February 17, 2023

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

Re: Tower Share Application – Dish Site 14102547
Dish Wireless Telecommunications Facility @ 134 Kikapoo Road, Middlefield, CT 06455
Original Tower Approval: Connecticut Siting Council Docket # 40, May 15, 1984

Dear Ms. Bachman,

Enclosed please find a check in the amount of Six Hundred and Twenty Five Dollars ($625.00); an original and two (2) copies of the following documents: the CSC Tower Share letter; a Letter of Authorization from the tower owner; GIS data of the property; a set of Construction Drawings; a Structural Analysis Report; an Antenna Mount Analysis Report; an EME Study Report; and four (4) Notice Confirmations.

I will email copies of these documents to the Council.

If you have any questions, please feel free to contact me; I can be reached at 443-677-0144 or via email at jmandrews@clinellc.com. Thank you for your kind cooperation in this matter.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

February 9, 2023

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

Re: Tower Share Application – Dish Site 14102547
Dish Wireless Telecommunications Facility @ 134 Kikapoo Road, Middlefield, CT 06455
Original Tower Approval: Connecticut Siting Council Docket # 40, May 15, 1984

Dear Ms. Bachman:

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing seventy five (75) foot tall monopole tower at 134 Kikapoo Road, Middlefield, CT 06455. The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by SBC Tower Holdings, LLC. The tower was originally approved by the Connecticut Siting Council in Docket #124, dated March 12, 1990.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, a single antenna mount, six (6) RRUs, and cables on the existing tower at fifty three (53) feet as more particularly detailed and described on the enclosed Construction Drawings. No height extension or compound expansion are proposed.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of Dish's intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A §16-50j-73, a copy of this letter is being sent to the following individuals: American Tower Corporation as Tower Owner; SBC Tower Holdings, LLC., as Property Owner; the Honorable Robert Yamartino, First Selectman of Middlefield, and Jerry Russ, the Middlefield Zoning Officer.

The applicant's proposal falls squarely within those activities explicitly provided for in R.C.S.A. §16-50j-89. Specifically:

1. The proposed modifications will NOT result in an increase in the height of the existing structure.
2. The proposed modifications will NOT require an extension of the site boundary.
3. The proposed modifications will NOT increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will NOT increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. Please see the RF emissions calculation for DISH's modified facility enclosed herewith.

Jack Andrews, Zoning Manager • 10130 Donleigh Drive, Columbia, MD 21046 • (443) 677-0144
Centerline Communications • 750 W Center Street, Suite 301, W Bridgewater, MA 02379

5. The proposed modifications will NOT cause an ineligible change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading. Please see the structural analysis enclosed herewith.

Connecticut General Statute 16-50aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, Dish respectfully indicates that the shared use of this facility satisfies these criteria:

A. Technical Feasibility. The existing tower has been deemed structurally capable of supporting Dish's proposed loading (see attached Structural Analysis).

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit Dish to obtain a building permit for the proposed installation. Further, a Letter of Authorization is attached, authorizing Dish to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of Dish equipment on the existing tower would have an insignificant visual impact on the area around the tower. Dish ground equipment would be installed within the existing facility compound. The shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by the attached EME study, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

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

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting the proposed loading. Dish is not aware of any public safety concerns relative to the proposed sharing of the existing tower. Dish's intention of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and visitors traveling through the area.

For the foregoing reasons, Dish Wireless respectfully requests that the Council approve this request for the shared use of this tower located at 134 Kikapoo Road, Middlefield, CT 06455. Feel free to contact me with any questions or comments. Thank you for your kind consideration of this matter.

Sincerely,

Jack Andrews
Zoning Manager, Centerline Communications
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144

Enclosures: Exhibit 1 – Letter of Authorization from tower owner
Exhibit 2 – Property Card and GIS
Exhibit 3 – Construction Drawings
Exhibit 4 – Structural Analysis Report
Exhibit 5 – Antenna Mount Analysis Report
Exhibit 6 – EME Study Report
Exhibit 7 – Four (4) Notice Confirmations
Exhibit 8 – Prior CSC Tower Approval

cc: American Tower Corporation - Tower Operator/Owner
SBC Tower Holdings LLC - Property Owner;
The Honorable Robert Yamartino - First Selectman of Middlefield
Jerry Russ - Middlefield Zoning Officer

Jack Andrews, Zoning Manager • 10130 Donleigh Drive, Columbia, MD 21046 • (443) 677-0144
Centerline Communications • 750 W Center Street, Suite 301, W Bridgewater, MA 02379

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION

CENTERLINE COMMUNICATIONS LLC/ AT&T MOBILITY

I, Margaret Robinson, Vice President, US Tower Legal Division on behalf of American Tower*, owner/operator of the tower facility located at the address identified below (the "Tower Facilities"), do hereby authorize AT&T MOBILITY, CENTERLINE COMMUNICATIONS LLC, its successors and assigns, to act as American Tower's non-exclusive agent for the purpose of filing and securing any zoning, land-use, building permit and/or electrical permit application(s) and approvals of the applicable jurisdiction for and to conduct the construction of the installation of antennas and related telecommunications equipment on the Tower Facility located at the above address. This installation shall not affect adjoining lands and will occur only within the area leased by American Tower.

American Tower understands that the application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by American Tower of conditions related to American Tower's installation. Any such conditions of approval or modifications will not be effective unless approved in writing by American Tower.

The above authorization does not permit AT&T MOBILITY, CENTERLINE COMMUNICATIONS LLC to modify or alter any existing permit(s) and/or zoning or land-use conditions or impose any additional conditions unrelated to American Tower's installation of telecommunications equipment without the prior written approval of American Tower.

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

ATC Asset #	Site Name	Project Number	Site Address
283420	STONEYBROOK RD CT	13682835	23 Stonybrook Road, Stratford, Connecticut
243036	WEST HAVEN & RT 162 CT	13682841	668 Jones Hill Road, West Haven, Connecticut
302479	Rkhl - Rocky Hill	13683394	699 West Street, Rocky Hill, Connecticut
302537	Middletown CT 3	13747862	47 Inwood Road, Rocky Hill, Connecticut
302535	Milford CT 2	13748383	185 Research Drive, Milford, Connecticut
302473	E H F R - Prestige Park	13748397	310 Prestige Park Road, East Hartford, Connecticut
302505	Wshn - West Haven	13748405	204 Burwell Street, West Haven, Connecticut
302489	Enfd - Enfield	13753208	77 Town Farm Road, Enfield, Connecticut
302524	Beacon Falls	13753210	664 Rimmon Hill Road, Seymour, Connecticut
310968	WSPT-WESTPORT REBUILD CT	13753216	180A Bayberry Lane, Westport, Connecticut
302526	Naugatuck (telephone Pole)	13753218	585 South Main St. (soc. Club), Naugatuck, Connecticut
310972	WATERFORD REBUILD CT	13753547	15 Miner Lane, Waterford, Connecticut
302538	Parsonage Hill Aka Wallin	13753549	922 Northrop Road, Wallingford, Connecticut
370624	Mankes Silo	13754283	1338 Highland Ave, Cheshire, Connecticut

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88017	SHELTON-TRUMBULL	13755484	14 OXFORD DRIVE/BOOTH HILL RD, Shelton, Connecticut
414240	Byram Park CT	13755490	48 RITCH AVENUE WEST, Greenwich, Connecticut
283423	NAUGATUCK CT	13755758	880 Andrew Mountain Road, Naugatuck, Connecticut
302480	Woodbridge CT 1	13756843	77 Pease Road, Woodbridge, Connecticut
411183	WATERFORD CT	13756866	53 Dayton Rd. Waterford, Connecticut
302540	Madison CT 6	13757740	8 Old 79, Madison, Connecticut
411259	CT Collinsville CAC 802816 CT	13757764	650 Albany Turnpike, Collinsville, Connecticut
411256	CANTON CT	13757774	14 CANTON SPRINGS ROAD, Canton, Connecticut
302493	Nrwc - Norwich	13757776	225 Rogers Road, Norwich, Connecticut
302476	Wtbr - Waterbury	13757794	352 Garden Circle, Waterbury, Connecticut
302475	Sttn - Southington	13757796	80 Shuttle Meadow Road, Southington, Connecticut
302494	Hddm - Haddam	13757798	139 Morris Hubbard Rd, Higganum, Connecticut
283419	PINE ORCHARD BRANFORD CT	13757800	123 Pine Orchard Road, Brrandford, Connecticut
302482	North Havent CT 1	13757802	15 Dewight Street, North Haven, Connecticut
302485	Mdfd - Middlefield	13757806	134 Kikapoo Road, Middlefield, Connecticut
302500	Brst - Bristol	13757810	790 Willis Street, Bristol, Connecticut
302467	Bilkays Express	13757812	90 North Plains Industrial Rd. Wallingford, Connecticut
302536	Cherry Hill-branford	13759895	4 Beaver Road, Brandford, Connecticut
302482	North Havent CT 1	14050356	15 Dewight Street, North Haven, Connecticut
311305	GLFD-GUILFORD REBUILD CT	14050358	10 Tanner Marsh Road, Guilford, Connecticut
411261	CROMWELLSW CT	14089799	99 Christian Hill Road, Cromwell, Connecticut
302481	Hrfr - South	14090117	289 Mountain Street, Hartford, Connecticut

Signature: 

Margaret Robinson, Vice President
US Tower Legal Division

See attached Notary Block

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION
CENTERLINE COMMUNICATIONS LLC/ AT&T MOBILITY

NOTARY BLOCK

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

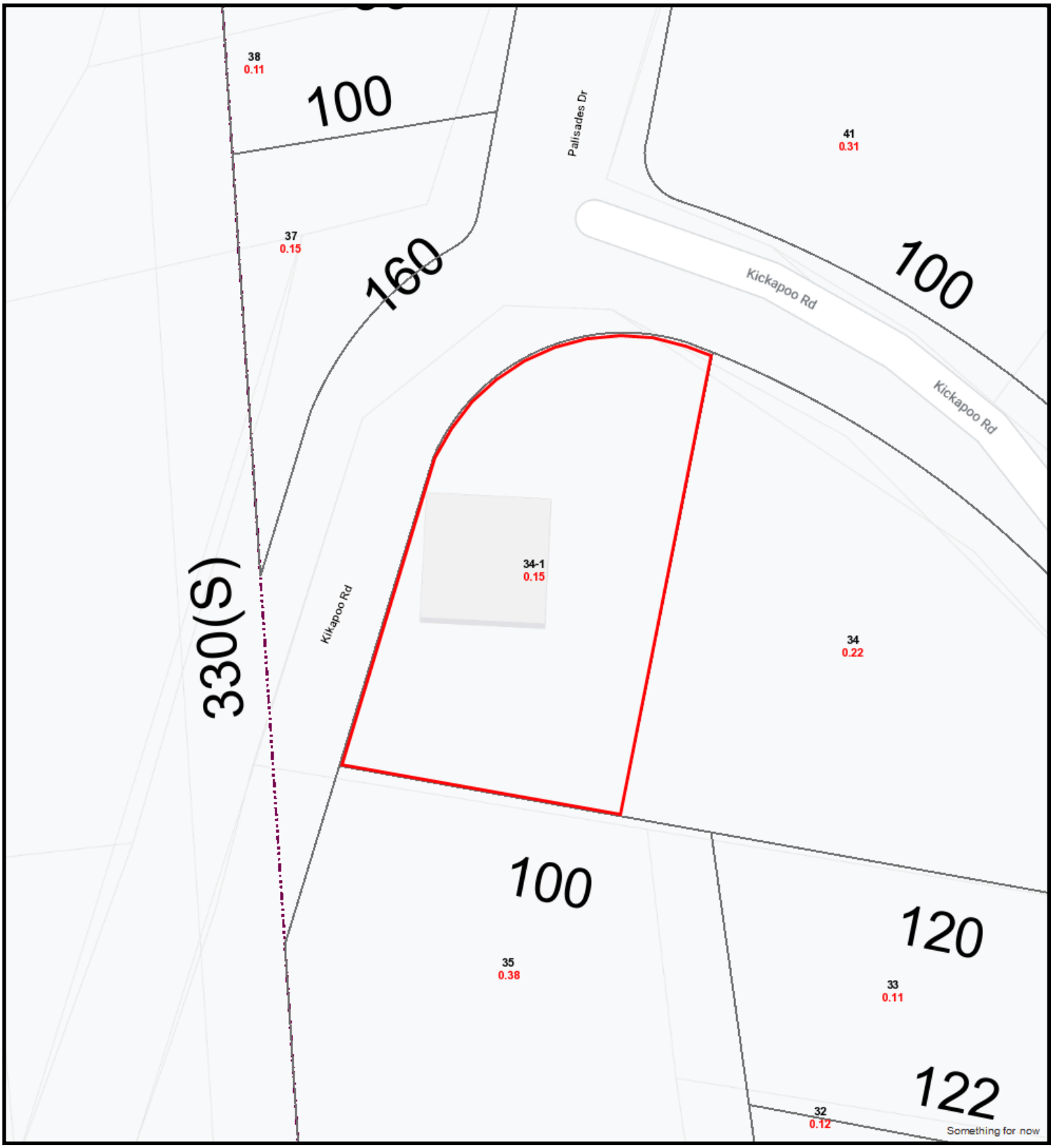
This instrument was acknowledged before me by Margaret Robinson, Vice President, UST Legal of American Tower (Tower Facility owner), personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same.

WITNESS my hand and official seal, this 30th day of June, 2022.

NOTARY SEAL

MELISSA ANN METZLER
Notary Public
Commonwealth of Massachusetts
My Commission Expires March 14, 2025

Notary Public
My Commission Expires: March 14, 2025



13757806

9/27/2022 6:17:02 PM

Scale: 1"=31'

Scale is approximate

The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

Kikapoo

Search Results

Parcel Details

PALISADES DR

SBC TOWER HOLDINGS LLC

PO BOX 723597
ATLANTA, GA 31139

Parcel ID: 10/10.2/34-1
Lot Size: 0.15
Sale Price: $$113,400.00

Links | Abutters

Parcel Details | Bing Bird's Eye
Photo | Property Map
Google Map | Add Parcel
Abutter Distance: | Remove Parcel
Adjacent | Print Labels
Adjacent | Export List
50 ft
100 ft
200 ft
300 ft
400 ft
500 ft

Parcel ID 10/10.2/34-

Address PALISADES

Scroll

About

Layers

Identify

38
0.11

37
0.15

34-1
0.15

330(S)

100

35
0.38

Summary

PALISADES DR

SBC TOWER HOLDINGS LLC

CAMA ID: 142 View Details

Email Map Link

lat:41.5135, long:-72.7466

Tighe&Bond

Copy and paste the following string into an email to link to the current map view:

dish wireless

DISH Wireless L.L.C. SITE ID:

BOHVN00152C

DISH Wireless L.L.C. SITE ADDRESS:

134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SCOPE OF WORK

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

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

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

NOTE: THE SCOPE OF THIS PROJECT DOES NOT INCLUDE MODIFICATIONS TO THE TOWER STRUCTURE OR FOUNDATION. A SEPARATE BUILDING PERMIT APPLICATION WILL BE SUBMITTED FOR ANY TOWER MODIFICATIONS.

SITE INFORMATION

PROPERTY OWNER:	SBC TOWER HOLDINGS, LLC
ADDRESS:	PO BOX 723597 ATLANTA, GA 31139
TOWER TYPE:	MONOPOLE
TOWER CO SITE ID:	302485
TOWER APP NUMBER:	14102547
COUNTY:	MIDDLESEX
LATITUDE (NAD 83):	41° 30' 48.99" N
LONGITUDE (NAD 83):	72° 44' 44.97" W
ZONING JURISDICTION:	MIDDLESEX COUNTY
ZONING DISTRICT:	HD1
PARCEL NUMBER:	10/10.2/34-1
OCCUPANCY GROUP:	U
CONSTRUCTION TYPE:	II-B
POWER COMPANY:	TBD
TELEPHONE COMPANY:	TBD

PROJECT DIRECTORY

APPLICANT:	DISH Wireless L.L.C. 5701 SOUTH SANTA FE DRIVE LITTLETON, CO 80120 (303) 706-5008
TOWER OWNER:	AMERICAN TOWER 10 PRESIDENTIAL WAY WOBURN, MA 01801
ENGINEER:	NB+C ENGINEERING SERVICES, LLC. 8601 SIX FORKS ROAD, SUITE 540 RALEIGH, NC 27615
SITE ACQUISITION:	JULIE CHAREST JULIE.CHAREST@DISH.COM
CONSTRUCTION MANAGER:	CHAD WILCOX CHAD.WILCOX@DISH.COM
RF ENGINEER:	DIPESH PARIKH DIPESH.PARIKH@DISH.COM

CONNECTICUT CODE COMPLIANCE

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

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

SITE PHOTO

DIRECTIONS

FROM HARTFORD TAKE I-91 SOUTH TO RT 66 EAST. ONCE ON RT 66 TAKE RIGHT AT FIRST LIGHT (RT 147). FOLLOW TO LAKE ROAD AND TAKE RIGHT. FOLLOW ROAD AROUND UNTIL YOU GET TO KICKAPOO ROAD AND TURN RIGHT. ACCESS GATE IS AT END OF ROAD ON TOP OF HILL

SHEET INDEX

SHEET NO.	SHEET TITLE
T-1	TITLE SHEET
A-0	SURVEY
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	RF SIGNAGE
GN-3	GENERAL NOTES
GN-4	GENERAL NOTES
GN-5	GENERAL NOTES

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

CALL 2 WORKING DAYS UTILITY NOTIFICATION PRIOR TO CONSTRUCTION

GENERAL NOTES

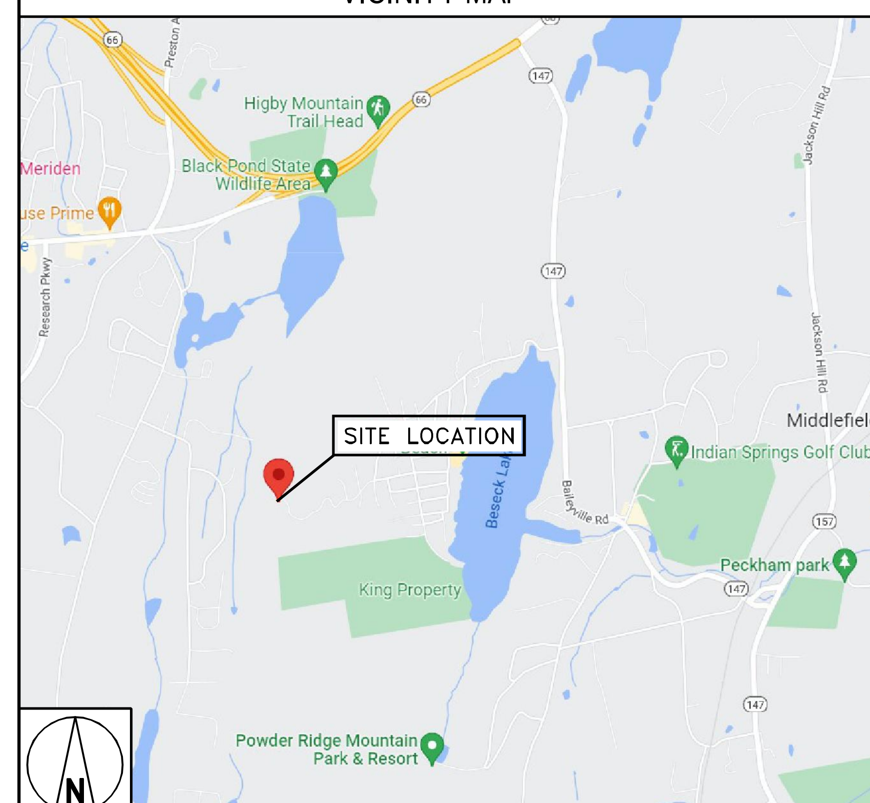
THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE. NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE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

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

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.

VICINITY MAP



NO SCALE

dish wireless
5701 SOUTH SANTA FE DRIVE
LITTLETON, CO 80120

NB+C TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615
(919) 657-9131

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/27/2022	ISSUED FOR REVIEW
0	07/14/2022	ISSUED FOR CONSTRUCTION
1	09/29/2022	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT PEN.0028997 LICENSED PROFESSIONAL ENGINEER
09/29/2022

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.

A&E PROJECT NUMBER
302485-14102547

DISH Wireless L.L.C. PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NOTES

1. THE SURVEY PROVIDED ON THIS SHEET IS PROVIDED FOR REFERENCE ONLY, THE UTILITY ROUTE AND EXISTING EASEMENT MUST BE VERIFIED PRIOR TO CONSTRUCTION.

LEGAL DESCRIPTION

PARENT PARCEL - AS PROVIDED:
ALL THAT CERTAIN PIECE OR PARCEL OF LAND LOCATED IN THE CITY OF MIDDLEFIELD, COUNTY OF MIDDLESEX AND STATE OF CONNECTICUT, COMPRISED OF LOT NOS. 177-179, SECTION D, INDICATED ON A MAP OF MOUNTAIN LAKE PARK, MADE BY H. E. DAGGETT, CIVIL ENGINEER, AND ON FILE WITH THE LAND RECORDS OF MIDDLEFIELD, CONNECTICUT, SAID LOTS ARE ON THE WEST SIDE OF BESECK LAKE IN SAID TOWN OF MIDDLEFIELD, AND ARE BOUNDED AND DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT IN THE WESTERLY LINE OF PALISADES DRIVE
SAID POINT BEING AN EXISTING IRON PIPE BEING N35-46-53E AND 49.51 FEET TO THE POINT AND PLACE OF BEGINNING;

THENCE: N35-51-38E A DISTANCE OF 79.53 FEET TO A POINT;
THENCE: S76-00-00E DISTANCE OF 74.68 FEET TO A POINT;
THENCE: S14-00-00W A DISTANCE OF 73.82 FEET TO A POINT;
THENCE: N76-00-00W A DISTANCE OF 79.35 FEET TO A POINT;

PARCEL CONTAINS 0.12 ACRES.

MEANING AND INTENDING TO CONVEY THE SAME PREMISES AS CONVEYED TO SBC TOWER HOLDINGS, LLC, BY GENERAL WARRANTY DEED DATED JUNE 28, 2013, AND RECORDED WITH THE ON SEPTEMBER 30, 2013 IN BOOK 318 AT PAGE 808.

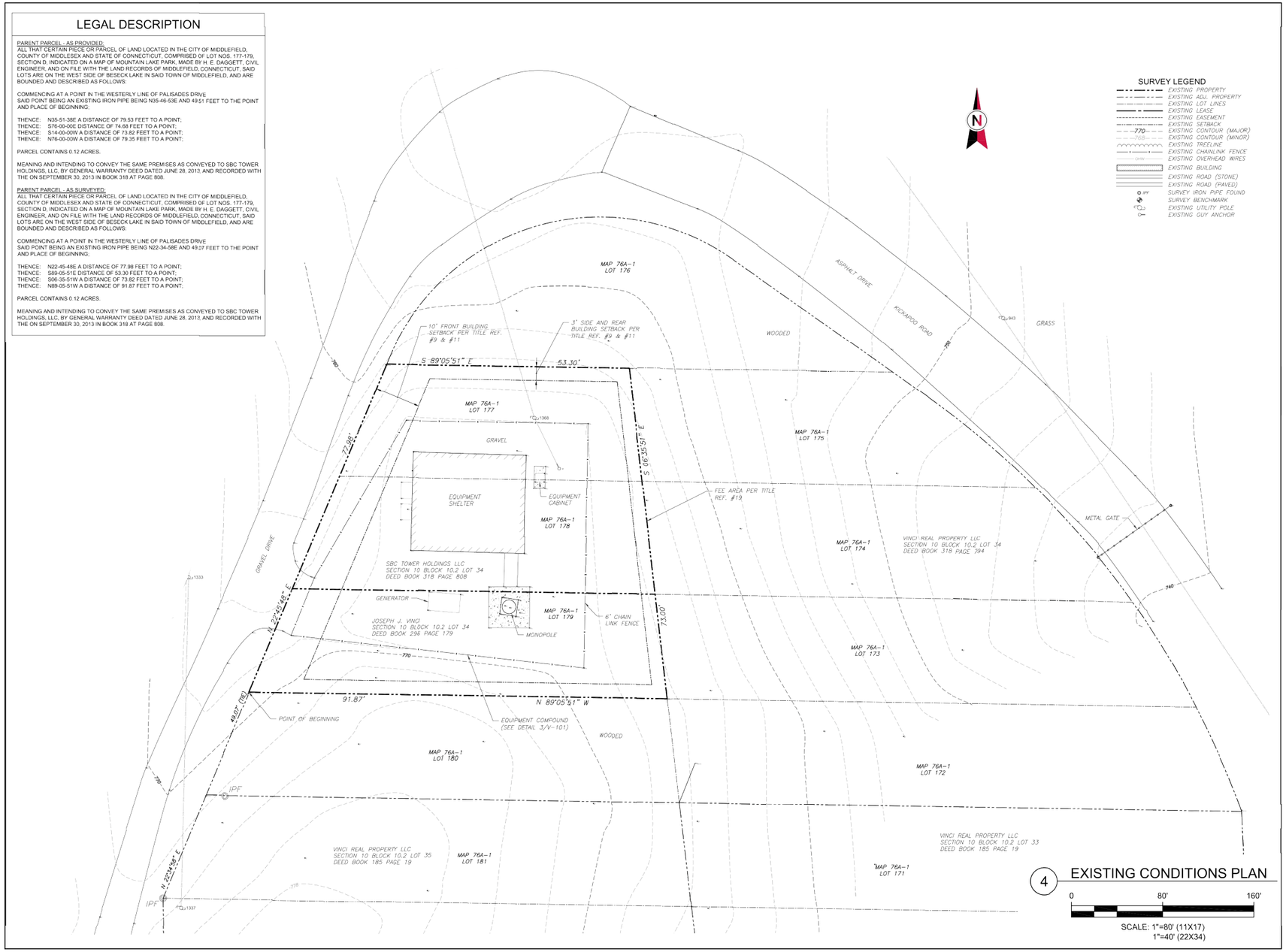
PARENT PARCEL - AS SURVEYED:
ALL THAT CERTAIN PIECE OR PARCEL OF LAND LOCATED IN THE CITY OF MIDDLEFIELD, COUNTY OF MIDDLESEX AND STATE OF CONNECTICUT, COMPRISED OF LOT NOS. 177-179, SECTION D, INDICATED ON A MAP OF MOUNTAIN LAKE PARK, MADE BY H. E. DAGGETT, CIVIL ENGINEER, AND ON FILE WITH THE LAND RECORDS OF MIDDLEFIELD, CONNECTICUT, SAID LOTS ARE ON THE WEST SIDE OF BESECK LAKE IN SAID TOWN OF MIDDLEFIELD, AND ARE BOUNDED AND DESCRIBED AS FOLLOWS:

COMMENCING AT A POINT IN THE WESTERLY LINE OF PALISADES DRIVE
SAID POINT BEING AN EXISTING IRON PIPE BEING N22-34-58E AND 49.07 FEET TO THE POINT AND PLACE OF BEGINNING;

THENCE: N22-45-48E A DISTANCE OF 77.98 FEET TO A POINT;
THENCE: S89-05-51E DISTANCE OF 53.30 FEET TO A POINT;
THENCE: S06-35-51W A DISTANCE OF 73.82 FEET TO A POINT;
THENCE: N89-05-51W A DISTANCE OF 91.87 FEET TO A POINT;

PARCEL CONTAINS 0.12 ACRES.

MEANING AND INTENDING TO CONVEY THE SAME PREMISES AS CONVEYED TO SBC TOWER HOLDINGS, LLC, BY GENERAL WARRANTY DEED DATED JUNE 28, 2013, AND RECORDED WITH THE ON SEPTEMBER 30, 2013 IN BOOK 318 AT PAGE 808.



4 EXISTING CONDITIONS PLAN

0 80' 160'

SCALE: 1"=80' (11X17)
1"=40' (22X34)

AMERICAN TOWER®
ATC TOWER SERVICES, INC
3533 REGENCY PARKWAY
SUITE 133
CARY, NC 27551
PHONE: (919) 468-0145
COA: D-0204

REV.	DESCRIPTION	BY	DATE
0	ISSUED FOR COMMENT	JR	01/09/18

ATC SITE NUMBER:
302485

ATC SITE NAME:
MIDDLEFIELD
CONNECTICUT

SITE ADDRESS:
PALISADES DR
MIDDLEFIELD, CT 06455

SURVEY CERTIFICATE:
I HEREBY DECLARE TO, AND ONLY, TO, THE INDIVIDUALS LISTED BELOW THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF THIS MAP SIS SUBSTANTIALLY CORRECT. THIS MAP AND SURVEY WERE PREPARED IN ACCORDANCE WITH THE STANDARDS OF A CLASS A-1 SURVEY AS DEFINED IN THE "RECOMMENDED STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS PREPARED AND ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC., ON SEPT. 13 1984, EXCEPT AS NOTED.

