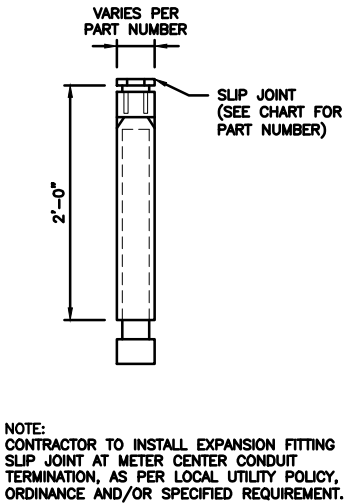
SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER

E-1



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



EXPANSION JOINT DETAIL

NO SCALE

1

TYPICAL UNDERGROUND TRENCH DETAIL

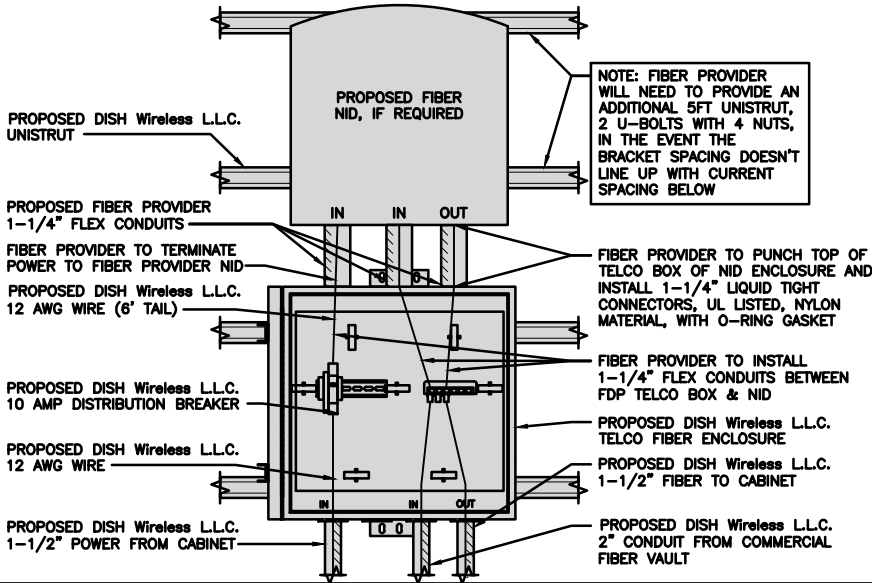
NO SCALE

2

DARK TELCO BOX – INTERIOR WIRING LAYOUT

NO SCALE

3



LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL)

NO SCALE

4

NOT USED

NO SCALE

5

NOT USED

NO SCALE

6

NOT USED

NO SCALE

7

NOT USED

NO SCALE

8

NOT USED

NO SCALE

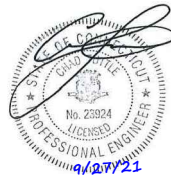
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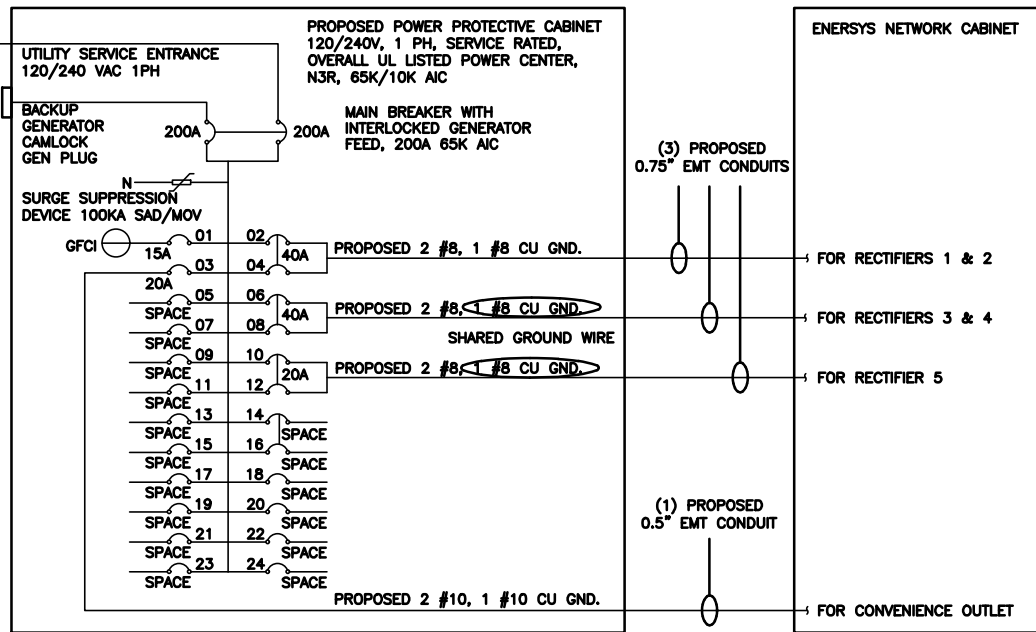
DISH Wireless L.L.C.
PROJECT INFORMATION

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100 OLD REDDING ROAD
REDDING, CT 06896

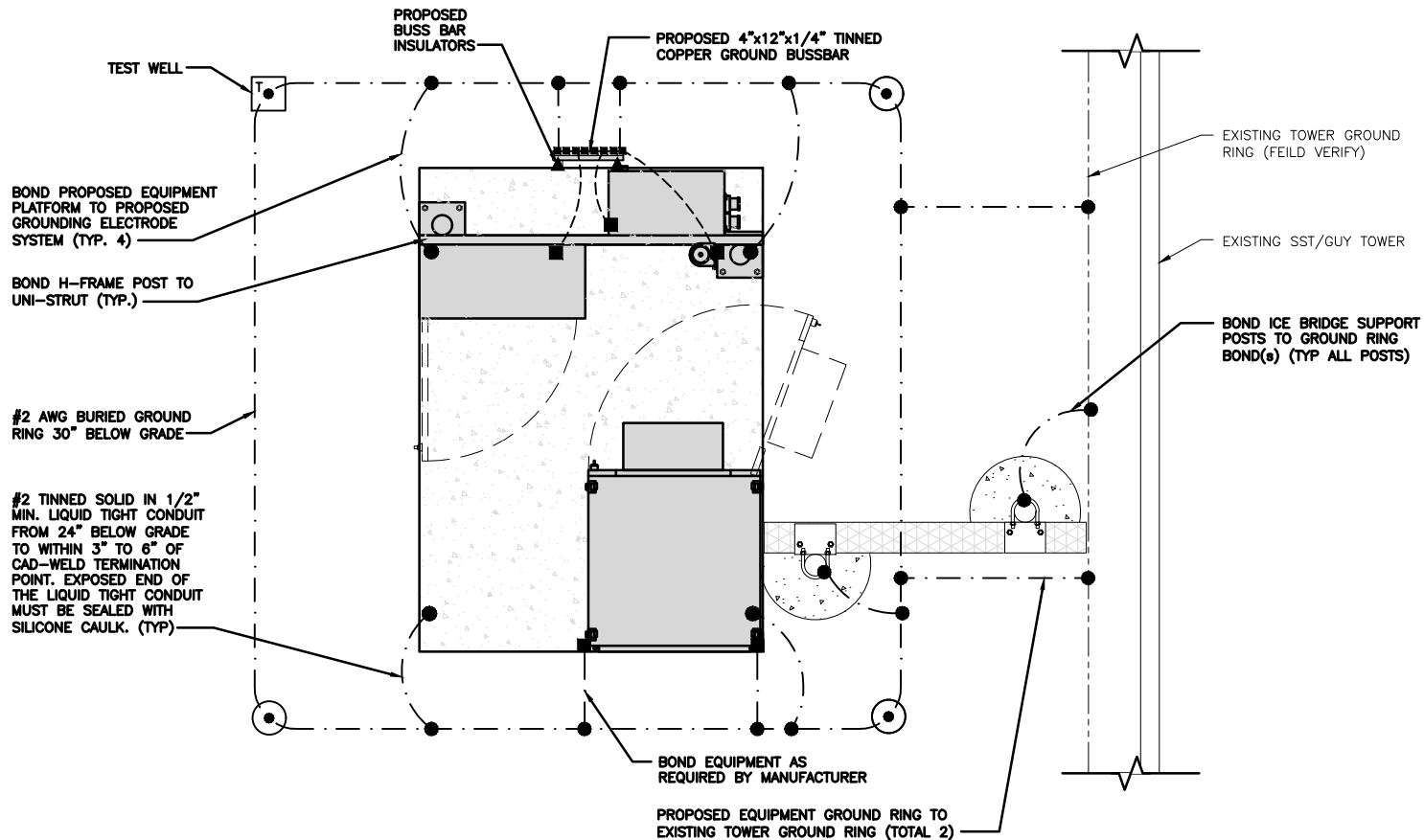
SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER

E-2



3.



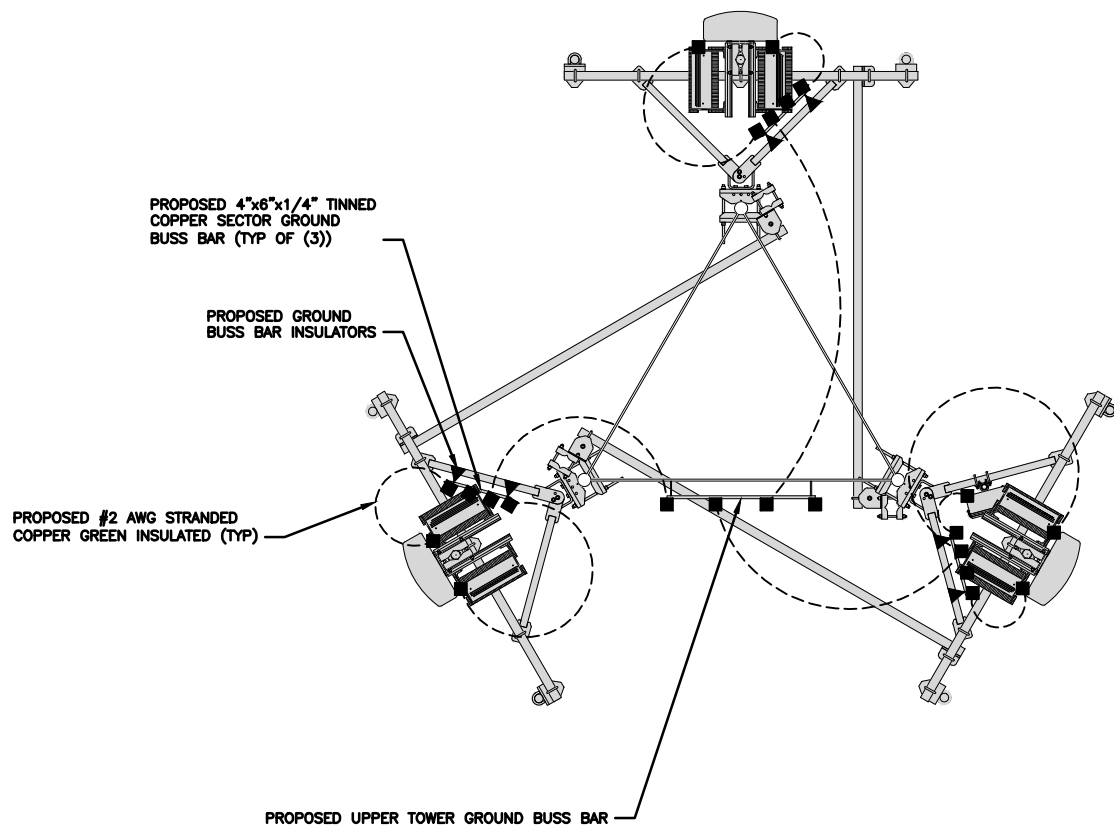
TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE

1

NOTES

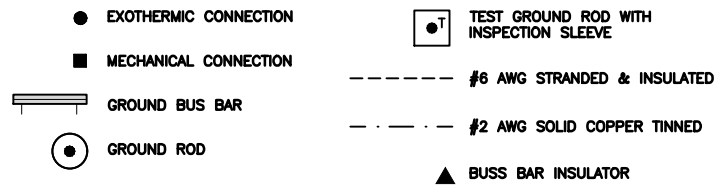
ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT
REFERENCING TO A SPECIFIC MANUFACTURER. THIS
LAYOUT IS FOR REFERENCE PURPOSES ONLY



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE

2



GROUNDING LEGEND

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

GROUNDING KEY NOTES

- (A) **EXTERIOR GROUND RING:** #2 AWG SOLID COPPER, BURIED AT A DEPTH OF AT LEAST 30 INCHES BELOW GRADE, OR 6 INCHES BELOW THE FROST LINE AND APPROXIMATELY 24 INCHES FROM THE EXTERIOR WALL OR FOOTING.
- (B) **TOWER GROUND RING:** THE GROUND RING SYSTEM SHALL BE INSTALLED AROUND AN ANTENNA TOWER'S LEGS, AND/OR GUY ANCHORS. WHERE SEPARATE SYSTEMS HAVE BEEN PROVIDED FOR THE TOWER AND THE BUILDING, AT LEAST TWO BONDS SHALL BE MADE BETWEEN THE TOWER RING GROUND SYSTEM AND THE BUILDING RING GROUND SYSTEM USING MINIMUM #2 AWG SOLID COPPER CONDUCTORS.
- (C) **INTERIOR GROUND RING:** #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTOR EXTENDED AROUND THE PERIMETER OF THE EQUIPMENT AREA. ALL NON-TELECOMMUNICATIONS RELATED METALLIC OBJECTS FOUND WITHIN A SITE SHALL BE GROUNDED TO THE INTERIOR GROUND RING WITH #6 AWG STRANDED GREEN INSULATED CONDUCTOR.
- (D) **BOND TO INTERIOR GROUND RING:** #2 AWG SOLID TINNED COPPER WIRE PRIMARY BONDS SHALL BE PROVIDED AT LEAST AT FOUR POINTS ON THE INTERIOR GROUND RING, LOCATED AT THE CORNERS OF THE BUILDING.
- (E) **GROUND ROD:** UL LISTED COPPER CLAD STEEL. MINIMUM 1/2" DIAMETER BY EIGHT FEET LONG. GROUND RODS SHALL BE INSTALLED WITH INSPECTION SLEEVES. GROUND RODS SHALL BE DRIVEN TO THE DEPTH OF GROUND RING CONDUCTOR.
- (F) **CELL REFERENCE GROUND BAR:** POINT OF GROUND REFERENCE FOR ALL COMMUNICATIONS EQUIPMENT FRAMES. ALL BONDS ARE MADE WITH #2 AWG UNLESS NOTED OTHERWISE. STRANDED GREEN INSULATED COPPER CONDUCTORS. BOND TO GROUND RING WITH (2) #2 SOLID TINNED COPPER CONDUCTORS.
- (G) **HATCH PLATE GROUND BAR:** BOND TO THE INTERIOR GROUND RING WITH TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS. WHEN A HATCH-PLATE AND A CELL REFERENCE GROUND BAR ARE BOTH PRESENT, THE CRGB MUST BE CONNECTED TO THE HATCH-PLATE AND TO THE INTERIOR GROUND RING USING (2) TWO #2 AWG STRANDED GREEN INSULATED COPPER CONDUCTORS EACH.
- (H) **EXTERIOR CABLE ENTRY PORT GROUND BARS:** LOCATED AT THE ENTRANCE TO THE CELL SITE BUILDING. BOND TO GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTORS WITH AN EXOTHERMIC WELD AND INSPECTION SLEEVE.
- (I) **TELCO GROUND BAR:** BOND TO BOTH CELL REFERENCE GROUND BAR OR EXTERIOR GROUND RING.
- (J) **FRAME BONDING:** THE BONDING POINT FOR TELECOM EQUIPMENT FRAMES SHALL BE THE GROUND BUS THAT IS NOT ISOLATED FROM THE EQUIPMENTS METAL FRAMEWORK.
- (K) **INTERIOR UNIT BONDS:** METAL FRAMES, CABINETS AND INDIVIDUAL METALLIC UNITS LOCATED WITH THE AREA OF THE INTERIOR GROUND RING REQUIRE A #6 AWG STRANDED GREEN INSULATED COPPER BOND TO THE INTERIOR GROUND RING.
- (L) **FENCE AND GATE GROUNDING:** METAL FENCES WITHIN 7 FEET OF THE EXTERIOR GROUND RING OR OBJECTS BONDED TO THE EXTERIOR GROUND RING SHALL BE BONDED TO THE GROUND RING WITH A #2 AWG SOLID TINNED COPPER CONDUCTOR AT AN INTERVAL NOT EXCEEDING 25 FEET. BONDS SHALL BE MADE AT EACH GATE POST AND ACROSS GATE OPENINGS.
- (M) **EXTERIOR UNIT BONDS:** METALLIC OBJECTS, EXTERNAL TO OR MOUNTED TO THE BUILDING, SHALL BE BONDED TO THE EXTERIOR GROUND RING. USING #2 TINNED SOLID COPPER WIRE
- (N) **ICE BRIDGE SUPPORTS:** EACH ICE BRIDGE LEG SHALL BE BONDED TO THE GROUND RING WITH #2 AWG BARE TINNED COPPER CONDUCTOR. PROVIDE EXOTHERMIC WELDS AT BOTH THE ICE BRIDGE LEG AND BURIED GROUND RING.
- (O) DURING ALL DC POWER SYSTEM CHANGES INCLUDING DC SYSTEM CHANGE OUTS, RECTIFIER REPLACEMENTS OR ADDITIONS, BREAKER DISTRIBUTION CHANGES, BATTERY ADDITIONS, BATTERY REPLACEMENTS AND INSTALLATIONS OR CHANGES TO DC CONVERTER SYSTEMS IT SHALL BE REQUIRED THAT SERVICE CONTRACTORS VERIFY ALL DC POWER SYSTEMS ARE EQUIPPED WITH A MASTER DC SYSTEM RETURN GROUND CONDUCTOR FROM THE DC POWER SYSTEM COMMON RETURN BUS DIRECTLY CONNECTED TO THE CELL SITE REFERENCE GROUND BAR
- (P) TOWER TOP COLLECTOR BUSS BAR IS TO BE MECHANICALLY BONDED TO TOWER STEEL.
- (Q) REFER TO DISH Wireless L.L.C. GROUNDING NOTES.

GROUNDING KEY NOTES

NO SCALE

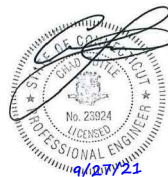
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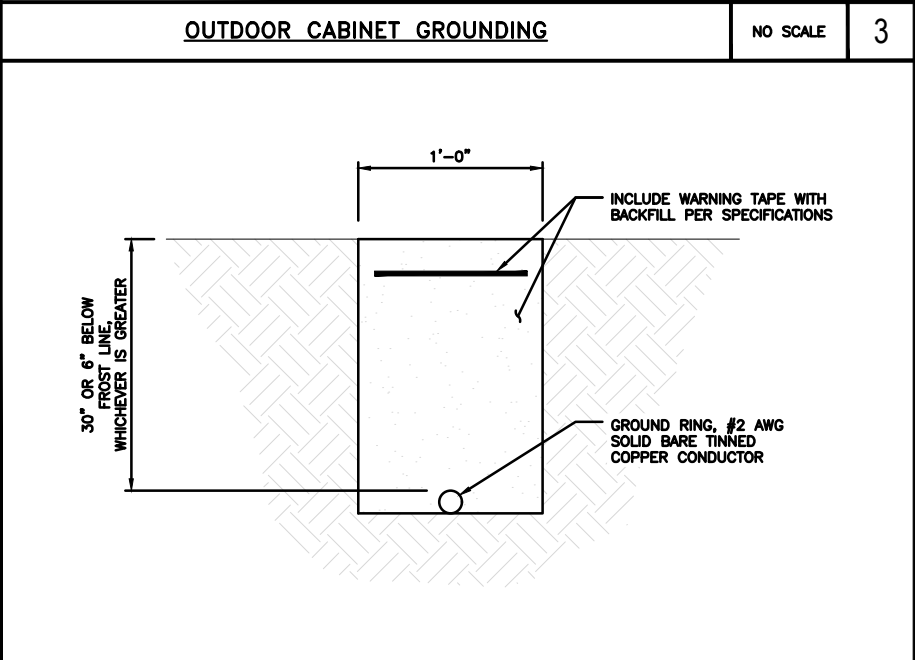
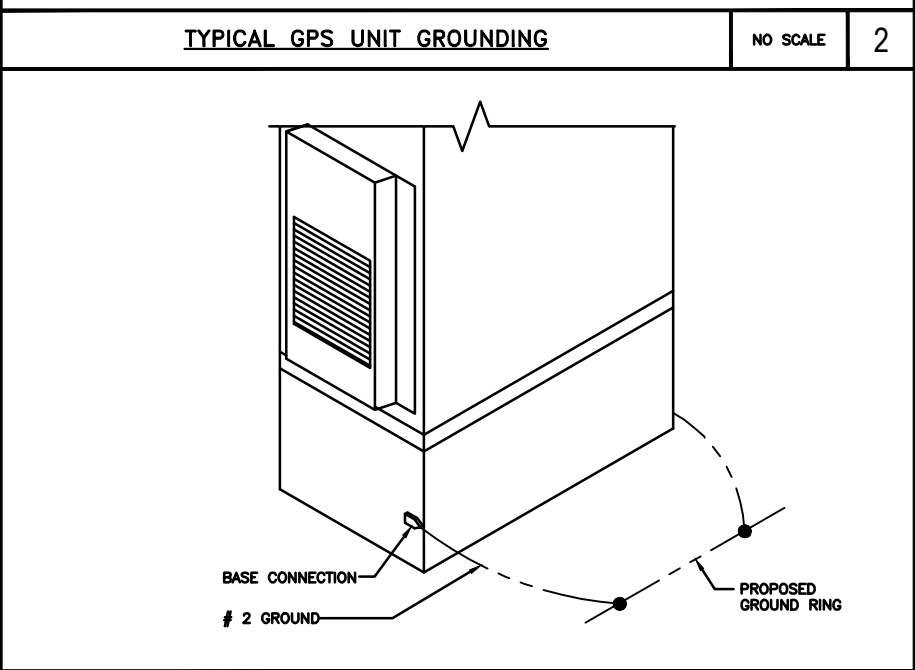
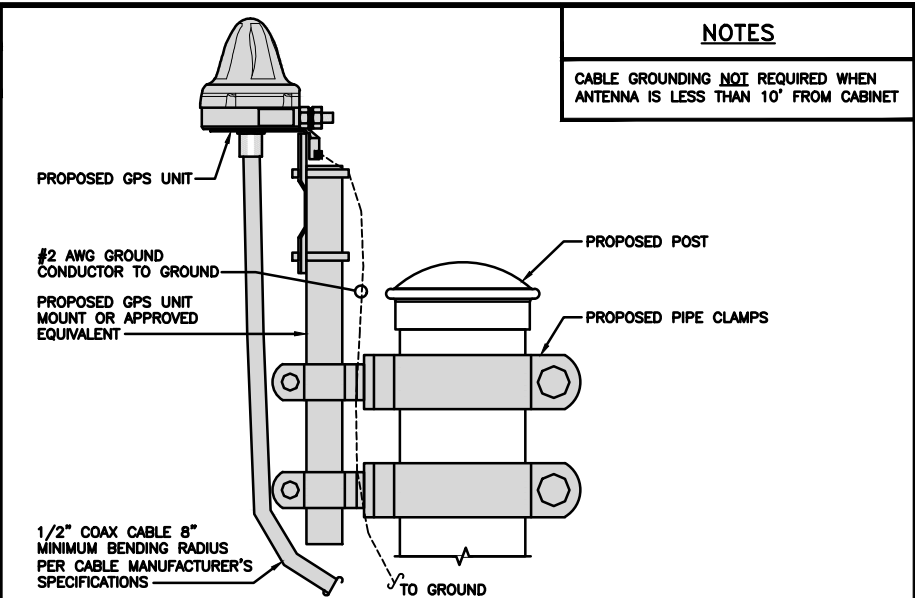
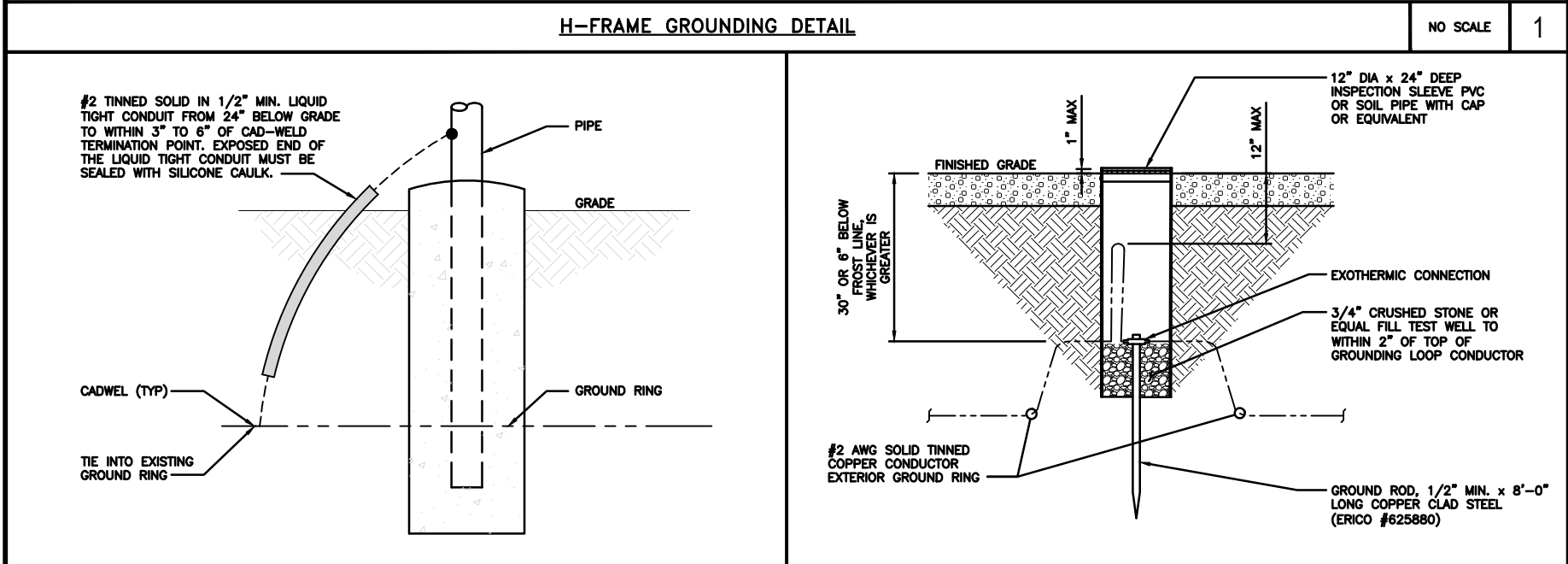
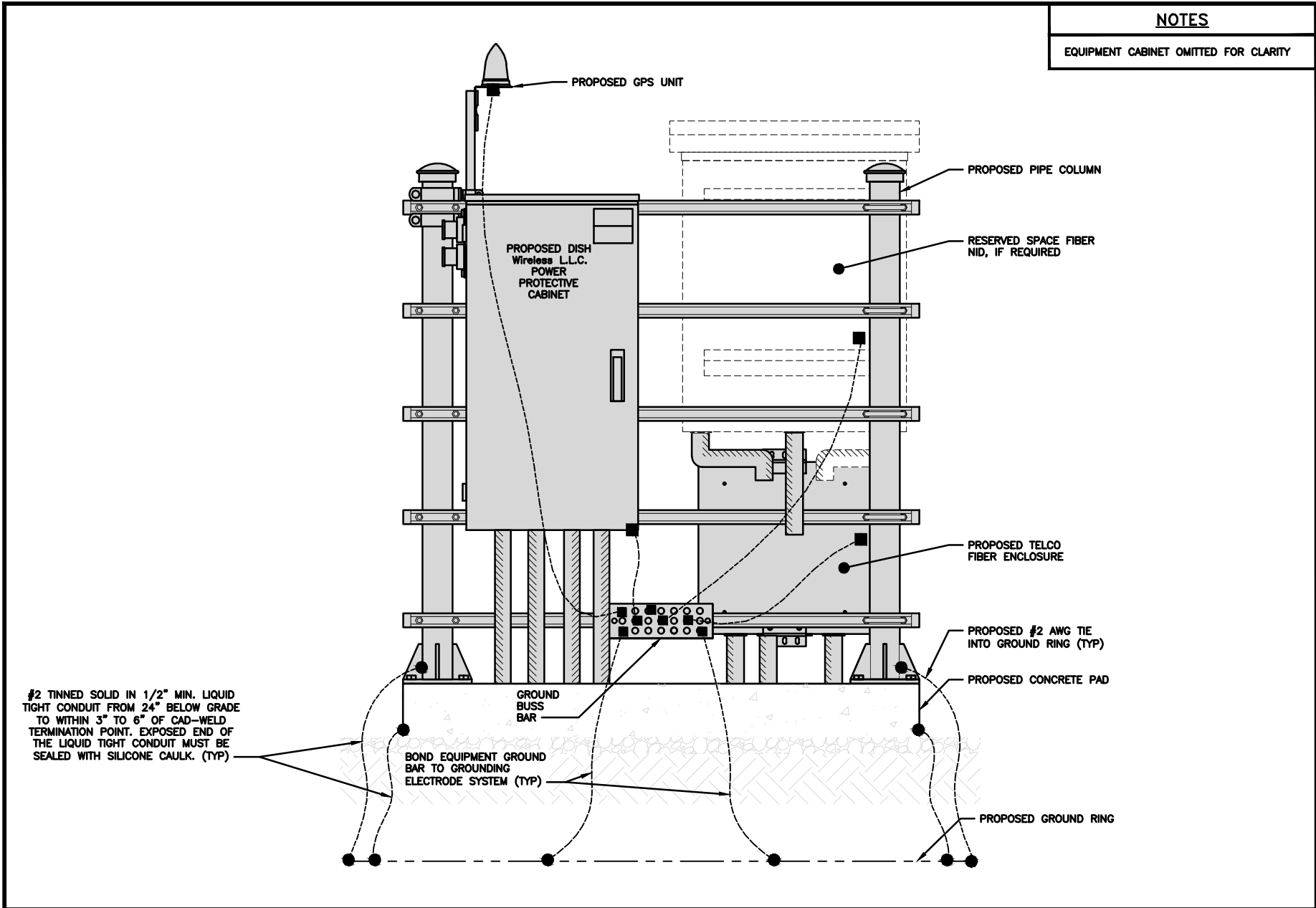
A&E PROJECT NUMBER
153701.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01161A
100 OLD REDDING ROAD
REDDING, CT 06896

SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

G-1



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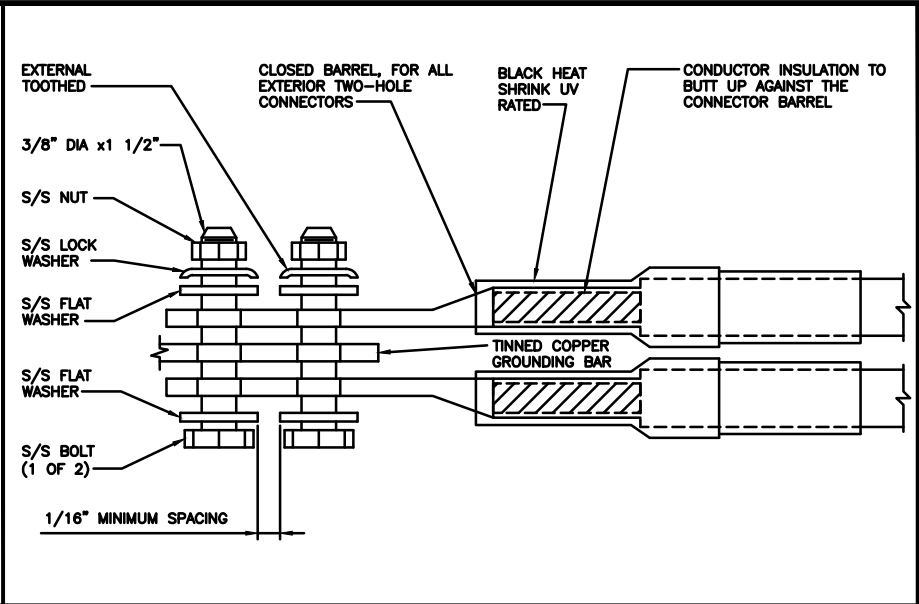
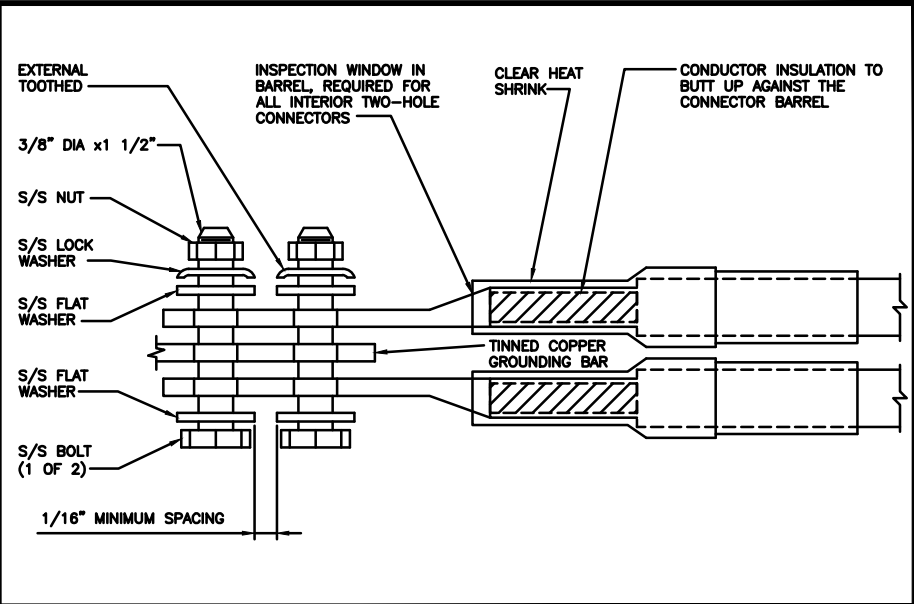
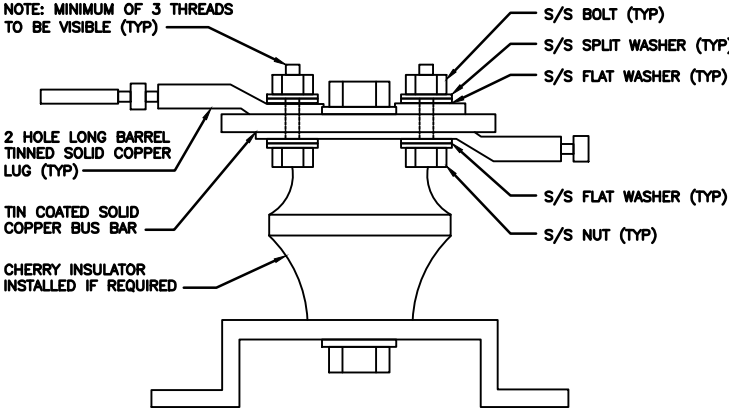
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SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-2

