

PROJECT NARRATIVE

April 22, 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
6 Fairfield Drive (Brkfld), Newtown, CT 06470
Latitude: 41°25'31.9" / Longitude: -73°22'26.57"

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 6 Fairfield Drive (Brkfld) in Newtown (the "Property"). The existing 152-foot monopole is owned by American Tower Corporation ("ATC"). The underlying property is owned by Photronics, Inc. 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 Daniel C. Rosenthal, First Selectman for the Town of Newtown, John Poeltl, Town of Newtown Chief Building Official and Photronics, Inc. as the property owner.

Background

This facility was originally approved by the Council under Docket No. 75 on May 13, 1987. A copy of this decision is included in this filing. The existing ATC facility consists of a 152-foot monopole located within an existing leased area. AT&T Mobility currently maintains antennas at the 152-foot level. SPOK Holdings, Inc. currently maintains antennas at the 151-foot level. Verizon Wireless currently maintains antennas at the 140-foot level. T-Mobile currently maintains antennas at the 134-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 6 Fairfield Drive (Brkfld) 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 121-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 6 Fairfield Drive (Brkfld) 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



AMERICAN TOWER®
CORPORATION

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, Newtown CT (aka 6 Fairfield Drive	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

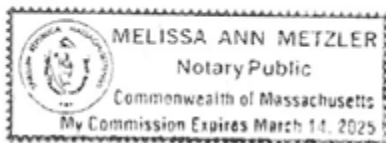
NOTARY BLOCK

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

DOCKET NO. 75

AN APPLICATION OF THE SOUTHERN NEW ENGLAND : CONNECTICUT SITING
TELEPHONE COMPANY FOR A CERTIFICATE OF :
ENVIRONMENTAL COMPATIBILITY AND PUBLIC : COUNCIL
NEED FOR CELLULAR TELEPHONE FACILITIES :
IN THE CITY OF DANBURY AND EITHER THE TOWN OF :
BROOKFIELD OR TOWN OF NEWTOWN, CONNECTICUT. : MAY 13, 1987

DECISION AND ORDER

Pursuant to the foregoing opinion, the Connecticut Siting Council (Council) hereby directs that a Certificate of Environmental Compatibility and Public Need, as provided by Section 16-50k of the General Statutes of Connecticut (CGS), be issued to Southern New England Telephone Cellular, Inc., (SNET) for the construction, operation, and maintenance of cellular mobile telephone facilities in the City of Danbury and Town of Newtown, Connecticut. The proposed Brookfield site is rejected.

The facilities shall be constructed, operated, and maintained as specified in the Council's record on this matter, and subject to the following conditions.

1. The Danbury tower, including antennas, shall be no taller than necessary to provide the proposed service, and in no event shall exceed 37 feet.
2. Unless necessary to comply with condition number three, below, no lights shall be installed on these towers.

3. The facilities shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations.

4. The Newtown tower, including antennas, shall be no taller than necessary to provide the proposed service, and in no event shall exceed 167 feet.

5. The certificate holder shall prepare a development and management (D&M) plan for the Newtown site in compliance with sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies. The D&M plan shall provide for evergreen screening around the outside perimeter of the eight-foot chain link fence which will surround this site.

6. No construction activities shall take place outside the hours of 7:00 A.M. to 7:00 P.M., Monday through Saturday.

7. The certificate holder or its successor shall notify the Council if and when directional antennas or any equipment other than that listed in this application is added to these facilities.

8. The certificate holder or its successor shall permit public or private entities to share space on the Newtown tower, for due consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

9. If these facilities do not provide or permanently cease to provide cellular service following the completion of construction, this Decision and Order shall be void, and the tower and all associated equipment in this application shall be dismantled and removed or reapplication for any new use shall be made to the Council before any such new use is made.

10. 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 issuance of this Decision and Order, or within three years of the completion of any appeal taken in this Decision.

11. The certificate holder shall comply with any future radio frequency (RF) standards promulgated by state or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the Certificate holder shall bring the facilities granted approval in this Decision into compliance with such standards.

Pursuant to CGS section 16-50p, we hereby direct that a copy of the Decision and Order be served on each person listed below. A notice of the issuance shall be published in the Danbury News-Times, the Brookfield Journal, and the Newtown Bee.

The parties to the proceeding are:

SNET Cellular, Inc.
c/o Peter J. Tyrrell
Senior Attorney
Room 1021
227 Church Street
New Haven, Connecticut 06506

(Applicant)

Town of Newtown
Planning and Zoning Commission

represented by:
Theodore G. Whippie, Chairman
Chairman
Planning and Zoning
Commission
Edmond Town Hall
45 Main Street
Newtown, Connecticut 06470

Metro Mobile CTS of Fairfield
County
(INTERVENOR)

represented by:
Howard L. Slater
Jennifer Young Gaudet
Byrne, Slater, Sandler,
Shulman & Rouse, P.C.
330 Main Street
P.O. Box 3216
Hartford, Connecticut 06103
its attorneys

Fergus W. O'Donnell
28 Whisconier Road
Brookfield, Center, Connecticut 06805

ET0136

C E R T I F I C A T I O N

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut, this 13th day of May 1987.

<u>Council Members</u>	<u>Vote Cast</u>
<u>Gloria Dibble Pond</u>) Gloria Dibble Pond Chairperson	Yes
_____) Commissioner John Downey Designee: Commissioner Peter G. Boucher	Absent
<u>Brian J. Emerick</u>) Acting Commissioner John Anderson Designee: Brian Emerick	Yes
<u>Owen L. Clark</u>) Owen L. Clark	Yes
<u>Fred J. Doocy</u>) Fred J. Doocy	Yes
_____) Mortimer A. Gelston	Absent
<u>James G. Horsfall</u>) James G. Horsfall	Yes
<u>William Smith</u>) William Smith	Yes
_____) Colin C. Tait	Absent

ENGINEERING DRAWINGS



DISH Wireless L.L.C. SITE ID:

NJJER01081B

DISH Wireless L.L.C. SITE ADDRESS:

**6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470**

SCOPE OF WORK	
THIS IS NOT AN ALL INCLUSIVE LIST. CONTRACTOR SHALL UTILIZE SPECIFIED EQUIPMENT PART OR ENGINEER APPROVED EQUIVALENT. CONTRACTOR SHALL VERIFY ALL NEEDED EQUIPMENT TO PROVIDE A FUNCTIONAL SITE. THE PROJECT GENERALLY CONSISTS OF THE FOLLOWING:	
TOWER SCOPE OF WORK:	
<ul style="list-style-type: none"> • INSTALL (3) PROPOSED PANEL ANTENNAS (1 PER SECTOR) • INSTALL (1) PROPOSED TOWER PLATFORM MOUNT • INSTALL PROPOSED JUMPERS • INSTALL (6) PROPOSED RRUs (2 PER SECTOR) • INSTALL (1) PROPOSED OVER VOLTAGE PROTECTION DEVICE (OVP) • INSTALL (1) PROPOSED HYBRID CABLE 	
GROUND SCOPE OF WORK:	
<ul style="list-style-type: none"> • INSTALL (1) PROPOSED METAL PLATFORM • INSTALL (1) PROPOSED ICE BRIDGE • INSTALL (1) PROPOSED PPC CABINET • INSTALL (1) PROPOSED EQUIPMENT CABINET • INSTALL (1) PROPOSED POWER CONDUIT • INSTALL (1) PROPOSED TELCO CONDUIT • INSTALL (1) PROPOSED TELCO-FIBER BOX • INSTALL (1) PROPOSED GPS UNIT • INSTALL (1) PROPOSED FIBER NID (IF REQUIRED) • INSTALL (1) PROPOSED METER CANISTER • INSTALL (1) PROPOSED FIBER HAND HOLE 	

SITE INFORMATION	PROJECT DIRECTORY
PROPERTY OWNER: PHOTORONICS INC ADDRESS: 15 SECOR RD BROOKFIELD, CT 06804	APPLICANT: DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120
TOWER TYPE: MONOPOLE	TOWER OWNER: AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 (781) 926-4500
TOWER CO SITE ID: 302518	SITE DESIGNER: B+T GROUP 1717 S. BOULDER AVE, SUITE 300 TULSA, OK 74119 (918) 587-4630
TOWER APP NUMBER: 13688395	SITE ACQUISITION: KENNETH R. BRADBURY II (781) 926-4770
COUNTY: FAIRFIELD	CONSTRUCTION MANAGER: MICHAEL NARDUCCI michael.narducci@dish.com
LATITUDE (NAD 83): 41° 25' 31.9" N 41.42552778 N	RF ENGINEER: MURUGABIRAN JAYAPAL murugabiran.jayapal@dish.com
LONGITUDE (NAD 83): 73° 22' 26.57" W 73.37404721 W	
ZONING JURISDICTION: FAIRFIELD COUNTY	
ZONING DISTRICT: R-1	
PARCEL NUMBER: 2-9-1.23	
OCCUPANCY GROUP: U	
CONSTRUCTION TYPE: II-B	
POWER COMPANY: T.B.D.	
TELEPHONE COMPANY: T.B.D.	



4/20/22
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/01/23

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: DAS	CHECKED BY: GLS	APPROVED BY: GLS
RFDS REV #:		1

CONSTRUCTION DOCUMENTS

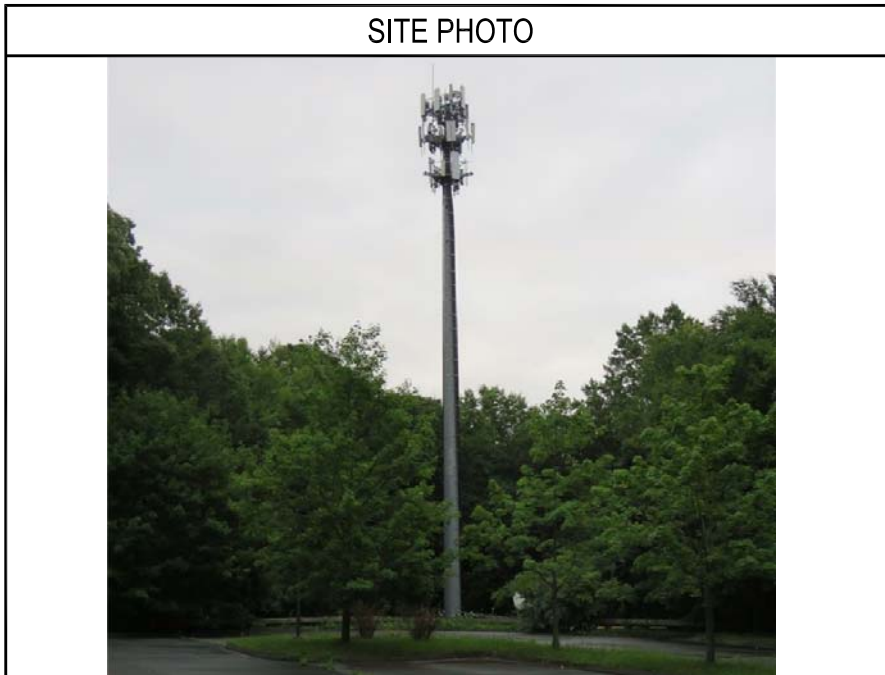
SUBMITTALS		
REV	DATE	DESCRIPTION
A	7/23/21	ISSUED FOR REVIEW
0	8/4/21	ISSUED FOR CONSTRUCTION
1	10/20/21	ISSUED FOR CONSTRUCTION
2	4/20/22	ISSUED FOR CONSTRUCTION

A&E PROJECT NUMBER
153235.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1



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

GENERAL NOTES

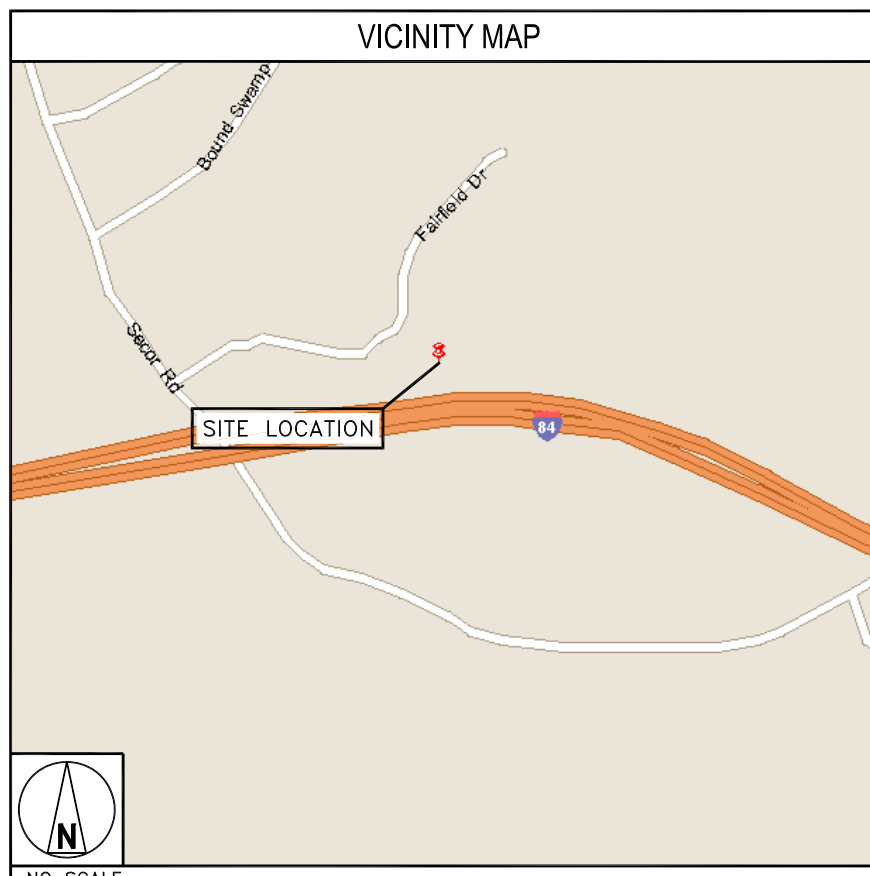
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE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

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

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

DIRECTIONS

DEPART 3 ADP BLVD, ROSELAND, NJ 07068 ON BECKER FARM RD (EAST). TURN RIGHT (SOUTH-WEST) ONTO CR-527 [LIVINGSTON AVE]. TAKE RAMP (RIGHT) ONTO I-280. AT EXIT 17B, STAY ON I-280 (NORTH). TAKE RAMP ONTO I-95 [NEW JERSEY TPKE]. STAY ON I-95 [NEW JERSEY TPKE] (NORTH). AT EXIT 73, STAY ON I-95 [NEW JERSEY TPKE] (EAST). ENTERING NEW YORK. STAY ON I-95 [US-1] (EAST). AT EXIT 3, KEEP STRAIGHT ONTO RAMP [3]. TAKE RAMP (RIGHT) ONTO I-87 [MAJOR DEEGAN EXPY]. AT EXIT 4, TAKE RAMP (RIGHT) ONTO CENTRAL PARK AVE. KEEP RIGHT ONTO RAMP. TAKE RAMP (LEFT) ONTO CROSS COUNTY PKWY. MERGE ONTO HUTCHINSON RIVER PKWY N. KEEP LEFT ONTO I-684. ENTERING CONNECTICUT. ENTERING NEW YORK. AT EXIT 9E, TAKE RAMP (RIGHT) ONTO I-84. ENTERING CONNECTICUT. AT EXIT 9, TURN RIGHT ONTO RAMP. KEEP LEFT TO STAY ON RAMP. BEAR LEFT (NORTH) ONTO CT-25 [HAWLEYVILLE RD]. TURN LEFT (WEST) ONTO OLD HAWLEYVILLE RD. TURN RIGHT (NORTH-WEST) ONTO MERIDIAN RIDGE DR. ARRIVE 6 FAIRFIELD DR, NEWTOWN, CT 06470.



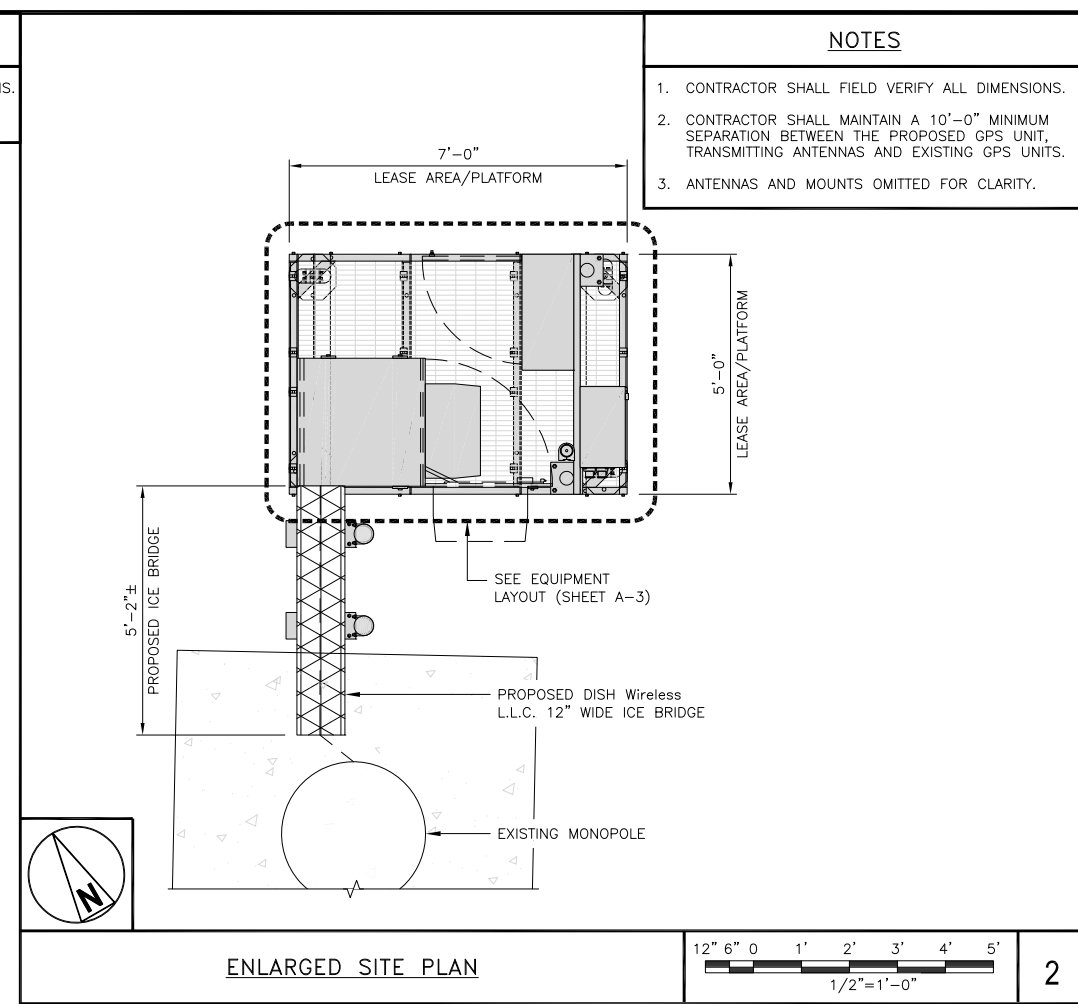
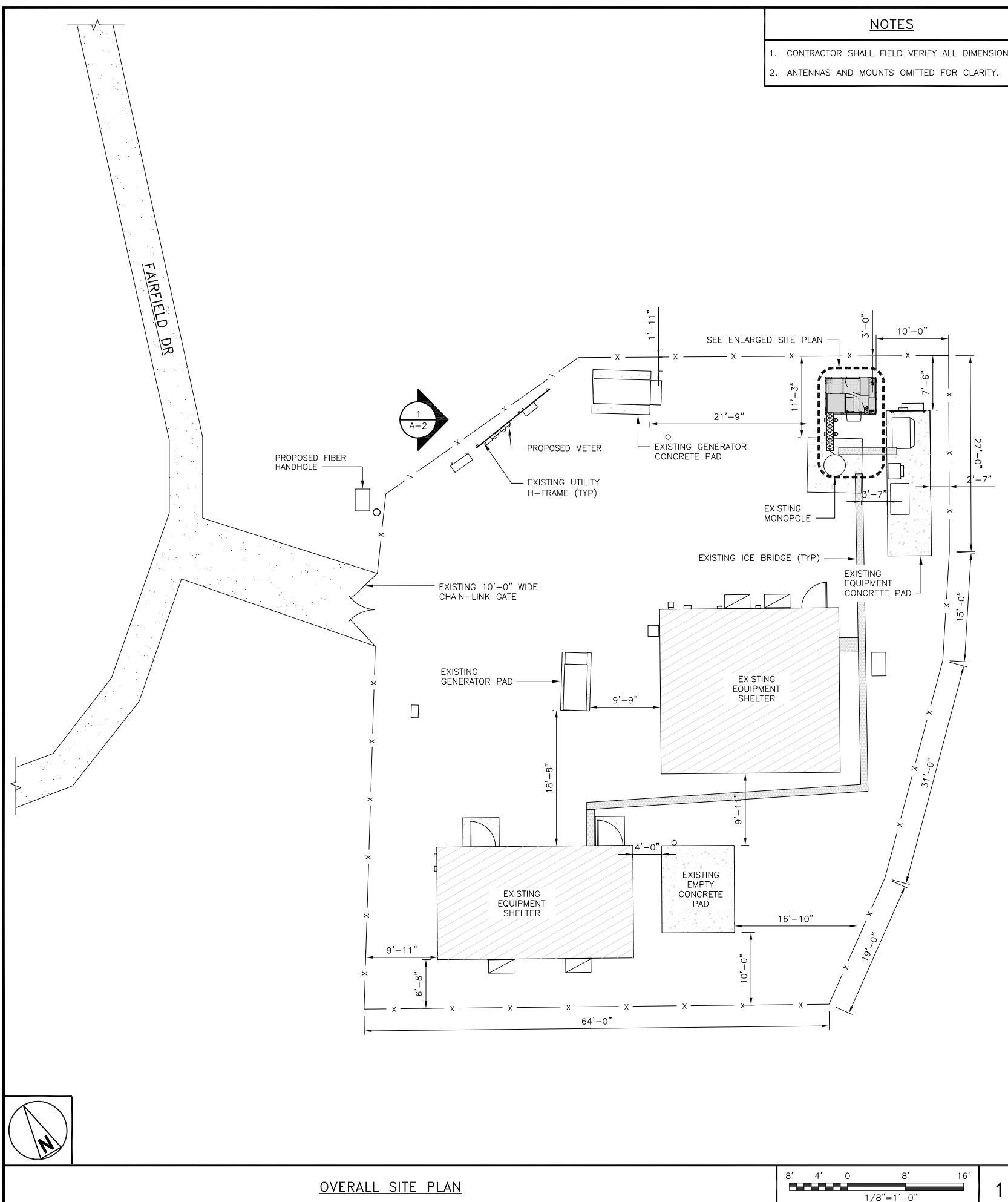
CONNECTICUT CODE COMPLIANCE

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

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

SHEET INDEX

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



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

AMERICAN TOWER®
10 PRESIDENTIAL WAY
WOBBURN, MA 01801

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

STATE OF CONNECTICUT
CHAD BOYLE
No. 23924
LICENSED PROFESSIONAL ENGINEER

4/20/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/01/23

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DRAWN BY: CHECKED BY: APPROVED BY:
DAS GLS GLS

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

REV	DATE	DESCRIPTION
A	7/23/21	ISSUED FOR REVIEW
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DISH Wireless L.L.C.
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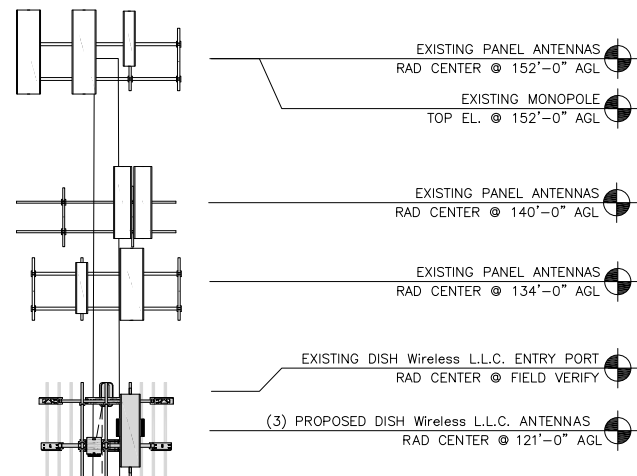
NJER01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

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.



(1) PROPOSED DISH Wireless L.L.C. HYBRID CABLE ROUTED INSIDE POLE

PROPOSED DISH Wireless L.L.C. ICE BRIDGE

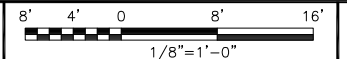
PROPOSED DISH Wireless L.L.C. GPS UNIT

PROPOSED DISH Wireless L.L.C. EQUIPMENT ON PROPOSED STEEL PLATFORM

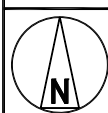
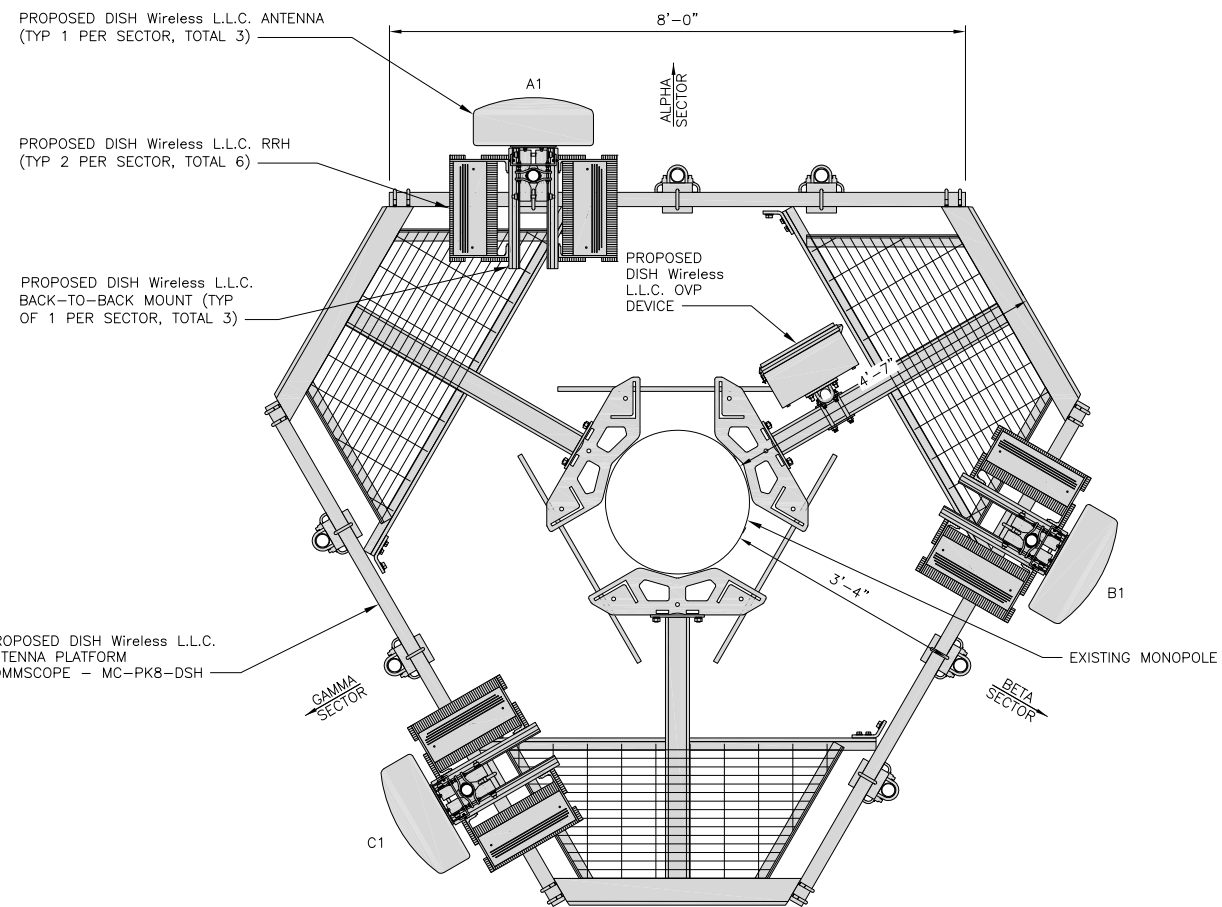
EXISTING ENTRY PORT

EXISTING MONOPOLE
BOTTOM EL. @ 6" AGL

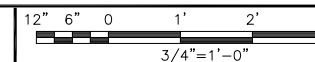
PROPOSED WEST ELEVATION



NOTE: AZIMUTHS ARE TENTATIVE AND NEED TO BE CONFIRMED PRIOR TO CONSTRUCTION.



ANTENNA LAYOUT



2

SECTOR	POSITION	ANTENNA					TRANSMISSION CABLE	
		EXISTING OR PROPOSED	MANUFACTURER - MODEL NUMBER	TECHNOLOGY	SIZE (HxW)	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH
ALPHA	A1	PROPOSED	JMA WIRELESS-MX08FRO665-21	5G	72.0" x 20.0"	0°	121'-0"	(1) HIGH-CAPACITY HYBRID CABLE (150' LONG)
BETA	B1	PROPOSED	JMA WIRELESS-MX08FRO665-21	5G	72.0" x 20.0"	110°	121'-0"	
GAMMA	C1	PROPOSED	JMA WIRELESS-MX08FRO665-21	5G	72.0" x 20.0"	255°	121'-0"	

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

NOTES

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

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

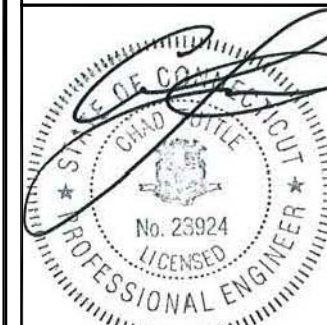
ANTENNA SCHEDULE

NO SCALE

3



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



4/20/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/01/23

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A&E PROJECT NUMBER
153235.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

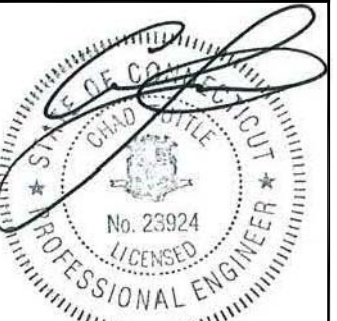
SHEET TITLE
ELEVATION, ANTENNA
LAYOUT AND SCHEDULE

SHEET NUMBER

A-2



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



4/20/22

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NEWTOWN, CT 06470

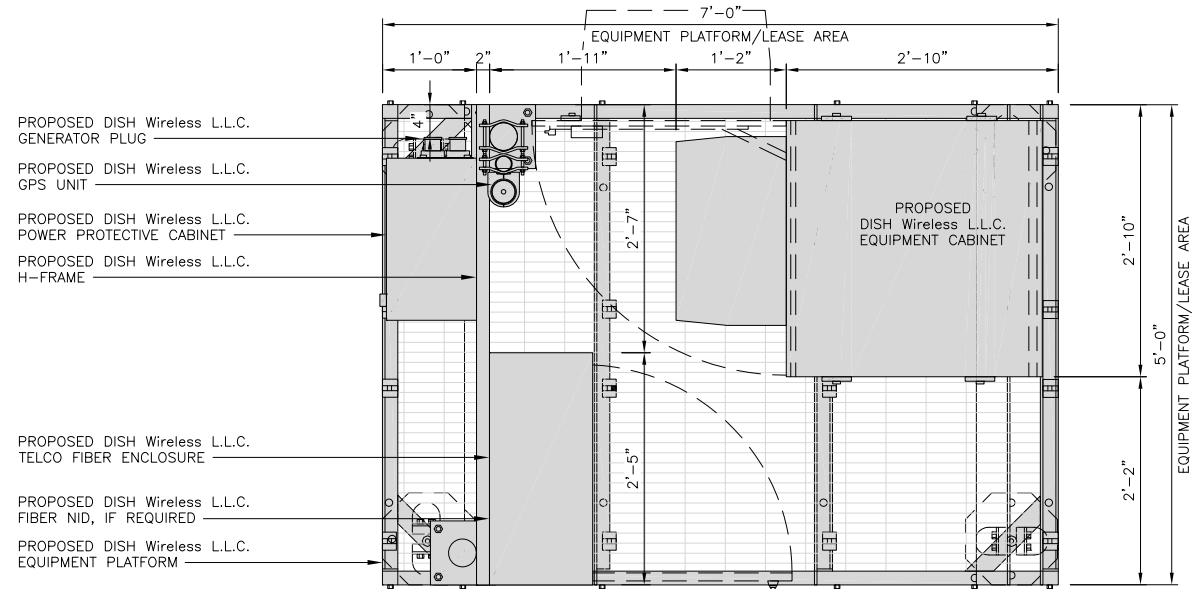
SHEET TITLE
EQUIPMENT PLATFORM AND
H-FRAME DETAILS

SHEET NUMBER

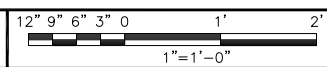
A-3

NOTES

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



PLATFORM EQUIPMENT PLAN

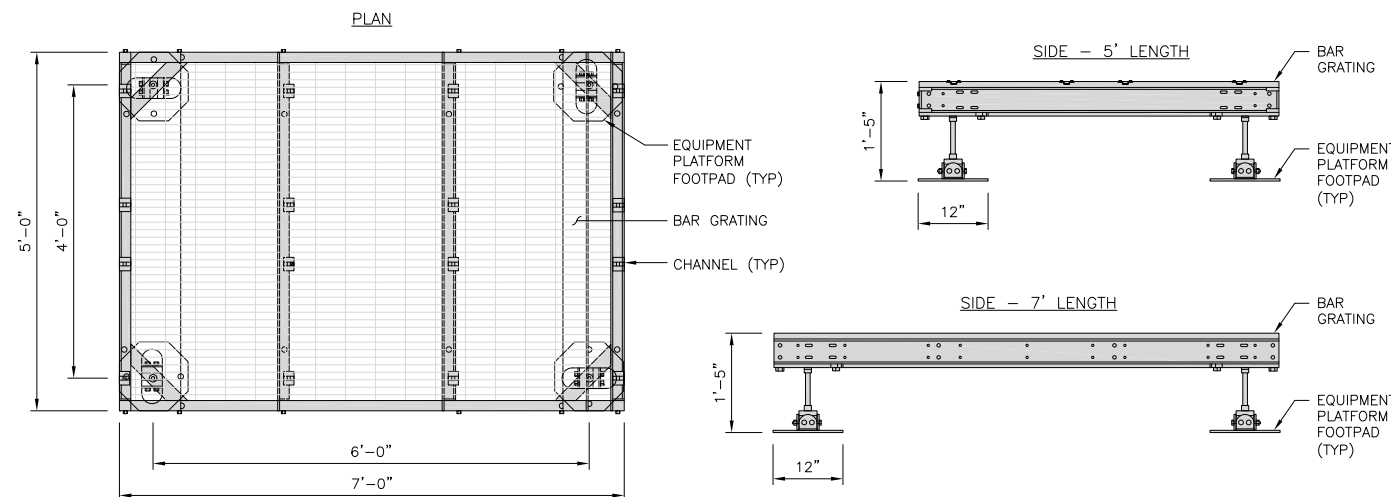


1

COMMSCOPE MTC4045LP
5X7 PLATFORM

DIMENSIONS (HxWxD)	16"x84"x60"
TOTAL WEIGHT	423 LBS

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



PLATFORM DETAIL

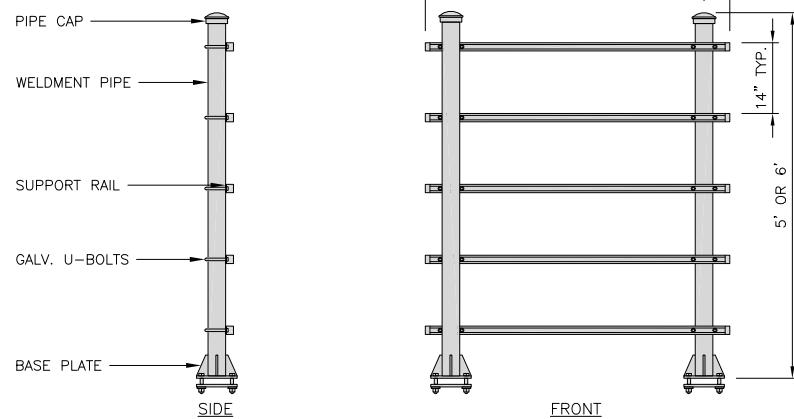
NO SCALE

2

COMMSCOPE MTC4045HFLD
H-FRAME

UNISTRUT/SUPPORT RAILS QTY	5
WEIGHT	59.74 lbs

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



H-FRAME DETAIL

NO SCALE

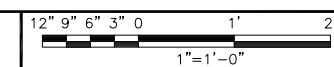
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NOT USED

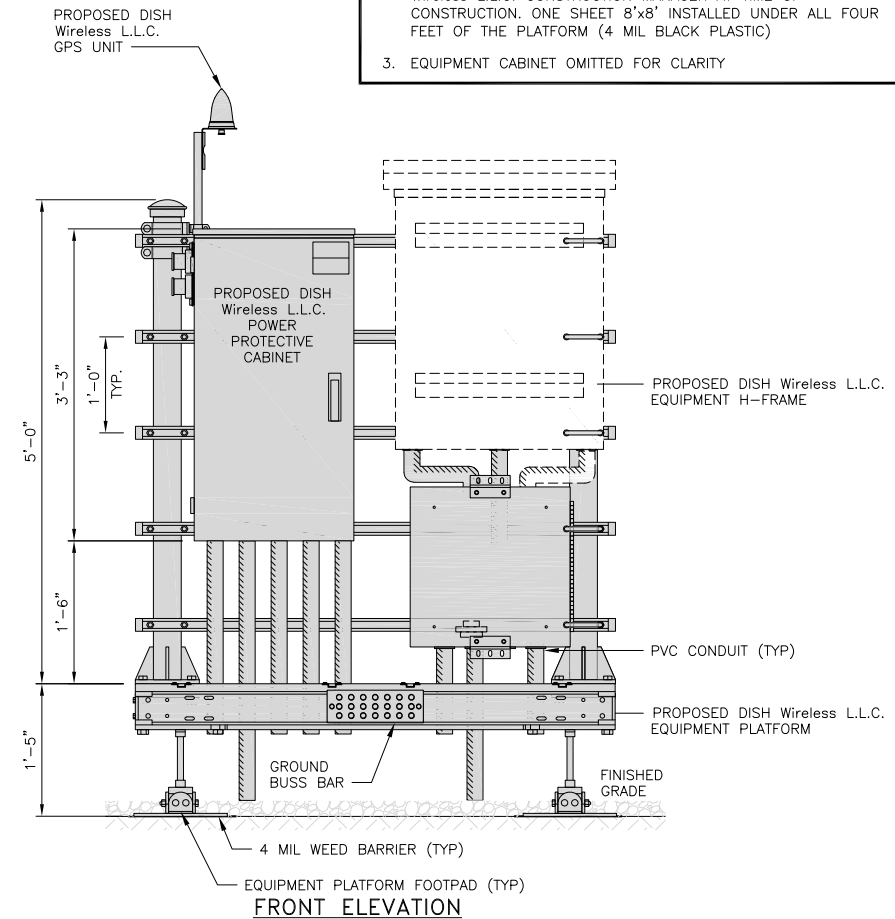
NO SCALE

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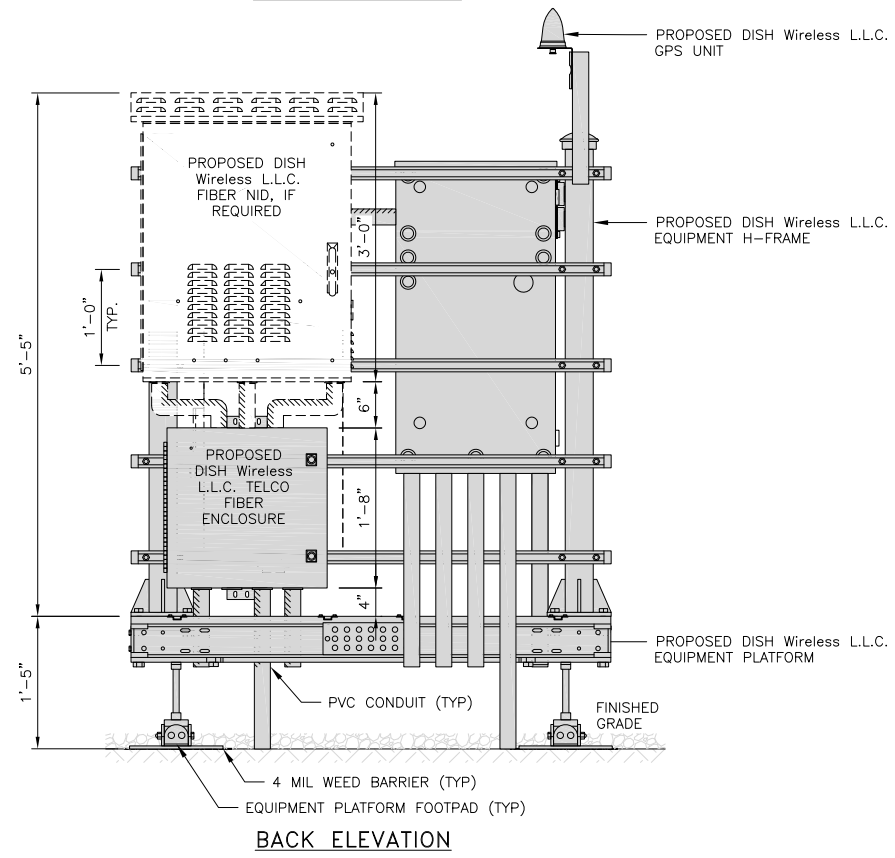
H-FRAME EQUIPMENT ELEVATION



