

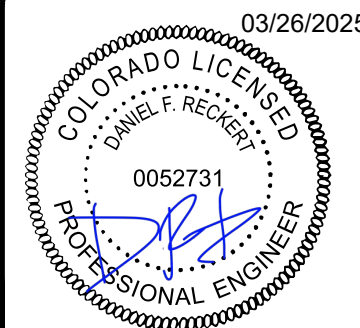
COUNTY: ROUTT
JURISDICTION: ROUTT COUNTY

Reviewed for
Verizon
Compliance
10000 PARK MEADOWS DRIVE, SUITE 300
DENE TREE, CO 80124-5453
(303) 694-3234
04/08/2025



REV	DATE	DESCRIPTION	CHK
1	03/26/25	REVISED PER COMMENT	AJ2
0	03/06/25	100% FINAL CD	AJ2

**APPROVED
FOR
CONSTRUCTION**



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.

SITE NAME
CO1 CATAMOUNT

31800 CR 14C
STEAMBOAT SPRINGS, CO 80487

5G L-SUB6 - CARRIER ADD
(EXISTING COMMUNICATIONS SITE)

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

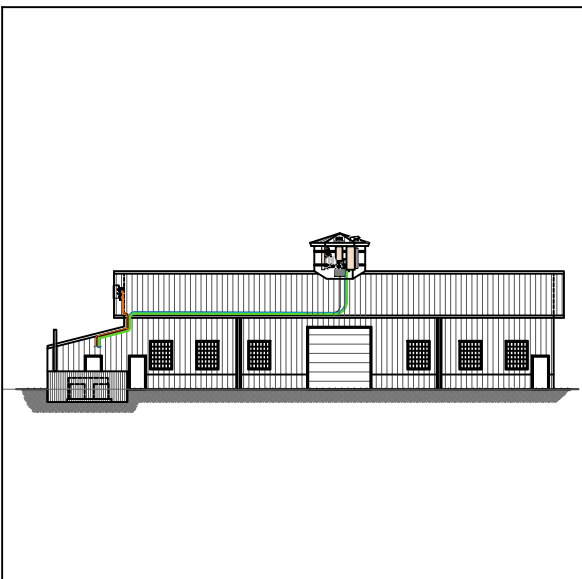
DRAWING INDEX

[illegible]

REFERENCE DOCUMENTS

RFDS BY VERIZON WIRELESS DATED: 10/08/2024
PCN MICROWAVE FINAL ENG. DATED: 09/09/2024
STRUCTURAL ANALYSIS DATED: 10/15/2024
MOUNT ANALYSIS DATED: 10/15/2024
DISH MOUNT AND STRUCTURAL PE LETTER DATED: 12/02/2024
HEAT LOAD STUDY BY EE PARKER LLC DATED: 10/20/2024
EME REPORT BY VERIZON DATED: 03/04/2025

NEW SITE ELEVATION



SITE INFORMATION

MAP/PARCEL #:	135301002
AREA OF CONSTRUCTION:	EXISTING BUILDING: ROOFTOP CUPOLA
LATITUDE:	40° 21' 21.11"
LONGITUDE:	106° 49' 39.31"
LAT/LONG TYPE:	NAD83
CURRENT ZONING:	AGRICULTURAL LAND
OCCUPANCY:	U
STRUCTURE HEIGHT:	30'-7"
ADA COMPLIANCE:	THIS FACILITY IS UNMANNED & NOT FOR HUMAN HABITATION.

APPLICABLE CODES

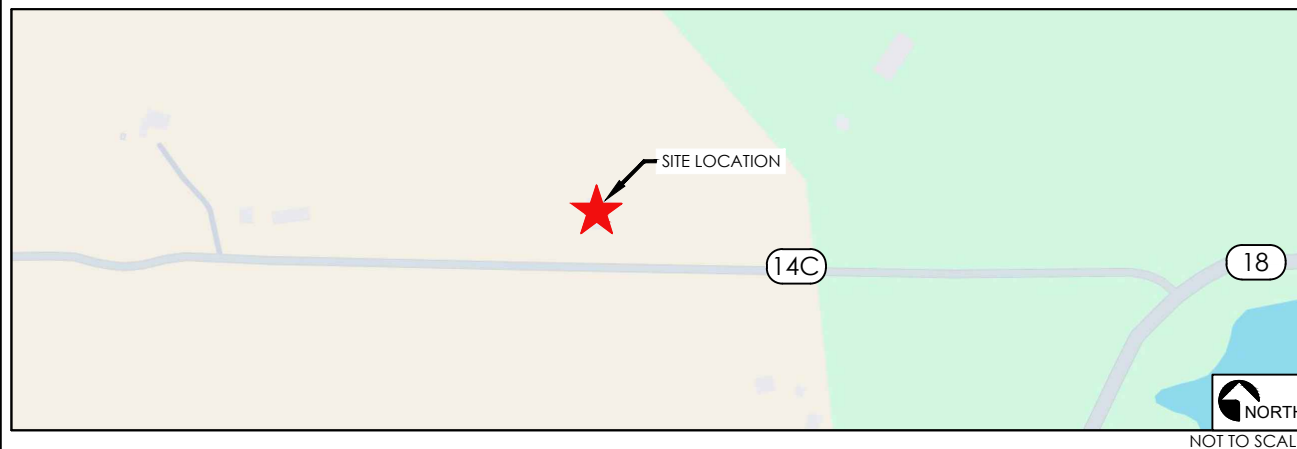
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES OF EAGLE COUNTY. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2021 CITY OF STEAMBOAT SPRINGS BUILDING CODE ADOPTION
	2021 INTERNATIONAL BUILDING CODE (IBC)
	2021 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
MECHANICAL	2021 INTERNATIONAL MECHANICAL CODE (IMC)
FUEL GAS	2021 INTERNATIONAL FUEL GAS CODE (IFGC)
PLUMBING	2021 INTERNATIONAL PLUMBING CODE (IPC)
ELECTRICAL	2023 NATIONAL ELECTRICAL CODE (NEC)
FIRE	2021 INTERNATIONAL FIRE CODE (IFC)
ENERGY	2021 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)
STEEL ANTENNA TOWERS & SUPPORTS	ANSI/TIA/EIA-222 LATEST EDITION

THE UTILITIES SHOWN HEREON ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER/ SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR/REPLACE TO OWNER'S SATISFACTION.



LOCATION MAP



DRIVING DIRECTIONS:

DRIVING DIRECTIONS:
FROM 10000 PARK MEADOWS DR (VERIZON OFFICE), HEAD NORTHWEST TOWARD PARK MEADOWS DR (128FT) HEAD NORTHWEST TOWARD PARK MEADOWS DR (0.1MI) TURN LEFT ONTO PARK MEADOWS DR (0.5MI) TURN RIGHT ONTO S YOSEMITE ST (0.3MI) USE THE LEFT 2 LANES TO TURN LEFT TO MERGE ONTO CO-470 W (0.3MI) MERGE ONTO CO-470 W (24.7MI) USE THE RIGHT 2 LANES TO TAKE EXIT 1 TO TURN ONTO I-70 W TOWARD GRAND JCT (55.0MI) TAKE EXIT 205 TO MERGE ONTO CO-9 N/BLUE RIVER PKWY TOWARD SILVERTHORNE (37.6MI) TURN LEFT ONTO US-40 W/PARK AVE (44.8MI) TURN LEFT ONTO CO RD 20 (1.5MI) TURN LEFT ONTO CO-131 S (1.0MI) TURN LEFT ONTO CO RD 18 (1.6MI) TURN RIGHT ONTO CO RD 14C (0.4MI) DESTINATION WILL BE ON THE RIGHT.

PROJECT DESCRIPTION

THIS PROJECT CONSISTS OF THE FOLLOWING:

REMOVAL

- NINE (9) EXISTING PANEL ANTENNAS
- TWELVE (12) EXISTING 7/8" COAX CABLES
- ONE (1) EXISTING RFS E105 WAVEGUIDE
- IRU600 RADIOS AND INUe SHELF
- TWO (2) EXISTING MOTOROLA CABINETS AND FILTERS

RELOCATE

- THREE (3) EXISTING 4449 RRH UNITS

INSTALLATION

- THREE (3) NEW JMA MX12FIT465-01 PANEL ANTENNAS
- THREE (3) NEW ERICSSON AIR 6419 ANTENNA/RADIOS
- THREE (3) NEW 4890 RRH UNITS
- ONE (1) NEW 6627 12 POSITION MAIN OVP UNIT
- ONE (1) NEW 4520 12 POSITION MAIN OVP UNIT (RACK MOUNTED)
- ONE (1) NEW UPCONVERTER
- ONE (1) NEW 6651 BBU UNITS
- TWO (2) NEW 6X12 HYBRID CABLES
- TWO (2) NEW WTM 4100 RADIOS
- TWO (2) NEW HYBRID FIBER/POWER CABLES
- ONE (1) NEW CTR-8740 ROUTER
- NINE (9) NEW EHRESMANN ENGINEERING A-10-24-VSP-T-PR FANS
- ONE (1) NEW EHRESMANN ENGINEERING AERIAL FAN CONTROLLER
- TWO (2) NEW EHRESMANN ENGINEERING AERIAL TEMPERATURE MONITORS
- ONE (1) NEW EHRESMANN ENGINEERING AERIAL NOISE SENSOR
- NINE (9) NEW EHRESMANN ENGINEERING POWER CABLES
- NINE (9) NEW EHRESMANN ENGINEERING FAN MOUNTING BRACKETS
- THREE (3) NEW FAMCO BK10X ROOF EXHAUST VENTS
- TWO (2) NEW FRP-6 ENDURO TUFF SPAN 24"x24" STATIONARY LOUVERS

PROJECT TEAM

<u>APPLICANT/CLIENT:</u> VERIZON WIRELESS 10000 PARK MEADOWS DRIVE, SUITE 300 LONE TREE, CO 80124-5453	<u>PROPERTY OWNER:</u> SLAG RESOURCES COMPANY, LLC JOHN GRACE 970-846-0200 885 ANGLERS CT STEAMBOAT SPRINGS, CO 80487-8821	<u>CONSTRUCTION ENGINEER:</u> VERIZON WIRELESS ANDREW COLE 303-827-6279 10000 PARK MEADOWS DRIVE, SUITE 300 LONE TREE, CO 80124-5453 ANDREW.COLE@VERIZONWIRELESS.COM	<u>ENGINEER/DESIGNER:</u> RETFERFORD ENTERPRISES, INC AARON ZAJICEK 720-371-3327 7093 SILVERHORN DR EVERGREEN, CO 80439 AARON.ZAJICEK@RETFERFORDENTERPRISES.COM	<u>SITE ACQUISITION:</u> RETFERFORD ENTERPRISES, INC. RACHEL LONG 720-581-1940 RACHEL.LONG@RETFERFORDENTERPRISES.COM
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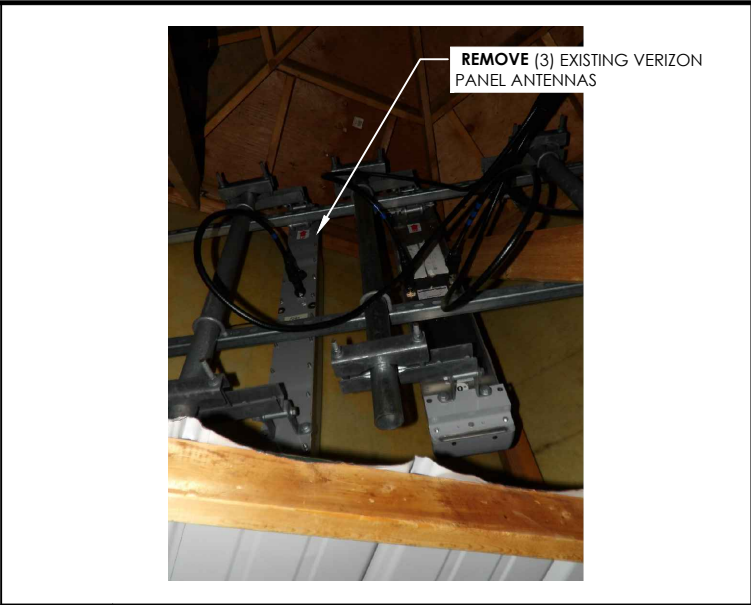
GENERAL PROJECT NOTES	
1.	CONTRACTOR IS RESPONSIBLE FOR ERECTING TEMPORARY BARRICADES AND/OR FENCING TO PROTECT THE SAFETY OF THE PUBLIC DURING CONSTRUCTION. THE CONTRACTOR SHALL REMOVE ALL TEMPORARY BARRIERS AND REPAIR ALL DAMAGE TO PROPERTY ON THE SITE CAUSED BY THIS CONSTRUCTION. THE COST OF REPAIR IS THE CONTRACTOR'S RESPONSIBILITY.
2.	ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS.
3.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE PRIOR TO ORDERING ANY MATERIALS OR CONDUCTING ANY WORK.
4.	EXCESS SOIL MATERIAL AND DEBRIS CAUSED BY THIS CONSTRUCTION SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL MANNER.
5.	CONTRACTOR SHALL MAKE ADJUSTMENTS TO GRADING ELEVATIONS AS NECESSARY TO ENSURE A SITE FREE OF DRAINAGE PROBLEMS.
6.	CONTRACTOR SHALL COORDINATE A CONSTRUCTION LAYDOWN AREA WITH THE PROPERTY OWNER. CONSTRUCTION LAYDOWN AREA SHALL BE FENCED-IN WITH TEMPORARY (45 DAY) CONSTRUCTION FENCE. THE TEMPORARY FENCE SHALL BE CONSTRUCTED OF 6' HIGH CHAIN LINK FABRIC AND IS TO BE REMOVED AT THE END OF CONSTRUCTION. LAYDOWN AREA IS TO BE RESTORED TO ITS ORIGINAL CONDITION AFTER FENCE REMOVAL.
7.	SURVEY INFORMATION SHOWN WAS CREATED FROM RECORD INFORMATION AND DOES NOT CONSTITUTE A LEGAL BOUNDARY SURVEY.
8.	THESE PLANS DO NOT ADDRESS THE SAFETY AND STABILITY OF THE STRUCTURE DURING ASSEMBLY AND ERECTION, WHICH ARE THE RESPONSIBILITY OF THE ERECTOR, BASED ON THE MEANS AND METHODS CHOSEN BY THE ERECTOR.