AMERICAN TOWER CORPORATION

FOR REFERENCE ONLY

SURVEY LOGO:	Tectonic PRACTICAL SOLUTIONS. EXCEPTIONAL SERVICE. Tectonic Engineering & Surveying Consultants P.C. Phone: (845) 567-4656 (800) 829-6511 www.tectonicengineering.com
DRAWN BY:	JR
APPROVED BY:	TH
DATE DRAWN:	01/09/18
ATC JOB NO:	302485

EXISTING CONDITIONS

SHEET NUMBER:	REVISION:
V-102	0

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

NB+C™
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615
(919) 657-9131

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/27/2022	ISSUED FOR REVIEW
0	07/14/2022	ISSUED FOR CONSTRUCTION
1	09/29/2022	ISSUED FOR CONSTRUCTION

09/29/2022

A&E PROJECT NUMBER
302485-14102547

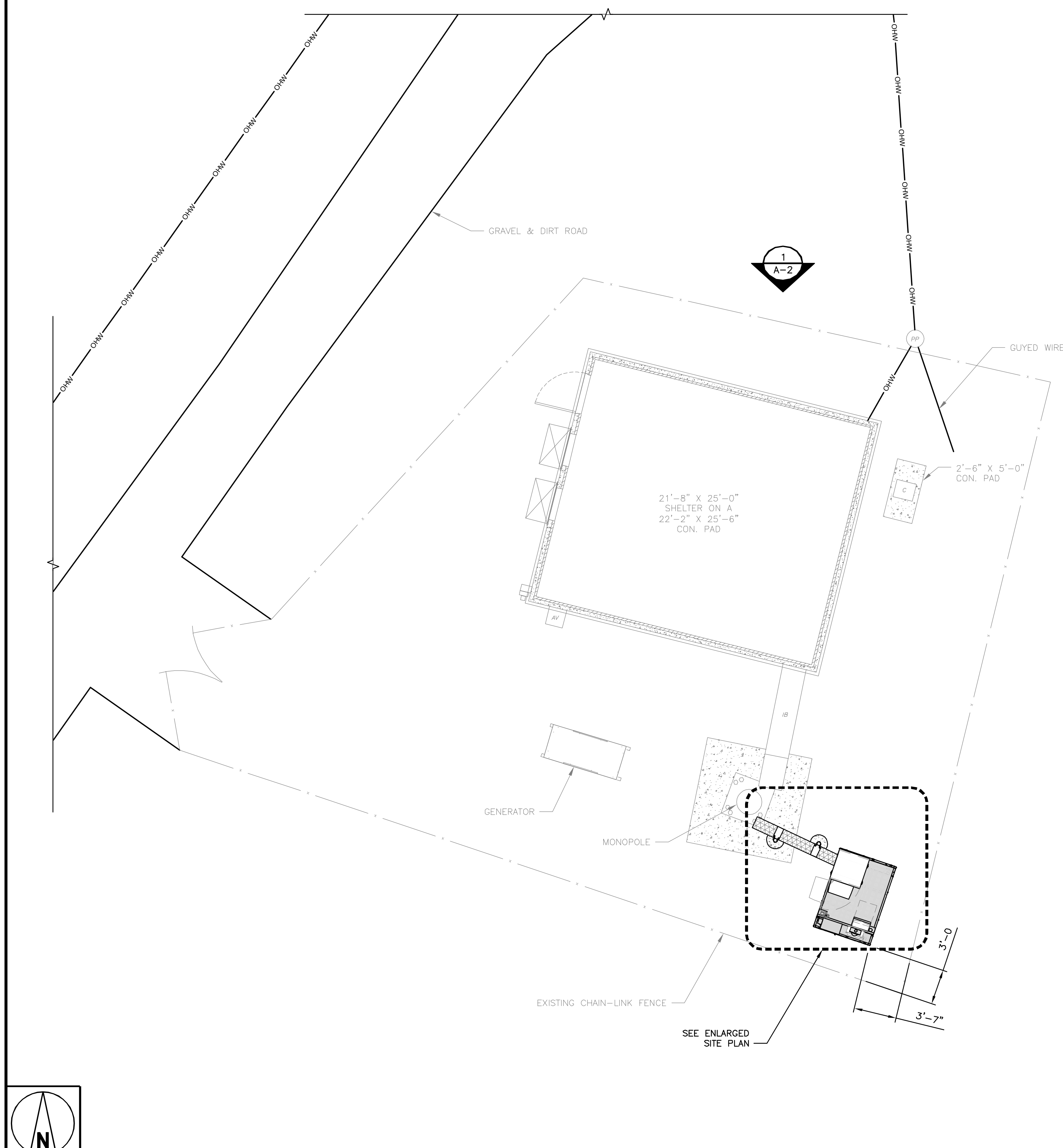
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
SURVEY

SHEET NUMBER
A-0

EXISTING SURVEY (BY OTHERS)

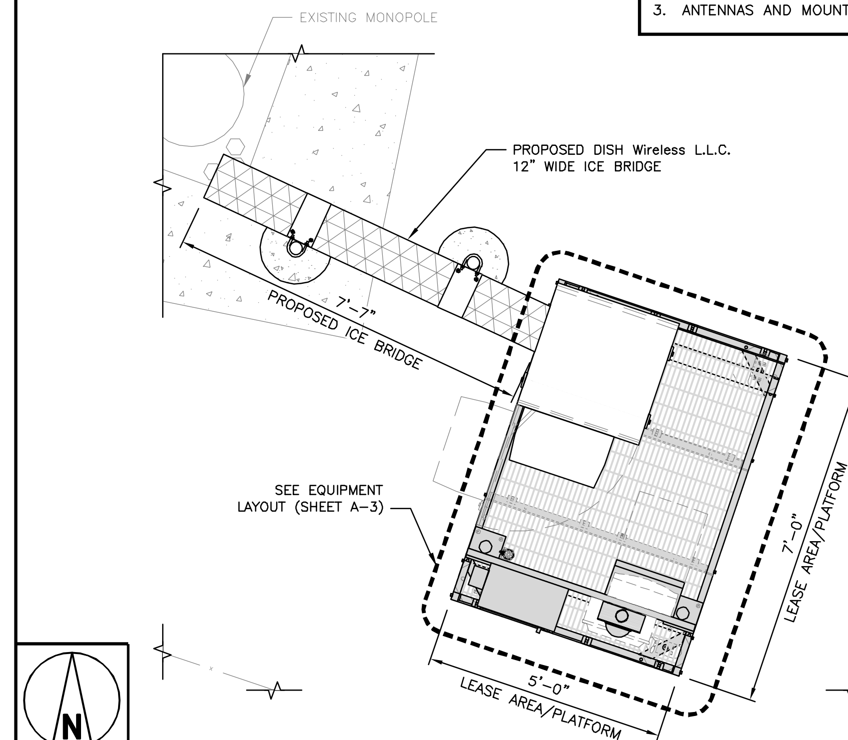
NO SCALE



NOTES

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

OVERALL SITE PLAN — 3/16"=1'-0" — 1



NOTES

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

ENLARGED SITE PLAN — 1/2"=1'-0" — 2

AERIAL VIEW — NO SCALE — 3

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LITTLETON, CO 80120

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8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615
(919) 657-9131

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/27/2022	ISSUED FOR REVIEW
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09/29/2022

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A&E PROJECT NUMBER
302485-14102547

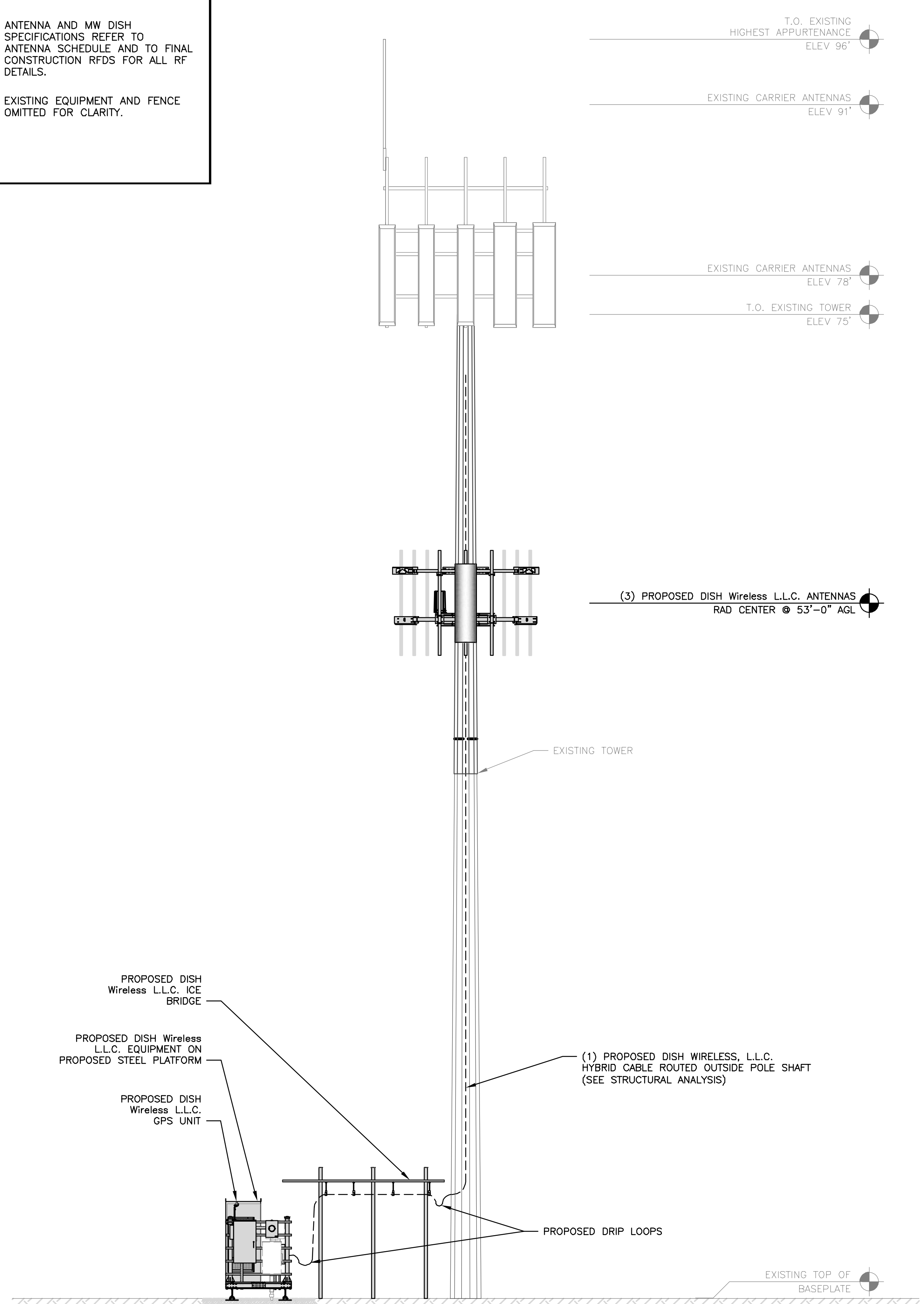
DISH Wireless L.L.C. PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
OVERALL AND ENLARGED SITE PLAN

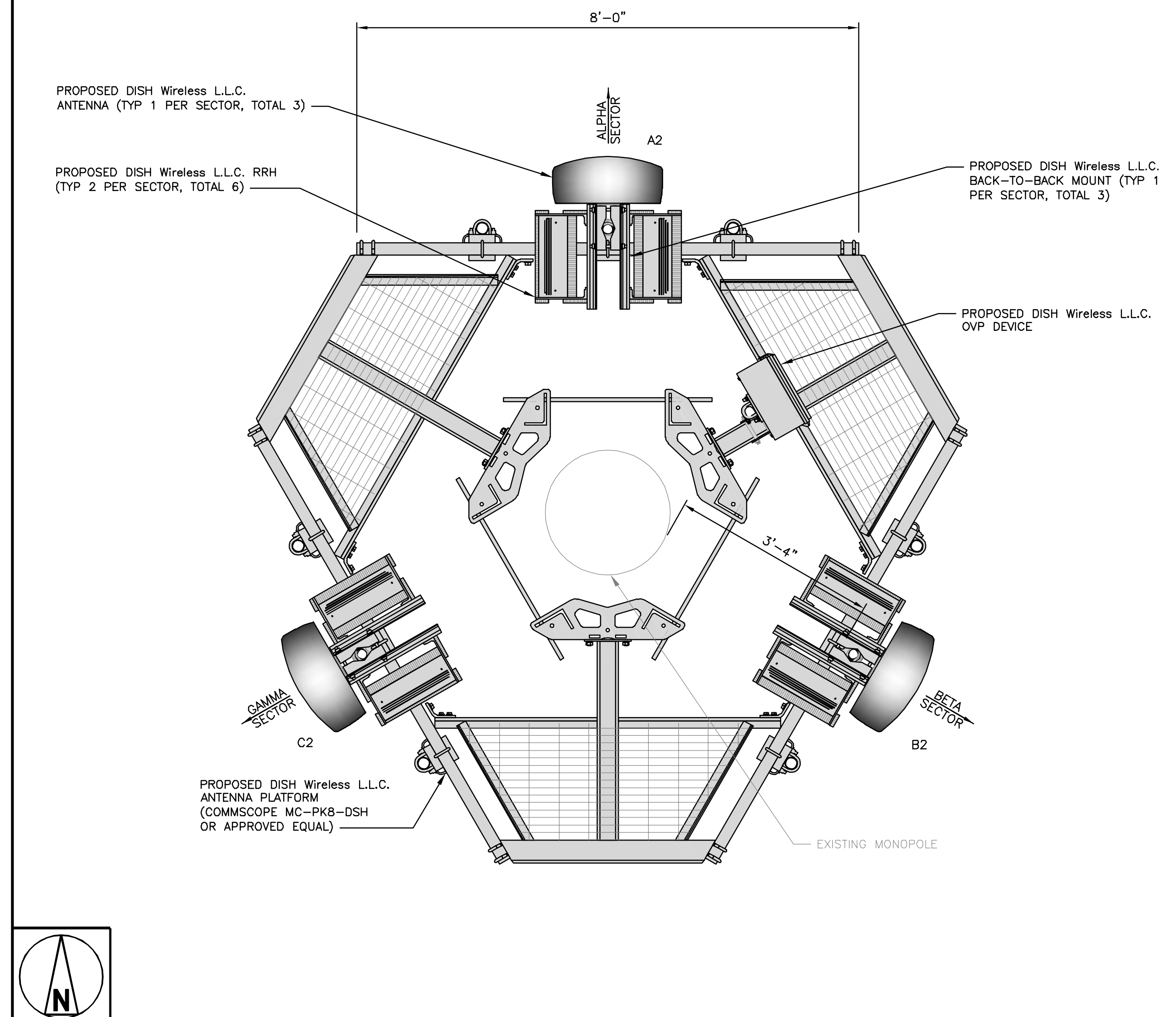
SHEET NUMBER
A-1

NOTES

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



PROPOSED NORTH ELEVATION — 6' 4' 2' 0 5' 10' — 3/16"=1'–0" — 1



ANTENNA LAYOUT — 12" 6" 0 1' 2' 3' — 3/4"=1'–0" — 2

SECTOR POS.	ANTENNA					TRANSMISSION CABLE	RRH			OVP
	EXISTING OR PROPOSED	MANUFACTURER – MODEL NUMBER	TECH	AZIMUTH	RAD CENTER	FEED LINE TYPE AND LENGTH	MANUFACTURER – MODEL NUMBER	TECH	POS.	MANUFACTURER MODEL
A1	––	––	––	––	––	(1) HIGH–CAPACITY HYBRID CABLE (102' LONG)	TA08025–B604	5G	A2	(1) RAYCAP RDIDC–9181–PF–48
A2	PROPOSED	JMA MX08FRO665–21	5G	0°	53'–0"		TA08025–B605	5G	A2	
A3	––	––	––	––	––		––	––	––	
B1	––	––	––	––	––	SHARED W/ALPHA	TA08025–B604	5G	B2	SHARED W/ALPHA
B2	PROPOSED	JMA MX08FRO665–21	5G	120°	53'–0"		TA08025–B605	5G	B2	
B3	––	––	––	––	––		––	––	––	
C1	––	––	––	––	––	SHARED W/ALPHA	TA08025–B604	5G	C2	SHARED W/ALPHA
C2	PROPOSED	JMA MX08FRO665–21	5G	240°	53'–0"		TA08025–B605	5G	C2	
C3	––	––	––	––	––		––	––	––	

NOTES

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

ANTENNA SCHEDULE — NO SCALE — 3

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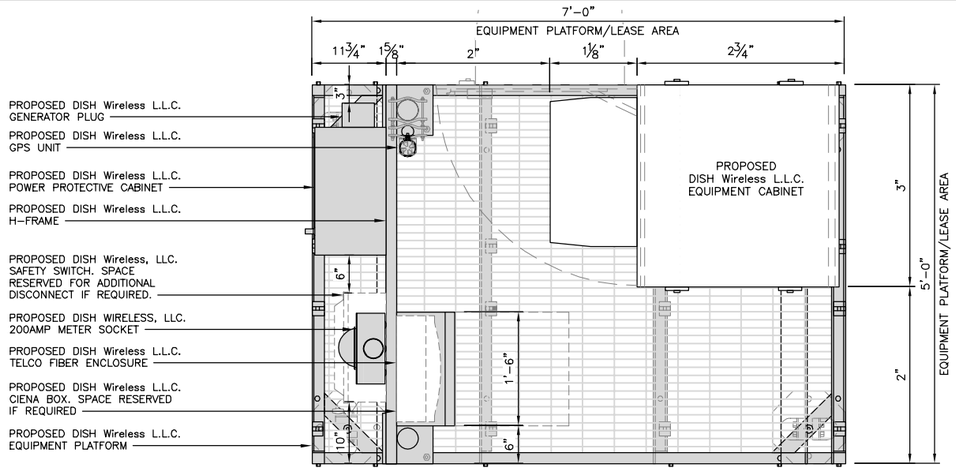
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
ELEVATION, ANTENNA LAYOUT AND SCHEDULE

SHEET NUMBER
A-2



PLATFORM EQUIPMENT PLAN

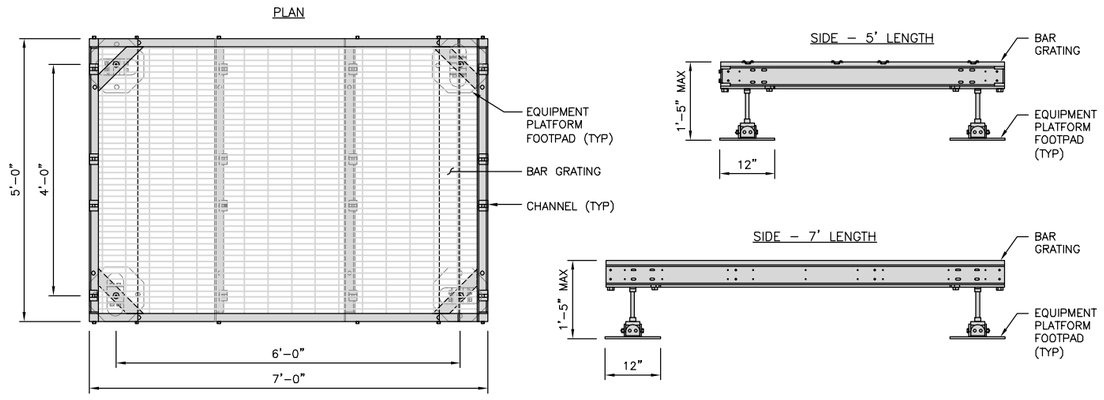
12" 9" 6" 3" 0 1' 2'
1"=1'-0"

1

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

NOTE:

PLATFORM TO BE WITHIN 1° OF LEVEL

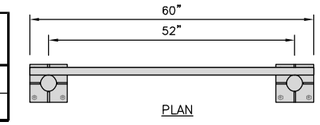


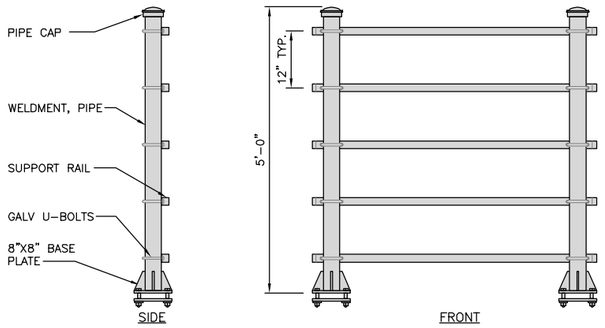
PLATFORM DETAIL

NO SCALE

2

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





H-FRAME DETAIL

NO SCALE

3

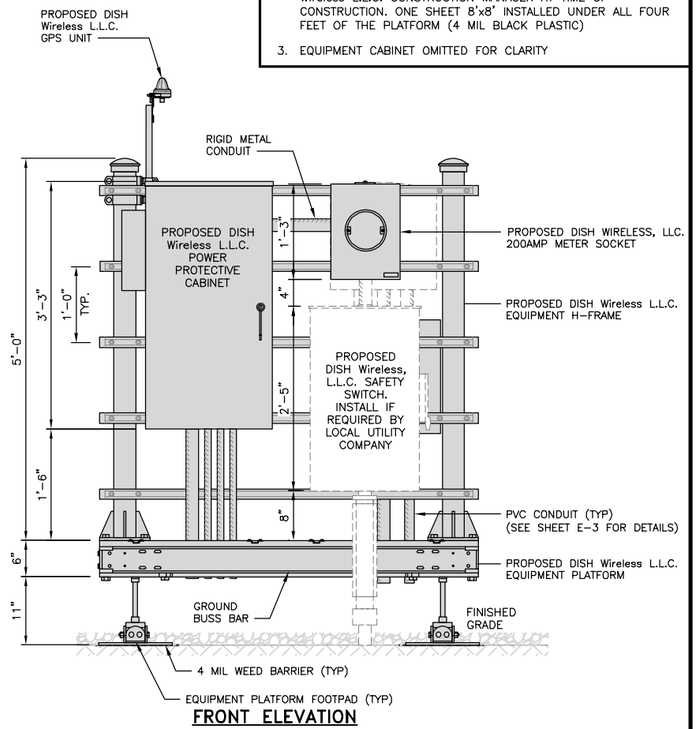
NOT USED

NO SCALE

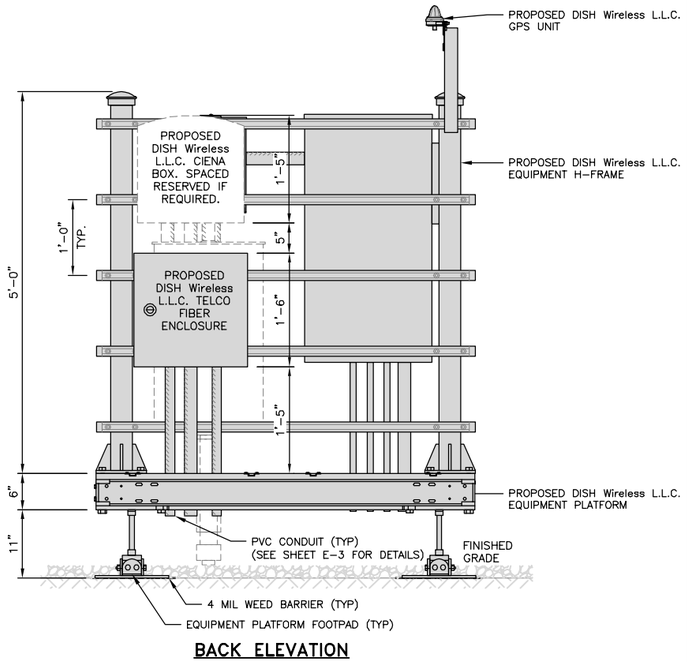
4

NOTES

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



FRONT ELEVATION



BACK ELEVATION

H-FRAME EQUIPMENT ELEVATION

12" 9" 6" 3" 0 1' 2'
1"=1'-0"

5

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CT	BW	BW

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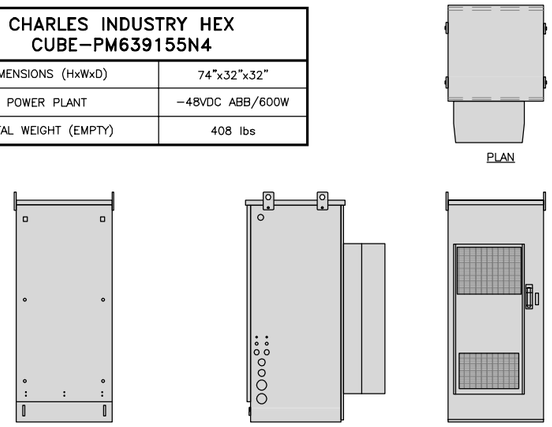
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
EQUIPMENT PLATFORM AND H-FRAME DETAILS

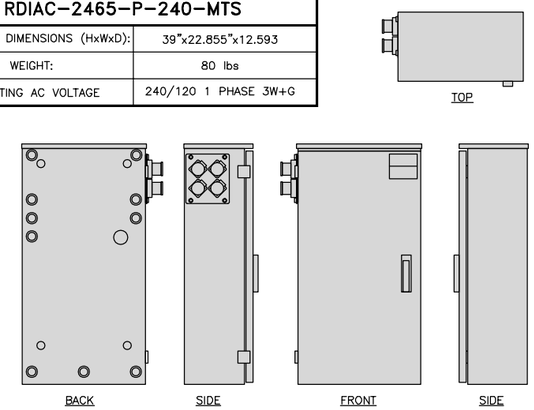
SHEET NUMBER
A-3

CHARLES INDUSTRY HEX CUBE–PM639155N4	
DIMENSIONS (HxWxD)	74"x32"x32"
POWER PLANT	–48VDC ABB/600W
TOTAL WEIGHT (EMPTY)	408 lbs



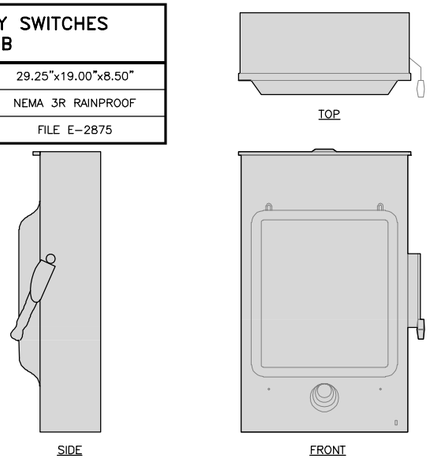
CABINET DETAIL | NO SCALE | 1

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



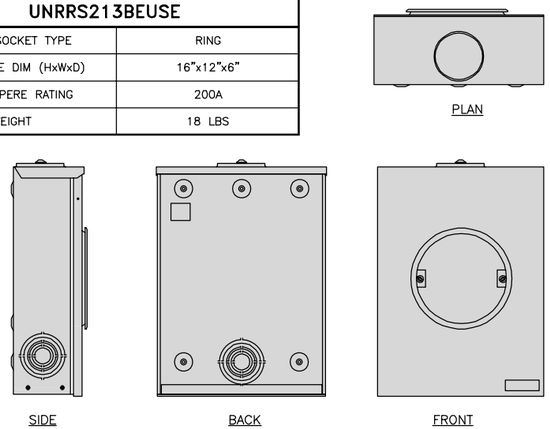
POWER PROTECTION CABINET (PPC) DETAIL | NO SCALE | 2

SQUARE D SAFETY SWITCHES D224NRB	
ENCLOSURE DIM (HxWxD)	29.25"x19.00"x8.50"
ENCLOSURE TYPE	NEMA 3R RAINPROOF
UL LISTED	FILE E–2875



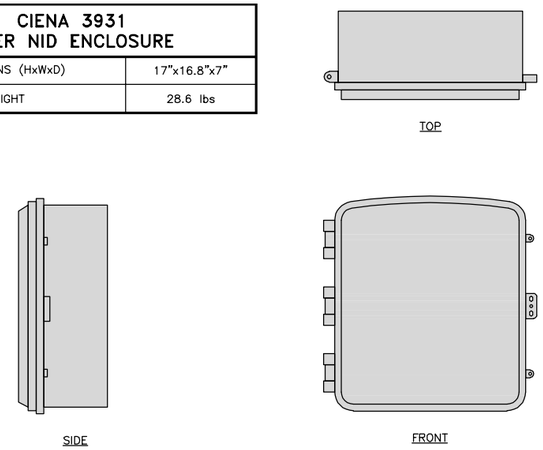
SAFETY SWITCH DETAIL | NO SCALE | 3

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



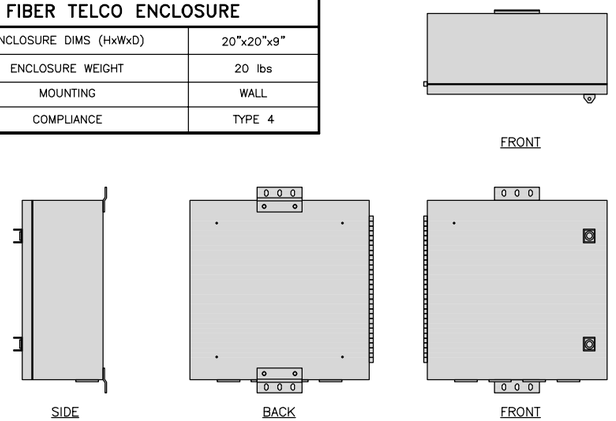
METER SOCKET DETAIL | NO SCALE | 4

CIENA 3931 FIBER NID ENCLOSURE	
DIMENSIONS (HxWxD)	17"x16.8"x7"
WEIGHT	28.6 lbs



FIBER NID ENCLOSURE DETAIL | NO SCALE | 5

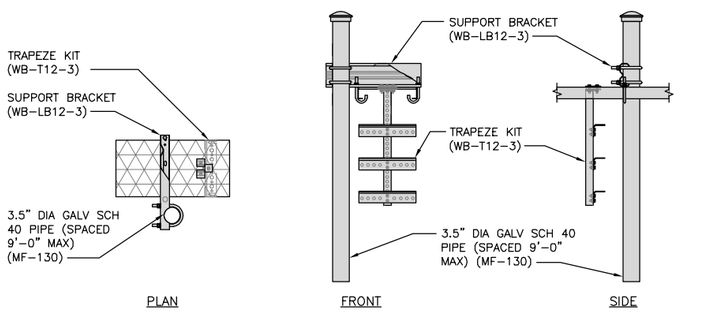
CHARLES CFIT–PF2020DSH1 FIBER TELCO ENCLOSURE	
ENCLOSURE DIMS (HxWxD)	20"x20"x9"
ENCLOSURE WEIGHT	20 lbs
MOUNTING	WALL
COMPLIANCE	TYPE 4



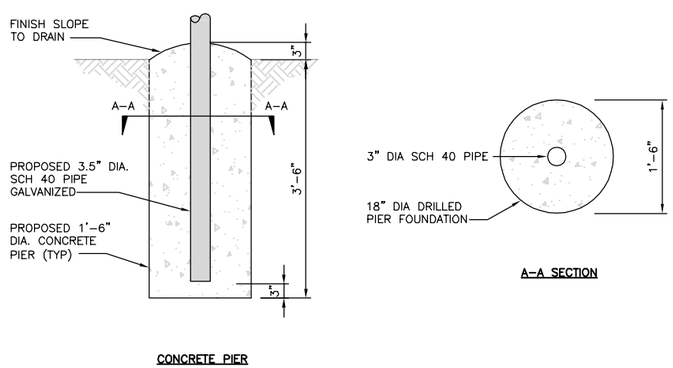
FIBER TELCO ENCLOSURE DETAIL | NO SCALE | 6

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

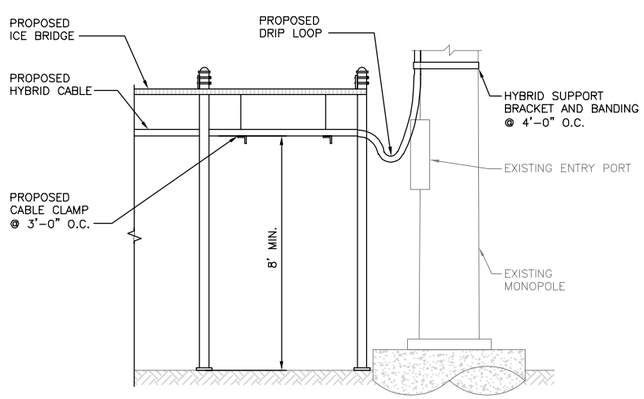
INCLUDED PRODUCTS:	
	WB–T12–3 TRAPEZE KIT, 3 RUNGS
	WB–LB12–3 SUPPORT BRACKET
	MF–130 DIRECT BURIAL PIPE COLUMN, 13'–4"



ICE BRIDGE DETAIL | NO SCALE | 7



TYPICAL ICE BRIDGE CONCRETE PIER DETAIL | NO SCALE | 8



HYBRID CABLE RUN | NO SCALE | 9

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DISH Wireless L.L.C.
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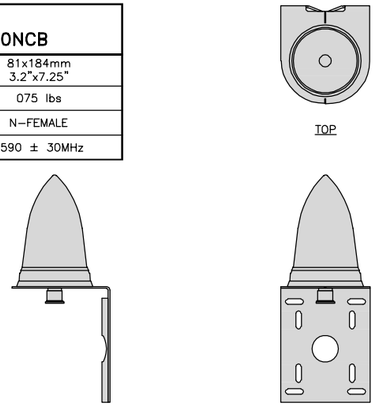
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

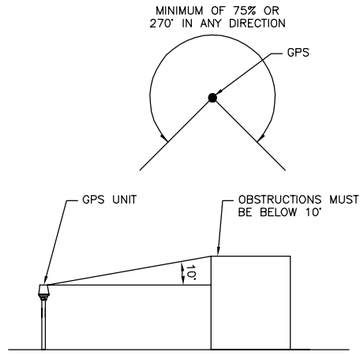
SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-4