5

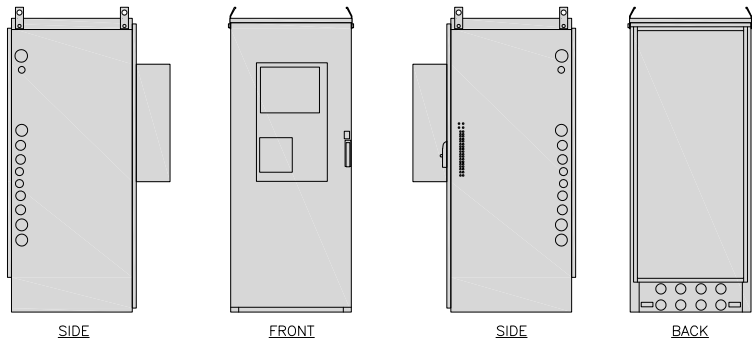
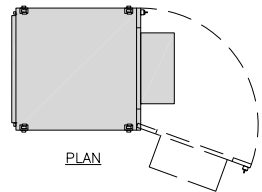


FRONT ELEVATION



BACK ELEVATION

ENERSYS HVAC CABINET 2000005995	
DIMENSIONS (HxWxD):	73"x30"x32"
WEIGHT EMPTY:	371 lbs
HVAC	600W
POWER SYSTEM	-48V ALPHA/600A

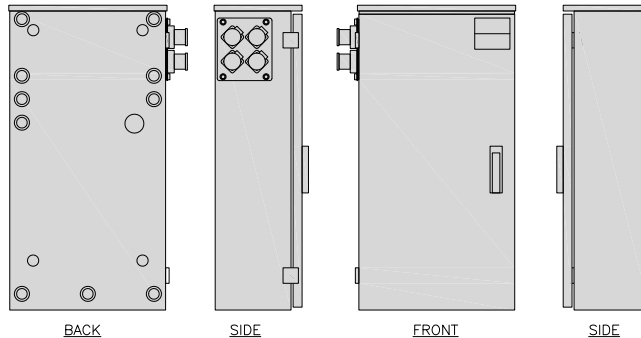
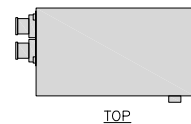


CABINET DETAIL

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



POWER PROTECTION CABINET (PPC) DETAIL

NO SCALE

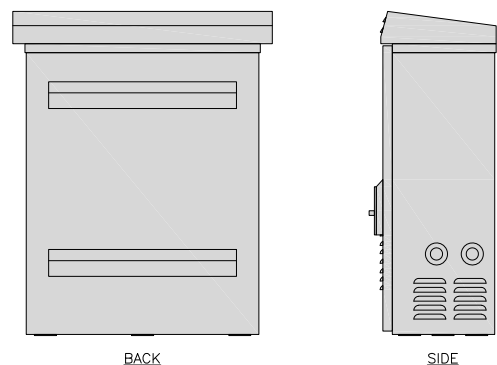
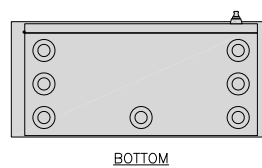
2

NOT USED

NO SCALE

3

ZAYO 5RU (LEFT SWING DOOR) FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	36.1"x29"x12.9"
WEIGHT	85 lbs

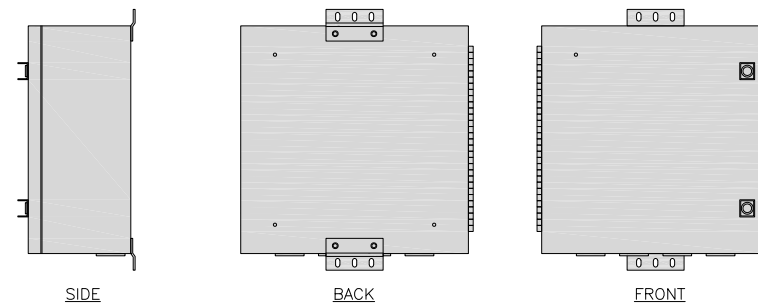
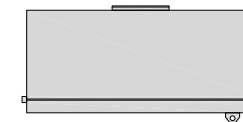


FIBER NID ENCLOSURE DETAIL

NO SCALE

5

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



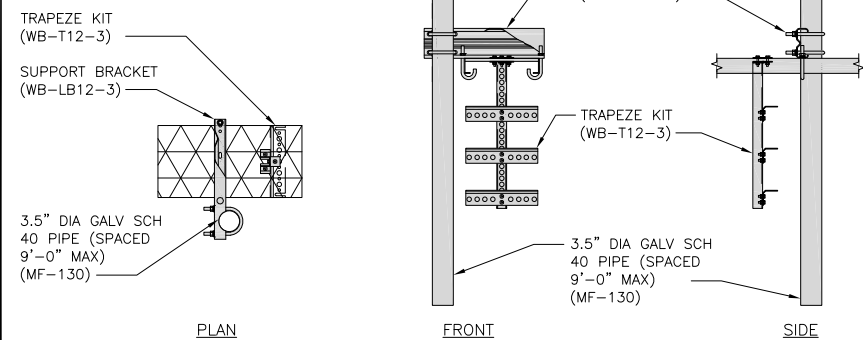
FIBER TELCO ENCLOSURE DETAIL

NO SCALE

6

COMMSCOPE WB-K110-B WAVEGUIDE BRIDGE KIT	
DIMENSIONS (HxL)	160"x10"
WEIGHT/ VOLUME	325.0 LBS
CABLE RUN (QTY)	12

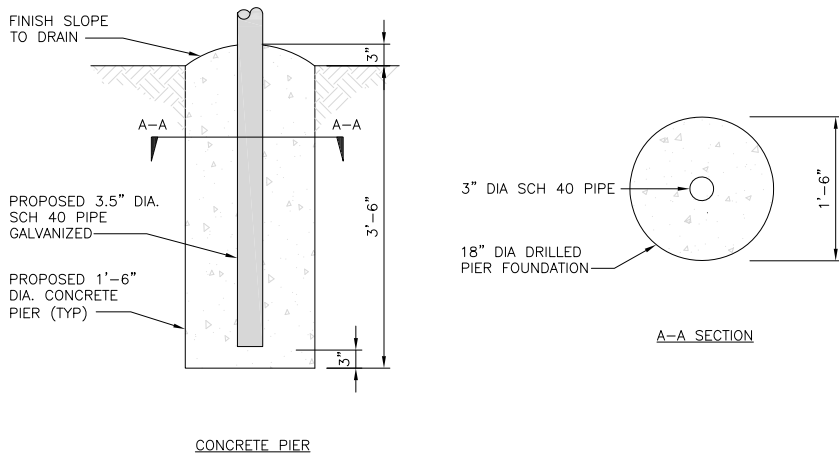
INCLUDED PRODUCTS:	WB-T12-3 TRAPEZE KIT, 3 RUNGS
	WB-LB12-3 SUPPORT BRACKET
	MF-130 DIRECT BURIAL PIPE COLUMN, 13'-4"



ICE BRIDGE DETAIL

NO SCALE

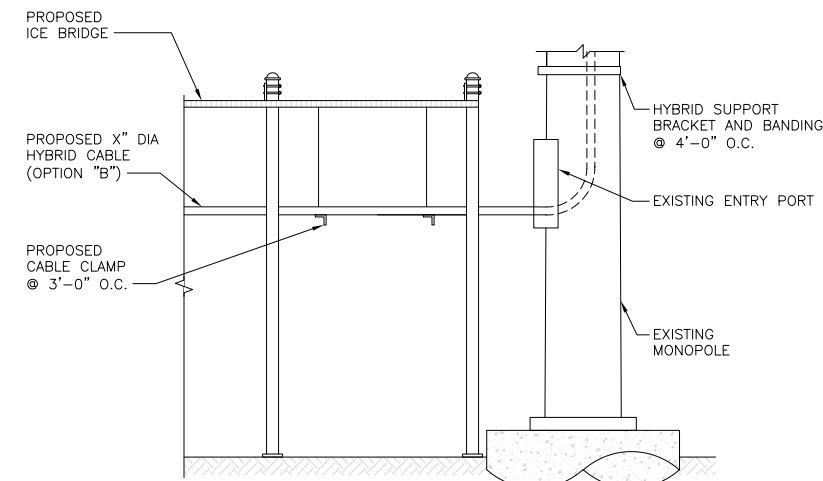
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TYPICAL ICE BRIDGE CONCRETE PIER DETAIL

NO SCALE

8



HYBRID CABLE RUN

NO SCALE

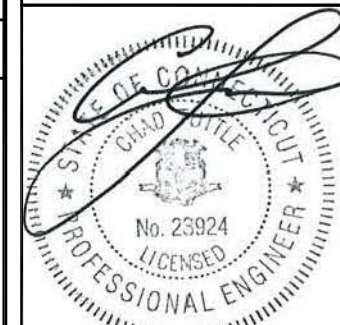
9

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AMERICAN TOWER
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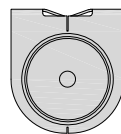
DISH Wireless L.L.C.
PROJECT INFORMATION
NJER01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

SHEET TITLE
EQUIPMENT DETAILS

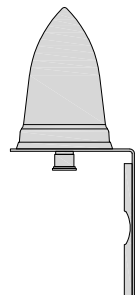
SHEET NUMBER

A-4

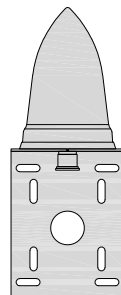
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



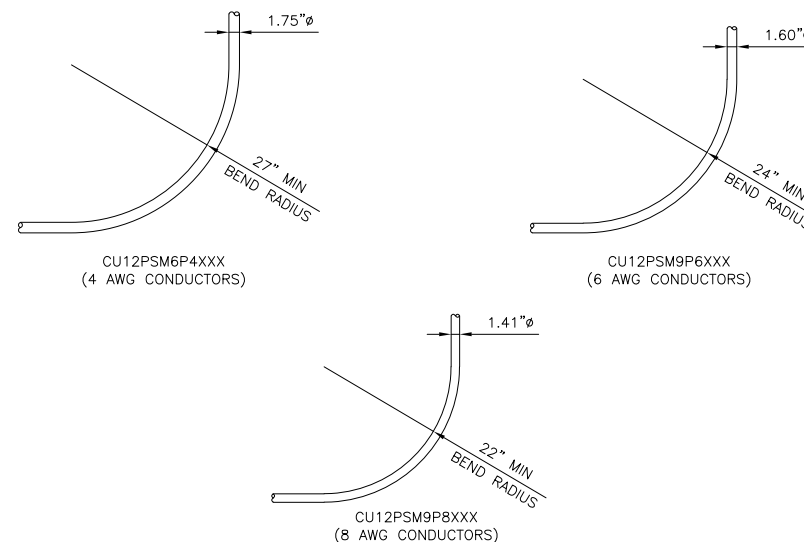
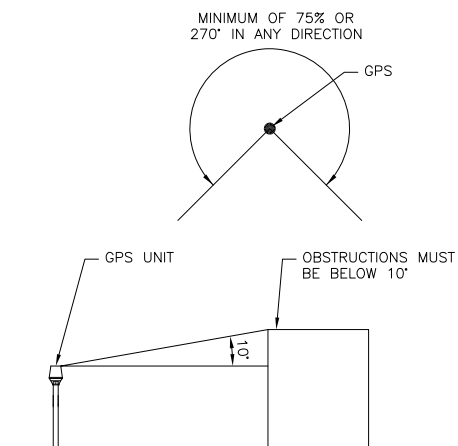
TOP



BACK



SIDE



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

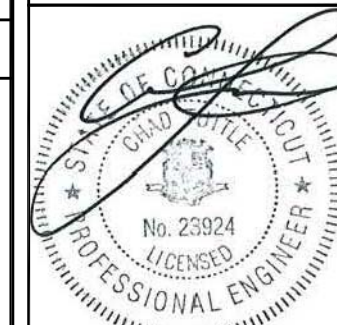
9

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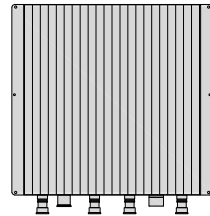
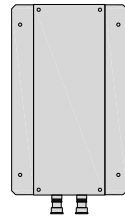
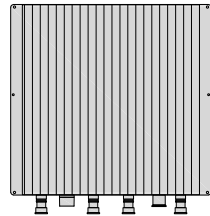
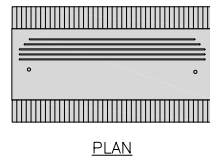
DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

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

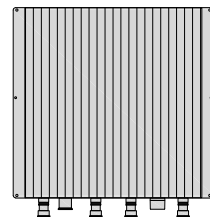
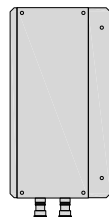
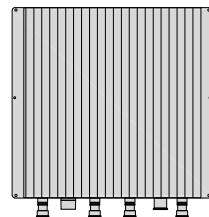
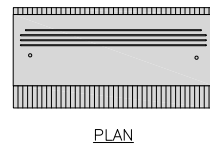


BACK

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



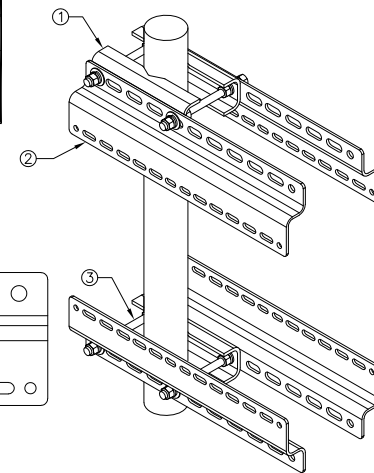
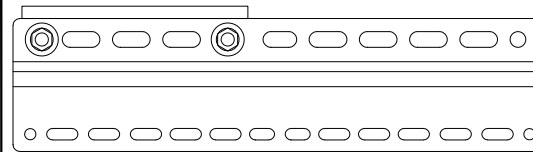
BACK

SIDE

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

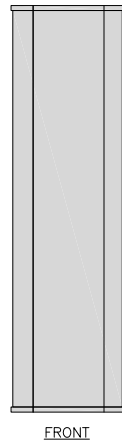
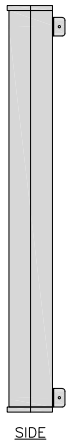
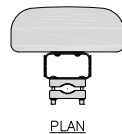
2

RRH MOUNT DETAIL

NO SCALE

3

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



SIDE

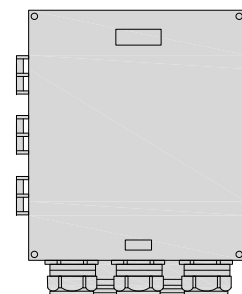
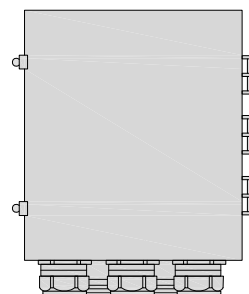
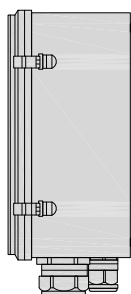
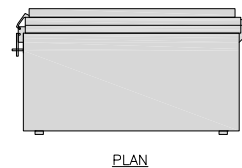
FRONT

ANTENNA DETAIL

NO SCALE

4

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



SIDE

BACK

FRONT

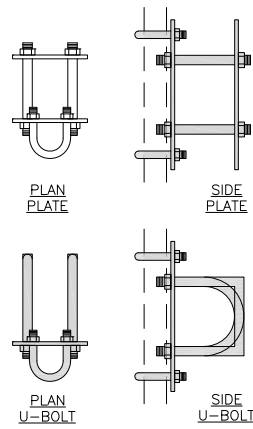
SURGE SUPPRESSION DETAIL (OVP)

NO SCALE

7

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

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



PLAN
U-BOLT

SIDE
U-BOLT

PLAN
U-BOLT

SIDE
U-BOLT

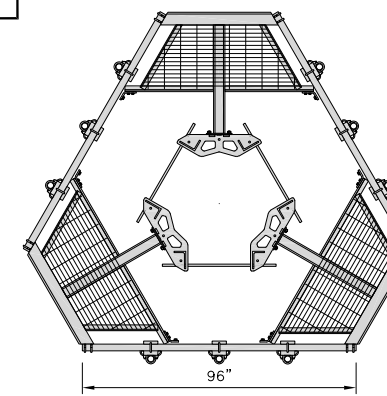
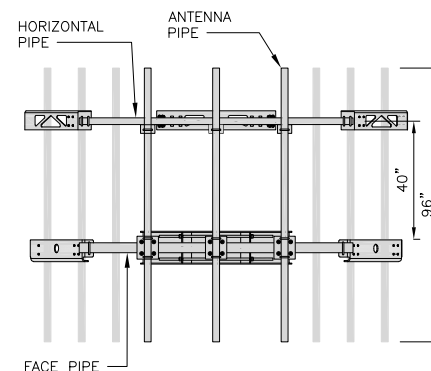
RRH/OVP MOUNT DETAIL

NO SCALE

8

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

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



ANTENNA PLATFORM DETAIL

NO SCALE

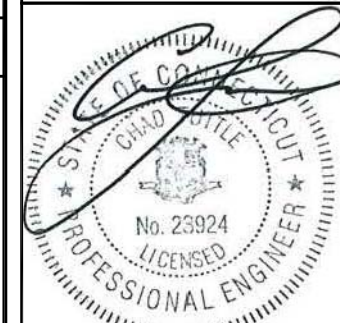
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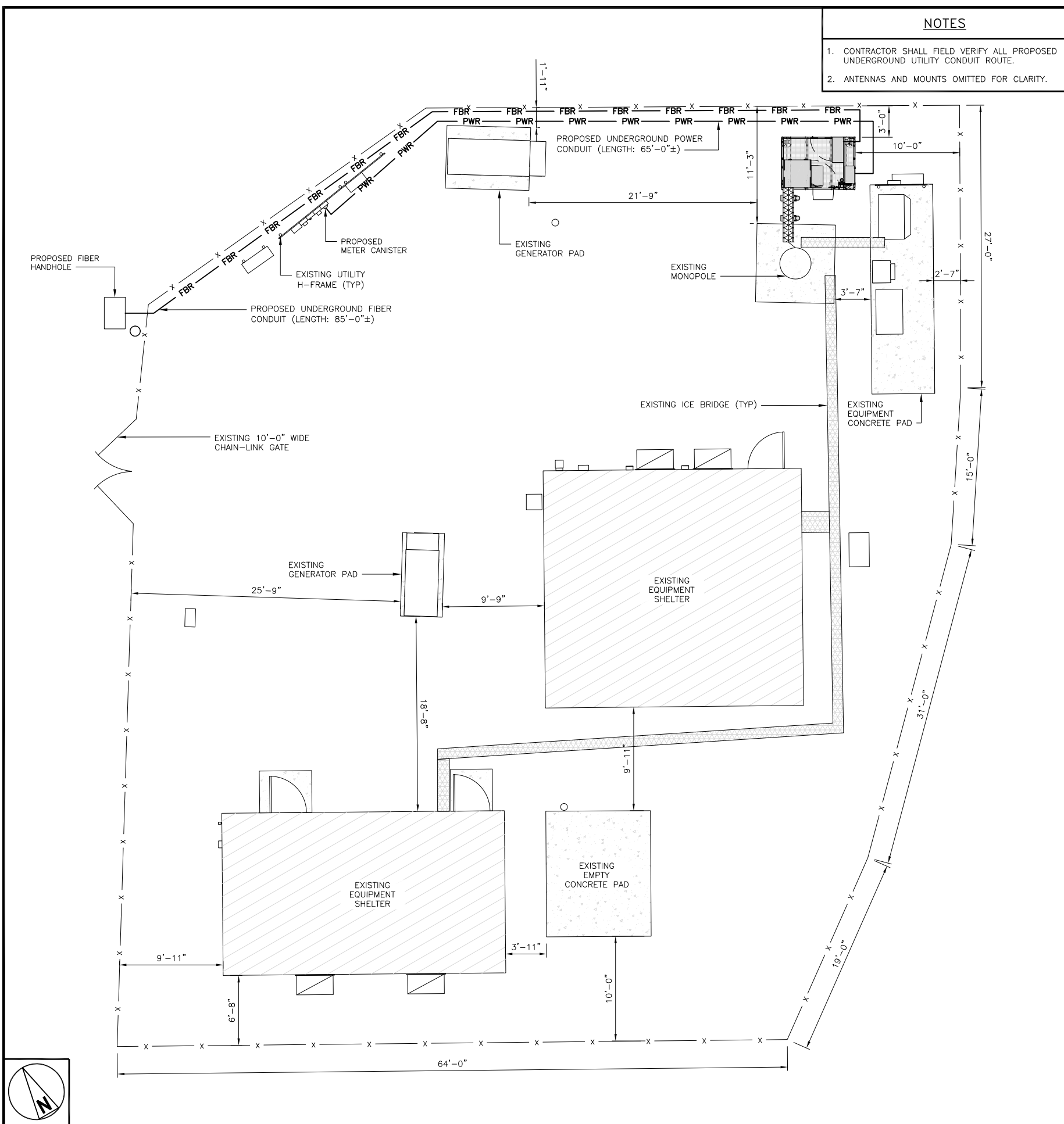
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6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER

A-6



NOTES

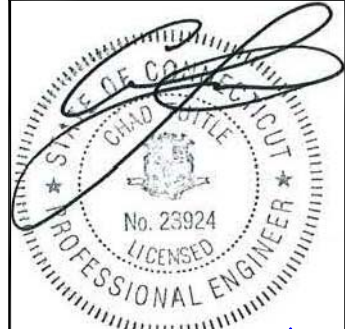
1. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.

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 OF THIS DRAWING'S CREATION



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



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CONSTRUCTION DOCUMENTS

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A&E PROJECT NUMBER
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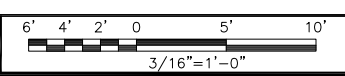
DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

SHEET TITLE
ELECTRICAL/FIBER ROUTE
PLAN AND NOTES

SHEET NUMBER
E-1



UTILITY ROUTE PLAN



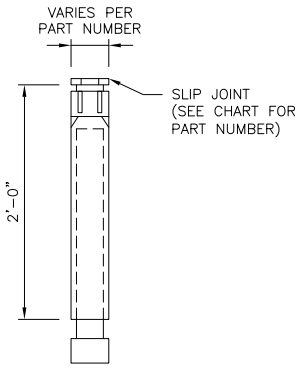
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ELECTRICAL NOTES

NO SCALE

2

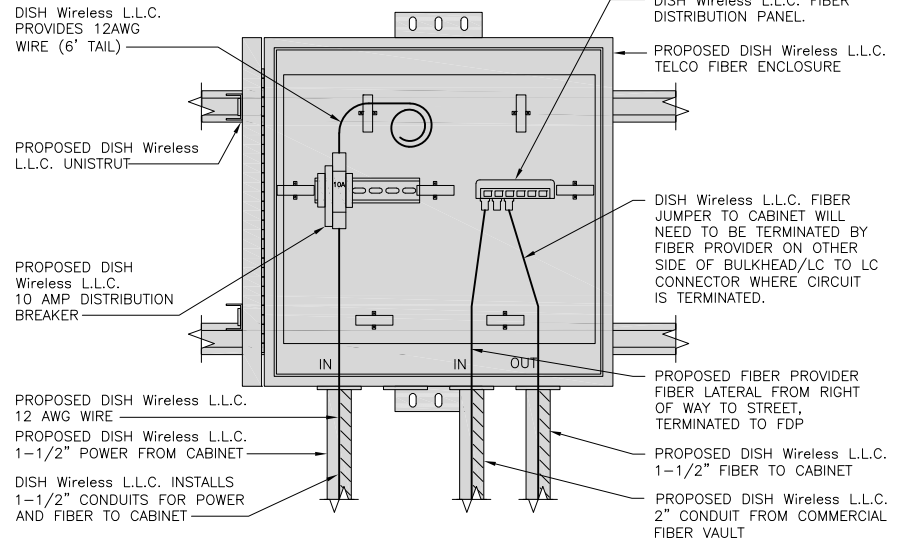
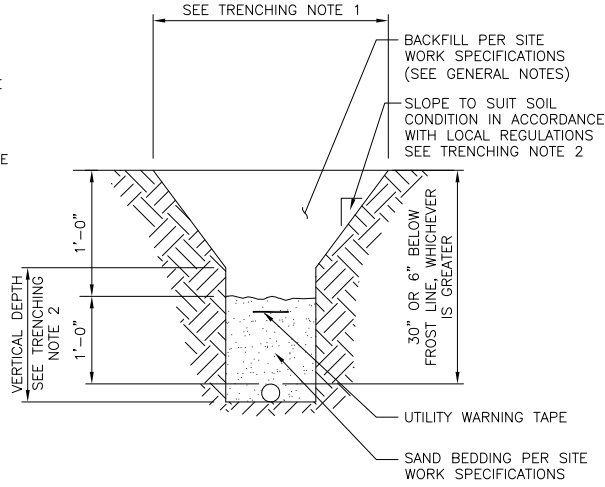
CARLON EXPANSION FITTINGS				
COUPLING END PART#	MALE TERMINAL ADAPTER END PART#	SIZE	STD CTN QTY.	TRAVEL LENGTH
E945D	E945DX	1/2"	20	4"
E945E	E945EX	3/4"	15	4"
E945F	E945FX	1"	10	4"
E945G	E945GX	1 1/4"	5	4"
E945H	E945HX	1 1/2"	5	4"
E945J	E945JX	2"	15	8"
E945K	E945KX	2 1/2"	10	8"
E945L	E945LX	3"	10	8"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



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

TRENCHING NOTES

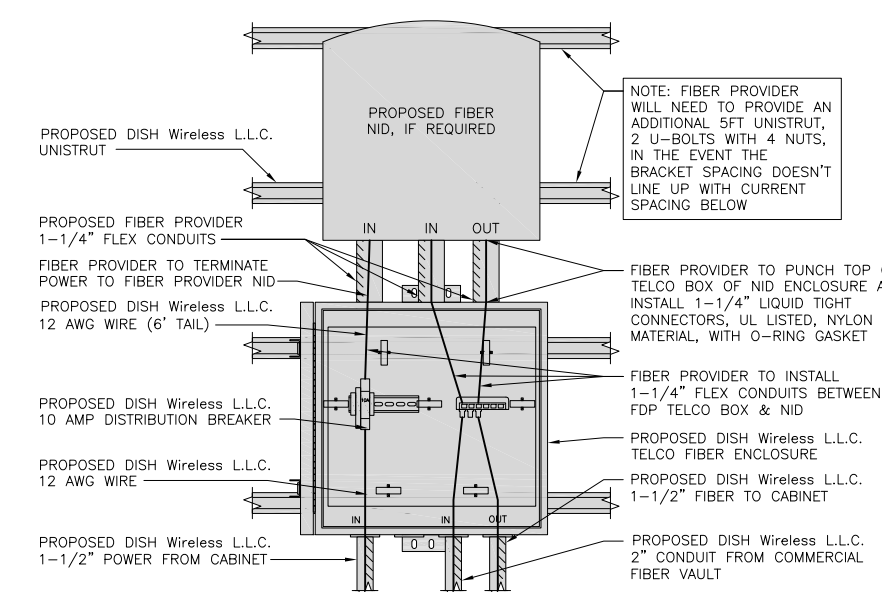
- CONTRACTOR SHALL RESTORE THE TRENCH TO ITS ORIGINAL CONDITIONS BY EITHER SEEDING OR SODDING GRASS AREAS, OR REPLACING ASPHALT OR CONCRETE AREAS TO ITS ORIGINAL CROSS SECTION.
- TRENCHING SAFETY; INCLUDING, BUT NOT LIMITED TO SOIL CLASSIFICATION, SLOPING, AND SHORING, SHALL BE GOVERNED BY THE CURRENT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



EXPANSION JOINT DETAIL NO SCALE 1

TYPICAL UNDERGROUND TRENCH DETAIL NO SCALE 2

DARK TELCO BOX – INTERIOR WIRING LAYOUT NO SCALE 3



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

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

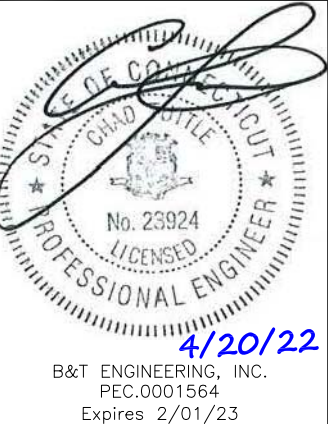
NOT USED NO SCALE 5

NOT USED NO SCALE 6

NOT USED NO SCALE 7

NOT USED NO SCALE 8

NOT USED NO SCALE 9



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RFDS REV #:		1

CONSTRUCTION DOCUMENTS

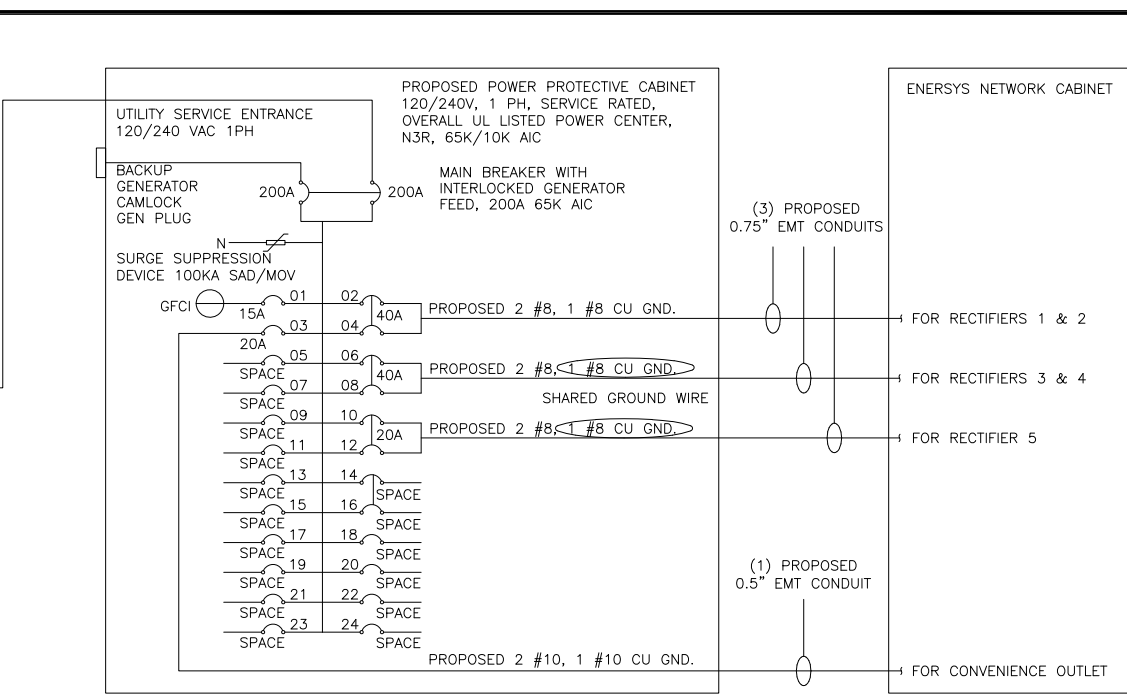
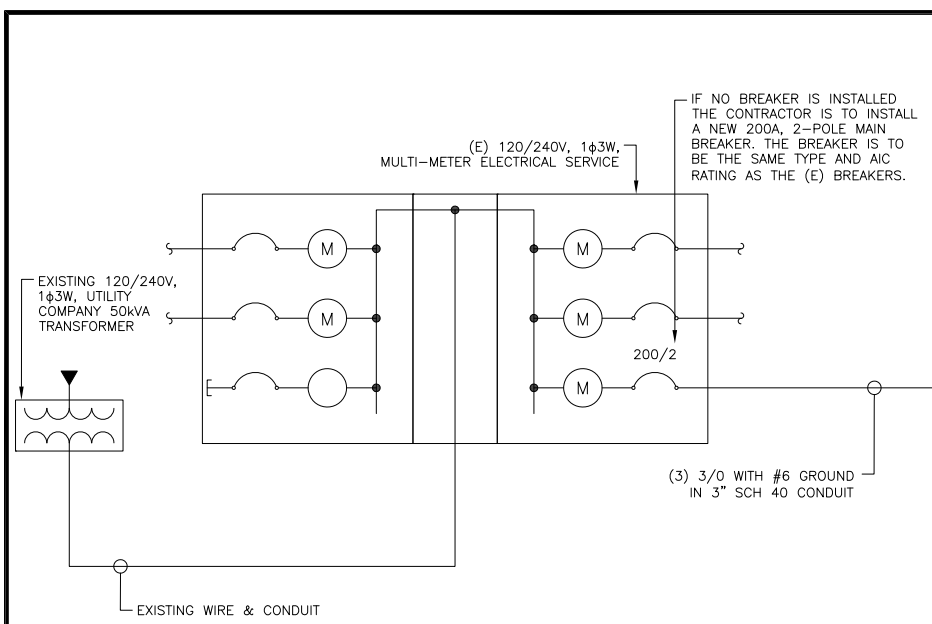
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DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

SHEET TITLE
ELECTRICAL
DETAILS

SHEET NUMBER
E-2



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

BREAKERS REQUIRED:
(2) 40A, 2P BREAKER - SQUARE D P/N:Q0240
(1) 20A, 2P BREAKER - SQUARE D P/N:Q0220
(1) 20A, 1P BREAKER - SQUARE D P/N:Q0120

NOTES

CONDUIT SIZING: AT 40% FILL PER NEC CHAPTER 9, TABLE 4, ARTICLE 358.

0.5" CONDUIT - 0.122 SQ. IN AREA
0.75" CONDUIT - 0.213 SQ. IN AREA
2.0" CONDUIT - 1.316 SQ. IN AREA
3.0" CONDUIT - 2.907 SQ. IN AREA

CABINET CONVENIENCE OUTLET CONDUCTORS (1 CONDUIT): USING THWN-2, CU.

#10 - 0.0211 SQ. IN X 2 = 0.0422 SQ. IN
#10 - 0.0211 SQ. IN X 1 = 0.0211 SQ. IN <GROUND
TOTAL = 0.0633 SQ. IN

0.5" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

RECTIFIER CONDUCTORS (3 CONDUITS): USING UL1015, CU.

#8 - 0.0552 SQ. IN X 2 = 0.1103 SQ. IN
#8 - 0.0131 SQ. IN X 1 = 0.0131 SQ. IN <BARE GROUND
TOTAL = 0.1234 SQ. IN

0.75" EMT CONDUIT IS ADEQUATE TO HANDLE THE TOTAL OF (3) WIRES, INCLUDING GROUND WIRE, AS INDICATED ABOVE.