GENERAL CONTRACTOR NOTES	
1.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE PROJECT SCOPE OF WORK DEFINED UNDER THE REQUEST FOR PROPOSAL (RFP) FOR THIS PROJECT AND ALL ASSOCIATED ATTACHMENTS AND DOCUMENTS PROVIDED. THE RFP AND ALL ASSOCIATED DOCUMENTS SHALL DEFINE THE COMPLETE PROJECT SCOPE OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL DOCUMENTS AND IS SOLELY RESPONSIBLE FOR ALL WORK. ALL DOCUMENTS INCLUDED WITHIN THE PROJECT REQUEST FOR PROPOSAL ARE REQUIRED FOR THE COMPLETE PROJECT SCOPE OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK (EQUIPMENT, MATERIAL, INSTALLATION, TESTING, ETC.) INDICATED IN ALL DOCUMENTS. THE RFP, VERIZON NETWORK STANDARDS AND PROJECT ADDENDUMS AND CLARIFICATIONS ARE COMPLEMENTARY TO EACH OTHER. THE FORMAT OF THE SPECIFICATIONS AND DRAWING NUMBERING PER DISCIPLINE IS NOT INTENDED TO IMPLY SEGREGATION OF SUB CONTRACTOR WORK. CONTRACTOR SHALL ASSIGN ALL SUB CONTRACTOR WORK AND VERIZON WILL NOT ACCEPT ANY CHANGE ORDERS FOR INTERNAL CONTRACTOR WORK ASSIGNMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTING ALL RFP DOCUMENTS TO THEIR SUB CONTRACTORS. ALL RFP DOCUMENTS ARE REQUIRED TO INDICATE THE PROJECT SCOPE OF WORK. PARTIAL SUB CONTRACTOR DOCUMENT PACKAGES ARE HIGHLY DISCOURAGED. IN THE EVENT OF A CONFLICT BETWEEN THE DRAWINGS, SPECIFICATIONS, REFERENCED STANDARDS, VERIZON STANDARDS, OR AGREEMENT TERMS AND CONDITIONS THE ARCHITECT/ ENGINEER SHALL BE CONTACTED FOR FORMAL INTERPRETATION OF THE REQUIREMENTS. THE CONTRACTOR SHALL BE DEEMED TO HAVE PROVIDED THE DETAILED AND EXTENSIVE INTERPRETATION. ANY WORK INSTALLED IN CONFLICT WITH THE ARCHITECT/ ENGINEER INTERPRETATIONS SHALL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO VERIZON.
2.	ALL ANTENNAS MUST BE PIM TESTED WITHIN 48 HOURS OF THEM BEING RECEIVED BY THE INSTALLATION CONTRACTOR. THOSE RESULTS MUST BE SENT BACK TO THE VERIZON CONSTRUCTION ENGINEER AND EQUIPMENT ENGINEER WITHIN THE SAME 48 HOURS. IF YOU MISS THE 48HR TIMELINE AND THE ANTENNAS DO NOT PASS UPON INSTALLATION, YOUR COMPANY WILL BE CHARGED FOR THE COST OF THE ANTENNAS FOR REPLACEMENT.
3.	ALL LOADS MUST BE SECURED PROPERLY TO THE VEHICLE OR TRAILER. VERIZON WILL PASS ALONG THE COST OF ANY REPLACEMENTS DUE TO DAMAGE OR LOSS WHETHER IT IS NEW OR USED.
4.	GENERAL CONTRACTORS & SUBCONTRACTORS SHALL VERIFY EXISTING CONDITIONS ON THE JOB SITE ALONG WITH ALL PLANS & DIMENSIONS. NOTIFY THE ENGINEER OF RECORD OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
5.	DRAWINGS ARE TO SCALE WHEN PLOTTED ON 11"X17" SHEET. USE DIMENSIONS SHOWN - DO NOT SCALE DRAWING. CONTACT RETHERFORD ENTERPRISES, INC. FOR FURTHER INFORMATION.
6.	CALL BEFORE YOU DIG. COLORADO LAW REQUIRES 2 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE. CALL 811 OR COLORADO811.ORG - SEE THE EXCAVATOR HANDBOOK FOR MORE INFORMATION.
7.	THESE DRAWINGS MAY NOT SHOW ALL UNDERGROUND/BUILDING PIPING & UTILITIES.THE CONTRACTOR SHALL EXERCISE EXTREME CARE DURING ALL EXCAVATION & OTHER CONSTRUCTION ACTIVITIES.

ANTENNA, MOUNTS & HARDWARE INSTALLATION NOTES	
1.	CONTRACTOR TO INSTALL ANTENNAS, MOUNTS AND TOWER HARDWARE PER MANUFACTURER'S RECOMMENDATIONS (OR AS REQUIRED BY THE OWNER/PROVIDER).
2.	ALL BOLTS SHALL BE TIGHTENED PER AISC REQUIREMENTS.
3.	ANY GALVANIZED SURFACES THAT ARE DAMAGED BY ABRASIONS, CUTS, DRILLING OR FIELD WELDING DURING SHIPPING OR ERECTION SHALL BE TOUCHED-UP WITH TWO COATS OF COLD GALVANIZING COMPOUND MEETING THE REQUIREMENTS OF ASTM A780.
4.	ANTENNA MOUNTS SHALL NOT BE USED AS A CLIMBING DEVICE. WORKERS SHALL ALWAYS TIE OFF TO AN APPROVED CLIMBING POINT.

MAIN OVP & RRH INSTALLATION NOTES	
1.	CONTRACTOR TO INSTALL MAIN OVP, REMOTE RADIO HEADS, TOWER MOUNTED AMPLIFIERS, AND/OR DIPLEXERS PER MANUFACTURER'S RECOMMENDATIONS.
2.	ALL BOLTS SHALL BE TIGHTENED PER AISC REQUIREMENTS.
3.	ANY GALVANIZED SURFACES THAT ARE DAMAGED BY ABRASIONS, CUTS, DRILLING OR FIELD WELDING DURING SHIPPING OR ERECTION SHALL BE TOUCHED-UP WITH TWO COATS OF COLD GALVANIZING COMPOUND MEETING THE REQUIREMENTS OF ASTM A780.

COAX PORT NOTES	
1.	REQUIRED ADDITIONAL COAX PORTS TO BE ADDED AS NEEDED BY CONTRACTOR.
2.	ANY ADDITIONAL COAX PORTS TO BE INSTALLED BELOW THE EXISTING, WHERE POSSIBLE.
3.	CONTRACTOR TO INVESTIGATE INTERIOR OF SHELTER/EQUIPMENT ROOM FOR CLEAREST PENETRATION POINT.
4.	ADDITIONAL COAX PORTS TO BE INSTALLED PER INDUSTRY STANDARDS.



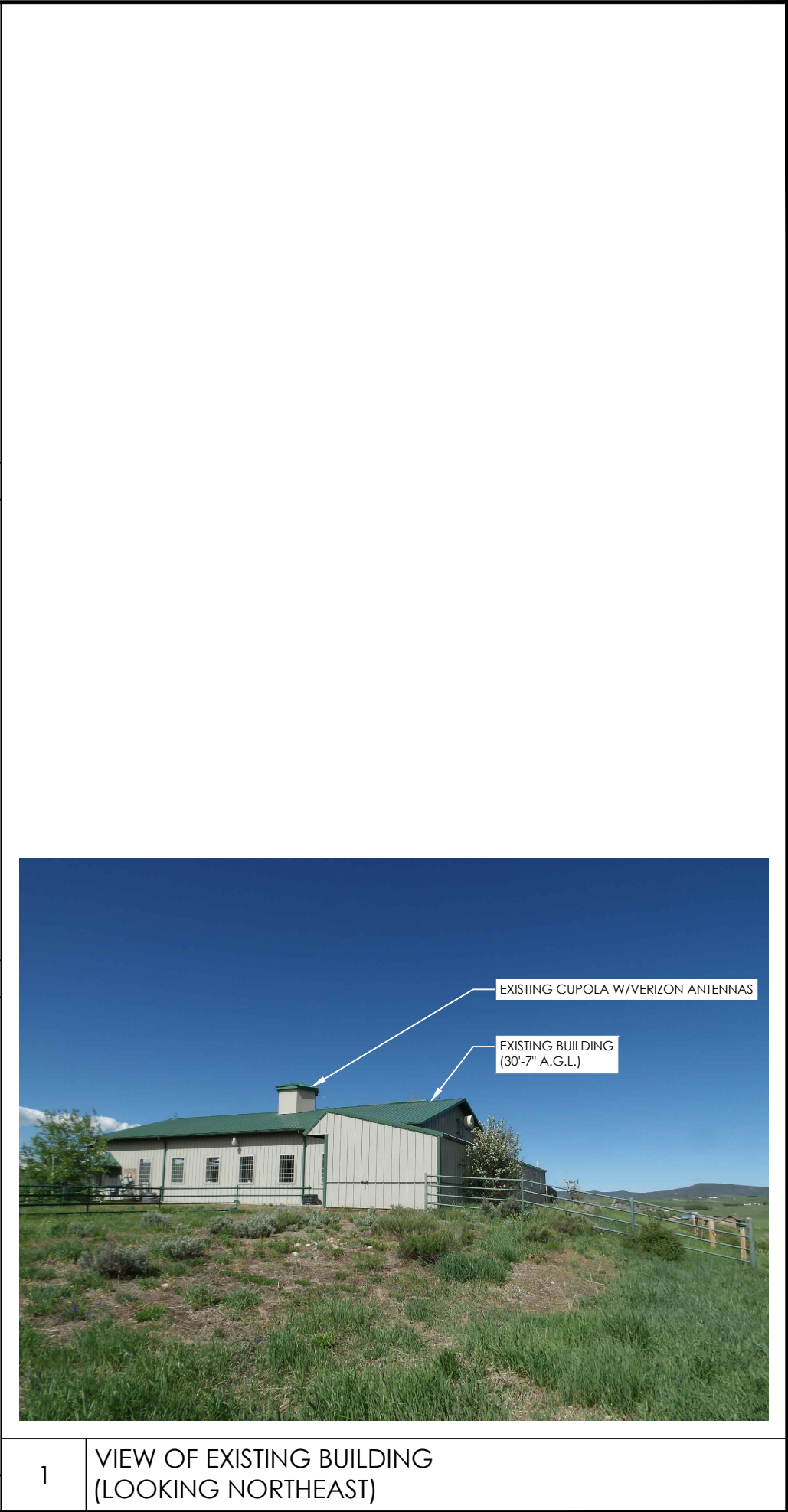
2 | VIEW OF EXISTING ALPHA SECTOR



3 | VIEW OF EXISTING BETA SECTOR



4 | VIEW OF EXISTING GAMMA SECTOR



1 | VIEW OF EXISTING BUILDING (LOOKING NORTHEAST)

Reviewed for

verizon

Compliance

10000 PARK MEADOWS DRIVE, SUITE 300
DONE TREE, CO 80124-5453
(303) 694-3234

04/08/2025

REETHERFORD ENTERPRISES, INC.
EMPOWERING CONNECTIONS
7093 SILVERHORN DRIVE
EVERGREEN | CO | 80439
(720) 261-2064

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5G L-SUB6 - CARRIER ADD
(EXISTING COMMUNICATIONS SITE)

SHEET TITLE

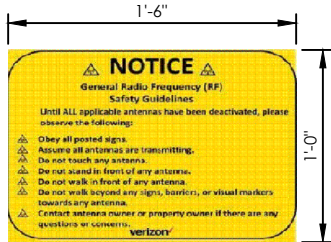
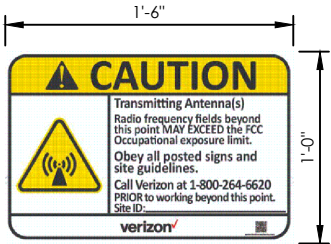
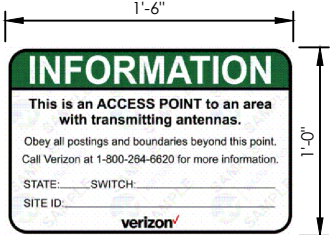
**GENERAL NOTES &
SITE IMAGES**