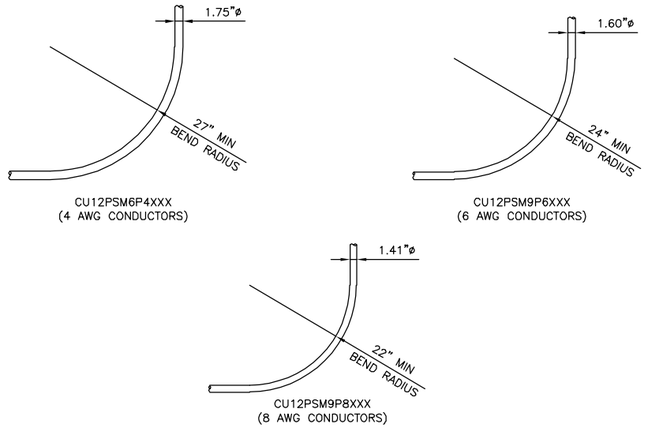
PCTEL GPSGL-TMG-SPI-40NCB	
DIMENSIONS (DIAxH) MM/INCH	81x184mm 3.2"x7.25"
WEIGHT W/ACCESSORIES	075 lbs
CONNECTOR	N-FEMALE
FREQUENCY RANGE	1590 ± 30MHz



GPS DETAIL | NO SCALE | 1

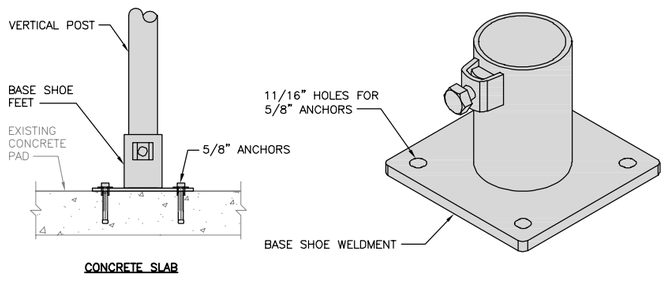


GPS MINIMUM SKY VIEW REQUIREMENTS | NO SCALE | 2



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

SITEPRO1 BSF35 BASE SHOE FEET	
DIMENSIONS (HxWxL)	8"x8"x1/2"
WEIGHT	15.0 LBS
POST SIZE:	2-7/8" OR 3-1/2"



ICE BRIDGE PIPE MOUNT DETAIL | NO SCALE | 4

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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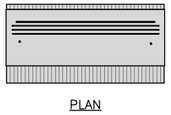
MIDDLEFIELD, CT 06455

SHEET TITLE
EQUIPMENT DETAILS

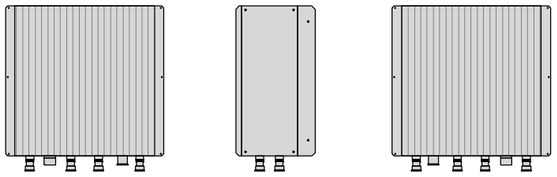
SHEET NUMBER
A-5

FUJITSU DUAL BAND TA08025-B604

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



PLAN

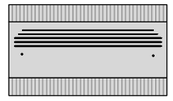


BACK SIDE FRONT

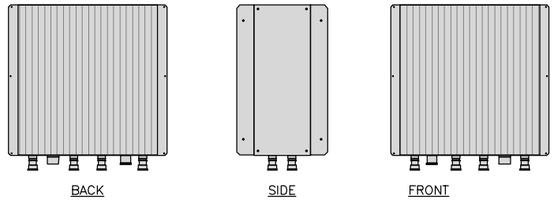
RRH DETAIL | NO SCALE | 1

FUJITSU TRIPLE BAND TA08025-B605

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



PLAN



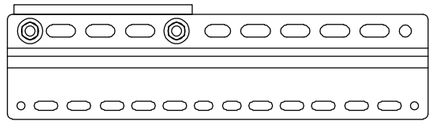
BACK SIDE FRONT

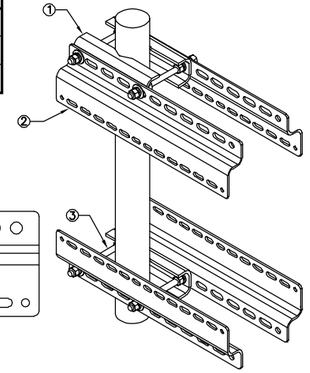
RRH DETAIL | NO SCALE | 2

SABRE DOUBLE Z-BRACKET G10123155

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

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





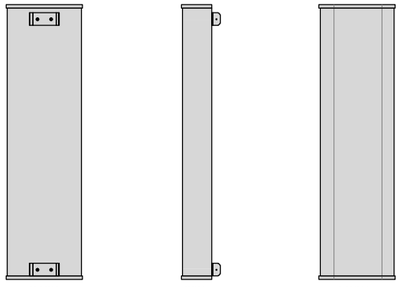
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

RRH MOUNT DETAIL | NO SCALE | 3

JMA WIRELESS MX08FRO665-21 ANTENNA

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

PLAN



BACK SIDE FRONT

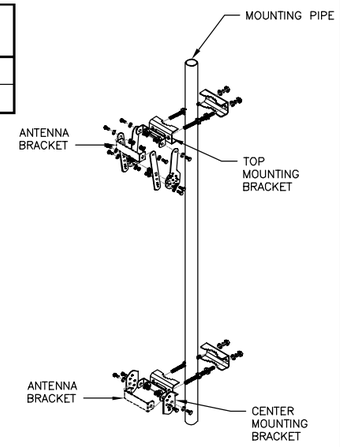
ANTENNA DETAIL | NO SCALE | 4

JMA ANTENNA MOUNT BRACKET #91900318

TOTAL WEIGHT (WITH BRACKETS)	18 lbs (8.18 Kg)
POLE DIAMETER RANGE	2.5" TO 4.5"

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

ANTENNA BRACKET NOT PART OF KIT



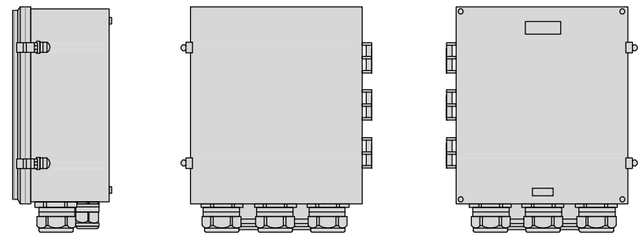
NOTE:
OR DISH Wireless L.L.C.
APPROVED EQUIVALENT

ANTENNA BRACKET DETAIL | NO SCALE | 5

RAYCAP RDIDC-9181-PF-48 DC SURGE PROTECTION (OVP)

DIMENSIONS (HxWxD)	18.98"x14.39"x8.15"
WEIGHT	21.82 LBS

PLAN

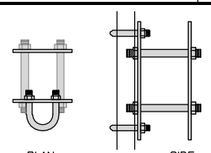


SIDE BACK FRONT

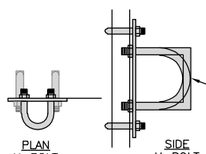
SURGE SUPPRESSION DETAIL (OVP) | NO SCALE | 6

COMMSCOPE XP-2040 CROSSOVER PLATE

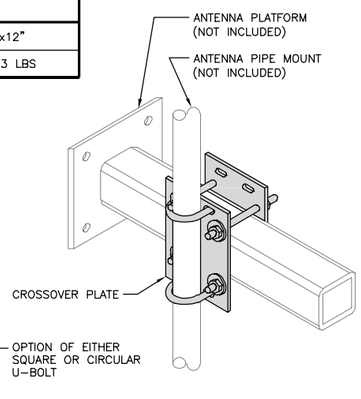
DIMENSIONS (HxW)	10"x12"
WEIGHT	11.023 LBS



PLAN PLATE SIDE PLATE



PLAN U-BOLT SIDE U-BOLT

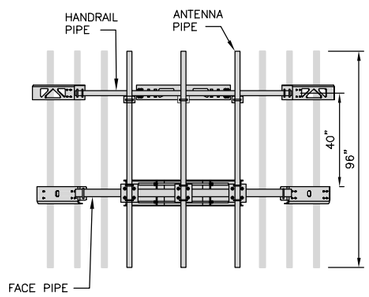


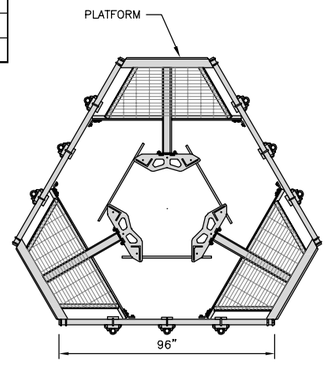
RRH/OVP MOUNT DETAIL | NO SCALE | 7

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 | 8

NOT USED | NO SCALE | 9

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LITTLETON, CO 80120

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8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615
(919) 657-9131

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/27/2022	ISSUED FOR REVIEW
0	07/14/2022	ISSUED FOR CONSTRUCTION
1	09/29/2022	ISSUED FOR CONSTRUCTION

09/29/2022

A&E PROJECT NUMBER
302485-14102547

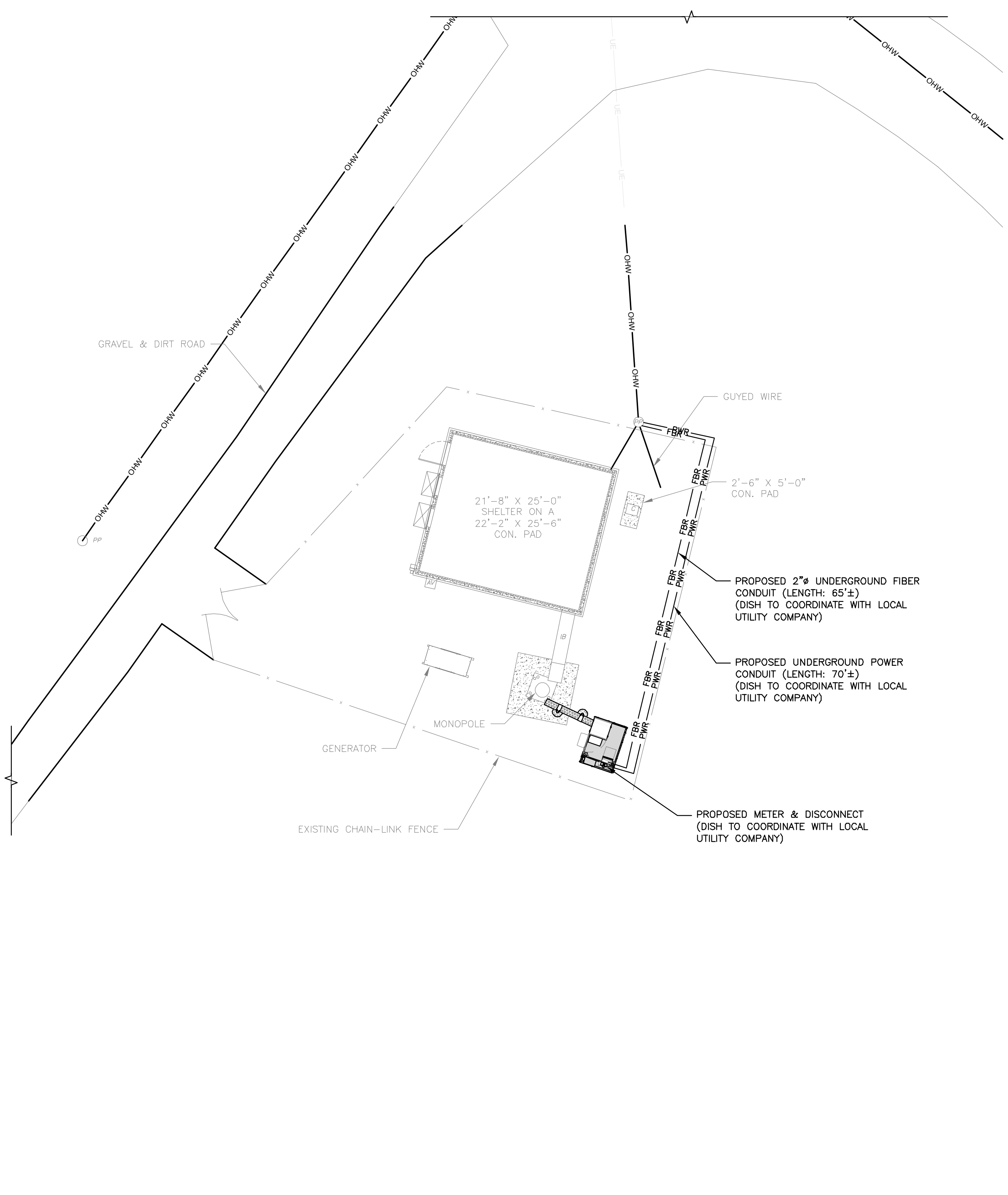
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-6

NOTES

1. THE EASEMENT RIGHTS FOR THIS SITE DO NOT INCLUDE A SPECIFIED AREA FOR THE LOCATION OF UTILITIES. CONSTRUCTION CONTRACTOR MUST FIELD VERIFY THE APPROPRIATENESS OF ALL PROPOSED UTILITY ROUTES
2. ANTENNAS AND MOUNTS OMITTED FOR CLARITY.
3. GC TO REFER TO FINAL UTILITY COORDINATION DOCUMENT FOR ALL MEET ME POINTS AND ROUTING DETAILS.



UTILITY ROUTE PLAN — 1

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

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

ELECTRICAL NOTES — NO SCALE — 2

AERIAL VIEW — NO SCALE — 3

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STATE OF CONNECTICUT — LICENSED PROFESSIONAL ENGINEER — PEN.0028997
09/29/2022

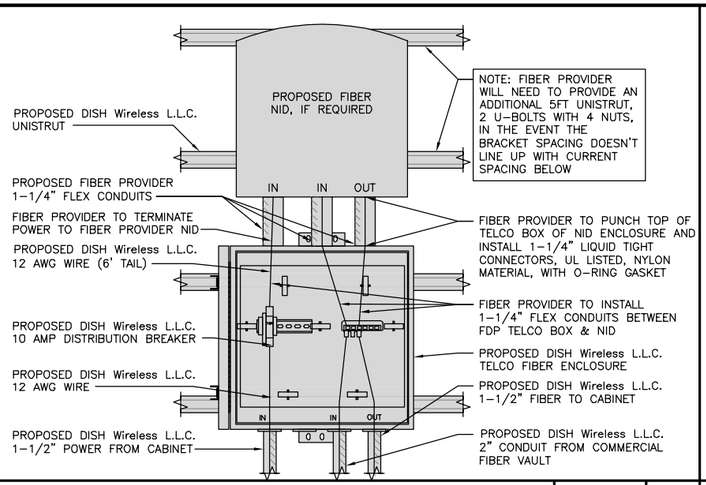
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

A&E PROJECT NUMBER
302485-14102547

DISH Wireless L.L.C. PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
ELECTRICAL/FIBER ROUTE PAN AND NOTES

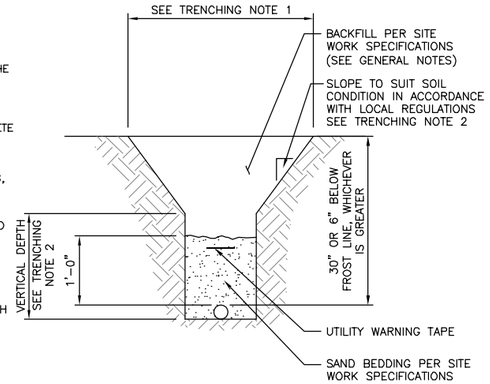
SHEET NUMBER
E-1



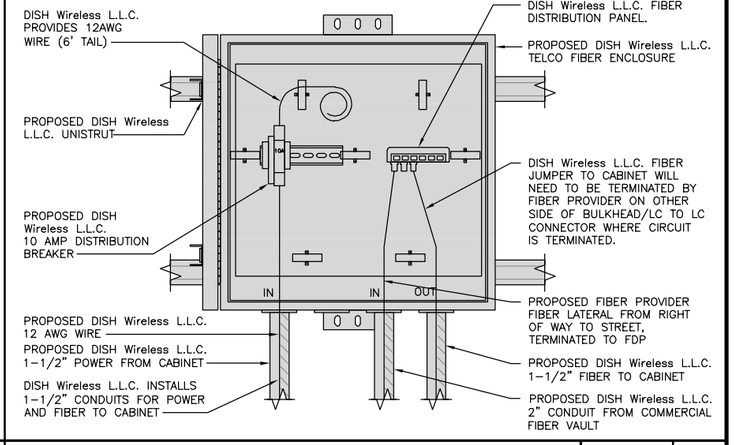
LIT TELCO BOX – INTERIOR WIRING LAYOUT (OPTIONAL) | NO SCALE | 1

TRENCHING NOTES

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



TYPICAL UNDERGROUND TRENCH DETAIL | NO SCALE | 2



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

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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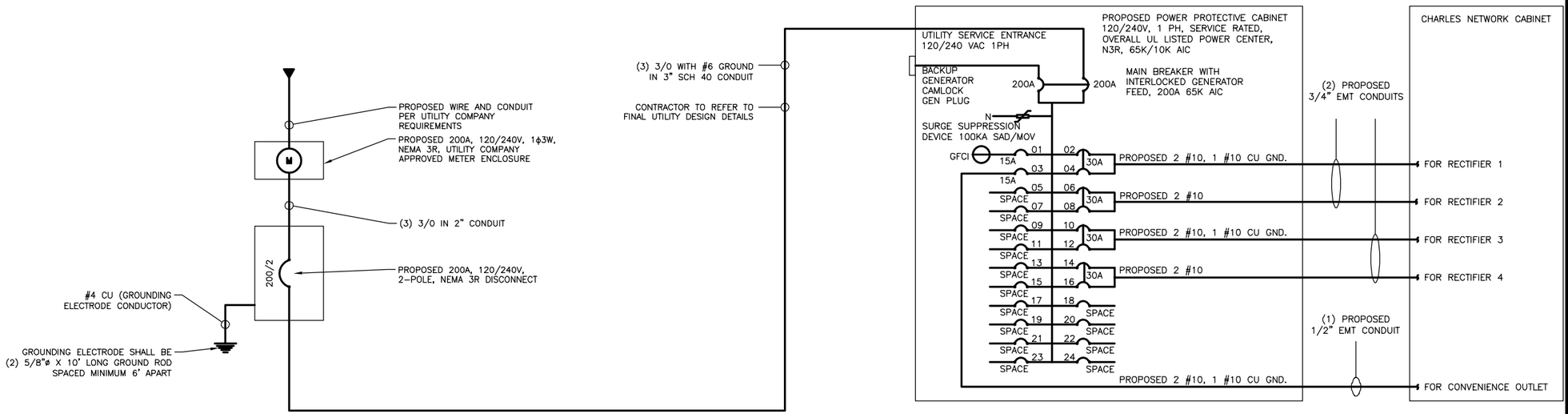
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER
E-2



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

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

PPC ONE-LINE DIAGRAM

NO SCALE | 1

PROPOSED CHARLES PANEL SCHEDULE

LOAD SERVED	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	TRIP	CKT #	PHASE	CKT #	TRIP	VOLT AMPS (WATTS) L1	VOLT AMPS (WATTS) L2	LOAD SERVED
PPC GFCI OUTLET	180		15A	1	A	2	30A	2000		ABB/GE INFINITY RECTIFIER 1
CHARLES GFCI OUTLET		180	15A	3	B	4			2000	
-SPACE-				5	A	6	30A	2000		ABB/GE INFINITY RECTIFIER 2
-SPACE-				7	B	8			2000	
-SPACE-				9	A	10	30A	2000		ABB/GE INFINITY RECTIFIER 3
-SPACE-				11	B	12			2000	
-SPACE-				13	A	14	30A	2000		ABB/GE INFINITY RECTIFIER 4
-SPACE-				15	B	16			2000	
-SPACE-				17	A	18				-SPACE-
-SPACE-				19	B	20				-SPACE-
-SPACE-				21	A	22				-SPACE-
-SPACE-				23	B	24				-SPACE-
VOLTAGE AMPS	180	180						8000	8000	
200A MCB, 1ϕ, 24 SPACE, 120/240V			L1		L2					
MB RATING: 65,000 AIC			8180		8180		VOLTAGE AMPS			
			69		69		AMPS			
			69				MAX AMPS			
			87				MAX 125%			

PANEL SCHEDULE

NO SCALE | 2

NOT USED

NO SCALE | 3

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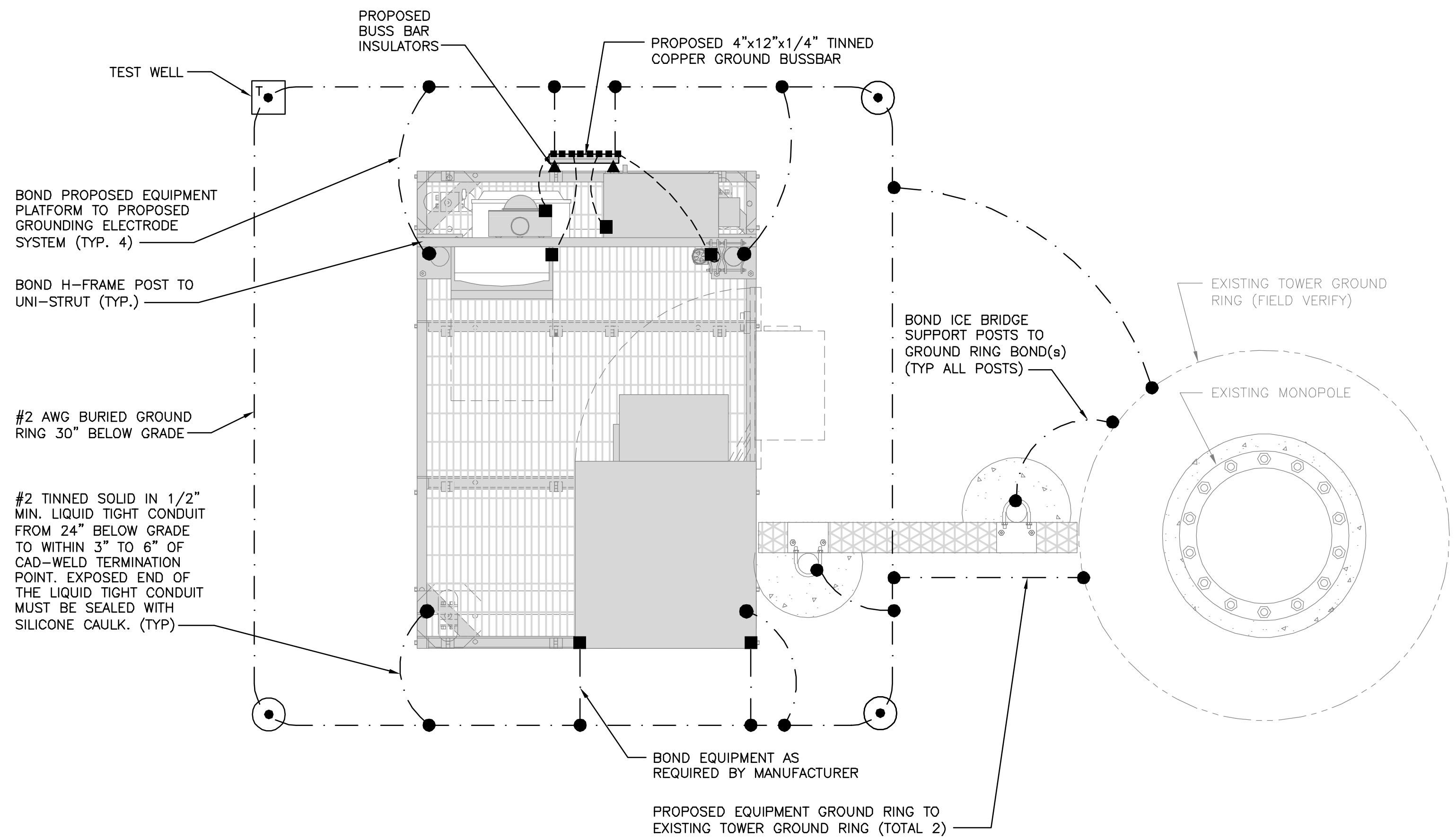
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
ELECTRICAL ONE-LINE AND PANEL SCHEDULE

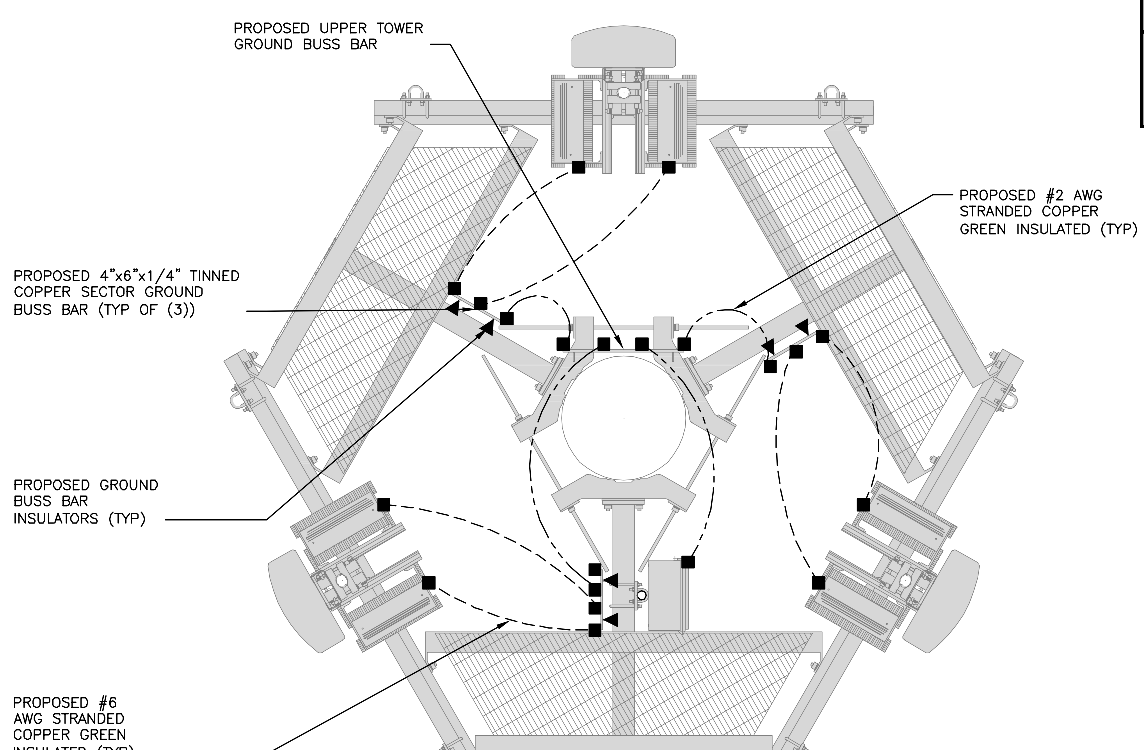
SHEET NUMBER
E-3



TYPICAL EQUIPMENT GROUNDING PLAN | NO SCALE | 1

NOTES

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



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2

GROUNDING LEGEND

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

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 5/8" 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.

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

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

(L) 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.

(M) 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.

(N) 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

(P) 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.