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

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

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

5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

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WOBBURN, MA 01801

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PPC ONE-LINE DIAGRAM

NO SCALE 1

PROPOSED ENERSYS PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS)		TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS)		LOAD SERVED
	L1	L2						L1	L2	
PPC GFCI OUTLET	180	180	15A	1	A	2	40A	3840	3840	ENERSYS ALPHA CORDEX RECTIFIERS 1 & 2
ENERSYS GFCI OUTLET			20A	3	B	4	40A	3840	3840	ENERSYS ALPHA CORDEX RECTIFIER 3 & 4
--SPACE--				5	A	6	40A	3840	3840	ENERSYS ALPHA CORDEX RECTIFIER 3 & 4
--SPACE--				7	B	8	40A	3840	3840	ENERSYS ALPHA CORDEX RECTIFIER 3 & 4
--SPACE--				9	A	10	20A	1920	1920	ENERSYS ALPHA CORDEX RECTIFIER 5
--SPACE--				11	B	12	20A	1920	1920	ENERSYS ALPHA CORDEX RECTIFIER 5
--SPACE--				13	A	14				--SPACE--
--SPACE--				15	B	16				--SPACE--
--SPACE--				17	A	18				--SPACE--
--SPACE--				19	B	20				--SPACE--
--SPACE--				21	A	22				--SPACE--
--SPACE--				23	B	24				--SPACE--
VOLTAGE AMPS			180	180				9500	9500	
200A MCB, 1φ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			9680	9680	VOLTAGE AMPS					
			81	81	AMPS					
					81		MAX AMPS			
					102		MAX 125%			

PANEL SCHEDULE

NO SCALE 2

NOT USED

NO SCALE 3

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CONSTRUCTION DOCUMENTS

SUBMITTALS

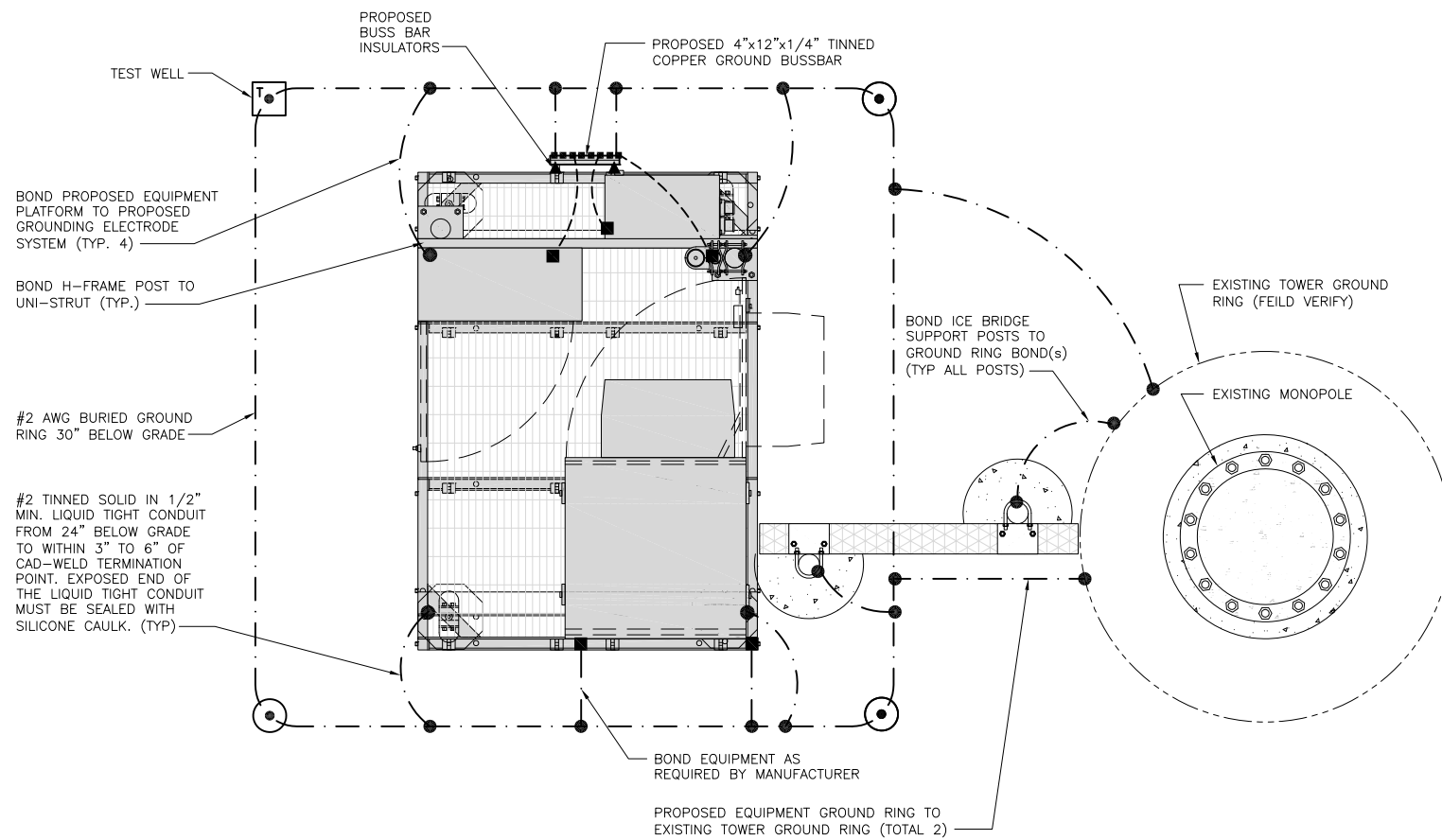
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DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

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

SHEET NUMBER
E-3

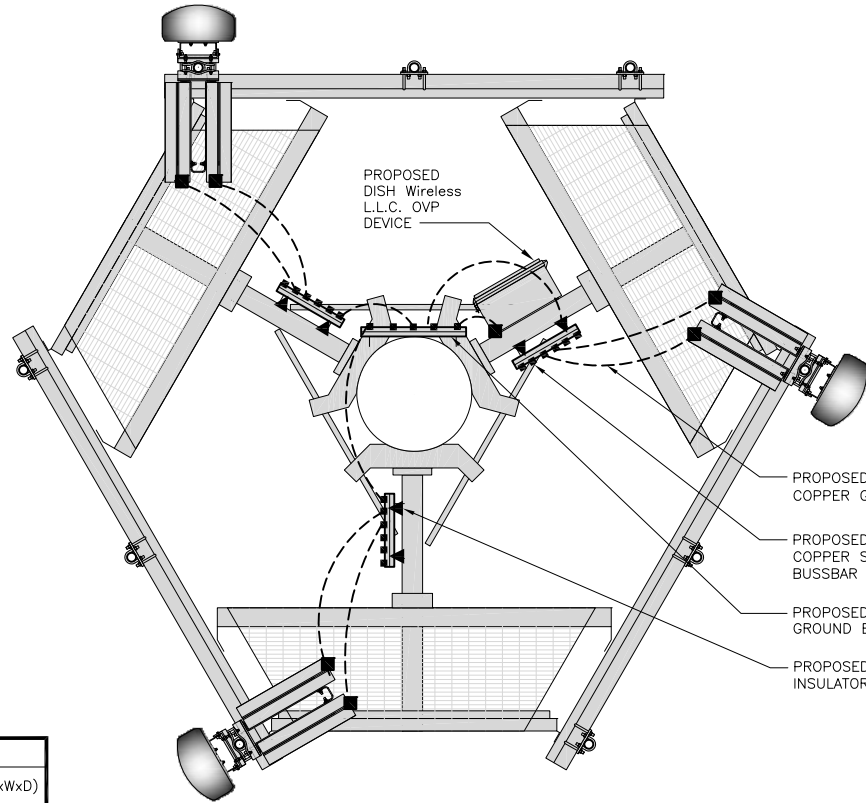


TYPICAL EQUIPMENT GROUNDING PLAN

NO SCALE 1

NOTES

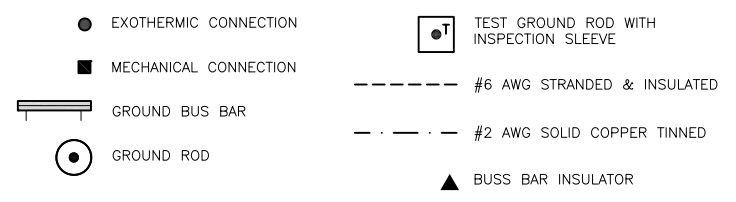
1. ANTENNAS AND OVP SHOWN ARE GENERIC AND NOT REFERENCING TO A SPECIFIC MANUFACTURER. THIS LAYOUT IS FOR REFERENCE ONLY



TYPICAL ANTENNA GROUNDING PLAN

NO SCALE 2

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



GROUNDING LEGEND

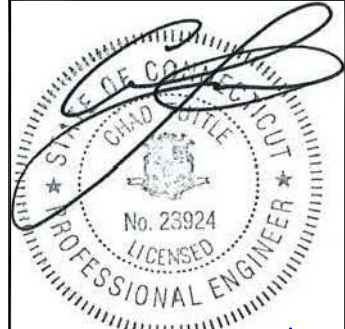
1. GROUNDING IS SHOWN DIAGRAMMATICALLY ONLY.
2. CONTRACTOR SHALL GROUND ALL EQUIPMENT AS A COMPLETE SYSTEM. GROUNDING SHALL BE IN COMPLIANCE WITH NEC SECTION 250 AND DISH Wireless L.L.C. GROUNDING AND BONDING REQUIREMENTS AND MANUFACTURER'S SPECIFICATIONS.
3. ALL GROUND CONDUCTORS SHALL BE COPPER; NO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

GROUNDING KEY NOTES

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

GROUNDING KEY NOTES

NO SCALE 3



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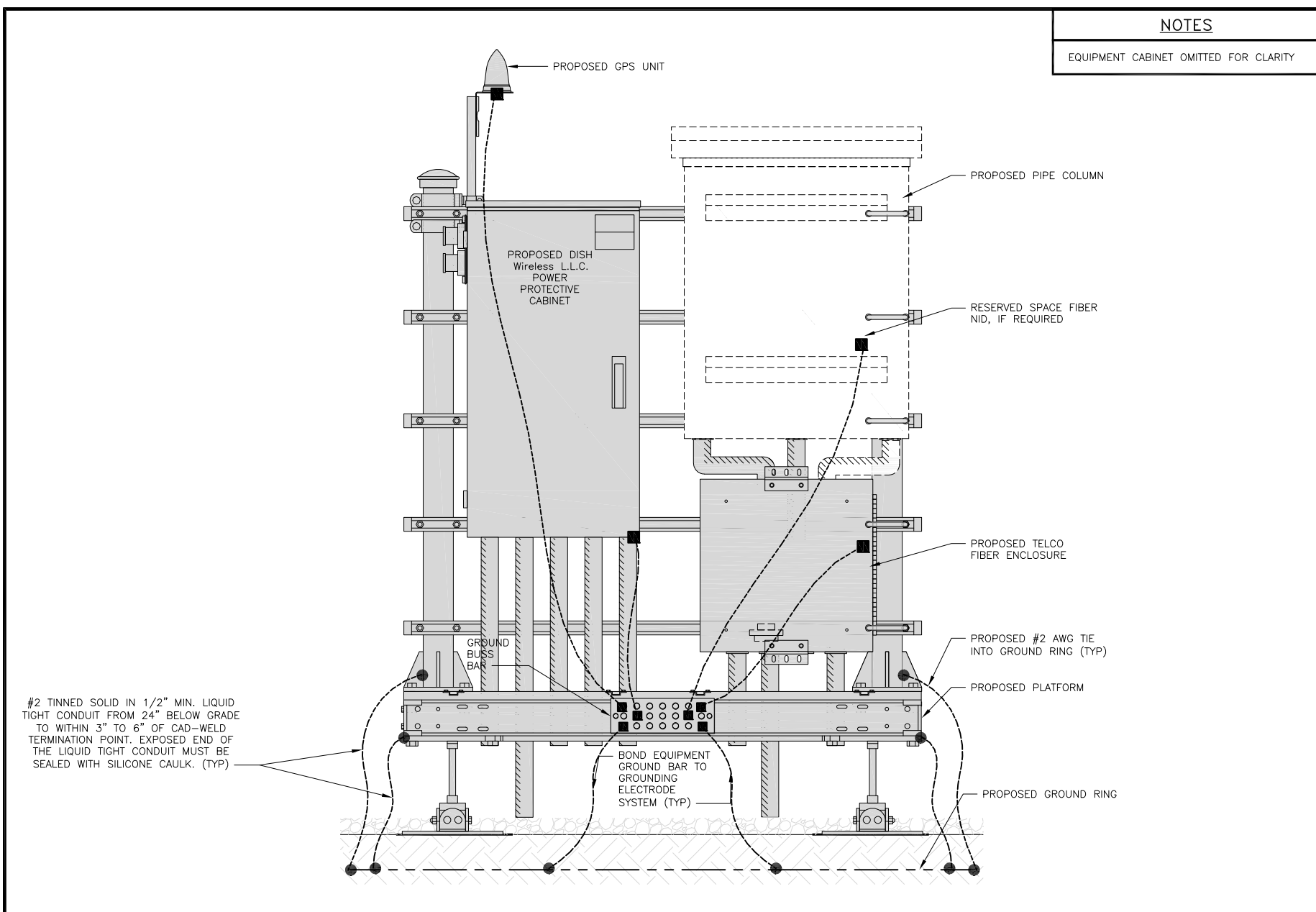
A&E PROJECT NUMBER
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DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

SHEET TITLE
GROUNDING PLANS
AND NOTES

SHEET NUMBER

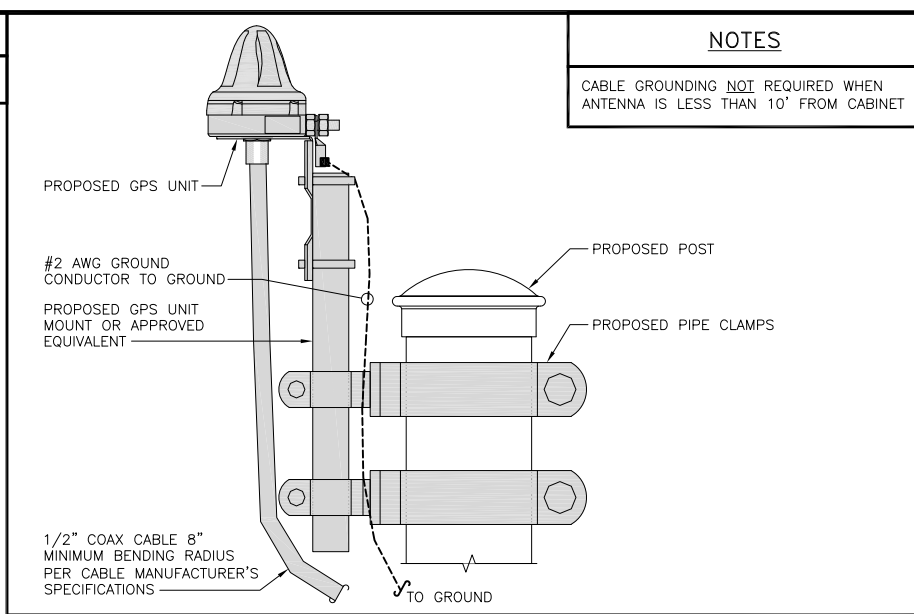
G-1



H-FRAME GROUNDING DETAIL

NO SCALE 1

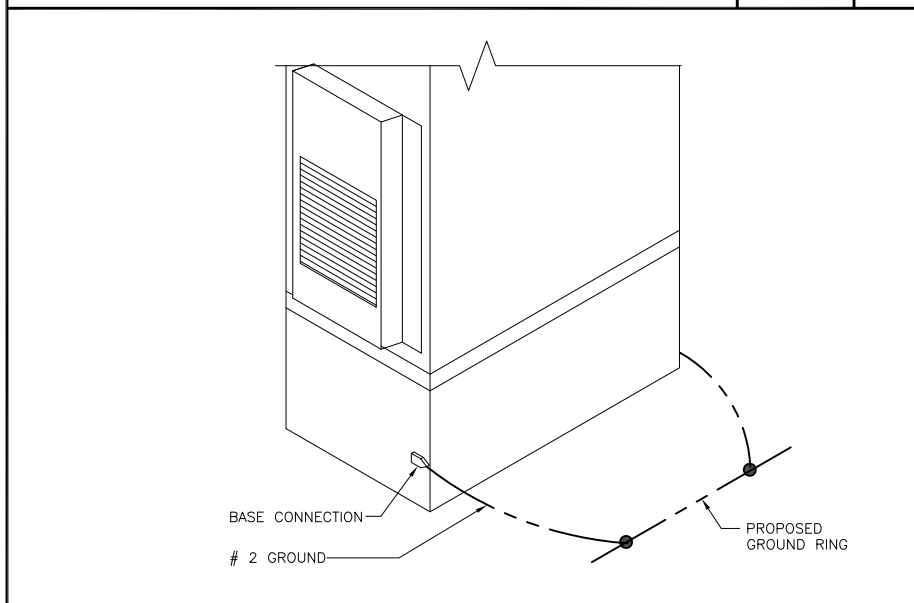
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EQUIPMENT CABINET OMITTED FOR CLARITY



TYPICAL GPS UNIT GROUNDING

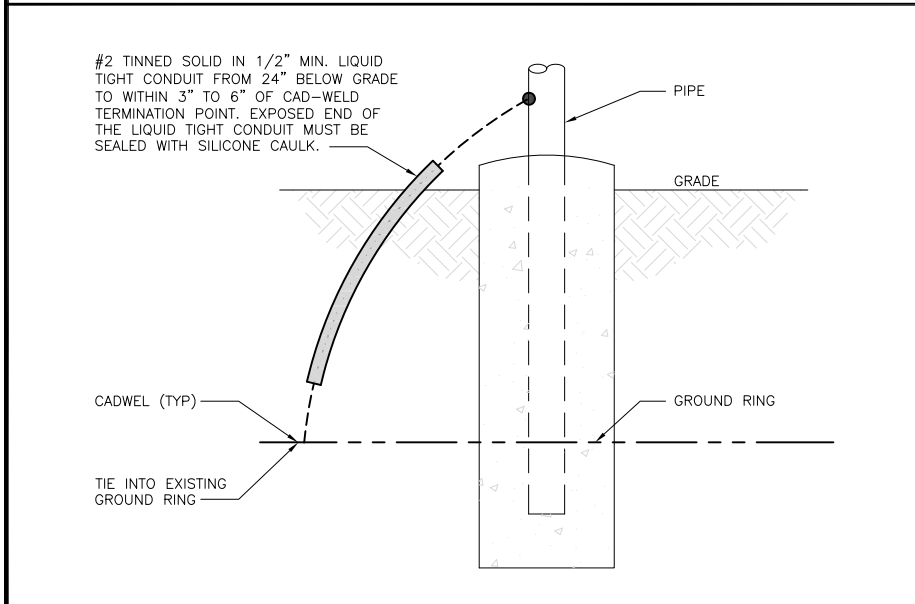
NO SCALE 2

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



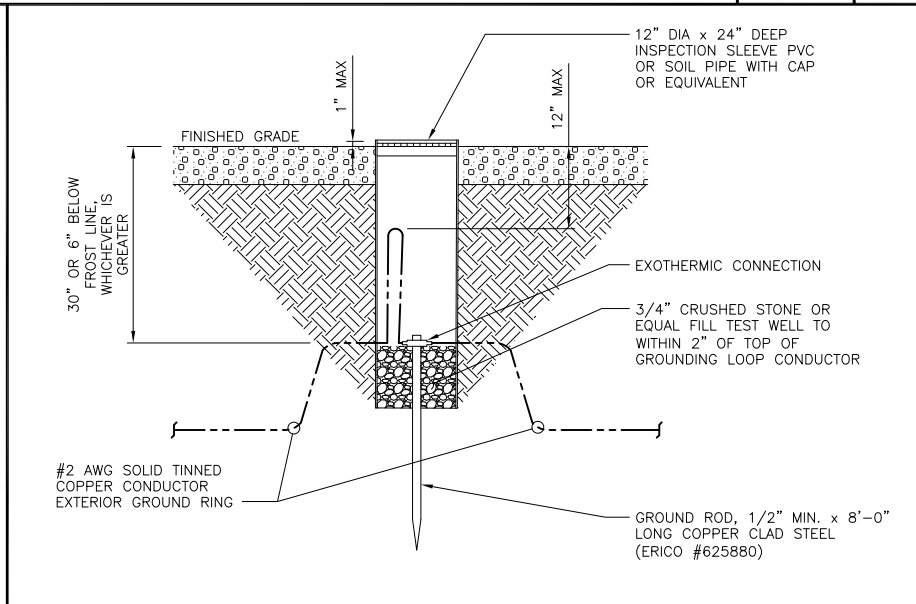
OUTDOOR CABINET GROUNDING

NO SCALE 3



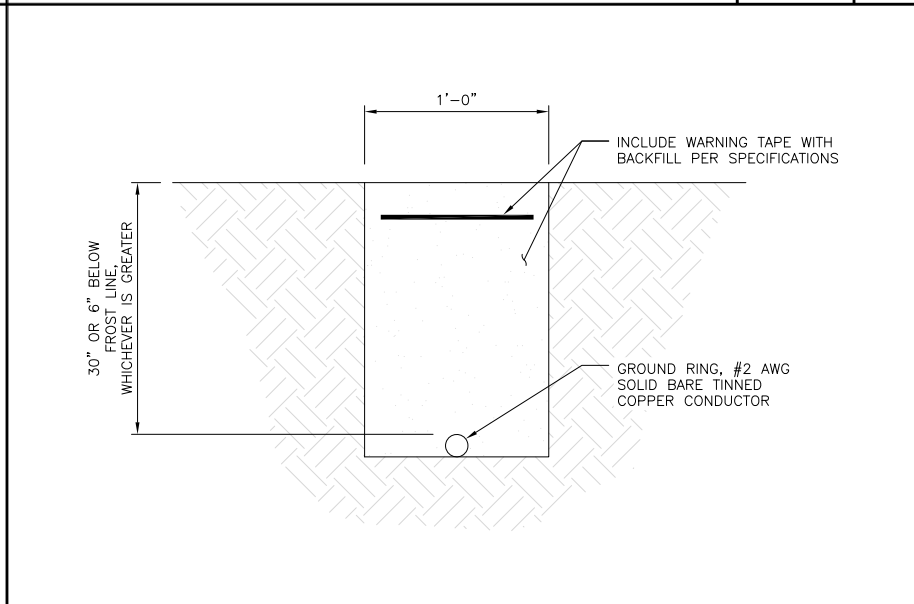
TRANSITIONING GROUND DETAIL

NO SCALE 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE

NO SCALE 5



TYPICAL GROUND RING TRENCH

NO SCALE 6

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STATE OF CONNECTICUT
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No. 23924
LICENSED PROFESSIONAL ENGINEER
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B&T ENGINEERING, INC.
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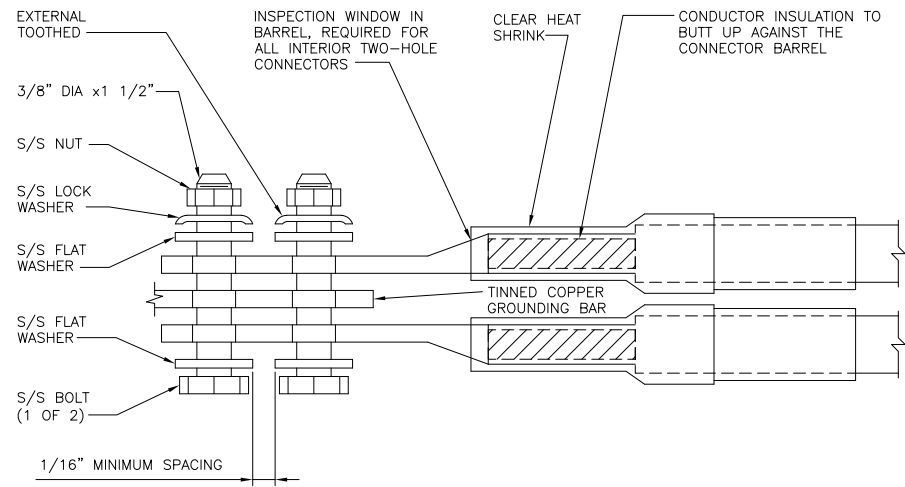
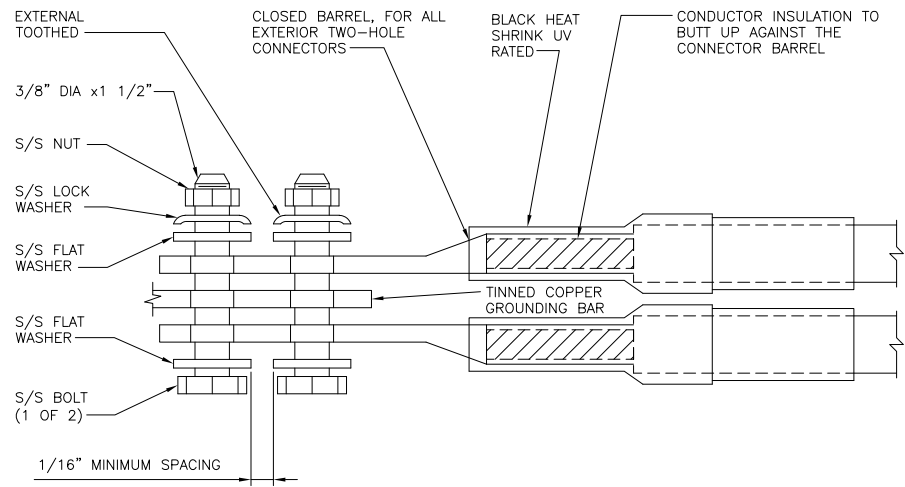
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SHEET NUMBER
G-2

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



TYPICAL GROUNDING NOTES

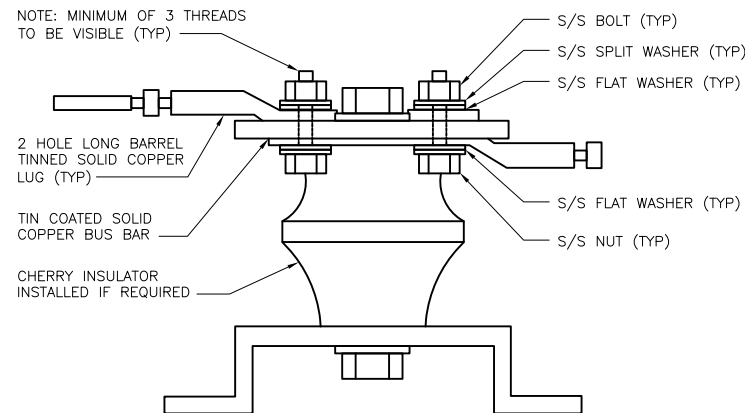
NO SCALE 1

TYPICAL EXTERIOR TWO HOLE LUG

NO SCALE 2

TYPICAL INTERIOR TWO HOLE LUG

NO SCALE 3



LUG DETAIL

NO SCALE 4

NOT USED

NO SCALE 5

NOT USED

NO SCALE 6

NOT USED

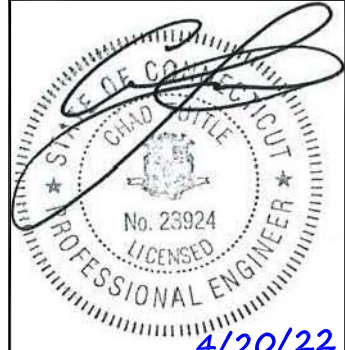
NO SCALE 7

NOT USED

NO SCALE 8

NOT USED

NO SCALE 9



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DAS	GLS	GLS

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS		
REV	DATE	DESCRIPTION
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A&E PROJECT NUMBER
153235.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
G-3

RF JUMPER COLOR CODING

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

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

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

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

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

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

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

HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS

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

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

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

FIBER JUMPERS TO RRHs

LOW-BAND RRH FIBER CABLES HAVE SECTOR STRIPE ONLY

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

POWER CABLES TO RRHs

LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY

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

RET MOTORS AT ANTENNAS

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

MICROWAVE RADIO LINKS

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

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

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

RF CABLE COLOR CODES

NO SCALE

1

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

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

NOT USED

NO SCALE

4



5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120



4/20/22

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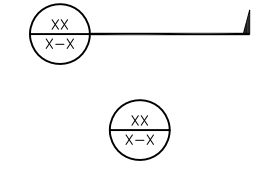
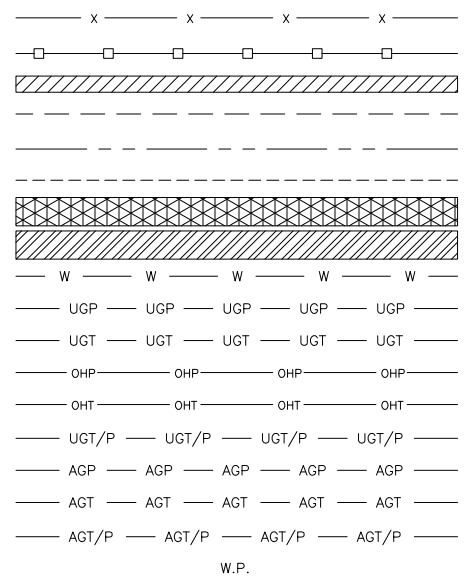
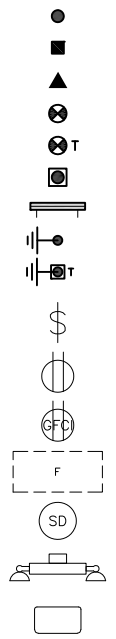
A&E PROJECT NUMBER
153235.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJER01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

SHEET TITLE
RF
CABLE COLOR CODES

SHEET NUMBER
RF-1

EXOTHERMIC CONNECTION
 MECHANICAL CONNECTION
 BUSS BAR INSULATOR
 CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 TEST CHEMICAL ELECTROLYTIC GROUNDING SYSTEM
 EXOTHERMIC WITH INSPECTION SLEEVE
 GROUNDING BAR
 GROUND ROD
 TEST GROUND ROD WITH INSPECTION SLEEVE
 SINGLE POLE SWITCH
 DUPLEX RECEPTACLE
 DUPLEX GFCI RECEPTACLE
 FLUORESCENT LIGHTING FIXTURE (2) TWO LAMPS 48-T8
 SMOKE DETECTION (DC)
 EMERGENCY LIGHTING (DC)
 SECURITY LIGHT W/PHOTOCELL LITHONIA ALXW
 LED-1-25A400/51K-SR4-120-PE-DOBXTD
 CHAIN LINK FENCE
 WOOD/WROUGHT IRON FENCE
 WALL STRUCTURE
 LEASE AREA
 PROPERTY LINE (PL)
 SETBACKS
 ICE BRIDGE
 CABLE TRAY
 WATER LINE
 UNDERGROUND POWER
 UNDERGROUND TELCO
 OVERHEAD POWER
 OVERHEAD TELCO
 UNDERGROUND TELCO/POWER
 ABOVE GROUND POWER
 ABOVE GROUND TELCO
 ABOVE GROUND TELCO/POWER
 WORKPOINT



LEGEND

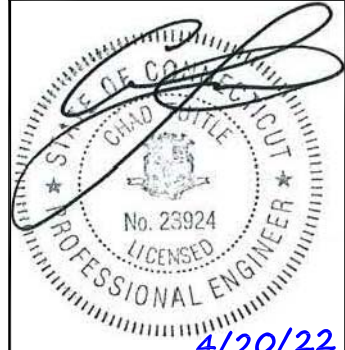
AB ANCHOR BOLT
 ABV ABOVE
 AC ALTERNATING CURRENT
 ADDL ADDITIONAL
 AFF ABOVE FINISHED FLOOR
 AFG ABOVE FINISHED GRADE
 AGL ABOVE GROUND LEVEL
 AIC AMPERAGE INTERRUPTION CAPACITY
 ALUM ALUMINUM
 ALT ALTERNATE
 ANT ANTENNA
 APPROX APPROXIMATE
 ARCH ARCHITECTURAL
 ATS AUTOMATIC TRANSFER SWITCH
 AWG AMERICAN WIRE GAUGE
 BATT BATTERY
 BLDG BUILDING
 BLK BLOCK
 BLKG BLOCKING
 BM BEAM
 BTC BARE TINNED COPPER CONDUCTOR
 BOF BOTTOM OF FOOTING
 CAB CABINET
 CANT CANTILEVERED
 CHG CHARGING
 CLG CEILING
 CLR CLEAR
 COL COLUMN
 COMM COMMON
 CONC CONCRETE
 CONSTR CONSTRUCTION
 DBL DOUBLE
 DC DIRECT CURRENT
 DEPT DEPARTMENT
 DF DOUGLAS FIR
 DIA DIAMETER
 DIAG DIAGONAL
 DIM DIMENSION
 DWG DRAWING
 DWL DOWEL
 EA EACH
 EC ELECTRICAL CONDUCTOR
 EL ELEVATION
 ELEC ELECTRICAL
 EMT ELECTRICAL METALLIC TUBING
 ENG ENGINEER
 EQ EQUAL
 EXP EXPANSION
 EXT EXTERIOR
 EW EACH WAY
 FAB FABRICATION
 FF FINISH FLOOR
 FG FINISH GRADE
 FIF FACILITY INTERFACE FRAME
 FIN FINISH(ED)
 FLR FLOOR
 FDN FOUNDATION
 FOC FACE OF CONCRETE
 FOM FACE OF MASONRY
 FOS FACE OF STUD
 FOW FACE OF WALL
 FS FINISH SURFACE
 FT FOOT
 FTG FOOTING
 GA GAUGE
 GEN GENERATOR
 GFCI GROUND FAULT CIRCUIT INTERRUPTER
 GLB GLUE LAMINATED BEAM
 GLV GALVANIZED
 GPS GLOBAL POSITIONING SYSTEM
 GND GROUND
 GSM GLOBAL SYSTEM FOR MOBILE
 HDG HOT DIPPED GALVANIZED
 HDR HEADER
 HGR HANGER
 HVAC HEAT/VENTILATION/AIR CONDITIONING
 HT HEIGHT
 IGR INTERIOR GROUND RING

IN INCH
 INT INTERIOR
 LB(S) POUND(S)
 LF LINEAR FEET
 LTE LONG TERM EVOLUTION
 MAS MASONRY
 MAX MAXIMUM
 MB MACHINE BOLT
 MECH MECHANICAL
 MFR MANUFACTURER
 MGB MASTER GROUND BAR
 MIN MINIMUM
 MISC MISCELLANEOUS
 MTL METAL
 MTS MANUAL TRANSFER SWITCH
 MW MICROWAVE
 NEC NATIONAL ELECTRIC CODE
 NM NEWTON METERS
 NO. NUMBER
 # NUMBER
 NTS NOT TO SCALE
 OC ON-CENTER
 OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
 OPNG OPENING
 P/C PRECAST CONCRETE
 PCS PERSONAL COMMUNICATION SERVICES
 PCU PRIMARY CONTROL UNIT
 PRC PRIMARY RADIO CABINET
 PP POLARIZING PRESERVING
 PSF POUNDS PER SQUARE FOOT
 PSI POUNDS PER SQUARE INCH
 PT PRESSURE TREATED
 PWR POWER CABINET
 QTY QUANTITY
 RAD RADIUS
 RECT RECTIFIER
 REF REFERENCE
 REINF REINFORCEMENT
 REQ'D REQUIRED
 RET REMOTE ELECTRIC TILT
 RF RADIO FREQUENCY
 RMC RIGID METALLIC CONDUIT
 RRH REMOTE RADIO HEAD
 RRU REMOTE RADIO UNIT
 RWY RACEWAY
 SCH SCHEDULE
 SHT SHEET
 SIAD SMART INTEGRATED ACCESS DEVICE
 SIM SIMILAR
 SPEC SPECIFICATION
 SQ SQUARE
 SS STAINLESS STEEL
 STD STANDARD
 STL STEEL
 TEMP TEMPORARY
 THK THICKNESS
 TMA TOWER MOUNTED AMPLIFIER
 TN TOE NAIL
 TOA TOP OF ANTENNA
 TOC TOP OF CURB
 TOF TOP OF FOUNDATION
 TOP TOP OF PLATE (PARAPET)
 TOS TOP OF STEEL
 TOW TOP OF WALL
 TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION
 TYP TYPICAL
 UG UNDERGROUND
 UL UNDERWRITERS LABORATORY
 UNO UNLESS NOTED OTHERWISE
 UMTS UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
 UPS UNINTERRUPTIBLE POWER SYSTEM (DC POWER PLANT)
 VIF VERIFIED IN FIELD
 W WIDE
 W/ WITH
 WD WOOD
 WP WEATHERPROOF
 WT WEIGHT

ABBREVIATIONS



5701 SOUTH SANTA FE DRIVE
 LITTLETON, CO 80120



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A&E PROJECT NUMBER
153235.001.01

DISH Wireless L.L.C.
 PROJECT INFORMATION
 NJJER01081B
 6 FAIRFIELD DR (BRKFLD)
 NEWTOWN, CT 06470

SHEET TITLE
LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

SITE ACTIVITY REQUIREMENTS:

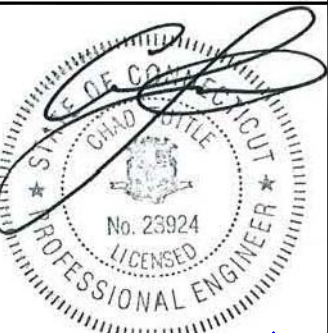
- NOTICE TO PROCEED – NO WORK SHALL COMMENCE PRIOR TO CONTRACTOR RECEIVING A WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE DISH Wireless L.L.C. AND TOWER OWNER NOC & THE DISH Wireless L.L.C. AND TOWER OWNER CONSTRUCTION MANAGER.
- "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.
- 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.
- 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).
- 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."
- 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.
- 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.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES INCLUDING PRIVATE LOCATES SERVICES PRIOR TO THE START OF CONSTRUCTION.
- 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.
- ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND DISH PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
- 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.
- 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.
- 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.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- 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.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
- 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:

- 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
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- 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.
- 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.
- 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
- 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.



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A&E PROJECT NUMBER
153235.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
NJER01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

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.

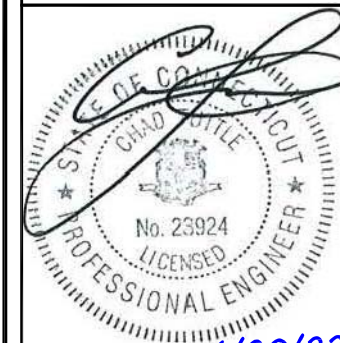
ELECTRICAL INSTALLATION NOTES:

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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LITTLETON, CO 80120



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A&E PROJECT NUMBER
153235.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
NJJE01081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

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.



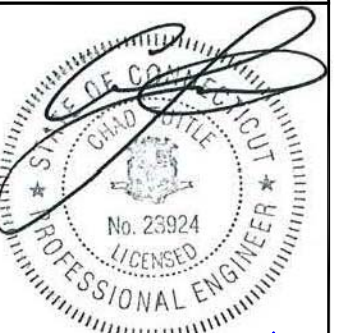
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10 PRESIDENTIAL WAY
WOBURN, MA 01801



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A&E PROJECT NUMBER
153235.001.01

DISH Wireless L.L.C.
PROJECT INFORMATION
NJERO1081B
6 FAIRFIELD DR (BRKFLD)
NEWTOWN, CT 06470

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

ENGINEERING:
STRUCTURAL ANALYSIS
MOUNT ANALYSIS



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 152 ft Monopole
ATC Site Name : Newtown CT 3, CT
ATC Asset Number : 302518
Engineering Number : 13688395_C3_03
Proposed Carrier : DISH WIRELESS L.L.C.
Carrier Site Name : NJJER01081B
Carrier Site Number : NJJER01081B
Site Location : 6 Fairfield Dr (Brkfld)
Newtown, CT 06470-1216
41.425500,-73.374000
County : Fairfield
Date : June 30, 2021
Max Usage : 62%
Result : Pass

Prepared By:
Nathan Haselden
Structural Engineer III

Nathan Haselden

Reviewed By:



COA: PEC.0001553



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Calculations	Attached



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 152 ft monopole to reflect the change in loading by DISH WIRELESS L.L.C..

Supporting Documents

Tower Drawings	EEI Job #8238 Rev 2, dated January 30, 2001
Foundation Drawing	EEI Job #8238, dated November 17, 2000
Geotechnical Report	Soiltesting Project #G128-5268-98, dated September 8, 1999

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:	115 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
Crest Height (H):	0 ft
Spectral Response:	$S_s = 0.21, S_1 = 0.05$
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
152.0	6	Powerwave Allgon LGP21901	Triangular Platform with Handrails	(2) 0.39" (10mm) Fiber Trunk (6) 0.78" (19.7mm) 8 AWG 6 (12) 1 5/8" Coax (3) 2" conduit	AT&T MOBILITY
	12	Powerwave Allgon 7020.00 Dual Band RET			
	3	CCI DTMAPB7819VG12A			
	6	Powerwave Allgon LGP21401			
	1	Raycap DC6-48-60-18-8F			
	3	Ericsson RRUS 4415 B30			
	6	Kathrein Scala 80010965			
	3	Ericsson RRUS 4478 B14			
	1	Raycap DC6-48-60-18-8C			
	3	Ericsson RRUS-12 1900 MHz			
	1	Raycap DC6-48-60-18-8C-EV			
	3	Powerwave Allgon 7770.00			
	3	Ericsson RRUS 4449 B5, B12			
151.0	1	Generic 15' Omni	Triangular Low Profile Platform	(1) 7/8" Coax	SPOK HOLDINGS, INC.
140.0	1	Generic 2" x 4" GPS	Triangular Platform with Handrails	(6) 1 5/8" Coax (1) 1/2" Coax (1) 2.02 (51.2mm) Hybrid	VERIZON WIRELESS
	3	Commscope CBC78T-DS-43-2X			
	3	Samsung B2/B66A RRH-BR049			
	3	Samsung Outdoor CBRS 20W RRH			
	3	Samsung Outdoor CBRS 20W RRH –Clip-on Antenna			
	3	Samsung B5/B13 RRH-BR04C			
	1	RFS DB-C1-12C-24AB-0Z			
	6	Commscope JAHH-65B-R3B			
	6	Andrew DB846H80E-SX			
	3	Samsung MT6407-77A			
134.0	3	Ericsson AIR 21	Triangular Platform with Handrails	(6) 1 5/8" Coax (3) 1.58" (40.1mm) Hybrid	T-MOBILE
	3	Ericsson Radio 4449 B12,B71			
	3	KMW AWS Twin Dual 700 Bypass			
	3	RFS APXVAARR24_43-U-NA20			



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
121.0	1	Commscope RDIDC-9181-PF-48	Triangular Platform with Handrails	(1) 1.75" (44.5mm) Hybrid	DISH WIRELESS L.L.C.
	3	Fujitsu TA08025-B604			
	3	Fujitsu TA08025-B605			
	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 lines inside the pole shaft.



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:

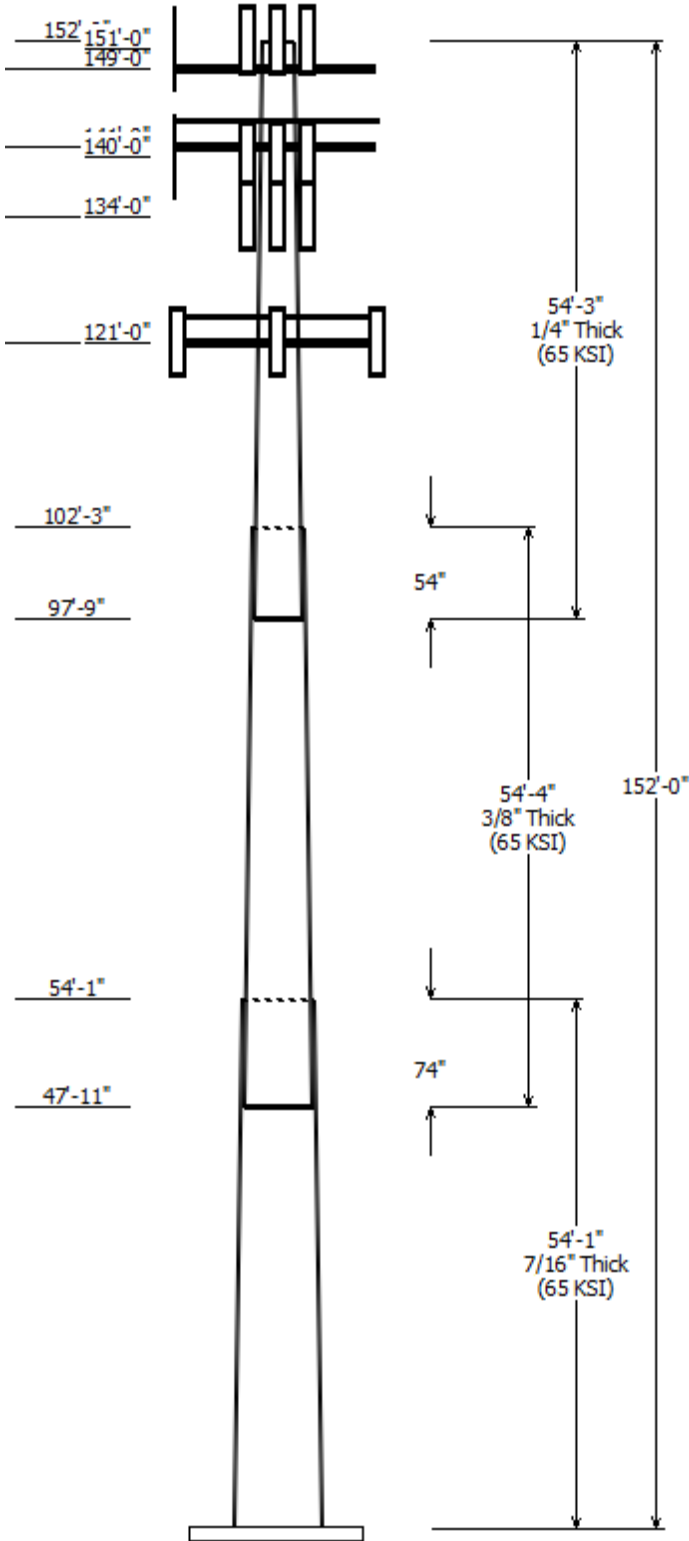
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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.

