



PROJECT:
VB SITE NAME: TEXAS CREEK
VB SITE NUMBER: US-CO-5091
SITE ADDRESS: HWY 50 & HWY 9
CANON CITY, CO 81212

SITE TYPE:
194' SELF SUPPORT
TEXAS CREEK
DN02546A



RAMAKER
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Certification & Seal:
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Colorado.



MARK	DATE	DESCRIPTION
2	06/25/24	JURISDICTION COMMENTS
1	04/11/24	JURISDICTION COMMENTS
0	01/26/24	FINAL CDs ISSUED
C	11/28/23	GRADING PLAN ADDED
B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES

PROJECT INFORMATION:
US-CO-5091 / DN02546A
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

TITLE SHEET
 SCALE: NONE

SHEET NUMBER 58067
TOTAL SHEETS 1-1

CONSTRUCTION MANAGER:	
LANDLORD:	

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E-9T	TYPICAL T-MOBILE EQUIPMENT GROUNDING ELEVATION
E-10	COMPOUND GROUNDING DETAILS
E-11	COMPOUND GROUNDING DETAILS

PROJECT INFORMATION:

A&E FIRM
RAMAKER & ASSOCIATES, INC.
 855 COMMUNITY DRIVE
 SAUK CITY, WI 53583
 CONTACT: ADAM SINDERMANN
 EMAIL: ASINDERMANN@RAMAKER.COM
 PHONE: (608) 643-4100

ELECTRIC PROVIDER
BLACK HILLS ENERGY
 CONTACT: TROY BEDFORD
 EMAIL: Troy.Bedford@blackhillscorp.com
 PHONE: (719) 289-8253

APPLICANT
VB BTS II, LLC
 750 PARK OF COMMERCE DRIVE
 BOCA RATON, FL 33487
 PHONE: (561) 948-6367

SITE COORDINATES:
 LATITUDE: 38° 29' 43.32" N (38.49537°N)
 LONGITUDE: 105° 21' 14.34" W (-105.35398°W)

PARCEL OWNER:
DAVID S. EATON

GEOCODE NUMBER:
 99924523

SCOPE OF WORK:

- PROPOSED 194' SELF SUPPORT TOWER
- PROPOSED 10'x13'-3" CONCRETE PAD WITH FULL CANOPY
- (2) PROPOSED EQUIPMENT CABINETS
- (1) PROPOSED GENERATOR
- (3) PROPOSED PANEL ANTENNAS
- INSTALL (1) ASIA
- INSTALL (1) ASIA
- INSTALL (1) ASIA
- INSTALL (1) ASIA
- INSTALL (2) ABIA
- INSTALL (2) ABIA
- INSTALL (2) ABIA
- INSTALL (2) ABIA
- INSTALL (2) ABIA
- INSTALL (24) COAX JUMPERS
- (1) PROPOSED HYPERBOOSTER
- (1) PROPOSED HOFFMAN BOX

CODE COMPLIANCE:

- 2015 INTERNATIONAL BUILDING CODE
- INTERNATIONAL MECHANICAL CODE
- ANSI/TIA-222 STRUCTURAL STANDARD
- NFPA 780 - LIGHTNING PROTECTION CODE
- NATIONAL ELECTRICAL CODE

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.

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GENERAL

THE CONSTRUCTION DOCUMENT DRAWINGS ARE INTERRELATED. WHEN PERFORMING THE WORK, EACH CONTRACTOR MUST REFER TO ALL DRAWINGS. COORDINATION IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

DIVISION 1: GENERAL REQUIREMENTS
 SECTION 01700 - PROJECT CLOSEOUT

- PART 1 - GENERAL**
1. OBTAIN AND SUBMIT RELEASES ENABLING THE OWNER UNRESTRICTED USE OF THE WORK AND ACCESS TO SERVICES AND UTILITIES. INCLUDE OCCUPANCY PERMITS, OPERATING CERTIFICATES AND SIMILAR RELEASES
 2. SUBMIT RECORD DRAWINGS. DAMAGE OR SETTLEMENT SURVEY, PROPERTY SURVEY, AND ACCESS TO SERVICES AND UTILITIES. INCLUDE OCCUPANCY PERMITS, OPERATING CERTIFICATES AND SIMILAR RELEASES
 3. COMPLETE FINAL CLEAN UP REQUIREMENTS, INCLUDING TOUCH-UP PAINTING, TOUCH UP AND OTHERWISE REPAIR AND RESTORE MARKED EXPOSED FINISHES.