<div>1. EXOTHERMIC WELD (2) TWO, #2 AWG BARE TINNED SOLID COPPER CONDUCTORS TO GROUND BAR. ROUTE CONDUCTORS TO BURIED GROUND RING AND PROVIDE PARALLEL EXOTHERMIC WELD.</div> <div>2. ALL EXTERIOR GROUNDING HARDWARE SHALL BE STAINLESS STEEL 3/8" DIAMETER OR LARGER. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING LOCK WASHERS, COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.</div> <div>3. FOR GROUND BOND TO STEEL ONLY: COAT ALL SURFACES WITH AN ANTI-OXIDANT COMPOUND BEFORE MATING.</div> <div>4. DO NOT INSTALL CABLE GROUNDING KIT AT A BEND AND ALWAYS DIRECT GROUND CONDUCTOR DOWN TO GROUNDING BUS.</div> <div>5. NUT & WASHER SHALL BE PLACED ON THE FRONT SIDE OF THE GROUND BAR AND BOLTED ON THE BACK SIDE.</div> <div>6. ALL GROUNDING PARTS AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR.</div> <div>7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ADDITIONAL GROUND BAR AS REQUIRED.</div> <div>8. ENSURE THE WIRE INSULATION TERMINATION IS WITHIN 1/8" OF THE BARREL (NO SHINERS).</div>														
TYPICAL GROUNDING NOTES			NO SCALE	1	TYPICAL EXTERIOR TWO HOLE LUG			NO SCALE	2	TYPICAL INTERIOR TWO HOLE LUG			NO SCALE	3
														
LUG DETAIL			NO SCALE	4	NOT USED			NO SCALE	5	NOT USED			NO SCALE	6
NOT USED			NO SCALE	7	NOT USED			NO SCALE	8	NOT USED			NO SCALE	9

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SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

RF JUMPER COLOR CODING				3/4" TAPE WIDTHS WITH 3/4" SPACING								
LOW-BAND RRH – (600MHz N71 BASEBAND) + (850MHz N26 BAND) + (700MHz N29 BAND) – OPTIONAL PER MARKET	ALPHA RRH				BETA RRH				GAMMA RRH			
	PORT 1 + SLANT	PORT 2 – SLANT	PORT 3 + SLANT	PORT 4 – SLANT	PORT 1 + SLANT	PORT 2 – SLANT	PORT 3 + SLANT	PORT 4 – SLANT	PORT 1 + SLANT	PORT 2 – SLANT	PORT 3 + SLANT	PORT 4 – SLANT
	RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
	ORANGE	ORANGE	RED	RED	ORANGE	ORANGE	BLUE	BLUE	ORANGE	ORANGE	GREEN	GREEN
		WHITE (–) PORT	ORANGE	ORANGE		WHITE (–) PORT	ORANGE	ORANGE		WHITE (–) PORT	ORANGE	ORANGE
			WHITE (–) PORT				WHITE (–) PORT				WHITE (–) PORT	
ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BANDS)												
MID-BAND RRH – (AWS BANDS N66+N70)												
	RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
	PURPLE	PURPLE	RED	RED	PURPLE	PURPLE	BLUE	BLUE	PURPLE	PURPLE	GREEN	GREEN
		WHITE (–) PORT	PURPLE	PURPLE		WHITE (–) PORT	PURPLE	PURPLE		WHITE (–) PORT	PURPLE	PURPLE
				WHITE (–) PORT				WHITE (–) PORT				WHITE (–) PORT
ADD FREQUENCY COLOR TO SECTOR BAND (CBRS WILL USE YELLOW BANDS)												
HYBRID/DISCREET CABLES												
INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS	EXAMPLE 1		EXAMPLE 2		EXAMPLE 3		CONTRACTOR TO REFER TO FINAL CONSTRUCTION RFDS FOR ALL RD DETAILS. FINAL RFDS IS IN NEXSYSONE.					
	RED		RED		RED							
	BLUE		BLUE		ORANGE							
	GREEN		GREEN		PURPLE							
	ORANGE		YELLOW									
EXAMPLE 1 – HYBRID, OR DISCREET, SUPPORTS ALL SECTORS, BOTH LOW-BANDS AND MID-BANDS												
EXAMPLE 2 – HYBRID, OR DISCREET, SUPPORTS CBRS ONLY, ALL SECTORS												
FIBER JUMPERS TO RRHs												
LOW-BAND RRH FIBER CABLES HAVE SECTOR STRIPE ONLY	LOW BAND RRH		HIGH BAND RRH		LOW BAND RRH		HIGH BAND RRH		LOW BAND RRH		HIGH BAND RRH	
	RED		RED		BLUE		BLUE		GREEN		GREEN	
			PURPLE				PURPLE				PURPLE	
POWER CABLES TO RRHs												
LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY	LOW BAND RRH		HIGH BAND RRH		LOW BAND RRH		HIGH BAND RRH		LOW BAND RRH		HIGH BAND RRH	
	RED		RED		BLUE		BLUE		GREEN		GREEN	
			PURPLE				PURPLE				PURPLE	
RET MOTORS AT ANTENNAS												
ANTENNA 1 LOW BAND/ "IN"	ANTENNA 1 HIGH BAND/ "IN"		ANTENNA 1 LOW BAND/ "IN"		ANTENNA 1 HIGH BAND/ "IN"		ANTENNA 1 LOW BAND/ "IN"		ANTENNA 1 HIGH BAND/ "IN"		ANTENNA 1 HIGH BAND/ "IN"	
	RED		RED		BLUE		BLUE		GREEN		GREEN	
			PURPLE				PURPLE				PURPLE	
MICROWAVE RADIO LINKS												
LINKS WILL HAVE A 1.5–2 INCH WHITE WRAP WITH THE AZIMUTH COLOR OVERLAPPING IN THE MIDDLE. ADD ADDITIONAL SECTOR COLOR BANDS FOR EACH ADDITIONAL MW RADIO.	FORWARD AZIMUTH OF 0–120 DEGREES				FORWARD AZIMUTH OF 120–240 DEGREES				FORWARD AZIMUTH OF 240–360 DEGREES			
	PRIMARY		SECONDARY		PRIMARY		SECONDARY		PRIMARY		SECONDARY	
	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
	RED	RED	RED	RED	BLUE	BLUE	BLUE	BLUE	GREEN	GREEN	GREEN	GREEN
	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
MICROWAVE CABLES WILL REQUIRE P-TOUCH LABELS INSIDE THE CABINET TO IDENTIFY THE LOCAL AND REMOTE SITE ID'S												

RF CABLE COLOR CODES

NO SCALE

1

NOT USED

NO SCALE

4

LOW BANDS (N71+N26)
OPTIONAL – (N29)

ORANGE

AWS
(N66+N70+H–BLOCK)

PURPLE

CBRS TECH
(3 GHz)

YELLOW

NEGATIVE SLANT PORT
ON ANT/RRH

WHITE

ALPHA SECTOR

RED

BETA SECTOR

BLUE

GAMMA SECTOR

GREEN

COLOR IDENTIFIER

NO SCALE

2

NOT USED

NO SCALE

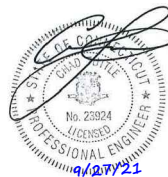
3

dish
wireless.

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

AMERICAN TOWER®
10 PRESIDENTIAL WAY
WOBURN, MA 01801

B+T GRP
1717 S. BOULDER
SUITE 300
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A&E PROJECT NUMBER

153701.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJer01161A
100 OLD REDDING ROAD
REDDING, CT 06896

SHEET TITLE
RF
CABLE COLOR CODE

SHEET NUMBER

RF-1

<div><div>EXOTHERMIC CONNECTION</div><div>MECHANICAL CONNECTION</div><div>BUSS BAR INSULATOR</div><div>CHEMICAL ELECTROLYTIC GROUNDING SYSTEM</div><div>TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM</div><div>EXOTHERMIC WITH INSPECTION SLEEVE</div><div>GROUNDING BAR</div><div>GROUND ROD</div><div>TEST GROUND ROD WITH INSPECTION SLEEVE</div><div>SINGLE POLE SWITCH</div><div>DUPLEX RECEPTACLE</div><div>DUPLEX GFCI RECEPTACLE</div><div>FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48-T8</div><div>SMOKE DETECTION (DC)</div><div>EMERGENCY LIGHTING (DC)</div><div>SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW LED-1-25A400/51K-SR4-120-PE-DDBTXD</div><div>CHAIN LINK FENCE</div><div>WOOD/WROUGHT IRON FENCE</div><div>WALL STRUCTURE</div><div>LEASE AREA</div><div>PROPERTY LINE (PL)</div><div>SETBACKS</div><div>ICE BRIDGE</div><div>CABLE TRAY</div><div>WATER LINE</div><div>UNDERGROUND POWER</div><div>UNDERGROUND TELCO</div><div>OVERHEAD POWER</div><div>OVERHEAD TELCO</div><div>UNDERGROUND TELCO/POWER</div><div>ABOVE GROUND POWER</div><div>ABOVE GROUND TELCO</div><div>ABOVE GROUND TELCO/POWER</div><div>WORKPOINT</div><div>SECTION REFERENCE</div><div>DETAIL REFERENCE</div></div> <div><div><div><div>●</div><div>■</div><div>▲</div><div></div><div></div><div></div><div></div><div></div><div></div><div>\$</div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div>W.P.</div></div></div> <div><div>ABANCHOR BOLT</div><div>ABVABOVE</div><div>ACALTERNATING CURRENT</div><div>ADDLADDITIONAL</div><div>AFFABOVE FINISHED FLOOR</div><div>AFGABOVE FINISHED GRADE</div><div>AGLABOVE GROUND LEVEL</div><div>AICAMPERAGE INTERRUPTION CAPACITY</div><div>ALUMALUMINUM</div><div>ALTALTERNATE</div><div>ANTANTENNA</div><div>APPROXAPPROXIMATE</div><div>ARCHARCHITECTURAL</div><div>ATSAutomatic Transfer Switch</div><div>AWGAMERICAN WIRE GAUGE</div><div>BATTBATTERY</div><div>BLDGBUILDING</div><div>BLKBLOCK</div><div>BLKGBLOCKING</div><div>BMBeam</div><div>BTCBARE TINNED COPPER CONDUCTOR</div><div>BOFBOTTOM OF FOOTING</div><div>CABCABINET</div><div>CANTCANTILEVERED</div><div>CHGCHARGING</div><div>CLGCEILING</div><div>CLRCLEAR</div><div>COLCOLUMN</div><div>COMMCOMMON</div><div>CONCCONCRETE</div><div>CONSTRCONSTRUCTION</div><div>DBLDOUBLE</div><div>DCDIRECT CURRENT</div><div>DEPTDEPARTMENT</div><div>DFDOUGLAS FIR</div><div>DIA DIAMETER</div><div>DIAGDIAGONAL</div><div>DIMDIMENSION</div><div>DWGDRAWING</div><div>DWLDOWEL</div><div>EAEACH</div><div>ECELECTRICAL CONDUCTOR</div><div>ELELEVATION</div><div>ELECELECTRICAL</div><div>EMTELECTRICAL METALLIC TUBING</div><div>ENGENGINEER</div><div>EQUEQUAL</div><div>EXPEXPANSION</div><div>EXTEXTERIOR</div><div>EW EACH WAY</div><div>FABFABRICATION</div><div>FFFINISH FLOOR</div><div>FGFINISH GRADE</div><div>FIFACILITY INTERFACE FRAME</div><div>FINFINISH(ED)</div><div>FLRFLOOR</div><div>FDNFOUNDATION</div><div>FOCFACE OF CONCRETE</div><div>FOMFACE OF MASONRY</div><div>FOSFACE OF STUD</div><div>FOWFACE OF WALL</div><div>FSFINISH SURFACE</div><div>FTFOOT</div><div>FTGFOOTING</div><div>GAGAUGE</div><div>GENGENERATOR</div><div>GFCIGROUND FAULT CIRCUIT INTERRUPTER</div><div>GLBGLUE LAMINATED BEAM</div><div>GLVGALVANIZED</div><div>GPSGLOBAL POSITIONING SYSTEM</div><div>GNDGROUND</div><div>GSMGLOBAL SYSTEM FOR MOBILE</div><div>HDBGHOT DIPPED GALVANIZED</div><div>HDRHEADER</div><div>HGRHANGER</div><div>HVACHHEAT/VENTILATION/AIR CONDITIONING</div><div>HTHEIGHT</div><div>IGRINTERIOR GROUND RING</div><div>ININCH</div><div>INTINTERIOR</div><div>LB(S)POUND(S)</div><div>LFLINEAR FEET</div><div>LTELONG TERM EVOLUTION</div><div>MASMASONRY</div><div>MAXMAXIMUM</div><div>MBMACHINE BOLT</div><div>MECHMECHANICAL</div><div>MFRMANUFACTURER</div><div>MGBMASTER GROUND BAR</div><div>MINMINIMUM</div><div>MISCMISCELLANEOUS</div><div>MTLMETAL</div><div>MTSMANUAL TRANSFER SWITCH</div><div>MWMICROWAVE</div><div>NECNATIONAL ELECTRIC CODE</div><div>NMNEWTON METERS</div><div>NO. NUMBER</div><div>#NUMBER</div><div>NTSNOT TO SCALE</div><div>OC ON-CENTER</div><div>OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION</div><div>OPNGOPENING</div><div>P/CPRECAST CONCRETE</div><div>PCSPERSONAL COMMUNICATION SERVICES</div><div>PCUPRIMARY CONTROL UNIT</div><div>PRCPRIMARY RADIO CABINET</div><div>PPPOLARIZING PRESERVING</div><div>PSFPOUNDS PER SQUARE FOOT</div><div>PSIPOUNDS PER SQUARE INCH</div><div>PTPRESSURE TREATED</div><div>PWRPOWER CABINET</div><div>QTYQUANTITY</div><div>RADRADIUS</div><div>RECTRECTIFIER</div><div>REFREFERENCE</div><div>REINFREINFORCEMENT</div><div>REQ'DREQUIRED</div><div>RETRREMOTE ELECTRIC TILT</div><div>RF RADIO FREQUENCY</div><div>RMC RIGID METALLIC CONDUIT</div><div>RRHREMOTE RADIO HEAD</div><div>RRURREMOTE RADIO UNIT</div><div>RWYRACEWAY</div><div>SCHSCHEDULE</div><div>SHTSHEET</div><div>SIADSMART INTEGRATED ACCESS DEVICE</div><div>SIMSIMILAR</div><div>SPECSPECIFICATION</div><div>SQSQUARE</div><div>SSSTAINLESS STEEL</div><div>STDSTANDARD</div><div>STLSTEEL</div><div>TEMPTEMPORARY</div><div>THKTHICKNESS</div><div>TMATOWER MOUNTED AMPLIFIER</div><div>TNTOE NAIL</div><div>TOATOP OF ANTENNA</div><div>TOCTOP OF CURB</div><div>TOFTOP OF FOUNDATION</div><div>TOPTOP OF PLATE (PARAPET)</div><div>TOSTOP OF STEEL</div><div>TOWTOP OF WALL</div><div>TVSSTRANSIENT VOLTAGE SURGE SUPPRESSION</div><div>TYP TYPICAL</div><div>UGUNDERGROUND</div><div>ULUNDERWRITERS LABORATORY</div><div>UNO UNLESS NOTED OTHERWISE</div><div>UMTS UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM</div><div>UPSUNITERRUPTIBLE POWER SYSTEM (DC POWER PLANT)</div><div>VIFVERIFIED IN FIELD</div><div>WWIDE</div><div>W/WITH</div><div>WDWOOD</div><div>WPWEATHERPROOF</div><div>WTWEIGHT</div></div>

LEGEND

ABBREVIATIONS



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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A&E PROJECT NUMBER
153701.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01161A
100 OLD REDDING ROAD
REDDING, CT 06896

SHEET TITLE
LEGEND AND
ABBREVIATIONS

SHEET NUMBER
GN-1

SITE ACTIVITY REQUIREMENTS:

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

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR DISH Wireless L.L.C. AND DISH Wireless L.L.C. AND TOWER OWNER POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND DISH Wireless L.L.C. AND TOWER OWNER STANDARDS, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH DISH Wireless L.L.C. AND TOWER OWNER INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON DISH Wireless L.L.C. AND TOWER OWNER TOWER SITE AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY DISH Wireless L.L.C. AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF DISH Wireless L.L.C. AND TOWER OWNER, AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER’S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR’S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS AND RADIOS REMOVED SHALL BE RETURNED TO THE OWNER’S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CARRIER POC AND TOWER OWNER.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND TOWER OWNER PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION, BEFORE SUBMITTING BIDS, TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR’S EXPENSE TO THE SATISFACTION OF DISH Wireless L.L.C. AND TOWER OWNER
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER’S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



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DISH Wireless L.L.C.
PROJECT INFORMATION

NJJer01161A
100 OLD REDDING ROAD
REDDING, CT 06896

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-2

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
#4 BARS AND SMALLER 40 ksi
#5 BARS AND LARGER 60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 - CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
 - CONCRETE EXPOSED TO EARTH OR WEATHER:
 - #6 BARS AND LARGER 2"
 - #5 BARS AND SMALLER 1-1/2"
 - CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
 - SLAB AND WALLS 3/4"
 - BEAMS AND COLUMNS 1-1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- 4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- 4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. TIE WRAPS ARE NOT ALLOWED.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3 (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR DISH Wireless L.L.C. AND TOWER OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "DISH Wireless L.L.C.".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



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RFDS REV #: 1.0

CONSTRUCTION
DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
A	7/30/21	ISSUED FOR REVIEW
0	8/27/21	ISSUED FOR CONSTRUCTION
1	9/7/21	ISSUED FOR CONSTRUCTION
2	9/14/21	ISSUED FOR CONSTRUCTION
3	9/27/21	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
153701.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01161A
100 OLD REDDING ROAD
REDDING, CT 06896

SHEET TITLE
GENERAL NOTES

SHEET NUMBER

GN-3

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES’S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4” NON–METALLIC, FLEXIBLE CONDUIT FROM 24” BELOW GRADE TO WITHIN 3” TO 6” OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.



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KAS YF YF

RFDS REV #: 1.0

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A&E PROJECT NUMBER

153701.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION

NJJER01161A
100 OLD REDDING ROAD
REDDING, CT 06896

SHEET TITLE
GENERAL NOTES

SHEET NUMBER

GN-4

ENGINEERING:
STRUCTURAL ANALYSIS
MOUNT ANALYSIS



AMERICAN TOWER®
C O R P O R A T I O N

Structural Analysis Report

Structure : 180 ft Self Supported Tower
ATC Site Name : Redding, CT
ATC Asset Number : 302522
Engineering Number : 13699598_C3_03
Proposed Carrier : DISH WIRELESS L.L.C.
Carrier Site Name : NJJER01161A
Carrier Site Number : NJJER01161A
Site Location : 100 Old Redding Road
Redding, CT 06896-2721
41.287100,-73.438200
County : Fairfield
Date : July 28, 2021
Max Usage : 82%
Result : Pass



Prepared By:
Steven Nedrud
Structural Engineer I

Reviewed By:

COA: PEC.0001553



Table of Contents

Introduction	1
Supporting Documents	1
Analysis	1
Conclusion.....	1
Existing and Reserved Equipment.....	2
Equipment to be Removed.....	3
Proposed Equipment	3
Standard Conditions	4
Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 180 ft self supported tower to reflect the change in loading by DISH WIRELESS L.L.C..

Supporting Documents

Tower Drawings	Rohn Drawing #C951762, dated December 26, 1995
Foundation Drawing	Rohn Drawing #A953313-1, dated January 12, 1996
Geotechnical Report	Soil Testing Job #591, dated December 26, 1995

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	116 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Spectral Response:	$S_s = 0.23$, $S_1 = 0.06$
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
184.0	3	Ericsson RRUS 4478 B14	Sector Frame	(3) 0.39" (10mm) Fiber Trunk (8) 0.78" (19.7mm) 8 AWG 6 (12) 1 1/4" Coax	AT&T MOBILITY
	1	Raycap DC6-48-60-18-8F ("Squid")			
	1	CCI OPA65R-BU8D			
	1	CCI DMP65R-BU8D			
	1	CCI TPA-65R-LCUUUU-H8			
	2	CCI OPA65R-BU6D			
	2	CCI DMP65R-BU6DA			
	2	Quintel QS66512-2			
	3	Powerwave Allgon 7770.00			
	3	Ericsson RRUS 32 B2			
	6	Powerwave Allgon LGP21401			
	6	Kaelus DBC0061F1V51-2			
	3	Ericsson RRUS 4449 B5, B12			
	2	Raycap DC6-48-60-18-8C			
	3	Ericsson RRUS 32 B30 (53 lbs)			
172.0	2	RFS APL868013-42T0	Sector Frame	(6) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Samsung B2/B66A RRH-BR049			
	3	Commscope CBC78T-DS-43-2X			
	3	Samsung B5/B13 RRH-BR04C			
	6	Commscope JAHH-65B-R3B			
	3	Samsung MT6407-77A			
	4	Andrew DB844G65ZAXY			
	1	RFS DB-C1-12C-24AB-OZ			
164.0	12	Decibel DB844H90E-XY			
157.0	3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield	Sector Frame	(4) 1 1/4" Hybriflex Cable	SPRINT NEXTEL
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
	3	Alcatel-Lucent 800 MHz RRH			
	3	Alcatel-Lucent RRH2x50-08			
	3	RFS APXVSP18-C-A20			
	3	Commscope DT465B-2XR			
147.0	3	Ericsson Radio 4449 B12,B71	Perfect Vision PV-SFA12- B Sector Frames	(3) 1 1/4" Hybriflex Cable (12) 1 5/8" Coax (1) 1 5/8" Hybriflex	T-MOBILE
	6	Ericsson AIR 21, 1.3M, B4A B2P (90.4 lbs)			
	3	RFS APXVAARR24_43-U-NA20			

Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
143.0	1	Andrew Microwaves DB810K-XT	Side Arm	(3) 1 5/8" Coax (1) 1/2" Coax (8) 1 5/8" Coax (1) 3/8" Coax (1) 1/2" Coax (2) EW63	CONNECTICUT STATE POLICE DEPT OF PUBLIC
	1	Sinclair SC479-HF1LDF			
142.0	1	Bird 432E-83I-01-T			
135.0	1	Generic 24" x 24" Ice Shield			
134.0	1	Generic 24" x 24" Ice Shield			
	2	Sinclair SE419-SF3P4LDF			
132.0	1	Bird 432-83H-01-T			
	2	Generic 96" x 12" Panel			
131.0	1	Morad VHF 156-DELUXE			
130.0	1	Amphenol Antel WPA-700120-4CF-EDIN-X			
129.0	1	RFS PA6-65AC			
128.0	1	RFS PA6-65AC			
125.0	1	Sinclair SE419-SF3P4LDF			
122.0	3	Sinclair SC479-HF1LDF			
120.5	1	Decibel DB586	Stand-Off	(1) 7/8" Coax	EVERSOURCE ENERGY
115.5	1	Decibel DB586	Stand-Off	(1) 7/8" Coax	
90.0	1	PCTEL GPS-TMG-HR-26N	Stand-Off	(1) 1/2" Coax	SPRINT NEXTEL
88.0	1	Sinclair SD210D	Side Arm	(2) 7/8" Coax	EVERSOURCE ENERGY
86.0	1	Generic 12' Omni	Side Arm	(1) 7/8" Coax	OTHER
66.0	1	Andrew DB264-A	Leg	(1) 7/8" Coax	CONNECTICUT STATE POLICE DEPT OF PUBLIC
30.0	1	Generic 2" x 4" GPS	Leg	(1) 1/2" Coax	VERIZON WIRELESS
18.0	1	PCTEL GPS-TMG-HR-26N	Leg	(1) 1/2" Coax	AT&T MOBILITY
15.0	1	PCTEL GPS-TMG-HR-26N	Leg	(3) 2" conduit	

Equipment to be Removed

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
No loading was considered as removed as part of this analysis.					

Proposed Equipment

Elev. ¹ (ft)	Qty	Equipment	Mount Type	Lines	Carrier
50.0	3	Fujitsu TA08025-B605	Sector Frame	(1) 1.75" (44.5mm) Hybrid	DISH WIRELESS L.L.C.
	1	Commscope RDIDC-9181-PF-48			
	3	Fujitsu TA08025-B604			
	3	JMA Wireless MX08FRO665-21			

¹ Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed coax on the tower face with the least amount of existing coax.



Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

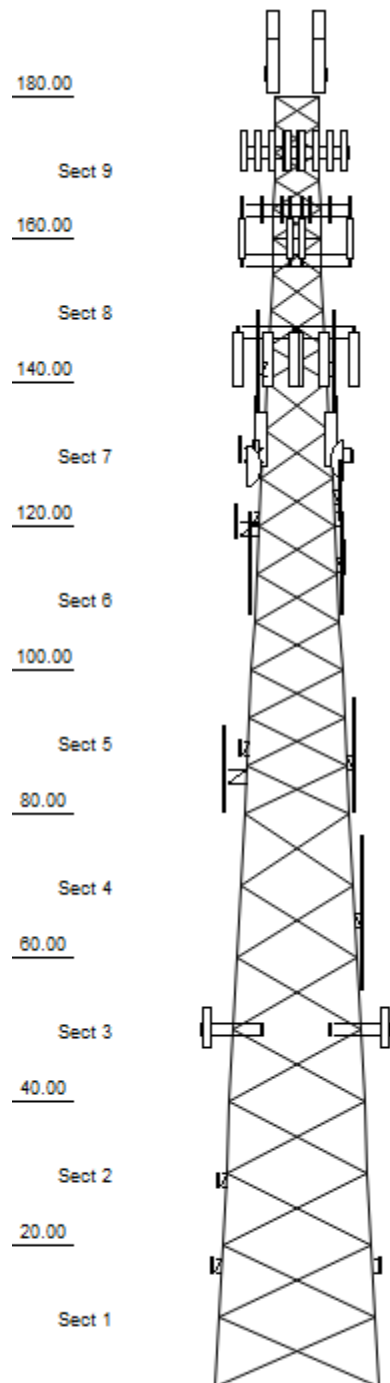
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively “American Tower”) are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

Quadrant 1



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Loads: 116 mph no ice
50 mph w/ 1" radial ice
Site Class: D Ss: 0.23 S1: 0.06
60 mph Serviceability

Job Information

Client : DISH WIRELESS L.L.C.

Tower : 302522

Location : Redding, CT

Base Width : 23.00 ft

Code : ANSI/TIA-222-H

Topo Method: Method 1

Top Width : 6.65 ft

Risk Cat : II

Topo: 1

Tower Ht : 180.00 ft

Exposure : B

Shape : Triangle

Sections Properties

Section	Leg Members	Diagonal Members	Horizontal Members
1	PSP 50 ksi ROHN 8 EHS	SAE 50 ksi 4X4X0.3125	(n ksi DEL BLANK
2	PSP 50 ksi ROHN 8 EHS	SAE 50 ksi 4X4X0.25	(n ksi DEL BLANK
3	PX 50 ksi 6" DIA PIPE	SAE 50 ksi 4X4X0.25	(n ksi DEL BLANK
4	PX 50 ksi 6" DIA PIPE	SAE 50 ksi 3.5X3.5X0.25	(n ksi DEL BLANK
5 - 6	PX 50 ksi 5" DIA PIPE	SAE 50 ksi 3X3X0.25	(n ksi DEL BLANK
7	PX 50 ksi 4" DIA PIPE	SAE 36 ksi 2.5X2.5X0.25	(n ksi DEL BLANK
8	PST 50 ksi 3" DIA PIPE	SAE 36 ksi 2X2X0.25	SAE 36 ksi 2X2X0.25
9	PST 50 ksi 2-1/2" DIA PIPE	SAE 36 ksi 1.75X1.75X0.1875	SAE 36 ksi 2X2X0.125

Discrete Appurtenance

Elev (ft)	Type	Qty	Description
184.00	Panel	1	CCI OPA65R-BU8D
184.00	Panel	1	CCI DMP65R-BU8D
184.00	Panel	1	CCI TPA-65R-LCUUUU-H8
184.00	Panel	2	CCI OPA65R-BU6D
184.00	Panel	2	CCI DMP65R-BU6DA
184.00	Panel	2	Quintel QS66512-2
184.00	Panel	3	Powerwave Allgon 7770.00
184.00		3	Ericsson RRUS 32 B2
184.00		3	Ericsson RRUS 32 B30 (53 lbs)
184.00		2	Raycap DC6-48-60-18-8C
184.00		3	Ericsson RRUS 4449 B5, B12
184.00		3	Ericsson RRUS 4478 B14
184.00		1	Raycap DC6-48-60-18-8F ("Squid
184.00		6	Powerwave Allgon LGP21401
184.00		6	Kaelus DBC0061F1V51-2
180.00	Mounting Frame	3	Round Sector Frames
172.00	Mounting Frame	3	Round Sector Frame
172.00		3	Samsung B5/B13 RRH-BR04C
172.00	Panel	6	Commscope JAHH-65B-R3B
172.00	Panel	3	Samsung MT6407-77A
172.00	Panel	4	Andrew DB844G65ZAXY
172.00		1	RFS DB-C1-12C-24AB-0Z
172.00	Panel	2	RFS APL868013-42T0
172.00		3	Samsung B2/B66A RRH-BR049
172.00		3	Commscope CBC78T-DS-43-2X
164.00	Mounting Frame	3	Round Sector Frame
164.00	Panel	12	Decibel DB844H90E-XY
157.00	Mounting Frame	3	Round Sector Frames
157.00	Panel	3	Commscope DT465B-2XR
157.00	Panel	3	RFS APXVSP18-C-A20
157.00		3	Alcatel-Lucent TD-RRH8x20-25 w
157.00		3	Alcatel-Lucent 1900 MHz 4X45 R
157.00		3	Alcatel-Lucent 800 MHz RRH
157.00		3	Alcatel-Lucent RRH2x50-08
147.00	Mounting Frame	3	Perfect Vision PV-SFA12-B Sect
147.00	Panel	3	RFS APXVAARR24_43-U-NA20
147.00	Panel	6	Ericsson AIR 21, 1.3M, B4A B2P
147.00		3	Ericsson Radio 4449 B12,B71
143.00	Whip	1	Sinclair SC479-HF1LDF
143.00	Whip	1	Andrew Microwaves DB810K-XT
142.50	Straight Arm	2	Round Side Arm
142.00		1	Bird 432E-831-01-T
136.00	Straight Arm	2	Round Side Arm
135.00	Other	1	Generic 24" x 24" Ice Shield
134.00	Whip	2	Sinclair SE419-SF3P4LDF

Job Information			
Client : DISH WIRELESS L.L.C.			
Tower : 302522	Location : Redding, CT	Base Width : 23.00 ft	
Code : ANSI/TIA-222-H	Topo Method: Method 1	Top Width : 6.65 ft	
Risk Cat : II	Topo: 1	Tower Ht : 180.00 ft	
	Exposure : B	Shape : Triangle	

134.00	Other	1	Generic 24" x 24" Ice Shield
132.00	Panel	2	Generic 96" x 12" Panel
132.00		1	Bird 432-83H-01-T
131.00	Straight Arm	2	Round Side Arm
131.00	Whip	1	Morad VHF 156-DELUXE
130.00	Panel	1	Amphenol Antel WPA-700120-4CF-
129.00	Dish	1	RFS PA6-65AC
128.00	Dish	1	RFS PA6-65AC
127.00	Straight Arm	1	Round Side Arms
125.00	Whip	1	Sinclair SE419-SF3P4LDF
122.00	Whip	3	Sinclair SC479-HF1LDF
121.00	Straight Arm	1	Round Side Arm
120.50	Straight Arm	1	Stand-Off
120.50	Whip	1	Decibel DB586
115.50	Whip	1	Decibel DB586
115.00	Straight Arm	2	Stand-Off
100.00	Straight Arm	1	Stand-Off
100.00	Straight Arm	1	Generic Flat Stand-Off
91.00	Straight Arm	1	Stand-Off
90.00	Whip	1	PCTEL GPS-TMG-HR-26N
88.00	Whip	1	Sinclair SD210D
86.00	Straight Arm	1	Side Arms
86.00	Whip	1	Generic 12' Omni
66.00	Whip	1	Andrew DB264-A
50.00	Mounting Frame	3	Generic Flat Light Sector Fram
50.00	Panel	3	JMA Wireless MX08FRO665-21
50.00		3	Fujitsu TA08025-B604
50.00		1	Commscope RDIDC-9181-PF-48
50.00		3	Fujitsu TA08025-B605
30.00	Whip	1	Generic 2" x 4" GPS
18.00	Whip	1	PCTEL GPS-TMG-HR-26N
18.00	Whip	1	PCTEL GPS-TMG-HR-26N

Linear Appurtenance

Elev (ft)		Qty	Description
From	To		
0.00	184.00	12	1 1/4" Coax
0.00	184.00	4	0.78" (19.7mm) 8 AWG
0.00	184.00	4	0.78" (19.7mm) 8 AWG
0.00	184.00	3	0.39" (10mm) Fiber T
0.00	180.00	1	Wave Guide
0.00	172.00	1	Wave Guide
0.00	172.00	2	1 5/8" Hybriflex
0.00	172.00	6	1 5/8" Coax
0.00	164.00	1	Wave Guide
0.00	157.00	4	1 1/4" Hybriflex Cab
0.00	147.00	1	Wave Guide
0.00	147.00	1	1 5/8" Hybriflex
0.00	147.00	12	1 5/8" Coax
0.00	147.00	3	1 1/4" Hybriflex Cab
0.00	143.00	2	1 5/8" Coax
0.00	142.50	1	Wave Guide
0.00	142.00	1	1/2" Coax
0.00	142.00	1	1 5/8" Coax
0.00	134.00	2	1 5/8" Coax
0.00	132.00	1	3/8" Coax
0.00	132.00	2	1 5/8" Coax
0.00	131.00	1	1/2" Coax
0.00	129.00	1	EW63
0.00	128.00	1	EW63
0.00	125.00	1	1 5/8" Coax

Job Information			
Client : DISH WIRELESS L.L.C.			
Tower : 302522	Location : Redding, CT	Base Width : 23.00 ft	
Code : ANSI/TIA-222-H	Topo Method: Method 1	Top Width : 6.65 ft	
Risk Cat : II	Topo: 1	Tower Ht : 180.00 ft	
	Exposure : B	Shape : Triangle	

0.00	122.00	3	1 5/8" Coax
0.00	120.50	1	7/8" Coax
0.00	115.50	1	7/8" Coax
0.00	90.00	1	1/2" Coax
0.00	88.00	2	7/8" Coax
0.00	86.00	1	7/8" Coax
0.00	66.00	1	7/8" Coax
0.00	50.00	1	1.75" (44.5mm) Hybri
0.00	30.00	1	1/2" Coax
0.00	18.00	1	1/2" Coax
0.00	15.00	1	2" conduit
0.00	15.00	2	2" conduit

Global Base Foundation Design Loads			
Load Case	Moment (k-ft)	Vertical (kip)	Horizontal (kip)
DL + WL	6,078.29	62.55	56.77
DL + WL + IL	1,925.14	134.32	18.79

Individual Base Foundation Design Loads		
Vertical (kip)	Uplift (kip)	Horizontal (kip)
326.01	279.21	35.19

Site Number: 302522	Code: ANSI/TIA-222-H	© 2007 - 2021 by ATC IP LLC. All rights reserved.
Site Name: Redding, CT	Engineering Number: 13699598_C3_03	7/28/2021 6:19:48 AM
Customer: DISH WIRELESS L.L.C.		