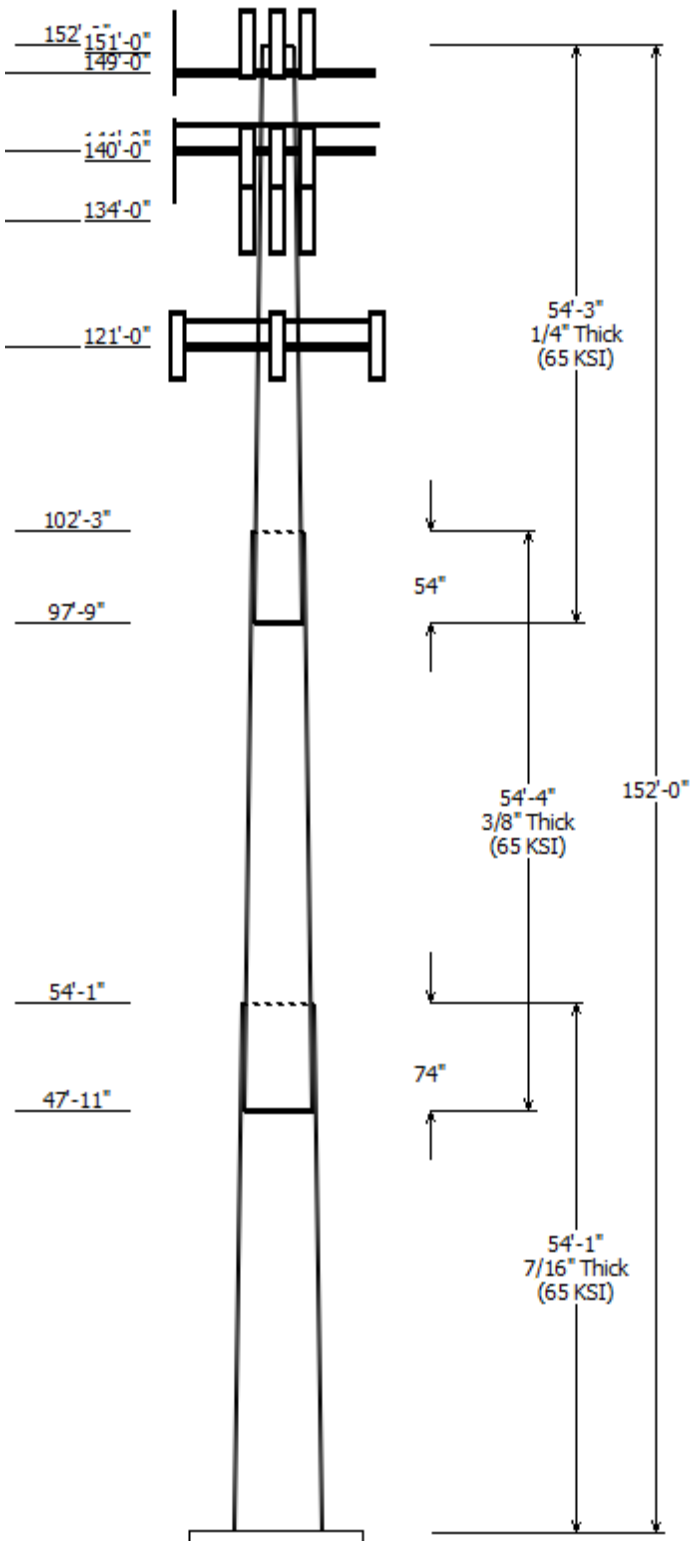


Job Information	
Client : DISH WIRELESS L.L.C.	
Pole : 302518	Code: ANSI/TIA-222-H
Location : Newtown CT 3, CT	
Description : 152 ft EEI Monopole	Risk Category : II
Shape : 18 Sides	Exposure : B
Height : 152.00 (ft)	Topo Method : Method 1
Base Elev (ft): 0.00	Topographic Category : 1
Taper: 0.268092in/ft)	

Sections Properties						
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Steel Grade
		Top	Bottom			
1	54.083	42.25	56.75	0.438	0.000	18 Sides 65
2	54.333	30.08	44.65	0.375	74.000	18 Sides 65
3	54.250	17.25	31.79	0.250	54.000	18 Sides 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
152.000	152.000	3	Powerwave Allgon 7770.00
152.000	152.000	1	Raycap DC6-48-60-18-8C-EV
152.000	152.000	3	Ericsson RRUS-12 1900 MHz
152.000	152.000	6	Kathrein Scala 80010965
152.000	152.000	1	Raycap DC6-48-60-18-8C
152.000	152.000	3	Ericsson RRUS 4478 B14
152.000	152.000	3	Ericsson RRUS 4449 B5, B12
152.000	152.000	3	Ericsson RRUS 4415 B30
152.000	152.000	1	Raycap DC6-48-60-18-8F
152.000	152.000	6	Powerwave Allgon LGP21401
152.000	152.000	3	CCI DTMABP7819VG12A
152.000	152.000	12	Powerwave Allgon 7020.00
152.000	152.000	6	Powerwave Allgon LGP21901
151.000	151.000	1	Generic 15' Omni
149.000	149.000	1	Site Pro1 RMQP-496-HK
141.000	141.000	1	Generic Flat Platform with Han
140.000	140.000	6	Commscope JAHH-65B-R3B
140.000	140.000	6	Andrew DB846H80E-SX
140.000	140.000	3	Samsung MT6407-77A
140.000	140.000	1	RFS DB-C1-12C-24AB-0Z
140.000	140.000	3	Samsung B5/B13 RRH-BR04C
140.000	140.000	3	Samsung Outdoor CBRS 20W
140.000	140.000	3	Samsung Outdoor CBRS 20W
140.000	140.000	3	Samsung B2/B66A RRH-BR049
140.000	140.000	3	Commscope CBC78T-DS-43-2X
140.000	140.000	1	Generic 2" x 4" GPS
134.000	134.000	1	Flat Platform with Round
134.000	134.000	3	RFS APXVAARR24_43-U-NA20
134.000	134.000	3	Ericsson AIR 21
134.000	134.000	3	Ericsson Radio 4449 B12,B71
134.000	134.000	3	KMW AWS Twin Dual 700
121.000	121.000	3	Fujitsu TA08025-B605
121.000	121.000	3	Fujitsu TA08025-B604
121.000	121.000	1	Commscope RDIDC-9181-PF-48
121.000	121.000	3	JMA Wireless MX08FRO665-21
121.000	121.000	1	Generic Flat Platform with Han

Linear Appurtenance			
From Elev (ft)	To Elev (ft)	Description	Exposed To Wind
0.000	121.0	1.75" (44.5mm)	No
0.000	134.0	1 5/8" Coax	Yes
0.000	134.0	1.58" (40.1mm)	No



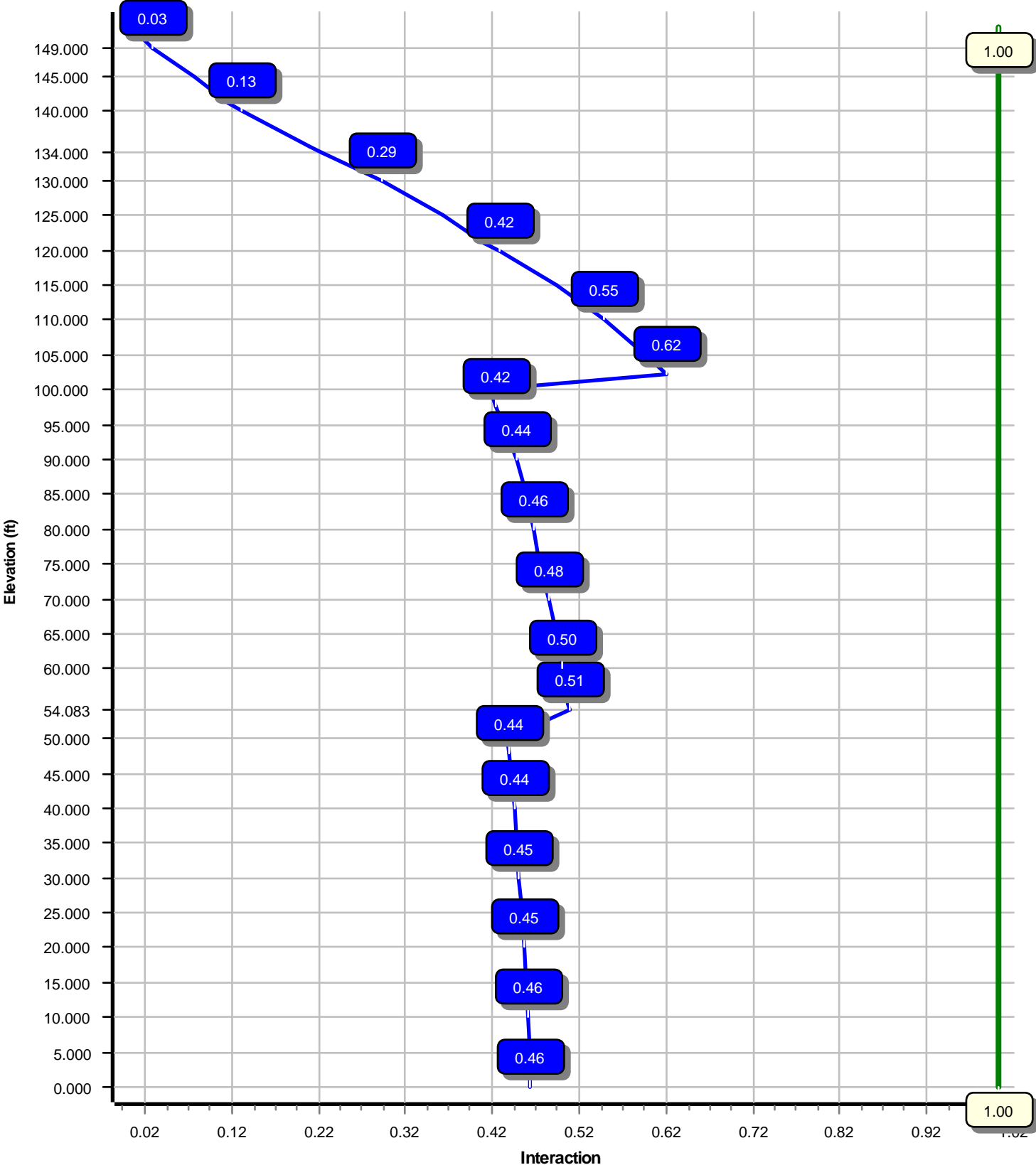
0.000	140.0	1 5/8" Coax	No
0.000	140.0	1/2" Coax	No
0.000	140.0	2.02 (51.2mm)	No
0.000	151.0	7/8" Coax	No
0.000	152.0	0.39" (10mm)	No
0.000	152.0	0.78" (19.7mm) 8	No
0.000	152.0	1 5/8" Coax	Yes
0.000	152.0	2" conduit	No

Load Cases	
1.2D + 1.0W	115 mph with No Ice
0.9D + 1.0W	115 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.0W	2803.87	24.16	53.75
0.9D + 1.0W	2765.05	24.15	40.30
1.2D + 1.0Di + 1.0Wi	814.24	7.05	73.01
1.2D + 1.0Ev + 1.0Eh	176.91	1.35	53.90
0.9D - 1.0Ev + 1.0Eh	173.76	1.35	36.97
1.0D + 1.0W	677.11	5.88	44.81

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000

Load Case : 1.2D + 1.0W
Max Ratio 61.77% at 102.2 ft



Site Number: 302518

Code: ANSI/TIA-222-H

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Site Name: Newtown CT 3, CT

Engineering Number: 13688395_C3_03

6/30/2021 8:30:09 AM

Customer: DISH WIRELESS L.L.C.

Analysis Parameters

Location :	Fairfield County, CT	Height (ft) :	152
Code :	ANSI/TIA-222-H	Base Diameter (in) :	56.75
Shape :	18 Sides	Top Diameter (in) :	17.25
Pole Type :	Taper	Taper (in/ft) :	0.268
Pole Manufacturer :	EEL	Rotation (deg) :	0.00
Kd (non-service) :	0.95	Ke :	0.98

Ice & Wind Parameters

Exposure Category:	B	Design Wind Speed Without Ice:	115 mph
Risk Category:	II	Design Wind Speed With Ice:	50 mph
Topographic Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	425.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.62		
T _L (sec):	6	p:	1
S _s :	0.214	S ₁ :	0.055
F _a :	1.600	F _v :	2.400
S _{ds} :	0.228	S _{d1} :	0.088
		C _s :	0.030
		C _s Max:	0.030
		C _s Min:	0.030

Load Cases

1.2D + 1.0W	115 mph with No Ice
0.9D + 1.0W	115 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Site Number: 302518

Code: ANSI/TIA-222-H

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Site Name: Newtown CT 3, CT

Engineering Number: 13688395_C3_03

6/30/2021 8:30:09 AM

Customer: DISH WIRELESS L.L.C.

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	54.083	0.4375	65		0.00	12,538	56.75	0.00	78.19	31328.3	21.46	129.71	42.25	54.08	58.06	12825.1	15.62	96.57	0.268092
2-18	54.333	0.3750	65	Slip	74.00	8,141	44.65	47.92	52.70	13054.7	19.59	119.08	30.08	102.25	35.36	3944.5	12.74	80.23	0.268092
3-18	54.250	0.2500	65	Slip	54.00	3,555	31.79	97.75	25.03	3146.6	21.01	127.18	17.25	152.00	13.49	492.5	10.76	69.00	0.268092
Shaft Weight						24,234													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor
152.00	Powerwave Allgon LGP21901	6	0.75	0.000	5.50	0.200	0.50	10.63	0.414	0.50
152.00	Powerwave Allgon 7020.00 Dual	12	0.75	0.000	2.20	0.339	0.50	9.03	0.613	0.50
152.00	CCI DTMABP7819VG12A	3	0.75	0.000	19.20	0.972	0.50	36.23	1.410	0.50
152.00	Powerwave Allgon LGP21401	6	0.75	0.000	14.10	1.104	0.50	30.78	1.581	0.50
152.00	Raycap DC6-48-60-18-8F	1	0.75	0.000	20.00	1.260	1.00	55.21	1.700	1.00
152.00	Ericsson RRUS 4415 B30	3	0.75	0.000	46.00	1.842	0.50	78.79	2.442	0.50
152.00	Ericsson RRUS 4449 B5, B12	3	0.75	0.000	71.00	1.969	0.50	114.10	2.593	0.50
152.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.40	2.021	0.67	100.44	2.652	0.67
152.00	Raycap DC6-48-60-18-8C	1	0.75	0.000	16.00	2.030	1.00	54.93	2.538	1.00
152.00	Ericsson RRUS-12 1900 MHz	3	0.75	0.000	60.00	2.700	0.67	109.59	3.418	0.67
152.00	Raycap DC6-48-60-18-8C-EV	1	0.75	0.000	16.00	4.788	1.00	102.35	5.772	1.00
152.00	Powerwave Allgon 7770.00	3	0.75	0.000	35.00	5.508	0.65	118.47	6.196	0.65
152.00	Kathrein Scala 80010965	6	0.75	0.000	97.60	13.814	0.62	275.88	15.854	0.62
151.00	Generic 15' Omni	1	1.00	0.000	40.00	4.500	1.00	115.60	8.070	1.00
149.00	Site Pro1 RMQP-496-HK	1	1.00	0.000	2,448.70	42.400	1.00	3,608.75	56.382	1.00
141.00	Generic Flat Platform with	1	1.00	0.000	2,500.00	42.400	1.00	3,679.01	56.319	1.00
140.00	Generic 2" x 4" GPS	1	0.80	0.000	5.00	0.040	1.00	6.70	0.121	1.00
140.00	Commscope CBC78T-DS-43-2X	3	0.80	0.000	20.70	0.552	0.50	35.33	0.888	0.50
140.00	Samsung Outdoor CBRS 20W	3	0.80	0.000	18.60	0.857	0.50	34.49	1.272	0.50
140.00	Samsung Outdoor CBRS 20W	3	0.80	0.000	4.40	0.892	0.50	16.32	1.315	0.50
140.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	108.18	2.473	0.50
140.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	126.65	2.473	0.50
140.00	RFS DB-C1-12C-24AB-0Z	1	0.80	0.000	32.00	4.056	1.00	116.17	4.960	1.00
140.00	Samsung MT6407-77A	3	0.75	0.000	81.60	4.709	0.61	149.10	5.715	0.61
140.00	Andrew DB846H80E-SX	6	0.80	0.000	16.00	5.867	0.73	113.25	5.783	0.73
140.00	Commscope JAHH-65B-R3B	6	0.80	0.000	60.60	9.113	0.69	194.58	10.950	0.69
134.00	KMW AWS Twin Dual 700 Bypass	3	0.75	0.000	17.40	0.993	0.50	33.89	1.437	0.50
134.00	Ericsson Radio 4449 B12,B71	3	0.75	0.000	74.00	1.639	0.50	110.93	2.196	0.50
134.00	Ericsson AIR 21	3	0.75	0.000	91.00	6.049	0.70	186.75	7.475	0.70
134.00	RFS APXVAARR24_43-U-NA20	3	0.75	0.000	127.90	20.243	0.63	386.83	22.689	0.63
134.00	Flat Platform with Round	1	1.00	0.000	2,000.00	34.800	1.00	2,918.96	50.790	1.00
121.00	Commscope RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	59.09	2.455	1.00
121.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	102.01	2.563	0.50
121.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	115.94	2.563	0.50
121.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	232.48	14.326	0.64
121.00	Generic Flat Platform with	1	1.00	0.000	2,500.00	42.400	1.00	3,661.04	56.107	1.00
Totals	Num Loadings:36				14,041.70			24,826.47		

Linear Appurtenance Properties

Load Case Azimuth (deg) : 0

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax / Flat	Dist Between Rows (in)	Dist Between Cols (in)	Dist Azimuth (deg)	Dist From Face (in)	Exposed To Wind Carrier
0.00	152.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	N AT&T MOBILITY
0.00	152.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	N AT&T MOBILITY

Site Number: 302518

Code: ANSI/TIA-222-H

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Site Name: Newtown CT 3, CT

Engineering Number: 13688395_C3_03

6/30/2021 8:30:09 AM

Customer: DISH WIRELESS L.L.C.

0.00	152.00	12	1 5/8" Coax	1.98	0.82	N	6	0.00	0.00	200	0.00	Y	AT&T MOBILITY
0.00	152.00	3	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	151.00	1	7/8" Coax	1.09	0.33	N	0	0.00	0.00	0	0.00	N	SPOK HOLDINGS,
0.00	140.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	140.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	140.00	1	2.02 (51.2mm) Hybrid	2.02	3.04	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	134.00	6	1 5/8" Coax	1.98	0.82	N	6	0.00	0.00	80	0.00	Y	T-MOBILE
0.00	134.00	3	1.58" (40.1mm) Hybrid	1.58	1.61	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	121.00	1	1.75" (44.5mm) Hybrid	1.75	2.72	N	0	0.00	0.00	0	0.00	N	DISH WIRELESS

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.4375	56.750	78.194	31,328.3	21.46	129.71	76.2	1087.	0.0	0.0
5.00		0.4375	55.410	76.333	29,143.9	20.92	126.65	76.8	1036.	0.0	1,314.6
10.00		0.4375	54.069	74.471	27,063.5	20.38	123.59	77.4	985.9	0.0	1,282.9
15.00		0.4375	52.729	72.610	25,084.5	19.84	120.52	78.1	937.0	0.0	1,251.2
20.00		0.4375	51.388	70.749	23,204.5	19.30	117.46	78.7	889.4	0.0	1,219.5
25.00		0.4375	50.048	68.887	21,420.8	18.76	114.39	79.3	843.0	0.0	1,187.9
30.00		0.4375	48.707	67.026	19,730.9	18.22	111.33	80.0	797.9	0.0	1,156.2
35.00		0.4375	47.367	65.165	18,132.3	17.68	108.27	80.6	754.0	0.0	1,124.5
40.00		0.4375	46.026	63.303	16,622.5	17.14	105.20	81.2	711.3	0.0	1,092.9
45.00		0.4375	44.686	61.442	15,199.0	16.60	102.14	81.9	669.9	0.0	1,061.2
47.92	Bot - Section 2	0.4375	43.904	60.356	14,407.3	16.28	100.35	82.2	646.3	0.0	604.4
50.00		0.4375	43.345	59.581	13,859.1	16.06	99.08	82.5	629.8	0.0	796.4
54.08	Top - Section 1	0.3750	43.001	50.733	11,646.4	18.81	114.67	79.3	533.5	0.0	1,531.3
55.00		0.3750	42.755	50.441	11,446.1	18.69	114.01	79.4	527.3	0.0	157.8
60.00		0.3750	41.414	48.845	10,394.0	18.06	110.44	80.2	494.3	0.0	844.6
65.00		0.3750	40.074	47.250	9,408.4	17.43	106.86	80.9	462.4	0.0	817.5
70.00		0.3750	38.734	45.655	8,487.2	16.80	103.29	81.6	431.6	0.0	790.3
75.00		0.3750	37.393	44.059	7,628.1	16.17	99.71	82.4	401.8	0.0	763.2
80.00		0.3750	36.053	42.464	6,829.1	15.54	96.14	82.6	373.1	0.0	736.0
85.00		0.3750	34.712	40.868	6,087.9	14.91	92.57	82.6	345.4	0.0	708.9
90.00		0.3750	33.372	39.273	5,402.4	14.28	88.99	82.6	318.9	0.0	681.8
95.00		0.3750	32.031	37.677	4,770.4	13.65	85.42	82.6	293.3	0.0	654.6
97.75	Bot - Section 3	0.3750	31.294	36.800	4,444.8	13.30	83.45	82.6	279.8	0.0	348.5
100.0		0.3750	30.691	36.082	4,189.7	13.02	81.84	82.6	268.9	0.0	468.8
102.2	Top - Section 2	0.2500	30.588	24.072	2,799.2	20.16	122.35	77.7	180.2	0.0	459.6
105.0		0.2500	29.850	23.487	2,600.0	19.64	119.40	78.3	171.6	0.0	222.5
110.0		0.2500	28.510	22.423	2,262.5	18.70	114.04	79.4	156.3	0.0	390.6
115.0		0.2500	27.169	21.360	1,955.6	17.75	108.68	80.5	141.8	0.0	372.5
120.0		0.2500	25.829	20.296	1,677.8	16.81	103.32	81.6	127.9	0.0	354.4
121.0		0.2500	25.561	20.083	1,625.6	16.62	102.24	81.9	125.3	0.0	68.7
125.0		0.2500	24.488	19.233	1,427.6	15.86	97.95	82.6	114.8	0.0	267.6
130.0		0.2500	23.148	18.169	1,203.6	14.92	92.59	82.6	102.4	0.0	318.2
134.0		0.2500	22.076	17.318	1,042.3	14.16	88.30	82.6	93.0	0.0	241.5
135.0		0.2500	21.808	17.105	1,004.3	13.97	87.23	82.6	90.7	0.0	58.6
140.0		0.2500	20.467	16.042	828.4	13.02	81.87	82.6	79.7	0.0	282.0
141.0		0.2500	20.199	15.829	795.9	12.84	80.80	82.6	77.6	0.0	54.2
145.0		0.2500	19.127	14.978	674.3	12.08	76.51	82.6	69.4	0.0	209.7
149.0		0.2500	18.054	14.127	565.8	11.32	72.22	82.6	61.7	0.0	198.1
150.0		0.2500	17.786	13.914	540.6	11.13	71.14	82.6	59.9	0.0	47.7
151.0		0.2500	17.518	13.702	516.2	10.95	70.07	82.6	58.0	0.0	47.0
152.0		0.2500	17.250	13.489	492.5	10.76	69.00	82.6	56.2	0.0	46.3
24,233.9											

Load Case: 1.2D + 1.0W	115 mph with No Ice	25 Iterations
Gust Response Factor :1.10		
Dead Load Factor :1.20		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		211.2	0.0					0.0	0.0	211.2	0.0	0.0	0.0
5.00		417.4	1,577.5					0.0	272.2	417.4	1,849.6	0.0	0.0
10.00		407.3	1,539.5					0.0	272.2	407.3	1,811.6	0.0	0.0
15.00		397.2	1,501.5					0.0	272.2	397.2	1,773.6	0.0	0.0
20.00		387.1	1,463.5					0.0	272.2	387.1	1,735.6	0.0	0.0
25.00		377.0	1,425.5					0.0	272.2	377.0	1,697.6	0.0	0.0
30.00		371.2	1,387.5					0.0	272.2	371.2	1,659.6	0.0	0.0
35.00		372.9	1,349.4					0.0	272.2	372.9	1,621.6	0.0	0.0
40.00		376.5	1,311.4					0.0	272.2	376.5	1,583.6	0.0	0.0
45.00		299.2	1,273.4					0.0	272.2	299.2	1,545.6	0.0	0.0
47.92	Bot - Section 2	190.5	725.3					0.0	158.8	190.5	884.1	0.0	0.0
50.00		237.1	955.6					0.0	113.4	237.1	1,069.0	0.0	0.0
54.08	Top - Section 1	192.1	1,837.5					0.0	222.3	192.1	2,059.8	0.0	0.0
55.00		226.2	189.4					0.0	49.9	226.2	239.2	0.0	0.0
60.00		380.4	1,013.5					0.0	272.2	380.4	1,285.7	0.0	0.0
65.00		376.7	981.0					0.0	272.2	376.7	1,253.1	0.0	0.0
70.00		371.9	948.4					0.0	272.2	371.9	1,220.6	0.0	0.0
75.00		366.2	915.8					0.0	272.2	366.2	1,188.0	0.0	0.0
80.00		359.6	883.3					0.0	272.2	359.6	1,155.4	0.0	0.0
85.00		352.3	850.7					0.0	272.2	352.3	1,122.8	0.0	0.0
90.00		344.3	818.1					0.0	272.2	344.3	1,090.3	0.0	0.0
95.00		261.7	785.5					0.0	272.2	261.7	1,057.7	0.0	0.0
97.75	Bot - Section 3	166.7	418.2					0.0	149.7	166.7	567.8	0.0	0.0
100.00		149.2	562.6					0.0	122.5	149.2	685.0	0.0	0.0
102.25	Top - Section 2	163.4	551.6					0.0	122.5	163.4	674.0	0.0	0.0
105.00		247.7	267.0					0.0	149.7	247.7	416.7	0.0	0.0
110.00		311.5	468.7					0.0	272.2	311.5	740.8	0.0	0.0
115.00		300.6	447.0					0.0	272.2	300.6	719.1	0.0	0.0
120.00		176.4	425.2					0.0	272.2	176.4	697.4	0.0	0.0
121.00	Appurtenance(s)	141.7	82.4	2,406.8	0.0	0.0	3,758.5	0.0	54.4	2,548.5	3,895.4	0.0	0.0
125.00		248.7	321.1					0.0	204.7	248.7	525.8	0.0	0.0
130.00		239.9	381.8					0.0	255.8	239.9	637.6	0.0	0.0
134.00	Appurtenance(s)	129.5	289.8	2,844.2	0.0	0.0	3,517.1	0.0	204.7	2,973.7	4,011.6	0.0	0.0
135.00		148.5	70.3					0.0	39.5	148.5	109.7	0.0	0.0
140.00	Appurtenance(s)	146.9	338.4	2,567.6	0.0	0.0	1,603.9	0.0	197.3	2,714.6	2,139.6	0.0	0.0
141.00	Appurtenance(s)	116.5	65.1	1,610.4	0.0	0.0	3,000.0	0.0	29.7	1,726.8	3,094.8	0.0	0.0
145.00		180.9	251.6					0.0	118.9	180.9	370.5	0.0	0.0
149.00	Appurtenance(s)	109.7	237.7	1,636.0	0.0	0.0	2,938.4	8.3	118.9	1,753.9	3,295.1	0.0	0.0
150.00		42.5	57.3					2.6	29.7	45.1	87.0	0.0	0.0
151.00	Appurtenance(s)	41.9	56.4	174.3	0.0	0.0	48.0	2.8	29.7	219.0	134.1	0.0	0.0
152.00	Appurtenance(s)	20.8	55.5	2,701.3	0.0	0.0	1,984.1	2.9	29.3	2,725.0	2,068.9	0.0	0.0
Totals:										24,315.5	53,775.4	0.00	0.00

Load Case: 1.2D + 1.0W

115 mph with No Ice

25 Iterations

Gust Response Factor :1.10
 Dead Load Factor :1.20
 Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-53.75	-24.16	0.00	-2,803.87	0.00	2,803.87	5,359.60	1,372.31	6,979.93	6,210.55	0.00	0.00	0.462
5.00	-51.85	-23.86	0.00	-2,683.05	0.00	2,683.05	5,275.68	1,339.64	6,651.63	5,966.65	0.07	-0.12	0.460
10.00	-49.98	-23.56	0.00	-2,563.76	0.00	2,563.76	5,189.62	1,306.97	6,331.23	5,725.08	0.27	-0.25	0.458
15.00	-48.16	-23.26	0.00	-2,445.97	0.00	2,445.97	5,101.44	1,274.31	6,018.74	5,485.99	0.60	-0.38	0.456
20.00	-46.37	-22.97	0.00	-2,329.65	0.00	2,329.65	5,011.12	1,241.64	5,714.16	5,249.58	1.08	-0.52	0.453
25.00	-44.62	-22.69	0.00	-2,214.78	0.00	2,214.78	4,918.68	1,208.98	5,417.48	5,016.02	1.70	-0.66	0.451
30.00	-42.91	-22.41	0.00	-2,101.33	0.00	2,101.33	4,824.11	1,176.31	5,128.72	4,785.49	2.46	-0.80	0.448
35.00	-41.24	-22.12	0.00	-1,989.29	0.00	1,989.29	4,727.41	1,143.64	4,847.86	4,558.17	3.38	-0.95	0.446
40.00	-39.60	-21.82	0.00	-1,878.71	0.00	1,878.71	4,628.58	1,110.98	4,574.91	4,334.22	4.46	-1.10	0.442
45.00	-38.01	-21.57	0.00	-1,769.62	0.00	1,769.62	4,527.62	1,078.31	4,309.87	4,113.84	5.70	-1.26	0.439
47.92	-37.10	-21.41	0.00	-1,706.70	0.00	1,706.70	4,467.74	1,059.25	4,158.91	3,987.00	6.49	-1.35	0.437
50.00	-36.00	-21.22	0.00	-1,662.09	0.00	1,662.09	4,424.53	1,045.64	4,052.73	3,897.19	7.10	-1.42	0.435
54.08	-33.92	-21.02	0.00	-1,575.47	0.00	1,575.47	3,619.86	890.37	3,428.08	3,171.85	8.38	-1.56	0.507
55.00	-33.65	-20.85	0.00	-1,556.20	0.00	1,556.20	3,605.16	885.24	3,388.67	3,140.59	8.68	-1.59	0.505
60.00	-32.30	-20.54	0.00	-1,451.95	0.00	1,451.95	3,523.72	857.24	3,177.73	2,971.70	10.44	-1.78	0.498
65.00	-31.00	-20.23	0.00	-1,349.25	0.00	1,349.25	3,440.15	829.24	2,973.56	2,805.61	12.41	-1.97	0.491
70.00	-29.72	-19.92	0.00	-1,248.11	0.00	1,248.11	3,354.45	801.24	2,776.17	2,642.48	14.57	-2.16	0.482
75.00	-28.48	-19.60	0.00	-1,148.54	0.00	1,148.54	3,266.62	773.24	2,585.56	2,482.50	16.95	-2.37	0.472
80.00	-27.27	-19.29	0.00	-1,050.52	0.00	1,050.52	3,154.85	745.24	2,401.72	2,309.86	19.53	-2.57	0.464
85.00	-26.10	-18.98	0.00	-954.06	0.00	954.06	3,036.31	717.24	2,224.67	2,138.69	22.34	-2.78	0.455
90.00	-24.95	-18.68	0.00	-859.14	0.00	859.14	2,917.78	689.24	2,054.39	1,974.10	25.36	-2.99	0.444
95.00	-23.86	-18.43	0.00	-765.75	0.00	765.75	2,799.25	661.24	1,890.90	1,816.10	28.61	-3.20	0.431
97.75	-23.27	-18.28	0.00	-715.07	0.00	715.07	2,734.06	645.84	1,803.86	1,732.01	30.49	-3.33	0.422
100.00	-22.56	-18.13	0.00	-673.95	0.00	673.95	2,680.72	633.24	1,734.18	1,664.69	32.08	-3.43	0.414
102.25	-21.86	-17.96	0.00	-633.16	0.00	633.16	1,683.04	422.46	1,157.64	1,050.18	33.72	-3.53	0.618
105.00	-21.40	-17.77	0.00	-583.76	0.00	583.76	1,655.06	412.20	1,102.06	1,007.42	35.78	-3.65	0.594
110.00	-20.59	-17.51	0.00	-494.92	0.00	494.92	1,602.55	393.53	1,004.52	930.92	39.76	-3.94	0.546
115.00	-19.81	-17.26	0.00	-407.34	0.00	407.34	1,547.92	374.86	911.50	856.15	44.04	-4.23	0.491
120.00	-19.08	-17.08	0.00	-321.05	0.00	321.05	1,491.15	356.20	822.99	783.31	48.61	-4.49	0.425
121.00	-15.37	-14.27	0.00	-303.97	0.00	303.97	1,479.54	352.46	805.83	768.99	49.55	-4.54	0.407
125.00	-14.82	-14.03	0.00	-246.90	0.00	246.90	1,428.88	337.53	739.01	710.88	53.44	-4.74	0.359
130.00	-14.16	-13.78	0.00	-176.75	0.00	176.75	1,349.86	318.86	659.54	634.05	58.52	-4.95	0.291
134.00	-10.41	-10.48	0.00	-121.63	0.00	121.63	1,286.64	303.93	599.22	575.75	62.72	-5.09	0.221
135.00	-10.30	-10.34	0.00	-111.15	0.00	111.15	1,270.84	300.20	584.59	561.61	63.79	-5.12	0.207
140.00	-8.40	-7.45	0.00	-59.46	0.00	59.46	1,191.82	281.53	514.16	493.57	69.21	-5.24	0.128
141.00	-5.48	-5.45	0.00	-52.01	0.00	52.01	1,176.01	277.80	500.62	480.48	70.31	-5.26	0.113
145.00	-5.12	-5.24	0.00	-30.20	0.00	30.20	1,112.80	262.87	448.26	429.91	74.74	-5.32	0.075
149.00	-2.00	-3.19	0.00	-9.23	0.00	9.23	1,049.58	247.93	398.78	382.15	79.21	-5.35	0.026
150.00	-1.92	-3.14	0.00	-6.04	0.00	6.04	1,033.78	244.20	386.87	370.65	80.33	-5.36	0.018
151.00	-1.81	-2.91	0.00	-2.91	0.00	2.91	1,017.97	240.47	375.13	359.33	81.45	-5.36	0.010
152.00	0.00	-2.72	0.00	0.00	0.00	0.00	1,002.17	236.73	363.57	348.18	82.57	-5.36	0.000

Load Case: 0.9D + 1.0W	115 mph with No Ice (Reduced DL)	25 Iterations
Gust Response Factor :1.10		
Dead Load Factor :0.90		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		211.2	0.0					0.0	0.0	211.2	0.0	0.0	0.0
5.00		417.4	1,183.1					0.0	204.1	417.4	1,387.2	0.0	0.0
10.00		407.3	1,154.6					0.0	204.1	407.3	1,358.7	0.0	0.0
15.00		397.2	1,126.1					0.0	204.1	397.2	1,330.2	0.0	0.0
20.00		387.1	1,097.6					0.0	204.1	387.1	1,301.7	0.0	0.0
25.00		377.0	1,069.1					0.0	204.1	377.0	1,273.2	0.0	0.0
30.00		371.2	1,040.6					0.0	204.1	371.2	1,244.7	0.0	0.0
35.00		372.9	1,012.1					0.0	204.1	372.9	1,216.2	0.0	0.0
40.00		376.5	983.6					0.0	204.1	376.5	1,187.7	0.0	0.0
45.00		299.2	955.1					0.0	204.1	299.2	1,159.2	0.0	0.0
47.92	Bot - Section 2	190.5	544.0					0.0	119.1	190.5	663.0	0.0	0.0
50.00		237.1	716.7					0.0	85.1	237.1	801.8	0.0	0.0
54.08	Top - Section 1	192.1	1,378.1					0.0	166.7	192.1	1,544.8	0.0	0.0
55.00		226.2	142.0					0.0	37.4	226.2	179.4	0.0	0.0
60.00		380.4	760.2					0.0	204.1	380.4	964.3	0.0	0.0
65.00		376.7	735.7					0.0	204.1	376.7	939.9	0.0	0.0
70.00		371.9	711.3					0.0	204.1	371.9	915.4	0.0	0.0
75.00		366.2	686.9					0.0	204.1	366.2	891.0	0.0	0.0
80.00		359.6	662.4					0.0	204.1	359.6	866.6	0.0	0.0
85.00		352.3	638.0					0.0	204.1	352.3	842.1	0.0	0.0
90.00		344.3	613.6					0.0	204.1	344.3	817.7	0.0	0.0
95.00		261.7	589.2					0.0	204.1	261.7	793.3	0.0	0.0
97.75	Bot - Section 3	166.7	313.6					0.0	112.3	166.7	425.9	0.0	0.0
100.00		149.2	421.9					0.0	91.9	149.2	513.8	0.0	0.0
102.25	Top - Section 2	163.4	413.7					0.0	91.9	163.4	505.5	0.0	0.0
105.00		247.7	200.3					0.0	112.3	247.7	312.5	0.0	0.0
110.00		311.5	351.5					0.0	204.1	311.5	555.6	0.0	0.0
115.00		300.6	335.2					0.0	204.1	300.6	539.3	0.0	0.0
120.00		176.4	318.9					0.0	204.1	176.4	523.0	0.0	0.0
121.00	Appurtenance(s)	141.7	61.8	2,406.8	0.0	0.0	2,818.9	0.0	40.8	2,548.5	2,921.5	0.0	0.0
125.00		248.7	240.8					0.0	153.5	248.7	394.3	0.0	0.0
130.00		239.9	286.4					0.0	191.9	239.9	478.2	0.0	0.0
134.00	Appurtenance(s)	129.5	217.4	2,844.2	0.0	0.0	2,637.8	0.0	153.5	2,973.7	3,008.7	0.0	0.0
135.00		148.5	52.7					0.0	29.6	148.5	82.3	0.0	0.0
140.00	Appurtenance(s)	146.9	253.8	2,567.6	0.0	0.0	1,202.9	0.0	148.0	2,714.6	1,604.7	0.0	0.0
141.00	Appurtenance(s)	116.5	48.8	1,610.4	0.0	0.0	2,250.0	0.0	22.3	1,726.8	2,321.1	0.0	0.0
145.00		180.9	188.7					0.0	89.2	180.9	277.9	0.0	0.0
149.00	Appurtenance(s)	109.7	178.3	1,636.0	0.0	0.0	2,203.8	8.3	89.2	1,753.9	2,471.3	0.0	0.0
150.00		42.5	42.9					2.6	22.3	45.1	65.2	0.0	0.0
151.00	Appurtenance(s)	41.9	42.3	174.3	0.0	0.0	36.0	2.8	22.3	219.0	100.6	0.0	0.0
152.00	Appurtenance(s)	20.8	41.6	2,701.3	0.0	0.0	1,488.1	2.9	22.0	2,725.0	1,551.7	0.0	0.0
Totals:										24,315.5	40,331.5	0.00	0.00

Load Case: 0.9D + 1.0W

115 mph with No Ice (Reduced DL)