SHEET NUMBER

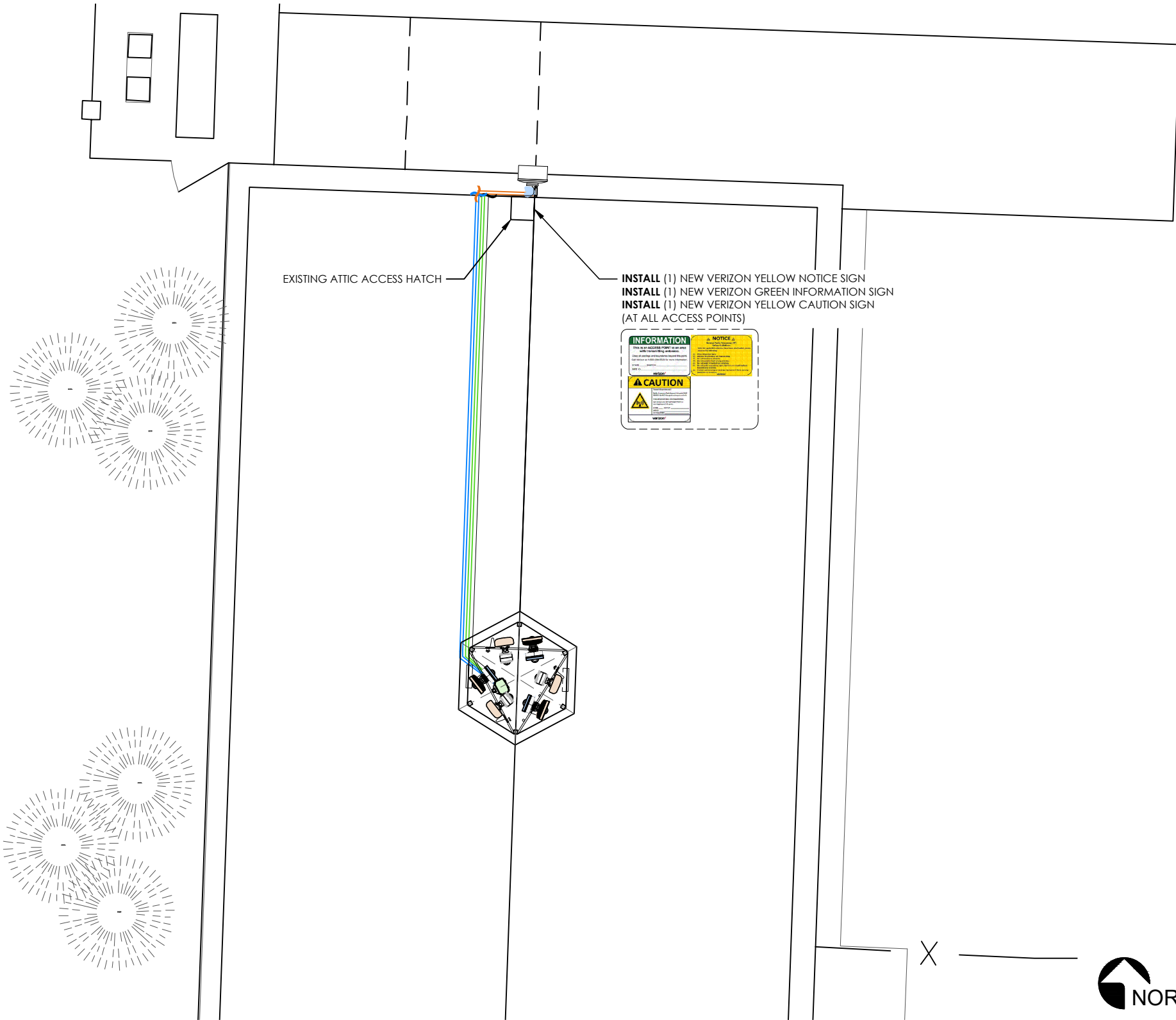
G-1

SIGN SPECIFICATIONS	
1.	ALL SIGNS SHOULD BE UV RESISTANT FOR OUTDOOR USE.
2.	ALL SIGNS SHALL HAVE ROUNDED CORNERS WITH PRE-DRILLED HOLES.

GENERAL EME SITE PLAN NOTES	
1.	EME SITE PLAN IS BASED ON EME REPORT 03/04/2025 PROVIDED BY VERIZON.
2.	NEW VERIZON YELLOW NOTICE SIGNS AND NEW VERIZON GREEN INFORMATION SIGNS TO BE POSTED AT ANY ACCESS POINT TO THE ROOF.



EME SIGN SPECIFICATIONS
N.T.S.



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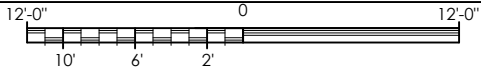
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SHEET TITLE

NEW EME SITE
PLAN

SHEET NUMBER

G-2

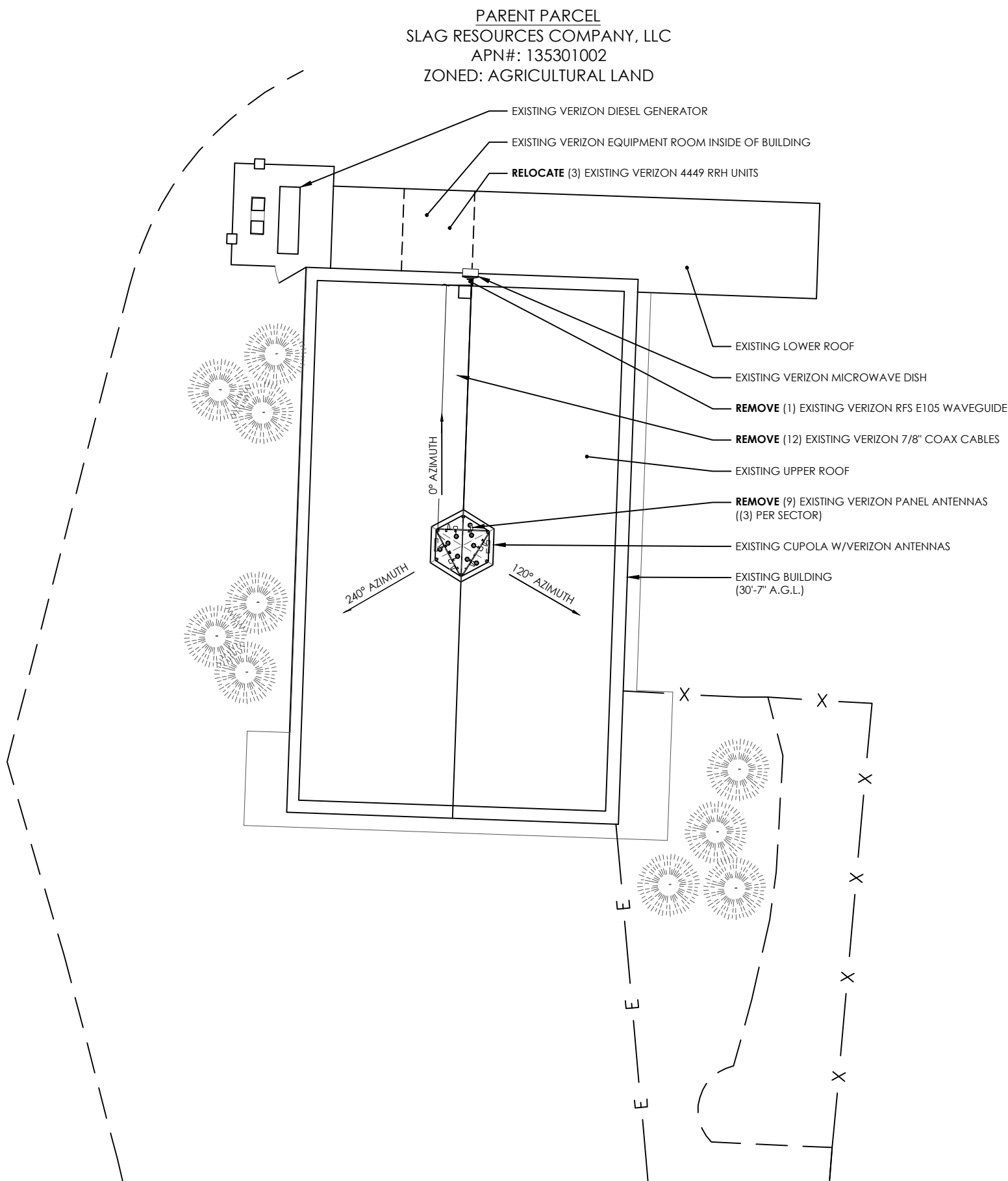


- GENERAL SITE PLAN NOTES
1.

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2.

SITE PLAN DATA AS SHOWN IS BASED UPON A LIMITED SITE MAPPING OF THE SURROUNDING AREA AND ARCHIVED SURVEY DOCUMENTS. DATA AS SHOWN IS FOR REFERENCE ONLY. CONFIRMATION AND PROOF OF LEASE AREA AND/OR EASEMENTS IS BEYOND THE SCOPE OF THIS PROJECT.
3.

CARRIER CONTRACTORS SHALL BE RESPONSIBLE FOR PROTECTION OF ROOF SURFACE DURING CONSTRUCTION. PROPER ROOF PROTECTING MATERIALS SHALL BE PLACED AROUND ALL WORKING AREAS AND NO TOOLS, LADDERS, MATERIALS, OR EQUIPMENT SHALL BE PLACED DIRECTLY ON THE ROOF SURFACE. ANY DAMAGES TO ROOF SURFACE DURING CONSTRUCTION SHALL BE REPAIRED TO AS NEW CONDITION.



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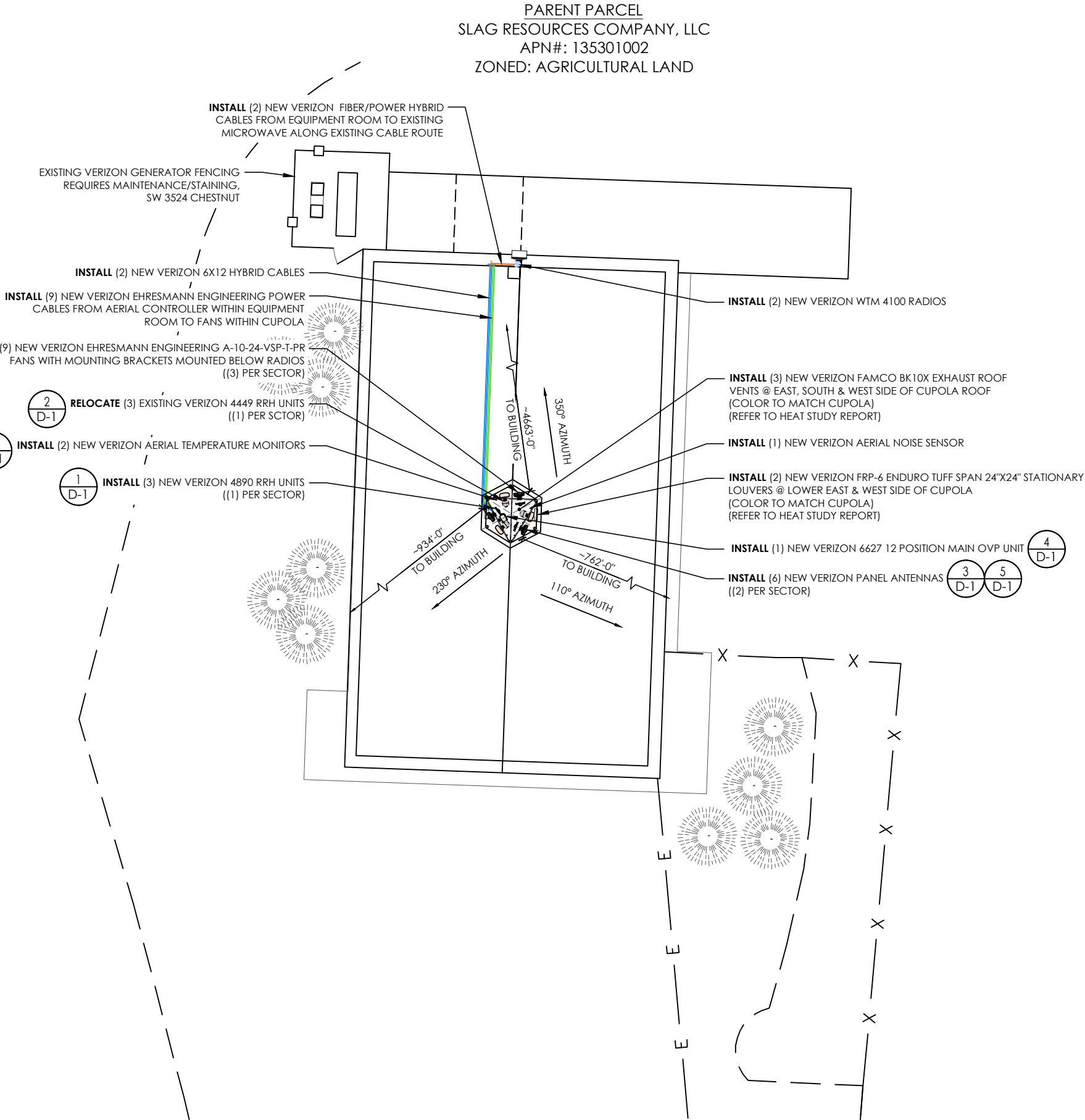
A-1

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**COLORADO LICENSED
PROFESSIONAL ENGINEER**
DANIEL F. RECKERT
0052731