Analysis Parameters

Location:	Fairfield County, CT	Height (ft):	180
Code:	ANSI/TIA-222-H	Base Elevation (ft):	0.00
Shape:	Triangle	Bottom Face Width (ft):	23.00
Tower Manufacturer:	Rohn	Top Face Width (ft):	6.65
Tower Type:	Self Support	Anchor Bolt Detail Type	c
Kd:	0.85		
Ke:	0.98		

Ice & Wind Parameters

Exposure Category:	B	Design Windspeed Without Ice:	116 mph
Risk Category:	II	Design Windspeed With Ice:	50 mph
Topographic Factor Procedure:	Method 1	Operational Windspeed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	685.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	0.96		
T_L (sec):	6	p:	1.3
S_S :	0.235	S_1 :	0.057
F_a :	1.600	F_v :	2.400
S_{ds} :	0.251	S_{d1} :	0.091
		C_S :	0.032
		C_S , Max:	0.032
		C_S , Min:	0.030

Load Cases

1.2D + 1.0W Normal	116 mph Normal with No Ice
1.2D + 1.0W 60 deg	116 mph 60 degree with No Ice
1.2D + 1.0W 90 deg	116 mph 90 degree with No Ice
0.9D + 1.0W Normal	116 mph Normal with No Ice (Reduced DL)
0.9D + 1.0W 60 deg	116 mph 60 deg with No Ice (Reduced DL)
0.9D + 1.0W 90 deg	116 mph 90 deg with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi Normal	50 mph Normal with 1.00 in Radial Ice
1.2D + 1.0Di + 1.0Wi 60 deg	50 mph 60 deg with 1.00 in Radial Ice
1.2D + 1.0Di + 1.0Wi 90 deg	50 mph 90 deg with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh Normal	Seismic Normal
1.2D + 1.0Ev + 1.0Eh 60 deg	Seismic 60 deg
1.2D + 1.0Ev + 1.0Eh 90 deg	Seismic 90 deg
0.9D - 1.0Ev + 1.0Eh Normal	Seismic (Reduced DL) Normal
0.9D - 1.0Ev + 1.0Eh 60 deg	Seismic (Reduced DL) 60 deg
0.9D - 1.0Ev + 1.0Eh 90 deg	Seismic (Reduced DL) 90 deg
1.0D + 1.0W Service Normal	Serviceability - 60 mph Wind Normal
1.0D + 1.0W Service 60 deg	Serviceability - 60 mph Wind 60 deg
1.0D + 1.0W Service 90 deg	Serviceability - 60 mph Wind 90 deg

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Tower LoadingDiscrete Appurtenance Properties 1.2D + 1.0W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
184.0	CCI DMP65R-BU6DA	2	79	12.7	5.9	20.7	7.7	0.80	0.72	0.0	0.0	33.60	418	191
184.0	CCI DMP65R-BU8D	1	96	17.9	8.0	20.7	7.7	0.80	1.00	0.0	0.0	33.60	408	115
184.0	CCI OPA65R-BU6D	2	63	12.9	5.9	21.0	7.8	0.80	0.72	0.0	0.0	33.60	423	152
184.0	CCI OPA65R-BU8D	1	77	18.1	8.0	21.0	7.8	0.80	1.00	0.0	0.0	33.60	413	92
184.0	CCI TPA-65R-	1	82	13.3	8.0	14.4	8.6	0.80	1.00	1.0	304.3	33.65	304	98
184.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.67	1.0	126.2	33.65	126	191
184.0	Ericsson RRUS 32	3	53	2.7	2.3	12.1	7.0	0.80	0.67	1.0	126.2	33.65	126	191
184.0	Ericsson RRUS 4449	3	71	2.0	1.5	13.2	9.4	0.80	0.50	0.0	0.0	33.60	67	256
184.0	Ericsson RRUS 4478	3	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.0	33.60	63	216
184.0	Kaelus	6	26	0.4	0.7	6.5	6.2	0.80	0.50	1.0	29.7	33.65	30	184
184.0	Powerwave Allgon	3	35	5.5	4.6	11.0	5.0	0.80	0.65	2.0	492.3	33.70	246	126
184.0	Powerwave Allgon	6	14	1.1	1.2	9.2	2.6	0.80	0.50	1.0	75.8	33.65	76	102
184.0	Quintel QS66512-2	2	111	8.1	6.0	12.0	9.6	0.80	0.80	1.0	297.8	33.65	298	266
184.0	Raycap DC6-48-60-	2	16	2.0	1.7	18.2	6.4	0.80	1.00	1.0	92.9	33.65	93	38
184.0	Raycap DC6-48-60-	1	32	1.5	2.0	11.0	11.0	0.80	1.00	1.0	33.6	33.65	34	38
180.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	33.39	690	1080
172.0	Andrew	4	12	4.3	4.0	10.0	8.5	0.80	0.75	0.0	0.0	32.96	292	58
172.0	Commscope	3	21	0.6	0.8	6.9	6.4	0.80	0.50	0.0	0.0	32.96	19	75
172.0	Commscope JAHH-	6	61	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.0	32.96	846	436
172.0	RFS APL868013-	2	6	3.6	4.0	6.0	8.0	0.80	0.79	0.0	0.0	32.96	128	15
172.0	RFS DB-C1-12C-	1	32	4.1	2.5	16.5	12.6	0.80	1.00	0.0	0.0	32.96	91	38
172.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	32.96	608	1080
172.0	Samsung B2/B66A	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.0	32.96	63	304
172.0	Samsung B5/B13	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.0	32.96	63	253
172.0	Samsung MT6407-	3	82	4.7	2.9	16.1	5.5	0.80	0.61	0.0	0.0	32.96	193	294
164.0	Decibel DB844H90E-	12	14	3.6	4.0	6.5	8.0	0.80	0.73	0.0	0.0	32.51	700	202
164.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	32.51	672	1080
157.0	Alcatel-Lucent 1900	3	60	2.3	2.1	11.1	10.7	0.80	0.67	3.0	307.4	32.28	102	216
157.0	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.67	3.0	282.5	32.28	94	191
157.0	Alcatel-Lucent	3	53	1.7	1.3	13.0	9.8	0.80	0.50	3.0	168.0	32.28	56	190
157.0	Alcatel-Lucent TD-	3	70	4.0	2.2	18.6	6.7	0.80	0.61	3.0	487.6	32.28	163	252
157.0	Commscope	3	58	9.1	6.0	13.8	8.2	0.80	0.69	3.0	1240.3	32.28	413	209
157.0	RFS APXVSPP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	3.0	1093.9	32.28	365	205
157.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	32.11	663	1080
147.0	Ericsson AIR 21,	6	90	6.1	4.7	12.1	7.9	0.80	0.70	-1.0	547.2	31.45	547	651
147.0	Ericsson Radio 4449	3	74	1.6	1.2	13.2	9.3	0.80	0.50	-1.0	52.6	31.45	53	266
147.0	Perfect Vision PV-	3	592	18.2	0.0	0.0	0.0	0.75	0.75	0.0	0.0	31.51	823	2131
147.0	RFS	3	128	20.2	8.0	24.0	8.7	0.80	0.63	-1.0	818.2	31.45	818	460
143.0	Andrew Microwaves	1	35	4.3	14.5	3.0	3.0	1.00	1.00	0.0	0.0	31.26	116	42
143.0	Sinclair SC479-	1	34	5.0	14.4	3.5	3.5	1.00	1.00	0.0	0.0	31.26	134	41
142.5	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	31.23	224	360
142.0	Bird 432E-83I-01-T	1	25	1.2	1.0	12.0	7.5	0.90	1.00	0.0	0.0	31.20	29	30
136.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	30.82	221	360
135.0	Generic 24" x 24"	1	50	0.8	0.3	24.0	24.0	1.00	1.00	-2.0	41.6	30.62	21	60
134.0	Generic 24" x 24"	1	50	0.8	0.3	24.0	24.0	1.00	1.00	-1.0	20.8	30.62	21	60
134.0	Sinclair SE419-	2	24	9.5	8.6	2.9	8.5	1.00	1.00	0.0	0.0	30.69	498	58
132.0	Bird 432-83H-01-T	1	25	1.4	1.2	12.0	7.0	1.00	1.00	0.0	0.0	30.56	36	30
132.0	Generic 96" x 12"	2	45	11.5	8.0	12.0	6.0	1.00	0.76	0.0	0.0	30.56	453	108
131.0	Morad VHF 156-	1	1	0.3	3.3	0.8	0.8	1.00	1.00	0.0	0.0	30.49	7	1
131.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	30.49	218	360
130.0	Amphenol Antel	1	7	2.7	4.0	5.6	5.6	0.90	1.00	0.0	0.0	30.42	62	8
129.0	RFS PA6-65AC	1	278	47.0	6.0	72.0	0.0	1.00	1.00	0.0	0.0	30.36	1214	334
128.0	RFS PA6-65AC	1	278	47.0	6.0	72.0	0.0	1.00	1.00	0.0	0.0	30.29	1211	334
127.0	Round Side Arms	1	100	5.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	30.22	104	120

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Tower Loading

125.0	Sinclair SE419-	1	24	9.5	8.6	2.9	8.5	1.00	1.00	0.0	0.0	30.09	244	29
122.0	Sinclair SC479-	3	34	5.0	14.4	3.5	3.5	1.00	1.00	-4.0	1518.3	29.59	380	122
121.0	Round Side Arm	1	100	5.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	29.81	103	120
120.5	Decibel DB586	1	8	0.7	4.9	1.0	1.5	1.00	1.00	0.0	0.0	29.77	19	10
120.5	Stand-Off	1	100	3.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	29.77	61	120
115.5	Decibel DB586	1	8	0.7	4.9	1.0	1.5	1.00	1.00	0.0	0.0	29.41	19	10
115.0	Stand-Off	2	100	3.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	29.38	121	240
100.0	Generic Flat Stand-	1	188	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	28.23	151	225
100.0	Stand-Off	1	100	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	28.23	72	120
91.00	Stand-Off	1	50	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	27.48	70	60
90.00	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	1.00	1.00	2.0	4.2	27.56	2	1
88.00	Sinclair SD210D	1	40	4.4	16.0	41.0	4.0	1.00	1.00	0.0	0.0	27.21	103	48
86.00	Generic 12' Omni	1	40	3.6	12.0	3.0	3.0	1.00	1.00	0.0	0.0	27.04	83	48
86.00	Side Arms	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	27.04	145	180
66.00	Andrew DB264-A	1	36	5.9	21.5	0.0	0.0	1.00	1.00	0.0	0.0	25.07	126	43
50.00	Commscope RDIDC-	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.0	23.16	29	26
50.00	Fujitsu TA08025-	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.0	23.16	46	230
50.00	Fujitsu TA08025-	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.0	23.16	46	270
50.00	Generic Flat Light	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	23.16	595	1440
50.00	JMA Wireless	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.0	23.16	378	232
30.00	Generic 2" x 4" GPS	1	5	0.0	0.2	4.0	2.0	1.00	1.00	0.0	0.0	20.01	1	6
18.00	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	1.00	1.00	0.0	0.0	19.99	2	1
18.00	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	1.00	1.00	0.0	0.0	19.99	2	1
Totals		176	15756	1107.8									18951	18907

Discrete Appurtenance Properties 0.9D + 1.0W

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
184.0	CCI DMP65R-BU6DA	2	79	12.7	5.9	20.7	7.7	0.80	0.72	0.0	0.0	33.60	418	143
184.0	CCI DMP65R-BU8D	1	96	17.9	8.0	20.7	7.7	0.80	1.00	0.0	0.0	33.60	408	86
184.0	CCI OPA65R-BU6D	2	63	12.9	5.9	21.0	7.8	0.80	0.72	0.0	0.0	33.60	423	114
184.0	CCI OPA65R-BU8D	1	77	18.1	8.0	21.0	7.8	0.80	1.00	0.0	0.0	33.60	413	69
184.0	CCI TPA-65R-	1	82	13.3	8.0	14.4	8.6	0.80	1.00	1.0	304.3	33.65	304	73
184.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.67	1.0	126.2	33.65	126	143
184.0	Ericsson RRUS 32	3	53	2.7	2.3	12.1	7.0	0.80	0.67	1.0	126.2	33.65	126	143
184.0	Ericsson RRUS 4449	3	71	2.0	1.5	13.2	9.4	0.80	0.50	0.0	0.0	33.60	67	192
184.0	Ericsson RRUS 4478	3	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.0	33.60	63	162
184.0	Kaelus	6	26	0.4	0.7	6.5	6.2	0.80	0.50	1.0	29.7	33.65	30	138
184.0	Powerwave Allgon	3	35	5.5	4.6	11.0	5.0	0.80	0.65	2.0	492.3	33.70	246	95
184.0	Powerwave Allgon	6	14	1.1	1.2	9.2	2.6	0.80	0.50	1.0	75.8	33.65	76	76
184.0	Quintel QS66512-2	2	111	8.1	6.0	12.0	9.6	0.80	0.80	1.0	297.8	33.65	298	200
184.0	Raycap DC6-48-60-	2	16	2.0	1.7	18.2	6.4	0.80	1.00	1.0	92.9	33.65	93	29
184.0	Raycap DC6-48-60-	1	32	1.5	2.0	11.0	11.0	0.80	1.00	1.0	33.6	33.65	34	29
180.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	33.39	690	810
172.0	Andrew	4	12	4.3	4.0	10.0	8.5	0.80	0.75	0.0	0.0	32.96	292	43
172.0	Commscope	3	21	0.6	0.8	6.9	6.4	0.80	0.50	0.0	0.0	32.96	19	56
172.0	Commscope JAHH-	6	61	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.0	32.96	846	327
172.0	RFS APL868013-	2	6	3.6	4.0	6.0	8.0	0.80	0.79	0.0	0.0	32.96	128	11
172.0	RFS DB-C1-12C-	1	32	4.1	2.5	16.5	12.6	0.80	1.00	0.0	0.0	32.96	91	29
172.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	32.96	608	810
172.0	Samsung B2/B66A	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.0	32.96	63	228
172.0	Samsung B5/B13	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.0	32.96	63	190
172.0	Samsung MT6407-	3	82	4.7	2.9	16.1	5.5	0.80	0.61	0.0	0.0	32.96	193	220
164.0	Decibel DB844H90E-	12	14	3.6	4.0	6.5	8.0	0.80	0.73	0.0	0.0	32.51	700	151
164.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	32.51	672	810

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Tower Loading

157.0	Alcatel-Lucent 1900	3	60	2.3	2.1	11.1	10.7	0.80	0.67	3.0	307.4	32.28	102	162
157.0	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.67	3.0	282.5	32.28	94	143
157.0	Alcatel-Lucent	3	53	1.7	1.3	13.0	9.8	0.80	0.50	3.0	168.0	32.28	56	143
157.0	Alcatel-Lucent TD-	3	70	4.0	2.2	18.6	6.7	0.80	0.61	3.0	487.6	32.28	163	189
157.0	Commscope	3	58	9.1	6.0	13.8	8.2	0.80	0.69	3.0	1240.3	32.28	413	157
157.0	RFS APXVSPP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	3.0	1093.9	32.28	365	154
157.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	32.11	663	810
147.0	Ericsson AIR 21,	6	90	6.1	4.7	12.1	7.9	0.80	0.70	-1.0	547.2	31.45	547	488
147.0	Ericsson Radio 4449	3	74	1.6	1.2	13.2	9.3	0.80	0.50	-1.0	52.6	31.45	53	200
147.0	Perfect Vision PV-	3	592	18.2	0.0	0.0	0.0	0.75	0.75	0.0	0.0	31.51	823	1598
147.0	RFS	3	128	20.2	8.0	24.0	8.7	0.80	0.63	-1.0	818.2	31.45	818	345
143.0	Andrew Microwaves	1	35	4.3	14.5	3.0	3.0	1.00	1.00	0.0	0.0	31.26	116	32
143.0	Sinclair SC479-	1	34	5.0	14.4	3.5	3.5	1.00	1.00	0.0	0.0	31.26	134	31
142.5	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	31.23	224	270
142.0	Bird 432E-83I-01-T	1	25	1.2	1.0	12.0	7.5	0.90	1.00	0.0	0.0	31.20	29	23
136.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	30.82	221	270
135.0	Generic 24" x 24"	1	50	0.8	0.3	24.0	24.0	1.00	1.00	-2.0	41.6	30.62	21	45
134.0	Generic 24" x 24"	1	50	0.8	0.3	24.0	24.0	1.00	1.00	-1.0	20.8	30.62	21	45
134.0	Sinclair SE419-	2	24	9.5	8.6	2.9	8.5	1.00	1.00	0.0	0.0	30.69	498	43
132.0	Bird 432-83H-01-T	1	25	1.4	1.2	12.0	7.0	1.00	1.00	0.0	0.0	30.56	36	23
132.0	Generic 96" x 12"	2	45	11.5	8.0	12.0	6.0	1.00	0.76	0.0	0.0	30.56	453	81
131.0	Morad VHF 156-	1	1	0.3	3.3	0.8	0.8	1.00	1.00	0.0	0.0	30.49	7	1
131.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	30.49	218	270
130.0	Amphenol Antel	1	7	2.7	4.0	5.6	5.6	0.90	1.00	0.0	0.0	30.42	62	6
129.0	RFS PA6-65AC	1	278	47.0	6.0	72.0	0.0	1.00	1.00	0.0	0.0	30.36	1214	250
128.0	RFS PA6-65AC	1	278	47.0	6.0	72.0	0.0	1.00	1.00	0.0	0.0	30.29	1211	250
127.0	Round Side Arms	1	100	5.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	30.22	104	90
125.0	Sinclair SE419-	1	24	9.5	8.6	2.9	8.5	1.00	1.00	0.0	0.0	30.09	244	22
122.0	Sinclair SC479-	3	34	5.0	14.4	3.5	3.5	1.00	1.00	-4.0	1518.3	29.59	380	92
121.0	Round Side Arm	1	100	5.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	29.81	103	90
120.5	Decibel DB586	1	8	0.7	4.9	1.0	1.5	1.00	1.00	0.0	0.0	29.77	19	7
120.5	Stand-Off	1	100	3.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	29.77	61	90
115.5	Decibel DB586	1	8	0.7	4.9	1.0	1.5	1.00	1.00	0.0	0.0	29.41	19	7
115.0	Stand-Off	2	100	3.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	29.38	121	180
100.0	Generic Flat Stand-	1	188	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	28.23	151	169
100.0	Stand-Off	1	100	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	28.23	72	90
91.00	Stand-Off	1	50	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	27.48	70	45
90.00	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	1.00	1.00	2.0	4.2	27.56	2	1
88.00	Sinclair SD210D	1	40	4.4	16.0	41.0	4.0	1.00	1.00	0.0	0.0	27.21	103	36
86.00	Generic 12' Omni	1	40	3.6	12.0	3.0	3.0	1.00	1.00	0.0	0.0	27.04	83	36
86.00	Side Arms	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	27.04	145	135
66.00	Andrew DB264-A	1	36	5.9	21.5	0.0	0.0	1.00	1.00	0.0	0.0	25.07	126	32
50.00	Commscope RDIDC-	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.0	23.16	29	20
50.00	Fujitsu TA08025-	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.0	23.16	46	173
50.00	Fujitsu TA08025-	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.0	23.16	46	203
50.00	Generic Flat Light	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	23.16	595	1080
50.00	JMA Wireless	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.0	23.16	378	174
30.00	Generic 2" x 4" GPS	1	5	0.0	0.2	4.0	2.0	1.00	1.00	0.0	0.0	20.01	1	5
18.00	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	1.00	1.00	0.0	0.0	19.99	2	1
18.00	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	1.00	1.00	0.0	0.0	19.99	2	1
Totals		176	15756	1107.8									18951	14180

Discrete Appurtenance Properties 1.2D + 1.0Di + 1.0Wi

Elevation (ft)	Description	Qty	Ice Wt (lb)	Ice EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
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Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Tower Loading

184.0	CCI DMP65R-BU6DA	2	254	14.6	5.9	20.7	7.7	0.80	0.72	0.0	0.0	6.24	89	539
184.0	CCI DMP65R-BU8D	1	326	20.4	8.0	20.7	7.7	0.80	1.00	0.0	0.0	6.24	86	345
184.0	CCI OPA65R-BU6D	2	240	14.8	5.9	21.0	7.8	0.80	0.72	0.0	0.0	6.24	90	505
184.0	CCI OPA65R-BU8D	1	310	20.6	8.0	21.0	7.8	0.80	1.00	0.0	0.0	6.24	87	325
184.0	CCI TPA-65R-	1	269	15.8	8.0	14.4	8.6	0.80	1.00	1.0	67.3	6.25	67	285
184.0	Ericsson RRUS 32 B2	3	103	3.5	2.3	12.1	7.0	0.80	0.67	1.0	30.2	6.25	30	340
184.0	Ericsson RRUS 32	3	103	3.5	2.3	12.1	7.0	0.80	0.67	1.0	30.2	6.25	30	340
184.0	Ericsson RRUS 4449	3	115	2.6	1.5	13.2	9.4	0.80	0.50	0.0	0.0	6.24	17	386
184.0	Ericsson RRUS 4478	3	97	2.4	1.4	13.4	7.7	0.80	0.50	0.0	0.0	6.24	16	328
184.0	Kaelus	6	38	0.7	0.7	6.5	6.2	0.80	0.50	1.0	9.4	6.25	9	259
184.0	Powerwave Allgon	3	120	6.2	4.6	11.0	5.0	0.80	0.65	2.0	103.0	6.26	52	380
184.0	Powerwave Allgon	6	31	1.6	1.2	9.2	2.6	0.80	0.50	1.0	20.2	6.25	20	203
184.0	Quintel QS66512-2	2	246	10.0	6.0	12.0	9.6	0.80	0.80	1.0	68.1	6.25	68	536
184.0	Raycap DC6-48-60-	2	55	2.5	1.7	18.2	6.4	0.80	1.00	1.0	21.6	6.25	22	117
184.0	Raycap DC6-48-60-	1	74	1.9	2.0	11.0	11.0	0.80	1.00	1.0	8.3	6.25	8	80
180.0	Round Sector	3	549	25.6	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.20	228	1826
172.0	Andrew	4	99	5.0	4.0	10.0	8.5	0.80	0.75	0.0	0.0	6.12	62	404
172.0	Commscope	3	36	0.9	0.8	6.9	6.4	0.80	0.50	0.0	0.0	6.12	6	119
172.0	Commscope JAHH-	6	197	11.0	6.0	13.8	8.2	0.80	0.69	0.0	0.0	6.12	189	1257
172.0	RFS APL868013-	2	66	4.9	4.0	6.0	8.0	0.80	0.79	0.0	0.0	6.12	32	134
172.0	RFS DB-C1-12C-	1	118	5.0	2.5	16.5	12.6	0.80	1.00	0.0	0.0	6.12	21	124
172.0	Round Sector Frame	3	549	25.6	0.0	0.0	0.0	0.75	0.67	0.0	0.0	6.12	201	1826
172.0	Samsung B2/B66A	3	128	2.5	1.3	15.0	10.0	0.80	0.50	0.0	0.0	6.12	16	433
172.0	Samsung B5/B13	3	109	2.5	1.3	15.0	8.1	0.80	0.50	0.0	0.0	6.12	16	369
172.0	Samsung MT6407-	3	151	5.7	2.9	16.1	5.5	0.80	0.61	0.0	0.0	6.12	44	501
164.0	Decibel DB844H90E-	12	21	5.3	4.0	6.5	8.0	0.80	0.73	0.0	0.0	6.04	191	281
164.0	Round Sector Frame	3	549	25.6	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.04	222	1826
157.0	Alcatel-Lucent 1900	3	114	3.0	2.1	11.1	10.7	0.80	0.67	3.0	74.9	6.00	25	378
157.0	Alcatel-Lucent 800	3	102	2.8	1.6	13.0	10.8	0.80	0.67	3.0	68.6	6.00	23	339
157.0	Alcatel-Lucent	3	92	2.3	1.3	13.0	9.8	0.80	0.50	3.0	41.8	6.00	14	309
157.0	Alcatel-Lucent TD-	3	133	4.9	2.2	18.6	6.7	0.80	0.61	3.0	110.5	6.00	37	441
157.0	Commscope	3	193	10.9	6.0	13.8	8.2	0.80	0.69	3.0	277.3	6.00	92	614
157.0	RFS APXVSP18-C-	3	172	9.9	6.0	11.8	7.0	0.80	0.69	3.0	250.4	6.00	83	551
157.0	Round Sector	3	546	25.5	0.0	0.0	0.0	0.75	0.75	0.0	0.0	5.97	218	1817
147.0	Ericsson AIR 21,	6	188	7.5	4.7	12.1	7.9	0.80	0.70	-1.0	125.8	5.84	126	1234
147.0	Ericsson Radio 4449	3	111	2.2	1.2	13.2	9.3	0.80	0.50	-1.0	13.1	5.84	13	379
147.0	Perfect Vision PV-	3	868	26.7	0.0	0.0	0.0	0.75	0.75	0.0	0.0	5.85	224	2958
147.0	RFS	3	390	22.7	8.0	24.0	8.7	0.80	0.63	-1.0	170.6	5.84	171	1247
143.0	Andrew Microwaves	1	108	7.8	14.5	3.0	3.0	1.00	1.00	0.0	0.0	5.81	39	115
143.0	Sinclair SC479-	1	117	8.5	14.4	3.5	3.5	1.00	1.00	0.0	0.0	5.81	42	124
142.5	Round Side Arm	2	199	7.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.80	56	458
142.0	Bird 432E-83I-01-T	1	52	1.7	1.0	12.0	7.5	0.90	1.00	0.0	0.0	5.80	7	57
136.0	Round Side Arm	2	198	7.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.73	55	456
135.0	Generic 24" x 24"	1	111	1.4	0.3	24.0	24.0	1.00	1.00	-2.0	13.1	5.69	7	121
134.0	Generic 24" x 24"	1	111	1.4	0.3	24.0	24.0	1.00	1.00	-1.0	6.5	5.69	7	121
134.0	Sinclair SE419-	2	122	11.7	8.6	2.9	8.5	1.00	1.00	0.0	0.0	5.70	114	253
132.0	Bird 432-83H-01-T	1	54	1.9	1.2	12.0	7.0	1.00	1.00	0.0	0.0	5.68	9	59
132.0	Generic 96" x 12"	2	187	13.6	8.0	12.0	6.0	1.00	0.76	0.0	0.0	5.68	100	393
131.0	Morad VHF 156-	1	13	0.8	3.3	0.8	0.8	1.00	1.00	0.0	0.0	5.66	4	13
131.0	Round Side Arm	2	198	7.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.66	55	456
130.0	Amphenol Antel	1	53	3.7	4.0	5.6	5.6	0.90	1.00	0.0	0.0	5.65	16	54
129.0	RFS PA6-65AC	1	589	50.1	6.0	72.0	0.0	1.00	1.00	0.0	0.0	5.64	240	645
128.0	RFS PA6-65AC	1	589	50.1	6.0	72.0	0.0	1.00	1.00	0.0	0.0	5.63	240	645
127.0	Round Side Arms	1	132	6.7	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.61	26	152
125.0	Sinclair SE419-	1	122	11.7	8.6	2.9	8.5	1.00	1.00	0.0	0.0	5.59	56	126
122.0	Sinclair SC479-	3	114	8.4	14.4	3.5	3.5	1.00	1.00	-4.0	468.7	5.50	117	364
121.0	Round Side Arm	1	132	6.3	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.54	24	152
120.5	Decibel DB586	1	11	1.0	4.9	1.0	1.5	1.00	1.00	0.0	0.0	5.53	5	13
120.5	Stand-Off	1	132	4.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.53	15	152

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Tower Loading

115.5	Decibel DB586	1	11	1.0	4.9	1.0	1.5	1.00	1.00	0.0	0.0	5.46	5	13
115.0	Stand-Off	2	132	4.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	5.46	30	303
100.0	Generic Flat Stand-	1	272	8.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	5.24	37	310
100.0	Stand-Off	1	131	4.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	5.24	18	151
91.00	Stand-Off	1	87	4.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	5.10	19	97
90.00	PCTEL GPS-TMG-HR-	1	4	0.2	0.4	3.2	3.2	1.00	1.00	2.0	1.8	5.12	1	4
88.00	Sinclair SD210D	1	122	11.4	16.0	41.0	4.0	1.00	1.00	0.0	0.0	5.06	49	130
86.00	Generic 12' Omni	1	98	6.3	12.0	3.0	3.0	1.00	1.00	0.0	0.0	5.02	27	106
86.00	Side Arms	1	196	7.9	0.0	0.0	0.0	1.00	1.00	0.0	0.0	5.02	34	226
66.00	Andrew DB264-A	1	150	17.7	21.5	0.0	0.0	1.00	1.00	0.0	0.0	4.66	70	158
50.00	Commscope RDIDC-	1	56	2.4	1.3	14.0	8.0	0.80	1.00	0.0	0.0	4.30	7	60
50.00	Fujitsu TA08025-	3	99	2.5	1.3	15.0	7.9	0.80	0.50	0.0	0.0	4.30	11	335
50.00	Fujitsu TA08025-	3	112	2.5	1.3	15.0	9.1	0.80	0.50	0.0	0.0	4.30	11	382
50.00	Generic Flat Light	3	580	26.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	4.30	166	1980
50.00	JMA Wireless	3	218	14.2	6.0	20.0	8.0	0.80	0.64	0.0	0.0	4.30	80	694
30.00	Generic 2" x 4" GPS	1	6	0.1	0.2	4.0	2.0	1.00	1.00	0.0	0.0	3.72	0	7
18.00	PCTEL GPS-TMG-HR-	1	3	0.2	0.4	3.2	3.2	1.00	1.00	0.0	0.0	3.71	1	3
18.00	PCTEL GPS-TMG-HR-	1	3	0.2	0.4	3.2	3.2	1.00	1.00	0.0	0.0	3.71	1	3
Totals		176	31077	1504.2									4742	34228