25 Iterations

Gust Response Factor :1.10
 Dead Load Factor :0.90
 Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-40.30	-24.15	0.00	-2,765.05	0.00	2,765.05	5,359.60	1,372.31	6,979.93	6,210.55	0.00	0.00	0.453
5.00	-38.87	-23.81	0.00	-2,644.31	0.00	2,644.31	5,275.68	1,339.64	6,651.63	5,966.65	0.07	-0.12	0.451
10.00	-37.46	-23.49	0.00	-2,525.24	0.00	2,525.24	5,189.62	1,306.97	6,331.23	5,725.08	0.26	-0.25	0.449
15.00	-36.08	-23.16	0.00	-2,407.81	0.00	2,407.81	5,101.44	1,274.31	6,018.74	5,485.99	0.59	-0.38	0.446
20.00	-34.72	-22.85	0.00	-2,291.99	0.00	2,291.99	5,011.12	1,241.64	5,714.16	5,249.58	1.06	-0.51	0.444
25.00	-33.40	-22.54	0.00	-2,177.75	0.00	2,177.75	4,918.68	1,208.98	5,417.48	5,016.02	1.67	-0.65	0.441
30.00	-32.10	-22.23	0.00	-2,065.05	0.00	2,065.05	4,824.11	1,176.31	5,128.72	4,785.49	2.43	-0.79	0.439
35.00	-30.84	-21.92	0.00	-1,953.88	0.00	1,953.88	4,727.41	1,143.64	4,847.86	4,558.17	3.33	-0.93	0.436
40.00	-29.60	-21.60	0.00	-1,844.28	0.00	1,844.28	4,628.58	1,110.98	4,574.91	4,334.22	4.39	-1.08	0.432
45.00	-28.40	-21.34	0.00	-1,736.26	0.00	1,736.26	4,527.62	1,078.31	4,309.87	4,113.84	5.61	-1.24	0.429
47.92	-27.71	-21.17	0.00	-1,674.02	0.00	1,674.02	4,467.74	1,059.25	4,158.91	3,987.00	6.39	-1.33	0.426
50.00	-26.88	-20.97	0.00	-1,629.91	0.00	1,629.91	4,424.53	1,045.64	4,052.73	3,897.19	6.99	-1.40	0.425
54.08	-25.31	-20.77	0.00	-1,544.30	0.00	1,544.30	3,619.86	890.37	3,428.08	3,171.85	8.24	-1.53	0.494
55.00	-25.10	-20.59	0.00	-1,525.26	0.00	1,525.26	3,605.16	885.24	3,388.67	3,140.59	8.54	-1.56	0.493
60.00	-24.08	-20.26	0.00	-1,422.33	0.00	1,422.33	3,523.72	857.24	3,177.73	2,971.70	10.27	-1.75	0.486
65.00	-23.09	-19.93	0.00	-1,321.05	0.00	1,321.05	3,440.15	829.24	2,973.56	2,805.61	12.20	-1.93	0.478
70.00	-22.12	-19.60	0.00	-1,221.42	0.00	1,221.42	3,354.45	801.24	2,776.17	2,642.48	14.33	-2.13	0.469
75.00	-21.18	-19.27	0.00	-1,123.43	0.00	1,123.43	3,266.62	773.24	2,585.56	2,482.50	16.66	-2.32	0.460
80.00	-20.26	-18.95	0.00	-1,027.08	0.00	1,027.08	3,154.85	745.24	2,401.72	2,309.86	19.20	-2.52	0.452
85.00	-19.37	-18.63	0.00	-932.35	0.00	932.35	3,036.31	717.24	2,224.67	2,138.69	21.95	-2.73	0.443
90.00	-18.50	-18.31	0.00	-839.22	0.00	839.22	2,917.78	689.24	2,054.39	1,974.10	24.92	-2.93	0.432
95.00	-17.67	-18.06	0.00	-747.68	0.00	747.68	2,799.25	661.24	1,890.90	1,816.10	28.10	-3.14	0.419
97.75	-17.22	-17.90	0.00	-698.02	0.00	698.02	2,734.06	645.84	1,803.86	1,732.01	29.94	-3.26	0.410
100.00	-16.69	-17.75	0.00	-657.76	0.00	657.76	2,680.72	633.24	1,734.18	1,664.69	31.50	-3.36	0.402
102.25	-16.16	-17.58	0.00	-617.82	0.00	617.82	1,683.04	422.46	1,157.64	1,050.18	33.11	-3.46	0.600
105.00	-15.80	-17.38	0.00	-569.47	0.00	569.47	1,655.06	412.20	1,102.06	1,007.42	35.13	-3.57	0.577
110.00	-15.18	-17.10	0.00	-482.59	0.00	482.59	1,602.55	393.53	1,004.52	930.92	39.03	-3.86	0.530
115.00	-14.59	-16.83	0.00	-397.07	0.00	397.07	1,547.92	374.86	911.50	856.15	43.22	-4.14	0.475
120.00	-14.03	-16.66	0.00	-312.90	0.00	312.90	1,491.15	356.20	822.99	783.31	47.70	-4.40	0.411
121.00	-11.29	-13.91	0.00	-296.24	0.00	296.24	1,479.54	352.46	805.83	768.99	48.62	-4.45	0.394
125.00	-10.87	-13.67	0.00	-240.59	0.00	240.59	1,428.88	337.53	739.01	710.88	52.43	-4.64	0.348
130.00	-10.37	-13.43	0.00	-172.22	0.00	172.22	1,349.86	318.86	659.54	634.05	57.39	-4.84	0.281
134.00	-7.61	-10.22	0.00	-118.52	0.00	118.52	1,286.64	303.93	599.22	575.75	61.51	-4.98	0.213
135.00	-7.53	-10.07	0.00	-108.30	0.00	108.30	1,270.84	300.20	584.59	561.61	62.55	-5.01	0.200
140.00	-6.16	-7.23	0.00	-57.95	0.00	57.95	1,191.82	281.53	514.16	493.57	67.86	-5.13	0.123
141.00	-4.00	-5.31	0.00	-50.72	0.00	50.72	1,176.01	277.80	500.62	480.48	68.94	-5.15	0.109
145.00	-3.74	-5.10	0.00	-29.49	0.00	29.49	1,112.80	262.87	448.26	429.91	73.27	-5.20	0.072
149.00	-1.44	-3.13	0.00	-9.07	0.00	9.07	1,049.58	247.93	398.78	382.15	77.64	-5.24	0.025
150.00	-1.38	-3.08	0.00	-5.94	0.00	5.94	1,033.78	244.20	386.87	370.65	78.74	-5.24	0.018
151.00	-1.30	-2.86	0.00	-2.86	0.00	2.86	1,017.97	240.47	375.13	359.33	79.83	-5.24	0.009
152.00	0.00	-2.72	0.00	0.00	0.00	0.00	1,002.17	236.73	363.57	348.18	80.93	-5.24	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 1.00 in Radial Ice	24 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	Ice Importance Factor :1.00
Dead Load Factor :1.20		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		67.4	0.0					0.0	0.0	67.4	0.0	0.0	0.0
5.00		133.5	1,849.4					0.0	359.8	133.5	2,209.2	0.0	0.0
10.00		130.6	1,836.2					0.0	367.1	130.6	2,203.4	0.0	0.0
15.00		127.7	1,806.4					0.0	370.9	127.7	2,177.3	0.0	0.0
20.00		124.7	1,771.1					0.0	373.5	124.7	2,144.6	0.0	0.0
25.00		121.6	1,733.0					0.0	375.5	121.6	2,108.5	0.0	0.0
30.00		120.0	1,693.1					0.0	377.2	120.0	2,070.3	0.0	0.0
35.00		120.7	1,652.0					0.0	378.6	120.7	2,030.5	0.0	0.0
40.00		122.1	1,609.9					0.0	379.8	122.1	1,989.7	0.0	0.0
45.00		97.2	1,567.1					0.0	380.9	97.2	1,948.0	0.0	0.0
47.92	Bot - Section 2	61.9	895.2					0.0	222.6	61.9	1,117.9	0.0	0.0
50.00		77.1	1,078.2					0.0	159.2	77.1	1,237.4	0.0	0.0
54.08	Top - Section 1	62.5	2,073.4					0.0	312.5	62.5	2,385.9	0.0	0.0
55.00		73.8	242.3					0.0	70.2	73.8	312.5	0.0	0.0
60.00		124.2	1,294.8					0.0	383.6	124.2	1,678.3	0.0	0.0
65.00		123.2	1,255.7					0.0	384.3	123.2	1,640.0	0.0	0.0
70.00		121.9	1,216.3					0.0	385.0	121.9	1,601.3	0.0	0.0
75.00		120.3	1,176.6					0.0	385.7	120.3	1,562.3	0.0	0.0
80.00		118.4	1,136.6					0.0	386.3	118.4	1,523.0	0.0	0.0
85.00		116.3	1,096.5					0.0	386.9	116.3	1,483.4	0.0	0.0
90.00		114.0	1,056.2					0.0	387.5	114.0	1,443.6	0.0	0.0
95.00		86.8	1,015.6					0.0	388.0	86.8	1,403.6	0.0	0.0
97.75	Bot - Section 3	55.4	542.4					0.0	213.6	55.4	756.0	0.0	0.0
100.00		49.6	664.2					0.0	174.9	49.6	839.1	0.0	0.0
102.25	Top - Section 2	54.5	651.5					0.0	175.0	54.5	826.5	0.0	0.0
105.00		82.7	386.6					0.0	214.0	82.7	600.6	0.0	0.0
110.00		104.3	677.5					0.0	389.4	104.3	1,067.0	0.0	0.0
115.00		101.1	647.3					0.0	389.9	101.1	1,037.2	0.0	0.0
120.00		59.5	617.0					0.0	390.3	59.5	1,007.3	0.0	0.0
121.00	Appurtenance(s)	48.0	120.5	579.7	0.0	0.0	5,271.9	0.0	78.1	627.7	5,470.6	0.0	0.0
125.00		84.4	467.5					43.2	299.6	127.6	767.1	0.0	0.0
130.00		81.8	555.9					54.7	374.8	136.5	930.8	0.0	0.0
134.00	Appurtenance(s)	44.3	423.5	699.2	0.0	0.0	5,193.9	44.3	300.1	787.8	5,917.5	0.0	0.0
135.00		51.1	103.4					11.2	53.3	62.2	156.7	0.0	0.0
140.00	Appurtenance(s)	50.6	494.5	562.8	0.0	0.0	3,330.9	56.2	266.6	669.6	4,092.0	0.0	0.0
141.00	Appurtenance(s)	40.4	96.0	404.4	0.0	0.0	3,924.0	11.3	43.6	456.0	4,063.6	0.0	0.0
145.00		62.9	369.2					45.7	174.5	108.6	543.7	0.0	0.0
149.00	Appurtenance(s)	38.3	349.4	411.2	0.0	0.0	3,848.7	46.1	174.6	495.7	4,372.8	0.0	0.0
150.00		14.9	84.8					11.6	43.7	26.5	128.5	0.0	0.0
151.00	Appurtenance(s)	14.7	83.6	59.1	0.0	0.0	107.4	11.6	43.7	85.4	234.7	0.0	0.0
152.00	Appurtenance(s)	7.3	82.4	619.5	0.0	0.0	3,800.2	11.7	43.3	638.4	3,925.8	0.0	0.0
Totals:										7,094.93	73,007.9	0.00	0.00

Site Number: 302518

Code: ANSI/TIA-222-H

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Site Name: Newtown CT 3, CT

Engineering Number: 13688395_C3_03

6/30/2021 8:30:18 AM

Customer: DISH WIRELESS L.L.C.

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 1.00 in Radial Ice

24 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-73.01	-7.05	0.00	-814.24	0.00	814.24	5,359.60	1,372.31	6,979.93	6,210.55	0.00	0.00	0.145
5.00	-70.79	-6.96	0.00	-778.99	0.00	778.99	5,275.68	1,339.64	6,651.63	5,966.65	0.02	-0.04	0.144
10.00	-68.58	-6.87	0.00	-744.18	0.00	744.18	5,189.62	1,306.97	6,331.23	5,725.08	0.08	-0.07	0.143
15.00	-66.40	-6.79	0.00	-709.81	0.00	709.81	5,101.44	1,274.31	6,018.74	5,485.99	0.17	-0.11	0.142
20.00	-64.25	-6.70	0.00	-675.87	0.00	675.87	5,011.12	1,241.64	5,714.16	5,249.58	0.31	-0.15	0.142
25.00	-62.14	-6.62	0.00	-642.36	0.00	642.36	4,918.68	1,208.98	5,417.48	5,016.02	0.49	-0.19	0.141
30.00	-60.07	-6.54	0.00	-609.26	0.00	609.26	4,824.11	1,176.31	5,128.72	4,785.49	0.71	-0.23	0.140
35.00	-58.03	-6.45	0.00	-576.58	0.00	576.58	4,727.41	1,143.64	4,847.86	4,558.17	0.98	-0.28	0.139
40.00	-56.04	-6.36	0.00	-544.33	0.00	544.33	4,628.58	1,110.98	4,574.91	4,334.22	1.29	-0.32	0.138
45.00	-54.09	-6.29	0.00	-512.52	0.00	512.52	4,527.62	1,078.31	4,309.87	4,113.84	1.65	-0.36	0.137
47.92	-52.97	-6.24	0.00	-494.19	0.00	494.19	4,467.74	1,059.25	4,158.91	3,987.00	1.88	-0.39	0.136
50.00	-51.73	-6.18	0.00	-481.19	0.00	481.19	4,424.53	1,045.64	4,052.73	3,897.19	2.06	-0.41	0.135
54.08	-49.34	-6.12	0.00	-455.95	0.00	455.95	3,619.86	890.37	3,428.08	3,171.85	2.43	-0.45	0.157
55.00	-49.02	-6.07	0.00	-450.34	0.00	450.34	3,605.16	885.24	3,388.67	3,140.59	2.52	-0.46	0.157
60.00	-47.34	-5.98	0.00	-419.98	0.00	419.98	3,523.72	857.24	3,177.73	2,971.70	3.03	-0.51	0.155
65.00	-45.70	-5.88	0.00	-390.09	0.00	390.09	3,440.15	829.24	2,973.56	2,805.61	3.60	-0.57	0.152
70.00	-44.09	-5.79	0.00	-360.67	0.00	360.67	3,354.45	801.24	2,776.17	2,642.48	4.23	-0.63	0.150
75.00	-42.52	-5.70	0.00	-331.72	0.00	331.72	3,266.62	773.24	2,585.56	2,482.50	4.91	-0.69	0.147
80.00	-41.00	-5.60	0.00	-303.24	0.00	303.24	3,154.85	745.24	2,401.72	2,309.86	5.66	-0.74	0.144
85.00	-39.51	-5.51	0.00	-275.24	0.00	275.24	3,036.31	717.24	2,224.67	2,138.69	6.48	-0.80	0.142
90.00	-38.06	-5.41	0.00	-247.70	0.00	247.70	2,917.78	689.24	2,054.39	1,974.10	7.35	-0.87	0.139
95.00	-36.65	-5.33	0.00	-220.64	0.00	220.64	2,799.25	661.24	1,890.90	1,816.10	8.29	-0.93	0.135
97.75	-35.90	-5.29	0.00	-205.97	0.00	205.97	2,734.06	645.84	1,803.86	1,732.01	8.84	-0.96	0.132
100.00	-35.06	-5.24	0.00	-194.08	0.00	194.08	2,680.72	633.24	1,734.18	1,664.69	9.30	-0.99	0.130
102.25	-34.23	-5.19	0.00	-182.29	0.00	182.29	1,683.04	422.46	1,157.64	1,050.18	9.77	-1.02	0.194
105.00	-33.62	-5.13	0.00	-168.02	0.00	168.02	1,655.06	412.20	1,102.06	1,007.42	10.37	-1.05	0.187
110.00	-32.55	-5.06	0.00	-142.36	0.00	142.36	1,602.55	393.53	1,004.52	930.92	11.52	-1.14	0.173
115.00	-31.51	-4.98	0.00	-117.08	0.00	117.08	1,547.92	374.86	911.50	856.15	12.76	-1.22	0.157
120.00	-30.50	-4.92	0.00	-92.20	0.00	92.20	1,491.15	356.20	822.99	783.31	14.08	-1.30	0.138
121.00	-25.04	-4.18	0.00	-87.29	0.00	87.29	1,479.54	352.46	805.83	768.99	14.35	-1.31	0.131
125.00	-24.27	-4.06	0.00	-70.56	0.00	70.56	1,428.88	337.53	739.01	710.88	15.48	-1.37	0.116
130.00	-23.34	-3.92	0.00	-50.26	0.00	50.26	1,349.86	318.86	659.54	634.05	16.94	-1.43	0.097
134.00	-17.45	-2.99	0.00	-34.57	0.00	34.57	1,286.64	303.93	599.22	575.75	18.16	-1.47	0.074
135.00	-17.29	-2.93	0.00	-31.58	0.00	31.58	1,270.84	300.20	584.59	561.61	18.46	-1.48	0.070
140.00	-13.22	-2.16	0.00	-16.91	0.00	16.91	1,191.82	281.53	514.16	493.57	20.03	-1.51	0.045
141.00	-9.17	-1.60	0.00	-14.75	0.00	14.75	1,176.01	277.80	500.62	480.48	20.35	-1.52	0.039
145.00	-8.63	-1.48	0.00	-8.36	0.00	8.36	1,112.80	262.87	448.26	429.91	21.63	-1.53	0.027
149.00	-4.27	-0.87	0.00	-2.45	0.00	2.45	1,049.58	247.93	398.78	382.15	22.92	-1.54	0.010
150.00	-4.14	-0.84	0.00	-1.58	0.00	1.58	1,033.78	244.20	386.87	370.65	23.24	-1.54	0.008
151.00	-3.91	-0.74	0.00	-0.74	0.00	0.74	1,017.97	240.47	375.13	359.33	23.56	-1.54	0.006
152.00	0.00	-0.64	0.00	0.00	0.00	0.00	1,002.17	236.73	363.57	348.18	23.89	-1.54	0.000

Load Case: 1.0D + 1.0W	Serviceability 60 mph	23 Iterations
Gust Response Factor :1.10		
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		51.4	0.0					0.0	0.0	51.4	0.0	0.0	0.0
5.00		101.7	1,314.6					0.0	226.8	101.7	1,541.4	0.0	0.0
10.00		99.2	1,282.9					0.0	226.8	99.2	1,509.7	0.0	0.0
15.00		96.7	1,251.2					0.0	226.8	96.7	1,478.0	0.0	0.0
20.00		94.3	1,219.5					0.0	226.8	94.3	1,446.3	0.0	0.0
25.00		91.8	1,187.9					0.0	226.8	91.8	1,414.7	0.0	0.0
30.00		90.4	1,156.2					0.0	226.8	90.4	1,383.0	0.0	0.0
35.00		90.8	1,124.5					0.0	226.8	90.8	1,351.3	0.0	0.0
40.00		91.7	1,092.9					0.0	226.8	91.7	1,319.7	0.0	0.0
45.00		72.9	1,061.2					0.0	226.8	72.9	1,288.0	0.0	0.0
47.92	Bot - Section 2	46.4	604.4					0.0	132.3	46.4	736.7	0.0	0.0
50.00		57.7	796.4					0.0	94.5	57.7	890.9	0.0	0.0
54.00	Top - Section 1	46.8	1,531.3					0.0	185.2	46.8	1,716.5	0.0	0.0
55.00		55.1	157.8					0.0	41.6	55.1	199.4	0.0	0.0
60.00		92.7	844.6					0.0	226.8	92.7	1,071.4	0.0	0.0
65.00		91.7	817.5					0.0	226.8	91.7	1,044.3	0.0	0.0
70.00		90.6	790.3					0.0	226.8	90.6	1,017.1	0.0	0.0
75.00		89.2	763.2					0.0	226.8	89.2	990.0	0.0	0.0
80.00		87.6	736.0					0.0	226.8	87.6	962.8	0.0	0.0
85.00		85.8	708.9					0.0	226.8	85.8	935.7	0.0	0.0
90.00		83.8	681.8					0.0	226.8	83.8	908.6	0.0	0.0
95.00		63.7	654.6					0.0	226.8	63.7	881.4	0.0	0.0
97.75	Bot - Section 3	40.6	348.5					0.0	124.7	40.6	473.2	0.0	0.0
100.00		36.4	468.8					0.0	102.1	36.4	570.9	0.0	0.0
102.25	Top - Section 2	39.8	459.6					0.0	102.1	39.8	561.7	0.0	0.0
105.00		60.3	222.5					0.0	124.7	60.3	347.3	0.0	0.0
110.00		75.9	390.6					0.0	226.8	75.9	617.4	0.0	0.0
115.00		73.2	372.5					0.0	226.8	73.2	599.3	0.0	0.0
120.00		43.0	354.4					0.0	226.8	43.0	581.2	0.0	0.0
121.00	Appurtenance(s)	34.5	68.7	586.2	0.0	0.0	3,132.1	0.0	45.4	620.7	3,246.2	0.0	0.0
125.00		60.6	267.6					0.0	170.6	60.6	438.1	0.0	0.0
130.00		58.4	318.2					0.0	213.2	58.4	531.4	0.0	0.0
134.00	Appurtenance(s)	31.5	241.5	692.7	0.0	0.0	2,930.9	0.0	170.6	724.3	3,343.0	0.0	0.0
135.00		36.2	58.6					0.0	32.9	36.2	91.5	0.0	0.0
140.00	Appurtenance(s)	35.8	282.0	625.4	0.0	0.0	1,336.6	0.0	164.4	661.2	1,783.0	0.0	0.0
141.00	Appurtenance(s)	28.4	54.2	392.2	0.0	0.0	2,500.0	0.0	24.8	420.6	2,579.0	0.0	0.0
145.00		44.1	209.7					0.0	99.1	44.1	308.8	0.0	0.0
149.00	Appurtenance(s)	26.7	198.1	398.5	0.0	0.0	2,448.7	2.0	99.1	427.2	2,745.9	0.0	0.0
150.00		10.3	47.7					0.6	24.8	11.0	72.5	0.0	0.0
151.00	Appurtenance(s)	10.2	47.0	42.5	0.0	0.0	40.0	0.7	24.8	53.3	111.8	0.0	0.0
152.00	Appurtenance(s)	5.1	46.3	657.9	0.0	0.0	1,653.4	0.7	24.5	663.7	1,724.1	0.0	0.0
Totals:										5,922.25	44,812.8	0.00	0.00

Load Case: 1.0D + 1.0W

Serviceability 60 mph

23 Iterations

Gust Response Factor :1.10

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-44.81	-5.88	0.00	-677.11	0.00	677.11	5,359.60	1,372.31	6,979.93	6,210.55	0.00	0.00	0.117
5.00	-43.27	-5.80	0.00	-647.70	0.00	647.70	5,275.68	1,339.64	6,651.63	5,966.65	0.02	-0.03	0.117
10.00	-41.75	-5.73	0.00	-618.69	0.00	618.69	5,189.62	1,306.97	6,331.23	5,725.08	0.06	-0.06	0.116
15.00	-40.27	-5.65	0.00	-590.07	0.00	590.07	5,101.44	1,274.31	6,018.74	5,485.99	0.15	-0.09	0.115
20.00	-38.82	-5.57	0.00	-561.82	0.00	561.82	5,011.12	1,241.64	5,714.16	5,249.58	0.26	-0.13	0.115
25.00	-37.41	-5.50	0.00	-533.95	0.00	533.95	4,918.68	1,208.98	5,417.48	5,016.02	0.41	-0.16	0.114
30.00	-36.02	-5.43	0.00	-506.44	0.00	506.44	4,824.11	1,176.31	5,128.72	4,785.49	0.59	-0.19	0.113
35.00	-34.67	-5.35	0.00	-479.30	0.00	479.30	4,727.41	1,143.64	4,847.86	4,558.17	0.82	-0.23	0.113
40.00	-33.34	-5.28	0.00	-452.53	0.00	452.53	4,628.58	1,110.98	4,574.91	4,334.22	1.08	-0.27	0.112
45.00	-32.05	-5.22	0.00	-426.13	0.00	426.13	4,527.62	1,078.31	4,309.87	4,113.84	1.37	-0.30	0.111
47.92	-31.31	-5.18	0.00	-410.92	0.00	410.92	4,467.74	1,059.25	4,158.91	3,987.00	1.57	-0.33	0.110
50.00	-30.42	-5.13	0.00	-400.13	0.00	400.13	4,424.53	1,045.64	4,052.73	3,897.19	1.71	-0.34	0.110
54.08	-28.70	-5.08	0.00	-379.20	0.00	379.20	3,619.86	890.37	3,428.08	3,171.85	2.02	-0.38	0.128
55.00	-28.50	-5.04	0.00	-374.54	0.00	374.54	3,605.16	885.24	3,388.67	3,140.59	2.09	-0.38	0.127
60.00	-27.43	-4.96	0.00	-349.36	0.00	349.36	3,523.72	857.24	3,177.73	2,971.70	2.52	-0.43	0.125
65.00	-26.38	-4.88	0.00	-324.57	0.00	324.57	3,440.15	829.24	2,973.56	2,805.61	2.99	-0.47	0.123
70.00	-25.36	-4.80	0.00	-300.17	0.00	300.17	3,354.45	801.24	2,776.17	2,642.48	3.51	-0.52	0.121
75.00	-24.37	-4.72	0.00	-276.17	0.00	276.17	3,266.62	773.24	2,585.56	2,482.50	4.09	-0.57	0.119
80.00	-23.40	-4.65	0.00	-252.55	0.00	252.55	3,154.85	745.24	2,401.72	2,309.86	4.71	-0.62	0.117
85.00	-22.46	-4.57	0.00	-229.32	0.00	229.32	3,036.31	717.24	2,224.67	2,138.69	5.38	-0.67	0.115
90.00	-21.55	-4.49	0.00	-206.47	0.00	206.47	2,917.78	689.24	2,054.39	1,974.10	6.11	-0.72	0.112
95.00	-20.67	-4.43	0.00	-184.00	0.00	184.00	2,799.25	661.24	1,890.90	1,816.10	6.89	-0.77	0.109
97.75	-20.19	-4.40	0.00	-171.81	0.00	171.81	2,734.06	645.84	1,803.86	1,732.01	7.35	-0.80	0.107
100.00	-19.62	-4.36	0.00	-161.92	0.00	161.92	2,680.72	633.24	1,734.18	1,664.69	7.73	-0.82	0.105
102.25	-19.06	-4.32	0.00	-152.11	0.00	152.11	1,683.04	422.46	1,157.64	1,050.18	8.13	-0.85	0.156
105.00	-18.71	-4.27	0.00	-140.23	0.00	140.23	1,655.06	412.20	1,102.06	1,007.42	8.62	-0.88	0.151
110.00	-18.09	-4.21	0.00	-118.87	0.00	118.87	1,602.55	393.53	1,004.52	930.92	9.58	-0.95	0.139
115.00	-17.48	-4.14	0.00	-97.83	0.00	97.83	1,547.92	374.86	911.50	856.15	10.61	-1.02	0.126
120.00	-16.90	-4.10	0.00	-77.11	0.00	77.11	1,491.15	356.20	822.99	783.31	11.71	-1.08	0.110
121.00	-13.66	-3.43	0.00	-73.01	0.00	73.01	1,479.54	352.46	805.83	768.99	11.94	-1.09	0.104
125.00	-13.23	-3.37	0.00	-59.30	0.00	59.30	1,428.88	337.53	739.01	710.88	12.88	-1.14	0.093
130.00	-12.69	-3.31	0.00	-42.46	0.00	42.46	1,349.86	318.86	659.54	634.05	14.10	-1.19	0.076
134.00	-9.36	-2.52	0.00	-29.22	0.00	29.22	1,286.64	303.93	599.22	575.75	15.11	-1.22	0.058
135.00	-9.27	-2.48	0.00	-26.70	0.00	26.70	1,270.84	300.20	584.59	561.61	15.37	-1.23	0.055
140.00	-7.50	-1.79	0.00	-14.29	0.00	14.29	1,191.82	281.53	514.16	493.57	16.67	-1.26	0.035
141.00	-4.94	-1.31	0.00	-12.50	0.00	12.50	1,176.01	277.80	500.62	480.48	16.94	-1.27	0.030
145.00	-4.63	-1.26	0.00	-7.27	0.00	7.27	1,112.80	262.87	448.26	429.91	18.01	-1.28	0.021
149.00	-1.89	-0.77	0.00	-2.23	0.00	2.23	1,049.58	247.93	398.78	382.15	19.08	-1.29	0.008
150.00	-1.82	-0.76	0.00	-1.46	0.00	1.46	1,033.78	244.20	386.87	370.65	19.35	-1.29	0.006
151.00	-1.71	-0.70	0.00	-0.70	0.00	0.70	1,017.97	240.47	375.13	359.33	19.62	-1.29	0.004
152.00	0.00	-0.66	0.00	0.00	0.00	0.00	1,002.17	236.73	363.57	348.18	19.89	-1.29	0.000

Equivalent Lateral Forces Method Analysis

Spectral Response Acceleration for Short Period (S_s):	0.21
Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.05
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.23
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):	2.62
Redundancy Factor (ρ):	1.00
Seismic Force Distribution Exponent (k):	2.00
Total Unfactored Dead Load:	44.81 k
Seismic Base Shear (E):	1.34 k

Load Case 1.2D + 1.0Ev + 1.0Eh

Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
40	151.50	71	1,623	0.004	5	88
39	150.50	72	1,626	0.004	5	89
38	149.50	72	1,620	0.004	5	90
37	147.00	297	6,422	0.015	20	370
36	143.00	309	6,314	0.015	20	385
35	140.50	79	1,560	0.004	5	98
34	137.50	446	8,440	0.020	27	556
33	134.50	91	1,654	0.004	5	114
32	132.00	412	7,180	0.017	23	513
31	127.50	531	8,638	0.020	27	662
30	123.00	438	6,628	0.016	21	546
29	120.50	114	1,656	0.004	5	142
28	117.50	581	8,024	0.019	25	724
27	112.50	599	7,584	0.018	24	746
26	107.50	617	7,134	0.017	23	769
25	103.63	347	3,729	0.009	12	433
24	101.13	562	5,744	0.014	18	700
23	98.88	571	5,581	0.013	18	711
22	96.38	473	4,395	0.010	14	589
21	92.50	881	7,542	0.018	24	1,098
20	87.50	909	6,956	0.016	22	1,132
19	82.50	936	6,369	0.015	20	1,166
18	77.50	963	5,783	0.014	18	1,199
17	72.50	990	5,204	0.012	16	1,233
16	67.50	1,017	4,634	0.011	15	1,267

Site Number: 302518

Code: ANSI/TIA-222-H

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Site Name: Newtown CT 3, CT

Engineering Number: 13688395_C3_03

6/30/2021 8:30:21 AM

Customer: DISH WIRELESS L.L.C.

15	62.50	1,044	4,079	0.010	13	1,301
14	57.50	1,071	3,542	0.008	11	1,335
13	54.54	199	593	0.001	2	248
12	52.04	1,716	4,649	0.011	15	2,138
11	48.96	891	2,135	0.005	7	1,110
10	46.46	737	1,590	0.004	5	918
9	42.50	1,288	2,326	0.005	7	1,604
8	37.50	1,320	1,856	0.004	6	1,644
7	32.50	1,351	1,427	0.003	5	1,683
6	27.50	1,383	1,046	0.002	3	1,723
5	22.50	1,415	716	0.002	2	1,762
4	17.50	1,446	443	0.001	1	1,802
3	12.50	1,478	231	0.001	1	1,841
2	7.50	1,510	85	0.000	0	1,881
1	2.50	1,541	10	0.000	0	1,920
Powerwave Allgon LGP	152.00	33	762	0.002	2	41
Powerwave Allgon 702	152.00	26	610	0.001	2	33
CCI DTMAPB7819VG12A	152.00	58	1,331	0.003	4	72
Powerwave Allgon LGP	152.00	85	1,955	0.005	6	105
Raycap DC6-48-60-18-	152.00	20	462	0.001	1	25
Ericsson RRUS 4415 B	152.00	138	3,188	0.008	10	172
Ericsson RRUS 4449 B	152.00	213	4,921	0.012	16	265
Ericsson RRUS 4478 B	152.00	178	4,117	0.010	13	222
Raycap DC6-48-60-18-	152.00	16	370	0.001	1	20
Ericsson RRUS-12 190	152.00	180	4,159	0.010	13	224
Raycap DC6-48-60-18-	152.00	16	370	0.001	1	20
Powerwave Allgon 777	152.00	105	2,426	0.006	8	131
Kathrein Scala 80010	152.00	586	13,530	0.032	43	729
Generic 15' Omni	151.00	40	912	0.002	3	50
Site Pro1 RMQP-496-H	149.00	2,449	54,364	0.128	172	3,050
Generic Flat Platfor	141.00	2,500	49,703	0.117	157	3,114
Generic 2" x 4" GPS	140.00	5	98	0.000	0	6
Commscope CBC78T-DS-	140.00	62	1,217	0.003	4	77
Samsung Outdoor CBRS	140.00	56	1,094	0.003	3	70
Samsung Outdoor CBRS	140.00	13	259	0.001	1	16
Samsung B5/B13 RRH-B	140.00	211	4,134	0.010	13	263
Samsung B2/B66A RRH-	140.00	253	4,963	0.012	16	315
RFS DB-C1-12C-24AB-0	140.00	32	627	0.001	2	40
Samsung MT6407-77A	140.00	245	4,798	0.011	15	305
Andrew DB846H80E-SX	140.00	96	1,882	0.004	6	120
Commscope JAHH-65B-R	140.00	364	7,127	0.017	23	453
KMW AWS Twin Dual 70	134.00	52	937	0.002	3	65
Ericsson Radio 4449	134.00	222	3,986	0.009	13	277
Ericsson AIR 21	134.00	273	4,902	0.012	16	340
RFS APXVAARR24_43-U-	134.00	384	6,890	0.016	22	478
Flat Platform with R	134.00	2,000	35,912	0.085	114	2,491
Commscope RDIDC-9181	121.00	22	321	0.001	1	27
Fujitsu TA08025-B604	121.00	192	2,807	0.007	9	239
Fujitsu TA08025-B605	121.00	225	3,294	0.008	10	280
JMA Wireless MX08FRO	121.00	193	2,833	0.007	9	241
Generic Flat Platfor	121.00	2,500	36,603	0.086	116	3,114
		44,813	424,630	1.000	1,344	55,821

Load Case 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
40	151.50	71	1,623	0.004	5	60
39	150.50	72	1,626	0.004	5	61
38	149.50	72	1,620	0.004	5	62
37	147.00	297	6,422	0.015	20	254

Site Number: 302518

Code: ANSI/TIA-222-H

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Site Name: Newtown CT 3, CT

Engineering Number: 13688395_C3_03

6/30/2021 8:30:21 AM

Customer: DISH WIRELESS L.L.C.

36	143.00	309	6,314	0.015	20	264
35	140.50	79	1,560	0.004	5	67
34	137.50	446	8,440	0.020	27	381
33	134.50	91	1,654	0.004	5	78
32	132.00	412	7,180	0.017	23	352
31	127.50	531	8,638	0.020	27	454
30	123.00	438	6,628	0.016	21	374
29	120.50	114	1,656	0.004	5	97
28	117.50	581	8,024	0.019	25	497
27	112.50	599	7,584	0.018	24	512
26	107.50	617	7,134	0.017	23	527
25	103.63	347	3,729	0.009	12	297
24	101.13	562	5,744	0.014	18	480
23	98.88	571	5,581	0.013	18	488
22	96.38	473	4,395	0.010	14	404
21	92.50	881	7,542	0.018	24	753
20	87.50	909	6,956	0.016	22	776
19	82.50	936	6,369	0.015	20	799
18	77.50	963	5,783	0.014	18	823
17	72.50	990	5,204	0.012	16	846
16	67.50	1,017	4,634	0.011	15	869
15	62.50	1,044	4,079	0.010	13	892
14	57.50	1,071	3,542	0.008	11	915
13	54.54	199	593	0.001	2	170
12	52.04	1,716	4,649	0.011	15	1,466
11	48.96	891	2,135	0.005	7	761
10	46.46	737	1,590	0.004	5	629
9	42.50	1,288	2,326	0.005	7	1,100
8	37.50	1,320	1,856	0.004	6	1,127
7	32.50	1,351	1,427	0.003	5	1,155
6	27.50	1,383	1,046	0.002	3	1,182
5	22.50	1,415	716	0.002	2	1,209
4	17.50	1,446	443	0.001	1	1,236
3	12.50	1,478	231	0.001	1	1,263
2	7.50	1,510	85	0.000	0	1,290
1	2.50	1,541	10	0.000	0	1,317
Powerwave Allgon LGP	152.00	33	762	0.002	2	28
Powerwave Allgon 702	152.00	26	610	0.001	2	23
CCI DTMAPB7819VG12A	152.00	58	1,331	0.003	4	49
Powerwave Allgon LGP	152.00	85	1,955	0.005	6	72
Raycap DC6-48-60-18-	152.00	20	462	0.001	1	17
Ericsson RRUS 4415 B	152.00	138	3,188	0.008	10	118
Ericsson RRUS 4449 B	152.00	213	4,921	0.012	16	182
Ericsson RRUS 4478 B	152.00	178	4,117	0.010	13	152
Raycap DC6-48-60-18-	152.00	16	370	0.001	1	14
Ericsson RRUS-12 190	152.00	180	4,159	0.010	13	154
Raycap DC6-48-60-18-	152.00	16	370	0.001	1	14
Powerwave Allgon 777	152.00	105	2,426	0.006	8	90
Kathrein Scala 80010	152.00	586	13,530	0.032	43	500
Generic 15' Omni	151.00	40	912	0.002	3	34
Site Pro1 RMQP-496-H	149.00	2,449	54,364	0.128	172	2,092
Generic Flat Platfor	141.00	2,500	49,703	0.117	157	2,136
Generic 2" x 4" GPS	140.00	5	98	0.000	0	4
Commscope CBC78T-DS-	140.00	62	1,217	0.003	4	53
Samsung Outdoor CBRS	140.00	56	1,094	0.003	3	48
Samsung Outdoor CBRS	140.00	13	259	0.001	1	11
Samsung B5/B13 RRH-B	140.00	211	4,134	0.010	13	180
Samsung B2/B66A RRH-	140.00	253	4,963	0.012	16	216
RFS DB-C1-12C-24AB-0	140.00	32	627	0.001	2	27
Samsung MT6407-77A	140.00	245	4,798	0.011	15	209
Andrew DB846H80E-SX	140.00	96	1,882	0.004	6	82
Commscope JAHH-65B-R	140.00	364	7,127	0.017	23	311
KMW AWS Twin Dual 70	134.00	52	937	0.002	3	45
Ericsson Radio 4449	134.00	222	3,986	0.009	13	190

Site Number: 302518

Code: ANSI/TIA-222-H

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Site Name: Newtown CT 3, CT

Engineering Number: 13688395_C3_03

6/30/2021 8:30:21 AM

Customer: DISH WIRELESS L.L.C.