- PART 2 - FINAL CLEANING**
1. COMPLETE THE FOLLOWING CLEANING OPERATIONS BEFORE REQUESTING INSPECTION FOR CERTIFICATION OF COMPLETION.
 - A. CLEAN THE PROJECT SITE, YARD AND GROUNDS, IN AREAS DISTURBED BY CONSTRUCTION ACTIVITIES, INCLUDING LANDSCAPE DEVELOPMENT AREAS, OF RUBBISH, WASTE MATERIALS, LITTER AND FOREIGN SUBSTANCES. SWEEP PAVED AREAS BROOM CLEAN. REMOVE PETRO-CHEMICAL SPILLS, STAINS AND OTHER FOREIGN DEPOSITS. RAKE GROUNDS THAT ARE NEITHER PLANTED NOR PAVED, TO A SMOOTH EVEN-TEXTURED SURFACE.
 - B. REMOVE TOOLS, CONSTRUCTION EQUIPMENT, MACHINERY AND SURPLUS MATERIAL FROM THE SITE.
 - C. REMOVE SNOW AND ICE TO PROVIDE SAFE ACCESS TO THE SITE AND EQUIPMENT ENCLOSURE.
 - D. CLEAN EXPOSED EXTERIOR AND INTERIOR HARD-SURFACED FINISHES TO A DIRT FREE CONDITION, FREE OF STAINS, FILMS AND SIMILAR FOREIGN SUBSTANCES. AVOID DISTURBING NATURAL WEATHERING OF EXTERIOR SURFACES.
 - E. REMOVE DEBRIS FROM LIMITED ACCESS SPACES, INCLUDING SPACES, EQUIPMENT ENCLOSURE, MANHOLES, AND SIMILAR AREAS.
 - F. REMOVE LABELS THAT ARE NOT PERMANENT LABELS, TOUCH-UP AND OTHERWISE REPAIR AND RESTORE MARKED EXPOSED FINISHES AND SURFACES. REPLACE FINISHES AND SURFACES THAT CAN NOT BE SATISFACTORILY REPAIRED OR RESTORED, OR THAT SHOW EVIDENCE OF REPAIR OR RESTORATION, DO NOT PAINT OVER "UL" AND SIMILAR LABELS, INCLUDING ELECTRICAL NAME PLATES.
 - H. LEAVE THE PROJECT CLEAN AND READY FOR OCCUPANCY.

- PART 1 - GENERAL**
1. MATERIALS
 - A. SOIL STABILIZER SHALL BE EPA-REGISTERED, PRE-EMERGENCE LIQUID:
 TOTAL KILL (PRODUCT 910) - EPA 10292-7
 PHASAR CORPORATION
 P.O. BOX 6123
 DARBORN, MI 48128
 (313) 563-8000
 AMBUSH HERBICIDE - EPA REGISTERED
 FRAMAR INDUSTRIAL PRODUCTS
 1435 MORRIS AVE.
 UNION, NJ 07083
 (900) 526-4924
 2. ROAD AND SITE MATERIALS SHALL CONFORM TO DOT SPECIFICATIONS FILL MATERIAL (UNLESS OTHERWISE NOTED). ACCEPTABLE SELECT FILL SHALL STANDARD SPECIFICATIONS BE IN ACCORDANCE WITH STATE DEPARTMENT OF HIGHWAY AND TRANSPORTATION.
 3. SOIL STABILIZER FABRIC SHALL BE MIRAFI - 500X.

- PART 2 - PRODUCTS**
1. FIELD QUALITY CONTROL
 - 4. COMPACT SOILS TO MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557. AREAS OF SETTLEMENT WILL BE EXCAVATED AND REFILLED AT CONTRACTOR'S EXPENSE. INDICATE PERCENTAGE OF COMPACTION ACHIEVED ON AS-BUILT DRAWINGS.
 - 5. PROTECTION
 - A. PROTECT SEEDED AREAS FROM EROSION BY SPREADING STRAW TO A UNIFORM LOOSE DEPTH OF 1-2 INCHES. STAKE AND THE DOWN AS REQUIRED. USE OF EROSION CONTROL MESH OR MULCH NET WILL BE AN ACCEPTABLE ALTERNATE.
 - B. ALL TREES PLACED IN CONJUNCTION WITH A LANDSCAPE CONTRACTOR WILL BE WRAPPED, TIED WITH HOSE PROTECTED WIRE, AND SECURED TO 2" X 2" X 4'-0" WOODEN STAKES EXTENDING TWO-FOOT INTO THE GROUND ON FOUR SIDES OF THE TREE.
 - C. PROTECT ALL EXPOSED AREAS AGAINST WASHOUTS AND SOIL EROSION. PLACE STRAW BALES AT THE INLET APPROACH TO ALL NEW OR EXISTING CULVERTS. WHERE THE SITE OR ROAD AREAS HAVE BEEN ELEVATED IMMEDIATELY ADJACENT TO THE RAIL LINE, STAKE EROSION CONTROL FABRIC FULL LENGTH IN THE SWALE TO PREVENT CONTAMINATION OF THE RAIL BALLAST. ALL EROSION CONTROL METHODS SHALL CONFORM TO APPLICABLE BUILDING CODE REQUIREMENTS.