(Q) 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

(R) 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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5701 SOUTH SANTA FE DRIVE
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RFDS REV #: 1

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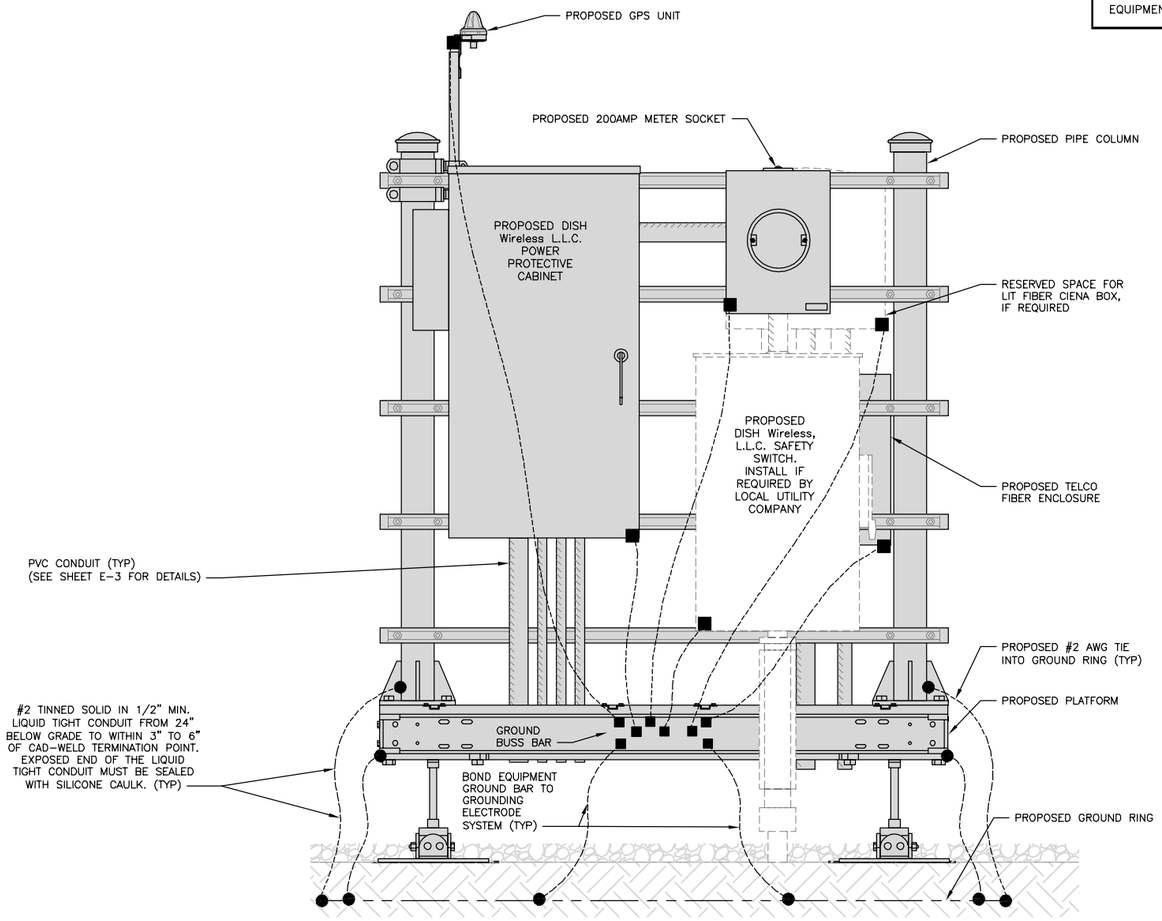
DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
GROUNDING PLAN AND NOTES

SHEET NUMBER
G-1

NOTES

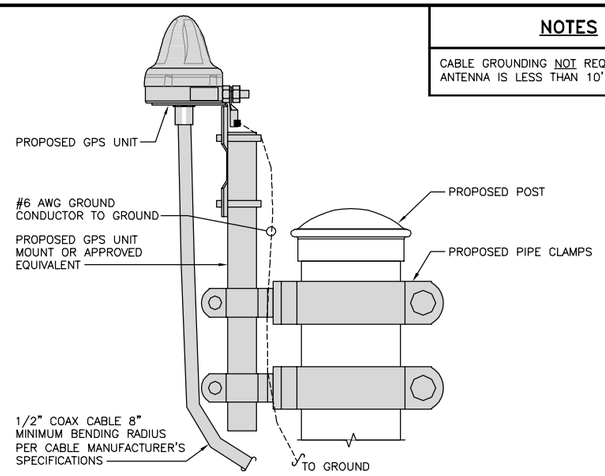
EQUIPMENT CABINET OMITTED FOR CLARITY



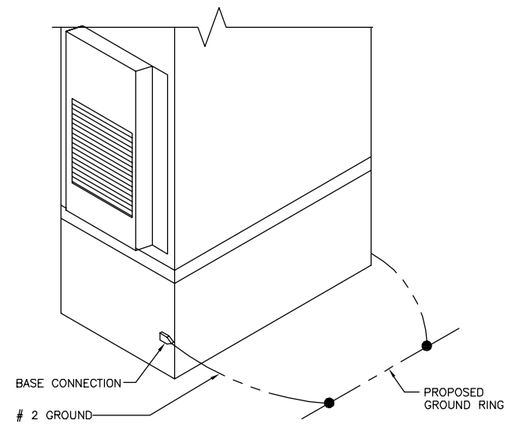
H-FRAME GROUNDING DETAIL | NO SCALE | 1

NOTES

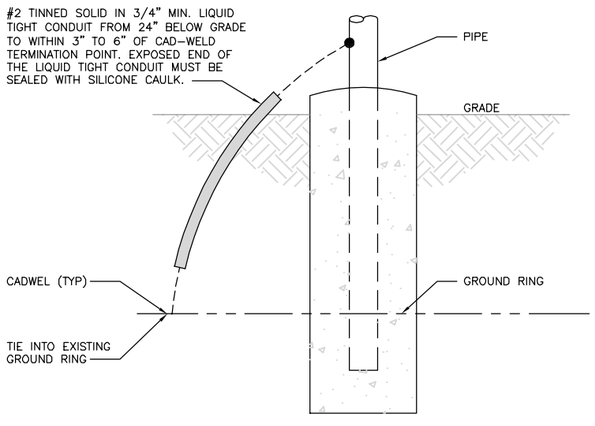
CABLE GROUNDING NOT REQUIRED WHEN ANTENNA IS LESS THAN 10' FROM CABINET



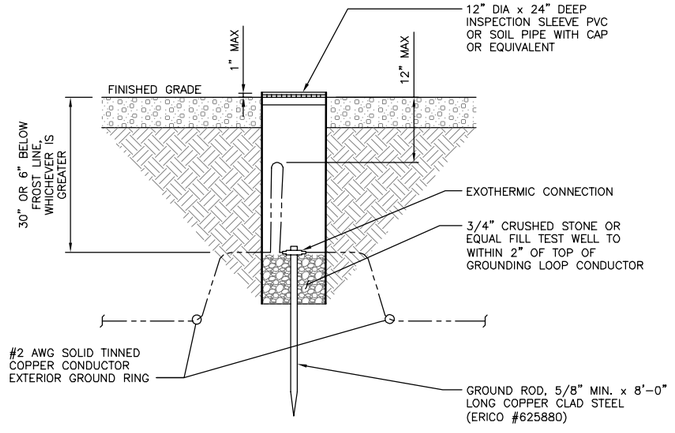
TYPICAL GPS UNIT GROUNDING | NO SCALE | 2



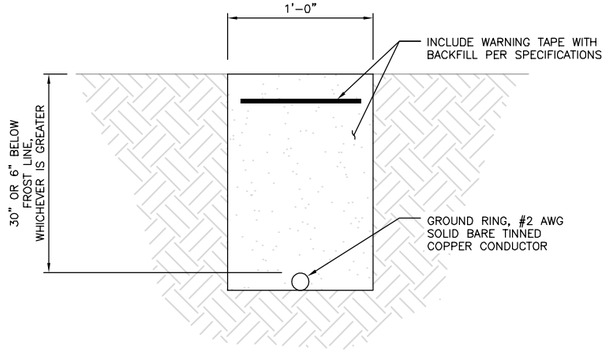
OUTDOOR CABINET GROUNDING | NO SCALE | 3



TRANSITIONING GROUND DETAIL | NO SCALE | 4



TYPICAL TEST GROUND ROD WITH INSPECTION SLEEVE | NO SCALE | 5



TYPICAL GROUND RING TRENCH | NO SCALE | 6

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8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615
(919) 657-9131

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BIW	BIW

RFDS REV #: 1

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09/29/2022

A&E PROJECT NUMBER

302485-14102547

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE

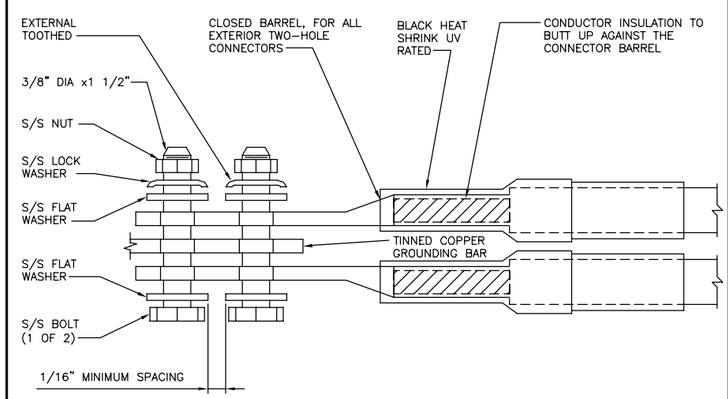
GROUNDING DETAILS

SHEET NUMBER

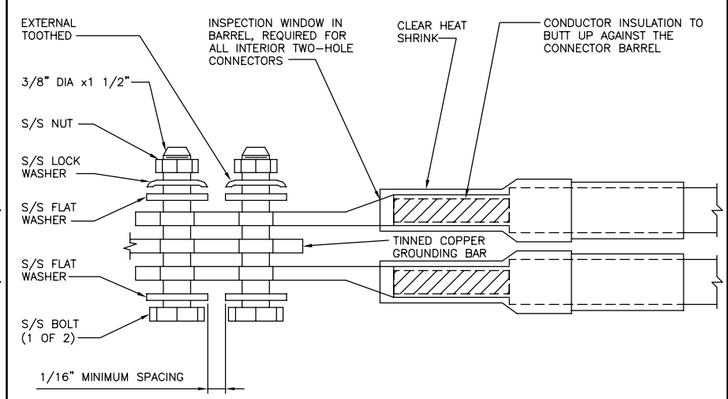
G-2

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

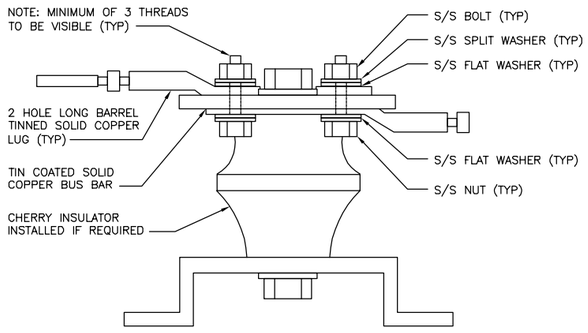
TYPICAL GROUNDING NOTES | NO SCALE | 1



TYPICAL EXTERIOR TWO HOLE LUG | NO SCALE | 2



TYPICAL INTERIOR TWO HOLE LUG | NO SCALE | 3



LUG DETAIL | NO SCALE | 4

NOT USED | NO SCALE | 5

NOT USED | NO SCALE | 6

NOT USED | NO SCALE | 7

NOT USED | NO SCALE | 8

NOT USED | NO SCALE | 9

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MIDDLEFIELD, CT 06455

SHEET TITLE
GROUNDING DETAILS

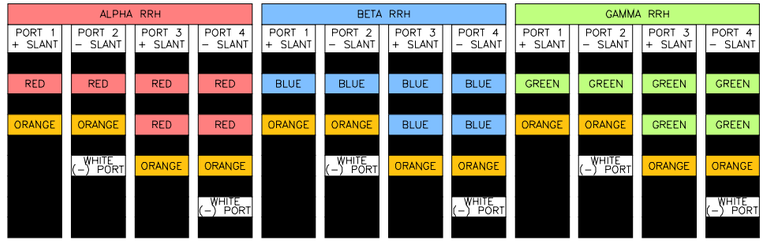
SHEET NUMBER
G-3

HYBRID/DISCREET CABLES

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

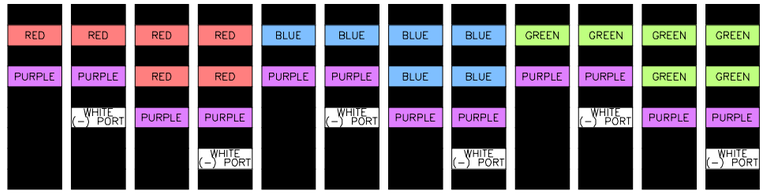
LOW-BAND RRH
(600 MHz N71 BASEBAND) +
(850 MHz N26 BAND) +
(700 MHz N29 BAND) - OPTIONAL PER MARKET

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



MID-BAND RRH
(AWS BANDS N66+N70)

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



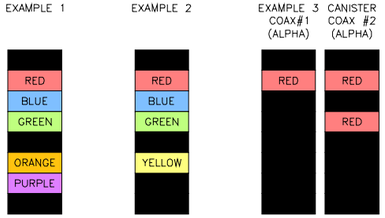
HYBRID/DISCREET CABLES

INCLUDE SECTOR BANDS BEING SUPPORTED ALONG WITH FREQUENCY BANDS.

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

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

EXAMPLE 3 - MAIN COAX WITH GROUND MOUNTED RRHs.

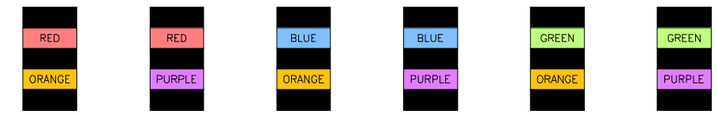


FIBER JUMPERS TO RRHs

LOW-BAND HHR FIBER CABLES HAVE SECTOR STRIPE ONLY.

POWER CABLES TO RRHs

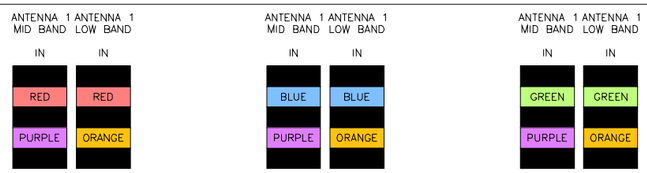
LOW-BAND RRH POWER CABLES HAVE SECTOR STRIPE ONLY



RET MOTORS AT ANTENNAS

RET CONTROL IS HANDLED BY THE MID-BAND RRH WHEN ONE SET OF RET PORTS EXIST ON ANTENNA.

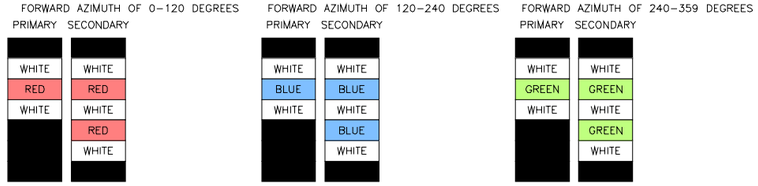
SEPARATE RET CABLES ARE USED WHEN ANTENNA PORTS PROVIDE INPUTS FOR BOTH LOW AND MID BANDS.



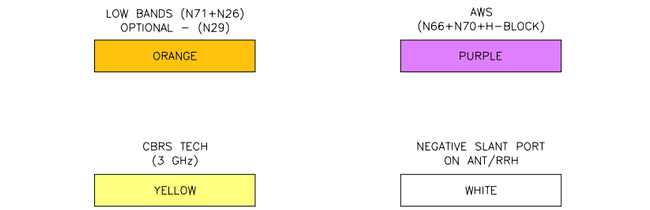
MICROWAVE RADIO LINKS

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.



RF CABLE COLOR CODES | NO SCALE | 1



COLOR IDENTIFIER | NO SCALE | 2

NOT USED | NO SCALE | 3

NOT USED | NO SCALE | 4

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DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
RF CABLE COLOR CODES

SHEET NUMBER
RF-1

LEGEND

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

ABBREVIATIONS

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

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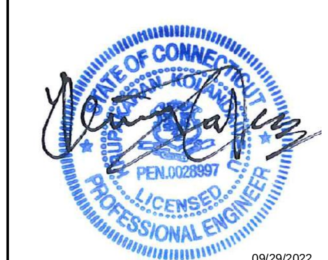

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A&E PROJECT NUMBER
302485–14102547

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
LEGEND AND ABBREVIATIONS

SHEET NUMBER
GN-1

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

SIGN PLACEMENT:

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

NOTES:

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

INFORMATION

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

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

Site ID: ______________________________

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

NOTICE

Transmitting Antenna(s)

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

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

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

Site ID: ______________________________

dish

THIS SIGN IS FOR REFERENCE PURPOSES ONLY

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dish

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dish

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RF SIGNAGE

dish wireless
5701 SOUTH SANTA FE DRIVE
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134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
RF SIGNAGE

SHEET NUMBER
GN-2

SITE ACTIVITY REQUIREMENTS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

GENERAL NOTES:

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

CONTRACTOR:GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

CARRIER:DISH Wireless L.L.C.

TOWER OWNER:TOWER OWNER

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

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

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

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

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

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

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

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

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

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

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

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

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

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DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BIW	BIW

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SUBMITTALS

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A&E PROJECT NUMBER

302485-14102547

DISH Wireless L.L.C.
PROJECT INFORMATION

BOHVN00152C

134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-3

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.

3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.

4. CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.

5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER 40 ksi

#5 BARS AND LARGER 60 ksi

6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

- CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"
- CONCRETE EXPOSED TO EARTH OR WEATHER:
- #6 BARS AND LARGER 2"
- #5 BARS AND SMALLER 1-1/2"
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
- SLAB AND WALLS 3/4"
- BEAMS AND COLUMNS 1-1/2"

7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

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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DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-4

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

2. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.

4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.

7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.

8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.

11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.

19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY). DO NOT ATTACH GROUNDING TO FIRE SPRINKLER SYSTEM PIPES.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."

2. STRUCTURAL STEEL ROLLED SHAPES, PLATES AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:

A. ASTM A-572, GRADE 50 – ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE

B. ASTM A-36 – ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.

C. ASTM A-500, GRADE B – HSS SECTION (SQUARE, RECTANGULAR, AND ROUND)

D. ASTM A-325, TYPE SC OR N – ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS

E. ASTM F-1554 07 – ALL ANCHOR BOLTS, UNLESS NOTED OTHERWISE

3. ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B695.

4. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES AND GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZATION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.

6. CONNECTIONS:

A. ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.

B. ALL WELDS SHALL BE INSPECTED VISUALLY. 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. REPAIR ALL WELDS AS NECESSARY.

C. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.

D. IT IS THE CONTRACTORS RESPONSIBILITY TO PROVIDE BURNING/WELDING PERMITS AS REQUIRED BY LOCAL GOVERNING AUTHORITY AND IF REQUIRED SHALL HAVE FIRE DEPARTMENT DETAIL FOR ANY WELDING ACTIVITY.

E. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNLESS NOTED OTHERWISE.

F. MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.

G. PRIOR TO FIELD WELDING GALVANIZING MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING ½" BEYOND ALL FIELD WELD SURFACES. AFTER WELD AND WELD INSPECTION IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.

H. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE REQUIRED DURING CONSTRUCTION UNTIL ALL CONNECTIONS ARE COMPLETE.

I. ANY FIELD CHANGES OR SUBSTITUTIONS SHALL HAVE PRIOR APPROVAL FROM THE ENGINEER, AND DISH NETWORK PROJECT MANAGER IN WRITING

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

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
8601 SIX FORKS ROAD, SUITE 540
RALEIGH, NC 27615
(919) 657-9131

DRAWN BY:	CHECKED BY:	APPROVED BY:
CT	BIW	BIW

RFDS REV #: 1

CONSTRUCTION DOCUMENTS

SUBMITTALS

REV	DATE	DESCRIPTION
A	06/27/2022	ISSUED FOR REVIEW
0	07/14/2022	ISSUED FOR CONSTRUCTION
1	09/29/2022	ISSUED FOR CONSTRUCTION

09/29/2022

A&E PROJECT NUMBER
302485-14102547

DISH Wireless L.L.C.
PROJECT INFORMATION
BOHVN00152C
134 KIKAPOO ROAD
MIDDLEFIELD, CT 06455

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-5

AMERICAN TOWER®
CORPORATION

Post Modification Structural Analysis Report

Structure	:	75 ft Monopole
ATC Asset Name	:	Mdfd - Middlefield
ATC Asset Number	:	302485
Engineering Number	:	14102547_C4_06
Proposed Carrier	:	DISH WIRELESS L.L.C.
Carrier Site Name	:	BOHVN00152C
Carrier Site Number	:	BOHVN00152C
Site Location	:	134 Kikapoo Road Middlefield, CT 06455-1334 41.5136, -72.7458
County	:	Middlesex
Date	:	December 13, 2022
Max Usage	:	95%
Analysis Result	:	Pass

Prepared By:

Matthew Reeves, CWI
Structural Engineer III

Reviewed

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a post-modification structural analysis performed on the 75 ft Monopole tower to reflect the change in loading by DISH WIRELESS L.L.C..

Supporting Documents

Tower Drawing:	Meyer Industries Job #AT&T Technologies Mapping by HTS Project #HTS071108, dated July 10, 2008
Foundation Drawing:	Southern New England Telephone Job #38920, dated October 28, 1983
Geotechnical Report:	S&ME Job #1261-08-261M, dated July 30, 2008
Modification:	ATC Project #13193668_C6_08, dated August 27, 2020 ATC Project #14102547_C4_06, dated September 23, 2022 (Pending)

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:	119 mph (3-second gust)
Basic Wind Speed w/ Ice:	50 mph (3-second gust) w/ 1.00" radial ice concurrent
Code(s):	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Crest Height (H):	309 ft
Crest Length (L):	422 ft
Spectral Response:	Ss = 0.21, S_1 = 0.06
Site Class:	D - Stiff Soil - Default

Wind load and Ice thickness have been reduced by applicable existing structure load modification factors in accordance with TIA-222-H, ANNEX-S

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 the pending modifications cited in the Supporting Documents table are not completed, the results of this analysis are no longer valid, and DISH WIRELESS L.L.C. should contact American Tower's Site Manager for further direction on how to proceed.

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/Reserved Loading

Elev.*	Qty	Equipment	Lines	Carrier
83.0’	1	10' Omni	(1) 1 5/8" Coax	SPOK HOLDINGS, INC.
	1	10' Omni	(1) 7/8" Coax	OTHER
80.0’	3	Ericsson Air 6449 B77D	-	AT&T MOBILITY
78.0’	1	Matsing MBA-3.2-H4-L4	(1) 0.39" (9.8mm) Cable (3) 0.41" (10.3mm) Fiber (8) 0.78" (19.7mm) 8 AWG 6 (8) 0.82" (20.8mm) 8 AWG 6 (2) 2" conduit (2) 3" conduit (14) 7/8" Coax	
	1	Raycap DC6-48-60-18-8C-EV		
	1	Raycap DC9-48-60-24-8C-EV		
	2	CCI DMP65R-BU8D		
	2	Ericsson RRUS 32 B2		
	2	Raycap DC6-48-60-18-8F (23.5" Height)		
	3	CCI HPA-65R-BUU-H8		
	3	Ericsson RRUS 32 B30		
	3	Ericsson RRUS 4478 B14		
	3	Quintel QD8616-7		
	4	Ericsson RRUS 4449 B5, B12		
	5	Ericsson RRUS 8843 B2, B66A		
	6	Kaelus DBC0051F3V51-2		
76.0’	3	Ericsson AIR 6419 B77G	-	
75.0’	1	Mount Reinforcement	-	
	1	Platform with Handrails		
63.0’	1	Platform with Handrails	(3) 1.99" (50.7mm) Hybrid	T-MOBILE
	3	Ericsson 4460 BAND 2/25		
	3	Ericsson 4480 BAND 71		
	3	Ericsson AIR 6419 B41		
	3	RFS APXVAALL24 43-U-NA20		
10.0’	1	Channel Master Type 120	(1) 0.28" (7mm) RG-6	SPOK HOLDINGS, INC.

(If table breaks across pages, please see previous page for data in merged cells)

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

Proposed Carrier Final Loading

Elev.*	Qty	Equipment	Lines	Carrier
53.0’	1	Raycap RDIDC-9181-PF-48	(1) 1.41" (35.8mm) Hybrid	DISH WIRELESS L.L.C.
	1	SitePro1 SNP8HR-396 Platform with Handrails		
	3	Fujitsu TA08025-B604		
	3	Fujitsu TA08025-B605		
	3	JMA Wireless MX08FRO665-21		

(If table breaks across pages, please see previous page for data in merged cells)

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.

Structure Usages

Structural Component	Usage	Pass/Fail
Anchor Rods	14%	Pass
Base Plate	61%	Pass
Shaft	74%	Pass
Reinforcement	95%	Pass

Foundation Reactions & Usages

Reaction Component	Analysis Reactions	Usage
Moment (k-ft)	1459.9	95%
Axial (k)	29.3	2%
Shear (k)	26.5	6%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Antenna Deflection, Twist, and Sway

Elev.	Antenna	Carrier	Deflection	Twist	Sway [Rotation]
53.0’	Raycap RDIDC-9181-PF-48	DISH WIRELESS L.L.C.	0.401’	N/A	0.780°
	Fujitsu TA08025-B605				
	Fujitsu TA08025-B604				
	JMA Wireless MX08FRO665-21				
10.0’	Channel Master Type 120	SPOK HOLDINGS, INC.	0.016’	N/A	0.180°

Deflection, Twist and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H

Standard Conditions

All engineering services performed by A.T. Engineering Services LLC 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 Services LLC

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

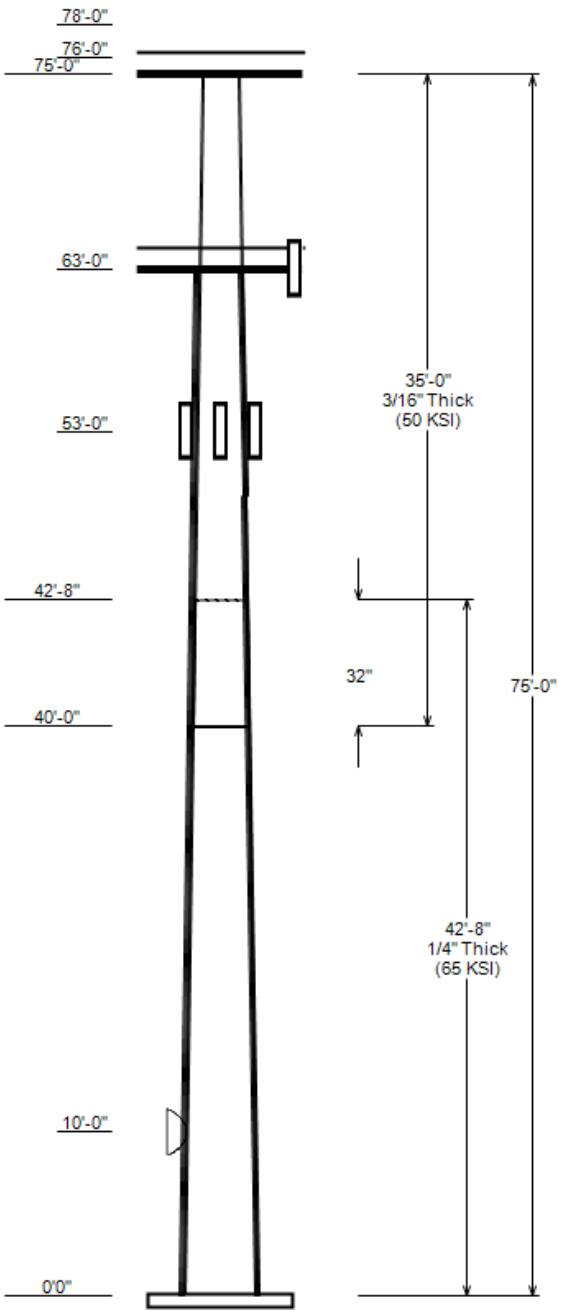
All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

Unless explicitly agreed by both the client and A.T. Engineering Services LLC, 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 Services LLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

ANALYSIS PARAMETERS

Nominal Wind:	116 mph	**Ice Wind:**	49 mph w/ 0.85" ice	**Service Wind:**	60 mph
Risk Category:	II	**Exposure:**	B	**S_s:** 0.207	**S_1:** 0.055
Topo Category:	0	**Topo Factor:**	Method 2	**Topo Feature:**	Flat Topped Ridge
Structure Height:	75 ft	**Base Elevation:**	0.00 ft	**Structure Type:**	Taper
Base Diameter:	27.97 in	**Base Rotation:**	0°	**Taper:**	0.1780 (in/ft)



POLE SECTION PROPERTIES

Section	Length (ft)	Flat Diameter (in) Top	Flat Diameter (in) Bottom	Thick (in)	Joint Type	Joint Length (in)	Pole Shape	Yield Strength (ksi)
1	42.667	20.38	27.97	0.250		0.000	12 Sides	65
2	35.000	15.00	21.23	0.188	Slip Joint	32.000	12 Sides	50

DISCRETE APPURTENANCE

Elev (ft)	Description
83.0	(1) Generic 10' Omni
83.0	(1) Generic 10' Omni
80.0	(3) Ericsson Air 6449 B77D
78.0	(6) Kaelus DBC0051F3V51-2
78.0	(2) Raycap DC6-48-60-18-8F (23.5"
78.0	(5) Ericsson RRUS 8843 B2, B66A
78.0	(4) Ericsson RRUS 4449 B5, B12
78.0	(3) Ericsson RRUS 4478 B14
78.0	(3) Ericsson RRUS 32 B30
78.0	(2) Ericsson RRUS 32 B2
78.0	(1) Raycap DC6-48-60-18-8C-EV
78.0	(1) Raycap DC9-48-60-24-8C-EV
78.0	(3) CCI HPA-65R-BUU-H8
78.0	(1) Matsing MBA-3.2-H4-L4
78.0	(2) CCI DMP65R-BU8D
78.0	(3) Quintel QD8616-7
76.0	(3) Ericsson AIR 6419 B77G
75.0	(1) Generic Mount Reinforcement
75.0	(1) Generic Round Platform with Ha
63.0	(3) Ericsson 4460 BAND 2/25
63.0	(3) Ericsson 4480 BAND 71
63.0	(3) Ericsson AIR 6419 B41
63.0	(3) RFS APXVAALL24 43-U-NA20
63.0	(1) Generic Round Platform with Ha
53.0	(1) Raycap RDIDC-9181-PF-48
53.0	(3) Fujitsu TA08025-B605
53.0	(3) Fujitsu TA08025-B604
53.0	(3) JMA Wireless MX08FRO665-21
53.0	(1) SitePro1 SNP8HR-396 Round Plat
10.0	(1) Channel Master Type 120

LINEAR APPURTENANCE

Elev To (ft)	Description
83.0	(1) 7/8" Coax
83.0	(1) 1 5/8" Coax
78.0	(8) 7/8" Coax
78.0	(6) 7/8" Coax
78.0	(2) 3" conduit
78.0	(2) 2" conduit
78.0	(8) 0.82" (20.8mm) 8 AWG 6
78.0	(8) 0.78" (19.7mm) 8 AWG 6
78.0	(3) 0.41" (10.3mm) Fiber
78.0	(1) 0.39" (9.8mm) Cable
67.5	(1) #20 w/ Angle Brackets
67.5	(1) #20 w/ Angle Brackets
67.5	(1) #20 w/ Angle Brackets
67.5	(1) #20 w/ Angle Brackets
63.0	(3) 1.99" (50.7mm) Hybrid
53.0	(1) 1.41" (35.8mm) Hybrid
10.0	(1) 0.28" (7mm) RG-6

DISH SERVICEABILITY

Load Case	Elevation (ft)	Deflection (in)	Rotation (°)
1.0D + 1.0W	10.00	0.194	0.181

LOAD CASE KEY

1.2D + 1.0W	115.99 mph Wind with No Ice
0.9D + 1.0W	115.99 mph Wind with No Ice (Reduc
1.2D + 1.0Di + 1.0Wi	48.73 mph Wind with 0.85" Radial I
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

GLOBAL BASE REACTIONS

Load Case	Moment (kip-ft)	Axial (kip)	Shear (kip)
1.2D + 1.0W	1459.93	29.34	26.46
0.9D + 1.0W	1446.97	21.98	26.44
1.2D + 1.0Di + 1.0Wi	362.63	39.80	6.46
1.2D + 1.0Ev + 1.0Eh	60.70	29.23	0.95
0.9D - 1.0Ev + 1.0Eh	60.02	20.11	0.95
1.0D + 1.0W	349.41	24.52	6.40

ANALYSIS PARAMETERS

Location:	Middlesex County,CT	**Height:**	75 ft
Type and Shape:	Taper, 12 Sides	**Base Diameter:**	27.97 in
Manufacturer:	ITT Meyer	**Top Diameter:**	15.00 in
K_d (non-service):	0.95	**Taper:**	0.1780 in/ft
K_e:	0.97	**Rotation:**	0.000º

ICE & WIND PARAMETERS

Risk Category:	II	**Design Wind Speed:**	116 mph
Exposure Category:	B	**Design Wind Speed w/ Ice:**	49 mph
Topo Factor Procedure:	Method 2	**Design Ice Thickness:**	0.85 in
		Service Wind Speed:	60 mph
		HMSL:	770.00 ft
Crest Height(H):	309 ft	**Distance from Apex (x):**	164 ft
Crest Length(L):	422 ft	**Upwind/Downwind:**	Upwind
Feature:	Flat Topped Ridge		

SEISMIC PARAMETERS

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil		**Period Based on Rayleigh Method (sec):**		1.51
T_L (sec):	6	**P:**	1	**C_s:**	0.039
S_s:	0.207	**S_1:**	0.055	**C_s Max:**	0.039
F_a:	1.600	**F_v:**	2.400	**C_s Min:**	0.030
S_{ds}:	0.221	**S_{d1}:**	0.088		

LOAD CASES

1.2D + 1.0W	115.99 mph Wind with No Ice
0.9D + 1.0W	115.99 mph Wind with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	48.73 mph Wind with 0.85" Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

SHAFT SECTION PROPERTIES

							Bottom						Top						
Section	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	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)
1-12	42.67	0.2500	65		0.00	2,796	27.97	0.003	22.31	2,188.6	27.30	111.88	20.38	42.67	16.20	837.9	19.16	81.51	0.1779
2-12	35.00	0.1875	50	Slip	32.00	1,289	21.23	40.000	12.70	717.8	27.66	113.22	15.00	75.00	8.94	250.5	18.76	80.00	0.1779
			Total Shaft Weight			**4,085**													