Ericsson AIR 21	134.00	273	4,902	0.012	16	233
RFS APXVAARR24_43-U-	134.00	384	6,890	0.016	22	328
Flat Platform with R	134.00	2,000	35,912	0.085	114	1,709
Commscope RDIDC-9181	121.00	22	321	0.001	1	19
Fujitsu TA08025-B604	121.00	192	2,807	0.007	9	164
Fujitsu TA08025-B605	121.00	225	3,294	0.008	10	192
JMA Wireless MX08FRO	121.00	193	2,833	0.007	9	165
Generic Flat Platfor	121.00	2,500	36,603	0.086	116	2,136
		44,813	424,630	1.000	1,344	38,286

Load Case 1.2D + 1.0Ev + 1.0Eh

Seismic

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-53.90	-1.35	0.00	-176.91	0.00	176.91	5,359.60	1,372.31	6,979.93	6,210.55	0.00	0.00	0.039
5.00	-52.02	-1.35	0.00	-170.17	0.00	170.17	5,275.68	1,339.64	6,651.63	5,966.65	0.00	-0.01	0.038
10.00	-50.18	-1.36	0.00	-163.40	0.00	163.40	5,189.62	1,306.97	6,331.23	5,725.08	0.02	-0.02	0.038
15.00	-48.38	-1.37	0.00	-156.60	0.00	156.60	5,101.44	1,274.31	6,018.74	5,485.99	0.04	-0.02	0.038
20.00	-46.61	-1.37	0.00	-149.77	0.00	149.77	5,011.12	1,241.64	5,714.16	5,249.58	0.07	-0.03	0.038
25.00	-44.89	-1.37	0.00	-142.93	0.00	142.93	4,918.68	1,208.98	5,417.48	5,016.02	0.11	-0.04	0.038
30.00	-43.21	-1.37	0.00	-136.07	0.00	136.07	4,824.11	1,176.31	5,128.72	4,785.49	0.16	-0.05	0.037
35.00	-41.56	-1.37	0.00	-129.20	0.00	129.20	4,727.41	1,143.64	4,847.86	4,558.17	0.22	-0.06	0.037
40.00	-39.96	-1.37	0.00	-122.34	0.00	122.34	4,628.58	1,110.98	4,574.91	4,334.22	0.28	-0.07	0.037
45.00	-39.04	-1.37	0.00	-115.48	0.00	115.48	4,527.62	1,078.31	4,309.87	4,113.84	0.36	-0.08	0.037
47.92	-37.93	-1.37	0.00	-111.49	0.00	111.49	4,467.74	1,059.25	4,158.91	3,987.00	0.42	-0.09	0.036
50.00	-35.79	-1.35	0.00	-108.64	0.00	108.64	4,424.53	1,045.64	4,052.73	3,897.19	0.45	-0.09	0.036
54.08	-35.55	-1.35	0.00	-103.13	0.00	103.13	3,619.86	890.37	3,428.08	3,171.85	0.54	-0.10	0.042
55.00	-34.21	-1.34	0.00	-101.89	0.00	101.89	3,605.16	885.24	3,388.67	3,140.59	0.56	-0.10	0.042
60.00	-32.91	-1.33	0.00	-95.17	0.00	95.17	3,523.72	857.24	3,177.73	2,971.70	0.67	-0.11	0.041
65.00	-31.64	-1.32	0.00	-88.50	0.00	88.50	3,440.15	829.24	2,973.56	2,805.61	0.80	-0.13	0.041
70.00	-30.41	-1.31	0.00	-81.88	0.00	81.88	3,354.45	801.24	2,776.17	2,642.48	0.94	-0.14	0.040
75.00	-29.21	-1.30	0.00	-75.32	0.00	75.32	3,266.62	773.24	2,585.56	2,482.50	1.09	-0.15	0.039
80.00	-28.04	-1.28	0.00	-68.83	0.00	68.83	3,154.85	745.24	2,401.72	2,309.86	1.26	-0.17	0.039
85.00	-26.91	-1.26	0.00	-62.42	0.00	62.42	3,036.31	717.24	2,224.67	2,138.69	1.44	-0.18	0.038
90.00	-25.81	-1.24	0.00	-56.12	0.00	56.12	2,917.78	689.24	2,054.39	1,974.10	1.64	-0.19	0.037
95.00	-25.22	-1.23	0.00	-49.91	0.00	49.91	2,799.25	661.24	1,890.90	1,816.10	1.85	-0.21	0.036
97.75	-24.51	-1.21	0.00	-46.53	0.00	46.53	2,734.06	645.84	1,803.86	1,732.01	1.97	-0.22	0.036
100.00	-23.81	-1.19	0.00	-43.80	0.00	43.80	2,680.72	633.24	1,734.18	1,664.69	2.08	-0.22	0.035
102.25	-23.38	-1.18	0.00	-41.12	0.00	41.12	1,683.04	422.46	1,157.64	1,050.18	2.18	-0.23	0.053
105.00	-22.61	-1.16	0.00	-37.86	0.00	37.86	1,655.06	412.20	1,102.06	1,007.42	2.32	-0.24	0.051
110.00	-21.86	-1.14	0.00	-32.05	0.00	32.05	1,602.55	393.53	1,004.52	930.92	2.58	-0.26	0.048
115.00	-21.14	-1.12	0.00	-26.33	0.00	26.33	1,547.92	374.86	911.50	856.15	2.85	-0.27	0.044
120.00	-21.00	-1.12	0.00	-20.73	0.00	20.73	1,491.15	356.20	822.99	783.31	3.15	-0.29	0.041
121.00	-16.55	-0.93	0.00	-19.61	0.00	19.61	1,479.54	352.46	805.83	768.99	3.21	-0.30	0.037
125.00	-15.89	-0.91	0.00	-15.88	0.00	15.88	1,428.88	337.53	739.01	710.88	3.47	-0.31	0.033
130.00	-15.38	-0.88	0.00	-11.35	0.00	11.35	1,349.86	318.86	659.54	634.05	3.80	-0.32	0.029
134.00	-11.61	-0.69	0.00	-7.82	0.00	7.82	1,286.64	303.93	599.22	575.75	4.07	-0.33	0.023
135.00	-11.06	-0.66	0.00	-7.13	0.00	7.13	1,270.84	300.20	584.59	561.61	4.14	-0.33	0.021
140.00	-9.29	-0.56	0.00	-3.83	0.00	3.83	1,191.82	281.53	514.16	493.57	4.49	-0.34	0.016
141.00	-5.80	-0.37	0.00	-3.26	0.00	3.26	1,176.01	277.80	500.62	480.48	4.56	-0.34	0.012
145.00	-5.43	-0.34	0.00	-1.80	0.00	1.80	1,112.80	262.87	448.26	429.91	4.85	-0.34	0.009
149.00	-2.29	-0.15	0.00	-0.42	0.00	0.42	1,049.58	247.93	398.78	382.15	5.14	-0.35	0.003
150.00	-2.20	-0.14	0.00	-0.28	0.00	0.28	1,033.78	244.20	386.87	370.65	5.21	-0.35	0.003
151.00	-2.06	-0.13	0.00	-0.13	0.00	0.13	1,017.97	240.47	375.13	359.33	5.29	-0.35	0.002
152.00	0.00	-0.12	0.00	0.00	0.00	0.00	1,002.17	236.73	363.57	348.18	5.36	-0.35	0.000

Load Case 0.9D - 1.0Ev + 1.0Eh

Seismic (Reduced DL)

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.97	-1.35	0.00	-173.76	0.00	173.76	5,359.60	1,372.31	6,979.93	6,210.55	0.00	0.00	0.035
5.00	-35.68	-1.35	0.00	-167.03	0.00	167.03	5,275.68	1,339.64	6,651.63	5,966.65	0.00	-0.01	0.035
10.00	-34.42	-1.35	0.00	-160.28	0.00	160.28	5,189.62	1,306.97	6,331.23	5,725.08	0.02	-0.02	0.035
15.00	-33.18	-1.36	0.00	-153.51	0.00	153.51	5,101.44	1,274.31	6,018.74	5,485.99	0.04	-0.02	0.034
20.00	-31.97	-1.36	0.00	-146.72	0.00	146.72	5,011.12	1,241.64	5,714.16	5,249.58	0.07	-0.03	0.034
25.00	-30.79	-1.36	0.00	-139.92	0.00	139.92	4,918.68	1,208.98	5,417.48	5,016.02	0.11	-0.04	0.034
30.00	-29.63	-1.36	0.00	-133.12	0.00	133.12	4,824.11	1,176.31	5,128.72	4,785.49	0.15	-0.05	0.034
35.00	-28.51	-1.36	0.00	-126.33	0.00	126.33	4,727.41	1,143.64	4,847.86	4,558.17	0.21	-0.06	0.034
40.00	-27.41	-1.35	0.00	-119.54	0.00	119.54	4,628.58	1,110.98	4,574.91	4,334.22	0.28	-0.07	0.034
45.00	-26.78	-1.35	0.00	-112.77	0.00	112.77	4,527.62	1,078.31	4,309.87	4,113.84	0.36	-0.08	0.033
47.92	-26.02	-1.35	0.00	-108.83	0.00	108.83	4,467.74	1,059.25	4,158.91	3,987.00	0.41	-0.09	0.033
50.00	-24.55	-1.33	0.00	-106.03	0.00	106.03	4,424.53	1,045.64	4,052.73	3,897.19	0.45	-0.09	0.033
54.08	-24.38	-1.33	0.00	-100.59	0.00	100.59	3,619.86	890.37	3,428.08	3,171.85	0.53	-0.10	0.038
55.00	-23.46	-1.32	0.00	-99.37	0.00	99.37	3,605.16	885.24	3,388.67	3,140.59	0.55	-0.10	0.038
60.00	-22.57	-1.31	0.00	-92.76	0.00	92.76	3,523.72	857.24	3,177.73	2,971.70	0.66	-0.11	0.038
65.00	-21.70	-1.30	0.00	-86.20	0.00	86.20	3,440.15	829.24	2,973.56	2,805.61	0.78	-0.12	0.037
70.00	-20.86	-1.29	0.00	-79.70	0.00	79.70	3,354.45	801.24	2,776.17	2,642.48	0.92	-0.14	0.036
75.00	-20.03	-1.27	0.00	-73.27	0.00	73.27	3,266.62	773.24	2,585.56	2,482.50	1.07	-0.15	0.036
80.00	-19.23	-1.25	0.00	-66.92	0.00	66.92	3,154.85	745.24	2,401.72	2,309.86	1.23	-0.16	0.035
85.00	-18.46	-1.23	0.00	-60.65	0.00	60.65	3,036.31	717.24	2,224.67	2,138.69	1.41	-0.18	0.034
90.00	-17.70	-1.21	0.00	-54.49	0.00	54.49	2,917.78	689.24	2,054.39	1,974.10	1.60	-0.19	0.034
95.00	-17.30	-1.20	0.00	-48.44	0.00	48.44	2,799.25	661.24	1,890.90	1,816.10	1.81	-0.20	0.033
97.75	-16.81	-1.18	0.00	-45.14	0.00	45.14	2,734.06	645.84	1,803.86	1,732.01	1.93	-0.21	0.032
100.00	-16.33	-1.16	0.00	-42.48	0.00	42.48	2,680.72	633.24	1,734.18	1,664.69	2.03	-0.22	0.032
102.25	-16.03	-1.15	0.00	-39.87	0.00	39.87	1,683.04	422.46	1,157.64	1,050.18	2.13	-0.22	0.047
105.00	-15.51	-1.13	0.00	-36.70	0.00	36.70	1,655.06	412.20	1,102.06	1,007.42	2.26	-0.23	0.046
110.00	-14.99	-1.11	0.00	-31.04	0.00	31.04	1,602.55	393.53	1,004.52	930.92	2.52	-0.25	0.043
115.00	-14.50	-1.09	0.00	-25.50	0.00	25.50	1,547.92	374.86	911.50	856.15	2.79	-0.27	0.039
120.00	-14.40	-1.08	0.00	-20.06	0.00	20.06	1,491.15	356.20	822.99	783.31	3.08	-0.28	0.035
121.00	-11.35	-0.90	0.00	-18.98	0.00	18.98	1,479.54	352.46	805.83	768.99	3.14	-0.29	0.032
125.00	-10.90	-0.88	0.00	-15.37	0.00	15.37	1,428.88	337.53	739.01	710.88	3.38	-0.30	0.029
130.00	-10.54	-0.85	0.00	-10.99	0.00	10.99	1,349.86	318.86	659.54	634.05	3.70	-0.31	0.025
134.00	-7.96	-0.67	0.00	-7.57	0.00	7.57	1,286.64	303.93	599.22	575.75	3.97	-0.32	0.019
135.00	-7.58	-0.64	0.00	-6.91	0.00	6.91	1,270.84	300.20	584.59	561.61	4.04	-0.32	0.018
140.00	-6.37	-0.55	0.00	-3.71	0.00	3.71	1,191.82	281.53	514.16	493.57	4.38	-0.33	0.013
141.00	-3.97	-0.35	0.00	-3.16	0.00	3.16	1,176.01	277.80	500.62	480.48	4.45	-0.33	0.010
145.00	-3.72	-0.33	0.00	-1.74	0.00	1.74	1,112.80	262.87	448.26	429.91	4.73	-0.34	0.007
149.00	-1.57	-0.14	0.00	-0.41	0.00	0.41	1,049.58	247.93	398.78	382.15	5.01	-0.34	0.003
150.00	-1.51	-0.14	0.00	-0.27	0.00	0.27	1,033.78	244.20	386.87	370.65	5.08	-0.34	0.002
151.00	-1.41	-0.13	0.00	-0.13	0.00	0.13	1,017.97	240.47	375.13	359.33	5.15	-0.34	0.002
152.00	0.00	-0.12	0.00	0.00	0.00	0.00	1,002.17	236.73	363.57	348.18	5.22	-0.34	0.000

Site Number: 302518

Code: ANSI/TIA-222-H

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Site Name: Newtown CT 3, CT

Engineering Number: 13688395_C3_03

6/30/2021 8:30:21 AM

Customer: DISH WIRELESS L.L.C.

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	24.16	0.00	53.75	0.00	0.00	2803.87	102.25	0.62
0.9D + 1.0W	24.15	0.00	40.30	0.00	0.00	2765.05	102.25	0.60
1.2D + 1.0Di + 1.0Wi	7.05	0.00	73.01	0.00	0.00	814.24	102.25	0.19
1.2D + 1.0Ev + 1.0Eh	1.35	0.00	53.90	0.00	0.00	176.91	102.25	0.05
0.9D - 1.0Ev + 1.0Eh	1.35	0.00	36.97	0.00	0.00	173.76	102.25	0.05
1.0D + 1.0W	5.88	0.00	44.81	0.00	0.00	677.11	102.25	0.16



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Antenna Mount Analysis Report

ATC Site Name : Newtown CT 3
ATC Site Number : 302518
Engineering Number : 13688395_C8_04
Mount Elevation : 121 ft.
Carrier : Dish Wireless L.L.C.
Carrier Site Name : NJJER01081B
Carrier Site Number : NJJER01081B
Site Location : 6 Fairfield Dr (Brkfld)
Newtown, CT 06470-1216
41.42550°, -73.37400°
County : Fairfield
Date : March 22, 2022
Max Usage : 48%
Result : Pass

Prepared By:
Matthew Williams
Project Engineer

Reviewed By:



COA: PEC.0001564 Expires: 02/01/2023



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Introduction

The purpose of this report is to summarize results of the antenna mount analysis performed for Dish Wireless L.L.C. at 121 ft.

Supporting Documents

Spec. Sheet	Spec Sheet for Commscope Part# MC-PK8-DSH dated March 17, 2021
Photos	Site photos from 2020
Other	302518_app
	Structural Analysis Report By TEP dated October 04, 2021
	Construction Drawings by Dish Wireless L.L.C. dated October 20, 2021

Analysis

This antenna mount was analyzed using RISA-3D v19.0.4 analysis software

Basic Wind Speed:	115 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radical ice concurrent
Codes:	ANSI/TIA-222-H / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat
Crest Height:	0 ft
Crest Length:	0 ft
Spectral Response:	$S_s = 0.214, S_1 = 0.055$
Site Class:	D – Stiff Soil
Live Loads:	$L_m = 500 \text{ lbs}, L_v = 250 \text{ lbs}$

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed. The mount can support the equipment as described in this report. Analysis is based on new Commscope Part# MC-PK8-DSH Mount.



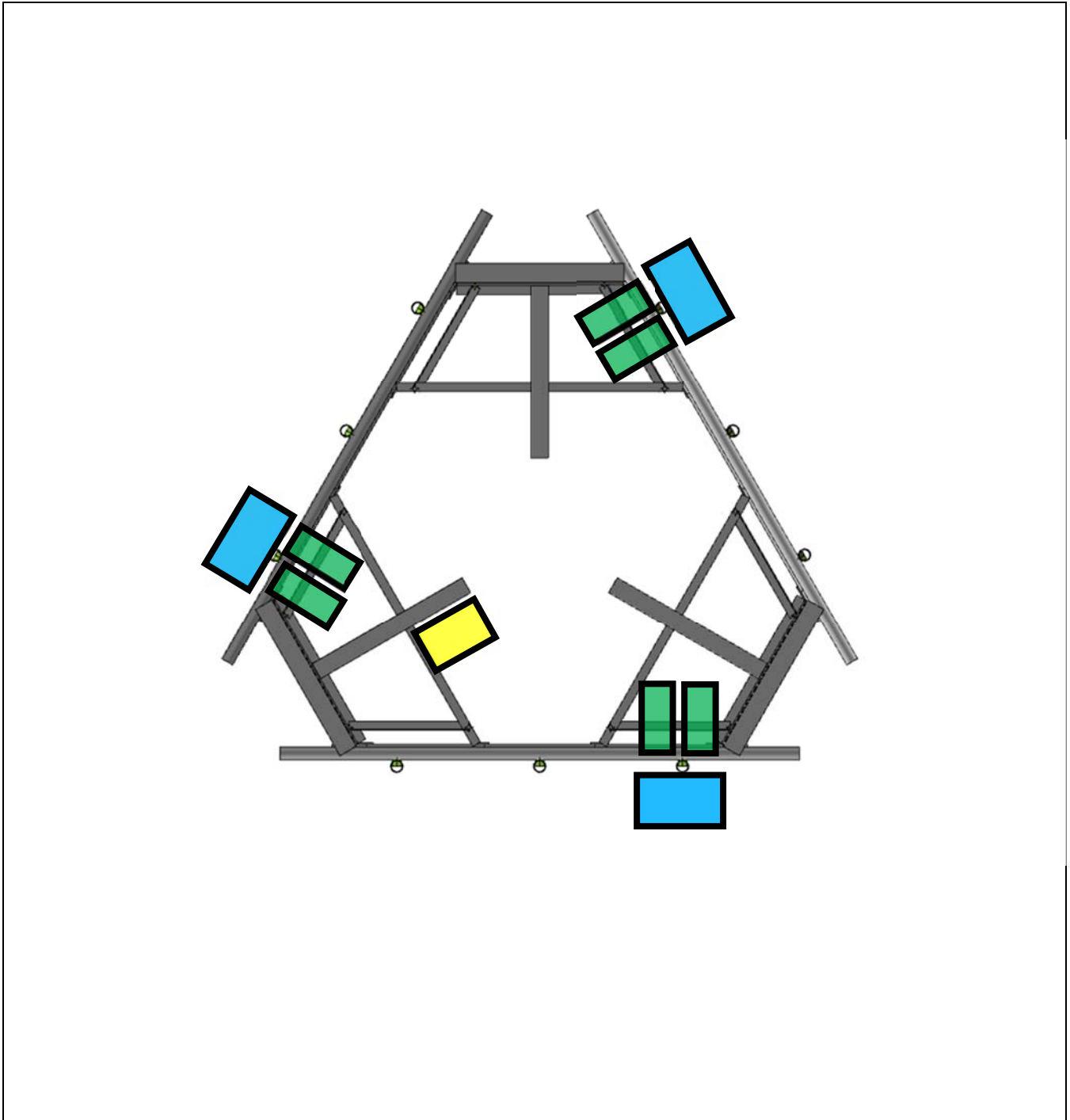
Antenna Loading

Mount Centerline (ft)	Antenna Centerline (ft)	Qty	Antenna Model
121	121	3	JMA Wireless MX08FRO665-21
		1	Commscope RDIDC-9181-PF-48
		3	Fujitsu TA08025-B605
		3	Fujitsu TA08025-B604

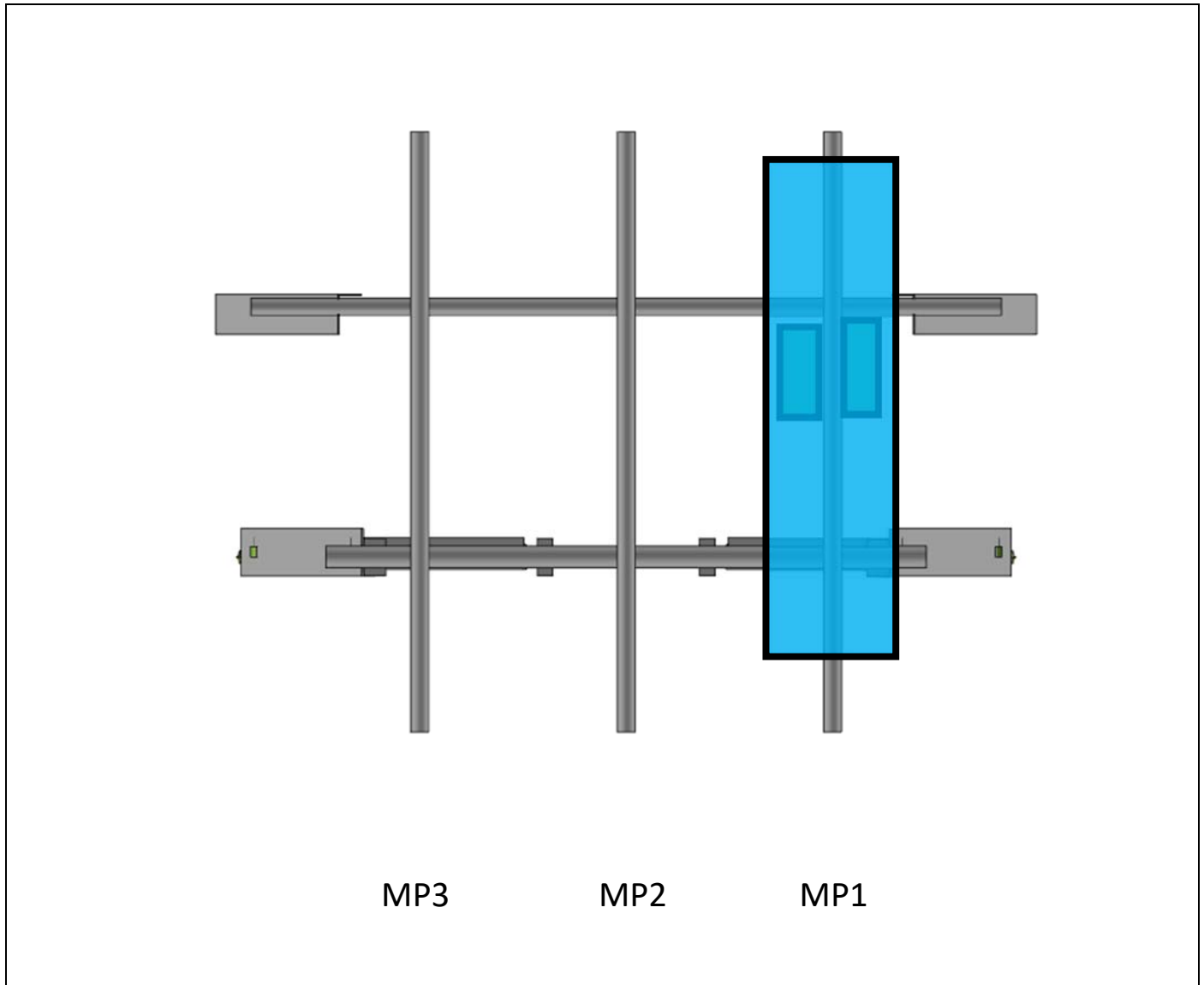
Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Main Horizontals	7%	Pass
Support Rails	11%	Pass
Support Tubes	48%	Pass
Support Channels	34%	Pass
Support Angles	31%	Pass
Mount Pipes	13%	Pass
Connection Plates	20%	Pass
Connection Angles	18%	Pass

Mount Layout



Equipment Layout



	Antenna Model	Location
1	JMA Wireless MX08FRO665-21	MP1
2	Commscope RDIDC-9181-PF-48	Support Tube
3	Fujitsu TA08025-B605	MP1
4	Fujitsu TA08025-B604	MP1



Standard Conditions

All engineering services performed by B+T Group, Tulsa 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 and mounts
- Information from drawings, design and analysis documents, and field notes in the possession of B+T Group
- Manufacturers drawings for Commscope MC-PK8-DSH used for analysis

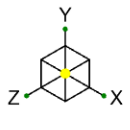
It is the responsibility of the client to ensure that the information provided to B+T Group and used in the performance of our engineering services is correct and complete.

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 B+T Group, 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. B+T Group is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Envelope Only Solution

B+T Group

MSP

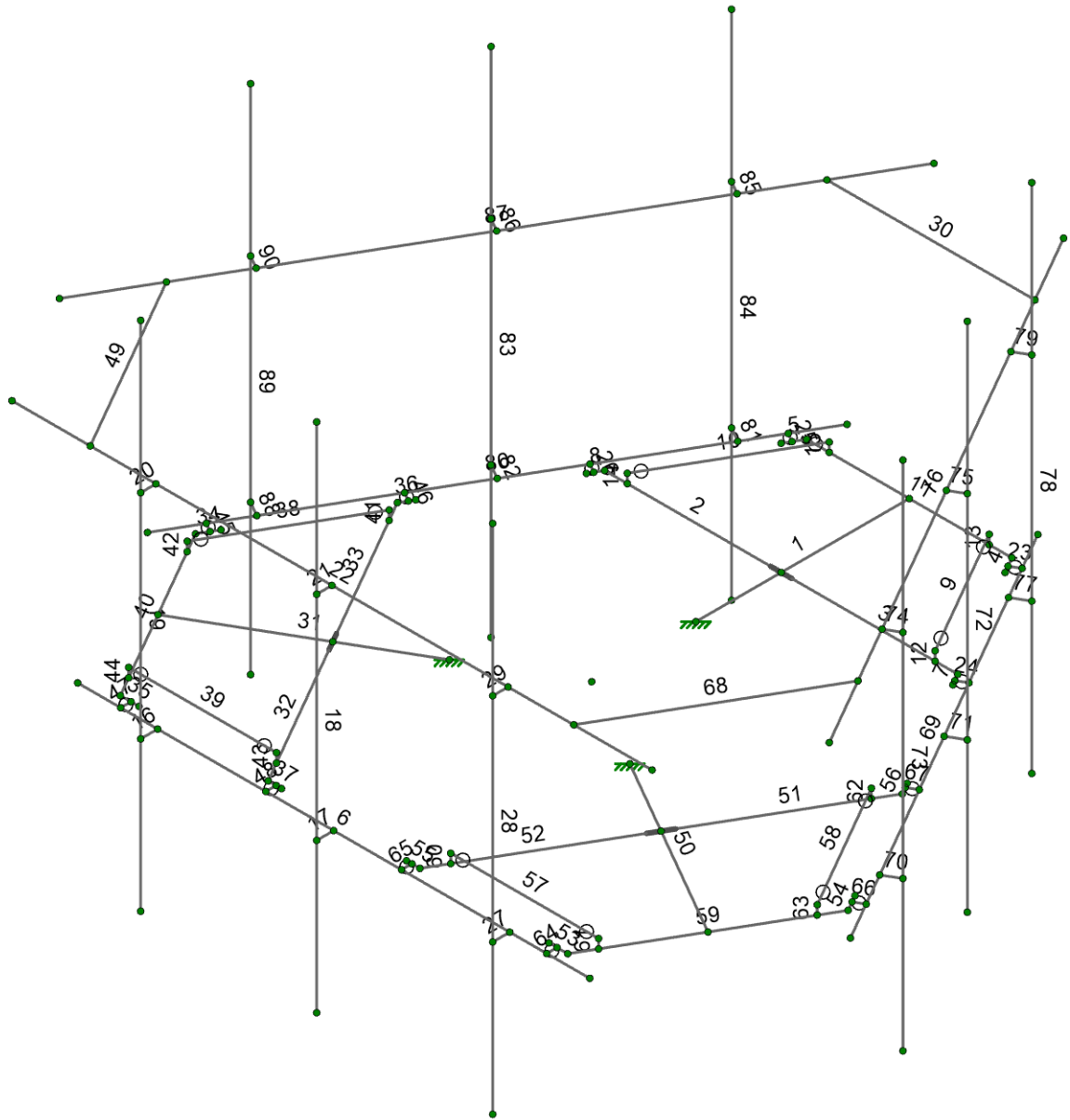
153235.002.01

302518 - Newtown CT 3

SK-1

Mar 22, 2022

153235_002_01_Newtown CT 3_...



Envelope Only Solution

B+T Group

MSP

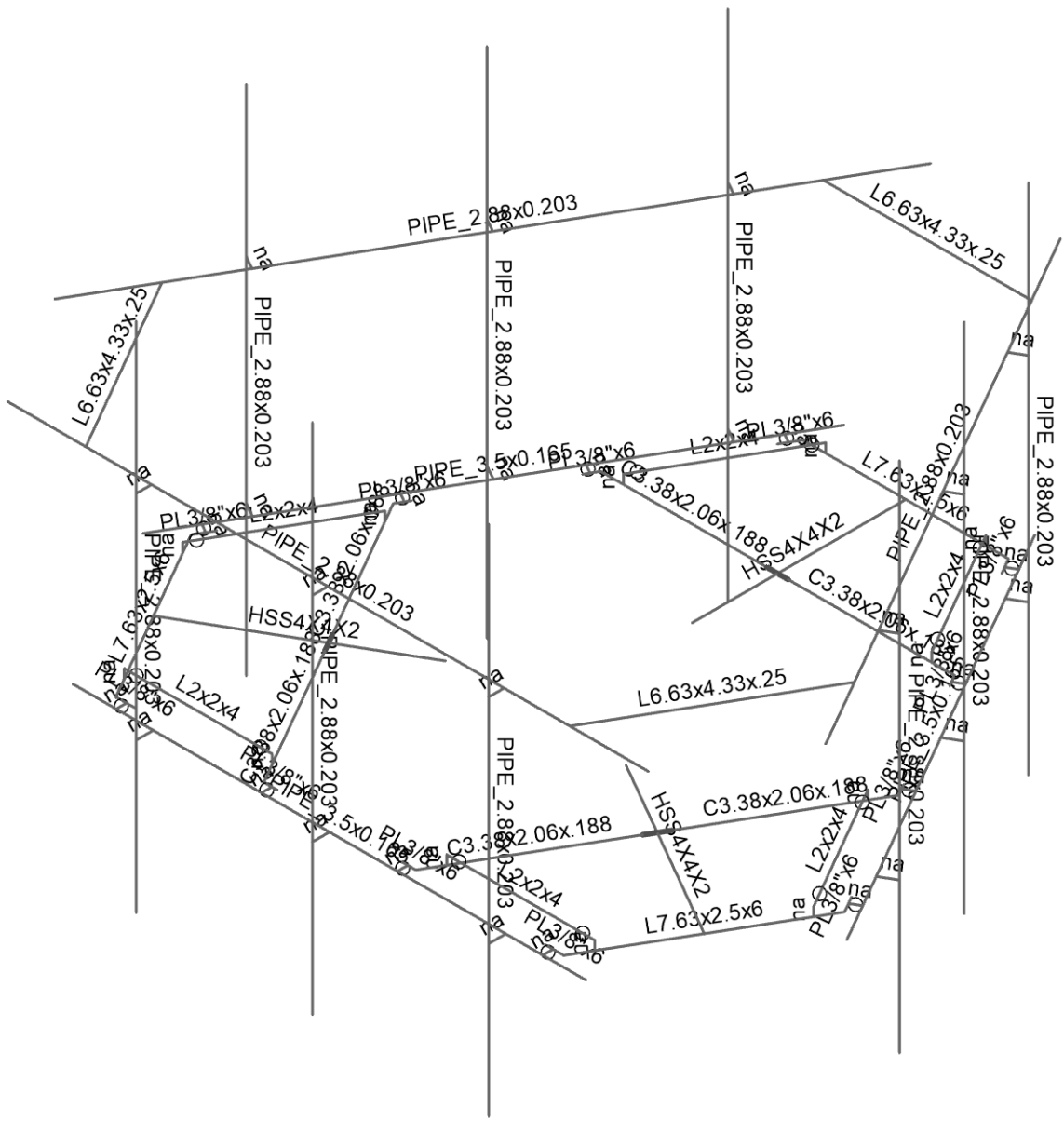
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302518 - Newtown CT 3

SK-2

Mar 22, 2022

153235_002_01_Newtown CT 3_...

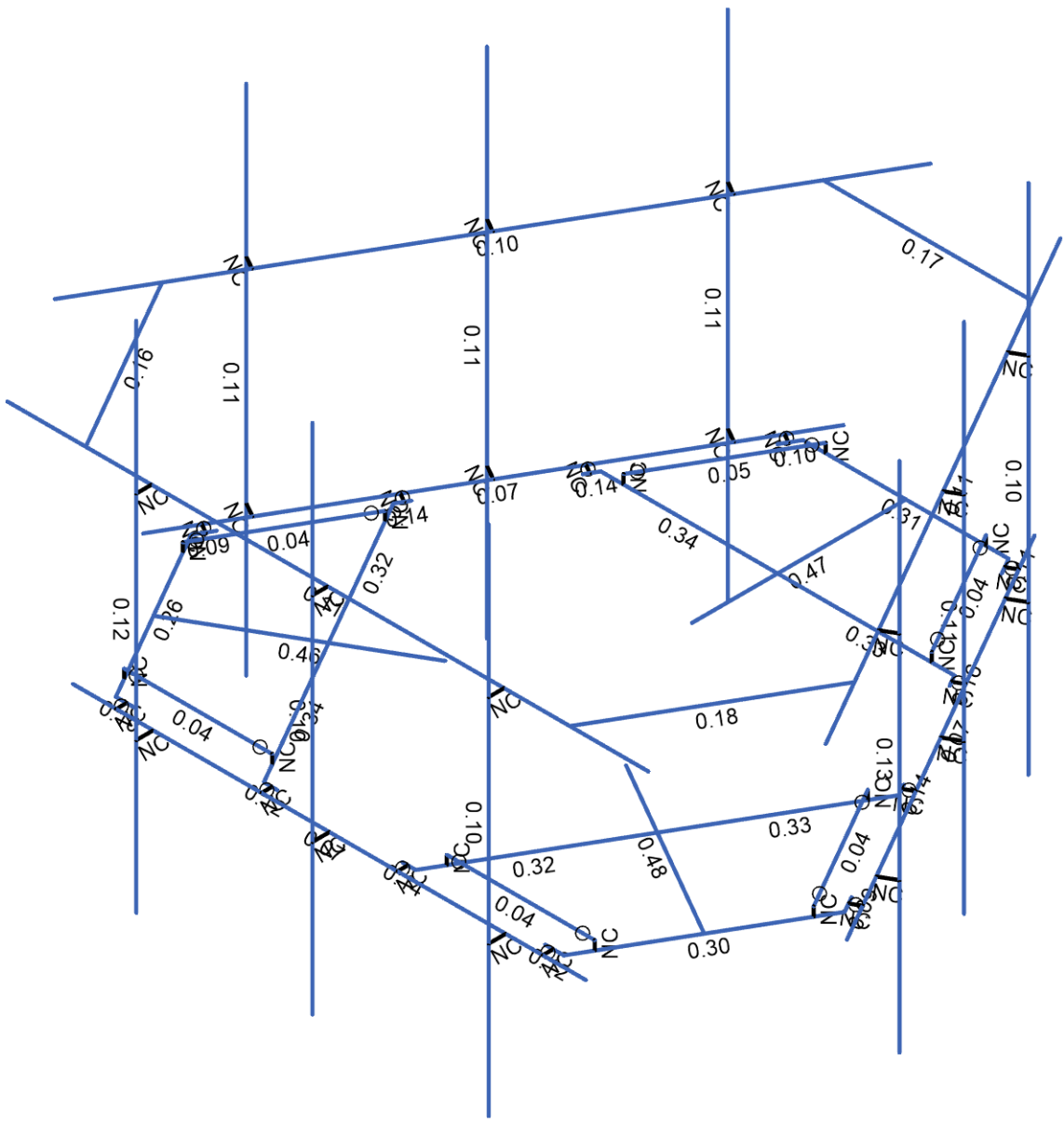
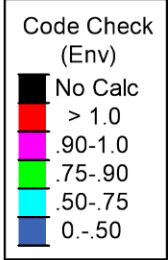


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 MSP
 153235.002.01

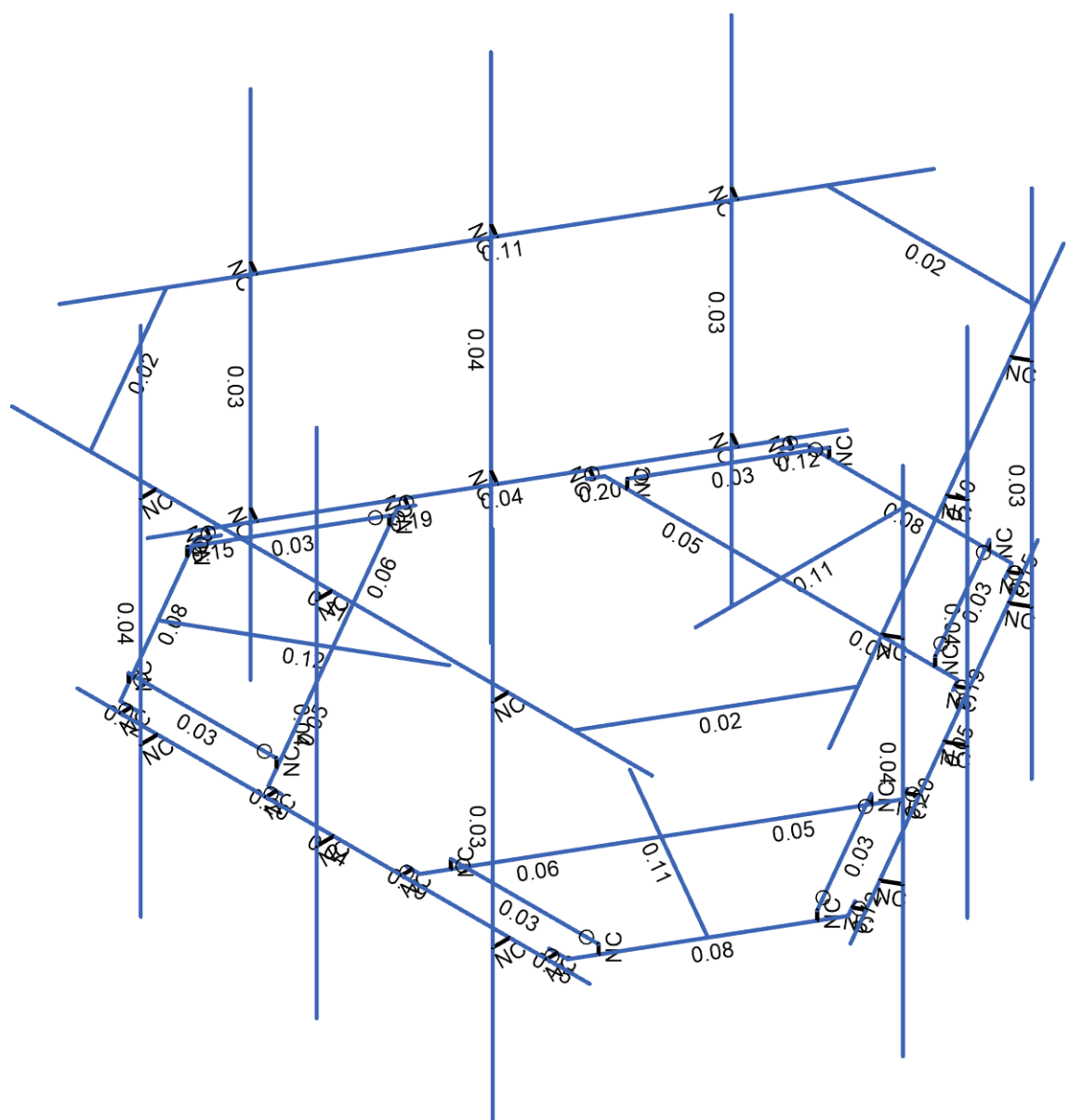
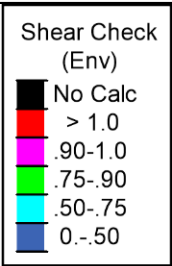
302518 - Newtown CT 3

SK-3
 Mar 22, 2022
 153235_002_01_Newtown CT 3_...