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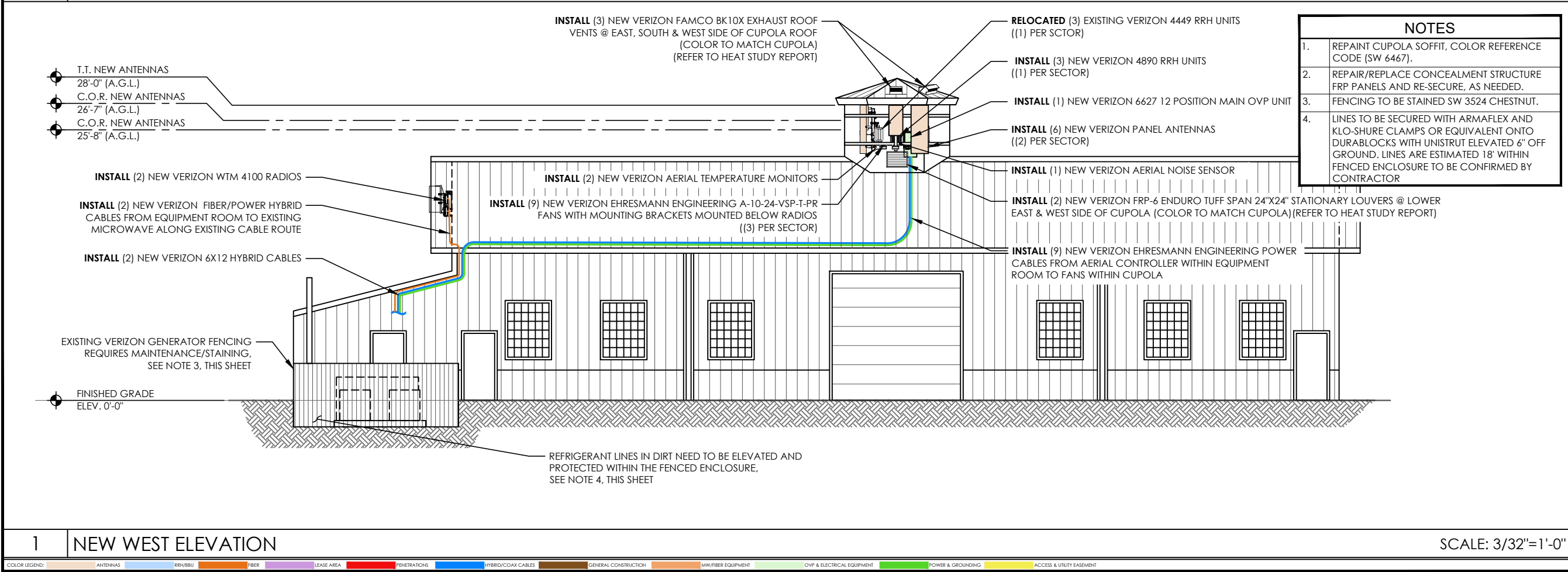
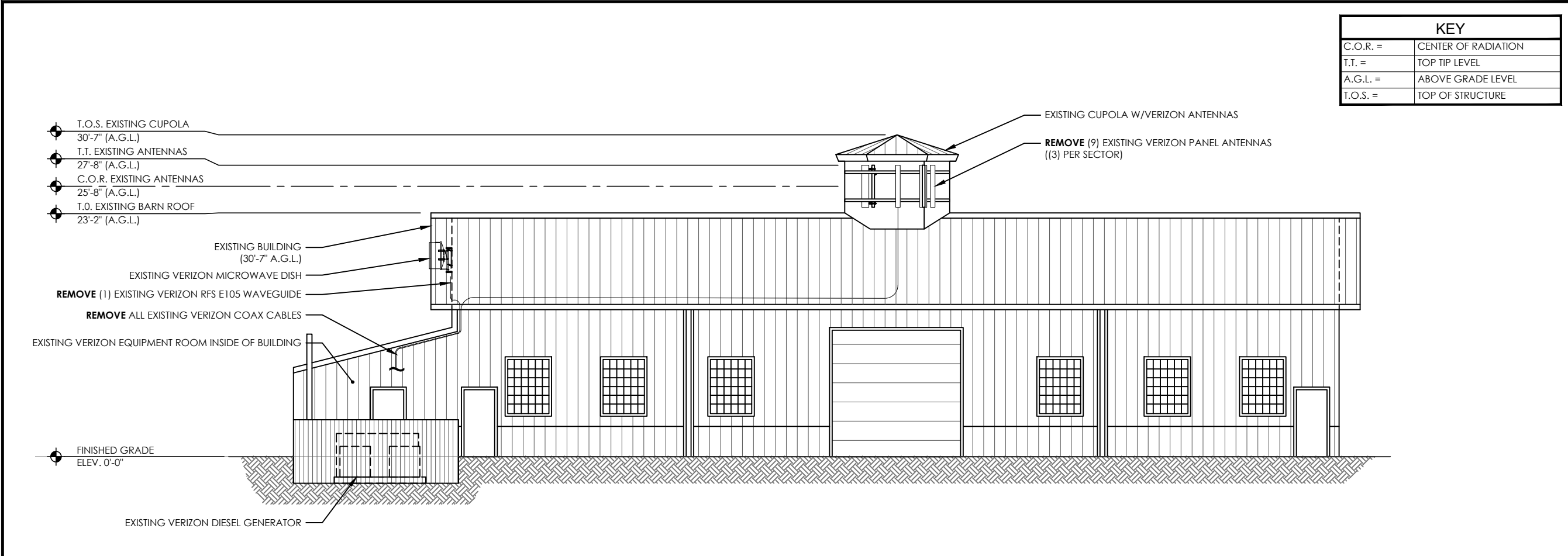
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NEW SITE PLAN

SHEET NUMBER
A-2



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SHEET TITLE

**EXISTING & NEW
ELEVATIONS**

SHEET NUMBER

A-3



2 BATTERY RACK
A-4



4 DC POWER DISTRIBUTION CENTER
A-4




12 FIBER RACK
A-4

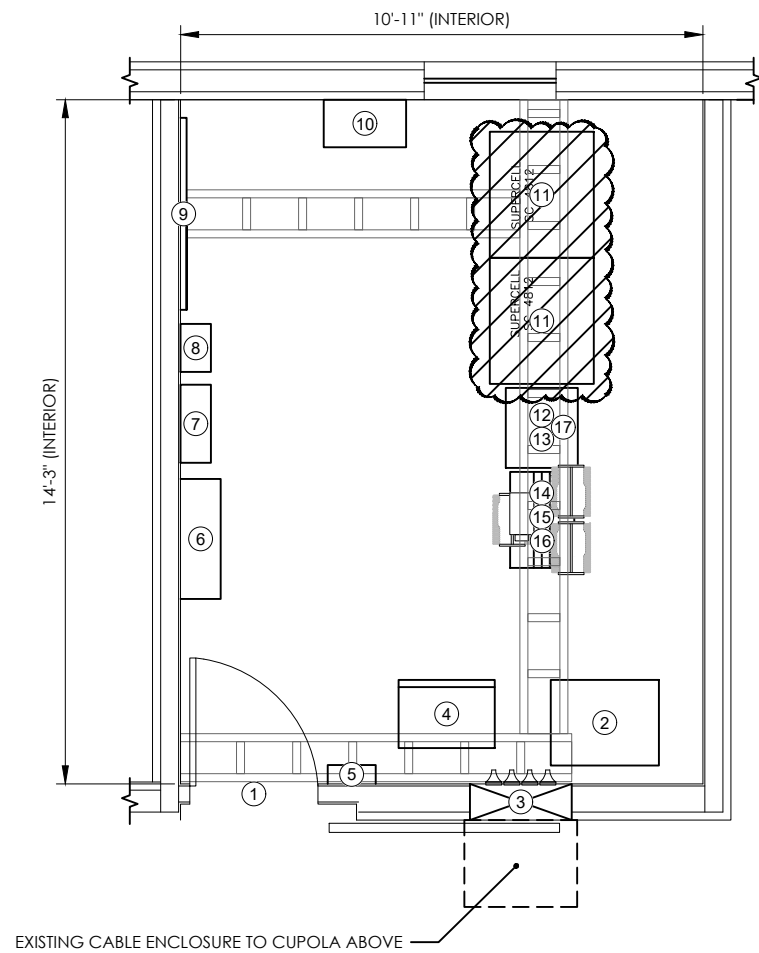


15 RRH UNITS RACK
A-4

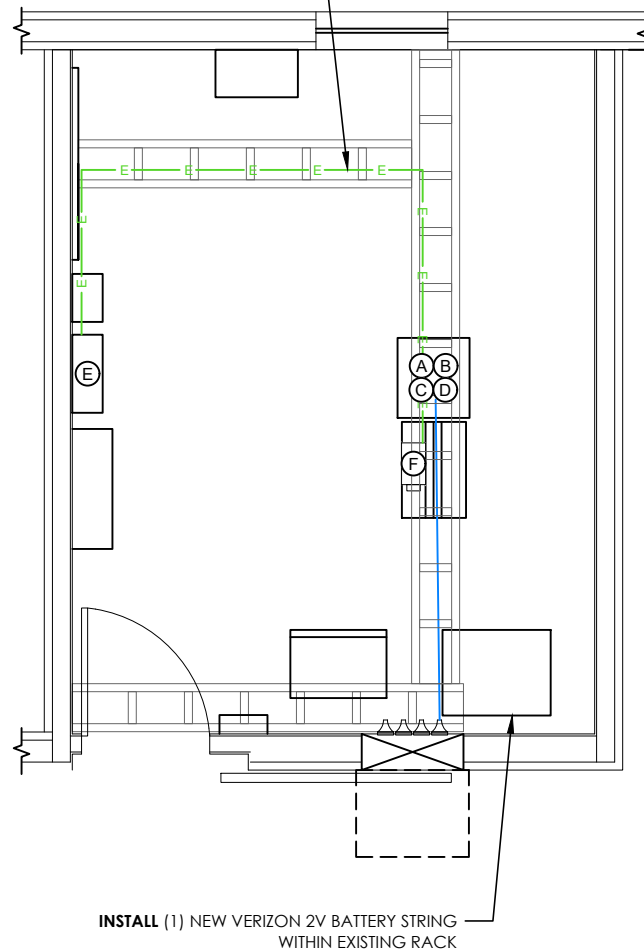
RELOCATE (3) EXISTING
4449 MAIN OVP UNITS
TO CUPOLA

NOTE

 TO BE REMOVED AND
DISPOSED OF IN A LEGAL
MANNER.




INSTALL NEW VERIZON #12CU POWER FOR AERIAL
FAN CONTROLLER ROUTED FROM EXISTING A/C
PANEL ROUTED WITHIN 1" CONDUIT



KEYED NOTES	
①	ACCESS DOOR
②	BATTERY RACK
③	COAX PORT
④	DC POWER DISTRIBUTION CENTER
⑤	TEMPERATURE CONTROL
⑥	AUTOMATIC TRANSFER SWITCH
⑦	ELECTRICAL PANEL
⑧	JBOX
⑨	TELCO BOARD
⑩	COMPRESSOR
⑪	REMOVE (2) MOTOROLA CABINETS
⑫	FIBER RACK
⑬	(1) 6630 BBU UNIT
⑭	AMPLINK RACK
⑮	(3) 4449 RRH UNITS (RELOCATE)
⑯	REMOVE FILTERS
⑰	REMOVE IRU RADIOS AND INUE SHELF
A	INSTALL (1) NEW UPCONVERTER
B	INSTALL (1) NEW 6651 BBU UNIT
C	INSTALL (1) NEW CTR-8740 ROUTER
D	INSTALL (1) NEW 4520 MAIN OVP UNIT
E	INSTALL (1) NEW 5 AMP BREAKER TO A/C PANEL FOR AERIAL FAN CONTROLLER
F	INSTALL (1) NEW AERIAL FAN CONTROLLER

BATTERY SPECIFICATIONS	
(8) EXISTING BATTERIES	
MANUFACTURER	DEKA
TYPE	UNIGY I
MODEL	12AVR170ET
NOMINAL VOLTAGE	12V
NOMINAL CAPACITY	170Ah (8Hr) TO 1.75 VPC
STRING	2 STRINGS
RECTIFIER SPECIFICATIONS	
(6) EXISTING RECTIFIERS	
MANUFACTURER	GE
MODEL	NEO50AC48ATEZ
-	
CONVERTER SPECIFICATIONS	
(3) EXISTING CONVERTERS	
MANUFACTURER	GE
MODEL	NE075DC24A
-	

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10000 PARK MEADOWS DRIVE, SUITE 300
STONE TREE, CO 80124-5453
(303) 694-3234
04/08/2025

**RETHERFORD ENTERPRISES, INC.**
EMPOWERING CONNECTIONS
7093 SILVERHORN DRIVE
EVERGREEN | CO | 80439
(720) 261-2064

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CO1 CATAMOUNT

31800 CR 14C
STEAMBOAT SPRINGS, CO 80487

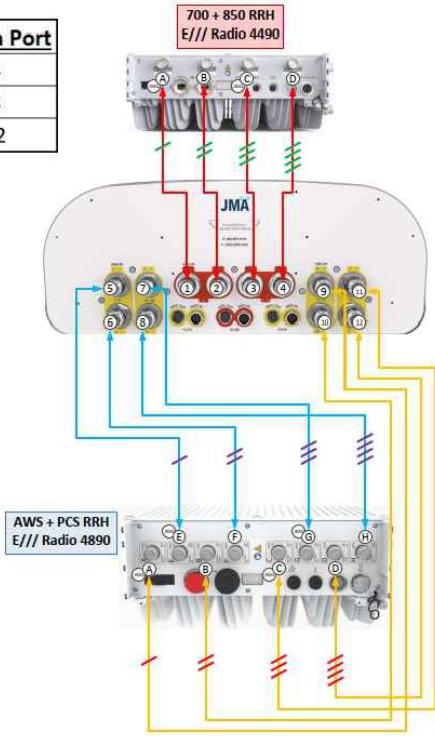
5G L-SUB6 - CARRIER ADD
(EXISTING COMMUNICATIONS SITE)