SECTION 02830 - FENCING AND GATE(S)

- PART 1 - GENERAL**
1. WORK INCLUDED
 - SEE PLAN FOR SITE AND LOCATION OF FENCE AND GATE(S).
 2. QUALITY ASSURANCE
 - A. ALL STEEL MATERIALS UTILIZED IN CONJUNCTION WITH THIS SPECIFICATION WILL BE GALVANIZED OR STAINLESS STEEL. WEIGHT OF ZINC COATING ON THE FABRIC SHALL NOT BE LESS THAN 12 OUNCES PER SQUARE FOOT OF MATERIAL COVERED. POSTS SHALL BE HOT-DIPPED IN GRADE "E" ZINC, 18 OUNCES PER SQUARE FOOT.
 - 3. SEQUENCING
 - PRIOR TO PLACEMENT OF FILL OR BASE MATERIALS, ROLL THE SOIL AREAS WITH STABILIZER MAT PRIOR TO PLACEMENT OF FILL OR BASE MATERIAL.
 - E. WHERE UNSTABLE SOIL CONDITIONS ARE ENCOUNTERED, LINE THE EXCAVATIONS ARE TO BE CALCULATED FROM BENCHMARK, FINISHED GRADES, OR INDICATED SLOPES.
 - B. CLEAR EXCESS SPOILS, IF ANY, FROM JOB SITE AND DO NOT SPREAD BEYOND THE LIMITS OF PROJECT AREA UNLESS AUTHORIZED BY PROJECT MANAGER AND AGREED TO BY LANDOWNER.
 - C. BRING THE ACCESS DRIVE W/ TURMAROUND TO BASE COURSE ELEVATION TO FACILITATE CONSTRUCTION AND OBSERVATION DURING CONSTRUCTION OF THE SITE.
 - D. AVOID GREATING DEPRESSIONS WHERE WATER MAY POND.
 - E. THE CONTRACT SHALL INCLUDE GRADING, BANKING, AND DITCHING, UNLESS OTHERWISE INDICATED.
 - F. WHEN IMPROVING AN EXISTING ACCESS DRIVE, GRADE THE EXISTING DRIVE TO REMOVE ANY ORGANIC MATTER AND SMOOTH THE SURFACE BEFORE PLACING FILL OR STONE.
 - G. PLACE FILL OR STONE IN SIX (6) INCH MAXIMUM LIFTS, AND COMPACT BEFORE PLACING NEXT LIFT.
 - H. THE TOP SURFACE COURSE SHALL EXTEND A MINIMUM OF ONE (1) FOOT BEYOND THE SITE FENCE (UNLESS OTHERWISE NOTED) AND SHALL COVER THE AREA AS INDICATED.
 - I. APPLY RIPRAP TO THE SIDE SLOPES OF ALL FENCED SITE AREAS, PARKING AREAS, AND ALL OTHER SLOPES GREATER THAN 2:1. APPLY RIPRAP TO THE SIDES OF DITCHES OR DRAINAGE SWALES.
 - J. APPLY RIPRAP TO THE DITCH FOR SIX (6) FEET ABOVE THE CULVERT ENTRANCE.
 - K. RIPRAP ENTIRE DITCH FOR SIX (6) FEET IN ALL DIRECTIONS AT CULVERT OPENINGS.
 - L. APPLY SEED, FERTILIZER, AND STRAW COVER TO ALL OTHER DISTURBED AREAS, SLOPES, AND DRAINAGE SWALES, NOT OTHERWISE RIP RAPPED.
 - M. UNDER NO CIRCUMSTANCES WILL DITCHES, SWALES, OR CULVERTS BE PLACED SO THAT THEY DIRECT WATER TOWARDS, OR PERMIT DESIGN OR ELEVATIONS ARE IN CONFLICT WITH THIS, ADVISE CONSTRUCTION MANAGER IMMEDIATELY.
 - N. IN DITCHES WITH SLOPES GREATER THAN 10% MOUND DIVERSIONARY HEADWALLS IN THE DITCH AT CULVERT ENTRANCES. POSITION THE HEADWALL AT AN ANGLE NO GREATER THAT 60° OFF THE DITCH LINE. RIPRAP THE UPSTREAM SIDE OF THE HEADWALL AS WELL AS THE DITCH FOR SIX (6) FEET ABOVE THE CULVERT ENTRANCE.
 - O. APPLY SEED AND FERTILIZER TO SURFACE CONDITIONS WHICH WILL IMMEDIATELY AFTER BRINGING LEASE AREA AND ACCESS DRIVE W/ TURMAROUND TO BASE COURSE ELEVATION, WATER TO ENSURE GROWTH.
 - G. REMOVE GRAVEL FROM TEMPORARY CONSTRUCTION ZONE TO AN AUTHORIZED AREA OR AS DIRECTED BY PROJECT MANAGER.
 - H. AFTER APPLICATION OF FINE SURFACES, APPLY SOIL STABILIZER TO STONE SURFACES.