Discrete Appurtenance Properties 1.0D + 1.0W Service

Elevation (ft)	Description	Qty	Wt. (lb)	EPA (sf)	Length (ft)	Width (in)	Depth (in)	K _a	Orient. Factor	Vert. Ecc.(ft)	M _u (lb-ft)	Q _z (psf)	F _a (WL) (lb)	P _a (DL) (lb)
184.0	CCI DMP65R-BU6DA	2	79	12.7	5.9	20.7	7.7	0.80	0.72	0.0	0.0	8.99	112	159
184.0	CCI DMP65R-BU8D	1	96	17.9	8.0	20.7	7.7	0.80	1.00	0.0	0.0	8.99	109	96
184.0	CCI OPA65R-BU6D	2	63	12.9	5.9	21.0	7.8	0.80	0.72	0.0	0.0	8.99	113	126
184.0	CCI OPA65R-BU8D	1	77	18.1	8.0	21.0	7.8	0.80	1.00	0.0	0.0	8.99	111	77
184.0	CCI TPA-65R-	1	82	13.3	8.0	14.4	8.6	0.80	1.00	1.0	81.4	9.00	81	82
184.0	Ericsson RRUS 32 B2	3	53	2.7	2.3	12.1	7.0	0.80	0.67	1.0	33.8	9.00	34	159
184.0	Ericsson RRUS 32	3	53	2.7	2.3	12.1	7.0	0.80	0.67	1.0	33.8	9.00	34	159
184.0	Ericsson RRUS 4449	3	71	2.0	1.5	13.2	9.4	0.80	0.50	0.0	0.0	8.99	18	213
184.0	Ericsson RRUS 4478	3	60	1.8	1.4	13.4	7.7	0.80	0.50	0.0	0.0	8.99	17	180
184.0	Kaelus	6	26	0.4	0.7	6.5	6.2	0.80	0.50	1.0	8.0	9.00	8	153
184.0	Powerwave Allgon	3	35	5.5	4.6	11.0	5.0	0.80	0.65	2.0	131.7	9.02	66	105
184.0	Powerwave Allgon	6	14	1.1	1.2	9.2	2.6	0.80	0.50	1.0	20.3	9.00	20	85
184.0	Quintel QS66512-2	2	111	8.1	6.0	12.0	9.6	0.80	0.80	1.0	79.7	9.00	80	222
184.0	Raycap DC6-48-60-	2	16	2.0	1.7	18.2	6.4	0.80	1.00	1.0	24.9	9.00	25	32
184.0	Raycap DC6-48-60-	1	32	1.5	2.0	11.0	11.0	0.80	1.00	1.0	9.0	9.00	9	32
180.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	8.93	185	900
172.0	Andrew	4	12	4.3	4.0	10.0	8.5	0.80	0.75	0.0	0.0	8.82	78	48
172.0	Commscope	3	21	0.6	0.8	6.9	6.4	0.80	0.50	0.0	0.0	8.82	5	62
172.0	Commscope JAHH-	6	61	9.1	6.0	13.8	8.2	0.80	0.69	0.0	0.0	8.82	226	364
172.0	RFS APL868013-	2	6	3.6	4.0	6.0	8.0	0.80	0.79	0.0	0.0	8.82	34	13
172.0	RFS DB-C1-12C-	1	32	4.1	2.5	16.5	12.6	0.80	1.00	0.0	0.0	8.82	24	32
172.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.67	0.0	0.0	8.82	163	900
172.0	Samsung B2/B66A	3	84	1.9	1.3	15.0	10.0	0.80	0.50	0.0	0.0	8.82	17	253
172.0	Samsung B5/B13	3	70	1.9	1.3	15.0	8.1	0.80	0.50	0.0	0.0	8.82	17	211
172.0	Samsung MT6407-	3	82	4.7	2.9	16.1	5.5	0.80	0.61	0.0	0.0	8.82	52	245
164.0	Decibel DB844H90E-	12	14	3.6	4.0	6.5	8.0	0.80	0.73	0.0	0.0	8.70	187	168
164.0	Round Sector Frame	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	8.70	180	900
157.0	Alcatel-Lucent 1900	3	60	2.3	2.1	11.1	10.7	0.80	0.67	3.0	82.2	8.64	27	180
157.0	Alcatel-Lucent 800	3	53	2.1	1.6	13.0	10.8	0.80	0.67	3.0	75.6	8.64	25	159
157.0	Alcatel-Lucent	3	53	1.7	1.3	13.0	9.8	0.80	0.50	3.0	45.0	8.64	15	159
157.0	Alcatel-Lucent TD-	3	70	4.0	2.2	18.6	6.7	0.80	0.61	3.0	130.5	8.64	43	210
157.0	Commscope	3	58	9.1	6.0	13.8	8.2	0.80	0.69	3.0	331.8	8.64	111	174

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Tower Loading

157.0	RFS APXVSP18-C-	3	57	8.0	6.0	11.8	7.0	0.80	0.69	3.0	292.7	8.64	98	171
157.0	Round Sector	3	300	14.4	0.0	0.0	0.0	0.75	0.75	0.0	0.0	8.59	177	900
147.0	Ericsson AIR 21,	6	90	6.1	4.7	12.1	7.9	0.80	0.70	-1.0	146.4	8.41	146	542
147.0	Ericsson Radio 4449	3	74	1.6	1.2	13.2	9.3	0.80	0.50	-1.0	14.1	8.41	14	222
147.0	Perfect Vision PV-	3	592	18.2	0.0	0.0	0.0	0.75	0.75	0.0	0.0	8.43	220	1776
147.0	RFS	3	128	20.2	8.0	24.0	8.7	0.80	0.63	-1.0	218.9	8.41	219	384
143.0	Andrew Microwaves	1	35	4.3	14.5	3.0	3.0	1.00	1.00	0.0	0.0	8.36	31	35
143.0	Sinclair SC479-	1	34	5.0	14.4	3.5	3.5	1.00	1.00	0.0	0.0	8.36	36	34
142.5	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	8.36	60	300
142.0	Bird 432E-83I-01-T	1	25	1.2	1.0	12.0	7.5	0.90	1.00	0.0	0.0	8.35	8	25
136.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	8.25	59	300
135.0	Generic 24" x 24"	1	50	0.8	0.3	24.0	24.0	1.00	1.00	-2.0	11.1	8.19	6	50
134.0	Generic 24" x 24"	1	50	0.8	0.3	24.0	24.0	1.00	1.00	-1.0	5.6	8.19	6	50
134.0	Sinclair SE419-	2	24	9.5	8.6	2.9	8.5	1.00	1.00	0.0	0.0	8.21	133	48
132.0	Bird 432-83H-01-T	1	25	1.4	1.2	12.0	7.0	1.00	1.00	0.0	0.0	8.18	10	25
132.0	Generic 96" x 12"	2	45	11.5	8.0	12.0	6.0	1.00	0.76	0.0	0.0	8.18	121	90
131.0	Morad VHF 156-	1	1	0.3	3.3	0.8	0.8	1.00	1.00	0.0	0.0	8.16	2	1
131.0	Round Side Arm	2	150	5.2	0.0	0.0	0.0	0.90	0.90	0.0	0.0	8.16	58	300
130.0	Amphenol Antel	1	7	2.7	4.0	5.6	5.6	0.90	1.00	0.0	0.0	8.14	17	7
129.0	RFS PA6-65AC	1	278	47.0	6.0	72.0	0.0	1.00	1.00	0.0	0.0	8.12	325	278
128.0	RFS PA6-65AC	1	278	47.0	6.0	72.0	0.0	1.00	1.00	0.0	0.0	8.10	324	278
127.0	Round Side Arms	1	100	5.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	8.09	28	100
125.0	Sinclair SE419-	1	24	9.5	8.6	2.9	8.5	1.00	1.00	0.0	0.0	8.05	65	24
122.0	Sinclair SC479-	3	34	5.0	14.4	3.5	3.5	1.00	1.00	-4.0	406.2	7.92	102	102
121.0	Round Side Arm	1	100	5.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	7.97	27	100
120.5	Decibel DB586	1	8	0.7	4.9	1.0	1.5	1.00	1.00	0.0	0.0	7.97	5	8
120.5	Stand-Off	1	100	3.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	7.97	16	100
115.5	Decibel DB586	1	8	0.7	4.9	1.0	1.5	1.00	1.00	0.0	0.0	7.87	5	8
115.0	Stand-Off	2	100	3.0	0.0	0.0	0.0	0.90	0.90	0.0	0.0	7.86	32	200
100.0	Generic Flat Stand-	1	188	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.55	40	188
100.0	Stand-Off	1	100	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.55	19	100
91.00	Stand-Off	1	50	3.0	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.35	19	50
90.00	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	1.00	1.00	2.0	1.1	7.37	1	1
88.00	Sinclair SD210D	1	40	4.4	16.0	41.0	4.0	1.00	1.00	0.0	0.0	7.28	28	40
86.00	Generic 12' Omni	1	40	3.6	12.0	3.0	3.0	1.00	1.00	0.0	0.0	7.23	22	40
86.00	Side Arms	1	150	6.3	0.0	0.0	0.0	1.00	1.00	0.0	0.0	7.23	39	150
66.00	Andrew DB264-A	1	36	5.9	21.5	0.0	0.0	1.00	1.00	0.0	0.0	6.71	34	36
50.00	Commscope RDIDC-	1	22	1.9	1.3	14.0	8.0	0.80	1.00	0.0	0.0	6.20	8	22
50.00	Fujitsu TA08025-	3	64	2.0	1.3	15.0	7.9	0.80	0.50	0.0	0.0	6.20	12	192
50.00	Fujitsu TA08025-	3	75	2.0	1.3	15.0	9.1	0.80	0.50	0.0	0.0	6.20	12	225
50.00	Generic Flat Light	3	400	17.9	0.0	0.0	0.0	0.75	0.75	0.0	0.0	6.20	159	1200
50.00	JMA Wireless	3	65	12.5	6.0	20.0	8.0	0.80	0.64	0.0	0.0	6.20	101	194
30.00	Generic 2" x 4" GPS	1	5	0.0	0.2	4.0	2.0	1.00	1.00	0.0	0.0	5.35	0	5
18.00	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	1.00	1.00	0.0	0.0	5.35	0	1
18.00	PCTEL GPS-TMG-HR-	1	1	0.1	0.4	3.2	3.2	1.00	1.00	0.0	0.0	5.35	0	1
Totals		176	15756	1107.8									5070	15756

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Tower LoadingLinear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out Of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	184.0	0.39" (10mm) Fiber	3	0.39	0.06	100	3	Individual	0.00	N	1.00	1.00	0.01
0.00	184.0	0.78" (19.7mm) 8	4	0.78	0.59	100	None	Individual	0.00	N	1.00	1.00	0.00
0.00	184.0	0.78" (19.7mm) 8	4	0.78	0.59	100	3	Individual	0.00	N	1.00	1.00	0.01
0.00	184.0	1 1/4" Coax	12	1.55	0.63	50	3	Block	0.00	N	1.00	1.00	0.00
0.00	180.0	Wave Guide	1	1.50	6.00	100	3	Individual	0.00	N	1.00	1.00	0.00
0.00	172.0	1 5/8" Coax	6	1.98	0.82	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	172.0	1 5/8" Hybriflex	2	1.98	1.30	100	2	Individual	0.00	N	1.00	1.00	0.01
0.00	172.0	Wave Guide	1	1.50	6.00	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	164.0	Wave Guide	1	1.50	6.00	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	157.0	1 1/4" Hybriflex	4	1.54	1.00	100	1	Individual	0.00	N	1.00	1.00	0.01
0.00	147.0	1 1/4" Hybriflex	3	1.54	1.00	100	None	Individual	0.00	N	1.00	1.00	0.00
0.00	147.0	1 5/8" Coax	12	1.98	0.82	100	None	Individual	0.00	N	1.00	1.00	0.00
0.00	147.0	1 5/8" Hybriflex	1	1.98	1.30	100	None	Individual	0.00	N	1.00	1.00	0.00
0.00	147.0	Wave Guide	1	1.50	6.00	100	3	Individual	0.00	N	1.00	1.00	0.00
0.00	143.0	1 5/8" Coax	2	1.98	0.82	100	3	Individual	0.00	N	1.00	1.00	0.00
0.00	142.5	Wave Guide	1	1.50	6.00	100	3	Individual	0.00	N	1.00	1.00	0.00
0.00	142.0	1 5/8" Coax	1	1.98	0.82	100	3	Individual	0.00	N	1.00	1.00	0.00
0.00	142.0	1/2" Coax	1	0.63	0.15	100	3	Individual	0.00	N	1.00	1.00	0.00
0.00	134.0	1 5/8" Coax	2	1.98	0.82	100	3	Individual	0.00	N	1.00	1.00	0.00
0.00	132.0	1 5/8" Coax	2	1.98	0.82	100	3	Individual	0.00	N	1.00	1.00	0.00
0.00	132.0	3/8" Coax	1	0.44	0.08	100	3	Individual	0.00	N	1.00	1.00	0.01
0.00	131.0	1/2" Coax	1	0.63	0.15	100	3	Individual	0.00	N	1.00	1.00	0.01
0.00	129.0	EW63	1	2.01	0.51	100	3	Individual	0.00	N	1.00	1.00	0.01
0.00	128.0	EW63	1	2.01	0.51	100	3	Individual	0.00	N	1.00	1.00	0.01
0.00	125.0	1 5/8" Coax	1	1.98	0.82	100	3	Individual	0.00	N	1.00	1.00	0.00
0.00	122.0	1 5/8" Coax	3	1.98	0.82	100	3	Individual	0.00	N	1.00	1.00	0.00
0.00	120.5	7/8" Coax	1	1.09	0.33	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	115.5	7/8" Coax	1	1.09	0.33	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	90.00	1/2" Coax	1	0.63	0.15	100	1	Individual	0.00	N	1.00	1.00	0.00
0.00	88.00	7/8" Coax	2	1.09	0.33	100	None	Individual	0.00	N	1.00	1.00	0.00
0.00	86.00	7/8" Coax	1	1.09	0.33	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	66.00	7/8" Coax	1	1.09	0.33	100	3	Individual	0.00	N	1.00	1.00	0.00
0.00	50.00	1.75" (44.5mm)	1	1.75	2.72	100	None	Individual	0.00	N	1.00	1.00	0.00
0.00	30.00	1/2" Coax	1	0.63	0.15	100	2	Individual	0.00	N	1.00	1.00	0.00
0.00	18.00	1/2" Coax	1	0.63	0.15	100	None	Individual	0.00	N	1.00	1.00	0.00
0.00	15.00	2" conduit	2	2.38	3.65	100	None	Individual	0.00	N	1.00	1.00	0.00
0.00	15.00	2" conduit	1	2.38	3.65	100	None	Individual	0.00	N	1.00	1.00	0.00

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Equivalent Lateral Force Method

Spectral Response Acceleration for Short Period (S_s):	0.23
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L - Seconds):	6
Importance Factor (I_p):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	3.00
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.25
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s :	0.03
Lower Limit C_s :	0.03
Period based on Rayleigh Method (sec):	0.96
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.23
Total Unfactored Dead Load:	52.12 k
Seismic Base Shear (E):	2.14 k

LoadCase 1.2D + 1.0Ev + 1.0Eh

Seismic

Section	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
9	170.00	1,429	794,661	0.054	116	1,786
8	150.00	2,212	1,054,54	0.072	155	2,765
7	130.00	3,253	1,300,66	0.089	191	4,067
6	110.00	4,030	1,311,72	0.090	192	5,038
5	90.00	4,197	1,067,24	0.073	156	5,247
4	70.00	4,631	864,209	0.059	127	5,789
3	50.00	4,984	614,763	0.042	90	6,231
2	30.00	5,428	357,026	0.024	52	6,786
1	10.00	6,203	105,547	0.007	15	7,755
CCI DMP65R-BU6DA	180.00	159	94,770	0.006	14	199
CCI DMP65R-BU8D	180.00	96	57,112	0.004	8	120
CCI OPA65R-BU6D	180.00	126	75,434	0.005	11	158
CCI OPA65R-BU8D	180.00	76	45,654	0.003	7	96
CCI TPA-65R-LCUUUU-H8	180.00	82	48,698	0.003	7	102
Ericsson RRUS 32 B2	180.00	159	94,889	0.006	14	199
Ericsson RRUS 32 B30 (53 lbs)	180.00	159	94,889	0.006	14	199
Ericsson RRUS 4449 B5, B12	180.00	213	127,115	0.009	19	266
Ericsson RRUS 4478 B14	180.00	180	107,242	0.007	16	225
Kaelus DBC0061F1V51-2	180.00	153	91,308	0.006	13	191
Powerwave Allgon 7770.00	180.00	105	62,663	0.004	9	131
Powerwave Allgon LGP21401	180.00	85	50,488	0.003	7	106
Quintel QS66512-2	180.00	222	132,486	0.009	19	278
Raycap DC6-48-60-18-8C	180.00	32	19,097	0.001	3	40
Raycap DC6-48-60-18-8F ("Squid")	180.00	32	18,978	0.001	3	40
Round Sector Frames	180.00	900	537,107	0.037	79	1,125

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Equivalent Lateral Force Method

Andrew DB844G65ZAXY	172.00	48	27,087	0.002	4	60
Commscope CBC78T-DS-43-2X	172.00	62	35,044	0.002	5	78
Commscope JAHH-65B-R3B	172.00	364	205,183	0.014	30	455
RFS APL868013-42T0	172.00	13	7,110	0.000	1	16
RFS DB-C1-12C-24AB-0Z	172.00	32	18,058	0.001	3	40
Round Sector Frame	172.00	900	507,878	0.035	74	1,125
Samsung B2/B66A RRH-BR049	172.00	253	142,883	0.010	21	317
Samsung B5/B13 RRH-BR04C	172.00	211	119,013	0.008	17	264
Samsung MT6407-77A	172.00	245	138,143	0.009	20	306
Decibel DB844H90E-XY	164.00	168	89,406	0.006	13	210
Round Sector Frame	164.00	900	478,962	0.033	70	1,125
Alcatel-Lucent 1900 MHz 4X45 RRH	157.00	180	90,785	0.006	13	225
Alcatel-Lucent 800 MHz RRH	157.00	159	80,193	0.005	12	199
Alcatel-Lucent RRH2x50-08	157.00	159	80,042	0.005	12	198
Alcatel-Lucent TD-RRH8x20-25 w/ Solar	157.00	210	105,916	0.007	16	263
Commscope DT465B-2XR	157.00	174	87,759	0.006	13	218
RFS APXVSP18-C-A20	157.00	171	86,246	0.006	13	214
Round Sector Frames	157.00	900	453,925	0.031	67	1,125
Ericsson AIR 21, 1.3M, B4A B2P (90.4 lbs)	147.00	542	252,279	0.017	37	678
Ericsson Radio 4449 B12,B71	147.00	222	103,256	0.007	15	278
Perfect Vision PV-SFA12-B Sector	147.00	1,776	826,048	0.057	121	2,220
RFS APXVAARR24_43-U-NA20	147.00	384	178,465	0.012	26	480
Andrew Microwaves DB810K-XT	143.00	35	15,736	0.001	2	44
Sinclair SC479-HF1LDF	143.00	34	15,286	0.001	2	43
Round Side Arm	142.50	300	134,296	0.009	20	375
Bird 432E-83I-01-T	142.00	25	11,143	0.001	2	31
Round Side Arm	136.00	300	126,797	0.009	19	375
Generic 24" x 24" Ice Shield	135.00	50	20,942	0.001	3	63
Generic 24" x 24" Ice Shield	134.00	50	20,751	0.001	3	63
Sinclair SE419-SF3P4LDF	134.00	48	19,921	0.001	3	60
Bird 432-83H-01-T	132.00	25	10,185	0.001	1	31
Generic 96" x 12" Panel	132.00	90	36,667	0.003	5	113
Morad VHF 156-DELUXE	131.00	1	363	0.000	0	1
Round Side Arm	131.00	300	121,084	0.008	18	375
Amphenol Antel WPA-700120-4CF-EDIN-	130.00	7	2,719	0.000	0	9
RFS PA6-65AC	129.00	278	110,100	0.008	16	348
RFS PA6-65AC	128.00	278	109,050	0.007	16	348
Round Side Arms	127.00	100	38,850	0.003	6	125
Sinclair SE419-SF3P4LDF	125.00	24	9,144	0.001	1	30
Sinclair SC479-HF1LDF	122.00	102	37,715	0.003	6	128
Round Side Arm	121.00	100	36,603	0.003	5	125
Decibel DB586	120.50	8	3,023	0.000	0	10
Stand-Off	120.50	100	36,417	0.002	5	125
Decibel DB586	115.50	8	2,869	0.000	0	10
Stand-Off	115.00	200	68,764	0.005	10	250
Generic Flat Stand-Off	100.00	188	54,278	0.004	8	234
Stand-Off	100.00	100	28,948	0.002	4	125
Stand-Off	91.00	50	12,888	0.001	2	63
PCTEL GPS-TMG-HR-26N	90.00	1	153	0.000	0	1
Sinclair SD210D	88.00	40	9,894	0.001	1	50
Generic 12' Omni	86.00	40	9,618	0.001	1	50
Side Arms	86.00	150	36,066	0.002	5	188
Andrew DB264-A	66.00	36	6,249	0.000	1	45
Commscope RDIDC-9181-PF-48	50.00	22	2,701	0.000	0	27
Fujitsu TA08025-B604	50.00	192	23,645	0.002	3	240

Site Number: 302522

Code:

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Equivalent Lateral Force Method

Fujitsu TA08025-B605	50.00	225	27,752	0.002	4	281
Generic Flat Light Sector Frame	50.00	1,200	148,012	0.010	22	1,500
JMA Wireless MX08FRO665-21	50.00	193	23,867	0.002	3	242
Generic 2" x 4" GPS	30.00	5	329	0.000	0	6
PCTEL GPS-TMG-HR-26N	18.00	1	21	0.000	0	1
PCTEL GPS-TMG-HR-26N	18.00	1	21	0.000	0	1
		52,122	14,614,858	1.000	2,142	65,160

LoadCase 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Section	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
9	170.00	1,429	794,661	0.054	116	1,214
8	150.00	2,212	1,054,54	0.072	155	1,880
7	130.00	3,253	1,300,66	0.089	191	2,765
6	110.00	4,030	1,311,72	0.090	192	3,425
5	90.00	4,197	1,067,24	0.073	156	3,567
4	70.00	4,631	864,209	0.059	127	3,935
3	50.00	4,984	614,763	0.042	90	4,236
2	30.00	5,428	357,026	0.024	52	4,613
1	10.00	6,203	105,547	0.007	15	5,272
CCI DMP65R-BU6DA	180.00	159	94,770	0.006	14	135
CCI DMP65R-BU8D	180.00	96	57,112	0.004	8	81
CCI OPA65R-BU6D	180.00	126	75,434	0.005	11	107
CCI OPA65R-BU8D	180.00	76	45,654	0.003	7	65
CCI TPA-65R-LCUUUU-H8	180.00	82	48,698	0.003	7	69
Ericsson RRUS 32 B2	180.00	159	94,889	0.006	14	135
Ericsson RRUS 32 B30 (53 lbs)	180.00	159	94,889	0.006	14	135
Ericsson RRUS 4449 B5, B12	180.00	213	127,115	0.009	19	181
Ericsson RRUS 4478 B14	180.00	180	107,242	0.007	16	153
Kaelus DBC0061F1V51-2	180.00	153	91,308	0.006	13	130
Powerwave Allgon 7770.00	180.00	105	62,663	0.004	9	89
Powerwave Allgon LGP21401	180.00	85	50,488	0.003	7	72
Quintel QS66512-2	180.00	222	132,486	0.009	19	189
Raycap DC6-48-60-18-8C	180.00	32	19,097	0.001	3	27
Raycap DC6-48-60-18-8F ("Squid")	180.00	32	18,978	0.001	3	27
Round Sector Frames	180.00	900	537,107	0.037	79	765
Andrew DB844G65ZAXY	172.00	48	27,087	0.002	4	41
Commscope CBC78T-DS-43-2X	172.00	62	35,044	0.002	5	53
Commscope JAHH-65B-R3B	172.00	364	205,183	0.014	30	309
RFS APL868013-42T0	172.00	13	7,110	0.000	1	11
RFS DB-C1-12C-24AB-0Z	172.00	32	18,058	0.001	3	27
Round Sector Frame	172.00	900	507,878	0.035	74	765
Samsung B2/B66A RRH-BR049	172.00	253	142,883	0.010	21	215
Samsung B5/B13 RRH-BR04C	172.00	211	119,013	0.008	17	179
Samsung MT6407-77A	172.00	245	138,143	0.009	20	208
Decibel DB844H90E-XY	164.00	168	89,406	0.006	13	143
Round Sector Frame	164.00	900	478,962	0.033	70	765
Alcatel-Lucent 1900 MHz 4X45 RRH	157.00	180	90,785	0.006	13	153
Alcatel-Lucent 800 MHz RRH	157.00	159	80,193	0.005	12	135
Alcatel-Lucent RRH2x50-08	157.00	159	80,042	0.005	12	135
Alcatel-Lucent TD-RRH8x20-25 w/ Solar	157.00	210	105,916	0.007	16	178
Commscope DT465B-2XR	157.00	174	87,759	0.006	13	148
RFS APXVSP18-C-A20	157.00	171	86,246	0.006	13	145

Site Number: 302522

Code:

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Equivalent Lateral Force Method

Round Sector Frames	157.00	900	453,925	0.031	67	765
Ericsson AIR 21, 1.3M, B4A B2P (90.4 lbs	147.00	542	252,279	0.017	37	461
Ericsson Radio 4449 B12,B71	147.00	222	103,256	0.007	15	189
Perfect Vision PV-SFA12-B Sector	147.00	1,776	826,048	0.057	121	1,509
RFS APXVAARR24_43-U-NA20	147.00	384	178,465	0.012	26	326
Andrew Microwaves DB810K-XT	143.00	35	15,736	0.001	2	30
Sinclair SC479-HF1LDF	143.00	34	15,286	0.001	2	29
Round Side Arm	142.50	300	134,296	0.009	20	255
Bird 432E-83I-01-T	142.00	25	11,143	0.001	2	21
Round Side Arm	136.00	300	126,797	0.009	19	255
Generic 24" x 24" Ice Shield	135.00	50	20,942	0.001	3	42
Generic 24" x 24" Ice Shield	134.00	50	20,751	0.001	3	42
Sinclair SE419-SF3P4LDF	134.00	48	19,921	0.001	3	41
Bird 432-83H-01-T	132.00	25	10,185	0.001	1	21
Generic 96" x 12" Panel	132.00	90	36,667	0.003	5	76
Morad VHF 156-DELUXE	131.00	1	363	0.000	0	1
Round Side Arm	131.00	300	121,084	0.008	18	255
Amphenol Antel WPA-700120-4CF-EDIN-	130.00	7	2,719	0.000	0	6
RFS PA6-65AC	129.00	278	110,100	0.008	16	236
RFS PA6-65AC	128.00	278	109,050	0.007	16	236
Round Side Arms	127.00	100	38,850	0.003	6	85
Sinclair SE419-SF3P4LDF	125.00	24	9,144	0.001	1	20
Sinclair SC479-HF1LDF	122.00	102	37,715	0.003	6	87
Round Side Arm	121.00	100	36,603	0.003	5	85
Decibel DB586	120.50	8	3,023	0.000	0	7
Stand-Off	120.50	100	36,417	0.002	5	85
Decibel DB586	115.50	8	2,869	0.000	0	7
Stand-Off	115.00	200	68,764	0.005	10	170
Generic Flat Stand-Off	100.00	188	54,278	0.004	8	159
Stand-Off	100.00	100	28,948	0.002	4	85
Stand-Off	91.00	50	12,888	0.001	2	42
PCTEL GPS-TMG-HR-26N	90.00	1	153	0.000	0	1
Sinclair SD210D	88.00	40	9,894	0.001	1	34
Generic 12' Omni	86.00	40	9,618	0.001	1	34
Side Arms	86.00	150	36,066	0.002	5	127
Andrew DB264-A	66.00	36	6,249	0.000	1	31
Commscope RDIDC-9181-PF-48	50.00	22	2,701	0.000	0	19
Fujitsu TA08025-B604	50.00	192	23,645	0.002	3	163
Fujitsu TA08025-B605	50.00	225	27,752	0.002	4	191
Generic Flat Light Sector Frame	50.00	1,200	148,012	0.010	22	1,020
JMA Wireless MX08FRO665-21	50.00	193	23,867	0.002	3	164
Generic 2" x 4" GPS	30.00	5	329	0.000	0	4
PCTEL GPS-TMG-HR-26N	18.00	1	21	0.000	0	1
PCTEL GPS-TMG-HR-26N	18.00	1	21	0.000	0	1
		52,122	14,614,858	1.000	2,142	44,297

Force/Stress Summary

Section: 1		SSV		Bot Elev (ft): 0.00				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls
LEG	PSP - ROHN 8 EHS	-317.44	1.2D + 1.0W Normal	10.02	100	100	100	41.2	50.0	386.43	0	0	0.00	0.00	82	Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SAE - 4X4X0.3125	-10.54	1.2D + 1.0W 90 deg	24.62	50	50	50	189.2	50.0	19.20	1	1	19.88	29.25	54	Member Z
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk	Shear	Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Bolts	Holes	phiRnv		phiRn	phiRn	phit	%	Controls
LEG	PSP - ROHN 8 EHS	272.74	0.9D + 1.0W 60 deg	50	65	437.40	0	0	0	0.00		0.00			62	Member
HORIZ		0.00		0	0	0.00	0	0	0	0.00		0.00		0.00	0	
DIAG	SAE - 4X4X0.3125	10.44	1.2D + 1.0W 90 deg	50	65	78.47	1	1	1	19.88		17.67		22.47	59	Bolt Bear
		Pu				phiRnt		Use	Num							
Max Splice Forces		(kip)	Load Case			(kip)		%	Bolts		Bolt Type					
Top Tension		250.62	0.9D + 1.0W 60 deg			0.00		0	0							
Top Compression		293.13	1.2D + 1.0W Normal			0.00		0								
Bot Tension		281.17	0.9D + 1.0W 60 deg			567.89		25	10		1" A354-BC					
Bot Compression		326.63	1.2D + 1.0W Normal			660.26		53								

Section: 2		SSV		Bot Elev (ft): 20.00				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	phiRnv	phiRn	%	Controls
LEG	PSP - ROHN 8 EHS	-284.40	1.2D + 1.0W Normal	10.02	100	100	100	41.2	50.0	386.43	0	0	0.00	0.00	73	Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SAE - 4X4X0.25	-10.74	1.2D + 1.0W 90 deg	22.81	50	50	50	172.2	43.5	18.73	1	1	19.88	23.40	57	Member Z
		Pu		Fy	Fu	Phit	Pn	Num	Num	Shear		Bear	Blk	Shear	Use	
Max Tension Member		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Bolts	Holes	phiRnv		phiRn	phiRn	phit	%	Controls
LEG	PSP - ROHN 8 EHS	243.94	0.9D + 1.0W 60 deg	50	65	437.40	0	0	0	0.00		0.00			55	Member
HORIZ		0.00		0	0	0.00	0	0	0	0.00		0.00		0.00	0	
DIAG	SAE - 4X4X0.25	10.41	1.2D + 1.0W 90 deg	50	65	63.50	1	1	1	19.88		14.14		17.98	73	Bolt Bear
		Pu				phiRnt		Use	Num							
Max Splice Forces		(kip)	Load Case			(kip)		%	Bolts		Bolt Type					
Top Tension		219.93	0.9D + 1.0W 60 deg			0.00		0	0							
Top Compression		257.61	1.2D + 1.0W Normal			0.00		0								
Bot Tension		250.62	0.9D + 1.0W 60 deg			436.14		57	8		1 A325					
Bot Compression		0.00				0.00		0								

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

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Customer: DISH WIRELESS L.L.C.