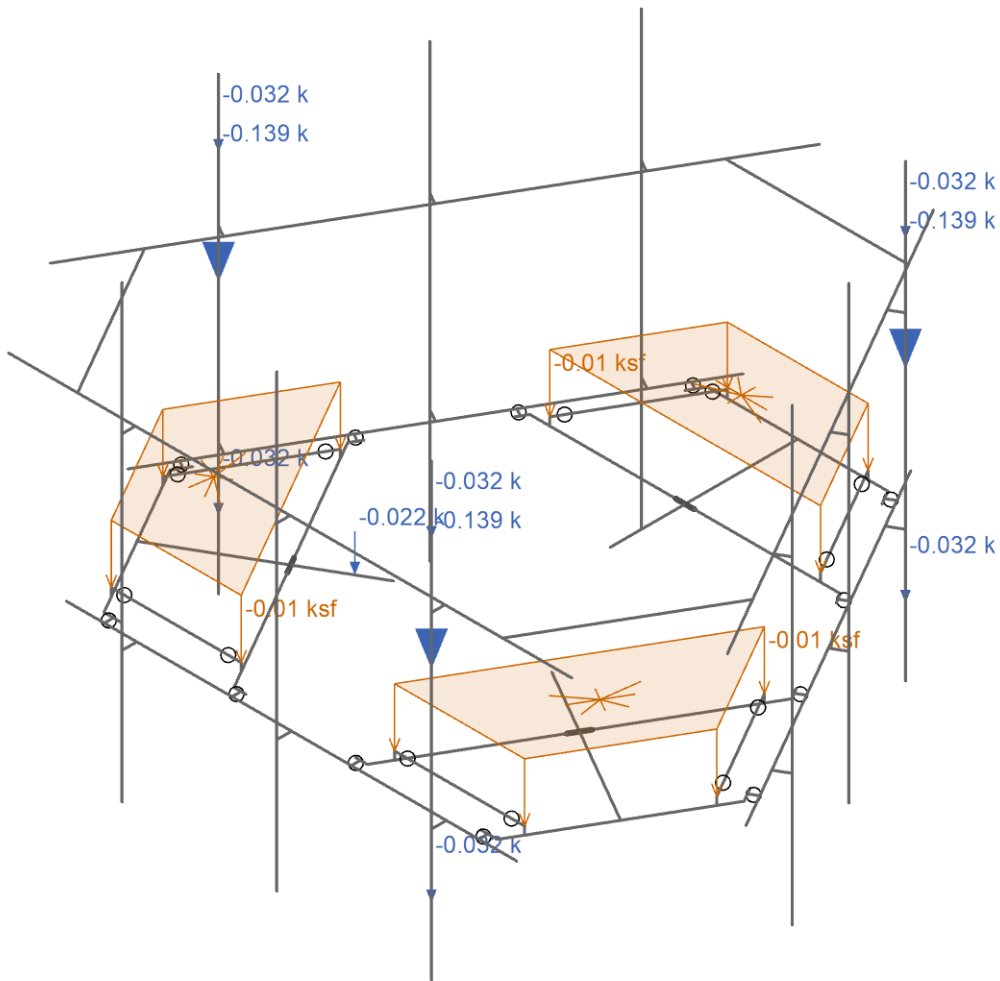
Member Code Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	302518 - Newtown CT 3	SK-4
MSP		Mar 22, 2022
153235.002.01		153235_002_01_Newtown CT 3_...



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

B+T Group	302518 - Newtown CT 3	SK-5
MSP		Mar 22, 2022
153235.002.01		153235_002_01_Newtown CT 3_...



Loads: BLC 1, Dead

B+T Group

MSP

153235.002.01

302518 - Newtown CT 3

SK-1

Mar 22, 2022

153235_002_01_Newtown CT 3_...

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	1	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	2						
3	3						
4	4						
5	5						
6	16						
7	17						
8	19						
9	20						
10	22						
11	25						
12	26						
13	29						
14	53	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
15	54						
16	55						
17	56						
18	57						
19	66						
20	67						
21	69						
22	70						
23	72						
24	75						
25	76						
26	79						
27	82	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
28	83						
29	84						
30	85						
31	86						
32	95						
33	96						
34	98						
35	99						
36	101						
37	104						
38	105						
39	108						

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	1	1	2		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
2	2	5	3	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
3	3	3	4	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
4	4	7	8		MF-CP1	Beam	RECT	A36 Gr.36	Typical
5	5	6	9		MF-CP1	Beam	RECT	A36 Gr.36	Typical
6	6	14	15		MF-H1	Beam	Pipe	A500 Gr.C	Typical
7	7	16	4		MF-CP1	Beam	RECT	A36 Gr.36	Typical
8	8	5	19		MF-CP1	Beam	RECT	A36 Gr.36	Typical
9	9	25	24		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
10	10	23	22		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
11	11	6	7		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
12	12	28	24		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
13	13	29	25		RIGID	None	None	RIGID	Typical
14	14	27	23		RIGID	None	None	RIGID	Typical
15	15	26	22		RIGID	None	None	RIGID	Typical
16	16	32	30		RIGID	None	None	RIGID	Typical
17	17	33	31		RIGID	None	None	RIGID	Typical
18	18	37	35		MF-P1	Column	Pipe	A500 Gr.C	Typical
19	19	36	34		MF-P1	Column	Pipe	A500 Gr.C	Typical
20	20	38	40		RIGID	None	None	RIGID	Typical
21	21	39	41		RIGID	None	None	RIGID	Typical
22	22	42	43		MF-H2	Beam	Pipe	A500 Gr.C	Typical
23	23	11	10		RIGID	None	None	RIGID	Typical
24	24	18	17		RIGID	None	None	RIGID	Typical
25	25	13	12		RIGID	None	None	RIGID	Typical
26	26	21	20		RIGID	None	None	RIGID	Typical
27	27	45	44		RIGID	None	None	RIGID	Typical
28	28	47	46		MF-P1	Column	Pipe	A500 Gr.C	Typical
29	29	48	49		RIGID	None	None	RIGID	Typical
30	30	51	52	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
31	31	53	54		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
32	32	57	55	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
33	33	55	56	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
34	34	59	60		MF-CP1	Beam	RECT	A36 Gr.36	Typical
35	35	58	61		MF-CP1	Beam	RECT	A36 Gr.36	Typical
36	36	66	56		MF-CP1	Beam	RECT	A36 Gr.36	Typical
37	37	57	69		MF-CP1	Beam	RECT	A36 Gr.36	Typical
38	38	75	74		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
39	39	73	72		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
40	40	58	59		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
41	41	78	74		RIGID	None	None	RIGID	Typical
42	42	79	75		RIGID	None	None	RIGID	Typical
43	43	77	73		RIGID	None	None	RIGID	Typical
44	44	76	72		RIGID	None	None	RIGID	Typical
45	45	63	62		RIGID	None	None	RIGID	Typical
46	46	68	67		RIGID	None	None	RIGID	Typical
47	47	65	64		RIGID	None	None	RIGID	Typical
48	48	71	70		RIGID	None	None	RIGID	Typical
49	49	80	81	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
50	50	82	83		SF-H1	Beam	Tube	A500 Gr.B Rect	Typical
51	51	86	84	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
52	52	84	85	180	SF-H2	Beam	Channel	A36 Gr.36	Typical
53	53	88	89		MF-CP1	Beam	RECT	A36 Gr.36	Typical
54	54	87	90		MF-CP1	Beam	RECT	A36 Gr.36	Typical
55	55	95	85		MF-CP1	Beam	RECT	A36 Gr.36	Typical
56	56	86	98		MF-CP1	Beam	RECT	A36 Gr.36	Typical
57	57	104	103		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
58	58	102	101		SF-H3	Beam	Single Angle	A36 Gr.36	Typical
59	59	87	88		SF-H4	Beam	Single Angle	A36 Gr.36	Typical
60	60	107	103		RIGID	None	None	RIGID	Typical
61	61	108	104		RIGID	None	None	RIGID	Typical
62	62	106	102		RIGID	None	None	RIGID	Typical
63	63	105	101		RIGID	None	None	RIGID	Typical
64	64	92	91		RIGID	None	None	RIGID	Typical
65	65	97	96		RIGID	None	None	RIGID	Typical
66	66	94	93		RIGID	None	None	RIGID	Typical
67	67	100	99		RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
68	68	109	110	180	MF-H3	Beam	Single Angle	A36 Gr.36	Typical
69	69	111	112		MF-H1	Beam	Pipe	A500 Gr.C	Typical
70	70	115	113		RIGID	None	None	RIGID	Typical
71	71	116	114		RIGID	None	None	RIGID	Typical
72	72	120	118		MF-P1	Column	Pipe	A500 Gr.C	Typical
73	73	119	117		MF-P1	Column	Pipe	A500 Gr.C	Typical
74	74	121	123		RIGID	None	None	RIGID	Typical
75	75	122	124		RIGID	None	None	RIGID	Typical
76	76	125	126		MF-H2	Beam	Pipe	A500 Gr.C	Typical
77	77	128	127		RIGID	None	None	RIGID	Typical
78	78	130	129		MF-P1	Column	Pipe	A500 Gr.C	Typical
79	79	131	132		RIGID	None	None	RIGID	Typical
80	80	133	134		MF-H1	Beam	Pipe	A500 Gr.C	Typical
81	81	137	135		RIGID	None	None	RIGID	Typical
82	82	138	136		RIGID	None	None	RIGID	Typical
83	83	142	140		MF-P1	Column	Pipe	A500 Gr.C	Typical
84	84	141	139		MF-P1	Column	Pipe	A500 Gr.C	Typical
85	85	143	145		RIGID	None	None	RIGID	Typical
86	86	144	146		RIGID	None	None	RIGID	Typical
87	87	147	148		MF-H2	Beam	Pipe	A500 Gr.C	Typical
88	88	150	149		RIGID	None	None	RIGID	Typical
89	89	152	151		MF-P1	Column	Pipe	A500 Gr.C	Typical
90	90	153	154		RIGID	None	None	RIGID	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
1	1	SF-H1	3.333	Lbyy	Lateral
2	2	SF-H2	2.758	Lbyy	Lateral
3	3	SF-H2	2.758	Lbyy	Lateral
4	4	MF-CP1	0.292	Lbyy	Lateral
5	5	MF-CP1	0.292	Lbyy	Lateral
6	6	MF-H1	8	Lbyy	Lateral
7	7	MF-CP1	0.208	Lbyy	Lateral
8	8	MF-CP1	0.208	Lbyy	Lateral
9	9	SF-H3	2.309	Lbyy	Lateral
10	10	SF-H3	2.309	Lbyy	Lateral
11	11	SF-H4	3.207	Lbyy	Lateral
12	18	MF-P1	8	Lbyy	Lateral
13	19	MF-P1	8	Lbyy	Lateral
14	22	MF-H2	10	Lbyy	Lateral
15	28	MF-P1	8	Lbyy	Lateral
16	30	MF-H3	3.25	Lbyy	Lateral
17	31	SF-H1	3.333	Lbyy	Lateral
18	32	SF-H2	2.758	Lbyy	Lateral
19	33	SF-H2	2.758	Lbyy	Lateral
20	34	MF-CP1	0.292	Lbyy	Lateral
21	35	MF-CP1	0.292	Lbyy	Lateral
22	36	MF-CP1	0.208	Lbyy	Lateral
23	37	MF-CP1	0.208	Lbyy	Lateral
24	38	SF-H3	2.309	Lbyy	Lateral
25	39	SF-H3	2.309	Lbyy	Lateral
26	40	SF-H4	3.207	Lbyy	Lateral
27	49	MF-H3	3.25	Lbyy	Lateral
28	50	SF-H1	3.333	Lbyy	Lateral
29	51	SF-H2	2.758	Lbyy	Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length [ft]	Lcomp top [ft]	Function
30	52	SF-H2	2.758	Lbyy	Lateral
31	53	MF-CP1	0.292	Lbyy	Lateral
32	54	MF-CP1	0.292	Lbyy	Lateral
33	55	MF-CP1	0.208	Lbyy	Lateral
34	56	MF-CP1	0.208	Lbyy	Lateral
35	57	SF-H3	2.309	Lbyy	Lateral
36	58	SF-H3	2.309	Lbyy	Lateral
37	59	SF-H4	3.207	Lbyy	Lateral
38	68	MF-H3	3.25	Lbyy	Lateral
39	69	MF-H1	8	Lbyy	Lateral
40	72	MF-P1	8	Lbyy	Lateral
41	73	MF-P1	8	Lbyy	Lateral
42	76	MF-H2	10	Lbyy	Lateral
43	78	MF-P1	8	Lbyy	Lateral
44	80	MF-H1	8	Lbyy	Lateral
45	83	MF-P1	8	Lbyy	Lateral
46	84	MF-P1	8	Lbyy	Lateral
47	87	MF-H2	10	Lbyy	Lateral
48	89	MF-P1	8	Lbyy	Lateral

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e ⁵ F ⁻¹]	Density [k/ft ³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
8	A500 Gr.C	29000	11154	0.3	0.65	0.49	46	1.4	62	1.3

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
1	Dead	DL	-1		20		3
2	0 Wind - No Ice	WLZ			20	48	
3	90 Wind - No Ice	WLX			20	48	
4	0 Wind - Ice	WLZ			20	48	
5	90 Wind - Ice	WLX			20	48	
6	0 Wind - Service	WLZ			20	48	
7	90 Wind - Service	WLX			20	48	
8	Ice	OL1			20	48	3
9	0 Seismic	ELZ			20	48	
10	90 Seismic	ELX			20	48	
11	Live Load a	LL		3			
12	Live Load b	LL		3			
13	Live Load c	LL		3			
14	Live Load d	LL					
15	Maint LL 1	LL			1		
16	Maint LL 2	LL			1		
17	Maint LL 3	LL			1		
18	Maint LL 4	LL			1		
19	Maint LL 5	LL			1		
20	Maint LL 6	LL			1		



Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed	Area(Member)
21	Maint LL 7	LL			1		
22	Maint LL 8	LL			1		
23	Maint LL 9	LL			1		
24	Maint LL 10	LL			1		
25	Maint LL 11	LL			1		
26	Maint LL 12	LL			1		
27	Maint LL 13	LL			1		
28	Maint LL 14	LL			1		
29	Maint LL 15	LL			1		
30	BLC 1 Transient Area Loads	None				9	
31	BLC 8 Transient Area Loads	None				9	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 Dead	Yes	Y	1	1.4						
2	1.2 D + 1.0 - 0 W	Yes	Y	1	1.2	2	1				
3	1.2 D + 1.0 - 30 W	Yes	Y	1	1.2	2	0.866	3	0.5		
4	1.2 D + 1.0 - 60 W	Yes	Y	1	1.2	3	0.866	2	0.5		
5	1.2 D + 1.0 - 90 W	Yes	Y	1	1.2	3	1				
6	1.2 D + 1.0 - 120 W	Yes	Y	1	1.2	3	0.866	2	-0.5		
7	1.2 D + 1.0 - 150 W	Yes	Y	1	1.2	2	-0.866	3	0.5		
8	1.2 D + 1.0 - 180 W	Yes	Y	1	1.2	2	-1				
9	1.2 D + 1.0 - 210 W	Yes	Y	1	1.2	2	-0.866	3	-0.5		
10	1.2 D + 1.0 - 240 W	Yes	Y	1	1.2	3	-0.866	2	-0.5		
11	1.2 D + 1.0 - 270 W	Yes	Y	1	1.2	3	-1				
12	1.2 D + 1.0 - 300 W	Yes	Y	1	1.2	3	-0.866	2	0.5		
13	1.2 D + 1.0 - 330 W	Yes	Y	1	1.2	2	0.866	3	-0.5		
14	1.2 D + 1.0 - 0 W/Ice	Yes	Y	1	1.2	4	1			8	1
15	1.2 D + 1.0 - 30 W/Ice	Yes	Y	1	1.2	4	0.866	5	0.5	8	1
16	1.2 D + 1.0 - 60 W/Ice	Yes	Y	1	1.2	5	0.866	4	0.5	8	1
17	1.2 D + 1.0 - 90 W/Ice	Yes	Y	1	1.2	5	1			8	1
18	1.2 D + 1.0 - 120 W/Ice	Yes	Y	1	1.2	5	0.866	4	-0.5	8	1
19	1.2 D + 1.0 - 150 W/Ice	Yes	Y	1	1.2	4	-0.866	5	0.5	8	1
20	1.2 D + 1.0 - 180 W/Ice	Yes	Y	1	1.2	4	-1			8	1
21	1.2 D + 1.0 - 210 W/Ice	Yes	Y	1	1.2	4	-0.866	5	-0.5	8	1
22	1.2 D + 1.0 - 240 W/Ice	Yes	Y	1	1.2	5	-0.866	4	-0.5	8	1
23	1.2 D + 1.0 - 270 W/Ice	Yes	Y	1	1.2	5	-1			8	1
24	1.2 D + 1.0 - 300 W/Ice	Yes	Y	1	1.2	5	-0.866	4	0.5	8	1
25	1.2 D + 1.0 - 330 W/Ice	Yes	Y	1	1.2	4	0.866	5	-0.5	8	1
26	1.2 D + 1.0 E - 0	Yes	Y	1	1.2	9	1				
27	1.2 D + 1.0 E - 30	Yes	Y	1	1.2	9	0.866	10	0.5		
28	1.2 D + 1.0 E - 60	Yes	Y	1	1.2	10	0.866	9	0.5		
29	1.2 D + 1.0 E - 90	Yes	Y	1	1.2	10	1				
30	1.2 D + 1.0 E - 120	Yes	Y	1	1.2	10	0.866	9	-0.5		
31	1.2 D + 1.0 E - 150	Yes	Y	1	1.2	9	-0.866	10	0.5		
32	1.2 D + 1.0 E - 180	Yes	Y	1	1.2	9	-1				
33	1.2 D + 1.0 E - 210	Yes	Y	1	1.2	9	-0.866	10	-0.5		
34	1.2 D + 1.0 E - 240	Yes	Y	1	1.2	10	-0.866	9	-0.5		
35	1.2 D + 1.0 E - 270	Yes	Y	1	1.2	10	-1				
36	1.2 D + 1.0 E - 300	Yes	Y	1	1.2	10	-0.866	9	0.5		
37	1.2 D + 1.0 E - 330	Yes	Y	1	1.2	9	0.866	10	-0.5		
38	1.2 D + 1.5 LL a + Service - 0 W	Yes	Y	1	1.2	6	1			11	1.5
39	1.2 D + 1.5 LL a + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	11	1.5
40	1.2 D + 1.5 LL a + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	11	1.5
41	1.2 D + 1.5 LL a + Service - 90 W	Yes	Y	1	1.2	7	1			11	1.5



Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
42	1.2 D + 1.5 LL a + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	11	1.5
43	1.2 D + 1.5 LL a + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	11	1.5
44	1.2 D + 1.5 LL a + Service - 180 W	Yes	Y	1	1.2	6	-1			11	1.5
45	1.2 D + 1.5 LL a + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	11	1.5
46	1.2 D + 1.5 LL a + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	11	1.5
47	1.2 D + 1.5 LL a + Service - 270 W	Yes	Y	1	1.2	7	-1			11	1.5
48	1.2 D + 1.5 LL a + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	11	1.5
49	1.2 D + 1.5 LL a + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	11	1.5
50	1.2 D + 1.5 LL b + Service - 0 W	Yes	Y	1	1.2	6	1			12	1.5
51	1.2 D + 1.5 LL b + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	12	1.5
52	1.2 D + 1.5 LL b + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	12	1.5
53	1.2 D + 1.5 LL b + Service - 90 W	Yes	Y	1	1.2	7	1			12	1.5
54	1.2 D + 1.5 LL b + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	12	1.5
55	1.2 D + 1.5 LL b + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	12	1.5
56	1.2 D + 1.5 LL b + Service - 180 W	Yes	Y	1	1.2	6	-1			12	1.5
57	1.2 D + 1.5 LL b + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	12	1.5
58	1.2 D + 1.5 LL b + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	12	1.5
59	1.2 D + 1.5 LL b + Service - 270 W	Yes	Y	1	1.2	7	-1			12	1.5
60	1.2 D + 1.5 LL b + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	12	1.5
61	1.2 D + 1.5 LL b + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	12	1.5
62	1.2 D + 1.5 LL c + Service - 0 W	Yes	Y	1	1.2	6	1			13	1.5
63	1.2 D + 1.5 LL c + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	13	1.5
64	1.2 D + 1.5 LL c + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	13	1.5
65	1.2 D + 1.5 LL c + Service - 90 W	Yes	Y	1	1.2	7	1			13	1.5
66	1.2 D + 1.5 LL c + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	13	1.5
67	1.2 D + 1.5 LL c + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	13	1.5
68	1.2 D + 1.5 LL c + Service - 180 W	Yes	Y	1	1.2	6	-1			13	1.5
69	1.2 D + 1.5 LL c + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	13	1.5
70	1.2 D + 1.5 LL c + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	13	1.5
71	1.2 D + 1.5 LL c + Service - 270 W	Yes	Y	1	1.2	7	-1			13	1.5
72	1.2 D + 1.5 LL c + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	13	1.5
73	1.2 D + 1.5 LL c + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	13	1.5
74	1.2 D + 1.5 LL d + Service - 0 W	Yes	Y	1	1.2	6	1			14	1.5
75	1.2 D + 1.5 LL d + Service - 30 W	Yes	Y	1	1.2	6	0.866	7	0.5	14	1.5
76	1.2 D + 1.5 LL d + Service - 60 W	Yes	Y	1	1.2	7	0.866	6	0.5	14	1.5
77	1.2 D + 1.5 LL d + Service - 90 W	Yes	Y	1	1.2	7	1			14	1.5
78	1.2 D + 1.5 LL d + Service - 120 W	Yes	Y	1	1.2	7	0.866	6	-0.5	14	1.5
79	1.2 D + 1.5 LL d + Service - 150 W	Yes	Y	1	1.2	6	-0.866	7	0.5	14	1.5
80	1.2 D + 1.5 LL d + Service - 180 W	Yes	Y	1	1.2	6	-1			14	1.5
81	1.2 D + 1.5 LL d + Service - 210 W	Yes	Y	1	1.2	6	-0.866	7	-0.5	14	1.5
82	1.2 D + 1.5 LL d + Service - 240 W	Yes	Y	1	1.2	7	-0.866	6	-0.5	14	1.5
83	1.2 D + 1.5 LL d + Service - 270 W	Yes	Y	1	1.2	7	-1			14	1.5
84	1.2 D + 1.5 LL d + Service - 300 W	Yes	Y	1	1.2	7	-0.866	6	0.5	14	1.5
85	1.2 D + 1.5 LL d + Service - 330 W	Yes	Y	1	1.2	6	0.866	7	-0.5	14	1.5
86	1.2 D + 1.5 LL Maint (1)	Yes	Y	1	1.2					15	1.5
87	1.2 D + 1.5 LL Maint (2)	Yes	Y	1	1.2					16	1.5
88	1.2 D + 1.5 LL Maint (3)	Yes	Y	1	1.2					17	1.5
89	1.2 D + 1.5 LL Maint (4)	Yes	Y	1	1.2					18	1.5
90	1.2 D + 1.5 LL Maint (5)	Yes	Y	1	1.2					19	1.5
91	1.2 D + 1.5 LL Maint (6)	Yes	Y	1	1.2					20	1.5
92	1.2 D + 1.5 LL Maint (7)	Yes	Y	1	1.2					21	1.5
93	1.2 D + 1.5 LL Maint (8)	Yes	Y	1	1.2					22	1.5
94	1.2 D + 1.5 LL Maint (9)	Yes	Y	1	1.2					23	1.5
95	1.2 D + 1.5 LL Maint (10)	Yes	Y	1	1.2					24	1.5
96	1.2 D + 1.5 LL Maint (11)	Yes	Y	1	1.2					25	1.5



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 Designer : MSP
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Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
97	1.2 D + 1.5 LL Maint (12)	Yes	Y	1	1.2					26	1.5
98	1.2 D + 1.5 LL Maint (13)	Yes	Y	1	1.2					27	1.5
99	1.2 D + 1.5 LL Maint (14)	Yes	Y	1	1.2					28	1.5
100	1.2 D + 1.5 LL Maint (15)	Yes	Y	1	1.2					29	1.5

Envelope Node Reactions

Node Label	X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC		
1	1	max	1.121	5	1.665	14	0.884	2	3.394	2	1.179	11	0.308	97
2		min	-1.126	11	0.07	8	-0.958	8	-0.288	8	-1.185	5	-0.19	89
3	53	max	0.91	5	1.713	18	1.244	2	0.114	13	1.361	3	0.026	12
4		min	-0.971	11	0.18	12	-1.203	8	-1.729	43	-1.369	9	-2.984	18
5	82	max	0.869	5	1.65	22	1.312	2	0.085	3	1.365	7	2.834	46
6		min	-0.803	11	0.149	4	-1.279	8	-1.842	69	-1.372	13	-0.088	4
7	Totals:	max	2.9	5	4.647	55	3.44	2						
8		min	-2.9	11	2.397	13	-3.44	8						

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

Member	Shape	Code Check	Loc [ft]	LC	Shear Check	Loc [ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	1	HSS4X4X2	0.467	0	13	0.113	0	y	73	70.173	73.278	8.24	8.24	2.012H1-1b
2	2	C3.38x2.06x.188	0.336	2.592	15	0.051	2.592	y	62	35.676	43.394	1.694	4.483	1.629H1-1b
3	3	C3.38x2.06x.188	0.328	0	13	0.069	2.241	y	2	35.676	43.394	1.694	4.483	1.614H1-1b
4	4	PL3/8"x6	0.109	0.164	7	0.148	0	y	62	68.997	72.9	0.57	9.113	2.018H1-1b
5	5	PL3/8"x6	0.099	0	3	0.121	0	y	38	68.997	72.9	0.57	9.113	1.801H1-1b
6	6	PIPE 3.5x0.165	0.066	6.75	7	0.039	4		4	45.872	71.57	6.336	6.336	1.888H1-1b
7	7	PL3/8"x6	0.162	0.208	8	0.192	0.208	y	61	70.882	72.9	0.57	9.113	1.559H1-1b
8	8	PL3/8"x6	0.142	0	13	0.196	0	y	51	70.882	72.9	0.57	9.113	2.222H1-1b
9	9	L2x2x4	0.037	1.155	22	0.028	0	y	45	23.349	30.586	0.691	1.577	1.139H2-1
10	10	L2x2x4	0.045	1.203	17	0.033	2.309	y	65	23.349	30.586	0.691	1.577	1.141H2-1
11	11	L7.63x2.5x6	0.31	1.604	8	0.077	1.604	y	63	75.414	118.523	1.798	13.963	1.29H2-1
12	18	PIPE 2.88x0.203	0.099	5.583	5	0.037	5.583		5	35.519	70.68	5.029	5.029	3H1-1b
13	19	PIPE 2.88x0.203	0.116	2.333	10	0.037	5.583		9	35.519	70.68	5.029	5.029	3H1-1b
14	22	PIPE 2.88x0.203	0.105	7.812	13	0.111	8.75		13	24.131	70.68	5.029	5.029	2.353H1-1b
15	28	PIPE 2.88x0.203	0.097	5.583	6	0.032	5.583		7	35.519	70.68	5.029	5.029	3H1-1b
16	30	L6.63x4.33x.25	0.167	3.25	6	0.018	3.25	z	12	51.808	86.767	2.31	6.976	1.5H2-1
17	31	HSS4X4X2	0.463	0	7	0.115	0	y	64	70.173	73.278	8.24	8.24	2.031H1-1b
18	32	C3.38x2.06x.188	0.336	2.592	19	0.051	2.592	y	66	35.676	43.394	1.694	4.483	1.629H1-1b
19	33	C3.38x2.06x.188	0.316	0	41	0.059	2.241	y	6	35.676	43.394	1.694	4.483	1.613H1-1b
20	34	PL3/8"x6	0.092	0.164	11	0.146	0	y	66	68.997	72.9	0.57	9.113	2.146H1-1b
21	35	PL3/8"x6	0.101	0	7	0.122	0	y	42	68.997	72.9	0.57	9.113	1.802H1-1b
22	36	PL3/8"x6	0.138	0.208	12	0.193	0.208	y	53	70.882	72.9	0.57	9.113	1.7H1-1b
23	37	PL3/8"x6	0.125	0	5	0.197	0	y	55	70.882	72.9	0.57	9.113	2.222H1-1b
24	38	L2x2x4	0.041	1.01	15	0.029	0	y	38	23.349	30.586	0.691	1.577	1.153H2-1
25	39	L2x2x4	0.041	1.155	21	0.032	2.309	y	69	23.349	30.586	0.691	1.577	1.139H2-1
26	40	L7.63x2.5x6	0.258	1.604	12	0.077	1.604	y	68	75.414	118.523	1.798	14.109	1.325H2-1
27	49	L6.63x4.33x.25	0.165	3.25	10	0.019	3.25	y	9	51.808	86.767	2.31	6.976	1.5H2-1
28	50	HSS4X4X2	0.475	0	9	0.115	0	y	68	70.173	73.278	8.24	8.24	2.009H1-1b
29	51	C3.38x2.06x.188	0.33	2.592	23	0.051	2.592	y	70	35.676	43.394	1.694	4.483	1.627H1-1b
30	52	C3.38x2.06x.188	0.324	0	9	0.06	2.241	y	10	35.676	43.394	1.694	4.483	1.616H1-1b
31	53	PL3/8"x6	0.115	0.164	3	0.147	0	y	70	68.997	72.9	0.57	9.113	2.128H1-1b
32	54	PL3/8"x6	0.088	0	11	0.12	0	y	46	68.997	72.9	0.57	9.113	1.777H1-1b
33	55	PL3/8"x6	0.141	0.208	4	0.191	0.208	y	57	70.882	72.9	0.57	9.113	1.657H1-1b
34	56	PL3/8"x6	0.143	0	9	0.197	0	y	59	70.882	72.9	0.57	9.113	2.241H1-1b
35	57	L2x2x4	0.04	1.131	19	0.028	0	y	41	23.349	30.586	0.691	1.577	1.139H2-1



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

Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc[ft]	Dir	LC	phi*Pnc [k]	phi*Pnt [k]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn	
36	58	L2x2x4	0.041	1.299	25	0.033	2.309	y	62	23.349	30.586	0.691	1.577	1.153	H2-1
37	59	L7.63x2.5x6	0.296	1.604	3	0.077	1.604	y	72	75.414	118.523	1.798	14.33	1.379	H2-1
38	68	L6.63x4.33x.25	0.184	3.25	2	0.021	3.25	y	13	51.808	86.767	2.31	6.976	1.5	H2-1
39	69	PIPE 3.5x0.165	0.074	3	2	0.045	4		9	45.872	71.57	6.336	6.336	1.836	H1-1b
40	72	PIPE 2.88x0.203	0.11	5.583	9	0.04	5.583		9	35.519	70.68	5.029	5.029	3	H1-1b
41	73	PIPE 2.88x0.203	0.125	2.333	2	0.038	5.583		13	35.519	70.68	5.029	5.029	3	H1-1b
42	76	PIPE 2.88x0.203	0.105	2.188	13	0.096	2.188		13	24.131	70.68	5.029	5.029	2.297	H1-1b
43	78	PIPE 2.88x0.203	0.1	5.583	9	0.03	5.583		12	35.519	70.68	5.029	5.029	3	H1-1b
44	80	PIPE 3.5x0.165	0.067	5	2	0.041	3		13	45.872	71.57	6.336	6.336	1.504	H1-1b
45	83	PIPE 2.88x0.203	0.11	5.583	13	0.042	5.583		13	35.519	70.68	5.029	5.029	3	H1-1b
46	84	PIPE 2.88x0.203	0.113	2.333	6	0.033	5.583		5	35.519	70.68	5.029	5.029	3	H1-1b
47	87	PIPE 2.88x0.203	0.101	7.813	9	0.107	8.75		9	24.131	70.68	5.029	5.029	2.516	H1-1b
48	89	PIPE 2.88x0.203	0.11	5.583	2	0.03	5.583		3	35.519	70.68	5.029	5.029	3	H1-1b

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B+T Group
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119
 (918) 587-4630

B+T GRP

[REF: AISC 360-05]

Reactions at Bolted Connection

Tension	:	0.884	k
Vertical Shear	:	1.665	k
Horizontal Shear	:	1.121	k
Torsion	:	0.308	k.ft
Moment from Horizontal Forces	:	1.179	k.ft
Moment from Vertical Forces	:	3.394	k.ft

Bolt Parameters

Bolt Grade	:	A325	
Bolt Diameter	:	0.625	in
Nominal Bolt Area	:	0.307	in ²
Bolt spacing, Horizontal	:	6	in
Bolt spacing, Vertical	:	6	in
Bolt edge distance, plate height	:	1.5	in
Bolt edge distance, plate width	:	1.5	in
Total Number of Bolts	:	4	bolts

Summary of Forces

Shear Resultant Force	:	2.01	k
Force from Horz. Moment	:	2.14	k
Force from Vert. Moment	:	6.15	k
Shear Load / Bolt	:	0.50	k
Tension Load / Bolt	:	0.22	k
Resultant from Moments / Bolt	:	3.25	k

Bolt Checks

Nominal Tensile Stress, F_{nt}	:	90.00	ksi	[AISC Table J3.2]
Available Tensile Stress, ΦR_{nt}	:	20.72	k/bolt	[Eq. J3-1]
Unity Check, Bolt Tension	:	16.77%		OKAY
Nominal Shear Stress, F_{nv}	:	48.00	ksi	[AISC Table J3.2]
Available Shear Stress, ΦR_{nv}	:	11.05	k/bolt	[Eq. J3-1]
Unity Check, Bolt Shear	:	6.54%		OKAY
Unity Check, Combined	:	23.31%		OKAY
Available Bearing Strength, ΦR_n	:	34.66	k/bolt	
Unity Check, Bolt Bearing	:	1.45%		OKAY

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Tower Type	:	Monopole	
Ground Elevation	z_s	: 426 ft	[ASCE7 Hazard Tool]
Tower Height	:	152.00 ft	
Mount Elevation	:	121.00 ft	
Antenna Elevation	:	121.00 ft	
Crest Height	:	0 ft	
Risk Category	:	II	[Table 2-1]
Exposure Category	:	B	[Sec. 2.6.5.1.2]
Topography Category	:	1.00	[Sec. 2.6.6.2]
Wind Velocity	V	: 115 mph	[ASCE7 Hazard Tool]
Ice wind Velocity	V_i	: 50 mph	[ASCE7 Hazard Tool]
Service Velocity	V_s	: 30 mph	[ASCE7 Hazard Tool]
Base Ice thickness	t_i	: 1.00 in	[ASCE7 Hazard Tool]
Seismic Design Cat.	:	B	[ASCE7 Hazard Tool]
	S_S	: 0.21	
	S_1	: 0.06	
	S_{DS}	: 0.23	
	S_{D1}	: 0.09	
Gust Factor	G_h	: 1.00	[Sec. 16.6]
Pressure Coefficient	K_z	: 1.04	[Sec. 2.6.5.2]
Topography Factor	K_{zt}	: 1.00	[Sec. 2.6.6]
Elevation Factor	K_e	: 0.98	[Sec. 2.6.8]
Directionality Factor	K_d	: 0.95	[Sec. 16.6]
Shielding Factor	K_a	: 0.90	[Sec. 16.6]
Design Ice Thickness	t_{iz}	: 1.14 in	[Sec. 2.6.10]
Importance Factor	I_e	: 1	[Table 2-3]
Response Coefficient	C_s	: 0.114	[Sec. 2.7.7.1]
Amplification	A_s	: 2.184211	[Sec. 16.7]
	q_z	: 33.05 psf	

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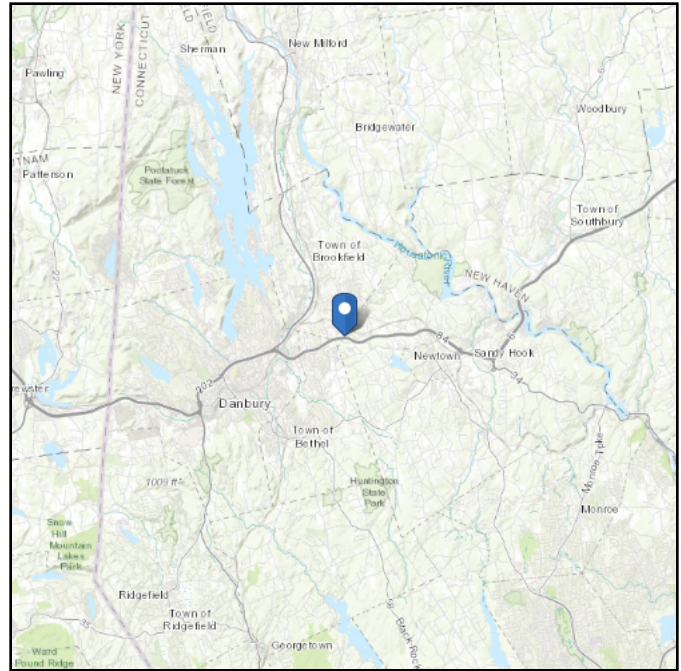
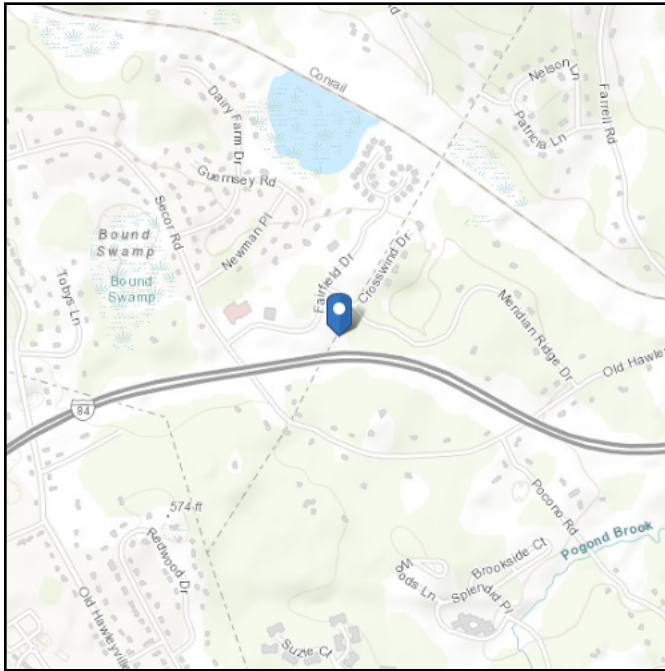
Manufacturer	Model	Qty	Aspect Ratio	C_a	EPA_N (ft ²)	EPA_T (ft ²)	EPA_{N-Ice} (ft ²)	EPA_{T-Ice} (ft ²)	$F_{A \text{ No Ice (N)}}$	$F_{A \text{ No Ice (T)}}$	$F_{A \text{ Ice (N)}}$	$F_{A \text{ Ice (T)}}$
				flat/round								
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	5.00	2.00	5.75	2.65	0.19	0.07	0.04	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	5.00	2.00	5.75	2.65	0.19	0.07	0.04	0.01
Fujitsu	TA08025-B605	1	1.73	1.20	0.99	1.64	1.42	2.16	0.04	0.06	0.01	0.01
Fujitsu	TA08025-B604	1	1.99	1.20	0.86	1.64	1.27	2.16	0.03	0.06	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	5.00	2.00	5.75	2.65	0.19	0.07	0.04	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	5.00	2.00	5.75	2.65	0.19	0.07	0.04	0.01
Fujitsu	TA08025-B605	1	1.73	1.20	0.99	1.64	1.42	2.16	0.04	0.06	0.01	0.01
Fujitsu	TA08025-B604	1	1.99	1.20	0.86	1.64	1.27	2.16	0.03	0.06	0.01	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	5.00	2.00	5.75	2.65	0.19	0.07	0.04	0.01
JMA WIRELESS	MX08FRO665-21	0.5	3.60	1.25	5.00	2.00	5.75	2.65	0.19	0.07	0.04	0.01
Fujitsu	TA08025-B605	1	1.73	1.20	0.99	1.64	1.42	2.16	0.04	0.06	0.01	0.01
Fujitsu	TA08025-B604	1	1.99	1.20	0.86	1.64	1.27	2.16	0.03	0.06	0.01	0.01
COMMSCOPE	RDIDC-9181-PF-48	1	1.14	1.20	1.56	0.89	2.07	1.30	0.06	0.03	0.01	0.01

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 425.67 ft (NAVD 88)
Latitude: 41.4255
Longitude: -73.374



Wind

Results:

Wind Speed	115 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Sat Mar 19 2022

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

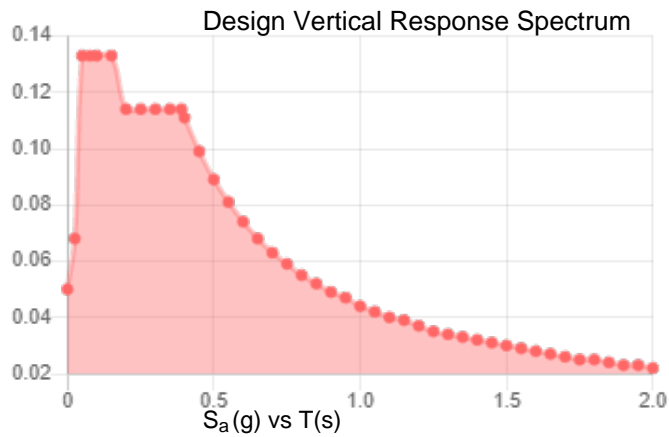
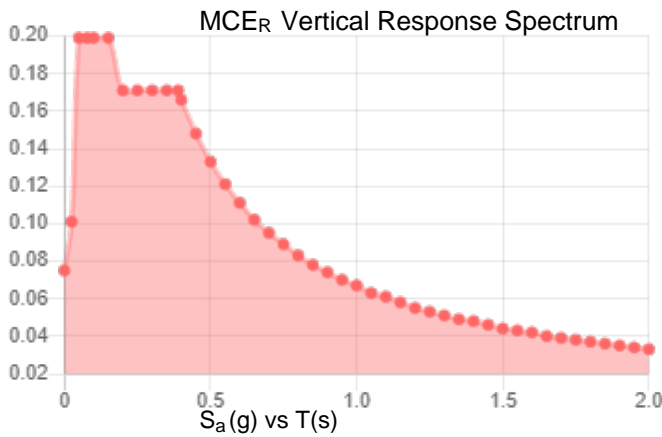
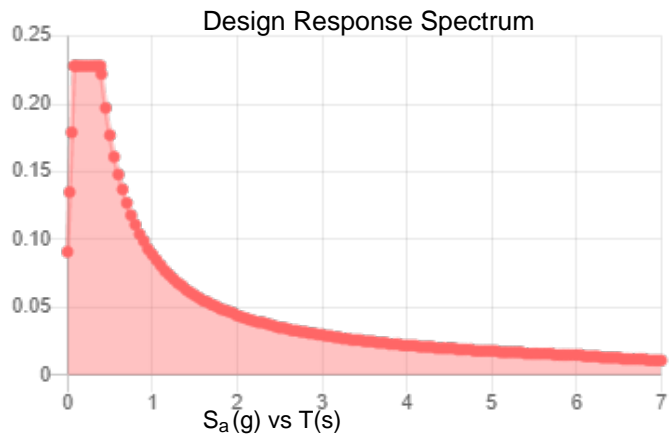
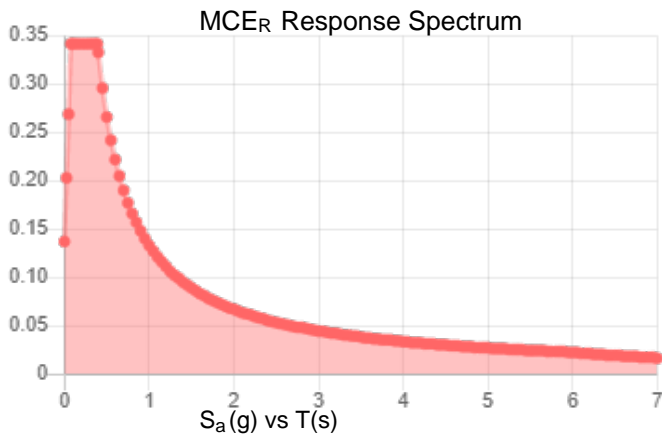
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_S :	0.214	S_{D1} :	0.089
S_1 :	0.055	T_L :	6
F_a :	1.6	PGA :	0.122
F_v :	2.4	PGA _M :	0.189
S_{MS} :	0.342	F_{PGA} :	1.557
S_{M1} :	0.133	I_e :	1
S_{DS} :	0.228	C_v :	0.728

Seismic Design Category B



Data Accessed: Sat Mar 19 2022

Date Source:

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

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Sat Mar 19 2022

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

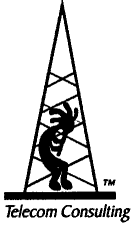
Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from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

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

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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:

NJER01081B

SITE ADDRESS:

6 FAIRFIELD DRIVE (BRKFLD)
NEWTOWN, CT

LATITUDE:

N 41.42552778

LONGITUDE:

W 73.3740472199

STRUCTURE TYPE:

Monopole

REPORT DATE:

MARCH 4, 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

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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 monopole located at 6 Fairfield Drive (Brkfld) in Newtown, CT. Dish refers to the antenna site by the code “NJJER01081B”, 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, T-Mobile and Verizon Wireless. A search of FCC records indicates there are no other licensed transmitting antenna operations to include in the compliance assessment for the site. 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 7.6270 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 13 times below the FCC limit for safe, continuous exposure of the general public.
- ❑ A supplemental analysis of the RF levels at the same height as the Dish antennas indicate that the FCC MPE limit is potentially exceeded. Therefore, it is recommended that two Caution signs be installed six feet below the antennas. In addition, NOC Information signs are to be installed at the base of the monopole.
- ❑ The results of the calculations, along with the proposed mitigation, combine to satisfy the FCC requirements and associated guidelines on RF compliance at street level around the site and on the subject roof. Moreover, because of the significant conservatism incorporated in the analysis, RF levels actually caused by the antennas will be lower than these calculations indicate.