SHEET TITLE
**EXISTING & NEW
EQUIPMENT PLANS**

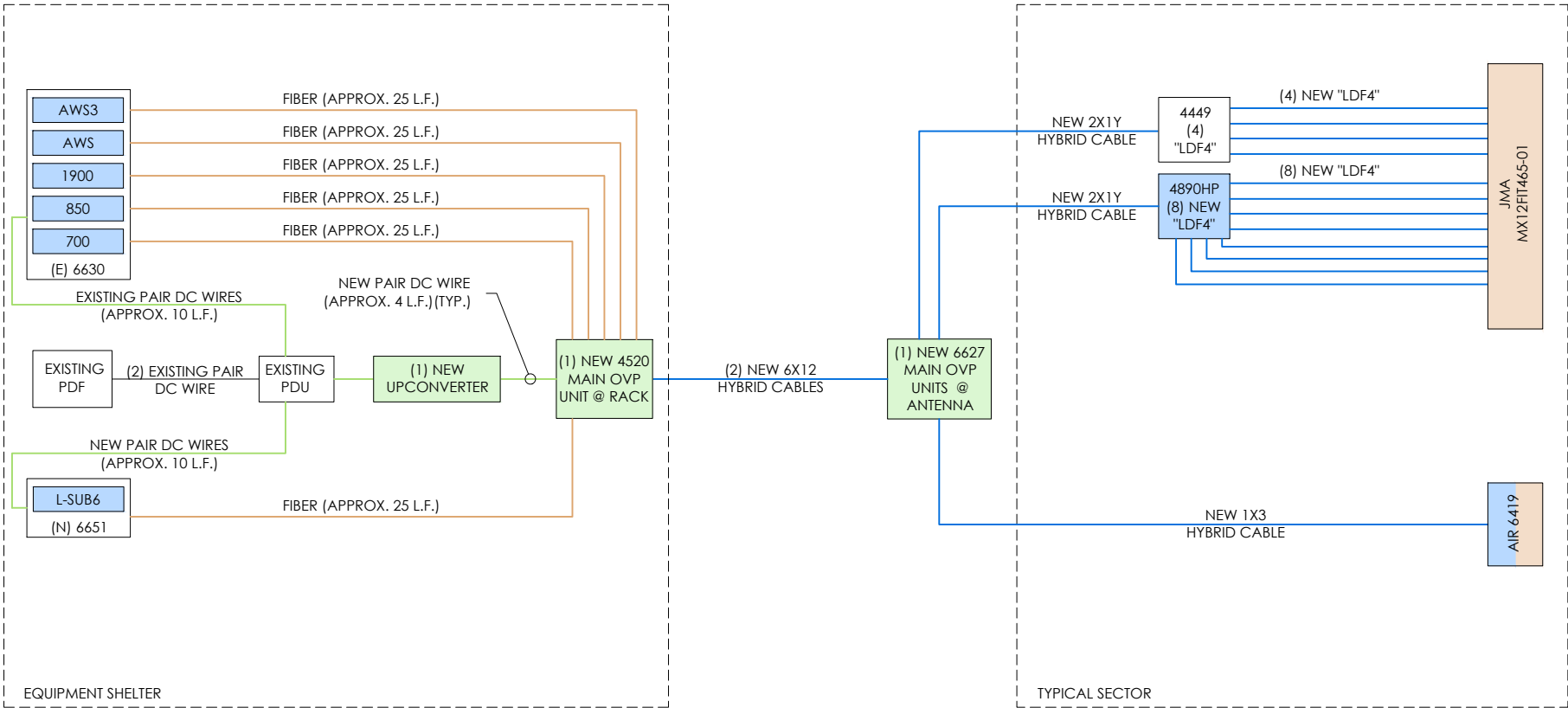
SHEET NUMBER
A-4

JMA MX12 FIT 4/6/8 65
per sector

Radio	Port	Antenna Port
4490	A-D	1-4
4890	E-H	5-8
	A-D	9-12



HYBRID CABLE LENGTHS				
FROM (RRH) TO (ANTENNAS)				
ANTENNA JUMPERS	SECTOR	CABLE/COAX SIZE (NOMINAL)	CABLE/COAX (QUANTITY)	ESTIMATED CABLE/COAX LENGTH
	ALPHA	½"Ø	12	15' PRE-MADE JUMPERS
	BETA	½"Ø	12	15' PRE-MADE JUMPERS
	GAMMA	½"Ø	12	15' PRE-MADE JUMPERS
FROM (MAIN OVP) TO (RRH)				
RRH JUMPERS	ALPHA	HYB 2X1Y	2	15'
		HYB 1X3	1	15'
	BETA	HYB 2X1Y	2	15'
		HYB 1X3	1	15'
	GAMMA	HYB 2X1Y	2	15'
		HYB 1X3	1	15'
FROM (MAIN OVP) TO (MAIN OVP)				
MAIN TRUNK	SECTOR	CABLE/COAX SIZE (NOMINAL)	CABLE/COAX (QUANTITY)	ESTIMATED CABLE/COAX LENGTH
	ALPHA, BETA & GAMMA	HYB 6X12	2	~100'
HYBRID CABLE LENGTHS				
FROM (MW RACK) TO (WTM 4100 RADIOS)				
MAIN TRUNK	MFG/MODEL	CABLE/COAX	CABLE/COAX (QUANTITY)	ESTIMATED CABLE/COAX LENGTH
	BIZLINK 037-579832-XXX	HYB FIBER/POWER	2	~35'
POWER CABLE LENGTHS				
FROM (AERIAL CONTROLLER) TO (AXIAL FANS)				
POWER CABLE	MFG/MODEL	CABLE/COAX	CABLE/COAX (QUANTITY)	ESTIMATED CABLE/COAX LENGTH
	EHRESMANN PROVIDED	POWER	9	100'

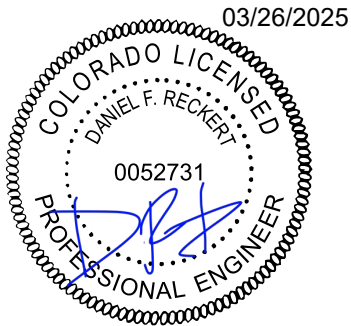


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31800 CR 14C
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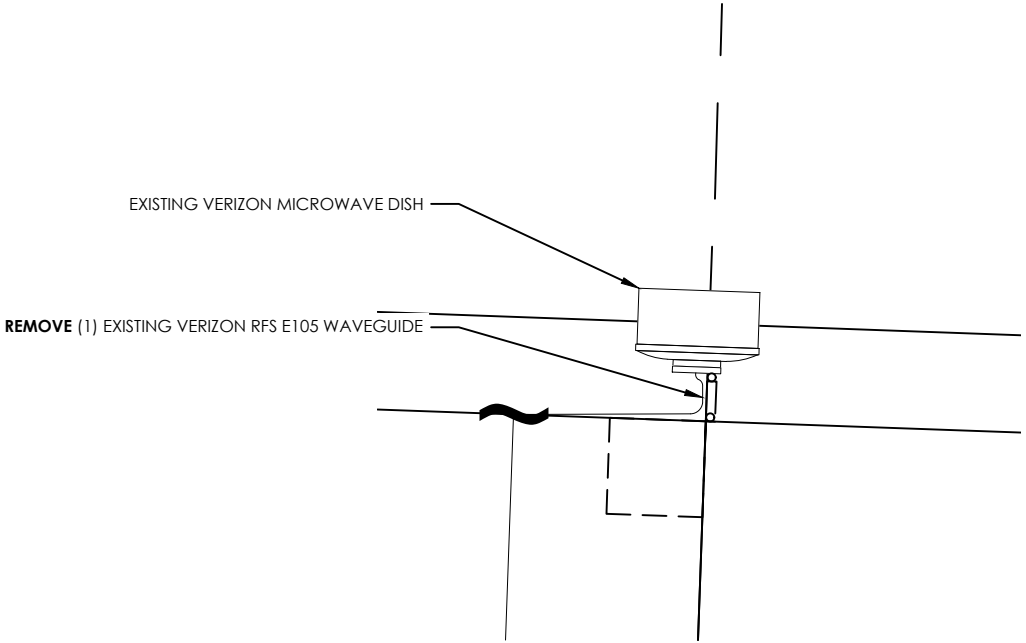
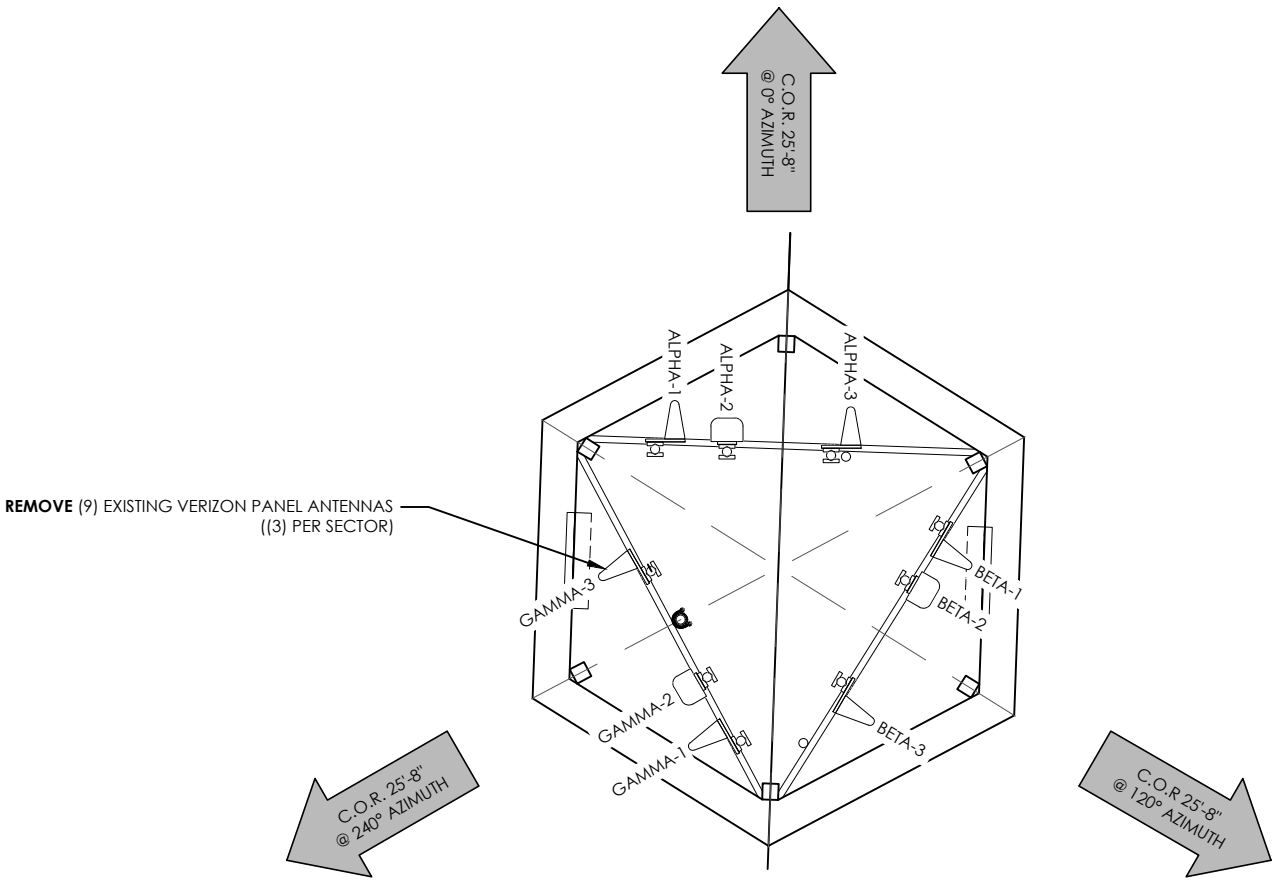
SHEET TITLE
**NEW CABLE CHART
& DIAGRAM**

SHEET NUMBER

A-5

EXISTING ANTENNA SCHEDULE							
	C.O.R.	AZIMUTH	QUANTITY	ANTENNA MAKE/MODEL	MOUNT TYPE	COAX (QUANTITY) SIZE (NOMINAL)	NOTES
ALPHA	25'-8"	0°	1	AMPHENOL BXA-70080-4CF 4' PANEL ANTENNA	(9) PIPE MOUNTS	REMOVE (12) EXISTING 7/8" COAX CABLES	REMOVE
			2	AMPHENOL LPD-7905/4 4' PANEL ANTENNA			REMOVE
BETA	25'-8"	120°	1	AMPHENOL BXA-70080-4CF 4' PANEL ANTENNA			REMOVE
			2	AMPHENOL LPD-7905/4 4' PANEL ANTENNA			REMOVE
GAMMA	25'-8"	240°	1	AMPHENOL BXA-70080-4CF 4' PANEL ANTENNA			REMOVE
			2	AMPHENOL LPD-7905/4 4' PANEL ANTENNA			REMOVE

NOTES:	
1.	ALL EXISTING AZIMUTHS REFERENCE TRUE NORTH.
2.	ALL EXISTING AZIMUTHS ARE APPROXIMATE AND BASED ON THE RFDS PROVIDED BY VERIZON.
3.	ALL EXISTING AZIMUTHS REFERENCE DATA COLLECTED FROM A RECENT SITE VISIT AND DIFFERS FROM THE INFORMATION PROVIDED IN THE RFDS.



NOTICE	
1.	CONTRACTOR SHALL NOT SUBMIT BIDS OR PERFORM CONSTRUCTION WORK ON THIS PROJECT WITHOUT ACCESS TO THE CURRENT COMPLETE SET OF DRAWINGS LISTED IN THE TITLE-SHEET INDEX.