- PART 2 - PRODUCTS**
1. FENCE MATERIAL
 - A. ALL FABRIC WIRE, RAILS, HARDWARE, AND OTHER STEEL MATERIALS SHALL BE HOT-DIPPED GALVANIZED.
 - B. FABRIC SHALL BE SEVEN-FOOT HIGH OR TO MATCH EXISTING FENCE TWO-INCH CHAIN LINK MESH OF NO. 9 GAUGE (0.148") WIRE. THE FABRIC SHALL HAVE A KNUCKLED FINISH FOR THE TOP SELVES.
 - C. FABRIC SHALL CONFORM TO THE SPECIFICATIONS OF ASTM A-392 CLASS 1.
 - D. BARBED WIRE SHALL BE DOUBLE-STRAND, 12-1/2 GAUGE TWISTED WIRE, WITH 14-GAUGE, 4-POINT ROUND BARBS SPACED ON FIVE-INCH CENTERS.
 - D. ALL POSTS SHALL BE SCHEDULE 40 MECHANICAL SERVICE PIPE DIAMETER LINE 2" SCHEDULE 40 (3#2" O.D.) SCHEDULE 40 (3#2" O.D.) CORNER 3" SCHEDULE 40 (3#2" O.D.) GATE 3" SCHEDULE 40 (3#2" O.D.) E. GATE POSTS SHALL BE EXTENDED 12 INCHES, INCLUDING DOME CAP. TO PROVIDE FOR ATTACHMENT OF BARBED WIRE.
 - F. ALL TOP AND BRACE RAILS SHALL BE 1" DIAMETER SCHEDULE 40 MECHANICAL-SERVICE PIPE.
 - G. GATE FRAMES AND BRACES SHALL BE 1.90 INCH DIAMETER SCHEDULE 40 MECHANICAL-SERVICE PIPE. FRAMES SHALL HAVE WELDED CORNERS.
 - H. GATE FRAMES SHALL HAVE A FULL-HEIGHT VERTICAL BRACE, AND A FULL-WIDTH HORIZONTAL BRACE, SECURED IN PLACE BY USE OF GATE CLAMP.
 - I. GATE HINGES SHALL BE MERCHANTS METAL MODEL 64386 HINGE ADAPTER WITH MODEL 6409, 188-DEGREE ATTACHMENT.
 - J. THE GUIDE (LATCH ASSEMBLY) SHALL BE HEAVY INDUSTRIAL DOUBLE GATE LATCH. SEE DETAIL.
 - K. LATCHES AND STOPS SHALL BE PROVIDED FOR ALL GATES.
 - L. PLUNGER ROD COMPLETE WITH RECEPTOR TO BE PROVIDED AT THE INACTIVE LEAF OF ALL DOUBLE GATE INSTALLATIONS.
 - M. ALL STOPS SHALL HAVE KEEPERS CAPABLE OF HOLDING THE GATE.
 2. PROTECTION
 - A. UPON COMPLETION OF ERECTION, INSPECT FENCE MATERIAL AND PAINT FIELD CUTS OR GALVANIZING BREAKS WITH ZINC-BASED PAINT. COLOR TO MATCH THE GALVANIZED METAL.
 - 3. PROTECTION

- APPLICABLE STANDARDS**
- ASTM-A120 SPECIFICATION FOR PIPE, STEEL BLACK AND HOT-DIPPED ZINC COATED (GALVANIZED) WELDED AND SEAMLESS, FOR ORDINARY USES.
 - ASTM-A123 ZINC (HOT-DIP GALVANIZED) COATING ON IRON AND STEEL PRODUCTS.
 - ASTM-A153 STANDARD SPECIFICATION FOR ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE.
 - ASTM-A392 SPECIFICATION FOR ZINC-COATED STEEL CHAIN LINK FENCE FABRIC.
 - ASTM-A491 SPECIFICATION FOR ALUMINUM-COATED STEEL CHAIN LINK FENCE FABRIC.
 - ASTM-A535 SPECIFICATION FOR ALUMINUM COATED STEEL BARBED WIRE STRIP. STRUCTURAL QUALITY.
 - FEDERAL SPECIFICATION RR-F191-FENCING, WIRE AND POST METAL (AND GATES, CHAIN LINK FENCE FABRIC, AND ACCESSORIES)

- PART 1 - GENERAL**
1. WORK INCLUDED: SEE SITE PLAN.
 2. DESCRIPTIONS
 3. QUALITY ASSURANCE
 - A. APPLY SOIL STABILIZER IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS (AS NEEDED).
 - B. APPLY AND MAINTAIN GRASS SEED AS RECOMMENDED BY THE SEED PRODUCER (IF REQUIRED).
 - C. PLACE AND MAINTAIN VEGETATION LANDSCAPING, IF INCLUDED WITHIN THE CONTRACT, RECOMMENDED BY NURSERY INDUSTRY STANDARDS.
 - 4. SEQUENCING
 - A. CONFIRM SURVEY STAKES AND SET ELEVATION STAKES PRIOR TO ANY CONSTRUCTION.
 - B. COMPLETELY GRUB THE ACCESS DRIVE W/ TURMAROUND UNDERGROUND UTILITY EASEMENTS, (IF APPLICABLE) AND LEASE AREA PRIOR TO FOUNDATION CONSTRUCTION, PLACEMENT OF BACKFILL AND SUB-BASE MATERIAL.
 - C. CONSTRUCT TEMPORARY CONSTRUCTION AREA ALONG ACCESS DRIVE.
 - D. BRING THE LEASE AREA AND ACCESS DRIVE W/ TURMAROUND TO BASE COURSE ELEVATION PRIOR TO PLACING BASE MATERIALS.
 - E. APPLY SOIL STABILIZER PRIOR TO INSTALLING FOUNDATION CONSTRUCTION (INCLUDING UNDERGROUND UTILITY EASEMENTS).
 - F. GRADE, SEED, FERTILIZE, AND MULCH ALL AREAS DISTURBED BY CONSTRUCTION (INCLUDING UNDERGROUND UTILITY EASEMENTS).