The remainder of this report provides the following:

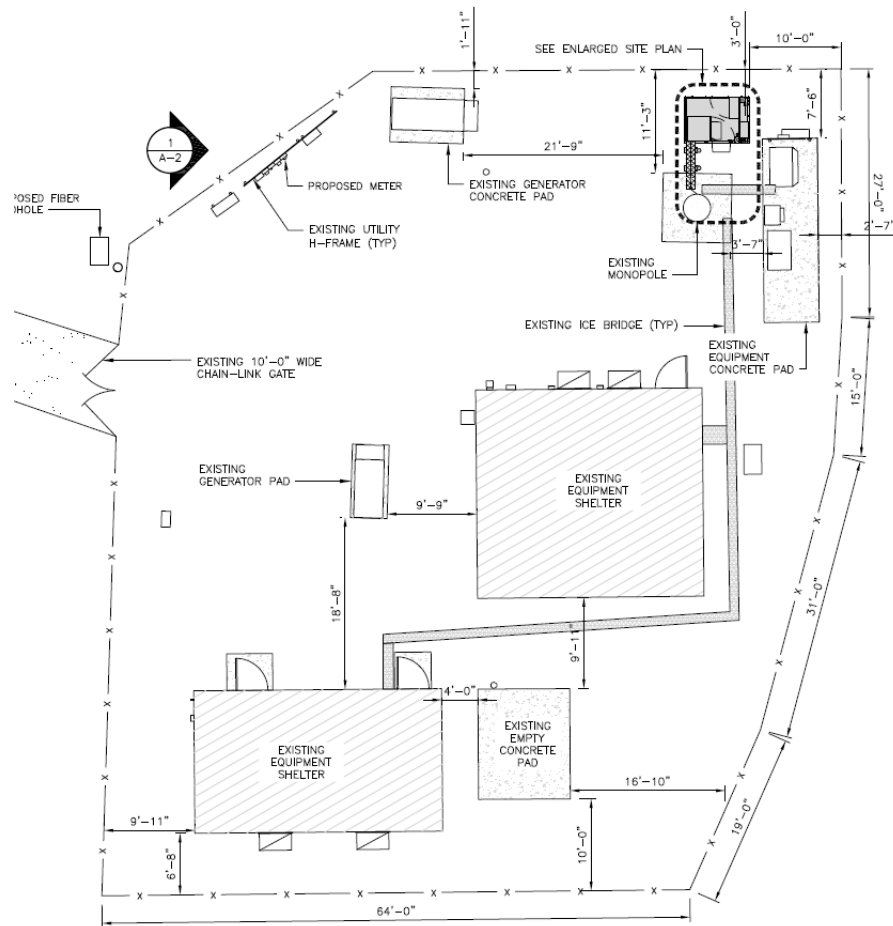
- ❑ relevant technical data on the proposed Dish antenna operations at the site, as well as on the other existing antenna operations;
- ❑ a description of the applicable FCC mathematical model for calculating RF levels, and application of the relevant technical data to that model;
- ❑ analysis of the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

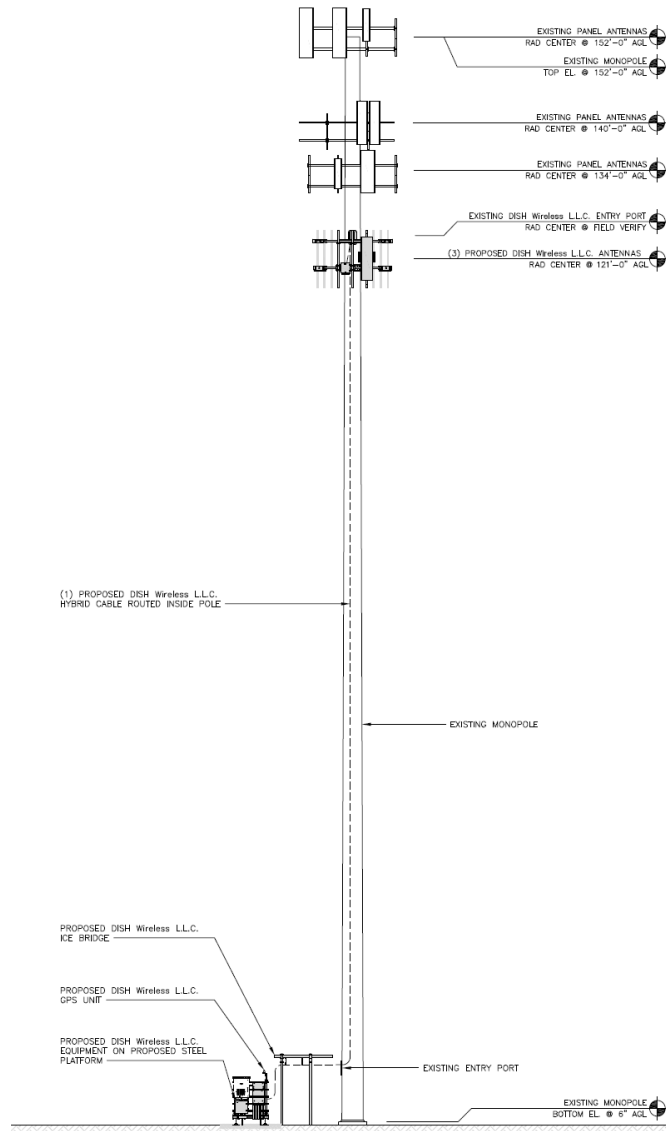
ANTENNA AND TRANSMISSION DATA

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
1	Dish	Commscope	FFVV-65B-R2	Panel	600	6	120	2110	121	12.46	64	0	2	0
1	Dish	Commscope	FFVV-65B-R2	Panel	2000	6	160	7396	121	16.66	67	0	2	0
1	Dish	Commscope	FFVV-65B-R2	Panel	2100	6	160	7396	121	16.66	67	0	2	0
2	Dish	Commscope	FFVV-65B-R2	Panel	600	6	120	2110	121	12.46	64	110	2	0
2	Dish	Commscope	FFVV-65B-R2	Panel	2000	6	160	7396	121	16.66	67	110	2	0
2	Dish	Commscope	FFVV-65B-R2	Panel	2100	6	160	7396	121	16.66	67	110	2	0
3	Dish	Commscope	FFVV-65B-R2	Panel	600	6	120	2110	121	12.46	64	255	2	0
3	Dish	Commscope	FFVV-65B-R2	Panel	2000	6	160	7396	121	16.66	67	255	2	0
3	Dish	Commscope	FFVV-65B-R2	Panel	2100	6	160	7396	121	16.66	67	255	2	0

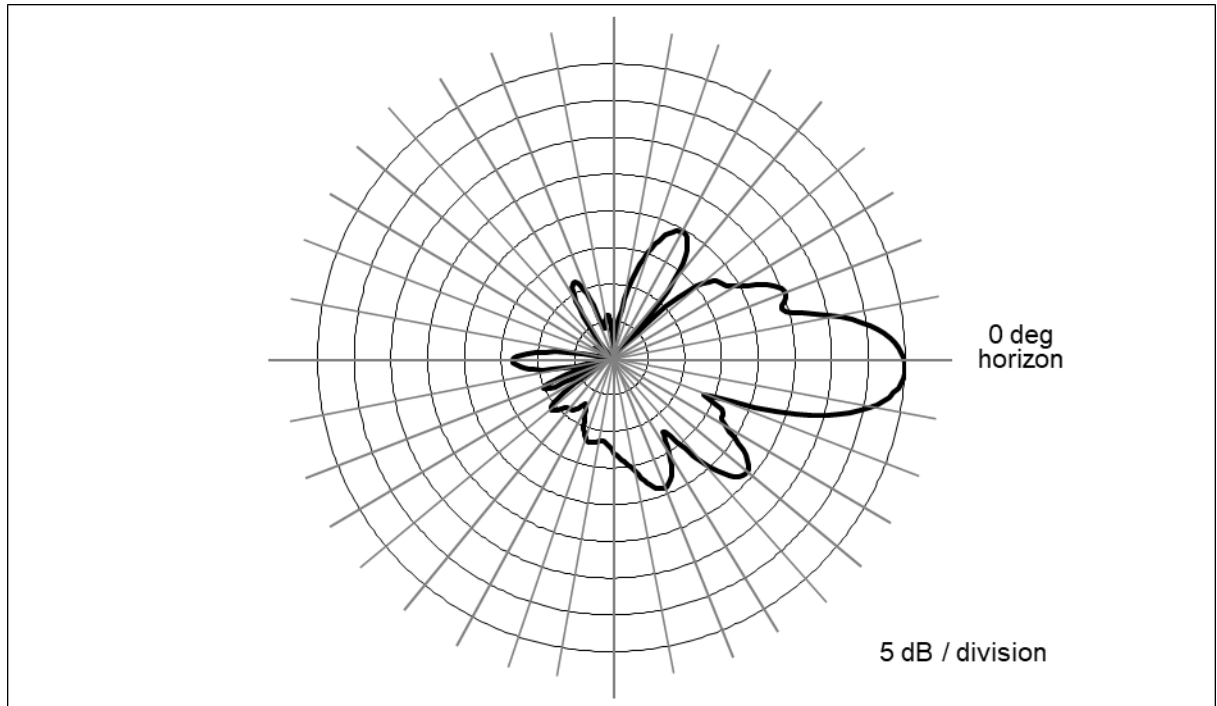
The area below the antennas, at street level, is of interest in terms of potential “uncontrolled” exposure of the general public, so the antenna’s vertical-plane emission characteristic is used in the calculations, as it is a key determinant of the relative amount of RF emissions in the “downward” direction.

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

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

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

Figure 1. 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 T-Mobile, we will conservatively assume operation with maximum channel capacity and at maximum transmitter power per channel to be used in each of its FCC-licensed frequency bands. For the other operator, we will rely on the transmission parameters in its associated 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
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

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:

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

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_{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 (2² = 4)
- MPE = FCC general population MPE limit
- R = straight-line distance from the RF source to the point of interest, centimeters

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

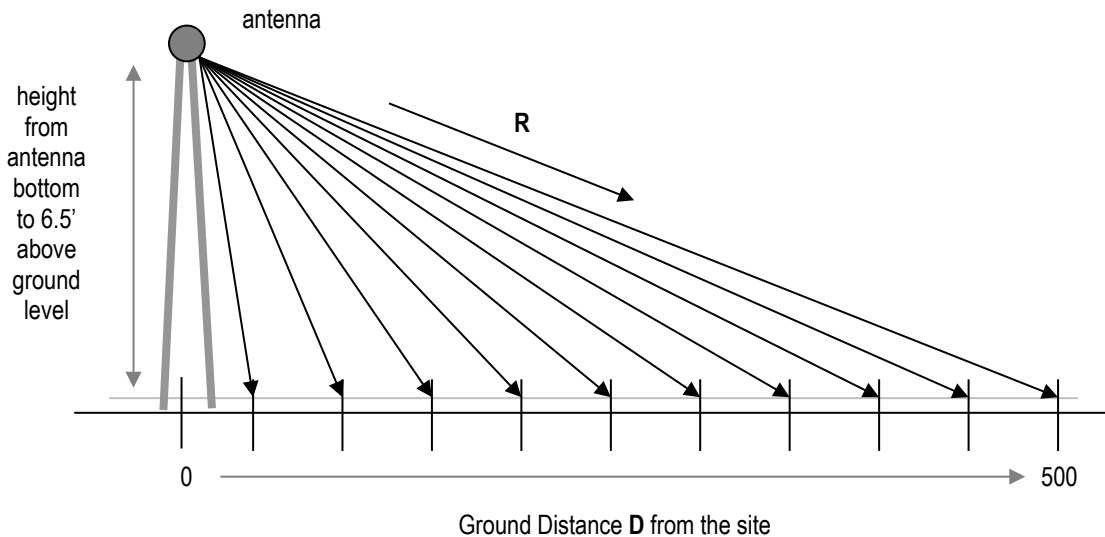


Figure 2. Street-level MPE% Calculation Geometry

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

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

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

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

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

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

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

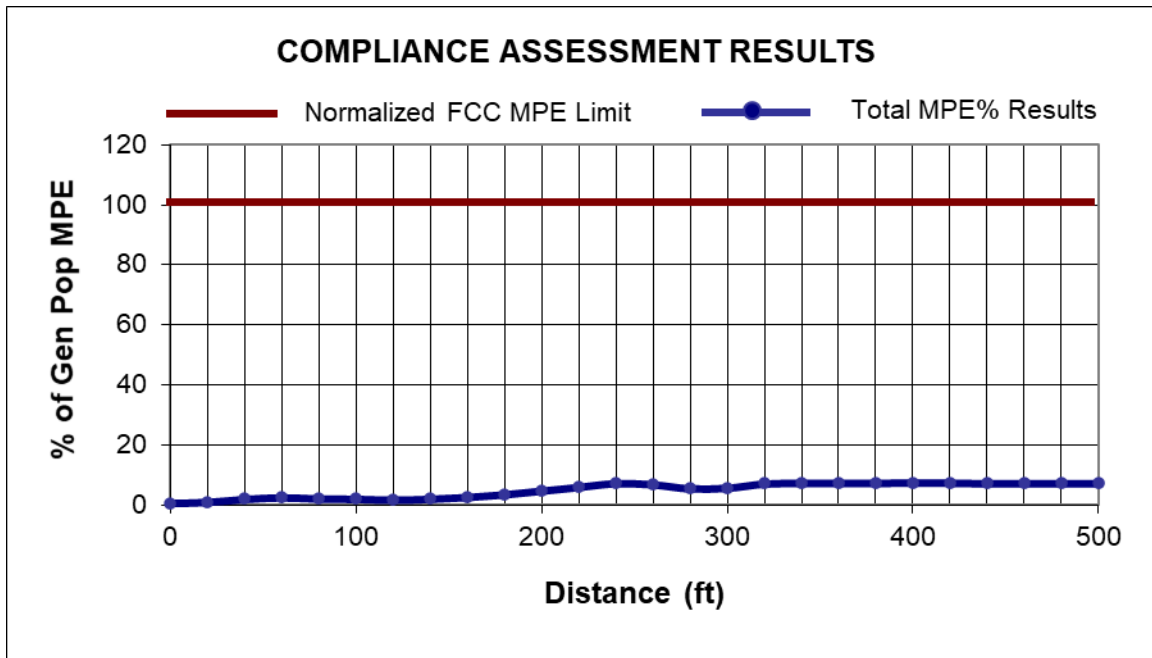
The net result of these assumptions is to intentionally and significantly overstate the calculated RF levels relative to the levels that will actually result from the antenna operations – and the purpose of this conservatism is to allow very "safe-side" conclusions about compliance.

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

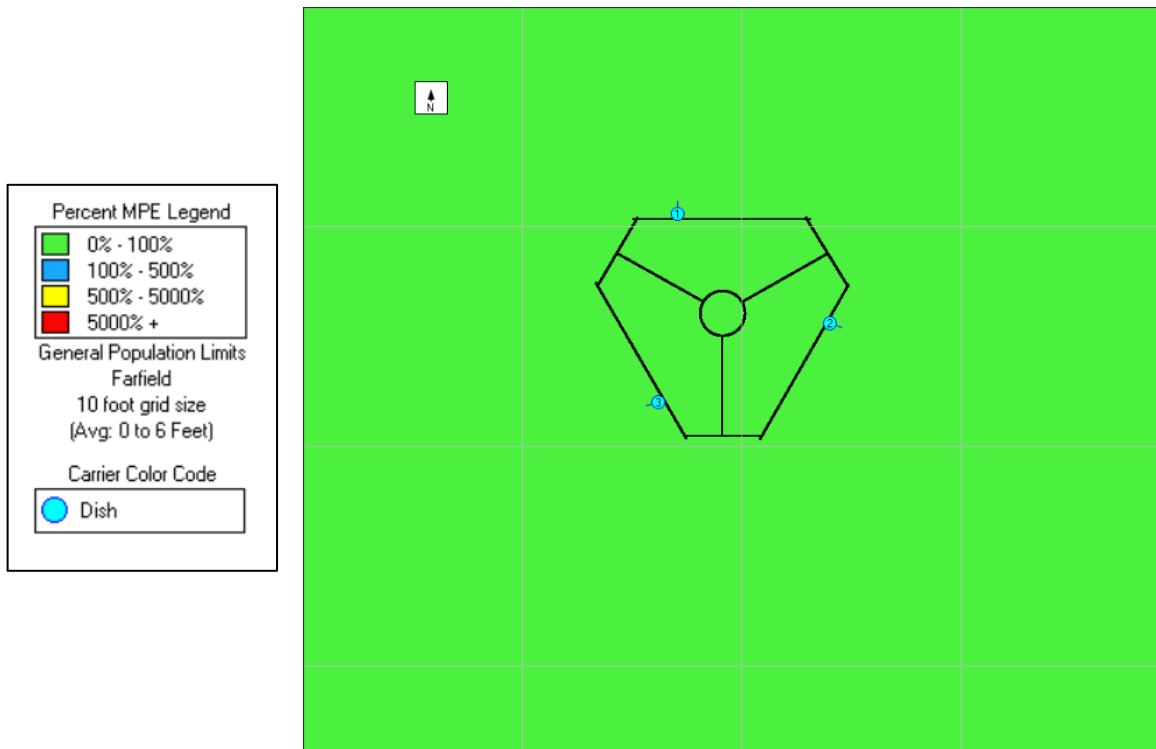
Ground Distance (ft)	Dish 600 MHz MPE%	Dish 2000 MHz MPE%	Dish 2100 MHz MPE%	AT&T MPE%	T-Mobile MPE%	Verizon Wireless MPE%	Total MPE%
0	0.0392	0.0019	0.0003	0.0576	0.2577	0.4412	0.7979
20	0.0766	0.0033	0.0044	0.0530	0.3772	0.6126	1.1271
40	0.1564	0.0091	0.0369	0.1196	0.6197	1.1750	2.1167
60	0.0831	0.0529	0.0760	0.1664	0.8796	1.4321	2.6901
80	0.0260	0.0899	0.0023	0.2376	0.6791	1.2402	2.2751
100	0.1220	0.1905	0.3040	0.3062	0.4015	0.8539	2.1781
120	0.2605	0.2047	0.2637	0.2883	0.3473	0.4921	1.8566
140	0.2041	0.1641	0.2693	0.3480	0.4931	0.7088	2.1874
160	0.0906	0.0095	0.0244	0.5768	0.6635	1.4236	2.7884
180	0.0396	0.0208	0.0504	0.5832	0.8485	2.1171	3.6596
200	0.0276	0.0030	0.0356	0.5633	1.3311	2.9285	4.8891
220	0.0226	0.0876	0.0734	0.5940	1.9194	3.4331	6.1301
240	0.0148	0.0285	0.1105	0.7492	2.2173	4.2622	7.3825
260	0.0099	0.0119	0.0619	0.7092	2.2936	3.9361	7.0226
280	0.0086	0.0735	0.0204	0.5945	1.9546	3.0130	5.6646
300	0.0150	0.0960	0.0579	0.4248	2.0716	3.1958	5.8611
320	0.0284	0.0818	0.0928	0.3175	2.4896	4.2584	7.2685
340	0.0502	0.0454	0.0930	0.2338	2.7644	4.2700	7.4568
360	0.0815	0.0145	0.0620	0.2106	2.7901	4.3102	7.4689
380	0.1219	0.0039	0.0275	0.1871	2.7212	4.4318	7.4934
400	0.1717	0.0037	0.0086	0.2092	2.6325	4.6013	7.6270
420	0.2293	0.0030	0.0028	0.2172	2.5400	4.5474	7.5397
440	0.2101	0.0027	0.0026	0.1997	2.4681	4.4665	7.3497
460	0.2692	0.0055	0.0017	0.2010	2.2728	4.6739	7.4241
480	0.2484	0.0051	0.0016	0.2592	2.2368	4.5993	7.3504
500	0.3072	0.0199	0.0077	0.3868	2.0799	4.5570	7.3585

As indicated, the maximum calculated overall RF level is 7.6270 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.

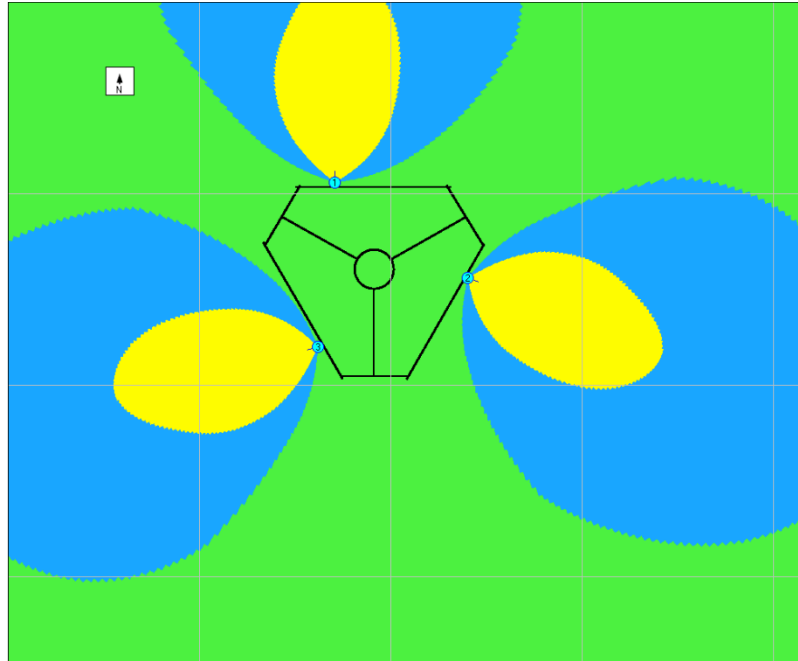
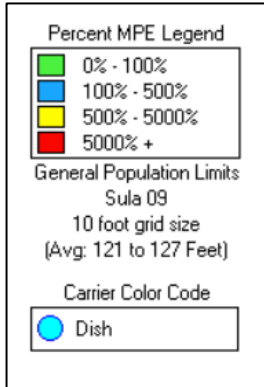


Near-field Analysis

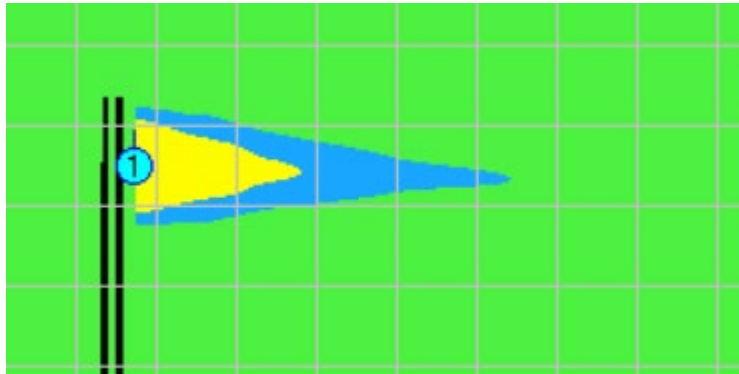
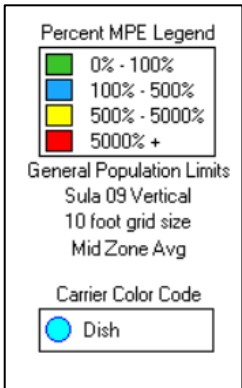
The compliance analysis for the same height as the antennas is performed using the RoofMaster program by Waterford Consultants.

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 7.6270 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 two Caution signs be six feet below the antennas. In addition, NOC Information signs be installed at the base of the monopole.

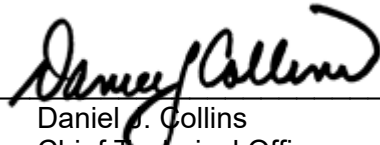
The results of the calculations, along with the described RF mitigation, combine to satisfy the FCC's RF compliance requirements and associated guidelines on compliance.

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

3/4/22

Date

Appendix A. DOCUMENTS Used to PREPARE THE ANALYSIS

RFDS: RFDS-NJJER01081B-Final-20211029-v.0_20211029141000

CD: NJJER01081B_FinalStampedCDs_20211020145722

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.

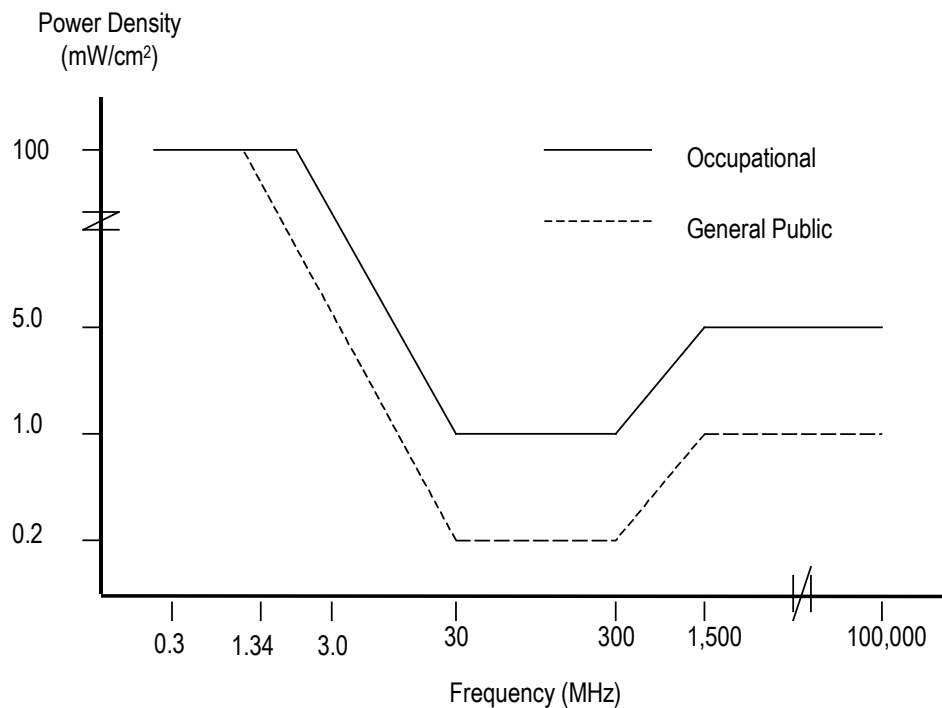
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in 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.

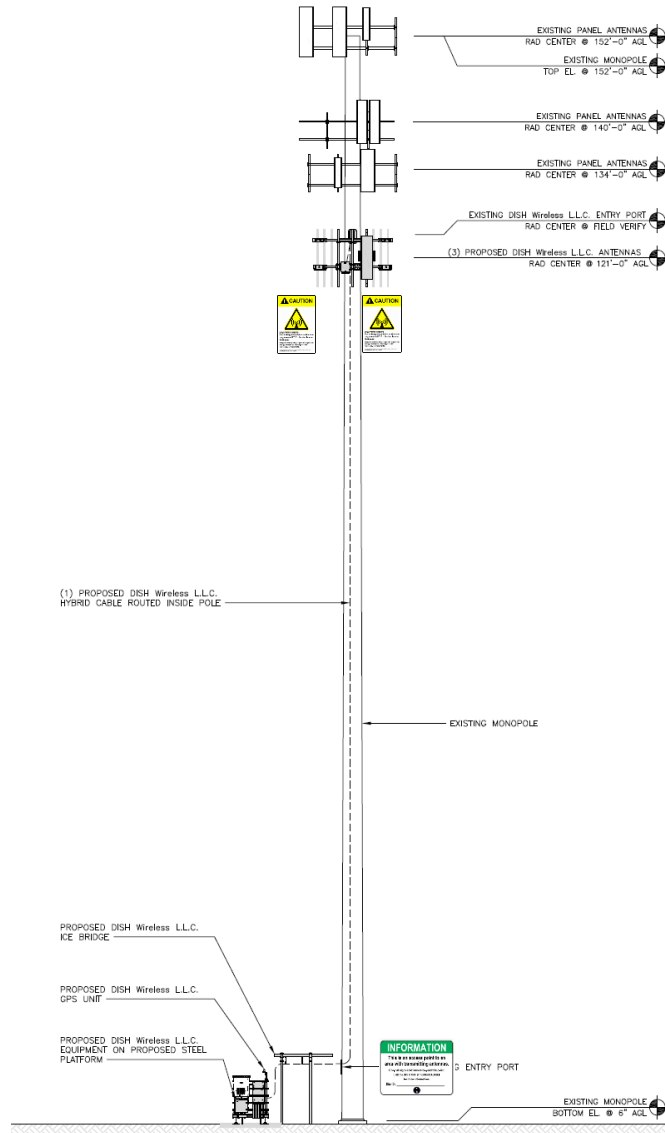
FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

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

<p>Synopsis:</p>	<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
<p>Education:</p>	<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
<p>Current Responsibilities:</p>	<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
<p>Prior Experience:</p>	<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
<p>Specific RF Safety / Compliance Experience:</p>	<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
<p>Other Background:</p>	<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

6 FAIRFIELD DR

Location 6 FAIRFIELD DR

Mblu G17 / / 034 / /

Acct# 04243000

Owner PHOTRONICS INC

Assessment \$1,295,440

Appraisal \$1,850,630

PID 6084

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2022	\$1,600,990	\$249,640	\$1,850,630

Assessment			
Valuation Year	Improvements	Land	Total
2022	\$1,120,690	\$174,750	\$1,295,440

Owner of Record

Owner PHOTRONICS INC
Co-Owner
Address 15 SECOR RD
BROOKFIELD, CT 06804

Sale Price \$2,200,000
Certificate
Book & Page 417/0853
Sale Date 07/26/2002
Instrument 25

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
PHOTRONICS INC	\$2,200,000		417/0853	25	07/26/2002
MACRICOSTAS GEORGE & STEPHEN	\$0		417/0850	29	07/26/2002
MAYO ASSOCIATES	\$0		160/ 639		08/10/1984

Building Information

Building 1 : Section 1

Year Built: 1985
Living Area: 20,800

Building Attributes

Code	Description	Size	Value	Bldg #
LDL1	Load Lvr Elec.	1.00 Units	\$2,730	1
ELV1	Elevator Commercial	1.00 Units	\$17,500	1

Land

Land Use

Use Code 402
Description Ind Office
Zone I-1

Land Line Valuation

Size (Acres) 1.9
Depth
Assessed Value \$174,750
Appraised Value \$249,640

Outbuildings

Outbuildings						
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	Paving Asph.			40000.00 S.F.	\$54,000	1
LT1	Light 1			2.00 Units	\$2,000	1
GEN	Generator			1.00 Units	\$0	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2021	\$1,600,990	\$249,640	\$1,850,630
2020	\$1,742,200	\$249,640	\$1,991,840
2019	\$1,742,200	\$249,640	\$1,991,840
2018	\$1,742,200	\$249,640	\$1,991,840

Assessment			
Valuation Year	Improvements	Land	Total
2021	\$1,120,690	\$174,750	\$1,295,440
2020	\$1,219,540	\$174,750	\$1,394,290
2019	\$1,219,540	\$174,750	\$1,394,290
2018	\$1,219,540	\$174,750	\$1,394,290

5 FAIRFIELD DR

Location 5 FAIRFIELD DR

Mblu G17 / / 033 / /

Acct# 03410000

Owner PHOTRONICS INC

Assessment \$284,480

Appraisal \$406,390

PID 6083

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2022	\$118,940	\$287,450	\$406,390

Assessment			
Valuation Year	Improvements	Land	Total
2022	\$83,260	\$201,220	\$284,480

Owner of Record

Owner PHOTRONICS INC
Co-Owner
Address 15 SECOR RD
BROOKFIELD, CT 06804

Sale Price \$530,000
Certificate
Book & Page 415/0258
Sale Date 06/19/2002
Instrument 08

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
PHOTRONICS INC	\$530,000		415/0258	08	06/19/2002
MACRICOSTAS CONSTANTINE	\$0		284/ 746		05/19/1994

Building Information

Building 1 : Section 1

Year Built:

Living Area: 0

Building Attributes	
Field	Description

Style:	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bathrooms	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Kitchens	
Whirlpool Tub	
Hot Tubs	
Fireplaces	
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Garages	
Fireplace	
Fndtn Cndtn	
Basement	

Building Photo



(http://images.vgsi.com/photos/BrookfieldCTPhotos///0031/P1010110_3109)

Building Layout

 Building Layout (ParcelSketch.ashx?pid=6083&bid=6083)

Building Sub-Areas (sq ft)
No Data for Building Sub-Areas

Extra Features

Extra Features
No Data for Extra Features

Land

Land Use

Use Code 440
Description Ind Ld Dv
Zone I-1

Land Line Valuation

Size (Acres) 5.08
Depth
Assessed Value \$201,220
Appraised Value \$287,450

Outbuildings

Outbuildings						
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	Paving Asph.			51200.00 S.F.	\$82,940	1
LT2	Light 2			4.00 Units	\$7,200	1
LT1	Light 1			24.00 Units	\$28,800	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2021	\$118,940	\$287,450	\$406,390
2020	\$120,450	\$290,530	\$410,980
2019	\$120,450	\$290,530	\$410,980
2018	\$120,450	\$290,530	\$410,980

Assessment			
Valuation Year	Improvements	Land	Total
2021	\$83,260	\$201,220	\$284,480
2020	\$84,320	\$203,370	\$287,690
2019	\$84,320	\$203,370	\$287,690
2018	\$84,320	\$203,370	\$287,690

NOTIFICATIONS

Dear Customer,

The following is the proof-of-delivery for tracking number: 776705561397

Delivery Information:

Status:	Delivered	Delivered To:	Shipping/Receiving
Signed for by:	A.ZARY	Delivery Location:	Newtown Municipal Center
Service type:	FedEx 2Day		3 Primrose Street
Special Handling:	Deliver Weekday		NEWTOWN, CT, 06470
		Delivery date:	Apr 29, 2022 12:45

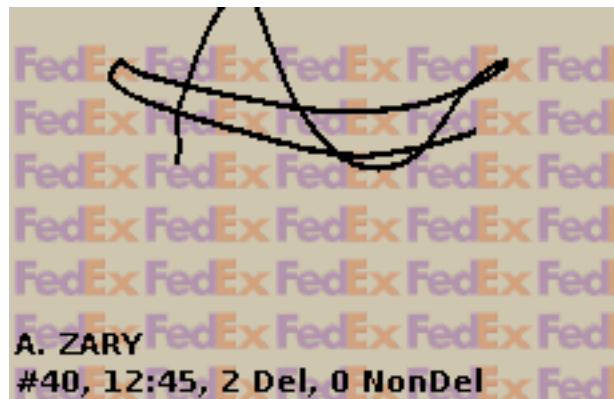
Shipping Information:

Tracking number:	776705561397	Ship Date:	Apr 27, 2022
		Weight:	1.0 LB/0.45 KG

Recipient:
Daniel C. Rosenthal,
Newtown Municipal Center
3 Primrose Street
NEWTOWN, CT, US, 06470

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

Reference 100814



Dear Customer,

The following is the proof-of-delivery for tracking number: 776705538540

Delivery Information:

Status:	Delivered	Delivered To:	Shipping/Receiving
Signed for by:	A.ZARY	Delivery Location:	Newtown Municipal Center
Service type:	FedEx 2Day		3 Primrose Street
Special Handling:	Deliver Weekday		NEWTOWN, CT, 06470
		Delivery date:	Apr 29, 2022 12:45

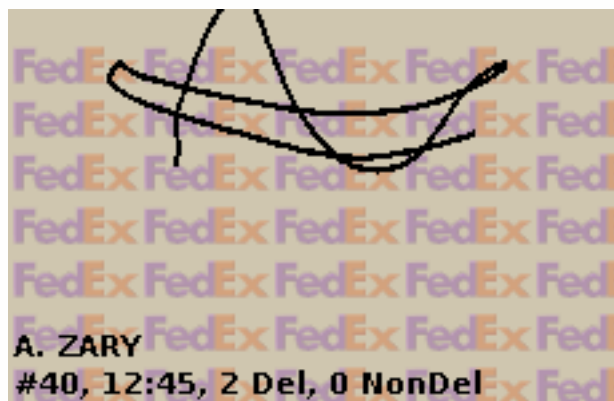
Shipping Information:

Tracking number:	776705538540	Ship Date:	Apr 27, 2022
		Weight:	1.0 LB/0.45 KG

Recipient:
John Poeltl - Building Official,
Newtown Municipal Center
3 Primrose Street
NEWTOWN, CT, US, 06470

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

Reference 100814



Dear Customer,

The following is the proof-of-delivery for tracking number: 776705585615

Delivery Information:

Status:	Delivered	Delivered To:	Shipping/Receiving
Signed for by:	M.MACCALL	Delivery Location:	15 Secor Road
Service type:	FedEx 2Day		
Special Handling:	Deliver Weekday		BROOKFIELD, CT, 06804
		Delivery date:	Apr 29, 2022 12:47

Shipping Information:

Tracking number:	776705585615	Ship Date:	Apr 27, 2022
		Weight:	1.0 LB/0.45 KG

Recipient:
Photonics, Inc.,
15 Secor Road
BROOKFIELD, CT, US, 06804

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

Reference 100814