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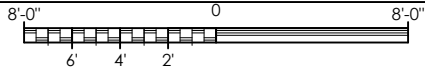
SITE NAME
CO1 CATAMOUNT

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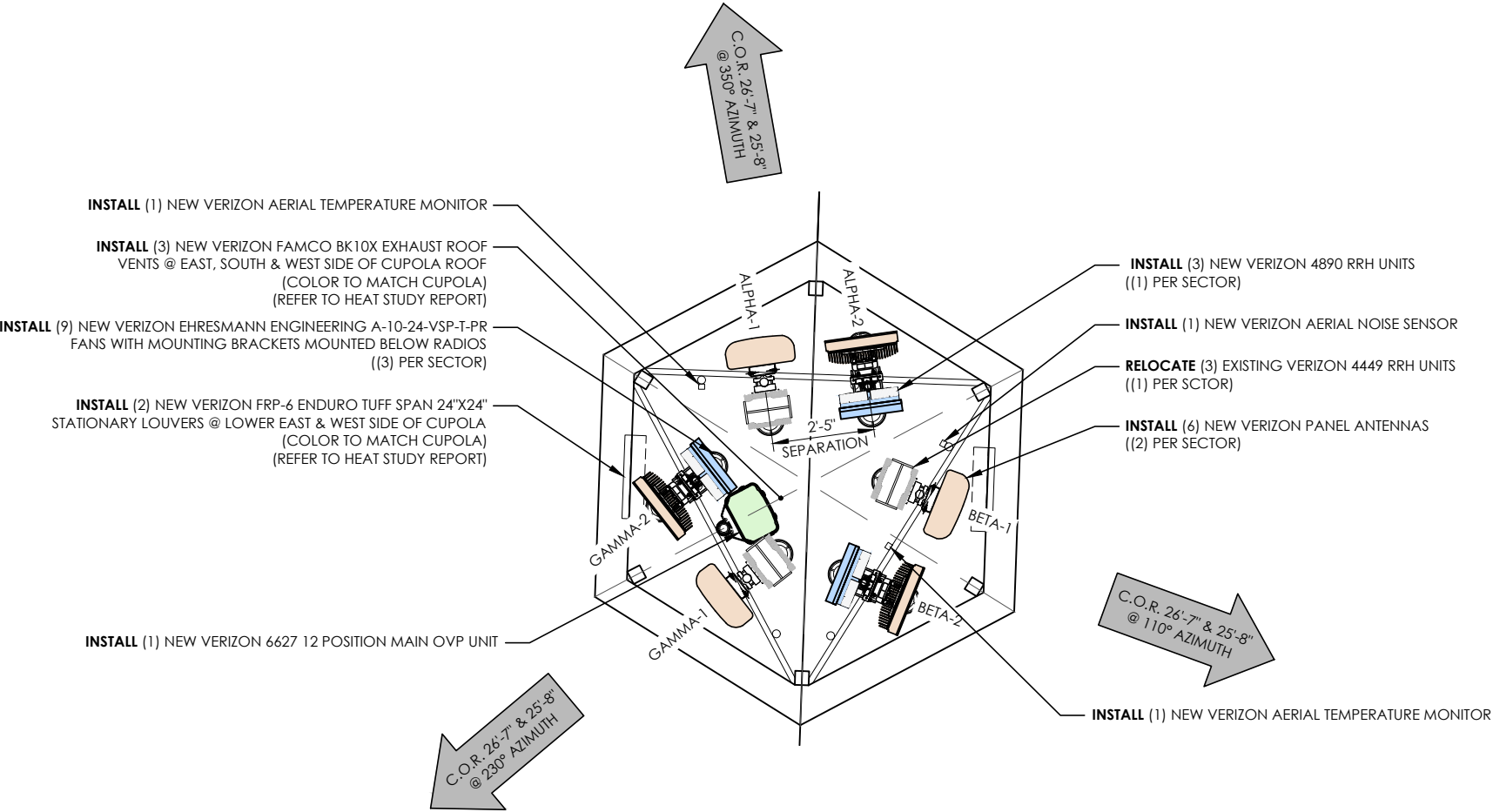
5G L-SUB6 - CARRIER ADD
(EXISTING COMMUNICATIONS SITE)

SHEET TITLE
EXISTING ANTENNA
SECTOR PLANS

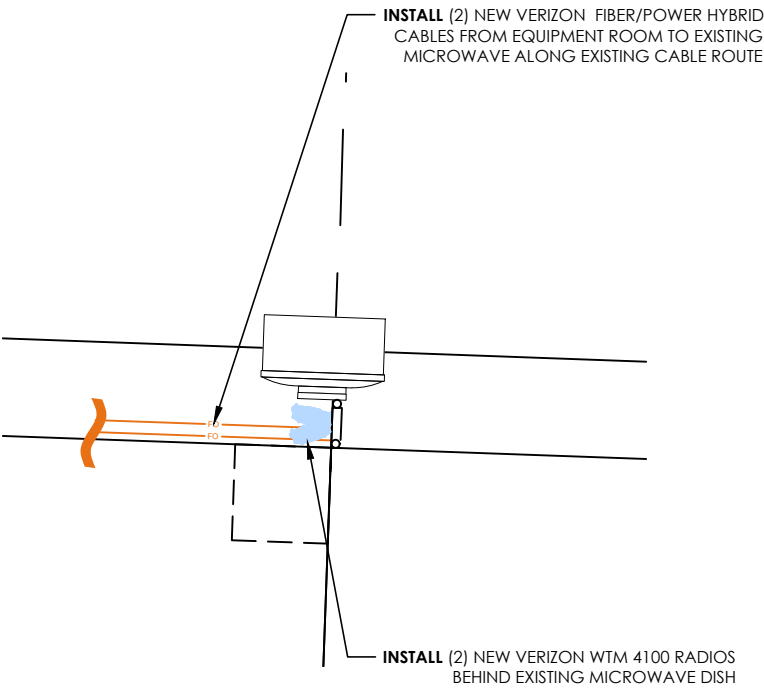
SHEET NUMBER
A-6



NEW ANTENNA SCHEDULE												
	C.O.R.	AZIMUTH	QUANTITY	ANTENNA MAKE/MODEL	MOUNT TYPE	COAX (QUANTITY) SIZE (NOMINAL)	ESTIMATED COAX CABLE LENGTH	MECHANICAL DOWNTILT				
ALPHA	26'-7"	350°	1 (NEW)	ERICSSON AIR 6419 2'-10.5" ANTENNA/RADIO	SEE ANTENNA MOUNT SCHEDULE	(2) 6X12 HYBRID CABLES (NEW)	SEE SHEET A-5 FOR COAX DESIGN	REFER TO RFDS				
	25'-8"		1 (NEW)	JMA MX12FIT465-01 4'-7" PANEL ANTENNA								
BETA	26'-7"	110°	1 (NEW)	ERICSSON AIR 6419 2'-10.5" ANTENNA/RADIO								
	25'-8"		1 (NEW)	JMA MX12FIT465-01 4'-7" PANEL ANTENNA								
GAMMA	26'-7"	230°	1 (NEW)	ERICSSON AIR 6419 2'-10.5" ANTENNA/RADIO								
	25'-8"		1 (NEW)	JMA MX12FIT465-01 4'-7" PANEL ANTENNA								
NOTES:												
1. FOR EXACT ANTENNA INFORMATION REFER TO THE RFDS DESIGN.												



NOTICE	
1.	CONTRACTOR SHALL NOT SUBMIT BIDS OR PERFORM CONSTRUCTION WORK ON THIS PROJECT WITHOUT ACCESS TO THE CURRENT COMPLETE SET OF DRAWINGS LISTED IN THE TITLE-SHEET INDEX.
GROUNDING NOTE	
1.	ALL NEW EQUIPMENT & COAX TO BE GROUNDED PER VERIZON GROUNDING SPECS
GENERAL ANTENNA NOTES	
1.	CONTRACTOR TO VERIFY MECHANICAL DOWNTILT WITH FINAL RFDS/RF ENGINEER.
2.	DUAL POLAR ANTENNAS REQUIRE TWO RUNS OF COAX PER ANTENNA.
3.	CONTRACTOR TO VERIFY ALL ACTUAL LENGTHS IN FIELD PRIOR TO INSTALLATION AND NOTIFY THE FIELD ENGINEER FOR VERIFICATION OF SIZES OF CABLES.
4.	CONTRACTOR TO PROVIDE AS BUILT FOR THE LENGTH OF CABLES UPON COMPLETION OF INSTALLATION.
5.	CONTRACTOR TO PROVIDE FINAL CABLE LENGTHS AND RETURN LOSSES FOR ALL CABLES.
6.	ALL AZIMUTHS REFERENCE TRUE NORTH. CONSULT REQUIRED QUADRANGLE MAP FOR NECESSARY MAGNETIC DECLINATION.



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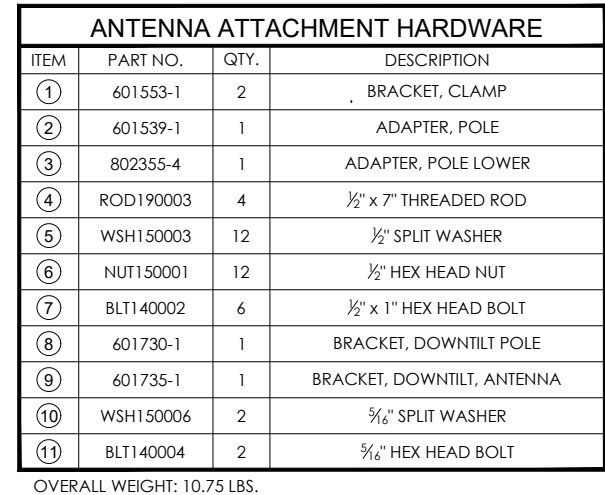
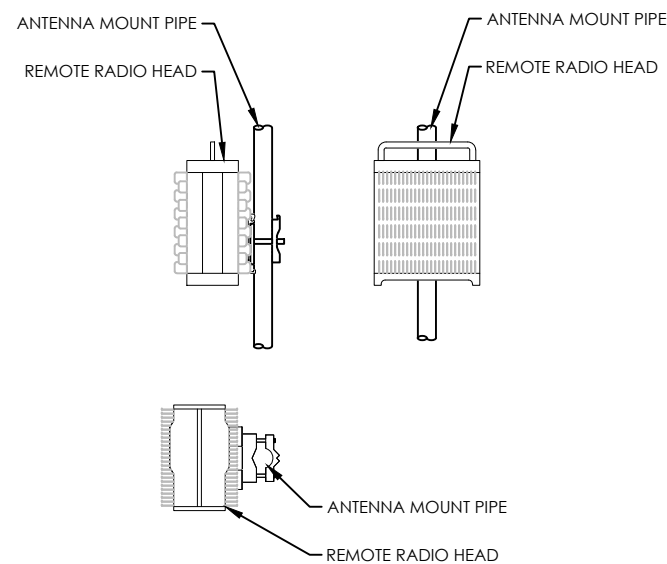
SITE NAME
CO1 CATAMOUNT

31800 CR 14C
STEAMBOAT SPRINGS, CO 80487

5G L-SUB6 - CARRIER ADD
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SHEET TITLE
**NEW ANTENNA
SECTOR PLANS**

SHEET NUMBER
A-7



RETHERFORD ENTERPRISES, INC.
EMPOWERING CONNECTIONS

7093 SILVERHORN DRIVE
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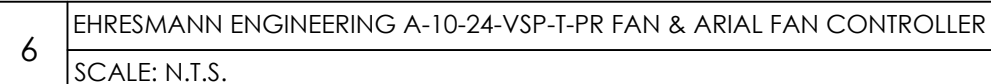
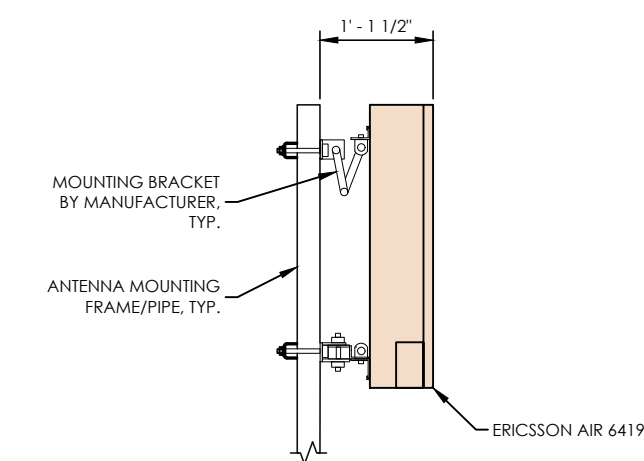
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<p>SHEET TITLE</p> <p>DETAILS</p>
<p>SHEET NUMBER</p> <p>D-1</p>





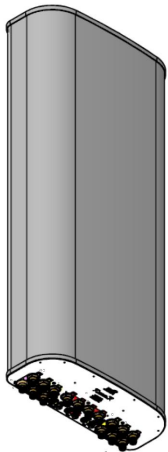
MX12FIT465-01

NWAV™ X-Pol 12-Port Antenna

X-Pol 12-Port 4 ft, 65° Form In Tighter, with Smart Bias Ts, 698-2690 MHz:

4 ports 698-894 MHz, 8 ports 1695-2690 MHz

- 12-Port antenna offering the same functionality as 2 Hex Port antennas in a single unit
- Full mid band arrays for maximum gain
- Fully integrated (iRETs) with independent RET control for low band and mid band
- Excellent passive intermodulation (PIM) performance reduces harmful interference.
- SON-Ready array spacing supports beamforming capabilities.
- Suitable for 3G, 4G, and 5G interface technologies
- Integrated Smart Bias-Ts reduce leasing costs
- Optimized form factor for reduced wind loading