Force/Stress Summary

Section: 3		SSV		Bot Elev (ft): 40.00				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear phiRnv	Bear phiRn	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	% Controls
LEG	PX - 6" DIA PIPE	-248.83	1.2D + 1.0W Normal	10.02	100	100	100	54.8	50.0	303.54	0	0	0.00	0.00	81 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 4X4X0.25	-9.93	1.2D + 1.0W 90 deg	21.00	50	50	50	158.5	43.5	22.11	1	1	19.88	23.40	49 Bolt Shear

Max Tension Member		Pu			Fy	Fu	Phit Pn	Num	Num	Shear phiRnv	Bear phiRn	Blk Shear phit Pn	Use	Controls
		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	(kip)	(kip)	%	
LEG	PX - 6" DIA PIPE	213.54	0.9D + 1.0W 60 deg	50	65	378.00	0	0	0.00	0.00			56	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00		0.00	0	
DIAG	SAE - 4X4X0.25	9.71	1.2D + 1.0W 90 deg	50	65	63.50	1	1	19.88	14.14		17.98	68	Bolt Bear

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type		
Top Tension		190.20	0.9D + 1.0W 60 deg		0.00	0			
Top Compression		221.61	1.2D + 1.0W Normal		0.00	0			
Bot Tension		219.93	0.9D + 1.0W 60 deg		436.14	50	8	1 A325	
Bot Compression		0.00			0.00	0			

Section: 4		SSV		Bot Elev (ft): 60.00				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn Num	Num	Shear phiRnv	Bear phiRn	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	% Controls
LEG	PX - 6" DIA PIPE	-212.08	1.2D + 1.0W Normal	10.02	100	100	100	54.8	50.0	303.58	0	0	0.00	0.00	69 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 3.5X3.5X0.25	-9.78	1.2D + 1.0W 90 deg	19.17	50	50	50	167.2	50.0	17.30	1	1	19.88	23.40	56 Member Z

Max Tension Member		Pu			Fy	Fu	Phit Pn	Num	Num	Shear phiRnv	Bear phiRn	Blk Shear phit Pn	Use	Controls
		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	(kip)	(kip)	%	
LEG	PX - 6" DIA PIPE	182.94	0.9D + 1.0W 60 deg	50	65	378.00	0	0	0.00	0.00			48	Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00		0.00	0	
DIAG	SAE - 3.5X3.5X0.25	9.59	1.2D + 1.0W 90 deg	50	65	54.36	1	1	19.88	14.14		17.98	67	Bolt Bear

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type		
Top Tension		156.48	0.9D + 1.0W 60 deg		0.00	0			
Top Compression		183.12	1.2D + 1.0W Normal		0.00	0			
Bot Tension		190.20	0.9D + 1.0W 60 deg		327.10	58	6	1 A325	
Bot Compression		0.00			0.00	0			

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Force/Stress Summary

Section: 5		SSV		Bot Elev (ft): 80.00				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear phiRnv	Bear phiRn	Use
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	% Controls
LEG	PX - 5" DIA PIPE	-176.60	1.2D + 1.0W Normal	6.68	100	100	100	43.6	50.0	238.95	0	0	0.00	0.00	73 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 3X3X0.25	-8.40	1.2D + 1.0W 90 deg	15.97	50	50	50	161.9	50.0	15.72	1	1	19.88	23.40	53 Member Z

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	PX - 5" DIA PIPE	151.87	0.9D + 1.0W 60 deg	50	65	274.50	0	0	0.00	0.00			55 Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00		0
DIAG	SAE - 3X3X0.25	8.28	1.2D + 1.0W 90 deg	50	65	45.22	1	1	19.88	14.14	14.93		58 Bolt Bear

Max Splice Forces		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension		121.58	0.9D + 1.0W 60 deg	0.00	0	0	
Top Compression		143.19	1.2D + 1.0W Normal	0.00	0		
Bot Tension		156.48	0.9D + 1.0W 60 deg	327.10	48	6	1 A325
Bot Compression		0.00		0.00	0		

Section: 6		SSV		Bot Elev (ft): 100.0				Height (ft): 20.000											
				Pu	Len			Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member				(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls	
LEG	PX - 5" DIA PIPE			-136.41	1.2D + 1.0W Normal	6.68	100	100	100	43.6	50.0	238.95	0	0	0.00	0.00	57	Member X	
HORIZ				0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0		
DIAG	SAE - 3X3X0.25			-7.97	1.2D + 1.0W 90 deg	14.16	50	50	50	143.6	50.0	19.99	1	1	19.88	23.40	40	Bolt Shear	

Max Tension Member		Pu (kip)	Load Case	Fy (ksi)	Fu (ksi)	Phit Pn (kip)	Num Bolts	Num Holes	Shear phiRnv (kip)	Bear phiRn (kip)	Blk Shear phit Pn (kip)	Use %	Controls
LEG	PX - 5" DIA PIPE	116.22	0.9D + 1.0W 60 deg	50	65	274.50	0	0	0.00	0.00			42 Member
HORIZ		0.00		0	0	0.00	0	0	0.00	0.00	0.00		0
DIAG	SAE - 3X3X0.25	7.87	1.2D + 1.0W 90 deg	50	65	45.22	1	1	19.88	14.14	14.93		55 Bolt Bear

Max Splice Forces		Pu (kip)	Load Case	phiRnt (kip)	Use %	Num Bolts	Bolt Type
Top Tension		83.31	0.9D + 1.0W 60 deg	0.00	0	0	
Top Compression		100.79	1.2D + 1.0W Normal	0.00	0		
Bot Tension		121.58	0.9D + 1.0W 60 deg	327.10	37	6	1 A325
Bot Compression		0.00		0.00	0		

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Force/Stress Summary

Section: 7		SSV		Bot Elev (ft): 120.0				Height (ft): 20.000							
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear phiRnv	Bear phiRn	Use
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	% Controls
LEG	PX - 4" DIA PIPE	-93.49	1.2D + 1.0W Normal	6.68	100	100	100	54.2	50.0	160.15	0	0	0.00	0.00	58 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SAE - 2.5X2.5X0.25	-7.44	1.2D + 1.0W 90 deg	12.42	50	50	50	151.9	36.0	14.77	1	1	19.88	20.88	50 Member Z

Max Tension Member		Pu			Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Blk	Shear	Use	
		(kip)	Load Case		(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv	phiRn	phiRn	phiRn	%	Controls
LEG	PX - 4" DIA PIPE	75.61	1.2D + 1.0W 60 deg		50	65	198.45	0	0		0.00	0.00			38	Member
HORIZ		0.00			0	0	0.00	0	0		0.00	0.00		0.00	0	
DIAG	SAE - 2.5X2.5X0.25	7.36	1.2D + 1.0W 90 deg		36	58	32.20	1	1		19.88	12.61		11.96	61	Blk Shear

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case		(kip)	%	Bolts	Bolt Type	
Top Tension		47.47	0.9D + 1.0W 60 deg		0.00	0	0		
Top Compression		60.38	1.2D + 1.0W Normal		0.00	0			
Bot Tension		83.31	0.9D + 1.0W 60 deg		218.07	38	4	1 A325	
Bot Compression		0.00			0.00	0			

Section: 8		SSV		Bot Elev (ft): 140.0				Height (ft): 20.000								
		Pu		Len	Bracing %			F'y	Phic	Pn	Num	Num	Shear	Bear	Use	
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls
LEG	PST - 3" DIA PIPE	-55.56	1.2D + 1.0W Normal	4.95	100	100	100	51.2	50.0	82.87	0	0	0.00	0.00	67	Member X
HORIZ	SAE - 2X2X0.25	-0.38	1.2D + 1.0W Normal	6.689	100	100	100	205.3	36.0	6.38	1	1	13.81	17.40	5	Member Z
DIAG	SAE - 2X2X0.25	-4.97	1.2D + 1.0W 90 deg	9.813	50	50	50	150.6	36.0	11.87	1	1	13.81	17.40	41	Member Z

Max Tension Member		Pu			Fy	Fu	Phit	Pn	Num	Num	Shear	Bear	Blk	Shear	Use	
		(kip)	Load Case		(ksi)	(ksi)	(kip)	Bolts	Holes		phiRnv	phiRn	phiRn	phiRn	%	Controls
LEG	PST - 3" DIA PIPE	48.60	0.9D + 1.0W 60 deg		50	65	100.35	0	0		0.00	0.00			48	Member
HORIZ	SAE - 2X2X0.25	0.39	1.2D + 1.0W 60 deg		36	58	25.06	1	1		13.81	10.44		9.11	4	Blk Shear
DIAG	SAE - 2X2X0.25	4.90	1.2D + 1.0W 90 deg		36	58	25.06	1	1		13.81	10.44		9.11	53	Blk Shear

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case		(kip)	%	Bolts	Bolt Type	
Top Tension		20.24	0.9D + 1.0W 60 deg		0.00	0	0		
Top Compression		26.37	1.2D + 1.0W Normal		0.00	0			
Bot Tension		47.47	0.9D + 1.0W 60 deg		166.22	29	4	0.875" A325	
Bot Compression		0.00			0.00	0			

Force/Stress Summary

Section: 9		SSV		Bot Elev (ft): 160.0		Height (ft): 20.000											
		Pu			Len	Bracing %			F'y	Phic	Pn Num	Num	Shear phiRnv	Bear phiRn	Use		
Max Compression Member		(kip)	Load Case	(ft)	X	Y	Z	KL/R	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	%	Controls	
LEG	PST - 2-1/2" DIA PIP	-22.69	1.2D + 1.0W Normal	3.95	100	100	100	50.1	50.0	63.85	0	0	0.00	0.00	35	Member X	
HORIZ	SAE - 2X2X0.125	-0.74	1.2D + 1.0W 60 deg	6.647	100	100	100	200.4	36.0	3.42	1	1	13.81	8.70	21	Member Z	
DIAG	SAE - 1.75X1.75X0.18	-3.86	1.2D + 1.0W 90 deg	7.764	50	50	50	135.8	36.0	9.64	1	1	13.81	13.05	40	Member Z	

Max Tension Member		Pu			Fy	Fu	Phit	Pn Num	Num	Shear phiRnv	Bear phiRn	Blk Shear phit	Pn	Use		
		(kip)	Load Case	(ksi)	(ksi)	(kip)	Bolts	Holes	(kip)	(kip)	(kip)	(kip)		%	Controls	
LEG	PST - 2-1/2" DIA PIP	20.59	0.9D + 1.0W 60 deg	50	65	76.68	0	0	0.00	0.00				26	Member	
HORIZ	SAE - 2X2X0.125	1.04	1.2D + 1.0W Normal	36	58	12.86	1	1	13.81	5.22		4.55		22	Blk Shear	
DIAG	SAE - 1.75X1.75X0.18	3.76	1.2D + 1.0W 90 deg	36	58	16.05	1	1	13.81	7.83		5.81		64	Blk Shear	

Max Splice Forces		Pu			phiRnt	Use	Num		
		(kip)	Load Case	(kip)	%	Bolts	Bolt Type		
Top Tension		0.00			0.00	0	0		
Top Compression		2.53	1.2D + 1.0Di + 1.0Wi		0.00	0			
Bot Tension		20.24	0.9D + 1.0W 60 deg	120.41	17	4	0.75" A325		
Bot Compression		0.00			0.00	0			

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Detailed Reactions

Load Case	Radius (ft)	Elevation (ft)	Azimuth (deg)	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
1.2D + 1.0W Normal	13.28	00.00	0	1	0.00	326.01	-35.19	
	13.28	00.00	120	1a	11.78	-131.73	-10.79	
	13.28	00.00	240	1b	-11.78	-131.73	-10.79	
1.2D + 1.0W 60 deg	13.28	00.00	0	1	-3.23	168.56	-17.66	
	13.28	00.00	120	1a	-16.90	168.40	6.03	
	13.28	00.00	240	1b	-27.10	-274.41	-15.64	
1.2D + 1.0W 90 deg	13.28	00.00	0	1	-3.81	20.85	-1.37	
	13.28	00.00	120	1a	-26.78	278.61	13.29	
	13.28	00.00	240	1b	-24.51	-236.92	-11.92	
0.9D + 1.0W Normal	13.28	00.00	0	1	0.00	320.38	-34.85	
	13.28	00.00	120	1a	12.09	-136.74	-10.98	
	13.28	00.00	240	1b	-12.09	-136.74	-10.98	
0.9D + 1.0W 60 deg	13.28	00.00	0	1	-3.24	163.14	-17.30	
	13.28	00.00	120	1a	-16.59	162.98	5.85	
	13.28	00.00	240	1b	-27.40	-279.21	-15.82	
0.9D + 1.0W 90 deg	13.28	00.00	0	1	-3.82	15.64	-1.01	
	13.28	00.00	120	1a	-26.47	273.04	13.10	
	13.28	00.00	240	1b	-24.82	-241.77	-12.10	
1.2D + 1.0Di + 1.0Wi Normal	13.28	00.00	0	1	0.00	141.42	-10.90	
	13.28	00.00	120	1a	4.43	-3.55	-3.94	
	13.28	00.00	240	1b	-4.43	-3.55	-3.94	
1.2D + 1.0Di + 1.0Wi 60 deg	13.28	00.00	0	1	-1.17	92.30	-5.22	
	13.28	00.00	120	1a	-5.11	92.27	1.60	
	13.28	00.00	240	1b	-9.67	-50.24	-5.58	
1.2D + 1.0Di + 1.0Wi 90 deg	13.28	00.00	0	1	-1.36	44.77	0.24	
	13.28	00.00	120	1a	-8.36	127.40	4.05	
	13.28	00.00	240	1b	-8.78	-37.85	-4.28	
1.2D + 1.0Ev + 1.0Eh Normal M1	13.28	00.00	0	1	0.00	34.88	-2.81	
	13.28	00.00	120	1a	-0.76	13.85	0.35	
	13.28	00.00	240	1b	0.76	13.85	0.35	
1.2D + 1.0Ev + 1.0Eh 60 deg M1	13.28	00.00	0	1	-0.08	27.87	-2.15	
	13.28	00.00	120	1a	-1.90	27.87	1.01	
	13.28	00.00	240	1b	0.15	6.84	0.09	
1.2D + 1.0Ev + 1.0Eh 90 deg M1	13.28	00.00	0	1	-0.09	20.86	-1.49	
	13.28	00.00	120	1a	-2.30	33.00	1.28	
	13.28	00.00	240	1b	0.28	8.72	0.21	
0.9D - 1.0Ev + 1.0Eh Normal M1	13.28	00.00	0	1	0.00	28.17	-2.33	
	13.28	00.00	120	1a	-0.35	7.18	0.11	
	13.28	00.00	240	1b	0.35	7.18	0.11	
0.9D - 1.0Ev + 1.0Eh 60 deg M1	13.28	00.00	0	1	-0.08	21.18	-1.67	
	13.28	00.00	120	1a	-1.49	21.17	0.77	
	13.28	00.00	240	1b	-0.26	0.19	-0.15	
0.9D - 1.0Ev + 1.0Eh 90 deg M1	13.28	00.00	0	1	-0.09	14.18	-1.02	
	13.28	00.00	120	1a	-1.89	26.30	1.04	

Site Number: 302522	Code: ANSI/TIA-222-H	© 2007 - 2021 by ATC IP LLC. All rights reserved.
Site Name: Redding, CT	Engineering Number: 13699598_C3_03	7/28/2021 6:19:48 AM
Customer: DISH WIRELESS L.L.C.		

	13.28	00.00	240	1b	-0.13	2.06	-0.03
1.0D + 1.0W Service Normal	13.28	00.00	0	1	0.00	99.41	-10.35
	13.28	00.00	120	1a	2.47	-23.64	-2.51
	13.28	00.00	240	1b	-2.47	-23.64	-2.51
1.0D + 1.0W Service 60 deg	13.28	00.00	0	1	-0.89	57.09	-5.60
	13.28	00.00	120	1a	-5.29	57.04	2.03
	13.28	00.00	240	1b	-6.60	-62.01	-3.81
1.0D + 1.0W Service 90 deg	13.28	00.00	0	1	-1.04	17.37	-1.19
	13.28	00.00	120	1a	-7.97	86.67	4.00
	13.28	00.00	240	1b	-5.91	-51.92	-2.81

Max Uplift:	279.21 (kip)	Moment Ice:	1,925.14 (kip-ft)	Moment:	6,078.29 (kip-ft)	1.2D + 1.0W Normal
Max Down:	326.01 (kip)	Total Down Ice:	134.32 (kip)	Total Down:	62.55 (kip)	
Max Shear:	35.19 (kip)	Total Shear Ice:	18.79 (kip)	Total Shear:	56.77 (kip)	

Site Number: 302522

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Deflections and Rotations

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)	Resultant (deg)
116 mph Normal with No Ice	20.00	0.025	0.0036	0.1193	0.1193
116 mph Normal with No Ice	30.00	0.049	0.0043	0.1636	0.1636
116 mph Normal with No Ice	50.00	0.121	0.0051	0.2529	0.2530
116 mph Normal with No Ice	70.00	0.227	0.0047	0.3514	0.3515
116 mph Normal with No Ice	86.67	0.341	0.0033	0.4452	0.4452
116 mph Normal with No Ice	93.33	0.395	0.0016	0.4816	0.4816
116 mph Normal with No Ice	100.00	0.453	0.0001	0.5198	0.5198
116 mph Normal with No Ice	113.33	0.582	0.0033	0.5916	0.5916
116 mph Normal with No Ice	120.00	0.653	0.0060	0.6084	0.6084
116 mph Normal with No Ice	126.67	0.728	0.0167	0.6697	0.6700
116 mph Normal with No Ice	133.33	0.806	0.0299	0.6844	0.6851
116 mph Normal with No Ice	140.25	0.893	0.0423	0.8039	0.8039
116 mph Normal with No Ice	145.19	0.957	0.0770	0.7414	0.7454
116 mph Normal with No Ice	155.06	1.097	0.1658	0.9254	0.9401
116 mph Normal with No Ice	164.20	1.237	0.1807	0.8932	0.9113
116 mph Normal with No Ice	172.10	1.363	0.1815	0.9313	0.9488
116 mph Normal with No Ice	180.00	1.491	0.1820	1.0589	1.0744
116 mph 60 degree with No Ice	20.00	0.023	0.0057	0.1147	0.1149
116 mph 60 degree with No Ice	30.00	0.047	0.0074	0.1578	0.1578
116 mph 60 degree with No Ice	50.00	0.117	0.0116	0.2446	0.2448
116 mph 60 degree with No Ice	70.00	0.220	0.0157	0.3407	0.3410
116 mph 60 degree with No Ice	86.67	0.331	0.0197	0.4320	0.4323
116 mph 60 degree with No Ice	93.33	0.383	0.0211	0.4672	0.4675
116 mph 60 degree with No Ice	100.00	0.440	0.0236	0.5046	0.5049
116 mph 60 degree with No Ice	113.33	0.566	0.0297	0.5708	0.5712
116 mph 60 degree with No Ice	120.00	0.634	0.0335	0.6054	0.6063
116 mph 60 degree with No Ice	126.67	0.707	0.0470	0.6453	0.6470
116 mph 60 degree with No Ice	133.33	0.784	0.0617	0.6663	0.6668
116 mph 60 degree with No Ice	140.25	0.868	0.0775	0.7730	0.7769
116 mph 60 degree with No Ice	145.19	0.931	0.1143	0.7552	0.7563
116 mph 60 degree with No Ice	155.06	1.066	0.2136	0.7688	0.7819
116 mph 60 degree with No Ice	164.20	1.202	0.2357	0.8608	0.8819
116 mph 60 degree with No Ice	172.10	1.324	0.2504	0.8939	0.9249
116 mph 60 degree with No Ice	180.00	1.448	0.2634	0.8642	0.8834
116 mph 90 degree with No Ice	20.00	0.023	-0.0071	0.1190	0.1192
116 mph 90 degree with No Ice	30.00	0.047	-0.0093	0.1586	0.1587
116 mph 90 degree with No Ice	50.00	0.118	-0.0148	0.2476	0.2480
116 mph 90 degree with No Ice	70.00	0.221	-0.0206	0.3431	0.3438
116 mph 90 degree with No Ice	86.67	0.333	-0.0262	0.4349	0.4357
116 mph 90 degree with No Ice	93.33	0.386	-0.0284	0.4700	0.4709
116 mph 90 degree with No Ice	100.00	0.443	-0.0307	0.5076	0.5085
116 mph 90 degree with No Ice	113.33	0.569	-0.0348	0.5727	0.5736
116 mph 90 degree with No Ice	120.00	0.638	-0.0372	0.6135	0.6137
116 mph 90 degree with No Ice	126.67	0.711	-0.0469	0.6472	0.6478
116 mph 90 degree with No Ice	133.33	0.789	-0.0562	0.6723	0.6746
116 mph 90 degree with No Ice	140.25	0.873	-0.0685	0.7642	0.7649
116 mph 90 degree with No Ice	145.19	0.936	-0.0902	0.7735	0.7787
116 mph 90 degree with No Ice	155.06	1.072	-0.1600	0.7245	0.7420
116 mph 90 degree with No Ice	164.20	1.209	-0.1644	0.8645	0.8800
116 mph 90 degree with No Ice	172.10	1.332	-0.1656	0.8932	0.9084
116 mph 90 degree with No Ice	180.00	1.456	-0.1667	0.8022	0.8193
116 mph Normal with No Ice (Reduced DL)	20.00	0.024	0.0036	0.1190	0.1191
116 mph Normal with No Ice (Reduced DL)	30.00	0.049	0.0043	0.1633	0.1633
116 mph Normal with No Ice (Reduced DL)	50.00	0.121	0.0051	0.2525	0.2525
116 mph Normal with No Ice (Reduced DL)	70.00	0.227	0.0047	0.3508	0.3508

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

116 mph Normal with No Ice (Reduced DL)	86.67	0.340	0.0032	0.4443	0.4444
116 mph Normal with No Ice (Reduced DL)	93.33	0.394	0.0016	0.4806	0.4806
116 mph Normal with No Ice (Reduced DL)	100.00	0.452	0.0001	0.5187	0.5187
116 mph Normal with No Ice (Reduced DL)	113.33	0.581	0.0033	0.5903	0.5903
116 mph Normal with No Ice (Reduced DL)	120.00	0.651	0.0060	0.6069	0.6069
116 mph Normal with No Ice (Reduced DL)	126.67	0.726	0.0167	0.6682	0.6684
116 mph Normal with No Ice (Reduced DL)	133.33	0.805	0.0299	0.6828	0.6834
116 mph Normal with No Ice (Reduced DL)	140.25	0.891	0.0423	0.8018	0.8018
116 mph Normal with No Ice (Reduced DL)	145.19	0.955	0.0770	0.7394	0.7434
116 mph Normal with No Ice (Reduced DL)	155.06	1.094	0.1657	0.9231	0.9378
116 mph Normal with No Ice (Reduced DL)	164.20	1.234	0.1806	0.8909	0.9091
116 mph Normal with No Ice (Reduced DL)	172.10	1.360	0.1814	0.9289	0.9464
116 mph Normal with No Ice (Reduced DL)	180.00	1.488	0.1819	1.0563	1.0719
116 mph 60 deg with No Ice (Reduced DL)	20.00	0.023	0.0057	0.1147	0.1148
116 mph 60 deg with No Ice (Reduced DL)	30.00	0.047	0.0074	0.1576	0.1577
116 mph 60 deg with No Ice (Reduced DL)	50.00	0.117	0.0116	0.2442	0.2444
116 mph 60 deg with No Ice (Reduced DL)	70.00	0.219	0.0157	0.3401	0.3404
116 mph 60 deg with No Ice (Reduced DL)	86.67	0.330	0.0197	0.4312	0.4315
116 mph 60 deg with No Ice (Reduced DL)	93.33	0.383	0.0210	0.4662	0.4666
116 mph 60 deg with No Ice (Reduced DL)	100.00	0.439	0.0236	0.5036	0.5038
116 mph 60 deg with No Ice (Reduced DL)	113.33	0.565	0.0297	0.5696	0.5699
116 mph 60 deg with No Ice (Reduced DL)	120.00	0.633	0.0335	0.6041	0.6050
116 mph 60 deg with No Ice (Reduced DL)	126.67	0.706	0.0469	0.6437	0.6454
116 mph 60 deg with No Ice (Reduced DL)	133.33	0.782	0.0617	0.6647	0.6653
116 mph 60 deg with No Ice (Reduced DL)	140.25	0.866	0.0775	0.7711	0.7750
116 mph 60 deg with No Ice (Reduced DL)	145.19	0.929	0.1142	0.7535	0.7546
116 mph 60 deg with No Ice (Reduced DL)	155.06	1.064	0.2134	0.7669	0.7796
116 mph 60 deg with No Ice (Reduced DL)	164.20	1.199	0.2355	0.8585	0.8798
116 mph 60 deg with No Ice (Reduced DL)	172.10	1.322	0.2501	0.8915	0.9226
116 mph 60 deg with No Ice (Reduced DL)	180.00	1.445	0.2631	0.8618	0.8811
116 mph 90 deg with No Ice (Reduced DL)	20.00	0.023	-0.0071	0.1188	0.1191
116 mph 90 deg with No Ice (Reduced DL)	30.00	0.047	-0.0093	0.1584	0.1584
116 mph 90 deg with No Ice (Reduced DL)	50.00	0.117	-0.0148	0.2472	0.2476
116 mph 90 deg with No Ice (Reduced DL)	70.00	0.220	-0.0206	0.3425	0.3431
116 mph 90 deg with No Ice (Reduced DL)	86.67	0.332	-0.0262	0.4340	0.4348
116 mph 90 deg with No Ice (Reduced DL)	93.33	0.385	-0.0284	0.4691	0.4699
116 mph 90 deg with No Ice (Reduced DL)	100.00	0.442	-0.0307	0.5065	0.5075
116 mph 90 deg with No Ice (Reduced DL)	113.33	0.568	-0.0348	0.5713	0.5724
116 mph 90 deg with No Ice (Reduced DL)	120.00	0.637	-0.0372	0.6120	0.6123
116 mph 90 deg with No Ice (Reduced DL)	126.67	0.710	-0.0469	0.6457	0.6463
116 mph 90 deg with No Ice (Reduced DL)	133.33	0.787	-0.0562	0.6707	0.6730
116 mph 90 deg with No Ice (Reduced DL)	140.25	0.871	-0.0686	0.7622	0.7630
116 mph 90 deg with No Ice (Reduced DL)	145.19	0.935	-0.0903	0.7716	0.7769
116 mph 90 deg with No Ice (Reduced DL)	155.06	1.070	-0.1601	0.7224	0.7400
116 mph 90 deg with No Ice (Reduced DL)	164.20	1.206	-0.1646	0.8623	0.8778
116 mph 90 deg with No Ice (Reduced DL)	172.10	1.329	-0.1658	0.8908	0.9061
116 mph 90 deg with No Ice (Reduced DL)	180.00	1.453	-0.1668	0.7997	0.8169
50 mph Normal with 1.00 in Radial Ice	20.00	0.008	0.0015	0.0406	0.0406
50 mph Normal with 1.00 in Radial Ice	30.00	0.017	0.0019	0.0543	0.0543
50 mph Normal with 1.00 in Radial Ice	50.00	0.039	0.0026	0.0813	0.0813
50 mph Normal with 1.00 in Radial Ice	70.00	0.072	0.0031	0.1099	0.1099
50 mph Normal with 1.00 in Radial Ice	86.67	0.107	0.0033	0.1375	0.1375
50 mph Normal with 1.00 in Radial Ice	93.33	0.124	0.0032	0.1477	0.1477
50 mph Normal with 1.00 in Radial Ice	100.00	0.142	0.0031	0.1590	0.1590
50 mph Normal with 1.00 in Radial Ice	113.33	0.181	0.0028	0.1795	0.1795
50 mph Normal with 1.00 in Radial Ice	120.00	0.202	0.0023	0.1844	0.1844
50 mph Normal with 1.00 in Radial Ice	126.67	0.225	0.0002	0.2015	0.2015
50 mph Normal with 1.00 in Radial Ice	133.33	0.248	0.0034	0.2058	0.2058
50 mph Normal with 1.00 in Radial Ice	140.25	0.274	0.0063	0.2390	0.2390
50 mph Normal with 1.00 in Radial Ice	145.19	0.294	0.0149	0.2231	0.2236
50 mph Normal with 1.00 in Radial Ice	155.06	0.335	0.0361	0.2682	0.2707
50 mph Normal with 1.00 in Radial Ice	164.20	0.376	0.0396	0.2614	0.2644

Site Number: 302522

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ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

50 mph Normal with 1.00 in Radial Ice	172.10	0.413	0.0398	0.2716	0.2741
50 mph Normal with 1.00 in Radial Ice	180.00	0.450	0.0399	0.3010	0.3037
50 mph 60 deg with 1.00 in Radial Ice	20.00	0.009	-0.0017	0.0404	0.0405
50 mph 60 deg with 1.00 in Radial Ice	30.00	0.018	-0.0022	0.0566	0.0566
50 mph 60 deg with 1.00 in Radial Ice	50.00	0.040	-0.0032	0.0805	0.0805
50 mph 60 deg with 1.00 in Radial Ice	70.00	0.072	-0.0041	0.1082	0.1082
50 mph 60 deg with 1.00 in Radial Ice	86.67	0.107	-0.0049	0.1353	0.1353
50 mph 60 deg with 1.00 in Radial Ice	93.33	0.123	-0.0051	0.1453	0.1453
50 mph 60 deg with 1.00 in Radial Ice	100.00	0.140	-0.0053	0.1564	0.1564
50 mph 60 deg with 1.00 in Radial Ice	113.33	0.179	-0.0055	0.1756	0.1757
50 mph 60 deg with 1.00 in Radial Ice	120.00	0.200	-0.0057	0.1853	0.1854
50 mph 60 deg with 1.00 in Radial Ice	126.67	0.222	-0.0074	0.1973	0.1973
50 mph 60 deg with 1.00 in Radial Ice	133.33	0.245	-0.0089	0.2025	0.2026
50 mph 60 deg with 1.00 in Radial Ice	140.25	0.271	-0.0111	0.2334	0.2336
50 mph 60 deg with 1.00 in Radial Ice	145.19	0.290	0.0181	0.2253	0.2255
50 mph 60 deg with 1.00 in Radial Ice	155.06	0.330	0.0368	0.2317	0.2325
50 mph 60 deg with 1.00 in Radial Ice	164.20	0.370	0.0397	0.2558	0.2571
50 mph 60 deg with 1.00 in Radial Ice	172.10	0.407	0.0408	0.2646	0.2659
50 mph 60 deg with 1.00 in Radial Ice	180.00	0.443	0.0418	0.2572	0.2572
50 mph 90 deg with 1.00 in Radial Ice	20.00	0.009	-0.0020	0.0404	0.0405
50 mph 90 deg with 1.00 in Radial Ice	30.00	0.017	-0.0026	0.0559	0.0559
50 mph 90 deg with 1.00 in Radial Ice	50.00	0.039	-0.0039	0.0808	0.0808
50 mph 90 deg with 1.00 in Radial Ice	70.00	0.072	-0.0051	0.1086	0.1086
50 mph 90 deg with 1.00 in Radial Ice	86.67	0.107	-0.0061	0.1358	0.1358
50 mph 90 deg with 1.00 in Radial Ice	93.33	0.123	-0.0064	0.1458	0.1460
50 mph 90 deg with 1.00 in Radial Ice	100.00	0.141	-0.0067	0.1569	0.1570
50 mph 90 deg with 1.00 in Radial Ice	113.33	0.179	-0.0071	0.1758	0.1759
50 mph 90 deg with 1.00 in Radial Ice	120.00	0.200	-0.0075	0.1878	0.1878
50 mph 90 deg with 1.00 in Radial Ice	126.67	0.223	-0.0096	0.1973	0.1973
50 mph 90 deg with 1.00 in Radial Ice	133.33	0.246	-0.0117	0.2044	0.2047
50 mph 90 deg with 1.00 in Radial Ice	140.25	0.271	-0.0145	0.2304	0.2305
50 mph 90 deg with 1.00 in Radial Ice	145.19	0.290	-0.0192	0.2303	0.2311
50 mph 90 deg with 1.00 in Radial Ice	155.06	0.331	-0.0343	0.2224	0.2251
50 mph 90 deg with 1.00 in Radial Ice	164.20	0.371	-0.0349	0.2563	0.2587
50 mph 90 deg with 1.00 in Radial Ice	172.10	0.408	-0.0351	0.2639	0.2663
50 mph 90 deg with 1.00 in Radial Ice	180.00	0.444	-0.0353	0.2437	0.2462
Seismic Normal M1	20.00	0.001	0.0002	0.0057	0.0057
Seismic Normal M1	30.00	0.002	0.0003	0.0076	0.0076
Seismic Normal M1	50.00	0.006	0.0005	0.0122	0.0122
Seismic Normal M1	70.00	0.011	0.0007	0.0171	0.0171
Seismic Normal M1	86.67	0.016	0.0008	0.0222	0.0222
Seismic Normal M1	93.33	0.019	0.0008	0.0243	0.0243
Seismic Normal M1	100.00	0.022	0.0009	0.0264	0.0264
Seismic Normal M1	113.33	0.029	0.0010	0.0303	0.0303
Seismic Normal M1	120.00	0.032	0.0010	0.0323	0.0323
Seismic Normal M1	126.67	0.036	0.0010	0.0349	0.0349
Seismic Normal M1	133.33	0.040	0.0009	0.0365	0.0365
Seismic Normal M1	140.25	0.045	0.0010	0.0427	0.0427
Seismic Normal M1	145.19	0.048	0.0006	0.0410	0.0410
Seismic Normal M1	155.06	0.056	0.0000	0.0445	0.0445
Seismic Normal M1	164.20	0.063	0.0001	0.0467	0.0467
Seismic Normal M1	172.10	0.070	0.0000	0.0484	0.0484
Seismic Normal M1	180.00	0.076	0.0001	0.0480	0.0480
Seismic 60 deg M1	20.00	0.001	-0.0002	0.0057	0.0057
Seismic 60 deg M1	30.00	0.002	-0.0003	0.0074	0.0074
Seismic 60 deg M1	50.00	0.005	-0.0005	0.0122	0.0122
Seismic 60 deg M1	70.00	0.011	-0.0007	0.0171	0.0171
Seismic 60 deg M1	86.67	0.016	-0.0008	0.0221	0.0221
Seismic 60 deg M1	93.33	0.019	-0.0008	0.0244	0.0244
Seismic 60 deg M1	100.00	0.022	-0.0009	0.0264	0.0264
Seismic 60 deg M1	113.33	0.028	-0.0010	0.0304	0.0304
Seismic 60 deg M1	120.00	0.032	-0.0010	0.0321	0.0321

Site Number: 302522

Code:

ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Seismic 60 deg M1	126.67	0.036	-0.0010	0.0351	0.0351
Seismic 60 deg M1	133.33	0.040	-0.0009	0.0362	0.0362
Seismic 60 deg M1	140.25	0.045	-0.0010	0.0438	0.0438
Seismic 60 deg M1	145.19	0.048	-0.0006	0.0405	0.0405
Seismic 60 deg M1	155.06	0.056	0.0000	0.0440	0.0440
Seismic 60 deg M1	164.20	0.063	0.0001	0.0469	0.0469
Seismic 60 deg M1	172.10	0.070	0.0000	0.0482	0.0482
Seismic 60 deg M1	180.00	0.076	0.0000	0.0478	0.0478
Seismic 90 deg M1	20.00	0.001	-0.0003	0.0057	0.0057
Seismic 90 deg M1	30.00	0.002	-0.0004	0.0075	0.0075
Seismic 90 deg M1	50.00	0.006	-0.0006	0.0122	0.0122
Seismic 90 deg M1	70.00	0.011	-0.0008	0.0171	0.0171
Seismic 90 deg M1	86.67	0.016	-0.0009	0.0222	0.0222
Seismic 90 deg M1	93.33	0.019	-0.0010	0.0244	0.0244
Seismic 90 deg M1	100.00	0.022	-0.0010	0.0264	0.0264
Seismic 90 deg M1	113.33	0.029	-0.0011	0.0304	0.0304
Seismic 90 deg M1	120.00	0.032	-0.0011	0.0323	0.0323
Seismic 90 deg M1	126.67	0.036	-0.0011	0.0350	0.0350
Seismic 90 deg M1	133.33	0.040	-0.0011	0.0366	0.0366
Seismic 90 deg M1	140.25	0.045	-0.0011	0.0430	0.0430
Seismic 90 deg M1	145.19	0.048	-0.0007	0.0410	0.0410
Seismic 90 deg M1	155.06	0.056	0.0000	0.0445	0.0445
Seismic 90 deg M1	164.20	0.063	0.0001	0.0471	0.0471
Seismic 90 deg M1	172.10	0.070	0.0000	0.0483	0.0483
Seismic 90 deg M1	180.00	0.076	0.0000	0.0479	0.0479
Seismic (Reduced DL) Normal M1	20.00	0.001	0.0002	0.0055	0.0055
Seismic (Reduced DL) Normal M1	30.00	0.002	0.0003	0.0075	0.0075
Seismic (Reduced DL) Normal M1	50.00	0.006	0.0005	0.0121	0.0121
Seismic (Reduced DL) Normal M1	70.00	0.011	0.0007	0.0171	0.0171
Seismic (Reduced DL) Normal M1	86.67	0.016	0.0008	0.0221	0.0221
Seismic (Reduced DL) Normal M1	93.33	0.019	0.0008	0.0242	0.0242
Seismic (Reduced DL) Normal M1	100.00	0.022	0.0009	0.0263	0.0263
Seismic (Reduced DL) Normal M1	113.33	0.028	0.0010	0.0302	0.0302
Seismic (Reduced DL) Normal M1	120.00	0.032	0.0010	0.0321	0.0321
Seismic (Reduced DL) Normal M1	126.67	0.036	0.0010	0.0347	0.0348
Seismic (Reduced DL) Normal M1	133.33	0.040	0.0009	0.0363	0.0363
Seismic (Reduced DL) Normal M1	140.25	0.045	0.0010	0.0427	0.0427
Seismic (Reduced DL) Normal M1	145.19	0.048	0.0006	0.0408	0.0408
Seismic (Reduced DL) Normal M1	155.06	0.056	0.0000	0.0443	0.0443
Seismic (Reduced DL) Normal M1	164.20	0.063	0.0001	0.0466	0.0466
Seismic (Reduced DL) Normal M1	172.10	0.070	0.0000	0.0481	0.0481
Seismic (Reduced DL) Normal M1	180.00	0.076	0.0001	0.0478	0.0478
Seismic (Reduced DL) 60 deg M1	20.00	0.001	-0.0002	0.0054	0.0054
Seismic (Reduced DL) 60 deg M1	30.00	0.002	-0.0003	0.0073	0.0074
Seismic (Reduced DL) 60 deg M1	50.00	0.005	-0.0005	0.0120	0.0120
Seismic (Reduced DL) 60 deg M1	70.00	0.011	-0.0006	0.0171	0.0171
Seismic (Reduced DL) 60 deg M1	86.67	0.016	-0.0008	0.0221	0.0221
Seismic (Reduced DL) 60 deg M1	93.33	0.019	-0.0008	0.0242	0.0242
Seismic (Reduced DL) 60 deg M1	100.00	0.022	-0.0009	0.0263	0.0263
Seismic (Reduced DL) 60 deg M1	113.33	0.028	-0.0010	0.0302	0.0302
Seismic (Reduced DL) 60 deg M1	120.00	0.032	-0.0010	0.0319	0.0319
Seismic (Reduced DL) 60 deg M1	126.67	0.036	-0.0010	0.0349	0.0349
Seismic (Reduced DL) 60 deg M1	133.33	0.040	-0.0009	0.0361	0.0361
Seismic (Reduced DL) 60 deg M1	140.25	0.045	-0.0010	0.0435	0.0435
Seismic (Reduced DL) 60 deg M1	145.19	0.048	-0.0006	0.0404	0.0404
Seismic (Reduced DL) 60 deg M1	155.06	0.056	0.0000	0.0437	0.0437
Seismic (Reduced DL) 60 deg M1	164.20	0.063	0.0001	0.0467	0.0467
Seismic (Reduced DL) 60 deg M1	172.10	0.070	0.0000	0.0480	0.0480
Seismic (Reduced DL) 60 deg M1	180.00	0.076	0.0000	0.0477	0.0477
Seismic (Reduced DL) 90 deg M1	20.00	0.001	-0.0003	0.0054	0.0055
Seismic (Reduced DL) 90 deg M1	30.00	0.002	-0.0004	0.0075	0.0075
Seismic (Reduced DL) 90 deg M1	50.00	0.006	-0.0006	0.0120	0.0120

Site Number: 302522

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ANSI/TIA-222-H

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Site Name: Redding, CT

Engineering Number: 13699598_C3_03

7/28/2021 6:19:48 AM

Customer: DISH WIRELESS L.L.C.