DISCRETE APPURTENANCE PROPERTIES

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
83.00	Generic 10' Omni	1	1.00	0.000	25.00	3.000	1.00	74.08	5.327	1.00
83.00	Generic 10' Omni	1	1.00	1.000	25.00	3.000	1.00	74.08	5.327	1.00
80.00	Ericsson Air 6449 B77D	3	0.75	0.000	81.60	4.028	0.65	148.10	4.917	0.65
78.00	Kaelus DBC0051F3V51-2	6	0.75	0.000	12.40	0.413	0.50	22.01	0.698	0.50
78.00	Raycap DC6-48-60-18-8F (23.5"	2	0.75	0.000	20.00	1.260	0.50	54.05	1.686	0.50
78.00	Ericsson RRUS 8843 B2, B66A	5	0.75	0.000	72.00	1.639	0.50	111.63	2.185	0.50
78.00	Ericsson RRUS 4449 B5, B12	4	0.75	0.000	71.00	1.969	0.50	112.67	2.572	0.50
78.00	Ericsson RRUS 4478 B14	3	0.75	0.000	59.40	2.021	0.50	99.08	2.631	0.50
78.00	Ericsson RRUS 32 B2	2	0.75	0.000	53.00	2.743	0.50	100.56	3.499	0.50
78.00	Ericsson RRUS 32 B30	3	0.75	0.000	60.00	2.743	0.50	107.57	3.499	0.50
78.00	Raycap DC6-48-60-18-8C-EV	1	0.75	0.000	16.00	4.788	0.50	99.50	5.739	0.50
78.00	Raycap DC9-48-60-24-8C-EV	1	0.75	0.000	16.00	4.788	0.50	99.48	5.739	0.50
78.00	CCI HPA-65R-BUU-H8	3	0.75	0.000	68.00	12.976	0.67	234.15	15.291	0.67
78.00	Matsing MBA-3.2-H4-L4	1	0.75	0.000	130.00	15.211	1.00	440.20	17.075	1.00
78.00	CCI DMP65R-BU8D	2	0.75	0.000	95.70	17.871	0.63	315.48	20.254	0.63
78.00	Quintel QD8616-7	3	0.75	0.000	150.00	18.815	0.65	396.23	21.205	0.65
76.00	Ericsson AIR 6419 B77G	3	0.75	0.000	66.10	3.797	0.65	128.84	4.649	0.65
75.00	Generic Mount Reinforcement	1	1.00	0.000	200.00	7.500	1.00	325.14	12.341	1.00
75.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3547.35	43.006	1.00
63.00	Generic Round Platform with Ha	1	1.00	0.000	2500.00	27.200	1.00	3541.29	42.915	1.00
63.00	RFS APXVAALL24 43-U-NA20	3	0.75	0.000	122.80	20.243	0.63	373.21	22.627	0.63
63.00	Ericsson AIR 6419 B41	3	0.75	0.000	83.30	6.322	0.63	180.60	7.409	0.63
63.00	Ericsson 4480 BAND 71	3	0.75	0.000	81.00	2.878	0.67	129.94	3.600	0.67
63.00	Ericsson 4460 BAND 2/25	3	0.75	0.000	109.00	2.564	0.67	165.82	3.242	0.67
53.00	JMA Wireless MX08FRO665-21	3	0.75	0.000	64.50	12.489	0.64	228.13	14.278	0.64
53.00	Raycap RDIDC-9181-PF-48	1	0.75	0.000	21.90	1.867	1.00	58.13	2.440	1.00
53.00	Fujitsu TA08025-B605	3	0.75	0.000	75.00	1.962	0.50	114.88	2.548	0.50
53.00	Fujitsu TA08025-B604	3	0.75	0.000	63.90	1.962	0.50	101.03	2.548	0.50
53.00	SitePro1 SNP8HR-396 Round Plat	1	1.00	0.000	1786.00	27.200	1.00	2578.12	39.264	1.00
10.00	Channel Master Type 120	1	1.00	0.000	126.00	20.190	0.93	238.82	21.841	0.93
Totals	**Row Count: 30**	**71**			**11,655.50**			**20,380.00**		

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg): 0.00

Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/ Row	Distance Between Rows(in)	Distance Between Cols(in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
0.00	83.00	1	1 5/8" Coax	1.98	0.82	N	0	0	0	0	0	N	SPOK HOLDINGS, INC.
0.00	83.00	1	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	OTHER
0.00	78.00	8	0.82" (20.8mm) 8 AWG	0.82	0.62	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	78.00	8	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	78.00	8	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	78.00	6	7/8" Coax	1.09	0.33	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	78.00	3	0.41" (10.3mm) Fiber	0.41	0.09	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	78.00	2	2" conduit	2.38	3.65	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	78.00	2	3" conduit	3.5	7.58	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	78.00	1	0.39" (9.8mm) Cable	0.39	0.07	N	0	0	0	0	0	N	AT&T MOBILITY
0.00	67.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	0	2.19	Y	
0.00	67.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	270	2.19	Y	
0.00	67.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	180	2.19	Y	
0.00	67.50	1	#20 w/ Angle Brackets	4	4.68	N	1	0	0	90	2.19	Y	

LINEAR APPURTENANCE PROPERTIES

Load Case Azimuth (deg): 0.00

Elev From (ft)	Elev To (ft)	Qty	Description	Diameter (in)	Weight (lb/ft)	Flat	Max/ Row	Distance Between Rows(in)	Distance Between Cols(in)	Azimuth (deg)	Distance From Face (in)	Exposed To Wind	Carrier
0.00	63.00	3	1.99" (50.7mm) Hybrid	1.99	1.9	N	0	0	0	0	0	N	T-MOBILE
0.00	53.00	1	1.41" (35.8mm) Hybrid	1.41	1.66	N	1	0	0	45	1	N	DISH WIRELESS L.L.C.
0.00	10.00	1	0.28" (7mm) RG-6	0.28	0.03	N	0	0	0	0	0	N	SPOK HOLDINGS, INC.

ADDITIONAL STEEL

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Intermediate Connectors Offset (in)	Bracket Type	Spacing (in)	Length (in)	Connectors	Continuation?
0.00	49.04	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	30.00	3.13	5/8" A36 U-Bolt	N
49.04	62.94	4	SOL #20 All Thread Bar	80	2.19	6" Angle Bracket	30.00	3.31	5/8" A36 U-Bolt	Y

SEGMENT PROPERTIES

Seg Top Elev (ft)	Description *(Max Length: 5 ft)*	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)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.2500	27.970	22.315	2,188.60	27.30	111.88	74.9	151.2	0.0	0.0	19.640	2,989.30	0.0
5.00		0.2500	27.080	21.598	1,984.50	26.35	108.32	76	141.6	0.0	373.6	19.640	2,839.00	334.0
10.00		0.2500	26.191	20.882	1,793.60	25.39	104.76	77	132.3	0.0	361.4	19.640	2,692.60	334.0
15.00		0.2500	25.301	20.166	1,615.30	24.44	101.20	78.1	123.3	0.0	349.2	19.640	2,550.10	334.0
20.00		0.2500	24.411	19.450	1,449.30	23.48	97.65	79.1	114.7	0.0	337.0	19.640	2,411.50	334.0
25.00		0.2500	23.522	18.734	1,295.00	22.53	94.09	80.1	106.4	0.0	324.8	19.640	2,276.70	334.0
30.00		0.2500	22.632	18.018	1,152.10	21.58	90.53	81.2	98.3	0.0	312.6	19.640	2,145.90	334.0
35.00		0.2500	21.742	17.301	1,020.10	20.62	86.97	81.9	90.6	0.0	300.5	19.640	2,018.90	334.0
40.00	Bot - Section 2	0.2500	20.853	16.585	898.60	19.67	83.41	81.9	83.2	0.0	288.3	19.640	1,895.80	334.0
42.67	Top - Section 1	0.1875	20.753	12.417	670.30	26.98	110.68	60.7	62.4	0.0	262.7	19.640	1,882.30	178.1
45.00		0.1875	20.338	12.166	630.50	26.38	108.47	61.1	59.9	0.0	97.6	19.640	1,826.40	155.9
49.04	Reinf. Top Reinf Bottom	0.1875	19.619	11.732	565.40	25.36	104.64	61.9	55.7	0.0	164.3	19.640	1,731.60	269.9
50.00		0.1875	19.449	11.629	550.70	25.11	103.73	62.1	54.7	0.0	38.2	19.640	1,709.50	64.1
53.00		0.1875	18.915	11.307	506.10	24.35	100.88	62.6	51.7	0.0	117.1	19.640	1,641.10	200.4
55.00		0.1875	18.559	11.092	477.80	23.84	98.98	63	49.7	0.0	76.2	19.640	1,596.40	133.6
60.00		0.1875	17.669	10.555	411.70	22.57	94.24	63	45.0	0.0	184.1	19.640	1,487.20	334.0
62.94	Reinf. Top	0.1875	17.146	10.239	375.80	21.82	91.45	63	42.3	0.0	104.0	19.640	1,424.80	196.4
63.00		0.1875	17.135	10.232	375.10	21.81	91.39	63	42.3	0.0	2.1			
65.00		0.1875	16.780	10.017	352.00	21.30	89.49	63	40.5	0.0	68.9			
70.00		0.1875	15.890	9.480	298.40	20.03	84.75	63	36.3	0.0	165.9			
75.00		0.1875	15.000	8.943	250.50	18.76	80.00	63	32.3	0.0	156.7			
										Totals:	**4,085.2**			**4,204.4**

CALCULATED FORCES

Load Case: 1.2D + 1.0W — 115.99 mph Wind with No Ice — 18 Iterations

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

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	-29.34	-26.46	0.00	-1,459.9	0.00	1,459.93	1,505.06	391.62	1,024.09	849.62	0	0	0.741
5.00	-27.94	-25.73	0.00	-1,327.6	0.00	1,327.62	1,476.97	379.05	959.43	806.77	0.21	-0.38	0.692
10.00	-26.43	-24.03	0.00	-1,199.0	0.00	1,198.99	1,447.54	366.48	896.88	764.23	0.81	-0.76	0.641
15.00	-25.09	-23.33	0.00	-1,078.8	0.00	1,078.83	1,416.77	353.91	836.44	722.09	1.8	-1.12	0.593
20.00	-23.79	-22.63	0.00	-962.2	0.00	962.21	1,384.66	341.35	778.10	680.42	3.16	-1.47	0.544
25.00	-22.51	-21.95	0.00	-849.0	0.00	849.05	1,351.21	328.78	721.87	639.28	4.88	-1.8	0.494
30.00	-21.26	-21.28	0.00	-739.3	0.00	739.30	1,316.42	316.21	667.76	598.76	6.94	-2.12	0.444
35.00	-20.04	-20.59	0.00	-632.9	0.00	632.91	1,275.29	303.64	615.75	556.74	9.31	-2.41	0.394
40.00	-18.87	-19.96	0.00	-530.0	0.00	529.95	1,222.50	291.07	565.84	511.35	11.99	-2.68	0.345
42.67	-18.11	-19.59	0.00	-476.7	0.00	476.72	678.31	167.62	325.21	284.06	13.53	-2.82	0.465
45.00	-17.60	-19.16	0.00	-431.0	0.00	430.99	669.39	164.24	312.22	274.62	14.94	-2.93	0.426
49.04	-16.75	-18.78	0.00	-353.6	0.00	353.59	653.49	158.38	290.35	258.44	17.5	-3.11	0.360

CALCULATED FORCES

50.00	-16.54	-18.53	0.00	-335.6	0.00	335.56	649.63	156.99	285.27	254.63	18.13	-3.16	0.344
53.00	-13.18	-15.27	0.00	-280.0	0.00	279.96	637.34	152.64	269.68	242.83	20.15	-3.27	0.289
55.00	-12.78	-14.85	0.00	-249.4	0.00	249.42	628.90	149.74	259.53	235.01	21.54	-3.34	0.262
60.00	-11.78	-14.33	0.00	-175.2	0.00	175.18	598.44	142.49	235.01	212.69	25.12	-3.49	0.196
62.94	-11.21	-14.13	0.00	-133.0	0.00	133.04	580.54	138.22	221.16	200.09	27.29	-3.55	0.156
62.94	-11.21	-14.13	0.00	-133.0	0.00	133.04	580.54	138.22	221.16	200.09	27.29	-3.55	0.695
63.00	-7.02	-9.72	0.00	-132.2	0.00	132.19	580.17	138.14	220.88	199.84	27.34	-3.56	0.679
65.00	-6.78	-9.39	0.00	-112.8	0.00	112.75	567.99	135.24	211.71	191.49	28.87	-3.74	0.606
70.00	-6.28	-8.97	0.00	-65.8	0.00	65.78	537.53	127.98	189.62	171.39	32.99	-4.1	0.400
75.00	0.00	-8.48	0.00	-21.0	0.00	20.95	507.08	120.73	168.75	152.41	37.42	-4.31	0.142

CALCULATED FORCES

Load Case: 0.9D + 1.0W — 115.99 mph Wind with No Ice (Reduced DL) — 18 Iterations

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

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	-21.98	-26.44	0.00	-1,447.0	0.00	1,446.97	1,505.06	391.62	1,024.09	849.62	0	0	0.732
5.00	-20.89	-25.65	0.00	-1,314.8	0.00	1,314.79	1,476.97	379.05	959.43	806.77	0.21	-0.38	0.682
10.00	-19.73	-23.92	0.00	-1,186.5	0.00	1,186.52	1,447.54	366.48	896.88	764.23	0.81	-0.75	0.632
15.00	-18.70	-23.18	0.00	-1,066.9	0.00	1,066.93	1,416.77	353.91	836.44	722.09	1.78	-1.11	0.584
20.00	-17.69	-22.45	0.00	-951.1	0.00	951.06	1,384.66	341.35	778.10	680.42	3.13	-1.45	0.535
25.00	-16.71	-21.75	0.00	-838.8	0.00	838.80	1,351.21	328.78	721.87	639.28	4.83	-1.78	0.486
30.00	-15.75	-21.05	0.00	-730.1	0.00	730.07	1,316.42	316.21	667.76	598.76	6.86	-2.09	0.436
35.00	-14.82	-20.35	0.00	-624.8	0.00	624.82	1,275.29	303.64	615.75	556.74	9.22	-2.38	0.387
40.00	-13.93	-19.72	0.00	-523.0	0.00	523.05	1,222.50	291.07	565.84	511.35	11.86	-2.65	0.339
42.67	-13.36	-19.35	0.00	-470.5	0.00	470.48	678.31	167.62	325.21	284.06	13.38	-2.79	0.456
45.00	-12.97	-18.91	0.00	-425.3	0.00	425.33	669.39	164.24	312.22	274.62	14.78	-2.9	0.418
49.04	-12.33	-18.53	0.00	-349.0	0.00	348.95	653.49	158.38	290.35	258.44	17.31	-3.08	0.353
50.00	-12.17	-18.28	0.00	-331.2	0.00	331.16	649.63	156.99	285.27	254.63	17.93	-3.12	0.337
53.00	-9.69	-15.06	0.00	-276.3	0.00	276.33	637.34	152.64	269.68	242.83	19.93	-3.23	0.284
55.00	-9.38	-14.64	0.00	-246.2	0.00	246.20	628.90	149.74	259.53	235.01	21.3	-3.3	0.256
60.00	-8.64	-14.13	0.00	-173.0	0.00	173.02	598.44	142.49	235.01	212.69	24.85	-3.45	0.191
62.94	-8.21	-13.94	0.00	-131.5	0.00	131.46	580.54	138.22	221.16	200.09	26.99	-3.51	0.152
62.94	-8.21	-13.94	0.00	-131.5	0.00	131.46	580.54	138.22	221.16	200.09	26.99	-3.51	0.681
63.00	-5.13	-9.60	0.00	-130.6	0.00	130.63	580.17	138.14	220.88	199.84	27.04	-3.51	0.667
65.00	-4.94	-9.26	0.00	-111.4	0.00	111.44	567.99	135.24	211.71	191.49	28.55	-3.7	0.595
70.00	-4.56	-8.84	0.00	-65.1	0.00	65.12	537.53	127.98	189.62	171.39	32.63	-4.06	0.393
75.00	0.00	-8.48	0.00	-21.0	0.00	20.95	507.08	120.73	168.75	152.41	37	-4.26	0.142

CALCULATED FORCES

Load Case: 1.2D + 1.0Di + 1.0Wi — 48.73 mph Wind with 0.85" Radial Ice — 17 Iterations

Gust Response Factor: 1.10
Dead load Factor: 1.20
Wind Load Factor: 1.00
Ice Dead Load Factor 1.00
Ice Importance Factor 1.00

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	-39.80	-6.46	0.00	-362.6	0.00	362.63	1,505.06	391.62	1,024.09	849.62	0	0	0.195
5.00	-38.29	-6.32	0.00	-330.3	0.00	330.33	1,476.97	379.05	959.43	806.77	0.05	-0.1	0.182
10.00	-36.54	-5.98	0.00	-298.8	0.00	298.75	1,447.54	366.48	896.88	764.23	0.2	-0.19	0.170
15.00	-35.04	-5.82	0.00	-268.9	0.00	268.86	1,416.77	353.91	836.44	722.09	0.45	-0.28	0.157
20.00	-33.54	-5.67	0.00	-239.7	0.00	239.74	1,384.66	341.35	778.10	680.42	0.79	-0.36	0.145
25.00	-32.06	-5.51	0.00	-211.4	0.00	211.40	1,351.21	328.78	721.87	639.28	1.21	-0.45	0.132
30.00	-30.60	-5.35	0.00	-183.9	0.00	183.86	1,316.42	316.21	667.76	598.76	1.73	-0.53	0.119
35.00	-29.16	-5.18	0.00	-157.1	0.00	157.12	1,275.29	303.64	615.75	556.74	2.32	-0.6	0.106
40.00	-27.73	-5.02	0.00	-131.2	0.00	131.23	1,222.50	291.07	565.84	511.35	2.98	-0.67	0.093
42.67	-26.88	-4.92	0.00	-117.8	0.00	117.85	678.31	167.62	325.21	284.06	3.37	-0.7	0.125
45.00	-26.30	-4.82	0.00	-106.4	0.00	106.36	669.39	164.24	312.22	274.62	3.72	-0.73	0.115
49.04	-25.29	-4.69	0.00	-86.9	0.00	86.89	653.49	158.38	290.35	258.44	4.36	-0.77	0.098
50.00	-25.06	-4.64	0.00	-82.4	0.00	82.38	649.63	156.99	285.27	254.63	4.51	-0.78	0.094
53.00	-20.23	-3.83	0.00	-68.5	0.00	68.46	637.34	152.64	269.68	242.83	5.02	-0.81	0.079
55.00	-19.74	-3.72	0.00	-60.8	0.00	60.81	628.90	149.74	259.53	235.01	5.36	-0.83	0.072
60.00	-18.55	-3.53	0.00	-42.2	0.00	42.20	598.44	142.49	235.01	212.69	6.25	-0.86	0.054
62.94	-17.85	-3.44	0.00	-31.8	0.00	31.82	580.54	138.22	221.16	200.09	6.79	-0.88	0.044
62.94	-17.85	-3.44	0.00	-31.8	0.00	31.82	580.54	138.22	221.16	200.09	6.79	-0.88	0.190
63.00	-11.57	-2.39	0.00	-31.6	0.00	31.61	580.17	138.14	220.88	199.84	6.8	-0.88	0.178
65.00	-11.27	-2.29	0.00	-26.8	0.00	26.83	567.99	135.24	211.71	191.49	7.18	-0.93	0.160
70.00	-10.63	-2.15	0.00	-15.4	0.00	15.39	537.53	127.98	189.62	171.39	8.2	-1.01	0.110
75.00	0.00	-1.95	0.00	-4.7	0.00	4.66	507.08	120.73	168.75	152.41	9.29	-1.06	0.031

CALCULATED FORCES

Load Case: 1.0D + 1.0W — 60 mph Wind with No Ice — 17 Iterations

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

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	-24.52	-6.40	0.00	-349.4	0.00	349.41	1,505.06	391.62	1,024.09	849.62	0	0	0.183
5.00	-23.48	-6.21	0.00	-317.4	0.00	317.43	1,476.97	379.05	959.43	806.77	0.05	-0.09	0.170
10.00	-22.33	-5.79	0.00	-286.4	0.00	286.40	1,447.54	366.48	896.88	764.23	0.19	-0.18	0.158
15.00	-21.32	-5.60	0.00	-257.5	0.00	257.47	1,416.77	353.91	836.44	722.09	0.43	-0.27	0.146
20.00	-20.32	-5.43	0.00	-229.4	0.00	229.45	1,384.66	341.35	778.10	680.42	0.76	-0.35	0.134
25.00	-19.33	-5.25	0.00	-202.3	0.00	202.32	1,351.21	328.78	721.87	639.28	1.17	-0.43	0.122
30.00	-18.36	-5.08	0.00	-176.1	0.00	176.06	1,316.42	316.21	667.76	598.76	1.66	-0.5	0.110
35.00	-17.40	-4.91	0.00	-150.6	0.00	150.64	1,275.29	303.64	615.75	556.74	2.22	-0.58	0.097
40.00	-16.45	-4.75	0.00	-126.1	0.00	126.09	1,222.50	291.07	565.84	511.35	2.86	-0.64	0.086
42.67	-15.84	-4.66	0.00	-113.4	0.00	113.42	678.31	167.62	325.21	284.06	3.23	-0.67	0.115
45.00	-15.43	-4.56	0.00	-102.5	0.00	102.53	669.39	164.24	312.22	274.62	3.57	-0.7	0.105
49.04	-14.74	-4.47	0.00	-84.1	0.00	84.12	653.49	158.38	290.35	258.44	4.18	-0.74	0.089
50.00	-14.57	-4.41	0.00	-79.8	0.00	79.83	649.63	156.99	285.27	254.63	4.33	-0.75	0.086
53.00	-11.65	-3.63	0.00	-66.6	0.00	66.60	637.34	152.64	269.68	242.83	4.81	-0.78	0.072
55.00	-11.32	-3.53	0.00	-59.3	0.00	59.34	628.90	149.74	259.53	235.01	5.14	-0.8	0.065
60.00	-10.49	-3.41	0.00	-41.7	0.00	41.69	598.44	142.49	235.01	212.69	6	-0.83	0.049
62.94	-10.00	-3.36	0.00	-31.7	0.00	31.67	580.54	138.22	221.16	200.09	6.52	-0.85	0.040
62.94	-10.00	-3.36	0.00	-31.7	0.00	31.67	580.54	138.22	221.16	200.09	6.52	-0.85	0.176
63.00	-6.32	-2.31	0.00	-31.5	0.00	31.47	580.17	138.14	220.88	199.84	6.53	-0.85	0.169
65.00	-6.14	-2.23	0.00	-26.8	0.00	26.84	567.99	135.24	211.71	191.49	6.89	-0.89	0.151
70.00	-5.73	-2.13	0.00	-15.7	0.00	15.67	537.53	127.98	189.62	171.39	7.87	-0.98	0.102
75.00	0.00	-2.03	0.00	-5.0	0.00	5.02	507.08	120.73	168.75	152.41	8.93	-1.03	0.033

EQUIVALENT LATERAL FORCES METHOD ANALYSIS

(Based on ASCE7-16 Chapters 11, 12 and 15)

Spectral Response Acceleration for Short Period (S_S):	0.207
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.055
Long-Period Transition Period (T_L – Seconds):	6
Importance Factor (I_e):	1.000
Site Coefficient F_a:	1.600
Site Coefficient F_v:	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.221
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.088
Seismic Response Coefficient (C_s):	0.039
Upper Limit C_S:	0.039
Lower Limit C_S:	0.030
Period based on Rayleigh Method (sec):	1.510
Redundancy Factor (p):	1.000
Seismic Force Distribution Exponent (k):	1.510
Total Unfactored Dead Load:	24.520 k
Seismic Base Shear (E):	0.950 k

SEISMIC FORCES

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)
20	72.5	348	221	0.024	22	433
19	67.5	404	230	0.025	23	503
18	64	183	96	0.010	10	227
17	62.97	6	3	0.000	0	7
16	61.47	485	240	0.026	24	603
15	57.5	831	372	0.040	38	1,035
14	54	335	136	0.015	14	417
13	51.5	510	194	0.021	20	635
12	49.52	164	59	0.006	6	204
11	47.02	694	229	0.025	23	863
10	43.8333	404	120	0.013	12	502
9	41.3333	612	167	0.018	17	762
8	37.5	944	222	0.024	23	1,174
7	32.5	956	181	0.019	18	1,190
6	27.5	968	143	0.015	15	1,205
5	22.5	980	107	0.011	11	1,220
4	17.5	993	74	0.008	8	1,235
3	12.5	1,005	45	0.005	5	1,250
2	7.5	1,017	21	0.002	2	1,266
1	2.5	1,029	4	0.000	0	1,281
Generic 10' Omni	75	25	17	0.002	2	31
Generic 10' Omni	75	25	17	0.002	2	31
Ericsson Air 6449 B77D	75	245	164	0.018	17	305
Kaelus DBC0051F3V51-2	75	74	50	0.005	5	93
Raycap DC6-48-60-18-8F (23.5" Height)	75	40	27	0.003	3	50
Ericsson RRUS 8843 B2, B66A	75	360	240	0.026	24	448
Ericsson RRUS 4449 B5, B12	75	284	190	0.020	19	353
Ericsson RRUS 4478 B14	75	178	119	0.013	12	222
Ericsson RRUS 32 B2	75	106	71	0.008	7	132
Ericsson RRUS 32 B30	75	180	120	0.013	12	224
Raycap DC6-48-60-18-8C-EV	75	16	11	0.001	1	20
Raycap DC9-48-60-24-8C-EV	75	16	11	0.001	1	20
CCI HPA-65R-BUU-H8	75	204	136	0.015	14	254
Matsing MBA-3.2-H4-L4	75	130	87	0.009	9	162
CCI DMP65R-BU8D	75	191	128	0.014	13	238
Quintel QD8616-7	75	450	301	0.032	31	560
Ericsson AIR 6419 B77G	75	198	132	0.014	13	247
Generic Mount Reinforcement	75	200	134	0.014	14	249

SEISMIC FORCES

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)
Generic Round Platform with Handrails	75	2,500	1,670	0.179	170	3,110
Generic Round Platform with Handrails	63	2,500	1,284	0.138	131	3,110
Ericsson 4460 BAND 2/25	63	327	168	0.018	17	407
Ericsson 4480 BAND 71	63	243	125	0.013	13	302
Ericsson AIR 6419 B41	63	250	128	0.014	13	311
RFS APXVAALL24 43-U-NA20	63	368	189	0.020	19	458
Raycap RDIDC-9181-PF-48	53	22	9	0.001	1	27
Fujitsu TA08025-B605	53	225	89	0.010	9	280
Fujitsu TA08025-B604	53	192	76	0.008	8	239
JMA Wireless MX08FRO665-21	53	194	77	0.008	8	241
SitePro1 SNP8HR-396 Round Platform with Handrails	53	1,786	707	0.076	72	2,222
Channel Master Type 120	10	126	4	0.000	0	157
	Totals:	**24,525**	**9,343**	**1.000**	**951**	**30,513**

SEISMIC FORCES

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)
20	72.5	348	221	0.024	22	298
19	67.5	404	230	0.025	23	346
18	64	183	96	0.010	10	156
17	62.97	6	3	0.000	0	5
16	61.47	485	240	0.026	24	415
15	57.5	831	372	0.040	38	712
14	54	335	136	0.015	14	287
13	51.5	510	194	0.021	20	437
12	49.52	164	59	0.006	6	140
11	47.02	694	229	0.025	23	594
10	43.8333	404	120	0.013	12	345
9	41.3333	612	167	0.018	17	524
8	37.5	944	222	0.024	23	808
7	32.5	956	181	0.019	18	818
6	27.5	968	143	0.015	15	829
5	22.5	980	107	0.011	11	839
4	17.5	993	74	0.008	8	850
3	12.5	1,005	45	0.005	5	860
2	7.5	1,017	21	0.002	2	871
1	2.5	1,029	4	0.000	0	881
Generic 10' Omni	75	25	17	0.002	2	21
Generic 10' Omni	75	25	17	0.002	2	21
Ericsson Air 6449 B77D	75	245	164	0.018	17	210
Kaelus DBC0051F3V51-2	75	74	50	0.005	5	64
Raycap DC6-48-60-18-8F (23.5" Height)	75	40	27	0.003	3	34
Ericsson RRUS 8843 B2, B66A	75	360	240	0.026	24	308
Ericsson RRUS 4449 B5, B12	75	284	190	0.020	19	243
Ericsson RRUS 4478 B14	75	178	119	0.013	12	153
Ericsson RRUS 32 B2	75	106	71	0.008	7	91
Ericsson RRUS 32 B30	75	180	120	0.013	12	154
Raycap DC6-48-60-18-8C-EV	75	16	11	0.001	1	14
Raycap DC9-48-60-24-8C-EV	75	16	11	0.001	1	14
CCI HPA-65R-BUU-H8	75	204	136	0.015	14	175
Matsing MBA-3.2-H4-L4	75	130	87	0.009	9	111
CCI DMP65R-BU8D	75	191	128	0.014	13	164
Quintel QD8616-7	75	450	301	0.032	31	385
Ericsson AIR 6419 B77G	75	198	132	0.014	13	170
Generic Mount Reinforcement	75	200	134	0.014	14	171
Generic Round Platform with Handrails	75	2,500	1,670	0.179	170	2,140
Generic Round Platform with Handrails	63	2,500	1,284	0.138	131	2,140
Ericsson 4460 BAND 2/25	63	327	168	0.018	17	280
Ericsson 4480 BAND 71	63	243	125	0.013	13	208
Ericsson AIR 6419 B41	63	250	128	0.014	13	214

SEISMIC FORCES

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)
RFS APXVAALL24 43-U-NA20	63	368	189	0.020	19	315
Raycap RDIDC-9181-PF-48	53	22	9	0.001	1	19
Fujitsu TA08025-B605	53	225	89	0.010	9	193
Fujitsu TA08025-B604	53	192	76	0.008	8	164
JMA Wireless MX08FRO665-21	53	194	77	0.008	8	166
SitePro1 SNP8HR-396 Round Platform with Handrails	53	1,786	707	0.076	72	1,529
Channel Master Type 120	10	126	4	0.000	0	108
	Totals:	**24,525**	**9,343**	**1.000**	**951**	**20,989**