NWAV™

Electrical specification (minimum/maximum)	Ports 1, 2, 3, 4		Ports 5, 6, 7, 8, 9, 10, 11, 12				
Frequency bands, MHz	698-806	806-894	1695-1880	1850-1990	1920-2180	2300-2360	2496-2690
Polarization	± 45°		± 45°				
Average gain over all tilts, dBi	12.9	13.3	16.6	16.8	17.1	17.2	17.3
Horizontal beamwidth (HBW), degrees ¹	70	67	66	64	62	60	58
Front-to-back ratio, co-polar power @180°± 30°, dB	>25.0	>25.0	>25.0	>25.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>20.0	>18.0	>19	>18	>18	>18	>18
Vertical beamwidth (VBW), degrees ¹	17.5	16.0	7.8	7.1	6.9	6.7	6.5
Electrical downtilt (EDT) range, degrees	2-16		0-9				
First upper side lobe (USLS) suppression, dB ¹	≤-15.0	≤-15.0	≤-16.0	≤-16.0	≤-16.0	≤-16.0	≤-16.0
Cross-polar isolation, port-to-port, dB ¹	25	25	25	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0		1.5:1 / -14.0				
Max passive intermodulation (PIM), 2x20W carrier, dBc	-153		-153				
Max input power per any port, watts	300		250				
Total composite power all ports, watts	1500						

¹ Typical value over frequency and tilt

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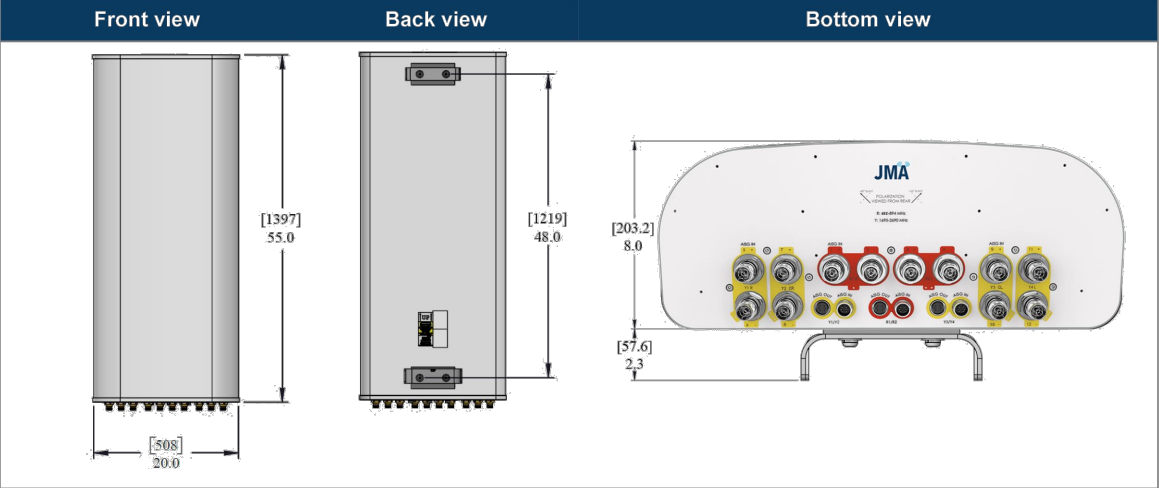
Page1



MX12FIT465-01

NWAV™ X-Pol 12-Port Antenna

Mechanical specifications	
Dimensions height/width/depth, inches (mm)	55/ 20.0/ 8.0 (1397/ 508.0/ 203.2)
Shipping dimensions length/width/height, inches (mm)	60/ 26/ 15 (1524/ 600/ 381)
No. of RF input ports, connector type, and location	12 x 4.3-10 female, bottom
RF connector torque	96 lbf-in (10.85 N·m or 8 lbf-ft)
Net antenna weight, lb (kg)	49 (22.2)
Shipping weight, lb (kg)	90.2 (40.9)
Antenna mounting and downtilt kit included with antenna	91900318
Net weight of the mounting and downtilt kit, lb (kg)	18 (8.2)
Range of mechanical up/down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal and lateral wind loading @ 150 km/h, lbf (N)	98.7 (439.0), 45.7 (203.3)
EPA frontal and lateral, ft², (m²)	4.4 (0.41), 2.1 (0.20)



Ordering information	
Antenna model	Description
MX12FIT465-01	4F X- Pol 12 PORT FIT 65° 2-16°/ 0-9° RET, 4.3-10 & SBT
Optional accessories	
AISG cables	M/F cables for AISG connections
PCU-1000 RET controller	Stand-alone controller for RET control and configurations
91900314-02	Dual Mount Bracket (see 91900314 bracket document for details)

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Page 2

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SITE NAME
CO1 CATAMOUNT

31800 CR 14C
STEAMBOAT SPRINGS, CO 80487

5G L-SUB6 - CARRIER ADD
(EXISTING COMMUNICATIONS SITE)

SHEET TITLE
ANTENNA
SPECIFICATIONS

SHEET NUMBER
D-2



AIR 6419 B41



AIR 6419, an Advanced Antenna System (AAS) with 64 transmitters and 64 receivers, improves upon previous generations of product with respect to energy efficiency and deployment capabilities. An Advanced Antenna System (AAS) such as AIR 6419 together with the Massive MIMO and Multi-User MIMO software features enables greater spectral efficiency. Enhanced bitrate per user achieved through interference suppression by applying beamforming capabilities in the downlink and the uplink.

Capacity increased by scheduling users in the cell on different layers supporting both Single User MIMO (SU-MIMO) and Multiuser MIMO (MU-MIMO). Application coverage is improved through beamforming in both the vertical and horizontal dimensions.

To support cost efficient site deployments, AIR 6419 includes Layer 1 beamforming enabling enhanced

Common Public Radio Interface (eCPRI) to be used between the AIR 6419 and RAN Compute portfolio products. The increasing capacity demands in operator's networks create needs for new spectrum efficient solutions.

Like its predecessor AIR 6449, AIR 6419 supports different cell or broadcast beam shapes, to meet different user distribution scenarios. The flexibility to steer the transmitted energy for control signaling in both azimuth and elevation enables improved efficiency in various deployments scenarios including Macro, Hotspot and High-rise.

The improved design of AIR 6419 enables faster roll out with minimal site impact, improved mid-band coverage and capacity boost for both existing and new bands compared to the use of traditional radio and antenna systems.

TECHNICAL SPECIFICATIONS AIR 6419 B41

PRODUCT NUMBER:	KRD 901 212/11	
ADVANCED ANTENNA SYSTEM		
Operating frequency band:	3GPP Band 41, 2496 – 2690 MHz (full band)	
Instantaneous bandwidth:	194 MHz	
Output Power	320 W	
EIRP max.	79 dBm	
Antenna configuration	(3x1) x (4x8)	
Architecture:	64T64R connected to an array of dual polarized antenna elements.	
Modulation:	Downlink	Up to 256 QAM.
	Uplink	Up to 64 QAM.
Multi-antenna beamforming functionality*:	Downlink SU-MIMO	Up to 16 layers per carrier.
	Downlink MU-MIMO	
	Uplink SU-MIMO	
	Uplink MU-MIMO	
	Cell shaping	
	Digital down-tilt	Up to 16 layers per carrier. Pre-defined cell or broadcast beam shapes*; Macro, Hotspot and High-rise. Continuously adjustable for macro scenario, fixed for Hotspot and High-rise scenario.
Mechanical specifications*		
Weight:	31 kg (68.5 lbs) excluding installation kit	
Size (H x W x D):	876 x 506 x 203 mm (34.5" x 20.0" x 8.0") (including protrusions) 852 x 506 x 160 mm (33.6" x 20.0" x 6.3") (excluding protrusions)	
Operational specifications*		
Wind Load Maximum:	653 N (front), 110 N (side) @ 42 m/s wind speed (pole installed)	
Operating Temperature Range:	- 40° to + 55° C	
Solar radiation:	≤ 1,120 W/m²	
Relative humidity:	2% to 100%	
Absolute humidity:	0.26 to 40 g/m³	
IP Classification:	IP65	
Main Interfaces		
Baseband:	Two eCPRI interfaces using 25G SFP+ ports with link capacity 25 Gb/s each. One 25 Gb/s eCPRI interface is sufficient for up to 100 MHz carrier bandwidth and 16 layers.	
Power Supply:	-48 V DC (3-wire or 2-wire) via a connector. Maximum fuse rating is 50 A.	
Mounting:	Optional mechanical tilt and swivel installation kit for wall and pole mounting.	
Handling:	Handle for lifting and hoisting.	

* Additional scenarios, cells or broadcast beam shapes possible with future software releases. Refer detailed description for more details on NR and EIRP for specific scenarios.

Final
Telefonaktiebolaget LM Ericsson
SE-164 80 Stockholm, Sweden
www.ericsson.com

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STEAMBOAT SPRINGS, CO 80487

5G L-SUB6 - CARRIER ADD
(EXISTING COMMUNICATIONS SITE)

SHEET TITLE
**ANTENNA
SPECIFICATIONS**

SHEET NUMBER
D-3

Radio 4890HP 48B2 48B66 S

- 8 RF ports, 4T8R per band (S for TX)
- B2: 4x60W
- B66: 4x60W
- Up to 480W in total RF power
- L, NR, NB-IoT
- 2x 2.5/4.9/9.8/10.1/24.3 Gbps CPRI/eCPRI

Radio 4890HP 48B2 48B66 S	Height	Width	Depth	Weight
wo protruding items	17.5 In (444 mm)	15.2 In (384 mm)	7.0 In (176 mm)	~69.5 lbs (~31.5 Kg)
w protruding items	20.6 In (522 mm)	15.7 In (397 mm)	7.2 In (182 mm)	

- 48 VDC 2-wire (single DC-connector),
- AISG v3.0 TMA & RET support via RS-485 or RF connectors
- Type 4.3-10 RF + connectors
- 2 external alarm
- Convectional cooling
 - Optional fan for increased site flexibility
- IP 65, -40 to +55°C

Pending Commercial Agreements



B2/B25 TX: 4 ports
B66 TX: 4 ports
B2/B25 &
B66 RX: 8 ports



Same order as Radio 8843

Now confirmed
max measurements/ will not exceed

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REV	DATE	DESCRIPTION	CHK
1	03/26/25	REVISED PER COMMENT	AJZ
0	03/06/25	100% FINAL CD	AJZ

FOR
INFORMATION
ONLY

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SITE NAME
CO1 CATAMOUNT

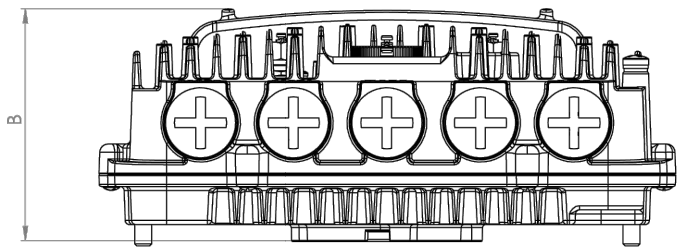
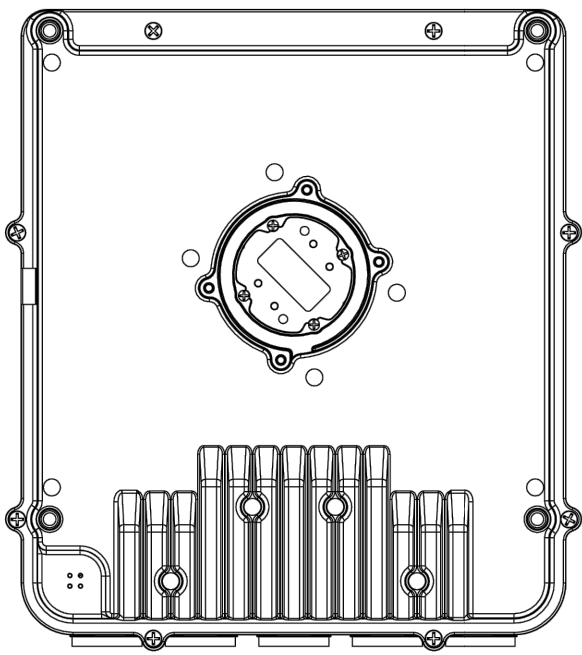
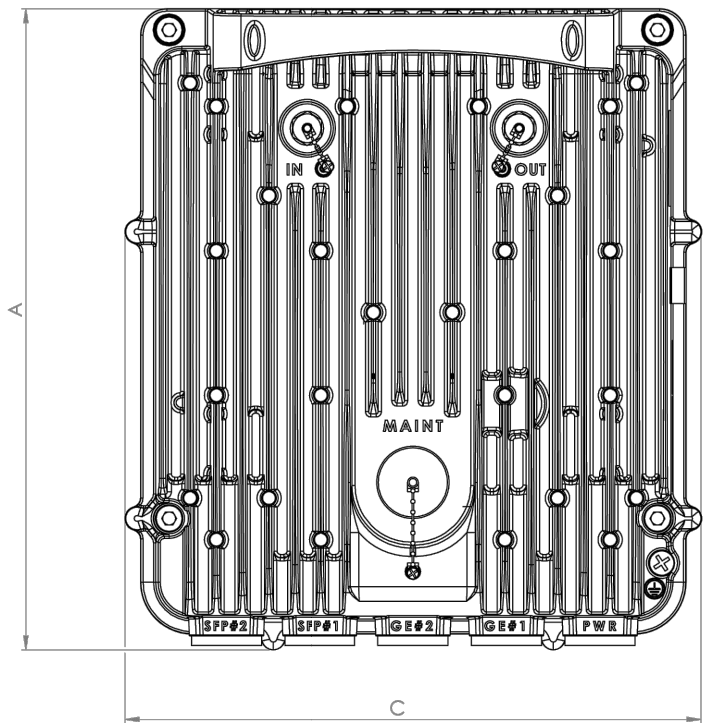
31800 CR 14C
STEAMBOAT SPRINGS, CO 80487

5G L-SUB6 - CARRIER ADD
(EXISTING COMMUNICATIONS SITE)

SHEET TITLE
RADIO
SPECIFICATIONS

SHEET NUMBER
D-4

The Solidworks Part File is the controlling document. Dimensions can be derived from the Solidworks model, Solidworks drawings or the DXF file.