DIVISION 2: SITE WORK
 SECTION 02200 - EARTHWORK AND DRAINAGE

- PART 1 - GENERAL**
1. WORK INCLUDED: SEE SITE PLAN.
 2. DESCRIPTIONS
 3. QUALITY ASSURANCE
 - A. APPLY SOIL STABILIZER IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS (AS NEEDED).
 - B. APPLY AND MAINTAIN GRASS SEED AS RECOMMENDED BY THE SEED PRODUCER (IF REQUIRED).
 - C. PLACE AND MAINTAIN VEGETATION LANDSCAPING, IF INCLUDED WITHIN THE CONTRACT, RECOMMENDED BY NURSERY INDUSTRY STANDARDS.
 - 4. SEQUENCING
 - A. CONFIRM SURVEY STAKES AND SET ELEVATION STAKES PRIOR TO ANY CONSTRUCTION.
 - B. COMPLETELY GRUB THE ACCESS DRIVE W/ TURMAROUND UNDERGROUND UTILITY EASEMENTS, (IF APPLICABLE) AND LEASE AREA PRIOR TO FOUNDATION CONSTRUCTION, PLACEMENT OF BACKFILL AND SUB-BASE MATERIAL.
 - C. CONSTRUCT TEMPORARY CONSTRUCTION AREA ALONG ACCESS DRIVE.
 - D. BRING THE LEASE AREA AND ACCESS DRIVE W/ TURMAROUND TO BASE COURSE ELEVATION PRIOR TO PLACING BASE MATERIALS.
 - E. APPLY SOIL STABILIZER PRIOR TO INSTALLING FOUNDATION CONSTRUCTION (INCLUDING UNDERGROUND UTILITY EASEMENTS).
 - F. GRADE, SEED, FERTILIZE, AND MULCH ALL AREAS DISTURBED BY CONSTRUCTION (INCLUDING UNDERGROUND UTILITY EASEMENTS).

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 HWY 50 & HWY 9
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 SHEET TITLE:
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1. I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Colorado.

Corporation & Sole:
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Vertical Bridge

Vertical Bridge logo with a stylized bridge graphic.

- A. TOWER**
- FIRST TEST - SHALL BE WITH THREE GROUND RODS INSTALLED (MINIMUM), EQUALLY SPACED AROUND THE TOWER FOUNDATION, BUT NOT CONNECTED TO THE SHELTER PAD EXTERNAL GROUND RING. FURNISH WIRE TO CONNECT (TEMPORARY CLAMP) ALL THREE GROUND RODS TOGETHER TO MAKE A SYSTEM TEST AFTER EACH ROD IS INDIVIDUALLY TESTED. IF ANY INDIVIDUAL ROD TESTS 25 OHMS OR MORE, NOTIFY THE CONTRACTOR AND OWNER'S REPRESENTATIVE SO THAT THE ROD CAN BE DRIVEN DEEPER UNTIL ALL THREE (3) RODS HAVE A RESISTANCE OF 10 OHMS OR LESS ON A DRY DAY.
 - SECOND TEST - SHALL BE WITH THE GROUND RODS CONNECTED. WITH DRY SOIL AND WHEN NO STANDING WATER HAS BEEN PRESENT FOR THE PAST TEN (10) DAYS. THE MAXIMUM ALLOWABLE READING IS 5 OHMS TO GROUND. IF THE RESISTANCE OF THE ENTIRE SYSTEM EXCEEDS 5 OHMS THE ELECTRICAL CONTRACTOR AND OWNER'S REPRESENTATIVE SHOULD BE NOTIFIED SO THAT EITHER ADDITIONAL AND/OR DEEPER RODS CAN BE INSTALLED.
- C. EQUIPMENT PAD AND TOWER**
- AFTER THE EQUIPMENT PAD AND TOWER GROUND RESISTANCE TEST IS COMPLETED, CONTRACTOR SHALL THE EQUIPMENT PAD EXTERNAL GROUND RING AND TOWER EXTERNAL GROUND RING TOGETHER. AFTER FIRST AND SECOND TEST ALL CONNECTIONS MUST BE MADE USING EXOTHERMIC WELD. NO LUGS OR CLAMPS WILL BE ACCEPTED.
 - AFTER ALL THE EXTERNAL GROUND RINGS ARE THE TOGETHER, COMPLETE A MEGGER CHECK OF THE GROUND SYSTEM SHOULD BE DONE. THE MAXIMUM ALLOWABLE LEADING IS 5 OHMS TO GROUND. 10. GROUNDING RESISTANCE TEST REPORT UPON COMPLETION OF THE TESTING FOR EACH SITE. A TEST REPORT SHOWING RESISTANCE IN OHMS WITH AUXILIARY POTENTIAL ELECTRODES AT 5 FEET AND 10 FEET INTERVALS UNTIL THE AVERAGE RESISTANCE STARTS INCREASING AND ALSO NOTE THAT 10-15 PHOTOS MUST BE TAKEN TO PROOF ENTIRE EXTERNAL GROUND RING SYSTEM BEFORE BACKFILL. TWO (2) SETS OF TEST DOCUMENTS ARE OF THE INDEPENDENT TESTING SERVICE TO BE BOUND AND SUBMITTED WITHIN ONE (1) WEEK OF WORK COMPLETION.
- 10. GROUNDING RESISTANCE TEST REPORT UPON COMPLETION OF THE TESTING FOR EACH SITE. A TEST REPORT SHOWING RESISTANCE IN OHMS WITH AUXILIARY POTENTIAL ELECTRODES AT 5 FEET AND 10 FEET INTERVALS UNTIL THE AVERAGE RESISTANCE STARTS INCREASING AND ALSO NOTE THAT 10-15 PHOTOS MUST BE TAKEN TO PROOF ENTIRE EXTERNAL GROUND RING SYSTEM BEFORE BACKFILL. TWO (2) SETS OF TEST DOCUMENTS ARE OF THE INDEPENDENT TESTING SERVICE TO BE BOUND AND SUBMITTED WITHIN ONE (1) WEEK OF WORK COMPLETION.**
- SECTION 16503 - POLES, POSTS, AND STANDARDS (SINGLE MAST AND SELF SUPPORTING TOWERS)**
- GENERAL
 - A. LIGHTNING ROD AND EXTENSION PIPE INCLUDING ALL APPURTENANCES, TO BE FURNISHED BY OWNER, IF REQUIRED. B. PROVIDE TEMPORARY LIGHTING FOR TOWER AS PER FAA REGULATIONS DURING CONSTRUCTION, IF REQUIRED. C. GROUNDING: GROUND TOWER WITH A MINIMUM OF #2 AWG TINNED SOLID BARE COPPER CONDUCTOR CADWELDED TO TOWER BASE PLATE. TWO (2) GROUNDING LEADS PER TOWER TOWER BASE PLATE. NON-EXOTHERMIC WELDS SHALL BE ATTACHED DIRECTLY TO THE MONOPOLE TOWER SHAFT.