1.2D + 1.0Ev + 1.0Eh **Seismic**

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-29.23	-0.95	0.00	-60.70	0.00	60.70	1,505.06	391.62	1,024	849.62	0.00	0.00	0.04
5.00	-27.97	-0.96	0.00	-55.93	0.00	55.93	1,476.97	379.05	959	806.77	0.01	-0.02	0.04
10.00	-26.56	-0.96	0.00	-51.13	0.00	51.13	1,447.54	366.48	897	764.23	0.03	-0.03	0.04
15.00	-25.32	-0.96	0.00	-46.32	0.00	46.32	1,416.77	353.91	836	722.09	0.08	-0.05	0.03
20.00	-24.10	-0.95	0.00	-41.52	0.00	41.52	1,384.66	341.35	778	680.42	0.13	-0.06	0.03
25.00	-22.90	-0.94	0.00	-36.75	0.00	36.75	1,351.21	328.78	722	639.28	0.21	-0.08	0.03
30.00	-21.71	-0.93	0.00	-32.04	0.00	32.04	1,316.42	316.21	668	598.76	0.29	-0.09	0.03
35.00	-20.53	-0.91	0.00	-27.40	0.00	27.40	1,275.29	303.64	616	556.74	0.40	-0.10	0.02
40.00	-19.77	-0.89	0.00	-22.85	0.00	22.85	1,222.50	291.07	566	511.35	0.51	-0.11	0.02
42.67	-19.27	-0.88	0.00	-20.47	0.00	20.47	678.31	167.62	325	284.06	0.58	-0.12	0.03
45.00	-18.41	-0.86	0.00	-18.42	0.00	18.42	669.39	164.24	312	274.62	0.64	-0.13	0.03
49.04	-18.20	-0.85	0.00	-14.95	0.00	14.95	653.49	158.38	290	258.44	0.75	-0.13	0.03
49.04	-18.20	-0.85	0.00	-14.95	0.00	14.95	653.49	158.38	290	258.44	0.75	-0.13	0.03
50.00	-17.57	-0.83	0.00	-14.13	0.00	14.13	649.63	156.99	285	254.63	0.77	-0.14	0.02
53.00	-14.14	-0.71	0.00	-11.63	0.00	11.63	637.34	152.64	270	242.83	0.86	-0.14	0.02
55.00	-13.11	-0.68	0.00	-10.20	0.00	10.20	628.90	149.74	260	235.01	0.92	-0.14	0.02
60.00	-12.50	-0.65	0.00	-6.83	0.00	6.83	598.44	142.49	235	212.69	1.07	-0.15	0.01
62.94	-12.50	-0.65	0.00	-4.91	0.00	4.91	580.54	138.22	221	200.09	1.17	-0.15	0.05
62.94	-12.50	-0.65	0.00	-4.91	0.00	4.91	580.54	138.22	221	200.09	1.17	-0.15	0.01
63.00	-7.68	-0.44	0.00	-4.87	0.00	4.87	580.17	138.14	221	199.84	1.17	-0.15	0.04
65.00	-7.18	-0.41	0.00	-4.00	0.00	4.00	567.99	135.24	212	191.49	1.23	-0.16	0.03
70.00	-6.75	-0.39	0.00	-1.95	0.00	1.95	537.53	127.98	190	171.39	1.41	-0.17	0.02
75.00	0.00	-0.37	0.00	0.00	0.00	0.00	507.08	120.73	169	152.41	1.59	-0.17	0.00

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 (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-20.11	-0.95	0.00	-60.02	0.00	60.02	1,505.06	391.62	1,024	849.62	0.00	0.00	0.04
5.00	-19.24	-0.96	0.00	-55.26	0.00	55.26	1,476.97	379.05	959	806.77	0.01	-0.02	0.04
10.00	-18.27	-0.96	0.00	-50.48	0.00	50.48	1,447.54	366.48	897	764.23	0.03	-0.03	0.03
15.00	-17.42	-0.95	0.00	-45.70	0.00	45.70	1,416.77	353.91	836	722.09	0.07	-0.05	0.03
20.00	-16.58	-0.94	0.00	-40.94	0.00	40.94	1,384.66	341.35	778	680.42	0.13	-0.06	0.03
25.00	-15.75	-0.93	0.00	-36.22	0.00	36.22	1,351.21	328.78	722	639.28	0.20	-0.08	0.03
30.00	-14.93	-0.92	0.00	-31.55	0.00	31.55	1,316.42	316.21	668	598.76	0.29	-0.09	0.02
35.00	-14.12	-0.90	0.00	-26.97	0.00	26.97	1,275.29	303.64	616	556.74	0.39	-0.10	0.02
40.00	-13.60	-0.88	0.00	-22.49	0.00	22.49	1,222.50	291.07	566	511.35	0.50	-0.11	0.02
42.67	-13.26	-0.87	0.00	-20.15	0.00	20.15	678.31	167.62	325	284.06	0.57	-0.12	0.03
45.00	-12.66	-0.84	0.00	-18.12	0.00	18.12	669.39	164.24	312	274.62	0.63	-0.12	0.02
49.04	-12.52	-0.84	0.00	-14.71	0.00	14.71	653.49	158.38	290	258.44	0.74	-0.13	0.02
49.04	-12.52	-0.84	0.00	-14.71	0.00	14.71	653.49	158.38	290	258.44	0.74	-0.13	0.02
50.00	-12.08	-0.82	0.00	-13.90	0.00	13.90	649.63	156.99	285	254.63	0.76	-0.13	0.02
53.00	-9.73	-0.70	0.00	-11.44	0.00	11.44	637.34	152.64	270	242.83	0.85	-0.14	0.02
55.00	-9.02	-0.66	0.00	-10.04	0.00	10.04	628.90	149.74	260	235.01	0.91	-0.14	0.02
60.00	-8.60	-0.64	0.00	-6.71	0.00	6.71	598.44	142.49	235	212.69	1.06	-0.15	0.01

CALCULATED FORCES

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
62.94	-8.60	-0.64	0.00	-4.83	0.00	4.83	580.54	138.22	221	200.09	1.15	-0.15	0.04
62.94	-8.60	-0.64	0.00	-4.83	0.00	4.83	580.54	138.22	221	200.09	1.15	-0.15	0.01
63.00	-5.28	-0.43	0.00	-4.80	0.00	4.80	580.17	138.14	221	199.84	1.15	-0.15	0.03
65.00	-4.94	-0.41	0.00	-3.94	0.00	3.94	567.99	135.24	212	191.49	1.22	-0.16	0.03
70.00	-4.64	-0.38	0.00	-1.91	0.00	1.91	537.53	127.98	190	171.39	1.39	-0.17	0.02
75.00	0.00	-0.37	0.00	0.00	0.00	0.00	507.08	120.73	169	152.41	1.56	-0.17	0.00

ANALYSIS SUMMARY

Load Case	Base Reactions: Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage: Elev (ft)	Interaction Ratio
1.2D + 1.0W	26.46	0.00	29.34	0.00	0.00	1459.93	0.00	0.74
0.9D + 1.0W	26.44	0.00	21.98	0.00	0.00	1446.97	0.00	0.73
1.2D + 1.0Di + 1.0Wi	6.46	0.00	39.80	0.00	0.00	362.63	0.00	0.19
1.2D + 1.0Ev + 1.0Eh	0.96	0.00	29.23	0.00	0.00	60.70	62.94	0.05
0.9D - 1.0Ev + 1.0Eh	0.96	0.00	20.11	0.00	0.00	60.02	62.94	0.04
1.0D + 1.0W	6.40	0.00	24.52	0.00	0.00	349.41	0.00	0.18

ADDITIONAL STEEL SUMMARY

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors: VQ/I (k/in)	Shear Applied (kips)	phiVn (kips)	Ratio	Max Member: Pu (kip)	phiPn (kip)	Ratio
0.00	49.04	SOL #20 All Thread Bar	532.0	16.0	16.8	0.9494	292.9	330.5	0.8863
49.04	62.94	SOL #20 All Thread Bar	532.0	16.0	16.8	0.9494	122.8	330.5	0.3716

Elev From (ft)	Elev To (ft)	Member	Upper Termination Connectors: MQ/I (kips)	phiVn (kips)	Number Required	Number Actual	Ratio	Lower Termination Connectors: MQ/I (kips)	phiVn (kip)	Number Required	Number Actual	Ratio
0.00	49.04	SOL #20 All Thread Bar	0	12	0	8	0.0000	0	12	0	0	0.0000
49.04	62.94	SOL #20 All Thread Bar	52.2955	12	5	12	0.3632	0	12	0	0	0.0000

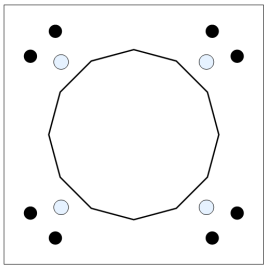
BASE PLATE ANALYSIS @ 0 FT

APPLIED REACTIONS

Moment (k-ft)	Axial (k)	Shear (k)
1459.93	29.34	26.46

PLATE PARAMETERS (ID# 22992)

Width:	44	in
Shape:	Square	
Thickness:	2	in
Grade:	A572-60	
Yield Strength:	60	ksi
Tensile Strength:	75	ksi
Clip Length:	0	in
Rod Detail Type:	d	
Clear Distance	4.5	in
Base Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Elastic	
Neutral Axis:	135	°



ANCHOR ROD PARAMETERS

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	F_y (ksi)	F_u (ksi)	Spacing (in)	Offset (°)
Original [ID#23596]	Cluster	8	2.25	44	A615-75	75	100	6	-

DYWIDAG BAR PARAMETERS

Quantity	Bar Size	Bar Diameter (in)	F_y (ksi)	F_u (ksi)	Bracket Type	Bracket Offset (in)	Circle (in)	Offset (°)
4 [ID# 1978]	#20	2.5	80	100	Angle	2.19	34.85	45

COMPONENT PROPERTIES

Component	ID	Gross Area (in^2)	Net Area (in^2)	Individual Inertia (in^4)	Moment of Inertia (in^4)	Threads/in
Pole	27.97"ø x 0.25" (12 Sides)	21.5234	-	-	2067.77	-
Bolt Group	Original (8) 2.25"ø	3.9761	3.2477	0.8393	5566.40	4.5
Dywidag Group	(4) #20	4.9087	4.9087	1.9175	2988.56	-

REACTION DISTRIBUTION

Component	ID	Moment M_u (k-ft)	Axial Load P_u (k)	Shear V_u (k)	Moment Factor
Pole	27.97"ø x 0.25" (12 Sides)	597.0	29.34	26.46	0.409
Bolt Group	Original (8) 2.25"ø	597.0	-	26.46	0.409
Dywidag Group	(4) #20	862.9	-	-	0.591

BASE PLATE BEND LINE ANALYSIS @ 0 FT

POLE PROPERTIES

Flat-to-Flat Diameter:	28.10	in	Flat Width:	7.528	in	Neutral Axis:	135	°
Point-to-Point Diameter:	29.09	in	Flat Radians:	0.524	rad			
Orientation Offset:	-	º						

PLATE PROPERTIES

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in^3)	Applied Moment M_u (k-in)	Moment Capacity ΦM_n (k-in)	Flexure Result $M_u/\Phi M_n$	
Flats	34.130	0.00	34.130	1124.2	1843.0	61.0%	✓
Corners	33.139	0.00	33.139	1037.8	1789.5	58.0%	✓

ELASTIC ANCHOR ROD ANALYSIS

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load P_u (k)	Applied Shear Load V_u (k)	Compressive Capacity ΦP_n (k)	Compressive Result	Interaction Result
Original	8	2.25	87.2	0.8	243.6	0.358	13.8%

DYWIDAG BAR ANALYSIS

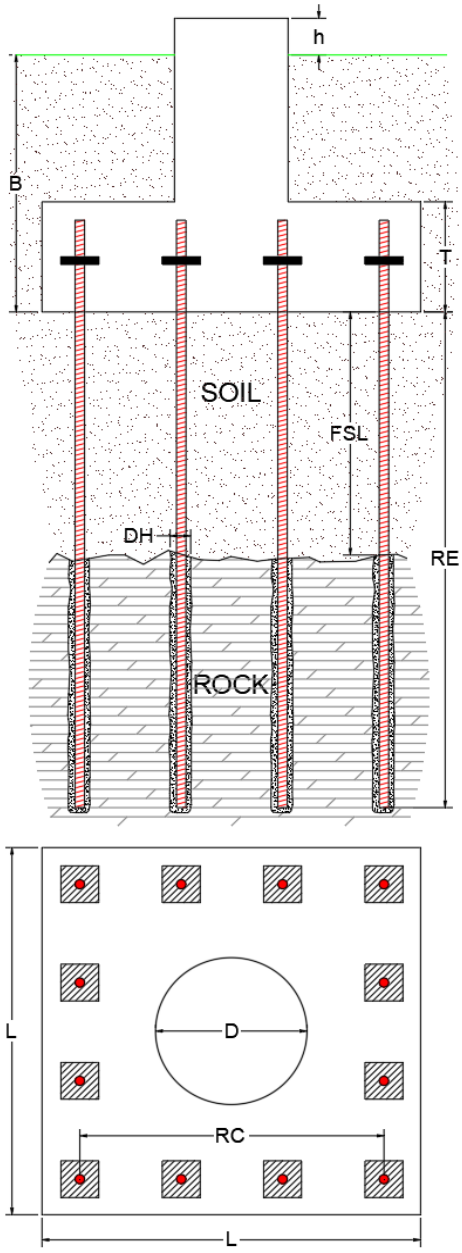
Group Quantity	Bar Size	Bar Circle (in)	Applied Axial Load P_u (k)	Compressive Capacity ΦP_n (k)	Compressive Result P_u / ΦP_n
4	#20	34.85	300.7	368.2	81.7%

AMERICAN TOWER CORPORATION

Site Name: MDFD - Middlefield, CT
Site Number: 302485
Tower Type: MP
Design Base Loads (Factored) - Analysis per TIA-222-H Standards

Rock Anchor Group Foundation Analysis

Foundation Parameters		
Include Rebar Analysis?	N	
Include Bearing Plate Analysis?	N	
Moment (Overturning) (M_u):	1459.9	k-ft
Shear/Leg (V_u):	26.5	k
Compression/Leg (P_u):	29.3	k
Uplift/Leg (T_u):	0.0	k
Mat/Pier Height Above Ground [h]:	0.50	ft
Pier Diameter [D]:		ft
Length / Width of Mat [L]:	9.0	ft
Mat Thickness [T]:	5.00	ft
Base Depth of Mat [B]:	5.00	ft
Water Table Depth (BGL):	99.0	ft
Unit Weight of Concrete:	150	pcf
Unit Weight of Soil at Mat/Pier:	120	pcf
Unit Weight of Water:	62.4	pcf
Unit Weight of Soil Below Water Table:	57.6	pcf
Ultimate Compressive Bearing Pressure:	45,000	psf
Shear Friction Coefficient:	0.50	
Capacity Increase (Due to Transient Loads):	1.000	
Pullout Angle:	45	°
Rod Diameter:	1.00	in
Rod Ultimate Strength:	100	ksi
Rod Net Area:	0.79	in^2
Number of Rods:	12	
Rod Arrangment:	Square	
If Square: If Square, Grid or Border?	Border	
Number of Rows:	4	
Number of Columns:	4	
Rod Group Width [RC]:	90.0	in
Diameter of Cored Hole [DH]:	2.000	in
Overall Rod Embedment Length [RE]:	121.7	in
Free Stress Length [FSL]	12.0	in
Ultimate Rod-to-Grout Interface Bond Strength:	300	psi
Ultimate Grout-to-Rock Anchor Interface Bond Strength:	630	psi
Lock Off Load:	0	k
Rock Anchor Design Plastic or Elastic:	Elastic	
Ignore Pullout Weight Resistance (Y/N):	N	



Capacities & Results		
Soil Strength Reduction Factor (ϕ_s):	0.75	
Bearing Strength Reduction Factor (ϕ_b):	0.75	
Factored Nominal Moment Capacity per Leg ($\phi_s M_n$):	1693.0	k
Factored Nominal Uplift Capacity per Leg ($\phi_s T_n$):	502.4	k
Applied Moment, M_u:	1605.5	k-ft
Applied Uplift, T_u:	0.0	k
$T_u/\phi_s T_n + M_u/\phi_s M_n$:	95%	Pass
Applied Axial, P_u:	42.5	k
Factored Nominal Compressive Capacity per Leg ($\phi_b P_n$):	2147.1	k
$P_u/\phi_b P_n$:	2%	Pass
Applied Shear, V_u:	26.5	k
Factored Nominal Shear Capacity per Leg ($\phi_s V_n$):	424.1	k
$V_u/\phi_s V_n$:	6%	Pass

Governing Strengths		
Total Pullout Weight:	579.7	k
Total Grout-to-Rock Bond Strength:	2,482.5	k
Total Rod-to-Grout Bond Strength:	2,606.6	k
Total Rod Mechanical Strength:	942.5	k
Pullout Weight per Rod:	48.3	k
Rock-to-Grout Bond Strength perRod:	206.9	k
Rod-to-Grout Bond Strength per Rod:	217.2	k
Rod Mechanical Strength per Rod:	78.5	k

AMERICAN TOWER®
CORPORATION

Mount Analysis Report

ATC Asset Name	:	Mdfd - Middlefield
ATC Asset Number	:	302485
Engineering Number	:	14102547_C8_07
Mount Elevation	:	53 ft
Proposed Carrier	:	Dish Wireless L.L.C.
Carrier Site Name	:	BOHVN00152C
Carrier Site Number	:	BOHVN00152C
Site Location	:	134 Kikapoo Road Middlefield, CT 06455-1334 41.513611, -72.7458
County	:	Middlesex
Date	:	January 6, 2023
Max Usage	:	58%
Analysis Result	:	Contingent Pass

Prepared By:
Molly Li
Structural Engineer I

Molly Li

Reviewed E

STATE OF CONNECTICUT
SCOTT A. WIRGAU
30575
LICENSED
PROFESSIONAL ENGINEER

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of the mount analysis performed for Dish Wireless L.L.C. at 53 ft.

Supporting Documents

Specifications Sheet:	Site Pro 1 VFA6-HD, dated June 29, 2018 Site Pro 1 RM4-HD, dated June 5, 2017 Site Pro 1 FMA2, dated October 13, 2010
Radio Frequency Data Sheet:	RFDS ID #BOHVN00152C, dated May 19, 2022
Reference Photos:	Site photos from 2021

Analysis

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

Basic Wind Speed:	119 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1.00'' radial ice concurrent
Codes:	ANSI/TIA-222-H/2021 IBC/2022 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 2
Feature:	Flat Topped Ridge
Crest Height (H):	309 ft
Crest Length (L):	422 ft
Spectral Response:	Ss = 0.207, S1 = 0.055
Site Class:	D - Stiff Soil
Live Loads:	Lm = 500 lbs, Lv = 250 lbs

Conclusion

Based on the analysis results, the antenna mount meets the requirements per the applicable codes listed above provided the modifications listed below are completed:

- Analysis based on new installation of Site Pro 1 VFA6-HD V-Frames (M1800R(5800)-2[6]) attached to Site Pro 1 RM4-HD Ring Mount with P472 (4.5" x 72") Bulk Pipe and Site Pro 1 FMA2 Flush Mount Adaptor.
- Install P2 (2.375" x 60") antenna mounting pipe (Mount Pipe D) on the Mount Arms with Site Pro 1 SCX7-U (or approved equivalent) crossover plate kits.
- No structural failures were addressed with the noted contingencies. Contingencies address Carrier's antenna spacing requirements.

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

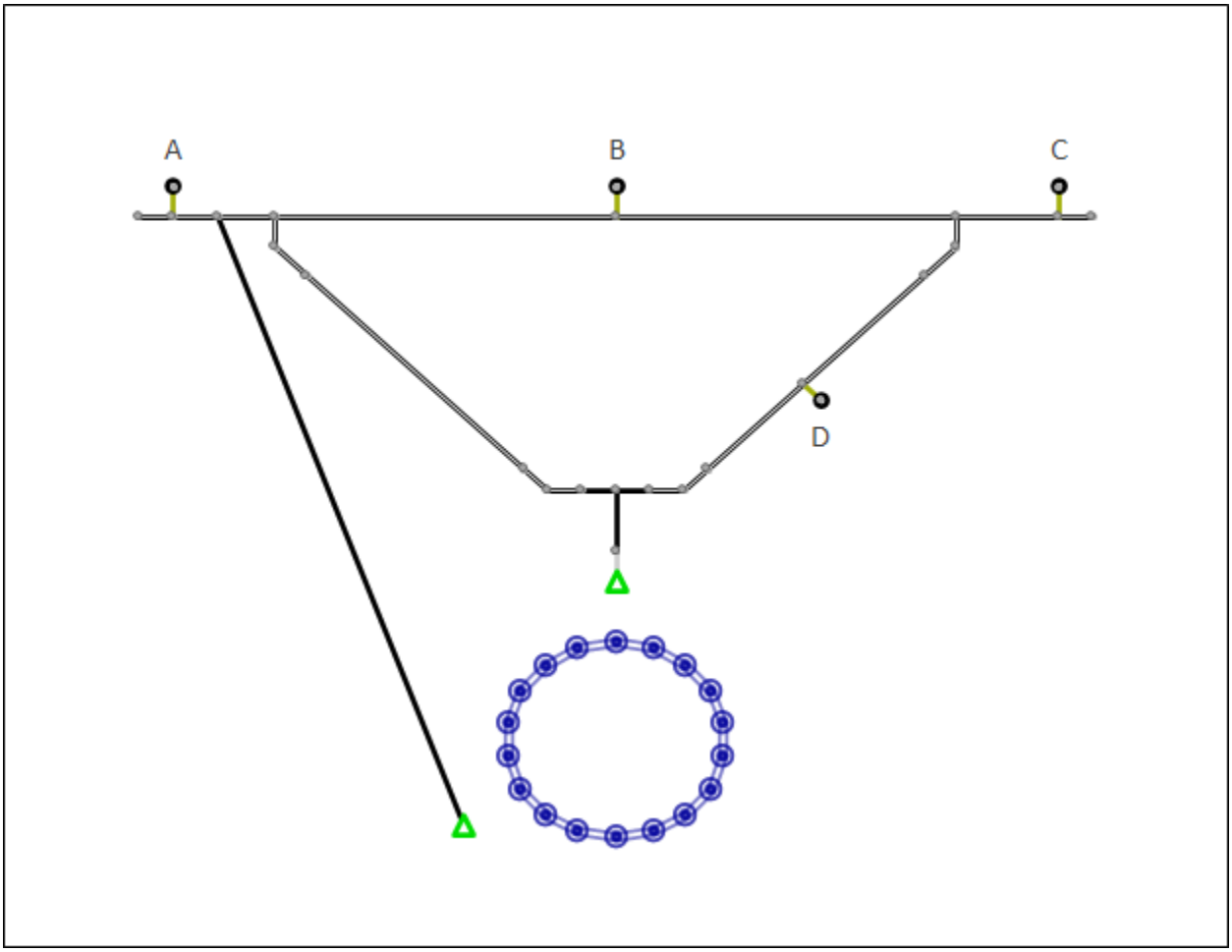
Application Loading

Mount Centerline (ft)	Equipment Centerline (ft)	Qty	Equipment Manufacturer & Model
53.0	53.0	3	JMA Wireless MX08FRO665-21
		1	Raycap RDIDC-9181-PF-48
		3	Fujitsu TA08025-B604
		3	Fujitsu TA08025-B605

Structure Usages

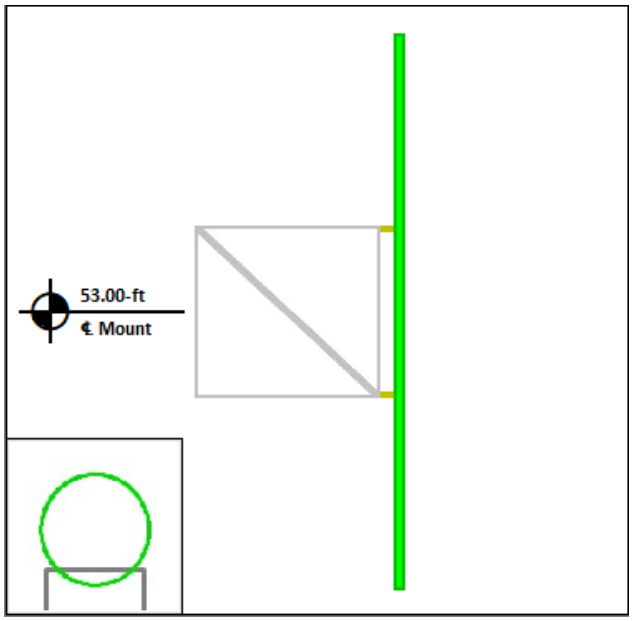
Structural Component	Controlling Usage	Pass/Fail
Horizontals	58%	Pass
Verticals	45%	Pass
Diagonals	14%	Pass
Tie-Backs	9%	Pass
Mount Pipes	19%	Pass

Mount Layout

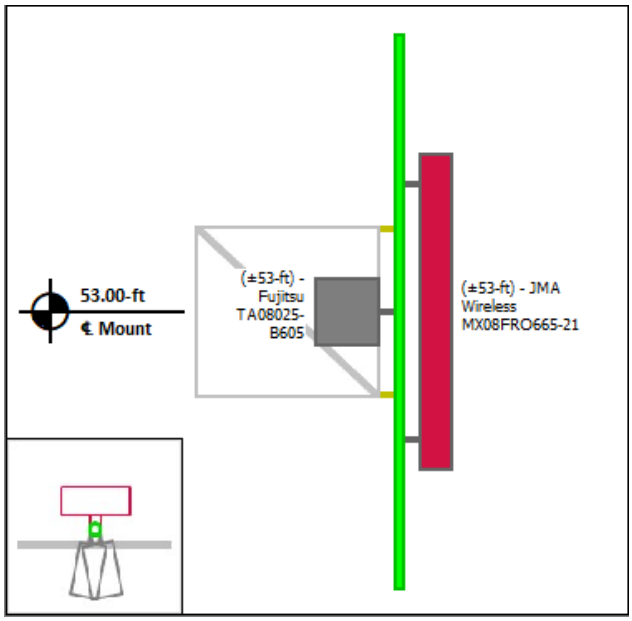


Equipment Layout

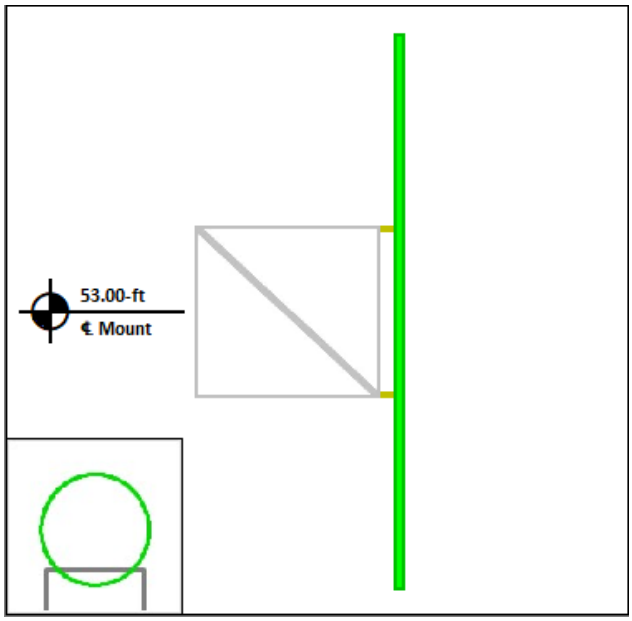
Mount Pipe A



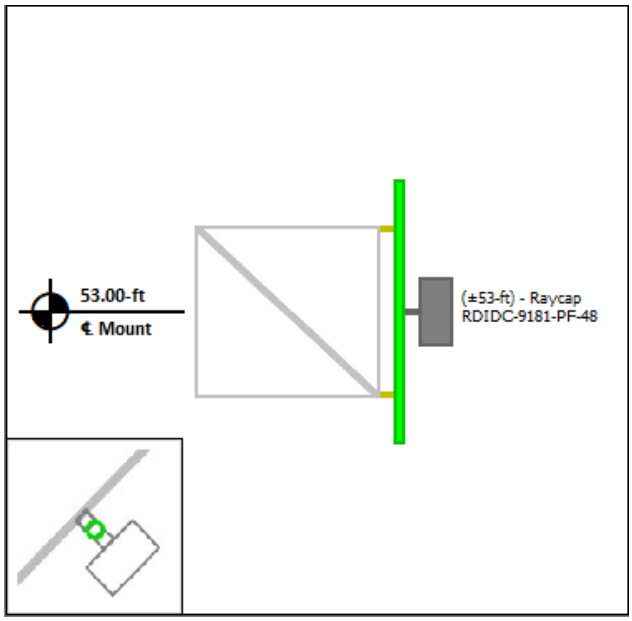
Mount Pipe B



Mount Pipe C



Mount Pipe D



Standard Conditions

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

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

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

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

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

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

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

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

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Site Number:	*302485*
Project Number:	*14102547_C8_07*
Carrier:	*Dish Wireless L.L.C.*
Mount Elevation:	*53 ft*
Date:	1/6/2023

Mount Analysis Force Calculations

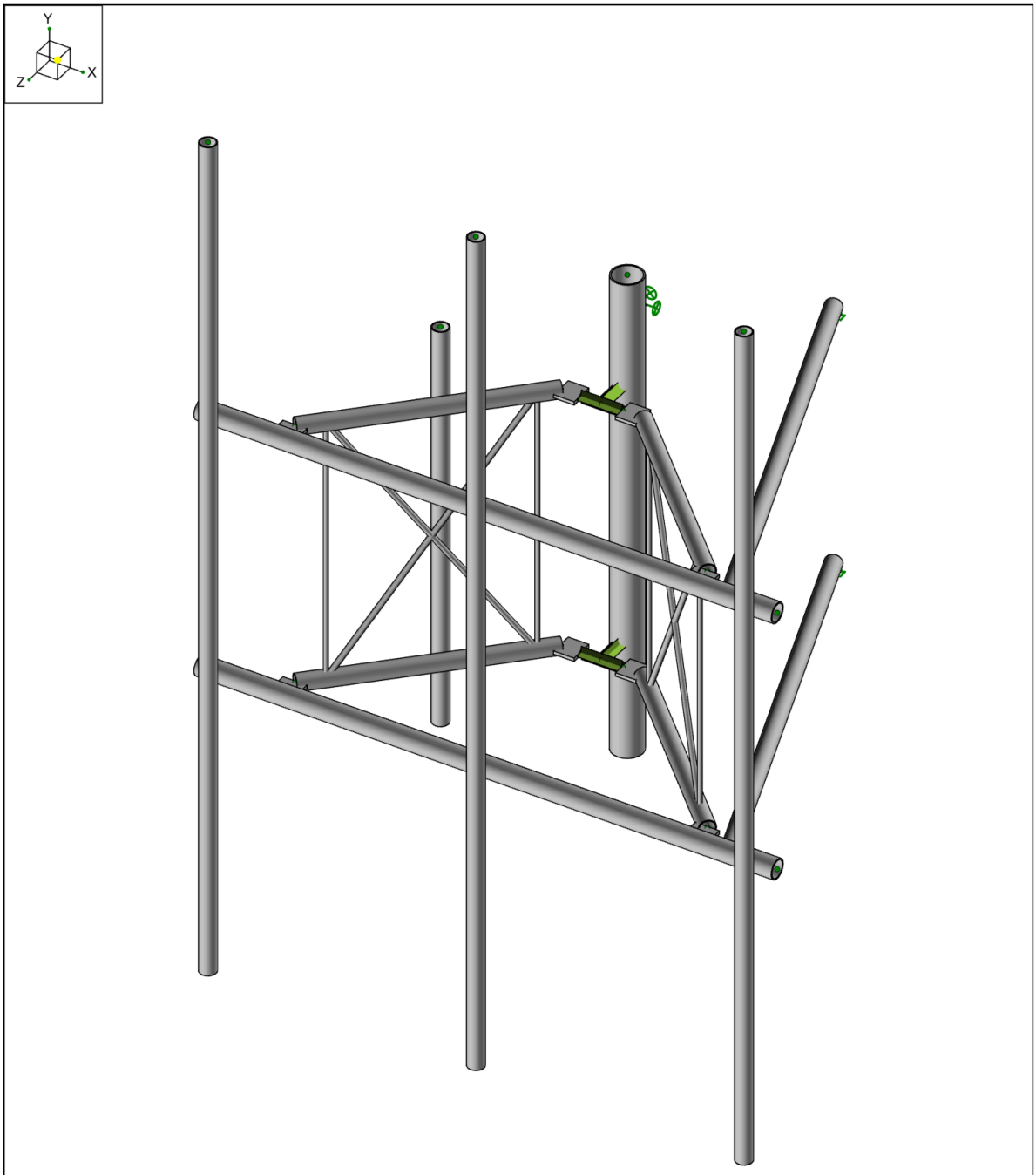
Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K_z	0.82	
Topographic Factor	K_{zt}	1.87	
Rooftop Wind Speed-up Factor	K_s	1.00	
Shielding Factor	K_a	0.90	
Ground Elevation Factor	K_e	0.97	
Wind Direction Probability Factor	K_d	0.95	
Basic Wind Speed	V	119	mph
Velocity Pressure	q_z	51.7	psf
Height Escalation Factor	K_{iz}	1.05	
Thickness of Radial Glaze Ice	T_{iz}	1.31	in