Seismic (Reduced DL) 90 deg M1	70.00	0.011	-0.0008	0.0171	0.0171
Seismic (Reduced DL) 90 deg M1	86.67	0.016	-0.0009	0.0221	0.0221
Seismic (Reduced DL) 90 deg M1	93.33	0.019	-0.0010	0.0242	0.0242
Seismic (Reduced DL) 90 deg M1	100.00	0.022	-0.0010	0.0263	0.0263
Seismic (Reduced DL) 90 deg M1	113.33	0.028	-0.0011	0.0302	0.0302
Seismic (Reduced DL) 90 deg M1	120.00	0.032	-0.0011	0.0321	0.0321
Seismic (Reduced DL) 90 deg M1	126.67	0.036	-0.0011	0.0349	0.0349
Seismic (Reduced DL) 90 deg M1	133.33	0.040	-0.0011	0.0364	0.0365
Seismic (Reduced DL) 90 deg M1	140.25	0.045	-0.0011	0.0427	0.0427
Seismic (Reduced DL) 90 deg M1	145.19	0.048	-0.0007	0.0408	0.0408
Seismic (Reduced DL) 90 deg M1	155.06	0.056	0.0000	0.0443	0.0443
Seismic (Reduced DL) 90 deg M1	164.20	0.063	0.0001	0.0469	0.0469
Seismic (Reduced DL) 90 deg M1	172.10	0.070	0.0000	0.0481	0.0481
Seismic (Reduced DL) 90 deg M1	180.00	0.076	0.0000	0.0477	0.0477
Serviceability - 60 mph Wind Normal	20.00	0.007	0.0010	0.0324	0.0324
Serviceability - 60 mph Wind Normal	30.00	0.013	0.0012	0.0441	0.0441
Serviceability - 60 mph Wind Normal	50.00	0.033	0.0014	0.0680	0.0680
Serviceability - 60 mph Wind Normal	70.00	0.061	0.0013	0.0943	0.0943
Serviceability - 60 mph Wind Normal	86.67	0.092	0.0009	0.1194	0.1194
Serviceability - 60 mph Wind Normal	93.33	0.106	0.0005	0.1292	0.1292
Serviceability - 60 mph Wind Normal	100.00	0.122	0.0001	0.1394	0.1394
Serviceability - 60 mph Wind Normal	113.33	0.156	0.0008	0.1586	0.1586
Serviceability - 60 mph Wind Normal	120.00	0.175	0.0015	0.1632	0.1632
Serviceability - 60 mph Wind Normal	126.67	0.195	0.0044	0.1795	0.1796
Serviceability - 60 mph Wind Normal	133.33	0.216	0.0079	0.1834	0.1835
Serviceability - 60 mph Wind Normal	140.25	0.240	0.0112	0.2151	0.2151
Serviceability - 60 mph Wind Normal	145.19	0.257	0.0206	0.1988	0.1998
Serviceability - 60 mph Wind Normal	155.06	0.294	0.0443	0.2480	0.2520
Serviceability - 60 mph Wind Normal	164.20	0.331	0.0481	0.2390	0.2438
Serviceability - 60 mph Wind Normal	172.10	0.365	0.0483	0.2491	0.2538
Serviceability - 60 mph Wind Normal	180.00	0.399	0.0484	0.2834	0.2875
Serviceability - 60 mph Wind 60 deg	20.00	0.006	-0.0016	0.0306	0.0307
Serviceability - 60 mph Wind 60 deg	30.00	0.013	-0.0020	0.0423	0.0423
Serviceability - 60 mph Wind 60 deg	50.00	0.031	-0.0032	0.0656	0.0656
Serviceability - 60 mph Wind 60 deg	70.00	0.059	-0.0044	0.0914	0.0915
Serviceability - 60 mph Wind 60 deg	86.67	0.089	-0.0055	0.1158	0.1158
Serviceability - 60 mph Wind 60 deg	93.33	0.103	-0.0059	0.1252	0.1253
Serviceability - 60 mph Wind 60 deg	100.00	0.118	-0.0063	0.1351	0.1352
Serviceability - 60 mph Wind 60 deg	113.33	0.152	-0.0071	0.1529	0.1530
Serviceability - 60 mph Wind 60 deg	120.00	0.170	-0.0075	0.1619	0.1620
Serviceability - 60 mph Wind 60 deg	126.67	0.189	-0.0095	0.1730	0.1732
Serviceability - 60 mph Wind 60 deg	133.33	0.210	0.0119	0.1784	0.1784
Serviceability - 60 mph Wind 60 deg	140.25	0.232	0.0153	0.2069	0.2074
Serviceability - 60 mph Wind 60 deg	145.19	0.249	0.0231	0.2018	0.2022
Serviceability - 60 mph Wind 60 deg	155.06	0.286	0.0447	0.2061	0.2066
Serviceability - 60 mph Wind 60 deg	164.20	0.322	0.0480	0.2304	0.2327
Serviceability - 60 mph Wind 60 deg	172.10	0.355	0.0492	0.2392	0.2430
Serviceability - 60 mph Wind 60 deg	180.00	0.388	0.0502	0.2310	0.2311
Serviceability - 60 mph Wind 90 deg	20.00	0.006	-0.0019	0.0320	0.0321
Serviceability - 60 mph Wind 90 deg	30.00	0.013	-0.0025	0.0428	0.0428
Serviceability - 60 mph Wind 90 deg	50.00	0.032	-0.0039	0.0665	0.0666
Serviceability - 60 mph Wind 90 deg	70.00	0.059	-0.0055	0.0921	0.0922
Serviceability - 60 mph Wind 90 deg	86.67	0.089	-0.0069	0.1166	0.1168
Serviceability - 60 mph Wind 90 deg	93.33	0.104	-0.0075	0.1260	0.1262
Serviceability - 60 mph Wind 90 deg	100.00	0.119	-0.0081	0.1360	0.1363
Serviceability - 60 mph Wind 90 deg	113.33	0.153	-0.0092	0.1536	0.1537
Serviceability - 60 mph Wind 90 deg	120.00	0.171	-0.0098	0.1645	0.1646
Serviceability - 60 mph Wind 90 deg	126.67	0.191	-0.0124	0.1735	0.1736
Serviceability - 60 mph Wind 90 deg	133.33	0.211	-0.0148	0.1800	0.1806
Serviceability - 60 mph Wind 90 deg	140.25	0.234	-0.0181	0.2045	0.2047
Serviceability - 60 mph Wind 90 deg	145.19	0.251	-0.0239	0.2070	0.2084
Serviceability - 60 mph Wind 90 deg	155.06	0.287	-0.0424	0.1939	0.1985

Site Number: 302522	Code: ANSI/TIA-222-H	© 2007 - 2021 by ATC IP LLC. All rights reserved.
Site Name: Redding, CT	Engineering Number: 13699598_C3_03	7/28/2021 6:19:48 AM
Customer: DISH WIRELESS L.L.C.		

Serviceability - 60 mph Wind 90 deg	164.20	0.324	-0.0435	0.2313	0.2354
Serviceability - 60 mph Wind 90 deg	172.10	0.357	-0.0437	0.2390	0.2429
Serviceability - 60 mph Wind 90 deg	180.00	0.390	-0.0439	0.2146	0.2191

Maximum Reactions Summary

Anchor Group	Vertical (kip)				Horizontal (kip)		Moment (kip-ft)	
	DL+WL	DL+WL+IL	UpLift	Shear	DL+WL	DL+WL+IL	DL+WL	DL+WL+IL
Base	62.55	134.32	326.01	35.19	56.77	18.79	6078.29	1925.14



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C O R P O R A T I O N

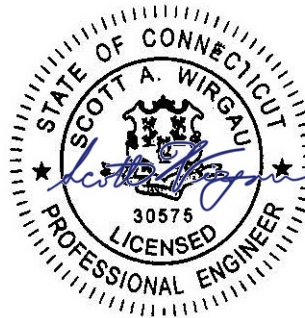
Mount Analysis Report

ATC Site Name : Redding, CT
ATC Site Number : 302522
Engineering Number : 13699598_C8_01
Mount Elevation : 76 ft
Carrier : Dish Wireless L.L.C.
Carrier Site Name : NJJER01161A
Carrier Site Number : NJJER01161A
Site Location : 100 Old Redding Road
Redding, CT 06896-2721
41.2871128 , -73.43820646
County : Fairfield
Date : March 25, 2022
Max Usage : 77%
Result : Pass

Prepared By:
Brittany Hucks
Structural Engineer I

Brittany Hucks

Reviewed By:



COA: PEC.0001553



Table of Contents

Introduction	1
Supporting Documents	1
Analysis	1
Conclusion	1
Application Loading.....	2
Structure Usages.....	2
Mount Layout	3
Equipment Layout	4
Standard Conditions.....	5
Calculations	Attached



Introduction

The purpose of this report is to summarize results of the mount analysis performed for Dish Wireless L.L.C. at 76 ft.

Supporting Documents

Specifications Sheet	Commscope MTC3975083, dated March 17, 2021
Radio Frequency Data Sheet	RFDS ID #NJER01161A, dated February 10, 2021
Reference Photos	Site photos from 2021

Analysis

This mount was analyzed using American Tower Corporation's Mount Analysis Program and RISA-3D

Basic Wind Speed:	116 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00" radial ice concurrent
Codes:	ANSI/TIA-222-H
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height (H):	0 ft
Crest Length (L):	0 ft
Spectral Response:	Ss = 0.235, S1 = 0.057
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs, Lv = 250 lbs

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above. The mount can support the equipment as described in this report.

- Analysis is based on new Commscope MTC3975083 mount.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

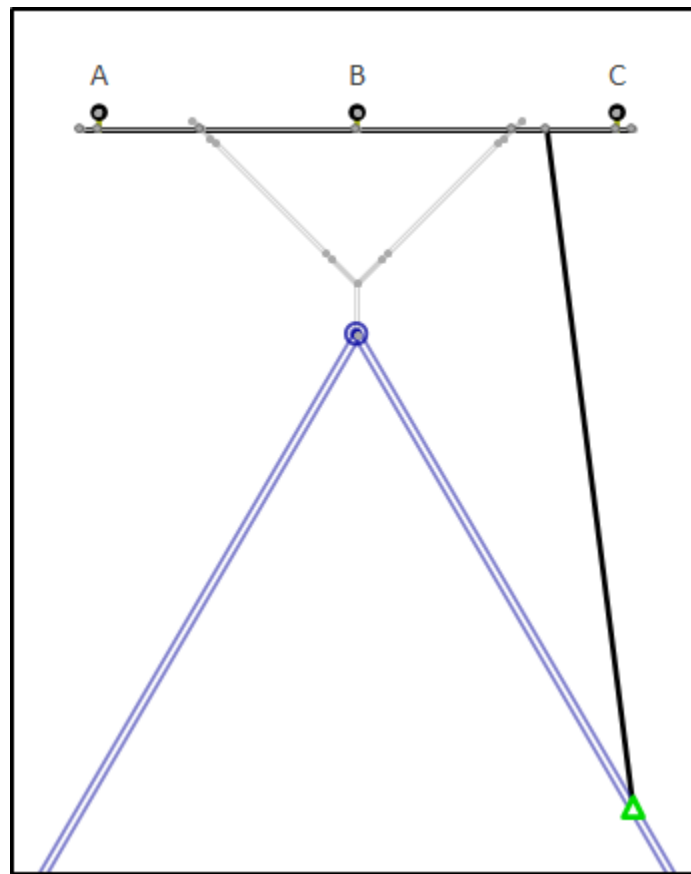
**Application Loading**

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
76.0	76.0	3	JMA Wireless MX08FRO665-21
		1	Commscope RDIDC-9181-PF-48
		3	Fujitsu TA08025-B605
		3	Fujitsu TA08025-B604

Structure Usages

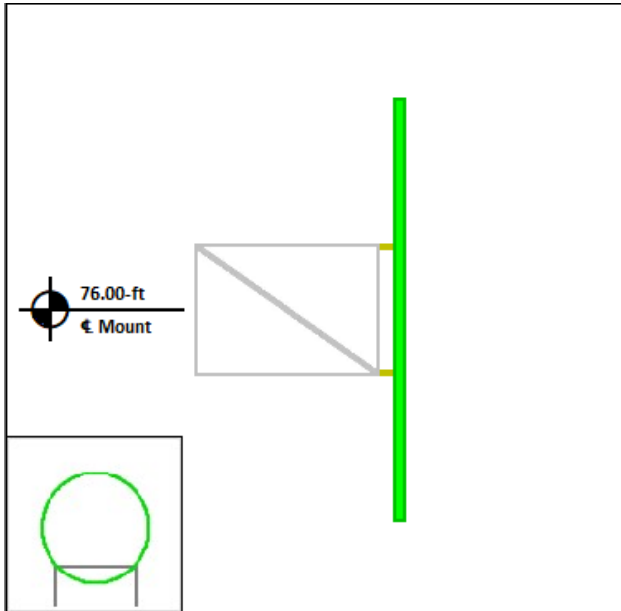
Structural Component	Controlling Usage	Pass/Fail
Horizontals	68%	Pass
Verticals	77%	Pass
Diagonals	23%	Pass
Tie-Backs	6%	Pass
Mount Pipes	8%	Pass

Mount Layout

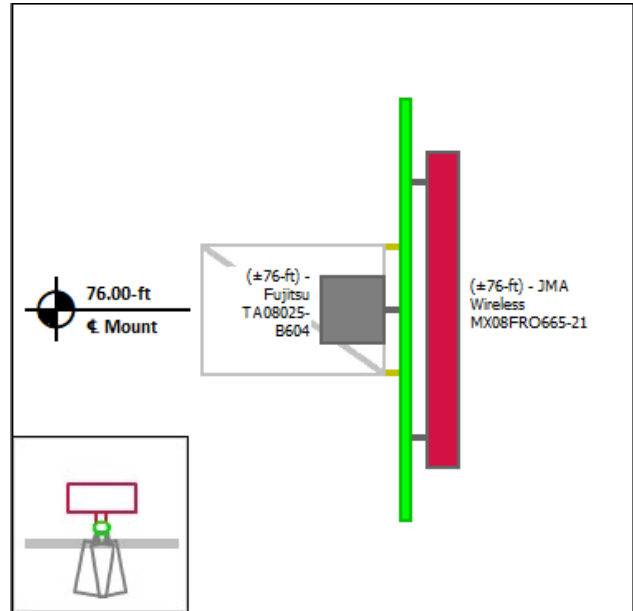


Equipment Layout

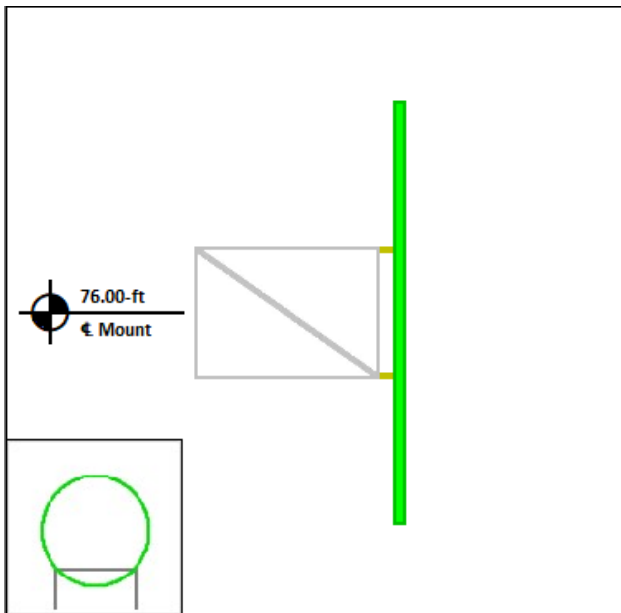
Mount Pipe A



Mount Pipe B



Mount Pipe C





Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding equipment, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

All connections are to be verified for condition and tightness by the installation contractor preceding any changes to the appurtenance mounting system and/or equipment attached to it.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

Installation of all equipment and steel should be confirmed not to cause tower conflicts nor impede the tower climbing pegs.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Site Number: 302522
 Project Number: 13699598_C8_01
 Carrier: Dish Wireless L.L.C.
 Mount Elevation: 76 ft
 Date: 3/25/2022

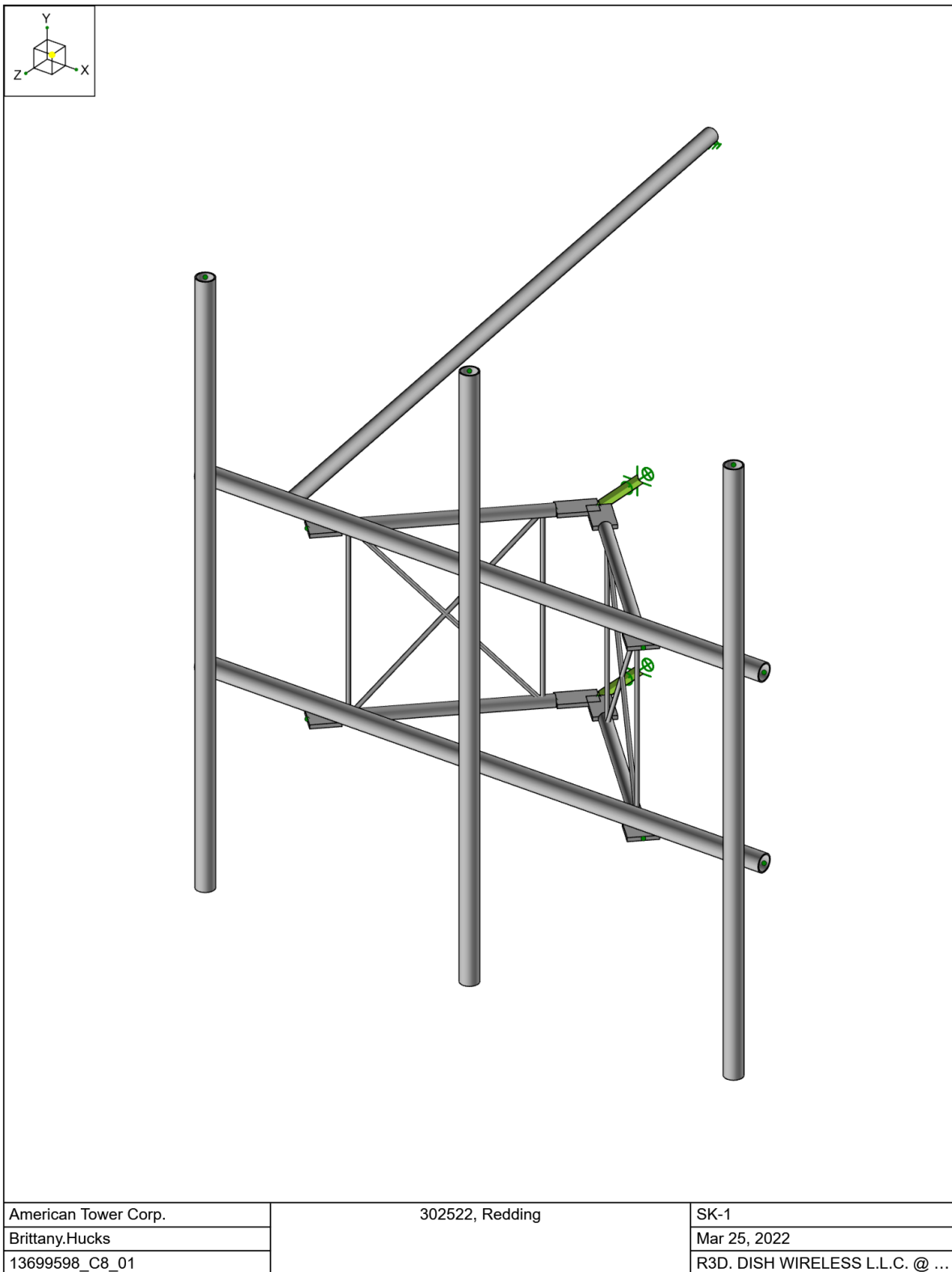
Mount Analysis Force Calculations

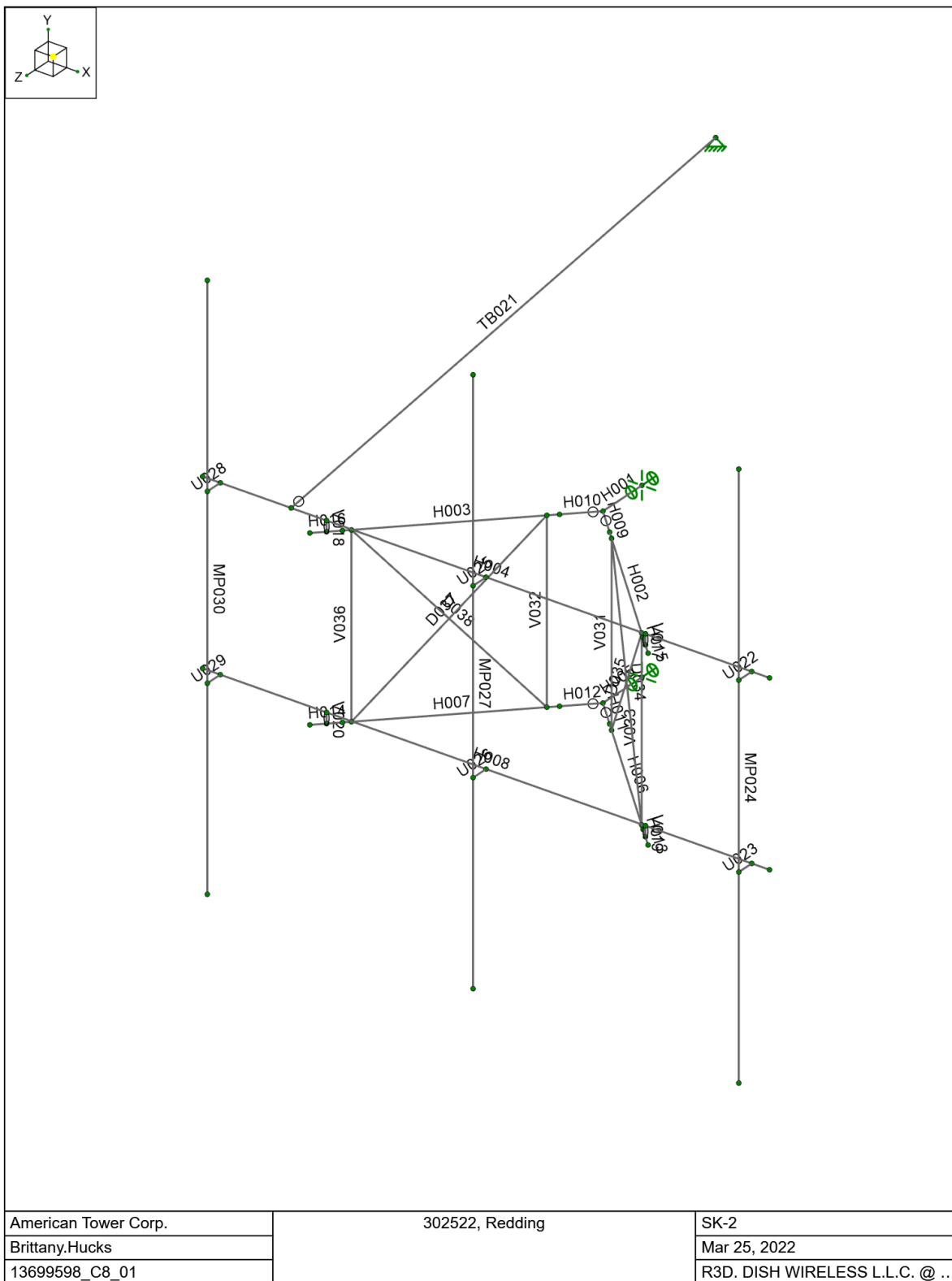
Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	0.91	
Topographic Factor	K_{zt}	1.00	
Rooftop Wind Speed-up Factor	K_s	1.00	
Shielding Factor	K_a	0.90	
Ground Elevation Factor	K_e	0.98	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	116	mph
Velocity Pressure	q_z	29.2	psf
Height Escalation Factor	K_{iz}	1.09	
Thickness of Radial Glaze Ice	T_{iz}	1.09	in

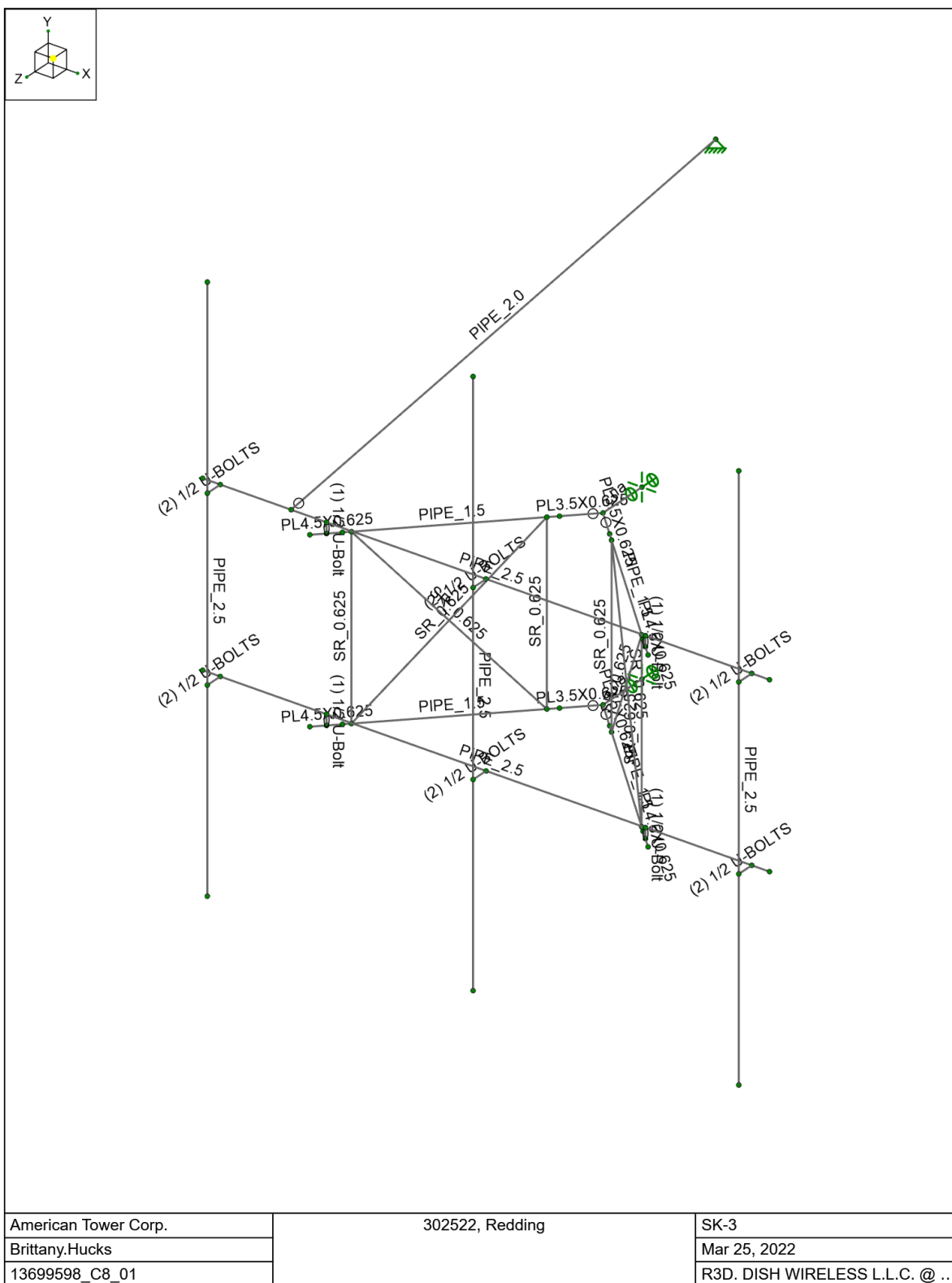
Seismic Load Calculations			
Short Period DSRAP	S_{Ds}	0.251	
1 Second DSRAP	S_{D1}	0.091	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_s	0.125	
Amplification Factor	A	1.0	
Total Weight	W	557.4	lbs
Total Shear Force	V_s	69.9	lbs
Horizontal Seismic Load	E_h	69.9	lbs
Vertical Seismic Load	E_v	27.9	lbs

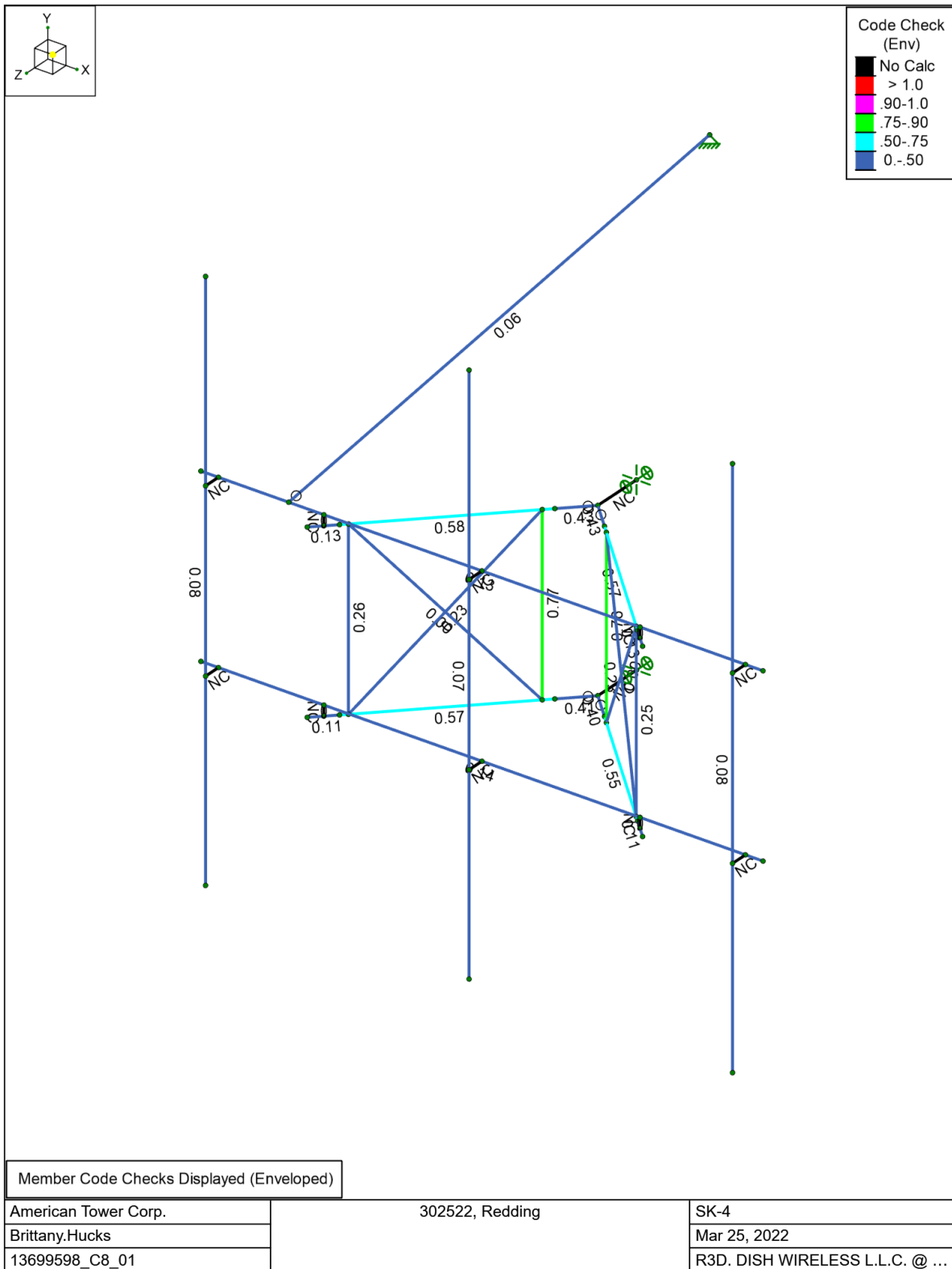
Antenna Calculations (Elevations per Application/RFDS)*									
Equipment	Height	Width	Depth	Weight	EPA_N	EPA_T	EPA_{Ni}	EPA_{Ti}	
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft	
JMA Wireless MX08FRO665-21	72.0	20.0	8.0	64.5	12.49	2.48	14.26	3.25	
Commscope RDIDC-9181-PF-48	16.0	14.0	8.0	21.9	N/A	N/A	N/A	N/A	
Fujitsu TA08025-B605	15.7	15.0	9.1	75.0	1.96	1.19	2.56	1.68	
Fujitsu TA08025-B604	15.7	15.0	7.9	63.9	1.96	1.03	2.56	1.50	