Radio Type	Dimension A	Dimension B	Dimension C	Weight
WTM4100 (6-42GHz)	295	109,5	271	5,5
WTM4200 (13-42GHz)				
WTM4800 (E-Band Single Carrier)	295	128	271	8,5
WTM4200 (6-11GHz)				
WTM4800 (E-Band Dual Carrier)				
WTM4500	295	112,5	271	7,5
WTM4800 Multiband (E-Band / Microwave)				



Drawing Title / File Name:
WTM4k Radio Size and Weight

Modeled



Sheet 1 of 1

G:\WTM4000\WTM4k Radio Size And Weight

Reviewed for
verizon
Compliance
04/08/2025


RETFERFORD ENTERPRISES, INC.
EMPOWERING CONNECTIONS
7093 SILVERHORN DRIVE
EVERGREEN | CO | 80439
(720) 261-2064

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**SITE NAME
CO1 CATAMOUNT**

31800 CR 14C
STEAMBOAT SPRINGS, CO 80487

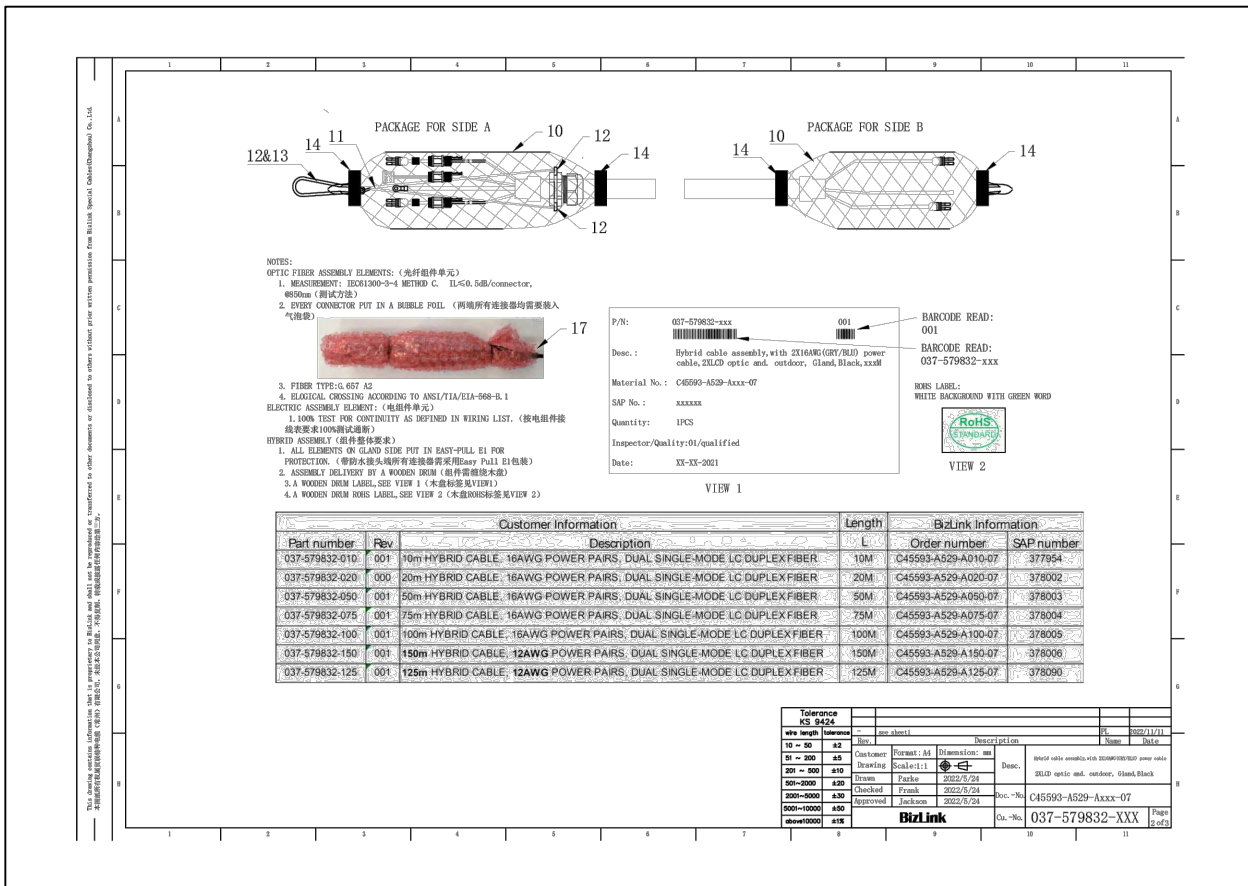
5G L-SUB6 - CARRIER ADD
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SHEET TITLE
**RADIO
SPECIFICATIONS
(MICROWAVE)**

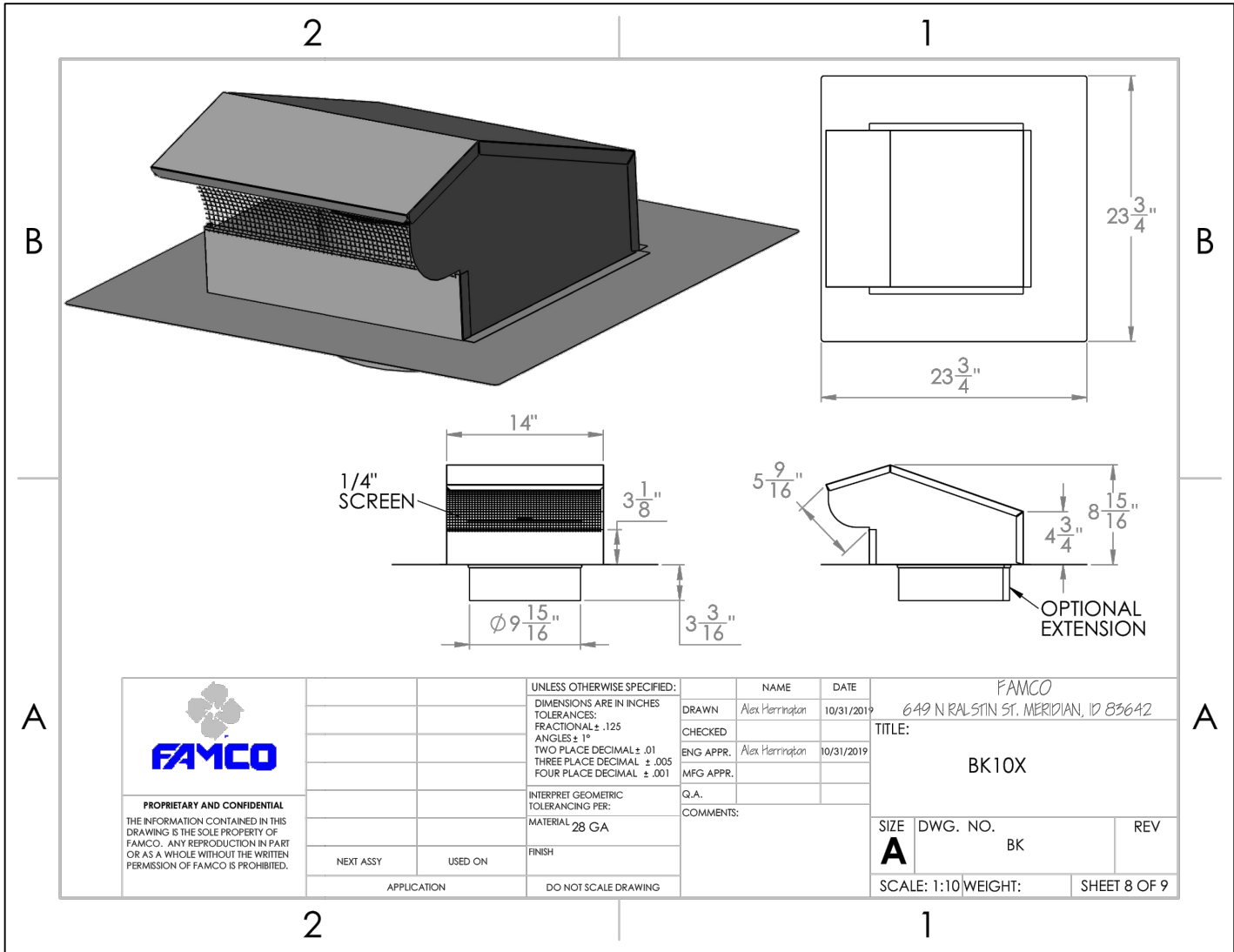
SHEET NUMBER
D-5

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D-6

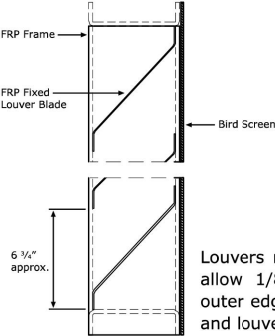


Tolerance KS 9424		Rev.		Description		By	Date
wire length tolerance		Rev.		Description		By	Date
10 to 500	±0.2	Customer		FORMAT: A1	Dimension: mm	Sheet only contains wire and cable, not pins or sockets	
201 to 500	±0.5	Drawing		Section: 1		20L2D opt'd on: outdoor, Glnd Glass	
500 to 1000	±0.5	Drawing		Frank	2022/5/24		
1000 to 5000	±0.5	Checked		Frank	2022/5/24		
5000 to 10000	±0.5	Approved		Jackson	2022/5/24	C45593-A529-XXXX-07	
above 10000	±1%			Bizlink		Qu. No.	037-579832-XXX
						Pg	3 of 3

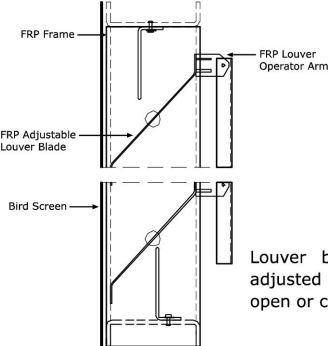


Tuff Span FRP Louvers

FRP-6 Stationary Louver



FRP-6 Adjustable Louver



Louvers must be sized to allow 1/8" gap between outer edges of the unit(s) and louver opening.

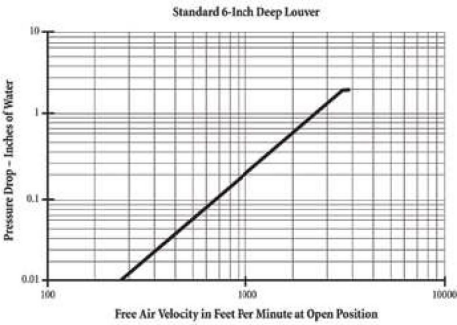
Louver blades can be adjusted and locked in open or closed position.

Free Area Guide in SF:

	24	30	36	42	48	54	60	66	72	78	84	90	96
24	1.10	1.42	1.73	2.05	2.37	2.69	3.00	3.32	3.64	3.96	4.28	4.59	4.91
30	1.65	2.12	2.60	3.08	3.55	4.03	4.51	4.98	5.46	5.94	6.41	6.89	7.37
36	2.20	2.83	3.47	4.10	4.74	5.37	6.01	6.65	7.28	7.92	8.55	9.19	9.82
42	2.75	3.54	4.34	5.13	5.92	6.72	7.51	8.31	9.10	9.90	10.69	11.48	12.28
48	3.30	4.25	5.20	6.16	7.11	8.06	9.01	9.97	10.92	11.87	12.83	13.78	14.73
54	3.85	4.96	6.07	7.18	8.29	9.41	10.52	11.63	12.74	13.85	14.97	16.08	17.19
60	4.39	5.67	6.94	8.21	9.48	10.75	12.02	13.29	14.56	15.83	17.10	18.37	19.64
66	4.94	6.37	7.80	9.23	10.66	12.09	13.52	14.95	16.38	17.81	19.24	20.67	22.10
72	5.49	7.08	8.67	10.26	11.85	13.44	15.02						
78	6.04	7.79	9.54	11.29	13.03	14.78	16.53						
84	6.59	8.50	10.40	12.31	14.22	16.12	18.03						
90	7.14	9.21	11.27	13.34	15.40	17.47	19.53						
96	7.69	9.92	12.14	14.36	16.59	18.81	21.03						
102	8.24	10.62	13.01	15.39	17.77	20.15	22.54						
108	8.79	11.33	13.87	16.41	18.96	21.50	24.04						
114													
120													

Notes: 1) Free area calculations do not consider obstructed area created by bird or insect screen. 2) Contact Enduro for open area of sizes not listed.

Free Air Velocity Chart



www.endurocomposites.com | 800-231-7271

Louvers

Reviewed for
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10000 PARK MEADOWS DRIVE, SUITE 300
DOWNE TREE, CO 80124-5453
(303) 694-3234

04/08/2025


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SHEET TITLE
**LOUVER & VENT
DETAILS**

SHEET NUMBER

D-7