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Colorado.

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 (608) 643-4100 www.ramaker.com



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PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE:
 COMPOUND NOTES

SCALE: NONE

PROJECT NUMBER
 58067

SHEET NUMBER
 N-3

TOPOGRAPHIC SURVEY
 SITUATED IN SECTION 8, TOWNSHIP 18 SOUTH, RANGE 71 WEST OF THE 6TH P.M.
 COUNTY OF FREMONT, STATE OF COLORADO

SURVEYOR'S CERTIFICATE

I hereby certify that Vertical Bridge LLC, a Delaware limited liability company, its subsidiaries, and their respective successors and/or assigns; and (ii) Toronto Dominion (Texas) LLC, as Administrative Agent, for itself and on behalf of the lenders parties from time to time to that certain Second Amended and Restated Loan Agreement dated June 17, 2016 with Vertical Bridge Hieldco, LLC, as borrower, and Vertical Bridge Hieldco Rental, LLC, as guarantor, and Vertical Bridge Hieldco Rental, LLC, as borrower, and Vertical Bridge Hieldco Rental, LLC, as guarantor, as permitted by the terms of the said Loan Agreement, have caused me to conduct a topographic survey of the land described herein and to prepare the accompanying plat and certificate of accuracy. The survey was conducted under my supervision using the normal standard of care of Professional Land Surveyors and the map hereon accurately represents said survey, to the best of my knowledge, the drawing does not represent a Land Survey, Land Survey Plat or Improvement Location Certificate, and any monuments or boundary lines shown are for information only and are not to be relied on.

This survey relied upon a title commitment by tower title & closing, Fidelity National Title Insurance Commitment Number VTB-147125-C dated February 21, 2023 for legal description and assessment of the change request. I further certify that on July 27, 2023, a topographic survey was conducted under my supervision using the normal standard of care of Professional Land Surveyors and the map hereon accurately represents said survey, to the best of my knowledge, the drawing does not represent a Land Survey, Land Survey Plat or Improvement Location Certificate, and any monuments or boundary lines shown are for information only and are not to be relied on.

1. Ownership of this tract of land
 2. Rights-of-way, easements and encumbrances recorded or unrecorded affecting this tract of land.
 3. Compatibility of this description with those of adjacent tracts of land.

Job No. 2004-023
 For and on behalf of
 Daley Land Surveying, Inc.
 1701 Lincoln Ave., #161
 Parker CO, 80134
 303 953 9841
 Robert Daley, PLS 35597



SURVEYOR'S NOTES:
 BASIS OF BEARINGS: The bearings shown on this survey are referenced to the southern line of Lot A, Royal Gorge Bluffs Subdivision, assumed to bear North 80°45'11" East, a distance of 1737.81 feet, monumented by a 1 1/2" blue plastic cap marked PLS 34987 at the southwest corner of said Lot A.
 COORDINATE SYSTEM AND DATUM: Horizontal coordinates are referenced to the local C.O.R.S. network, utilizing the Goidard model.
 FLOOD ZONE: Zone X, Other Areas, Areas determined to be outside the 0.2% annual chance floodplain per FEMA National Flood Insurance Program Map 0804JCO005E, Parcel 605 of 925, Map Revision date of September 19, 2007.
 UTILITIES: Utilities which are readily visible upon the ground, such as manholes, power and light poles, poles, etc. were located by field surveys and shown hereon. Sub-surface utilities, if shown, are the result of field surveys of utility location marks provided by others.
 NOTICE: According to Colorado law you must commence any legal action based upon any defect in this survey within three years after the date of the certificate shown hereon. You may discover such defect in no event, may any action be commenced more than ten years from the date of the certificate shown hereon.