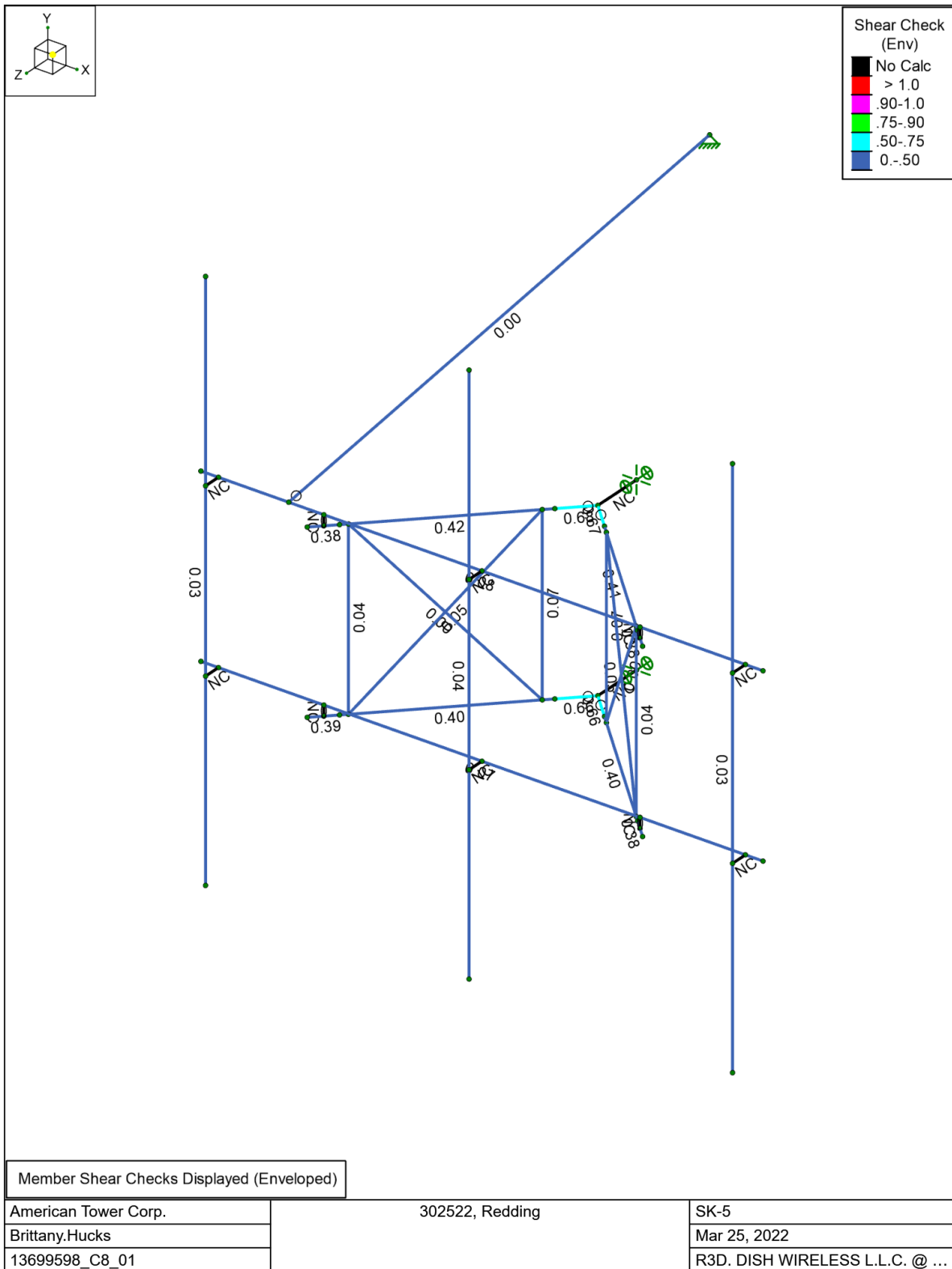
* Equipment with EPA values N/A were not considered in the mount analysis













Company : American Tower Corp.
 Designer : Brittany.Hucks
 Job Number : 13699598_C8_01
 Model Name : 302522, Redding

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Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
1	D	DL	-1		4	
2	Di	IL			4	26
3	W 0	WL			4	37
4	W 30	WL			8	73
5	W 60	WL			8	73
6	W 90	WL			4	38
7	W 120	WL			8	73
8	W 150	WL			8	73
9	W 180	WL			4	37
10	W 210	WL			8	73
11	W 240	WL			8	73
12	W 270	WL			4	38
13	W 300	WL			8	73
14	W 330	WL			8	73
15	Wi 0	WL			4	37
16	Wi 30	WL			8	73
17	Wi 60	WL			8	73
18	Wi 90	WL			4	38
19	Wi 120	WL			8	73
20	Wi 150	WL			8	73
21	Wi 180	WL			4	37
22	Wi 210	WL			8	73
23	Wi 240	WL			8	73
24	Wi 270	WL			4	38
25	Wi 300	WL			8	73
26	Wi 330	WL			8	73
27	Ws 0	WL			4	37
28	Ws 30	WL			8	73
29	Ws 60	WL			8	73
30	Ws 90	WL			4	38
31	Ws 120	WL			8	73
32	Ws 150	WL			8	73
33	Ws 180	WL			4	37
34	Ws 210	WL			8	73
35	Ws 240	WL			8	73
36	Ws 270	WL			4	38
37	Ws 300	WL			8	73
38	Ws 330	WL			8	73
39	Ev -Y	ELY				26
40	Eh -Z	ELZ				26
41	Eh -X	ELX				26
42	Lv (1)	LL			1	
43	Lv (2)	LL			1	
44	Lv (3)	LL			1	
45	Lv (4)	LL			1	
46	Lv (5)	LL			1	
47	Lv (6)	LL			1	
48	Lv (7)	LL			1	
49	Lv (8)	LL			1	
50	Lv (9)	LL			1	
51	Lv (10)	LL			1	
52	Lv (11)	LL		1		
53	Lv (12)	LL		1		
54	Lv (13)	LL		1		
55	Lv (14)	LL		1		



Company : American Tower Corp.
 Designer : Brittany.Hucks
 Job Number : 13699598_C8_01
 Model Name : 302522, Redding

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Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
56	Lm (1)	LL		1		
57	Lm (2)	LL		1		
58	Lm (3)	LL		1		

Node Boundary Conditions

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	Z Rot [k-in/rad]
1	N001	Reaction	Reaction	Reaction	Reaction
2	N007	Reaction	Reaction	Reaction	Reaction
3	N030	Reaction	Reaction	Reaction	

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N001	N002		RIGID	None	None	RIGID	Typical
2	H002	N019	N022		PIPE 1.5	Beam	None	A500 Gr. C	Typical
3	H003	N013	N016		PIPE 1.5	Beam	None	A500 Gr. C	Typical
4	H004	N005	N006		PIPE 2.5	Beam	None	A500 Gr. C	Typical
5	H005	N007	N008		RIGID	None	None	RIGID	Typical
6	H006	N020	N021		PIPE 1.5	Beam	None	A500 Gr. C	Typical
7	H007	N014	N015		PIPE 1.5	Beam	None	A500 Gr. C	Typical
8	H008	N011	N012		PIPE 2.5	Beam	None	A500 Gr. C	Typical
9	H009	N002	N019	90	PL3.5X0.625	Beam	None	A36	Typical
10	H010	N002	N013	90	PL3.5X0.625	Beam	None	A36	Typical
11	H011	N008	N020	90	PL3.5X0.625	Beam	None	A36	Typical
12	H012	N008	N014	90	PL3.5X0.625	Beam	None	A36	Typical
13	H013	N021	N024	90	PL4.5X0.625	Beam	None	A36	Typical
14	H014	N015	N018	90	PL4.5X0.625	Beam	None	A36	Typical
15	H015	N022	N023	90	PL4.5X0.625	Beam	None	A36	Typical
16	H016	N016	N017	90	PL4.5X0.625	Beam	None	A36	Typical
17	V017	N025	N003		(1) 1/2 U-Bolt	Column	None	A36	Typical
18	V018	N026	N004		(1) 1/2 U-Bolt	Column	None	A36	Typical
19	V019	N027	N009		(1) 1/2 U-Bolt	Column	None	A36	Typical
20	V020	N028	N010		(1) 1/2 U-Bolt	Column	None	A36	Typical
21	TB021	N030	N029		PIPE 2.0	Beam	None	A500 Gr. C	Typical
22	U022	N031	N034		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
23	U023	N035	N036		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
24	MP024	N037	N038		PIPE 2.5	Column	None	A500 Gr. C	Typical
25	U025	N033	N039		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
26	U026	N040	N041		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
27	MP027	N042	N043		PIPE 2.5	Column	None	A500 Gr. C	Typical
28	U028	N032	N044		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
29	U029	N045	N046		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
30	MP030	N047	N048		PIPE 2.5	Column	None	A500 Gr. C	Typical
31	V031	N050	N049		SR 0.625	Column	None	A36	Typical
32	V032	N052	N051		SR 0.625	Column	None	A36	Typical
33	V033	N053	N054		SR 0.625	Column	None	A36	Typical
34	D034	N053	N049		SR 0.625	Column	None	A36	Typical
35	D035	N050	N054		SR 0.625	Column	None	A36	Typical
36	V036	N056	N055		SR 0.625	Column	None	A36	Typical
37	D037	N056	N051		SR 0.625	Column	None	A36	Typical
38	D038	N052	N055		SR 0.625	Column	None	A36	Typical



Company : American Tower Corp.
 Designer : Brittany.Hucks
 Job Number : 13699598_C8_01
 Model Name : 302522, Redding

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Member Advanced Data

	Label	I Release	J Release	T/C Only	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001				Yes	** NA **		None
2	H002				Yes	N/A		None
3	H003				Yes	N/A		None
4	H004				Yes	N/A		None
5	H005				Yes	** NA **		None
6	H006				Yes	N/A		None
7	H007				Yes	N/A		None
8	H008				Yes	N/A		None
9	H009	OOOOXO			Yes	Default		None
10	H010	OOOOXO			Yes	Default		None
11	H011	OOOOXO			Yes	Default		None
12	H012	OOOOXO			Yes	Default		None
13	H013				Yes	N/A		None
14	H014				Yes	N/A		None
15	H015				Yes	N/A		None
16	H016				Yes	N/A		None
17	V017	OOOXOO			Yes	** NA **	Exclude	None
18	V018	OOOXOO			Yes	** NA **	Exclude	None
19	V019	OOOXOO			Yes	** NA **	Exclude	None
20	V020	OOOXOO			Yes	** NA **	Exclude	None
21	TB021		BenPIN		Yes	N/A		None
22	U022				Yes	N/A	Exclude	None
23	U023				Yes	N/A	Exclude	None
24	MP024				Yes	** NA **		None
25	U025				Yes	N/A	Exclude	None
26	U026				Yes	N/A	Exclude	None
27	MP027				Yes	** NA **		None
28	U028				Yes	N/A	Exclude	None
29	U029				Yes	N/A	Exclude	None
30	MP030				Yes	** NA **		None
31	V031				Yes	** NA **		None
32	V032				Yes	** NA **		None
33	V033				Yes	** NA **		None
34	D034			Tension Only	Yes	** NA **		None
35	D035			Tension Only	Yes	** NA **		None
36	V036				Yes	** NA **		None
37	D037			Tension Only	Yes	** NA **		None
38	D038			Tension Only	Yes	** NA **		None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
1	H002	PIPE 1.5	30				Lbyy	0.8	1	Lateral
2	H003	PIPE 1.5	30				Lbyy	0.8	1	Lateral
3	H004	PIPE 2.5	96				Lbyy	1	1	Lateral
4	H006	PIPE 1.5	30				Lbyy	0.8	1	Lateral
5	H007	PIPE 1.5	30				Lbyy	0.8	1	Lateral
6	H008	PIPE 2.5	96				Lbyy	1	1	Lateral
7	H009	PL3.5X0.625	6				Lbyy	2.1	2.1	Lateral
8	H010	PL3.5X0.625	6				Lbyy	2.1	2.1	Lateral
9	H011	PL3.5X0.625	6				Lbyy	2.1	2.1	Lateral
10	H012	PL3.5X0.625	6				Lbyy	2.1	2.1	Lateral
11	H013	PL4.5X0.625	4.5				Lbyy	2.1	2.1	Lateral
12	H014	PL4.5X0.625	4.5				Lbyy	2.1	2.1	Lateral
13	H015	PL4.5X0.625	4.5				Lbyy	2.1	2.1	Lateral



Company : American Tower Corp.
 Designer : Brittany.Hucks
 Job Number : 13699598_C8_01
 Model Name : 302522, Redding

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Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
14	H016	PL4.5X0.625	4.5			Lbyy		2.1	2.1	Lateral
15	V017	(1) 1/2 U-Bolt	1.75			Lbyy		0.65	0.65	Lateral
16	V018	(1) 1/2 U-Bolt	1.75			Lbyy		0.65	0.65	Lateral
17	V019	(1) 1/2 U-Bolt	1.75			Lbyy		0.65	0.65	Lateral
18	V020	(1) 1/2 U-Bolt	1.75			Lbyy		0.65	0.65	Lateral
19	TB021	PIPE 2.0	119.446			Lbyy		1	1	Lateral
20	U022	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
21	U023	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
22	MP024	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
23	U025	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
24	U026	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
25	MP027	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
26	U028	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
27	U029	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
28	MP030	PIPE 2.5	96	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
29	V031	SR 0.625	30			Lbyy		0.65	0.65	Lateral
30	V032	SR 0.625	30			Lbyy		0.65	0.65	Lateral
31	V033	SR 0.625	30			Lbyy		0.65	0.65	Lateral
32	D034	SR 0.625	40.361			Lbyy		0.65	0.65	Lateral
33	D035	SR 0.625	40.361			Lbyy		0.65	0.65	Lateral
34	V036	SR 0.625	30			Lbyy		0.65	0.65	Lateral
35	D037	SR 0.625	40.361			Lbyy		0.65	0.65	Lateral
36	D038	SR 0.625	40.361			Lbyy		0.65	0.65	Lateral

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [$10^{-6} F^{-1}$]	Density [lb/ft ³]	Yield [psi]	Ry	Fu [psi]	Rt
1	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2
2	A500 Gr. C	2.9e+07	1.115e+07	0.3	0.65	490	46000	1.4	62000	1.3
3	A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N001	max	1095.144	104	772.116	90	220.792	24	0	111	0	111	94.465	78
2		min	-1051.696	86	243.407	24	-1783.216	80	0	1	0	1	-98.333	110
3	N007	max	1048.649	80	610.897	84	1752.526	88	0	111	0	111	91.442	78
4		min	-1091.694	110	221.054	15	244.459	20	0	1	0	1	-95.135	110
5	N030	max	96.923	18	395.729	75	603.594	4	0	111	0	111	0	111
6		min	-97.339	12	14.849	16	-603.601	10	0	1	0	1	0	1
7	Totals:	max	609.967	6	1399.254	109	742.221	14						
8		min	-609.967	12	486.94	18	-742.221	20						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	H002	PIPE 1.5	0.569	1.563	84	0.414	0	77	26562.555	31008.6	1452.45	1452.45	2.095	H3-6	
2	H003	PIPE 1.5	0.583	1.563	104	0.418	0	110	26562.555	31008.6	1452.45	1452.45	2.096	H3-6	
3	H004	PIPE 2.5	0.131	48	96	0.077	75	107	33487.322	66654	4726.5	4726.5	1.739	H1-1b	
4	H006	PIPE 1.5	0.555	1.563	78	0.398	0	77	26562.555	31008.6	1452.45	1452.45	2.076	H3-6	
5	H007	PIPE 1.5	0.569	1.563	110	0.402	0	110	26562.555	31008.6	1452.45	1452.45	2.076	H3-6	
6	H008	PIPE 2.5	0.135	48	98	0.069	75	108	33487.322	66654	4726.5	4726.5	1.782	H1-1b	
7	H009	PL3.5X0.625	0.425	6	81	0.672	6	y	77	54826.037	70875	922.852	5167.969	1.102	H1-1b
8	H010	PL3.5X0.625	0.435	6	104	0.678	0.25	y	110	54826.037	70875	922.852	5167.969	1.101	H1-1b
9	H011	PL3.5X0.625	0.398	6	78	0.659	0.25	y	77	54826.037	70875	922.852	5167.969	1.086	H1-1b



Company : American Tower Corp.
 Designer : Brittany.Hucks
 Job Number : 13699598_C8_01
 Model Name : 302522, Redding

3/25/2022
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 Checked By : -

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
10	H012	PL3.5X0.625	0.408	6	110	0.664	6	y	110	54826.037	70875	922.852	5167.969	1.085	H1-1b
11	H013	PL4.5X0.625	0.107	0	84	0.383	0.328	y	77	78870.627	91125	1186.523	8542.969	3	H1-1b
12	H014	PL4.5X0.625	0.109	0	104	0.386	2.156	y	110	78870.627	91125	1186.523	8542.969	3	H1-1b
13	H015	PL4.5X0.625	0.126	0	82	0.379	2.156	y	76	78870.627	91125	1186.523	8542.969	3	H1-1b
14	H016	PL4.5X0.625	0.129	0	104	0.382	2.156	y	111	78870.627	91125	1186.523	8542.969	3	H1-1b
15	TB021	PIPE 2.0	0.063	59.723	6	0.004	119.446		29	9928.122	42228	2459.85	2459.85	1.136	H1-1b
16	MP024	PIPE 2.5	0.079	33	81	0.026	33		81	46563.382	66654	4726.5	4726.5	3	H1-1b
17	MP027	PIPE 2.5	0.074	33	93	0.042	33		108	46563.382	66654	4726.5	4726.5	3	H1-1b
18	MP030	PIPE 2.5	0.08	33	107	0.026	33		104	46563.382	66654	4726.5	4726.5	3	H1-1b
19	V031	SR 0.625	0.759	0	76	0.07	0		110	4378.243	9940.196	103.544	103.544	2.269	H1-1b
20	V032	SR 0.625	0.766	0	111	0.073	30		108	4378.243	9940.196	103.544	103.544	2.268	H1-1b
21	V033	SR 0.625	0.253	30	80	0.038	30		104	4378.243	9940.196	103.544	103.544	2.276	H1-1b
22	D034	SR 0.625	0.23	40.361	80	0.049	0		78	2458.567	9940.196	103.544	103.544	1.982	H1-1a*
23	D035	SR 0.625	0	40.361	111	0	40.361		111	2458.567	9940.196	103.544	103.544	1	H1-1a
24	V036	SR 0.625	0.257	30	108	0.038	0		102	4378.243	9940.196	103.544	103.544	2.276	H1-1b
25	D037	SR 0.625	0.234	40.361	108	0.05	0		110	2458.567	9940.196	103.544	103.544	1.985	H1-1a*
26	D038	SR 0.625	0	40.361	111	0	40.361		111	2458.567	9940.196	103.544	103.544	1	H1-1a

POWER DENSITY STUDY



PINNACLE TELECOM GROUP

Professional and Technical Services

ANTENNA SITE FCC RF COMPLIANCE ASSESSMENT AND REPORT FOR MUNICIPAL SUBMISSION



PREPARED FOR:

Dish Wireless, LLC

SITE ID:

NJER01161A

SITE ADDRESS:

100 Old Redding Road
Redding, CT

LATITUDE:

N 41.28708333

LONGITUDE:

W 73.43820

STRUCTURE TYPE:

LATTICE TOWER

REPORT DATE:

MARCH 8, 2022

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	3
ANTENNA AND TRANSMISSION DATA	5
COMPLIANCE ANALYSIS	12
COMPLIANCE CONCLUSION	20

CERTIFICATION

Appendix A. DOCUMENTS USED TO PREPARE THE ANALYSIS

Appendix B. BACKGROUND ON THE FCC MPE LIMIT

Appendix C. PROPOSED SIGNAGE

Appendix D. SUMMARY OF EXPERT QUALIFICATIONS

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 lattice tower located at 100 Old Redding Road in Redding, CT. Dish refers to the antenna site by the code “NJJER01161A”, 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 AT&T, Sprint, T-Mobile, Verizon Wireless, State of Connecticut, Eversource Energy Service Company, Northwest Connecticut Public Safety Comm. Center, Inc., Redding Police Department and the Town of Redding Police. 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 a mathematical analysis of RF levels resulting around the site in areas of unrestricted public access, that is, at street level around the site. The compliance analysis employs a standard FCC formula 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 7.9599 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 12 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 three Caution signs be installed six feet below the antennas. In addition, NOC Information signs are to be installed at the base of the lattice tower.
- ❑ 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:

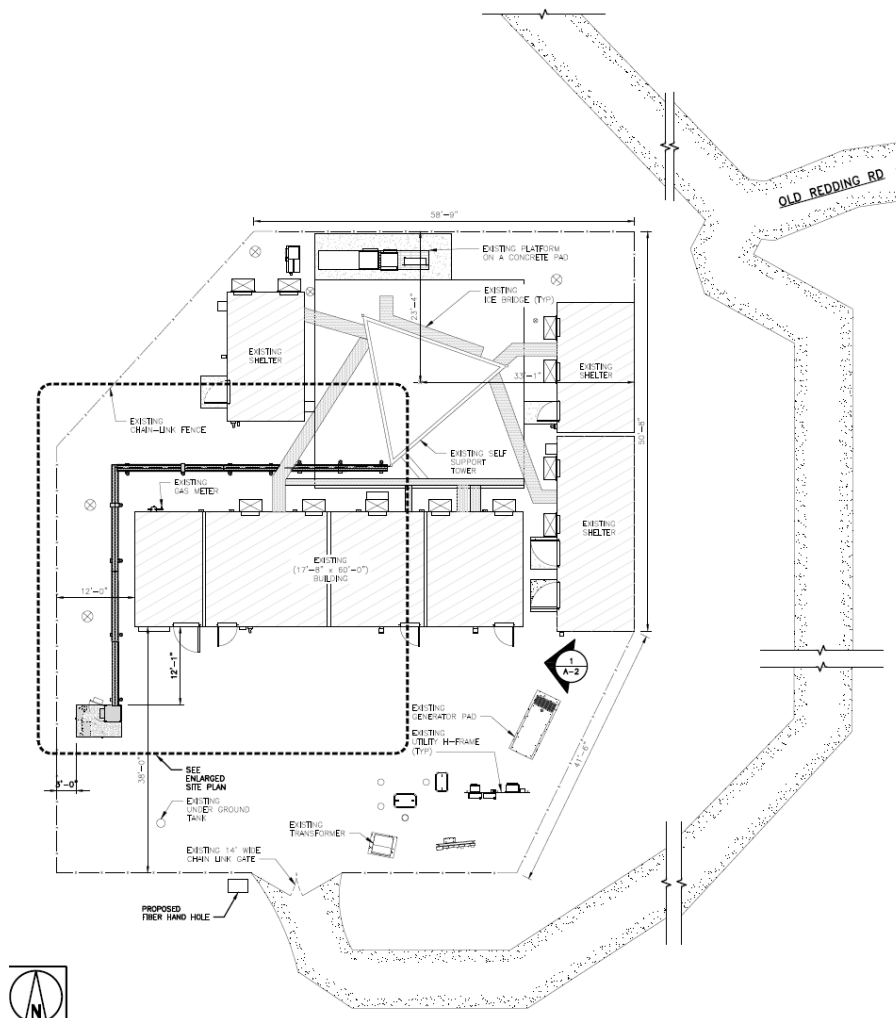
- ❑ relevant technical data on the proposed Dish antenna operations at the site, as well as on the other existing antenna operations;
- ❑ a description of the applicable FCC mathematical model for calculating RF levels, and application of the relevant technical data to that model;
- ❑ analysis of the 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.

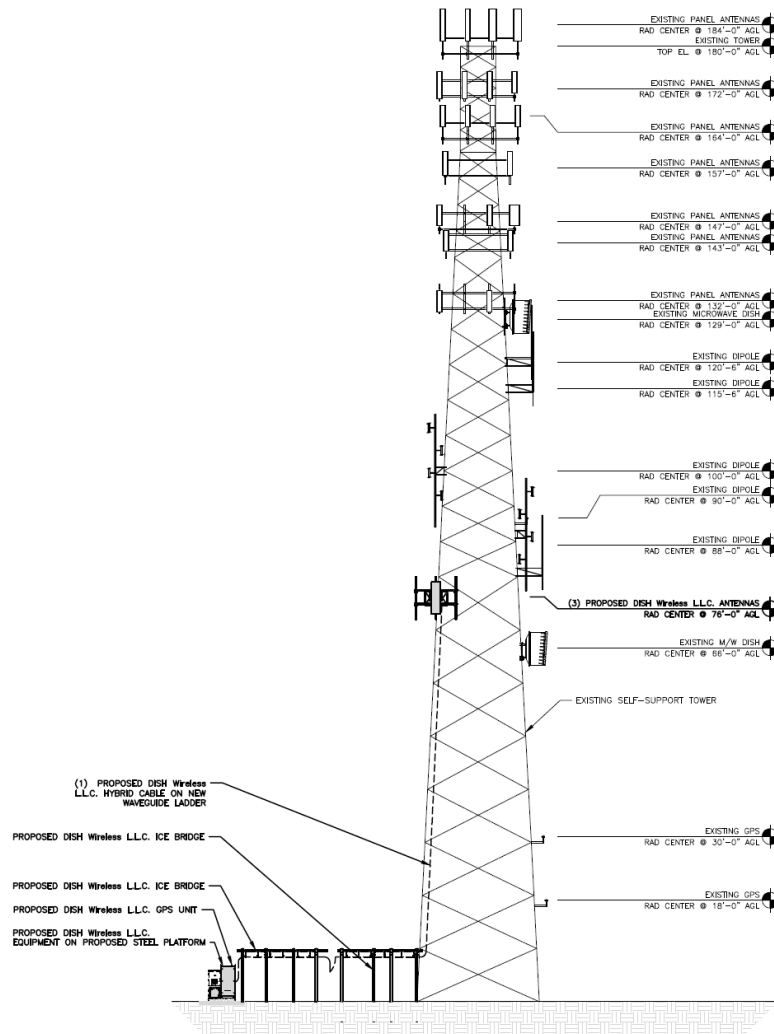
ANTENNA AND TRANSMISSION DATA

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 Input Power (watts)	Total ERP (watts)	Z AGL (ft)	Ant. Gain (dBd)	B/W	Azimuth	EDT	MDT
❶	Dish	Commscope	FFVV-65B-R2	Panel	600	6	120	2110	76	12.46	64	50	2	0
❶	Dish	Commscope	FFVV-65B-R2	Panel	2000	6	160	7396	76	16.66	67	50	2	0
❶	Dish	Commscope	FFVV-65B-R2	Panel	2100	6	160	7396	76	16.66	67	50	2	0
❷	Dish	Commscope	FFVV-65B-R2	Panel	600	6	120	2110	76	12.46	64	200	2	0
❷	Dish	Commscope	FFVV-65B-R2	Panel	2000	6	160	7396	76	16.66	67	200	2	0
❷	Dish	Commscope	FFVV-65B-R2	Panel	2100	6	160	7396	76	16.66	67	200	2	0
❸	Dish	Commscope	FFVV-65B-R2	Panel	600	6	120	2110	76	12.46	64	300	2	0
❸	Dish	Commscope	FFVV-65B-R2	Panel	2000	6	160	7396	76	16.66	67	300	2	0
❸	Dish	Commscope	FFVV-65B-R2	Panel	2100	6	160	7396	76	16.66	67	300	2	0

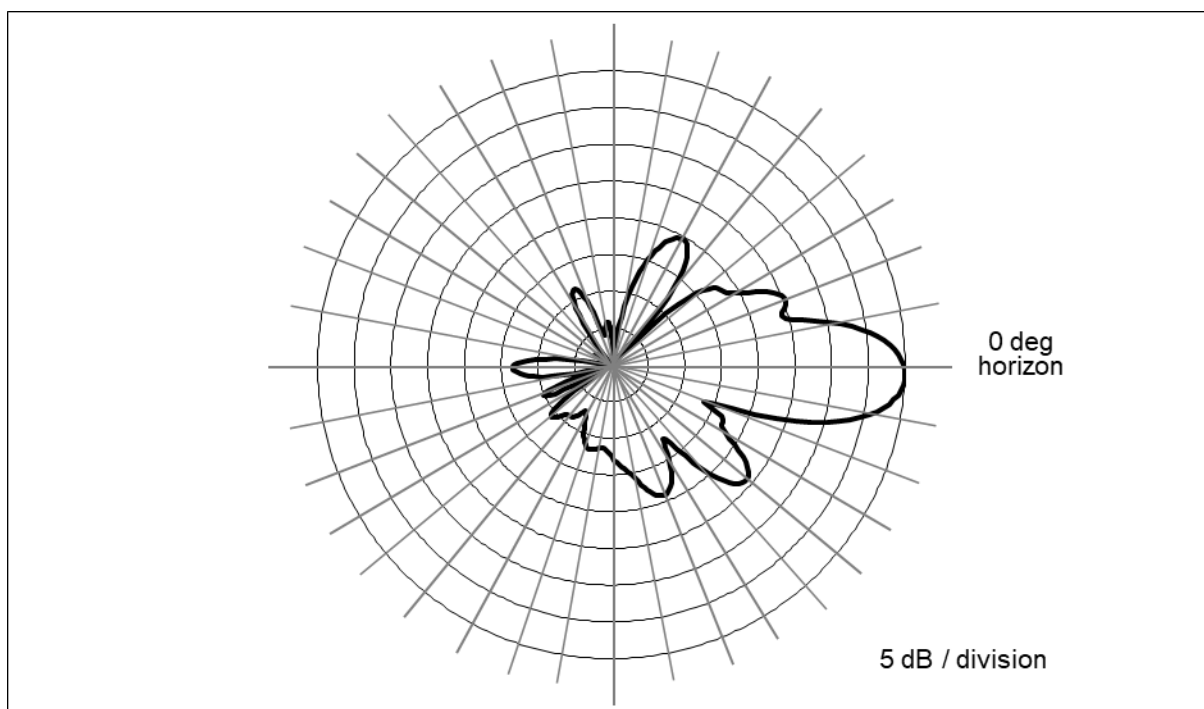
The area below the antennas, at street level, is of interest in terms of potential “uncontrolled” exposure of the general public, so the antenna’s vertical-plane emission characteristic is used in the calculations, as it is a key determinant of the relative amount of RF emissions in the “downward” direction.

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 $1/100^{\text{th}}$ of the maximum that occurs in the main beam (at 0 degrees); at 30 dB, the energy is only $1/1000^{\text{th}}$ 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. Commscope FFVV-65B-R2 – 600 MHz Vertical-plane Pattern



As noted at the outset, there are existing antenna operations to include in the compliance assessment. For each of the wireless operators, we will conservatively assume operation with maximum channel capacity and at maximum transmitter power per channel to be used by each wireless operator in each of their respective FCC-licensed frequency bands. For each of the other operators, we will rely on the transmission parameters in their respective FCC licenses.

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

<i>Carrier</i>	<i>Antenna Manufacturer</i>	<i>Antenna Model</i>	<i>Type</i>	<i>Freq (MHz)</i>	<i>Total ERP (watts)</i>	<i>Ant. Gain (dBd)</i>	<i>Azimuth</i>
AT&T	Generic	Generic	Panel	700	4945	11.26	N/A
AT&T	Generic	Generic	Panel	850	2400	11.76	N/A
AT&T	Generic	Generic	Panel	1900	5756	15.56	N/A
AT&T	Generic	Generic	Panel	2100	5890	15.66	N/A
AT&T	Generic	Generic	Panel	2300	4131	16.16	N/A
Sprint	Generic	Generic	Panel	800	2168	13.36	N/A
Sprint	Generic	Generic	Panel	1900	6168	15.86	N/A
Sprint	Generic	Generic	Panel	2500	4669	15.90	N/A
T-Mobile	Generic	Generic	Panel	600	3163	12.96	N/A
T-Mobile	Generic	Generic	Panel	700	867	13.36	N/A
T-Mobile	Generic	Generic	Panel	1900	4123	15.36	N/A
T-Mobile	Generic	Generic	Panel	1900	1452	15.60	N/A
T-Mobile	Generic	Generic	Panel	2100	4626	15.86	N/A
T-Mobile	Generic	Generic	Panel	1900	1419	15.50	N/A
T-Mobile	Generic	Generic	Panel	2500	12804	22.35	N/A
Verizon Wireless	Generic	Generic	Panel	746	2400	11.76	N/A
Verizon Wireless	Generic	Generic	Panel	869	5166	12.36	N/A
Verizon Wireless	Generic	Generic	Panel	1900	5372	15.26	N/A
Verizon Wireless	Generic	Generic	Panel	2100	5625	15.46	N/A
State of Connecticut	Generic	Generic	Dish	6000	299	37.76	N/A
State of Connecticut	Generic	Generic	Dish	6000	119	37.76	N/A
State of Connecticut	Generic	Generic	Dish	6000	825	36.86	N/A
State of Connecticut	Generic	Generic	Dish	6000	1015	37.76	N/A
State of Connecticut	Generic	Generic	Panel	859	200	6.86	N/A
State of Connecticut	Generic	Generic	Panel	851	174	6.86	N/A
State of Connecticut	Generic	Generic	Panel	853	174	6.86	N/A
State of Connecticut	Generic	Generic	Panel	806	35	7.86	N/A
State of Connecticut	Generic	Generic	Panel	851	174	8.36	N/A
State of Connecticut	Generic	Generic	Panel	851	174	8.36	N/A
State of Connecticut	Generic	Generic	Panel	769	174	7.86	N/A
State of Connecticut	Generic	Generic	Panel	769	100	8.36	N/A
Eversource Energy	Generic	Generic	Omni	37	370	0.0	N/A
Eversource Energy	Generic	Generic	Omni	937	240	9.0	N/A
Northwest CT Public Safety Comm Ctr.	Generic	Generic	Omni	462	315	3.0	N/A

<i>Carrier</i>	<i>Antenna Manufacturer</i>	<i>Antenna Model</i>	<i>Type</i>	<i>Freq (MHz)</i>	<i>Total ERP (watts)</i>	<i>Ant. Gain (dBd)</i>	<i>Azimuth</i>
Redding Police Department	Generic	Generic	Omni	156	35	0.0	N/A
Town of Redding Police	Generic	Generic	Omni	154	16.5	0.0	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:

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

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

- $10^{(G_{\max}-V_{\text{disc}}/10)}$ = 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.