Seismic Load Calculations			
Short Period DSRAP	S_{DS}	0.221	
1 Second DSRAP	S_{D1}	0.088	
Importance Factor	I	1.0	
Response Modification Coefficient	R	2.0	
Seismic Response Coefficient	C_S	0.110	
Amplification Factor	A	1.0	
Total Weight	W	755.9	lbs
Total Shear Force	V_S	83.5	lbs
Horizontal Seismic Load	Eh	83.5	lbs
Vertical Seismic Load	Ev	33.4	lbs

Antenna Calculations (Elevations per Application/RFDS)*

Equipment	Height	Width	Depth	Weight	EPA_N	EPA_T	EPA_{Ni}	EPA_{Ti}
Model #	in	in	in	lbs	sqft	sqft	sqft	sqft
JMA Wireless MX08FRO665-21	72.0	20.0	8.0	64.5	12.49	2.40	14.63	3.30
Raycap RDIDC-9181-PF-48	16.0	14.0	8.0	21.9	1.87	1.07	2.58	1.65
Fujitsu TA08025-B604	15.7	15.0	7.9	63.9	1.96	1.03	2.69	1.60
Fujitsu TA08025-B605	15.7	15.0	9.1	75.0	1.96	1.19	2.69	1.79

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



American Tower Corp.	302485, Mdfd - Middlefield	SK-1
Molly.Li		Jan 06, 2023
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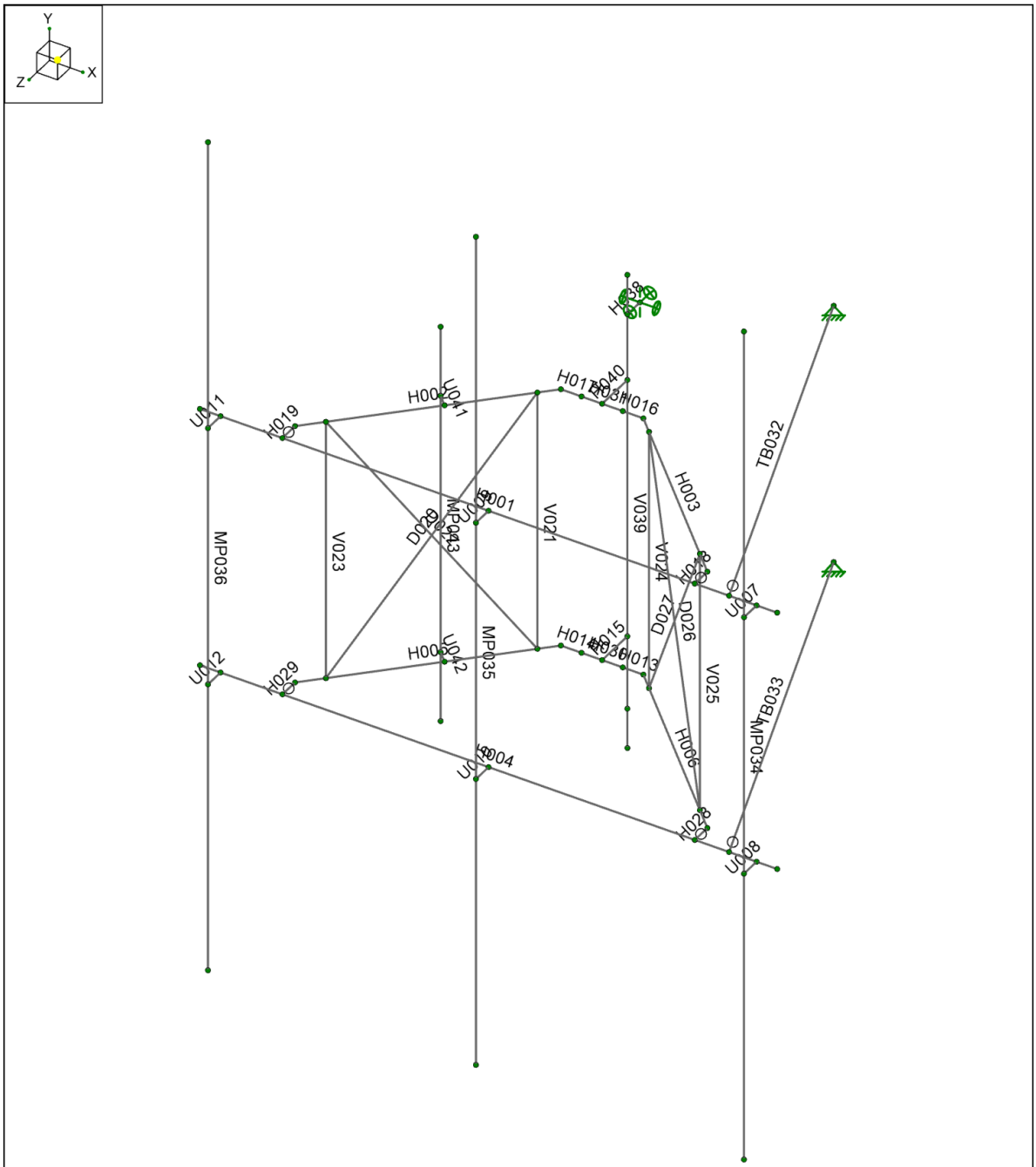

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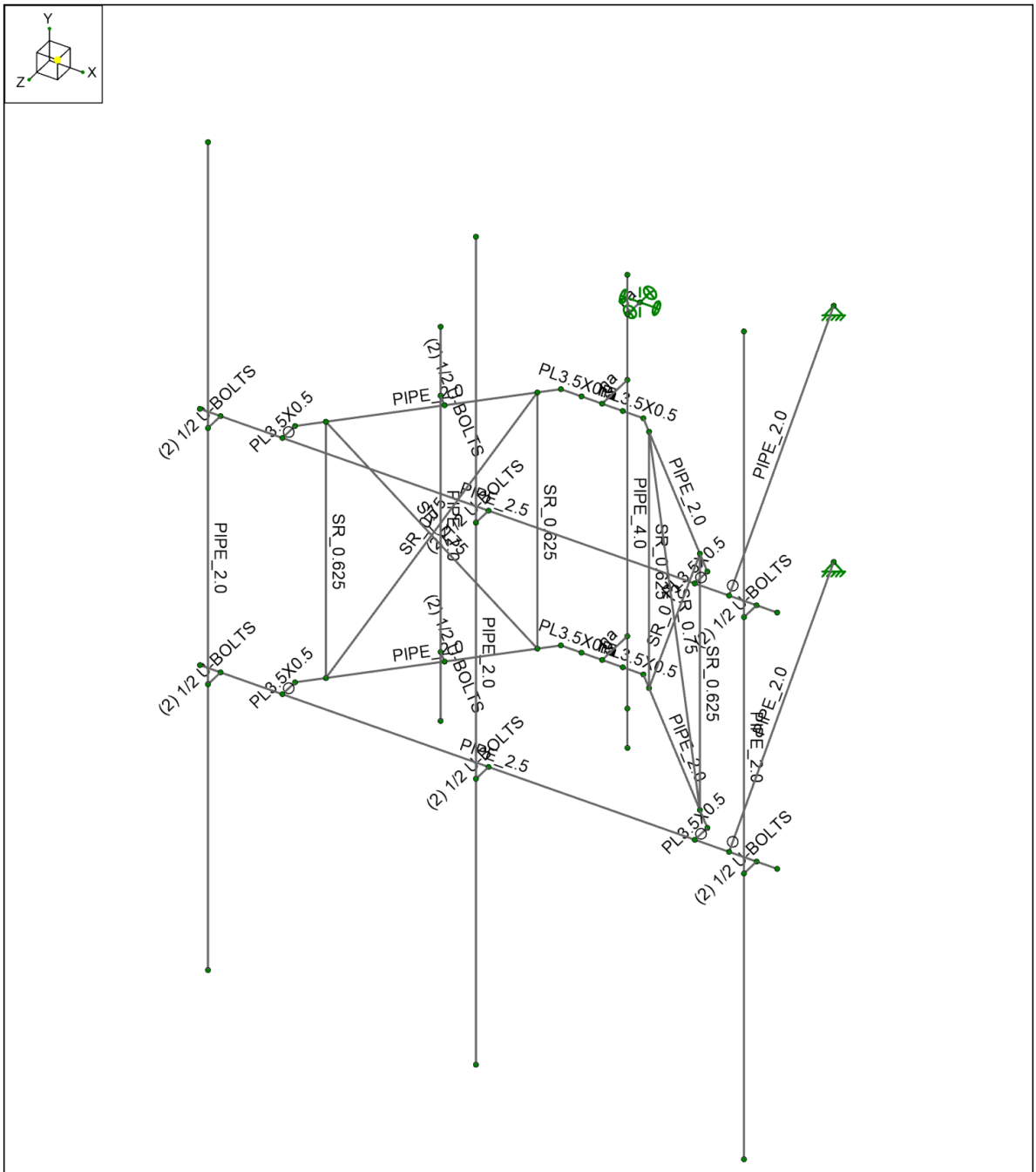

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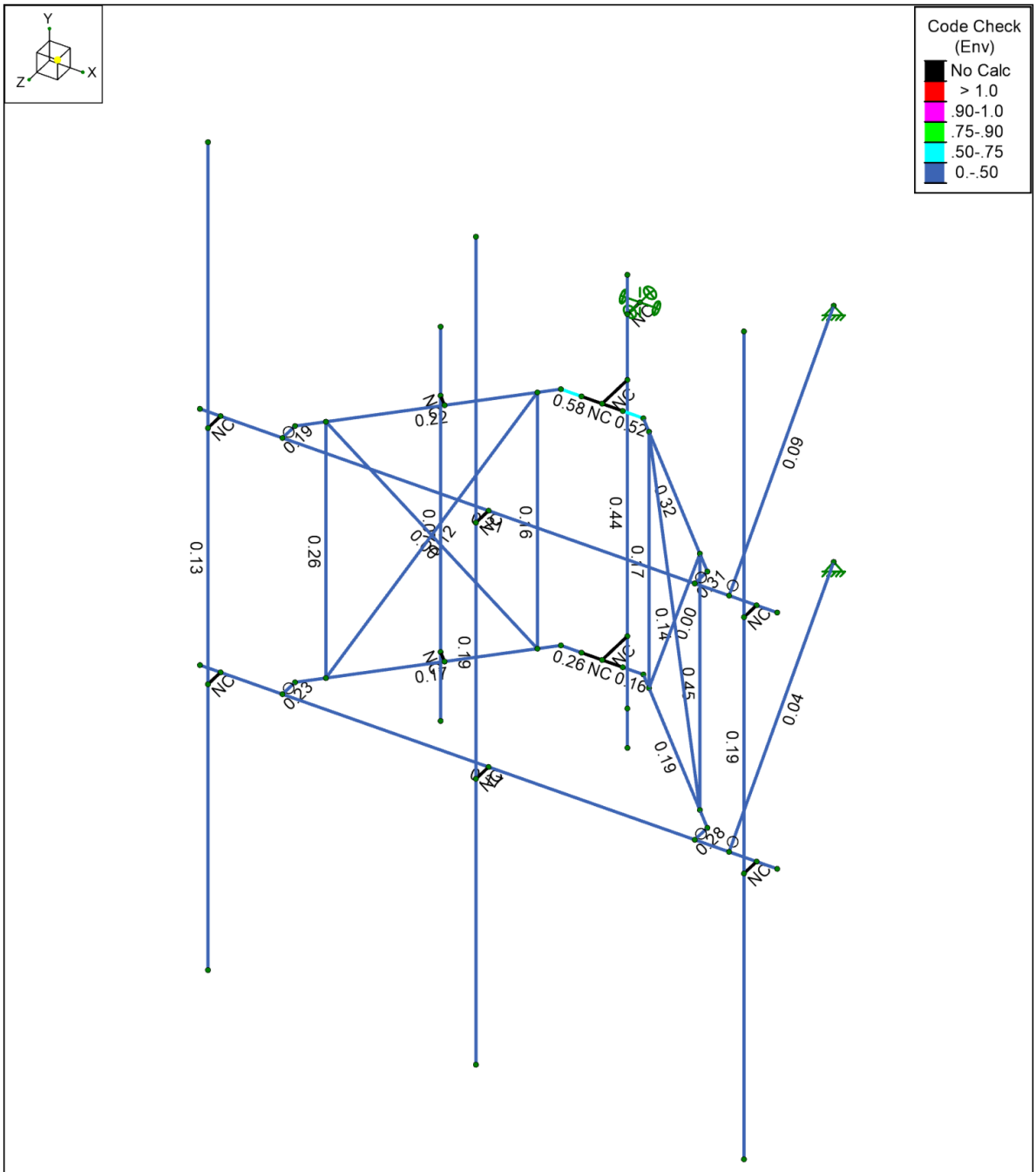

Member Code Checks Displayed (Enveloped)

American Tower Corp.	302485, Mdfd - Middlefield	SK-4
Molly.Li		Jan 06, 2023
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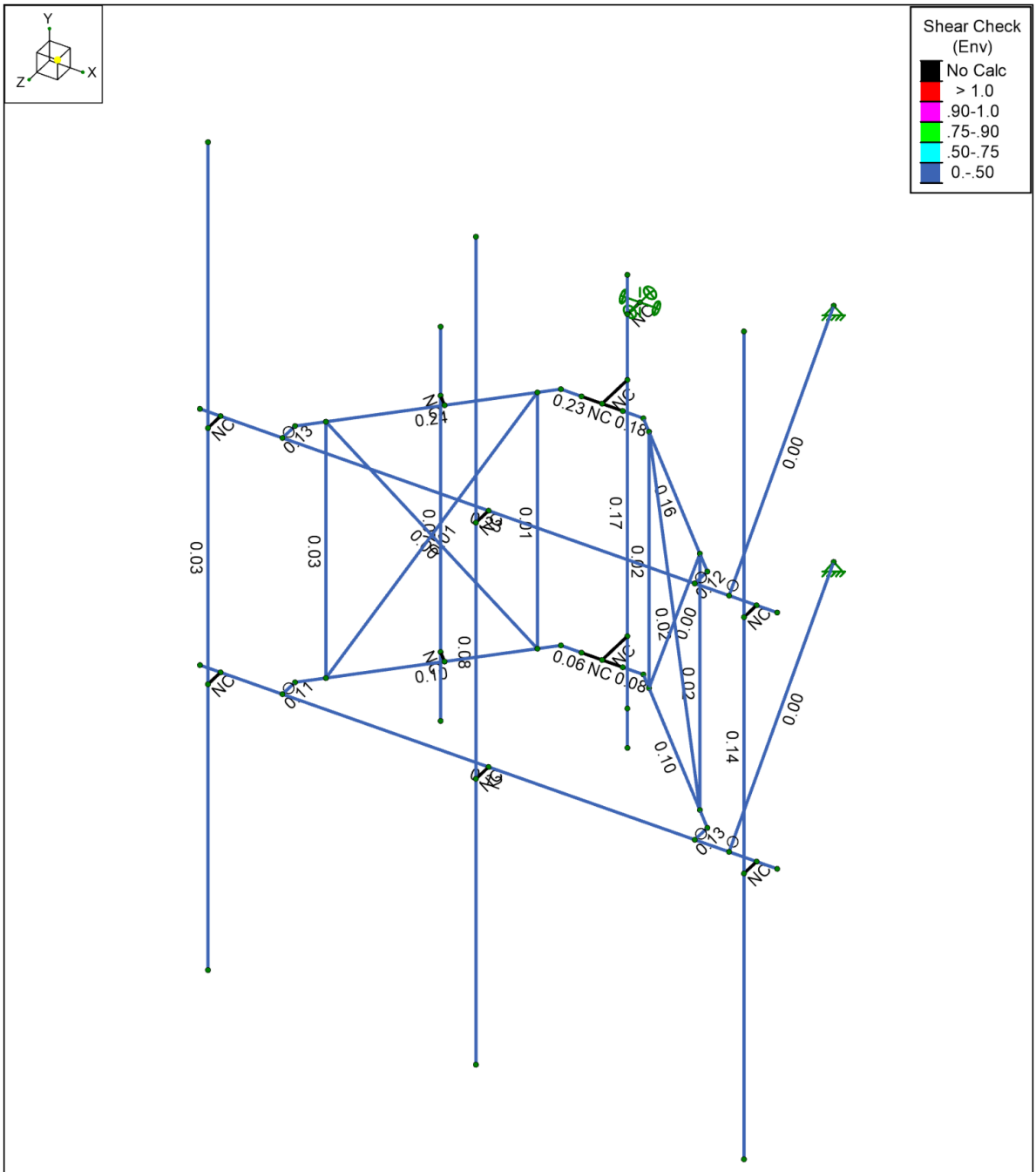

American Tower Corp.	302485, Mdfd - Middlefield	SK-5
Molly.Li		Jan 06, 2023
14102547_C8_07		R3D. DISH WIRELESS L.L.C. @ …

Basic Load Cases

	BLC Description	Category	Y Gravity	Nodal	Point	Distributed
1	D	DL	-1		5	
2	Di	IL			5	29
3	W 0	WL			5	38
4	W 30	WL			10	75
5	W 60	WL			10	75
6	W 90	WL			5	39
7	W 120	WL			10	75
8	W 150	WL			10	75
9	W 180	WL			5	38
10	W 210	WL			10	75
11	W 240	WL			10	75
12	W 270	WL			5	39
13	W 300	WL			10	75
14	W 330	WL			10	75
15	Wi 0	WL			5	38
16	Wi 30	WL			10	75
17	Wi 60	WL			10	75
18	Wi 90	WL			5	39
19	Wi 120	WL			10	75
20	Wi 150	WL			10	75
21	Wi 180	WL			5	38
22	Wi 210	WL			10	75
23	Wi 240	WL			10	75
24	Wi 270	WL			5	39
25	Wi 300	WL			10	75
26	Wi 330	WL			10	75
27	Ws 0	WL			5	38
28	Ws 30	WL			10	75
29	Ws 60	WL			10	75
30	Ws 90	WL			5	39
31	Ws 120	WL			10	75
32	Ws 150	WL			10	75
33	Ws 180	WL			5	38
34	Ws 210	WL			10	75
35	Ws 240	WL			10	75
36	Ws 270	WL			5	39
37	Ws 300	WL			10	75
38	Ws 330	WL			10	75
39	Ev -Y	ELY				29
40	Eh -Z	ELZ				29
41	Eh -X	ELX				29
42	Lv (1)	LL			1	
43	Lv (2)	LL			1	
44	Lv (3)	LL			1	
45	Lv (4)	LL			1	
46	Lv (5)	LL			1	
47	Lv (6)	LL			1	
48	Lv (7)	LL		1		
49	Lv (8)	LL		1		
50	Lm (1)	LL		1		
51	Lm (2)	LL		1		
52	Lm (3)	LL		1		
53	Lm (4)	LL		1		

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4D	Yes	Y	DL	1.4						
2	1.2D + 1.0W [0°]	Yes	Y	DL	1.2	3	1				
3	1.2D + 1.0W [30°]	Yes	Y	DL	1.2	4	1				
4	1.2D + 1.0W [60°]	Yes	Y	DL	1.2	5	1				
5	1.2D + 1.0W [90°]	Yes	Y	DL	1.2	6	1				
6	1.2D + 1.0W [120°]	Yes	Y	DL	1.2	7	1				
7	1.2D + 1.0W [150°]	Yes	Y	DL	1.2	8	1				
8	1.2D + 1.0W [180°]	Yes	Y	DL	1.2	9	1				
9	1.2D + 1.0W [210°]	Yes	Y	DL	1.2	10	1				
10	1.2D + 1.0W [240°]	Yes	Y	DL	1.2	11	1				
11	1.2D + 1.0W [270°]	Yes	Y	DL	1.2	12	1				
12	1.2D + 1.0W [300°]	Yes	Y	DL	1.2	13	1				
13	1.2D + 1.0W [330°]	Yes	Y	DL	1.2	14	1				
14	0.9D + 1.0W [0°]	Yes	Y	DL	0.9	3	1				
15	0.9D + 1.0W [30°]	Yes	Y	DL	0.9	4	1				
16	0.9D + 1.0W [60°]	Yes	Y	DL	0.9	5	1				
17	0.9D + 1.0W [90°]	Yes	Y	DL	0.9	6	1				
18	0.9D + 1.0W [120°]	Yes	Y	DL	0.9	7	1				
19	0.9D + 1.0W [150°]	Yes	Y	DL	0.9	8	1				
20	0.9D + 1.0W [180°]	Yes	Y	DL	0.9	9	1				
21	0.9D + 1.0W [210°]	Yes	Y	DL	0.9	10	1				
22	0.9D + 1.0W [240°]	Yes	Y	DL	0.9	11	1				
23	0.9D + 1.0W [270°]	Yes	Y	DL	0.9	12	1				
24	0.9D + 1.0W [300°]	Yes	Y	DL	0.9	13	1				
25	0.9D + 1.0W [330°]	Yes	Y	DL	0.9	14	1				
26	1.2D + 1.0Di + 1.0Wi [0°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	15	1		
27	1.2D + 1.0Di + 1.0Wi [30°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	16	1		
28	1.2D + 1.0Di + 1.0Wi [60°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	17	1		
29	1.2D + 1.0Di + 1.0Wi [90°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	18	1		
30	1.2D + 1.0Di + 1.0Wi [120°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	19	1		
31	1.2D + 1.0Di + 1.0Wi [150°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	20	1		
32	1.2D + 1.0Di + 1.0Wi [180°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	21	1		
33	1.2D + 1.0Di + 1.0Wi [210°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	22	1		
34	1.2D + 1.0Di + 1.0Wi [240°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	23	1		
35	1.2D + 1.0Di + 1.0Wi [270°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	24	1		
36	1.2D + 1.0Di + 1.0Wi [300°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	25	1		
37	1.2D + 1.0Di + 1.0Wi [330°] + 1.0Ti	Yes	Y	DL	1.2	IL	1	26	1		
38	1.2D + 1.0Ev + 1.0Eh [0°]	Yes	Y	DL	1.2	ELY	1	ELZ	1	ELX	0.001
39	1.2D + 1.0Ev + 1.0Eh [30°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.866	ELX	0.5
40	1.2D + 1.0Ev + 1.0Eh [60°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.5	ELX	0.866
41	1.2D + 1.0Ev + 1.0Eh [90°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.001	ELX	1
42	1.2D + 1.0Ev + 1.0Eh [120°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.5	ELX	0.866
43	1.2D + 1.0Ev + 1.0Eh [150°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.866	ELX	0.5
44	1.2D + 1.0Ev + 1.0Eh [180°]	Yes	Y	DL	1.2	ELY	1	ELZ	-1	ELX	0.001
45	1.2D + 1.0Ev + 1.0Eh [210°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.866	ELX	-0.5
46	1.2D + 1.0Ev + 1.0Eh [240°]	Yes	Y	DL	1.2	ELY	1	ELZ	-0.5	ELX	-0.866
47	1.2D + 1.0Ev + 1.0Eh [270°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.001	ELX	-1
48	1.2D + 1.0Ev + 1.0Eh [300°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.5	ELX	-0.866
49	1.2D + 1.0Ev + 1.0Eh [330°]	Yes	Y	DL	1.2	ELY	1	ELZ	0.866	ELX	-0.5
50	0.9D + 1.0Ev + 1.0Eh [0°]	Yes	Y	DL	0.9	ELY	1	ELZ	1	ELX	0.001
51	0.9D + 1.0Ev + 1.0Eh [30°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.866	ELX	0.5
52	0.9D + 1.0Ev + 1.0Eh [60°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.5	ELX	0.866
53	0.9D + 1.0Ev + 1.0Eh [90°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.001	ELX	1
54	0.9D + 1.0Ev + 1.0Eh [120°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.5	ELX	0.866
55	0.9D + 1.0Ev + 1.0Eh [150°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.866	ELX	0.5

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
56	0.9D + 1.0Ev + 1.0Eh [180°]	Yes	Y	DL	0.9	ELY	1	ELZ	-1	ELX	0.001
57	0.9D + 1.0Ev + 1.0Eh [210°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.866	ELX	-0.5
58	0.9D + 1.0Ev + 1.0Eh [240°]	Yes	Y	DL	0.9	ELY	1	ELZ	-0.5	ELX	-0.866
59	0.9D + 1.0Ev + 1.0Eh [270°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.001	ELX	-1
60	0.9D + 1.0Ev + 1.0Eh [300°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.5	ELX	-0.866
61	0.9D + 1.0Ev + 1.0Eh [330°]	Yes	Y	DL	0.9	ELY	1	ELZ	0.866	ELX	-0.5
62	1.2D + 1.5Lv(1)	Yes	Y	DL	1.2	42	1.5				
63	1.2D + 1.5Lv(2)	Yes	Y	DL	1.2	43	1.5				
64	1.2D + 1.5Lv(3)	Yes	Y	DL	1.2	44	1.5				
65	1.2D + 1.5Lv(4)	Yes	Y	DL	1.2	45	1.5				
66	1.2D + 1.5Lv(5)	Yes	Y	DL	1.2	46	1.5				
67	1.2D + 1.5Lv(6)	Yes	Y	DL	1.2	47	1.5				
68	1.2D + 1.5Lv(7)	Yes	Y	DL	1.2	48	1.5				
69	1.2D + 1.5Lv(8)	Yes	Y	DL	1.2	49	1.5				
70	1.2D + 1.5Lm(1) + 1.0Wm [0°]	Yes	Y	DL	1.2	50	1.5	27	1		
71	1.2D + 1.5Lm(1) + 1.0Wm [30°]	Yes	Y	DL	1.2	50	1.5	28	1		
72	1.2D + 1.5Lm(1) + 1.0Wm [60°]	Yes	Y	DL	1.2	50	1.5	29	1		
73	1.2D + 1.5Lm(1) + 1.0Wm [90°]	Yes	Y	DL	1.2	50	1.5	30	1		
74	1.2D + 1.5Lm(1) + 1.0Wm [120°]	Yes	Y	DL	1.2	50	1.5	31	1		
75	1.2D + 1.5Lm(1) + 1.0Wm [150°]	Yes	Y	DL	1.2	50	1.5	32	1		
76	1.2D + 1.5Lm(1) + 1.0Wm [180°]	Yes	Y	DL	1.2	50	1.5	33	1		
77	1.2D + 1.5Lm(1) + 1.0Wm [210°]	Yes	Y	DL	1.2	50	1.5	34	1		
78	1.2D + 1.5Lm(1) + 1.0Wm [240°]	Yes	Y	DL	1.2	50	1.5	35	1		
79	1.2D + 1.5Lm(1) + 1.0Wm [270°]	Yes	Y	DL	1.2	50	1.5	36	1		
80	1.2D + 1.5Lm(1) + 1.0Wm [300°]	Yes	Y	DL	1.2	50	1.5	37	1		
81	1.2D + 1.5Lm(1) + 1.0Wm [330°]	Yes	Y	DL	1.2	50	1.5	38	1		
82	1.2D + 1.5Lm(2) + 1.0Wm [0°]	Yes	Y	DL	1.2	51	1.5	27	1		
83	1.2D + 1.5Lm(2) + 1.0Wm [30°]	Yes	Y	DL	1.2	51	1.5	28	1		
84	1.2D + 1.5Lm(2) + 1.0Wm [60°]	Yes	Y	DL	1.2	51	1.5	29	1		
85	1.2D + 1.5Lm(2) + 1.0Wm [90°]	Yes	Y	DL	1.2	51	1.5	30	1		
86	1.2D + 1.5Lm(2) + 1.0Wm [120°]	Yes	Y	DL	1.2	51	1.5	31	1		
87	1.2D + 1.5Lm(2) + 1.0Wm [150°]	Yes	Y	DL	1.2	51	1.5	32	1		
88	1.2D + 1.5Lm(2) + 1.0Wm [180°]	Yes	Y	DL	1.2	51	1.5	33	1		
89	1.2D + 1.5Lm(2) + 1.0Wm [210°]	Yes	Y	DL	1.2	51	1.5	34	1		
90	1.2D + 1.5Lm(2) + 1.0Wm [240°]	Yes	Y	DL	1.2	51	1.5	35	1		
91	1.2D + 1.5Lm(2) + 1.0Wm [270°]	Yes	Y	DL	1.2	51	1.5	36	1		
92	1.2D + 1.5Lm(2) + 1.0Wm [300°]	Yes	Y	DL	1.2	51	1.5	37	1		
93	1.2D + 1.5Lm(2) + 1.0Wm [330°]	Yes	Y	DL	1.2	51	1.5	38	1		
94	1.2D + 1.5Lm(3) + 1.0Wm [0°]	Yes	Y	DL	1.2	52	1.5	27	1		
95	1.2D + 1.5Lm(3) + 1.0Wm [30°]	Yes	Y	DL	1.2	52	1.5	28	1		
96	1.2D + 1.5Lm(3) + 1.0Wm [60°]	Yes	Y	DL	1.2	52	1.5	29	1		
97	1.2D + 1.5Lm(3) + 1.0Wm [90°]	Yes	Y	DL	1.2	52	1.5	30	1		
98	1.2D + 1.5Lm(3) + 1.0Wm [120°]	Yes	Y	DL	1.2	52	1.5	31	1		
99	1.2D + 1.5Lm(3) + 1.0Wm [150°]	Yes	Y	DL	1.2	52	1.5	32	1		
100	1.2D + 1.5Lm(3) + 1.0Wm [180°]	Yes	Y	DL	1.2	52	1.5	33	1		
101	1.2D + 1.5Lm(3) + 1.0Wm [210°]	Yes	Y	DL	1.2	52	1.5	34	1		
102	1.2D + 1.5Lm(3) + 1.0Wm [240°]	Yes	Y	DL	1.2	52	1.5	35	1		
103	1.2D + 1.5Lm(3) + 1.0Wm [270°]	Yes	Y	DL	1.2	52	1.5	36	1		
104	1.2D + 1.5Lm(3) + 1.0Wm [300°]	Yes	Y	DL	1.2	52	1.5	37	1		
105	1.2D + 1.5Lm(3) + 1.0Wm [330°]	Yes	Y	DL	1.2	52	1.5	38	1		
106	1.2D + 1.5Lm(4) + 1.0Wm [0°]	Yes	Y	DL	1.2	53	1.5	27	1		
107	1.2D + 1.5Lm(4) + 1.0Wm [30°]	Yes	Y	DL	1.2	53	1.5	28	1		
108	1.2D + 1.5Lm(4) + 1.0Wm [60°]	Yes	Y	DL	1.2	53	1.5	29	1		
109	1.2D + 1.5Lm(4) + 1.0Wm [90°]	Yes	Y	DL	1.2	53	1.5	30	1		
110	1.2D + 1.5Lm(4) + 1.0Wm [120°]	Yes	Y	DL	1.2	53	1.5	31	1		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
111	1.2D + 1.5Lm(4) + 1.0Wm [150°]	Yes	Y	DL	1.2	53	1.5	32	1		
112	1.2D + 1.5Lm(4) + 1.0Wm [180°]	Yes	Y	DL	1.2	53	1.5	33	1		
113	1.2D + 1.5Lm(4) + 1.0Wm [210°]	Yes	Y	DL	1.2	53	1.5	34	1		
114	1.2D + 1.5Lm(4) + 1.0Wm [240°]	Yes	Y	DL	1.2	53	1.5	35	1		
115	1.2D + 1.5Lm(4) + 1.0Wm [270°]	Yes	Y	DL	1.2	53	1.5	36	1		
116	1.2D + 1.5Lm(4) + 1.0Wm [300°]	Yes	Y	DL	1.2	53	1.5	37	1		
117	1.2D + 1.5Lm(4) + 1.0Wm [330°]	Yes	Y	DL	1.2	53	1.5	38	1		