SECOND SURVEYOR'S NOTES:
 1. At the time of this survey there does not appear to be any visible encroachments affecting the Lease Area.
 2. The Access and Utility Easement and the Utility Easement described on this survey was calculated to intersect the existing Parent tract access road which is a Public Right of Way.
 3. The Lease Area, the Access and Utility Easement and the Utility Easement described on this survey has entirely within the Parent tract.

LOWER TITLE & CLOSING
 Commitment for Title Insurance issued by Fidelity National Title Insurance Company
 Transaction Identification Data for reference only:
 Issuing Agent: 147759.12706
 Tower Title, LLC Loan/D Number: (LOC)US-CO-5091
 Issuing Office:
 Commitment Number: VTB-147125-C
 Issuing Office File Number: VTB-147125-C
 Property Address: 43340 US Highway 50, Canon City, CO 81212
 Revision Number:
SCHEDULE A
 1. Commitment Date: 21st day of February, 2023
 2. Policy to be issued:
 a. 2006 ALTA Owner's Policy 2006 Proposed insured: VB B15 II, LLC Proposed Policy Amount: \$250,000.00
 3. The estate or interest in the land described or referred to in this Commitment is: Fee simple.
 4. The title is, at the Commitment Date, vested in: David S. Easton
 5. The land is described as follows: per Exhibit A attached

EXCEPTIONS UNLESS CLEARED TO THE SATISFACTION OF THE COMPANY:
 1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I - Requirements are met. The Exception is a standard Exception and not the type to be depicted hereon.
 2. Rights or claims of parties in possession not shown by the public records. The Exception is a standard Exception and not the type to be depicted hereon.
 3. Easements or claims of easements not shown by the public records. The Exception is a standard Exception and not the type to be depicted hereon.
 4. Discrepancies, conflicts in boundary lines, encroachments, overlaps, variations or shortages in area or content, party walls and any other matters that would be disclosed by a correct survey and/or physical inspection of the land. The Exception is a standard Exception and not the type to be depicted hereon.
 5. Any lien, or right to lien, for services, labor or material furnished, imposed by law and not shown by the public record. The Exception is a standard Exception and not the type to be depicted hereon.
 6. Any minor or well rights, or rights or title to water or claims thereof, in, on or under the land. The Exception is a standard Exception, blanketed in nature and not the type to be depicted hereon.
 7. Unpatented mining claims, reservations or exceptions in patents or in the Acts authorizing the issuance of said patents. The Exception is a standard Exception and not the type to be depicted hereon.
 8. All taxes, assessments, liens and charges which constitute liens or are due or payable including unredemmed tax sales. The Exception is a standard Exception and not the type to be depicted hereon.
 9. Rights of the simple owners in and to the subject property. The Exception is a standard Exception and not the type to be depicted hereon.
 10. Any and all matters disclosed on the map entitled "Royal Gorge Bluffs Subdivision", dated February 23, 2004 and recorded February 23, 2004 in (Instrument) 783312 in Fremont County, Colorado. The Exception is a standard Exception and not the type to be depicted hereon.
 Exhibit A
 All the real property together with improvements, if any, situate, lying and being in the County of Fremont, State of Colorado, described as follows: Lot A, Royal Gorge Bluffs Subdivision according to the recorded plat in the County of Fremont, State of Colorado.
 Parcel ID: 99924523 (Account: R038978) This being the same property conveyed to David S. Easton by a Deed from David R. Shippey dated 8/17/2021 and recorded 8/16/2021 in Instrument 1005282 in the County of Fremont, State of Colorado.

PROJECT INFORMATION: 43340 US HIGHWAY 50 CANYON CITY, CO 81212 FREMONT COUNTY	
SHEET TITLE: TOPOGRAPHIC SURVEY	
PROJECT NUMBER: LST1	SHEET NUMBER: LST1

PROJECT TITLE: FA# XXXXXXXX SITE # US-CO-5091 TEXAS CREEK	
ISSUE PHASE	DATE ISSUED
MARK	DATE
1	8/7/23
2	8/1/23
3	8/1/23
4	8/29/23
5	4/4/24
DESCRIPTION	
1	SURVEY
2	LEASE AND EASEMENT
3	REVISE ACCESS AND ADD UTILITY EASEMENT
4	REVISE CERTIFICATION
5	UPDATE EX. ACCESS ESMT LOT A