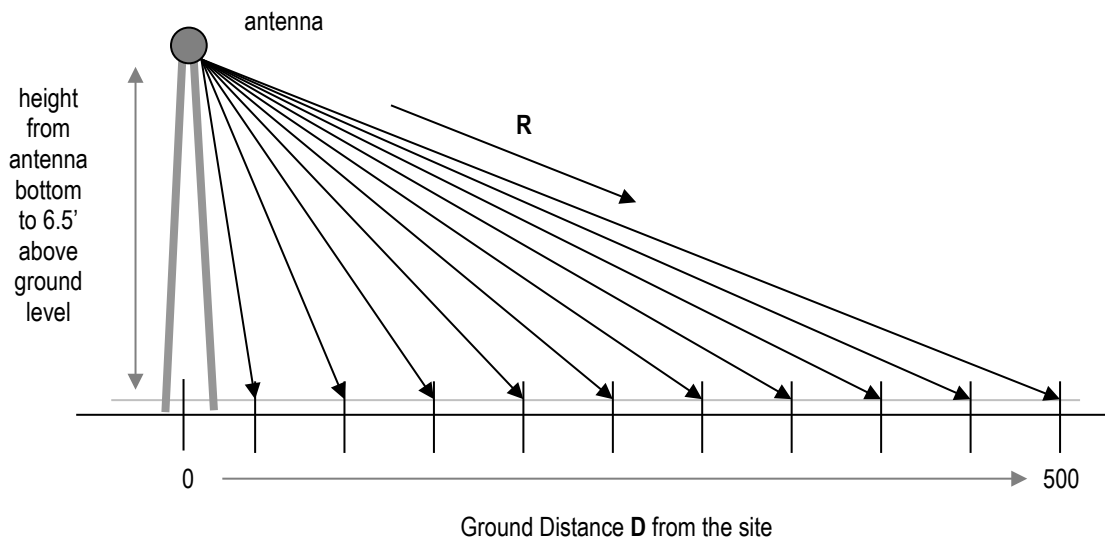


Figure 2. Street-level MPE% Calculation Geometry

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.

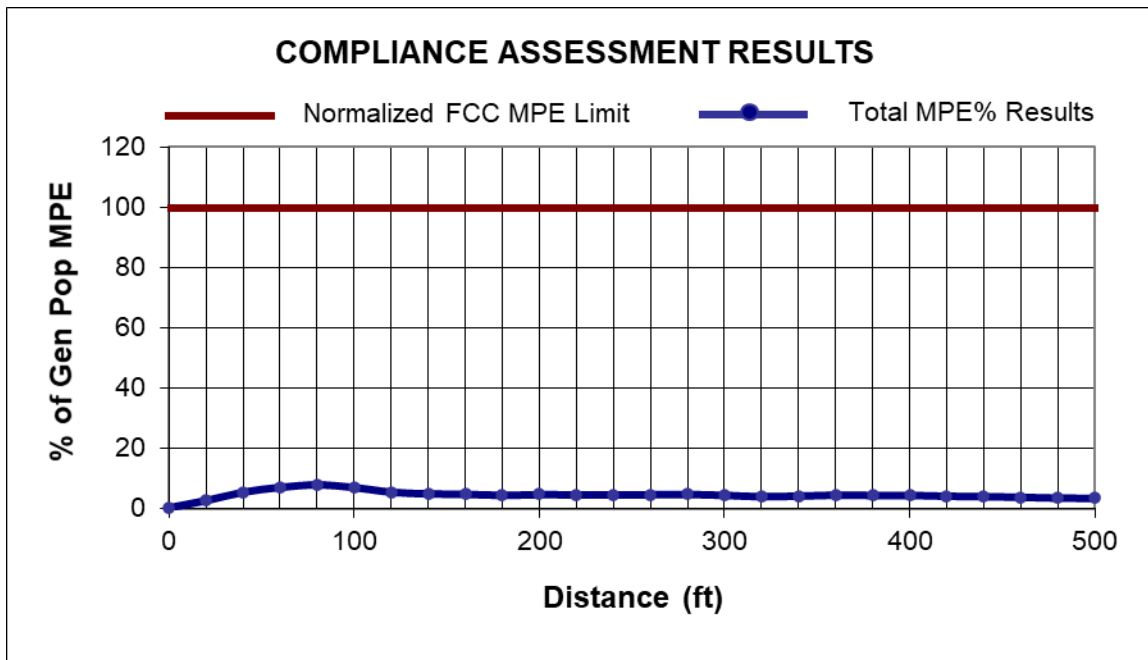
The tables that follow provide the results of the MPE% calculations for each antenna operation, with the overall worst-case calculated result highlighted in bold in the last column of the last table. Note that the transmission parameters for each Dish antenna sector are identical, and the calculations reflect the worst-case result for any/all sectors.

Ground Distance (ft)	Dish 600 MHz MPE%	Dish 2000 MHz MPE%	Dish 2100 MHz MPE%	AT&T MPE%	Sprint MPE%	T-Mobile MPE%	Verizon Wireless MPE%	Subtotal MPE%
0	0.0832	0.0039	0.0006	0.0384	0.0181	0.2118	0.0127	0.3687
20	0.2373	0.0216	0.0417	0.0331	0.0111	0.3070	0.0146	0.6664
40	0.2066	0.1385	0.1039	0.0641	0.0083	0.4592	0.0239	1.0045
60	0.1164	0.4648	0.2149	0.0899	0.0096	0.7391	0.0566	1.6913
80	0.5323	0.3851	0.5709	0.1271	0.0288	0.6329	0.0835	2.3606
100	0.3709	0.2242	0.4849	0.1571	0.0251	0.4566	0.0910	1.8098
120	0.1071	0.0639	0.0461	0.2071	0.0472	0.2819	0.0879	0.8412
140	0.0559	0.0655	0.0352	0.2069	0.0401	0.3349	0.0674	0.8059
160	0.0397	0.1384	0.2356	0.1914	0.0421	0.4228	0.1034	1.1734
180	0.0207	0.0249	0.1295	0.2682	0.0616	0.6162	0.1629	1.2840
200	0.0334	0.2145	0.1292	0.3762	0.1112	0.8671	0.1628	1.8944
220	0.0601	0.1731	0.1965	0.3901	0.0915	1.0983	0.1466	2.1562
240	0.1824	0.0325	0.1388	0.3677	0.0550	1.3793	0.1806	2.3363
260	0.2603	0.0083	0.0587	0.4164	0.0292	1.6421	0.2335	2.6485
280	0.3514	0.0076	0.0177	0.4264	0.0238	1.8744	0.2688	2.9701
300	0.4516	0.0058	0.0056	0.4849	0.0302	1.6818	0.2595	2.9194
320	0.5571	0.0114	0.0035	0.4695	0.0445	1.3338	0.2270	2.6468
340	0.6637	0.0431	0.0166	0.4019	0.0474	1.6371	0.1716	2.9814
360	0.7667	0.0973	0.0570	0.2929	0.0507	2.0194	0.1317	3.4157
380	0.6912	0.0877	0.0514	0.2229	0.0550	2.2386	0.0925	3.4393
400	0.7793	0.1183	0.0949	0.1736	0.0561	2.2635	0.0579	3.5436
420	0.7091	0.1077	0.0863	0.1536	0.0486	2.2284	0.0306	3.3643
440	0.7826	0.0849	0.0927	0.1409	0.0325	2.1745	0.0154	3.3235
460	0.7179	0.0779	0.0850	0.1274	0.0157	2.1149	0.0161	3.1549
480	0.6607	0.0717	0.0782	0.1182	0.0145	1.9513	0.0303	2.9249
500	0.7152	0.0239	0.0441	0.1346	0.0100	1.9197	0.0281	2.8756

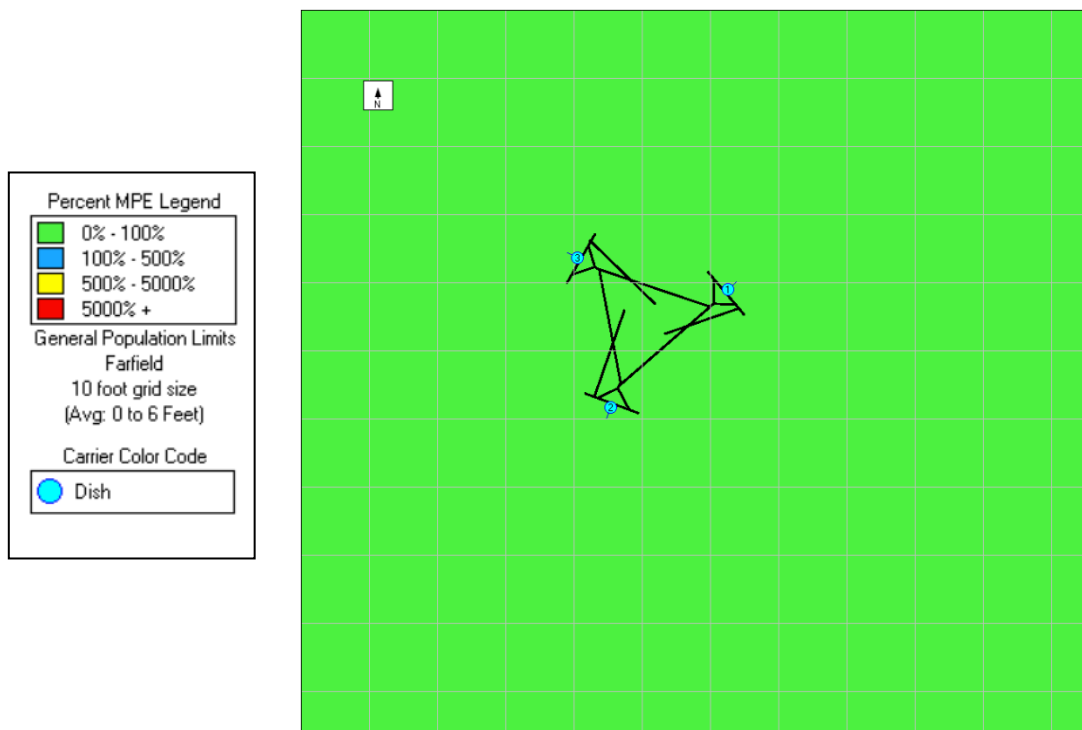
Ground Distance (ft)	Subtotal MPE%	State of CT MPE%	Eversource Energy MPE%	Northwest CT Public Safety MPE%	Redding PD MPE%	Town of Redding Police MPE%	Total MPE%
0	0.3687	0.0073	0.0151	0.0050	0.0004	0.0002	0.3967
20	0.6664	0.0128	1.4049	0.5674	0.0870	0.0410	2.7795
40	1.0045	0.0150	3.7129	0.4451	0.2365	0.1115	5.5255
60	1.6913	0.0100	4.9120	0.0176	0.3424	0.1614	7.1347
80	2.3606	0.0037	4.9154	0.1294	0.3743	0.1765	7.9599
100	1.8098	0.0040	4.4380	0.3450	0.3536	0.1667	7.1171
120	0.8412	0.0145	3.7575	0.5077	0.3128	0.1475	5.5812
140	0.8059	0.0269	3.1599	0.6096	0.2667	0.1257	4.9947
160	1.1734	0.0215	2.6259	0.6997	0.2299	0.1084	4.8588
180	1.2840	0.0265	2.2147	0.7142	0.1960	0.0924	4.5278
200	1.8944	0.0494	1.8551	0.7088	0.1691	0.0797	4.7565
220	2.1562	0.0941	1.5729	0.6515	0.1441	0.0679	4.6867
240	2.3363	0.1202	1.3785	0.6355	0.1240	0.0584	4.6529
260	2.6485	0.1289	1.1921	0.5988	0.1102	0.0519	4.7304
280	2.9701	0.1171	1.0405	0.5444	0.0965	0.0455	4.8141
300	2.9194	0.0921	0.9166	0.4769	0.0851	0.0401	4.5302
320	2.6468	0.0694	0.8149	0.4512	0.0756	0.0356	4.0935
340	2.9814	0.0475	0.7299	0.4201	0.0675	0.0318	4.2782
360	3.4157	0.0280	0.6727	0.3759	0.0607	0.0286	4.5816
380	3.4393	0.0129	0.6068	0.3543	0.0548	0.0258	4.4939
400	3.5436	0.0037	0.5509	0.3205	0.0509	0.0240	4.4936
420	3.3643	0.0015	0.5007	0.2913	0.0464	0.0219	4.2261
440	3.3235	0.0041	0.4577	0.2720	0.0424	0.0200	4.1197
460	3.1549	0.0069	0.4199	0.2493	0.0389	0.0184	3.8883
480	2.9249	0.0191	0.3850	0.2293	0.0359	0.0169	3.6111
500	2.8756	0.0177	0.3556	0.2215	0.0331	0.0156	3.5191

As indicated, the maximum calculated overall RF level is 7.9599 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 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.

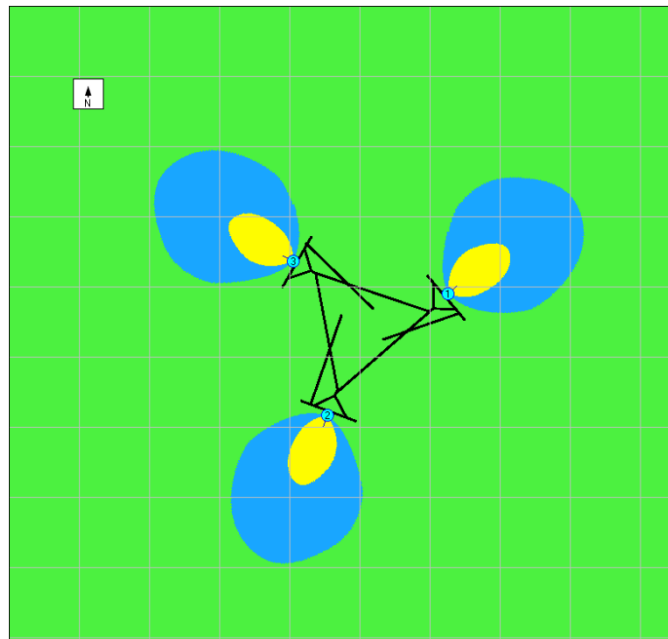
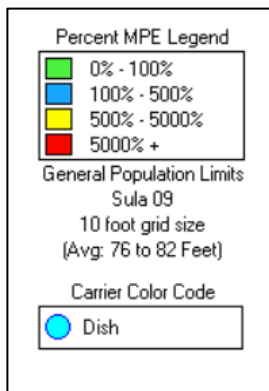


Near-field Analysis

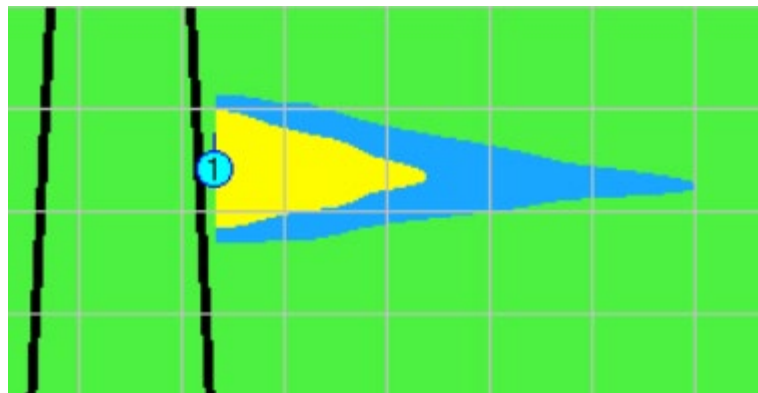
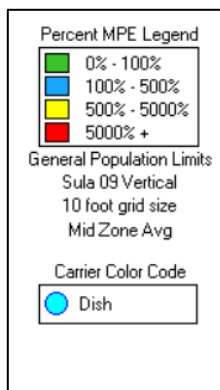
The compliance analysis for the same height as the antennas is performed using the RoofMaster program by Waterford Consultants.

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 roof, 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 combination of proposed and existing antenna operations at street level around the site is 7.9599 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 compliance, it is recommended that three Caution signs be installed six feet below the antennas. In addition, NOC Information signs be installed at the base of the lattice tower.

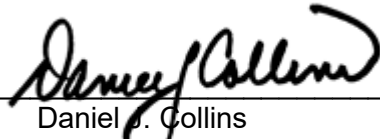
The results of the calculations, along with the described RF mitigation, combine to satisfy the FCC's RF compliance requirements and associated guidelines on compliance.

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

3/8/22

Date

Appendix A. DOCUMENTS USED TO PREPARE THE ANALYSIS

RFDS: RFDS-NJJER01161A-Final-20211004-v.0_20211004090752

CD: NJJER01161A_FinalStampedCDs_20210927103508

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.

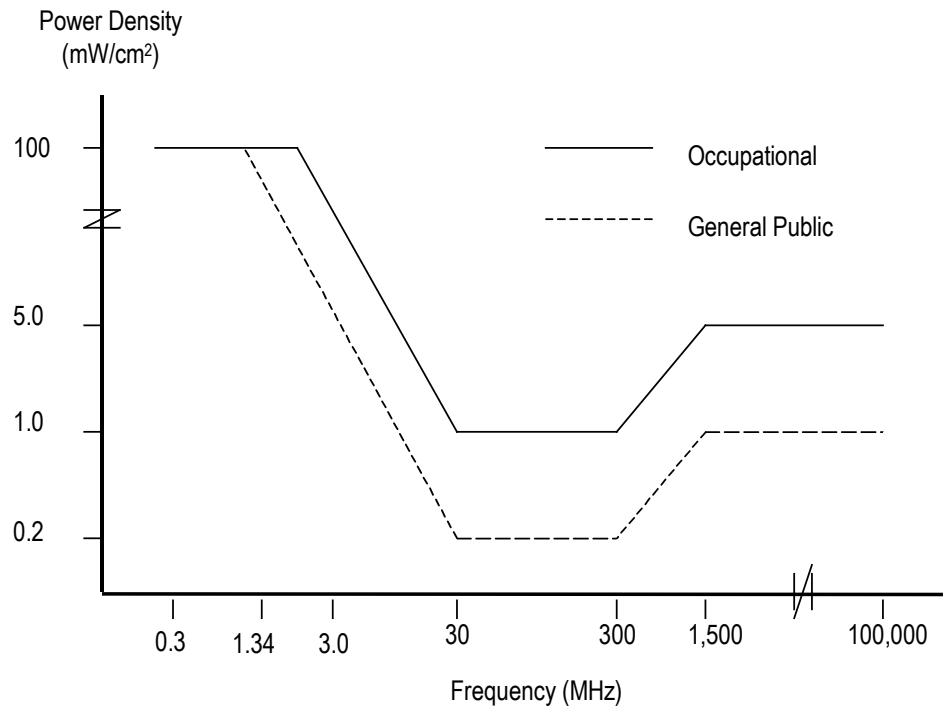
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in 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/cm²). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm² 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.

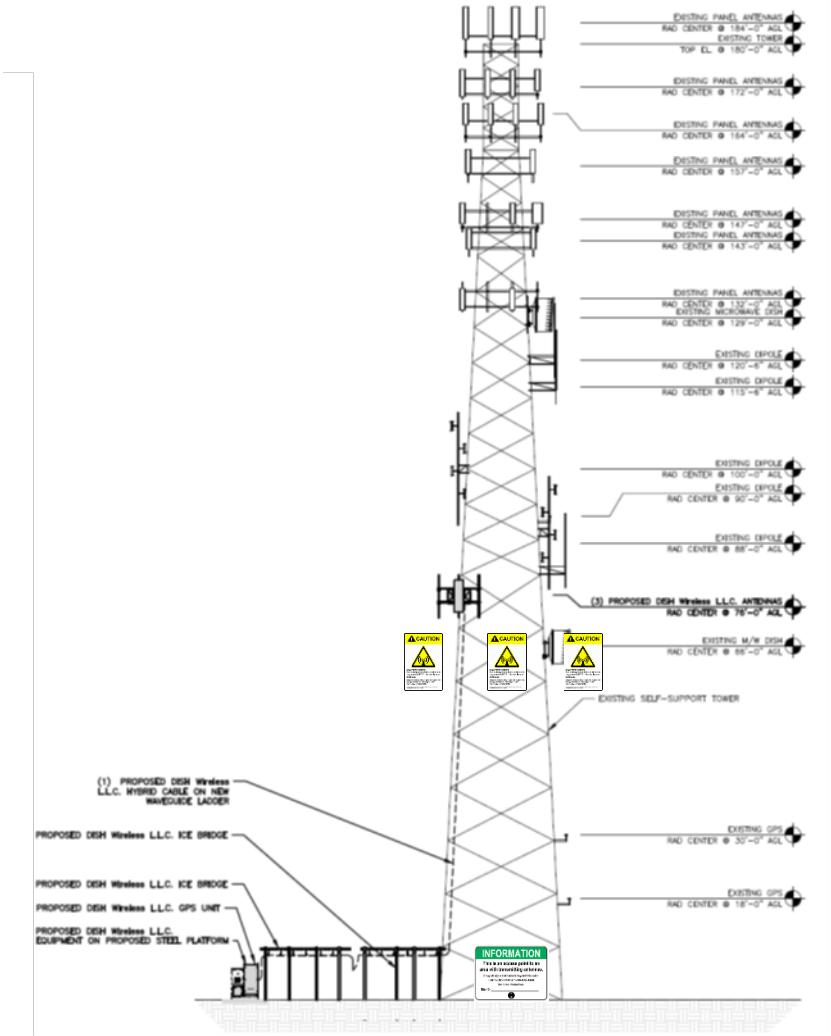
FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

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

<i>Synopsis:</i>	<ul style="list-style-type: none"> • 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
<i>Education:</i>	<ul style="list-style-type: none"> • 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
<i>Current Responsibilities:</i>	<ul style="list-style-type: none"> • Leads all PTG staff work involving RF safety and FCC compliance, microwave and satellite system engineering, and consulting on wireless technology and regulation
<i>Prior Experience:</i>	<ul style="list-style-type: none"> • 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
<i>Specific RF Safety / Compliance Experience:</i>	<ul style="list-style-type: none"> • 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
<i>Other Background:</i>	<ul style="list-style-type: none"> • Author, <i>Microwave System Engineering</i> (AT&T, 1974) • Co-author and executive editor, <i>A Guide to New Technologies and Services</i> (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

UNDERLYING PROPERTY INFORMATION

100 OLD REDDING RD

Location 100 OLD REDDING RD

Mblu 35/ / 46/ /

Acct# 00300300

Owner KAUFMAN ROBERT J

Assessment \$801,200

Appraisal \$2,881,800

PID 2924

Building Count 3

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2021	\$675,800	\$2,206,000	\$2,881,800
Assessment			
Valuation Year	Improvements	Land	Total
2021	\$473,000	\$328,200	\$801,200

Owner of Record

Owner KAUFMAN ROBERT J
Co-Owner
Address 41 PADANARAM RD
DANBURY, CT 06810

Sale Price \$0
Certificate 2
Book & Page 0117/0510
Sale Date 06/15/1983
Instrument XX

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
KAUFMAN ROBERT J	\$0	2	0117/0510	XX	06/15/1983
KAUFMAN ROBERT J	\$0	1	0115/0739	XX	12/28/1982
KAUFMAN MARION C	\$0	3	0072/0621	XX	05/13/1966

Building Information

Building 1 : Section 1

Year Built: 1940
Living Area: 2,354
Replacement Cost: \$331,800
Building Percent Good: 78

Replacement Cost
Less Depreciation: \$258,800

Building Attributes	
Field	Description
Style	Colonial
Model	Residential
Grade:	B
Stories	2 Stories
Occupancy	1
Exterior Wall 1	Clapboard
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Wood Shingle
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	
Heat Fuel	Gas
Heat Type:	Forced Air
AC Type:	None
Total Bedrooms	4 Bedrooms
Full Bathrooms	1
Half Bathrooms	1
Total Xtra Fixtrs	1
Total Rooms	8
Bath Style:	Above Average
Kitchen Style:	Average
Fireplaces 2	3
Cndtn	
Whirlpool Tubs	
Fin Bsmt Area	
Fin Bsmt Qual	
Bsmt Garages	
Num Park	
Fireplaces	
Fndtn Cndtn	
Basement	

Building 2 : Section 1

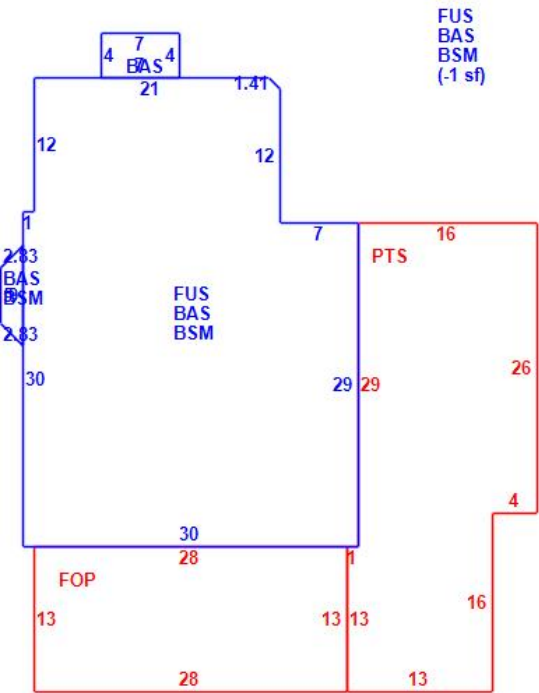
Year Built: 1975

Building Photo



(<http://images.vgsi.com/photos/ReddingCTPhotos/\00\00\68\79.jpg>)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,198	1,198
FUS	Finished Upper Story	1,156	1,156
BSM	Basement Area	1,170	0
FOP	Framed Open Porch	364	0
PTS	Patio - Stone	621	0
		4,509	2,354

Building Photo

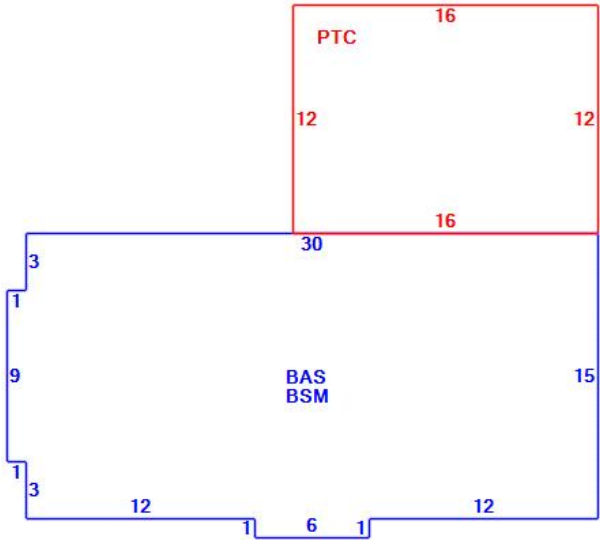
Living Area: 465
Replacement Cost: \$82,790
Building Percent Good: 76
Replacement Cost
Less Depreciation: \$62,900

Building Attributes : Bldg 2 of 3	
Field	Description
Style	Studio/Hm Office
Model	Residential
Grade:	C
Stories	01
Occupancy	01
Exterior Wall 1	Wood
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Wood Shingle
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	
Heat Fuel	Gas
Heat Type:	Hot Water
AC Type:	None
Total Bedrooms	00
Full Bathrooms	0
Half Bathrooms	1
Total Xtra Fixtrs	
Total Rooms	2
Bath Style:	Average
Kitchen Style:	Average
Fireplaces 2	
Cndtn	
Whirlpool Tubs	
Fin Bsmt Area	
Fin Bsmt Qual	
Bsmt Garages	
Num Park	
Fireplaces	
Fndtn Cndtn	
Basement	



(<http://images.vgsi.com/photos/ReddingCTPhotos/\\00\\00\\68\\80.jpg>)

Building Layout



Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	465	465
BSM	Basement Area	465	0
PTC	Patio - Concrete	192	0
		1,122	465

Building 3 : Section 1

Year Built:	2000
Living Area:	0
Replacement Cost:	\$338,148
Building Percent Good:	90
Replacement Cost	
Less Depreciation:	\$304,300

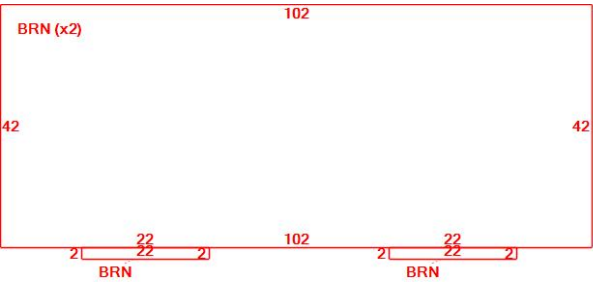
Building Attributes : Bldg 3 of 3	
Field	Description
Style	Barn
Model	Ind/Comm
Grade	B
Stories	2
Occupancy	1.00
Exterior Wall 1	Cedar
Exterior Wall 2	
Roof Structure	Gambrel
Roof Cover	Wood Shingle
Interior Wall 1	Wall Board
Interior Wall 2	Minimum
Interior Floor 1	Minimum/Plywd
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air
AC Type	None
Struct Class	
Bldg Use	Farm Buildings
Bedrooms	0
Full Bths	0
Half Bths	2
1st Floor Use:	
Heat/AC	None
Frame Type	Wood Frame
Baths/Plumbing	Average
Ceiling/Walls	None
Rooms/Prtns	Average
Wall Height	10.00
% Comn Wall	

Building Photo



(<http://images.vgsi.com/photos/ReddingCTPhotos/\00\00\68\81.jpg>)

Building Layout



Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BRN	Barn Area	8,656	0
		8,656	0

Extra Features

Extra Features				<u>Legend</u>
Code	Description	Size	Value	Bldg #
FPL	Fireplace	1.00 Units	\$3,200	3

GEN	Generator	1.00 Units	\$0	1
-----	-----------	------------	-----	---

Land

Land Use				Land Line Valuation	
Use Code	101	Size (Acres)	134.66	Frontage	
Description	Single Family Res	Depth		Assessed Value	\$328,200
Zone	R-2	Appraised Value	\$2,206,000		
Neighborhood	100				
Alt Land Appr Category	No				

Special Land			
Land Use Code	Land Use Description	Units	Unit Type
800	Open Space	122	AC

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
WDK	Wood Deck			264.00 S.F.	\$2,900	2
GAR1	Garage	FR	Frame	575.00 S.F.	\$2,700	1
SPL1	InGround Pool	CRH	Heatd/Concrt	1080.00 S.F.	\$37,100	1
PAT1	Patio	ST	Stone	432.00 S.F.	\$3,900	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2021	\$675,800	\$2,206,000	\$2,881,800
2020	\$675,800	\$2,206,000	\$2,881,800
2019	\$675,800	\$2,206,000	\$2,881,800

Assessment			
Valuation Year	Improvements	Land	Total
2021	\$473,000	\$328,200	\$801,200
2020	\$473,000	\$328,200	\$801,200
2019	\$473,000	\$328,200	\$801,200

NOTIFICATIONS



April 18, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 776556915876

Delivery Information:

Status:	Delivered	Delivered To:	Shipping/Receiving
Signed for by:	S.SIGNATURE NOT REQ	Delivery Location:	41 PADANARAM RD
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		DANBURY, CT, 06810
		Delivery date:	Apr 15, 2022 13:15

Shipping Information:

Tracking number:	776556915876	Ship Date:	Apr 12, 2022
		Weight:	1.0 LB/0.45 KG

Recipient:
Robert J. Kaufman - Owner,
41 Padanaram Road
DANBURY, CT, US, 06810

Shipper:
Corey Milan, NB+C
100 Apollo Dr.
Suite 303
CHELMSFORD, MA, US, 01824

Reference 100814

Proof-of-delivery details appear below; however, no signature is available for this FedEx Express shipment because a signature was not required.

Thank you for choosing FedEx



April 21, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 776556852444

Delivery Information:

Status:	Delivered	Delivered To:	Shipping/Receiving
Signed for by:	S.IGNATURE NOT REQ	Delivery Location:	100 HILL RD
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		REDDING CENTER, CT, 06875
		Delivery date:	Apr 20, 2022 16:14

Shipping Information:

Tracking number:	776556852444	Ship Date:	Apr 12, 2022
		Weight:	0.5 LB/0.23 KG

Recipient:
Julia Pemberton - First Selectman,
Redding Town Hall
100 Hill Road
REDDING CENTER, CT, US, 06875

Shipper:
Corey Milan, NB+C
100 Apollo Dr.
Suite 303
CHELMSFORD, MA, US, 01824

Reference 100814

Thank you for choosing FedEx



April 21, 2022

Dear Customer,

The following is the proof-of-delivery for tracking number: 776556889305

Delivery Information:

Status:	Delivered	Delivered To:	Shipping/Receiving
Signed for by:	S.IGNATURE NOT REQ	Delivery Location:	10 LONETOWN RD
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		REDDING CENTER, CT, 06875
		Delivery date:	Apr 20, 2022 16:11

Shipping Information:

Tracking number:	776556889305	Ship Date:	Apr 12, 2022
		Weight:	1.0 LB/0.45 KG

Recipient: Shaun Donnelly - Building Official, Building Department 10 Lonetown Road REDDING CENTER, CT, US, 06875	Shipper: Corey Milan, NB+C 100 Apollo Dr. Suite 303 CHELMSFORD, MA, US, 01824
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Reference	100814
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Thank you for choosing FedEx