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	H001	N003	N002		PIPE_2.5	Beam	None	A53 Gr. B	Typical
2	H002	N028	N004		PIPE_2.0	Beam	None	A53 Gr. B	Typical
3	H003	N027	N005		PIPE_2.0	Beam	None	A53 Gr. B	Typical
4	H004	N008	N007		PIPE_2.5	Beam	None	A53 Gr. B	Typical
5	H005	N025	N009		PIPE_2.0	Beam	None	A53 Gr. B	Typical
6	H006	N024	N010		PIPE_2.0	Beam	None	A53 Gr. B	Typical
7	U007	N011	N014		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
8	U008	N015	N016		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
9	U009	N012	N017		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
10	U010	N018	N019		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
11	U011	N013	N020		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
12	U012	N021	N022		(2) 1/2 U-BOLTS	Beam	None	SAE J429 Gr. 2	Typical
13	H013	N043	N024	90	PL3.5X0.5	Beam	None	A36	Typical
14	H014	N044	N025	90	PL3.5X0.5	Beam	None	A36	Typical
15	H015	N006	N023		RIGID	None	None	RIGID	Typical
16	H016	N041	N027	90	PL3.5X0.5	Beam	None	A36	Typical
17	H017	N042	N028	90	PL3.5X0.5	Beam	None	A36	Typical
18	H018	N005	N030	90	PL3.5X0.5	Beam	None	A36	Typical
19	H019	N004	N029	90	PL3.5X0.5	Beam	None	A36	Typical
20	D020	N034	N031		SR_0.75	Column	None	A36	Typical
21	V021	N031	N032		SR_0.625	Column	None	A36	Typical
22	D022	N032	N033		SR_0.75	Column	None	A36	Typical
23	V023	N033	N034		SR_0.625	Column	None	A36	Typical
24	V024	N035	N036		SR_0.625	Column	None	A36	Typical
25	V025	N037	N038		SR_0.625	Column	None	A36	Typical
26	D026	N038	N035		SR_0.75	Column	None	A36	Typical
27	D027	N036	N037		SR_0.75	Column	None	A36	Typical
28	H028	N010	N040	90	PL3.5X0.5	Beam	None	A36	Typical
29	H029	N009	N039	90	PL3.5X0.5	Beam	None	A36	Typical
30	H030	N043	N044		RIGID	None	None	RIGID	Typical
31	H031	N041	N042		RIGID	None	None	RIGID	Typical
32	TB032	N046	N045		PIPE_2.0	Beam	None	A53 Gr. B	Typical
33	TB033	N047	N048		PIPE_2.0	Beam	None	A53 Gr. B	Typical
34	MP034	N049	N050		PIPE_2.0	Column	None	A53 Gr. B	Typical
35	MP035	N051	N052		PIPE_2.0	Column	None	A53 Gr. B	Typical
36	MP036	N053	N054		PIPE_2.0	Column	None	A53 Gr. B	Typical
37	H038	N060	N061		RIGID	None	None	RIGID	Typical
38	V039	N056	N057		PIPE_4.0	Column	None	A53 Gr. B	Typical
39	H040	N026	N055		RIGID	None	None	RIGID	Typical
40	U041	N062	N063		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
41	U042	N064	N065		(2) 1/2 U-BOLTS	Beam	None	A36	Typical
42	MP043	N066	N067		PIPE_2.0	Column	None	A53 Gr. B	Typical

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lb y-y [in]	Lb z-z [in]	Lcomp top [in]	L-Torque [in]	K y-y	K z-z	Function
1	H001	PIPE_2.5	84			Lbyy		1	1	Lateral
2	H002	PIPE_2.0	33.941			Lbyy		0.8	1	Lateral
3	H003	PIPE_2.0	33.941			Lbyy		0.8	1	Lateral
4	H004	PIPE_2.5	84			Lbyy		1	1	Lateral
5	H005	PIPE_2.0	33.941			Lbyy		0.8	1	Lateral
6	H006	PIPE_2.0	33.941			Lbyy		0.8	1	Lateral
7	U007	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
8	U008	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
9	U009	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
10	U010	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
11	U011	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
12	U012	(2) 1/2 U-BOLTS	3			Lbyy		0.5	0.5	Lateral
13	H013	PL3.5X0.5	3			Lbyy		2.1	2.1	Lateral
14	H014	PL3.5X0.5	3			Lbyy		2.1	2.1	Lateral
15	H016	PL3.5X0.5	3			Lbyy		2.1	2.1	Lateral
16	H017	PL3.5X0.5	3			Lbyy		2.1	2.1	Lateral
17	H018	PL3.5X0.5	3			Lbyy		2.1	2.1	Lateral
18	H019	PL3.5X0.5	3			Lbyy		2.1	2.1	Lateral
19	D020	SR_0.75	47.434			Lbyy		0.65	0.65	Lateral
20	V021	SR_0.625	39			Lbyy		0.65	0.65	Lateral
21	D022	SR_0.75	47.434			Lbyy		0.65	0.65	Lateral
22	V023	SR_0.625	39			Lbyy		0.65	0.65	Lateral
23	V024	SR_0.625	39			Lbyy		0.65	0.65	Lateral
24	V025	SR_0.625	39			Lbyy		0.65	0.65	Lateral
25	D026	SR_0.75	47.434			Lbyy		0.65	0.65	Lateral
26	D027	SR_0.75	47.434			Lbyy		0.65	0.65	Lateral
27	H028	PL3.5X0.5	3			Lbyy		2.1	2.1	Lateral
28	H029	PL3.5X0.5	3			Lbyy		2.1	2.1	Lateral
29	TB032	PIPE_2.0	63.736			Lbyy		1	1	Lateral
30	TB033	PIPE_2.0	63.736			Lbyy		1	1	Lateral
31	MP034	PIPE_2.0	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
32	MP035	PIPE_2.0	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
33	MP036	PIPE_2.0	126	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral
34	V039	PIPE_4.0	72			Lbyy		1	1	Lateral
35	U041	(2) 1/2 U-BOLTS	2.121			Lbyy		0.5	0.5	Lateral
36	U042	(2) 1/2 U-BOLTS	2.121			Lbyy		0.5	0.5	Lateral
37	MP043	PIPE_2.0	60	Segment	Segment	Lbyy	Segment	2.1	2.1	Lateral

Node Boundary Conditions

	Node Label	X [lb/in]	Y [lb/in]	Z [lb/in]	X Rot [k-in/rad]	Z Rot [k-in/rad]
1	N046	Reaction	Reaction	Reaction		
2	N047	Reaction	Reaction	Reaction		
3	N061	Reaction	Reaction	Reaction	Reaction	Reaction

Member Advanced Data

	Label	J Release	T/C Only	Physical	Deflection Ratio Options	Activation	Seismic DR
1	H001			Yes	N/A		None
2	H002			Yes	N/A		None
3	H003			Yes	N/A		None
4	H004			Yes	N/A		None
5	H005			Yes	N/A		None
6	H006			Yes	N/A		None

Member Advanced Data (Continued)

	Label	J Release	T/C Only	Physical	Deflection Ratio Options	Activation	Seismic DR
7	U007			Yes	N/A	Exclude	None
8	U008			Yes	N/A	Exclude	None
9	U009			Yes	N/A	Exclude	None
10	U010			Yes	N/A	Exclude	None
11	U011			Yes	N/A	Exclude	None
12	U012			Yes	N/A	Exclude	None
13	H013			Yes	N/A		None
14	H014			Yes	N/A		None
15	H015			Yes	** NA **		None
16	H016			Yes	N/A		None
17	H017			Yes	N/A		None
18	H018	BenPIN		Yes	N/A		None
19	H019	BenPIN		Yes	N/A		None
20	D020		Tension Only	Yes	** NA **		None
21	V021			Yes	** NA **		None
22	D022		Tension Only	Yes	** NA **		None
23	V023			Yes	** NA **		None
24	V024			Yes	** NA **		None
25	V025			Yes	** NA **		None
26	D026		Tension Only	Yes	** NA **		None
27	D027		Tension Only	Yes	** NA **		None
28	H028	BenPIN		Yes	N/A		None
29	H029	BenPIN		Yes	N/A		None
30	H030			Yes	** NA **		None
31	H031			Yes	** NA **		None
32	TB032	BenPIN		Yes	N/A		None
33	TB033	BenPIN		Yes	N/A		None
34	MP034			Yes	** NA **		None
35	MP035			Yes	** NA **		None
36	MP036			Yes	** NA **		None
37	H038			Yes	** NA **		None
38	V039			Yes	** NA **		None
39	H040			Yes	** NA **		None
40	U041			Yes	N/A	Exclude	None
41	U042			Yes	N/A	Exclude	None
42	MP043			Yes	** NA **		None

Hot Rolled Steel Properties

	Label	E [psi]	G [psi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [lb/ft³]	Yield [psi]	Ry	Fu [psi]	Rt
1	A53 Gr. B	2.9e+07	1.115e+07	0.3	0.65	490	35000	1.6	60000	1.2
2	SAE J429 Gr. 2	2.9e+07	1.115e+07	0.3	0.65	490	57000	1.1	74000	1.1
3	A36	2.9e+07	1.115e+07	0.3	0.65	490	36000	1.5	58000	1.2

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N046	max	669.738	22	28.977	28	1894.886	22	0	117	0	117	0	117
2		min	-851.506	4	8.405	20	-2428.232	4	0	1	0	1	0	1
3	N047	max	315.824	70	26.671	34	891.774	70	0	117	0	117	0	117
4		min	-113.799	20	6.812	15	-327.322	20	0	1	0	1	0	1
5	N061	max	1986.441	4	1647.743	37	2718.336	15	2406.407	21	0	117	3737.191	18
6		min	-1987.2	10	534.637	16	-2702.466	9	-4000.172	3	0	1	-4377.531	12
7	Totals:	max	1335.55	6	1700.925	33	1673.214	14						
8		min	-1335.55	12	557.47	15	-1673.216	8						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	H001	PIPE_2.5	0.207	12.25	4	0.231	11.375		4	33961.614	50715	3596.25	3596.25	1.42	H1-1b
2	H002	PIPE_2.0	0.225	2.828	104	0.244	0		105	29191.323	32130	1871.625	1871.625	2.042	H1-1b
3	H003	PIPE_2.0	0.322	33.941	4	0.165	0		72	29191.323	32130	1871.625	1871.625	1.992	H1-1b
4	H004	PIPE_2.5	0.17	42	13	0.12	7		3	33961.614	50715	3596.25	3596.25	1.713	H1-1b
5	H005	PIPE_2.0	0.165	29.698	101	0.102	30.052		101	29191.323	32130	1871.625	1871.625	2.378	H1-1b
6	H006	PIPE_2.0	0.192	30.052	75	0.102	30.052		75	29191.323	32130	1871.625	1871.625	1.897	H1-1b
7	H013	PL3.5X0.5	0.165	0	12	0.083	0	y	89	51289.202	56700	590.625	4134.375	1.429	H1-1b
8	H014	PL3.5X0.5	0.258	0	105	0.061	3	y	110	51289.202	56700	590.625	4134.375	1.465	H1-1b
9	H016	PL3.5X0.5	0.521	0	4	0.18	0	y	4	51289.202	56700	590.625	4134.375	1.265	H1-1b
10	H017	PL3.5X0.5	0.581	0	104	0.226	3	y	94	51289.202	56700	590.625	4134.375	1.5	H1-1b
11	H018	PL3.5X0.5	0.313	0	72	0.123	0	y	84	51289.202	56700	590.625	4134.375	1.667	H1-1b
12	H019	PL3.5X0.5	0.192	0	105	0.13	0	y	90	51289.202	56700	590.625	4134.375	1.667	H1-1b
13	D020	SR_0.75	0.118	47.434	102	0.012	47.434		4	3691.013	14313.882	178.924	178.924	2.377	H1-1b*
14	V021	SR_0.625	0.163	39	18	0.01	39		4	2633.14	9940.196	103.544	103.544	1.948	H1-1b*
15	D022	SR_0.75	0	47.434	117	0	47.434		117	3691.013	14313.882	178.924	178.924	1	H1-1a
16	V023	SR_0.625	0.26	39	104	0.033	0		4	2633.14	9940.196	103.544	103.544	2.135	H1-1a
17	V024	SR_0.625	0.172	39	10	0.016	39		4	2633.14	9940.196	103.544	103.544	1.86	H1-1b*
18	V025	SR_0.625	0.453	39	71	0.023	0		4	2633.14	9940.196	103.544	103.544	2.227	H1-1a
19	D026	SR_0.75	0.141	47.434	72	0.022	0		4	3691.013	14313.882	178.924	178.924	2.558	H1-1b*
20	D027	SR_0.75	0	47.434	117	0	47.434		117	3691.013	14313.882	178.924	178.924	1	H1-1a
21	H028	PL3.5X0.5	0.28	0	75	0.13	3	y	73	51289.202	56700	590.625	4134.375	1.667	H1-1b
22	H029	PL3.5X0.5	0.231	0	101	0.106	0	y	85	51289.202	56700	590.625	4134.375	1.666	H1-1b
23	TB032	PIPE_2.0	0.089	63.736	22	0.003	63.736		6	22909.603	32130	1871.625	1871.625	1.136	H1-1b*
24	TB033	PIPE_2.0	0.041	0	70	0.003	63.736		12	22909.603	32130	1871.625	1871.625	1.136	H1-1b*
25	MP034	PIPE_2.0	0.186	81.375	3	0.141	44.625		4	18380.609	32130	1871.625	1871.625	3	H1-1b
26	MP035	PIPE_2.0	0.192	44.625	3	0.082	44.625		4	18380.609	32130	1871.625	1871.625	2.668	H1-1b
27	MP036	PIPE_2.0	0.128	44.625	3	0.032	44.625		4	18380.609	32130	1871.625	1871.625	2.293	H1-1b
28	V039	PIPE_4.0	0.442	6	4	0.171	6		4	83097.932	93240	10631.25	10631.25	2.937	H1-1b
29	MP043	PIPE_2.0	0.067	10.625	108	0.071	10.625		4	18380.609	32130	1871.625	1871.625	2.342	H1-1b

Fox Hill Telecom

Radio Frequency Emissions Analysis Report

Site ID: BOHVN00152C

ATC_Mdfd - Middlefield,CT
134 Kikapoo Road
Middlefield, CT 06455

January 26, 2023

Fox Hill Telecom Project Number: 230058

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**48.46 %**

Fox Hill Telecom

January 26, 2023

Dish Wireless
5701 South Santa Fe Drive
Littleton, CO 80120

Emissions Analysis for Site: **BOHVN00152C – ATC_Mdfd - Middlefield,CT**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed radio installation for Dish Wireless, LLC (Dish) facility located at **134 Kikapoo Road, Middlefield, CT**, for the purpose of determining whether the emissions from the Proposed Dish radio and antenna installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 600 MHz band is approximately 400 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS / AWS-4) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed upgrades to the Dish Wireless antenna facility located at **134 Kikapoo Road, Middlefield, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65 for far field modeling calculations.

In OET-65, plane wave power densities in the Far Field of an antenna are calculated by considering antenna gain and reflective waves that would contribute to exposure.

Since the radiation pattern of an antenna has developed in the **Far Field** region the power gain in specific directions needs to be considered in exposure predictions to yield an Effective Radiated Power (ERP) in each specific direction from the antenna. Also, since the vertical radiation pattern of the antenna is considered, the exposure calculations would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels. To determine a worst-case scenario at each point along the calculation radials, each point was calculated using the antenna gain value at each angle of incident and compared against the result using an isotropic radiator at the antenna height with the greater of the two used to yield the more pessimistic far field value for each point along the calculation radial.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential 1.6 times increase in power density in calculating far field power density values.

With these factors Considered, the worst case **Far Field prediction model** utilized in this analysis is determined by the following equation:

Equation 9 per FCC OET65 for Far Field Modeling

$$S = \frac{33.4\ ERP}{R^2}$$

S = Power Density (in μw/cm^2)
ERP = Effective Radiated Power from antenna (watts)
R = Distance from the antenna (meters)

Predicted far field power density values for all carriers identified in this report were calculated 6 feet above the ground level and are displayed as a percentage of the applicable FCC standards. All emissions values for other carriers were calculated using the same Far Field model outlined above, using industry standard radio configurations and frequency band selection based upon available licenses in this geographic area for emissions contribution estimates.

For each Dish sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
5G	n71 (600 MHz)	4	61.5
5G	n70 (AWS-4 / 1995-2020)	4	40
5G	n66 (AWS-4 / 2180-2200)	4	40

Table 1: Channel Data Table

The following **Dish** antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz (n71) frequency band and the 2100 MHz (AWS 4) frequency bands at 1995-2020 MHz (n70) and 2180-2200 MHz (n66). This is based on feedback from Dish regarding anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	JMA MX08FRO665-21	53
B	1	JMA MX08FRO665-21	53
C	1	JMA MX08FRO665-21	53

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

RESULTS

Per the calculations completed for the proposed **Dish** configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	15.37
						Sector A Composite MPE%	**15.37**
Antenna B1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	15.37
						Sector B Composite MPE%	**15.37**
Antenna C1	JMA MX08FRO665-21	n71 (600 MHz) / n70 (AWS-4 / 1995-2020) / n66 (AWS-4 / 2180-2200)	11.45 / 16.15 / 16.65	12	566	17,426.72	15.37
						Sector C Composite MPE%	**15.37**

Table 3: Dish Emissions Levels

The Following table (*Table 4*) shows all additional carriers on site and their emissions contribution estimates, along with the newly calculated **Dish** far field emissions contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site emissions values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each **Dish** Sector as well as the composite emissions value for the site.

Site Composite MPE%	
Carrier	**MPE%**
Dish – Max Per Sector Value	**15.37 %**
AT&T	17.43 %
T-Mobile	13.91 %
Omni Antennas (800 Mhz)	1.75 %
Site Total MPE %:	**48.46 %**

Table 4: All Carrier MPE Contributions

Dish Sector A Total:	15.37 %
Dish Sector B Total:	15.37 %
Dish Sector C Total:	15.37 %
Site Total:	48.46 %

Table 5: Site MPE Summary

Table 6 below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated **Dish** sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

Dish _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Dish n71 (600 MHz) 5G	4	858.77	53	40.68	n71 (600 MHz)	400	10.17%
Dish n70 (AWS-4 / 1995-2020) 5G	4	1,648.39	53	26.00	n70 (AWS-4 / 1995-2020)	1000	2.60%
Dish n66 (AWS-4 / 2180-2200) 5G	4	1,849.52	53	26.00	n66 (AWS-4 / 2180-2200)	1000	2.60%
						Total:	**15.37 %**

Table 6: Dish Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the Dish facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

Dish Sector	Power Density Value (%)
Sector A:	15.37 %
Sector B:	15.37 %
Sector C:	15.37 %
Dish Maximum Total (per sector):	15.37 %
Site Total:	48.46 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite emissions value for this site, assuming all carriers present, is **48.46 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon the far field calculations performed for all carriers identified in this report.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Worcester, MA 01609
(978)660-3998

February 9, 2023

First Selectman Robert Yamartino
393 Jackson Hill Rd
P.O. Box 179
Middlefield, CT 06455

Re: Tower Share Application – Dish Site 14102547
Dish Wireless Telecommunications Facility @ 134 Kikapoo Road, Middlefield, CT 06455
Original Tower Approval: Connecticut Siting Council Docket # 40, May 15, 1984

Dear First Selectman Yamartino:

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing seventy five (75) foot tall monopole tower at 134 Kikapoo Road, Middlefield, CT 06455. The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by SBC Tower Holdings, LLC. The tower was originally approved by the Connecticut Siting Council in Docket #124, dated March 12, 1990.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, a single antenna mount, six (6) RRUs, and cables on the existing tower at fifty three (53) feet as more particularly detailed and described on the enclosed Construction Drawings. No height extension or compound expansion are proposed.

This letter is intended to serve as the required notice to the municipality's chief elected official. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe AT&T's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
443-677-0144

Enclosures

February 9, 2023

Dave Cooper
Project Manager, Site Development
American Tower Corporation
10 Presidential Way
Woburn, MA 01801

Re: Tower Share Application – Dish Site 14102547
Dish Wireless Telecommunications Facility @ 134 Kikapoo Road, Middlefield, CT 06455
Original Tower Approval: Connecticut Siting Council Docket # 40, May 15, 1984

Dear Mr. Cooper:

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing seventy five (75) foot tall monopole tower at 134 Kikapoo Road, Middlefield, CT 06455. The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by SBC Tower Holdings, LLC. The tower was originally approved by the Connecticut Siting Council in Docket #124, dated March 12, 1990.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, a single antenna mount, six (6) RRUs, and cables on the existing tower at fifty three (53) feet as more particularly detailed and described on the enclosed Construction Drawings. No height extension or compound expansion are proposed.

This letter is intended to serve as the required notice to the tower owner. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe AT&T's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
443-677-0144

Enclosures

February 9, 2023

SBC Tower Holdings LLC
PO Box 723597
Atlanta, GA 31139

Re: Tower Share Application – Dish Site 14102547
Dish Wireless Telecommunications Facility @ 134 Kikapoo Road, Middlefield, CT 06455
Original Tower Approval: Connecticut Siting Council Docket # 40, May 15, 1984

Dear Property Owner:

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing seventy five (75) foot tall monopole tower at 134 Kikapoo Road, Middlefield, CT 06455. The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by SBC Tower Holdings, LLC. The tower was originally approved by the Connecticut Siting Council in Docket #124, dated March 12, 1990.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, a single antenna mount, six (6) RRUs, and cables on the existing tower at fifty three (53) feet as more particularly detailed and described on the enclosed Construction Drawings. No height extension or compound expansion are proposed.

This letter is intended to serve as the required notice to the property owner. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe AT&T's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
443-677-0144

Enclosures

February 9, 2023

Jerry Russ, Zoning Officer
Community Center Building
405 Main Street
Middlefield. CT 06455

Re: Tower Share Application – Dish Site 14102547
Dish Wireless Telecommunications Facility @ 134 Kikapoo Road, Middlefield, CT 06455
Original Tower Approval: Connecticut Siting Council Docket # 40, May 15, 1984

Dear Mr. Russ:

Dish Wireless ("Dish") is proposing a wireless telecommunications facility on an existing seventy five (75) foot tall monopole tower at 134 Kikapoo Road, Middlefield, CT 06455. The monopole tower is owned and operated by American Tower Corporation. The subject property is owned by SBC Tower Holdings, LLC. The tower was originally approved by the Connecticut Siting Council in Docket #124, dated March 12, 1990.

Dish proposes to install a five (5) foot by seven (7) foot metal platform within the existing fenced compound and install three (3) antennas, a single antenna mount, six (6) RRUs, and cables on the existing tower at fifty three (53) feet as more particularly detailed and described on the enclosed Construction Drawings. No height extension or compound expansion are proposed.

This letter is intended to serve as the required notice to the municipal planning agency. As required by Regulations of Connecticut State Agencies ("RCSA") 16-50j-73 the Connecticut Siting Council ("CSC") has been notified of this proposal and will review this application. Please accept this letter as notification pursuant to RSCA 16-50j-73.

The enclosed letter and attachments to the CSC fully describe AT&T's proposal for the site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachmann, Executive Director of the CSC at 860-972-2935.

Respectfully Submitted,

Jack Andrews
Zoning Manager, Centerline Communications
443-677-0144

Enclosures

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DOCKET NO. 40

ORIGINAL

AN APPLICATION SUBMITTED BY THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF FACILITIES TO PROVIDE CELLULAR SERVICE IN THE HARTFORD AND MIDDLESEX COUNTIES.	:	CONNECTICUT SITING COUNCIL
	:	May 15, 1984

D E C I S I O N A N D O R D E R

Pursuant to the foregoing opinion, the Council hereby directs that a certificate of environmental compatibility and public need as required by section 16-50k of the General Statutes of Connecticut, revisions of 1958, revised to 1983, as amended, be issued to Southern New England Telephone for the construction, operation, and maintenance of a telecommunications tower and associated equipment to provide cellular service at each of the following sites:

Shuttle Meadow Road, Southington, Connecticut;
Mountain Street, Hartford, Connecticut;
Prestige Park Road, East Hartford, Connecticut;
Beckley Road, Berlin, Connecticut;
Slicer tract, Niederwerfer Road, South Windsor, Connecticut; and
Kikapoo Road, Middlefield, Connecticut.

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 towers shall be no taller than necessary to provide the proposed service and in no event shall exceed

   a) 150 feet at the Southington site,
   b) 100 feet at the Hartford site,
   c) 150 feet at the East Hartford site,
   d) 150 feet at the Berlin site,
   e) 75 feet at the South Windsor site, and
   f) 75 feet at the Middlefield site.

2. A fence not lower than eight feet shall surround each tower and its associated equipment.

3. The applicant or its successor shall notify the Council if and when directional antennas or any other equipment is added to any of these facilities.
4. The applicant or its successor shall permit in accordance with representations made by it during the proceeding public or private entities to share space on the facilities, for due consideration received, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
5. Unless necessary to comply with condition number seven, below, no lights shall be installed on any of these towers.
6. The facility construction shall be conducted in accordance with all applicable federal, state, and municipal laws and regulations.
7. The applicant shall submit a development and management plan (D&M) for the South Windsor, Southington, and Berlin sites pursuant to sections 16-50j-85 through 16-50j-87 of the regulations of state agencies, except that irrelevant items in section 16-50j-86 need only be identified as such. The D&M plans shall include appropriate evergreen screening of the sites. The applicant shall comply with the reporting requirements of section 16-50j-87 for all sites. The applicant shall consult with Mrs. Claire Aubin and the Town of South Windsor in the preparation of the South Windsor site D&M.
8. Construction activities shall take place during daylight working hours.
9. This decision and order shall be void and the towers and associated equipment approved herein shall be dismantled and removed,

or reapplication for any new use shall be made to the Connecticut Siting Council before any such new use is made, if the towers do not provide or permanently cease to provide cellular service following completion of construction.

10. This decision and order shall be void if all construction authorized is not completed within three years of the issuance of this decision.

Pursuant to section 16-50p(c) of the General Statutes, we hereby direct that a copy of the opinion and decision and order be served on each person listed below. A notice of the issuance shall be published in the Hartford Courant, Journal Inquirer, and the Middletown Press.

The parties to this proceeding are

Southern New England Telephone Company Room 314 227 Church Street New Haven, Connecticut 06506	(Applicant)
ATTN: Mr. Peter J. Tyrrell, Esquire	(its attorney)
Town of South Windsor 1540 Sullivan Avenue South Windsor, Connecticut 06074	represented by: Mr. Richard M. Rittenband Town Attorney 1734 Ellington Road South Windsor, Connecticut 06074
Frank Niederwerfer 260 Niederwerfer Road South Windsor, Connecticut 06074	(service waived)
Claire Aubin 407 Niederwerfer Road South Windsor, Connecticut 06074	(service waived)

Betty S. Kleiner
Chairman
Hartford Audubon Society, Inc.
5 Flintlock Ridge
Simsbury, Connecticut 06070

(service waived)

Roger Thorpe
2916 Ellington Road
South Windsor, Connecticut 06074

Intervenors in this proceeding are

Dwight A. Johnson
Murtha, Cullina, Richter
and Pinney
101 Pearl Street
P.O. Box 3197
Hartford, Connecticut 06103-0197

representing:

Metromedia TeleCommunications
Nutmeg Telecommunications, Inc.
CSI of New Haven
CSI of Stamford
Cellular Communications, Inc.
LIN Cellular Corp.
Cellular Mobile Services
Maxcell TeleCommunications, Inc.
Mobile Cellular Telephone, Inc.
Cellular Dynamics
Connecticut Corridor Cellular
Chase/Post Cellular

CERTIFICATION

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 15th day of May, 1984.

Council Members	Vote Cast
Gloria Dibble Pond Chairperson	Yes
Commissioner John Downey Designee: Commissioner Peter G. Boucher	Yes
Commissioner Stanley Pac Designee: Christopher Cooper	Yes
Owen L. Clark	Yes
Fred J. Doocy	~~Yes~~ Abstain
Mortimer A. Gelston	Yes
James G. Horsfall	Absent
Janet Sitty	Yes
Colin C. Tait	Absent

STATE OF CONNECTICUT)
: ss. New Britain, May 15, 1984
COUNTY OF HARTFORD)

I hereby certify that the foregoing is a true and correct copy of the decision and order issued by the Connecticut Siting Council, State of Connecticut.

ATTEST:

Christopher S. Wood, Executive Director
Connecticut Siting Council

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

November 7, 2022

Jack Andrews
Zoning Manager
Centerline Communications, LLC
10130 Donleigh Drive
Columbia, MD 21046
jmandrews@clinellc.com

RE: **EM-AT&T-082-221011 -** AT&T notice of intent to modify an existing telecommunications facility located at Palisades Drive (a/k/a 134 Kickapoo Road), Middlefield, Connecticut.

Dear Jack Andrews:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Prior to the commencement of construction, AT&T shall provide a copy of the Structural Analysis referencing the Connecticut State Building Code effective October 1, 2022;

2. Prior to AT&T's antenna installation, antenna mount modifications shall be installed in accordance with the Mount Analysis prepared by Engineered Tower Solutions dated August 19, 2022 and stamped and signed by Frederick Geoffrey Bost;

3. Within 45 days following completion of equipment installation, AT&T shall provide documentation certified by a Professional Engineer that its installation complied with the recommendations of the Mount Analysis;

4. Construction activities shall take place during daylight working hours in accordance with Condition No. 8 of the Council's Decision and Order in Docket No. 40;

5. RF access restriction and caution signage shall be installed at the site in compliance with FCC guidance;

6. Any deviation from the proposed modification as specified in this notice and supporting materials submitted to the Council shall render this acknowledgement invalid;

7. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;

8. The Council shall be notified in writing at least two weeks prior to the commencement of site construction activities;

9. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

10. Deployment of any 5G services must comply with FCC and FAA guidance relative to air navigation, as applicable;

11. Any nonfunctioning antenna and associated antenna mounting equipment, or other equipment at this facility owned and operated by AT&T shall be removed within 60 days of the date the antenna or equipment ceased to function;

12. The validity of this action shall expire one year from the date of this letter; and

13. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated October 4, 2022. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/RDM/emr

c: The Honorable Robert Yamartino, Selectman, Town of Middlefield
(ryamartino@middlefieldct.org)