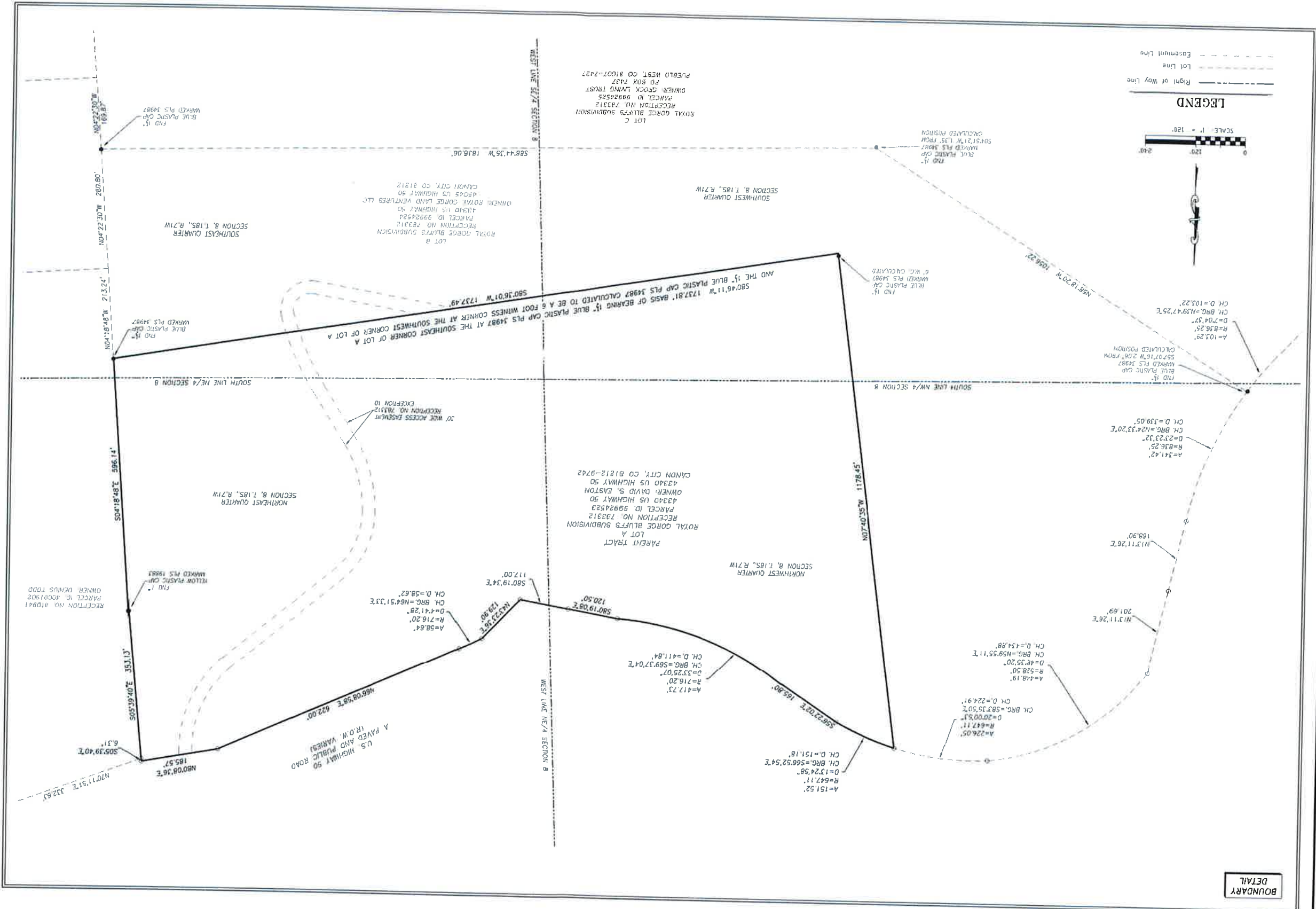


Vertical Bridge
 750 PARK OF COMMERCE DR #200
 BOCA RATON, FL 33487
 OFFICE: (561) 948-6367

RAMAKER
 (800) 643-4100
 www.ramaker.com

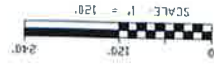
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TOPOGRAPHIC SURVEY
 VERTICAL BRIDGE SITE US-CO-5091 TEXAS CREEK
 SITUATED IN SECTION 8, TOWNSHIP 18 SOUTH, RANGE 71 WEST OF THE 6TH P.M.
 COUNTY OF FREMONT, STATE OF COLORADO



BOUNDARY
 DETAIL

LEGEND
 --- Easement Line
 --- Lot Line
 --- Right of Way Line



TOPOGRAPHIC SURVEY

PROJECT TITLE:
 F#A# XXXXXXXXX
 SITE # US-CO-5091
 TEXAS CREEK
 43340 US HIGHWAY 50
 CANYON CITY, CO 81212
 FREMONT COUNTY

PROJECT TITLE:

MARK	DATE	DESCRIPTION
1	8/7/23	SURVEY
2	9/1/23	LEASE AND EASEMENT
3	9/11/23	REVISE ACCESS AND ADD UTILITY EASEMENT
4	9/28/23	REVISE CERTIFICATION
5	4/4/24	UPDATE EX ACCESS ESMT LOT A



RAMAKER
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 (908) 643-4100 www.ramaker.com

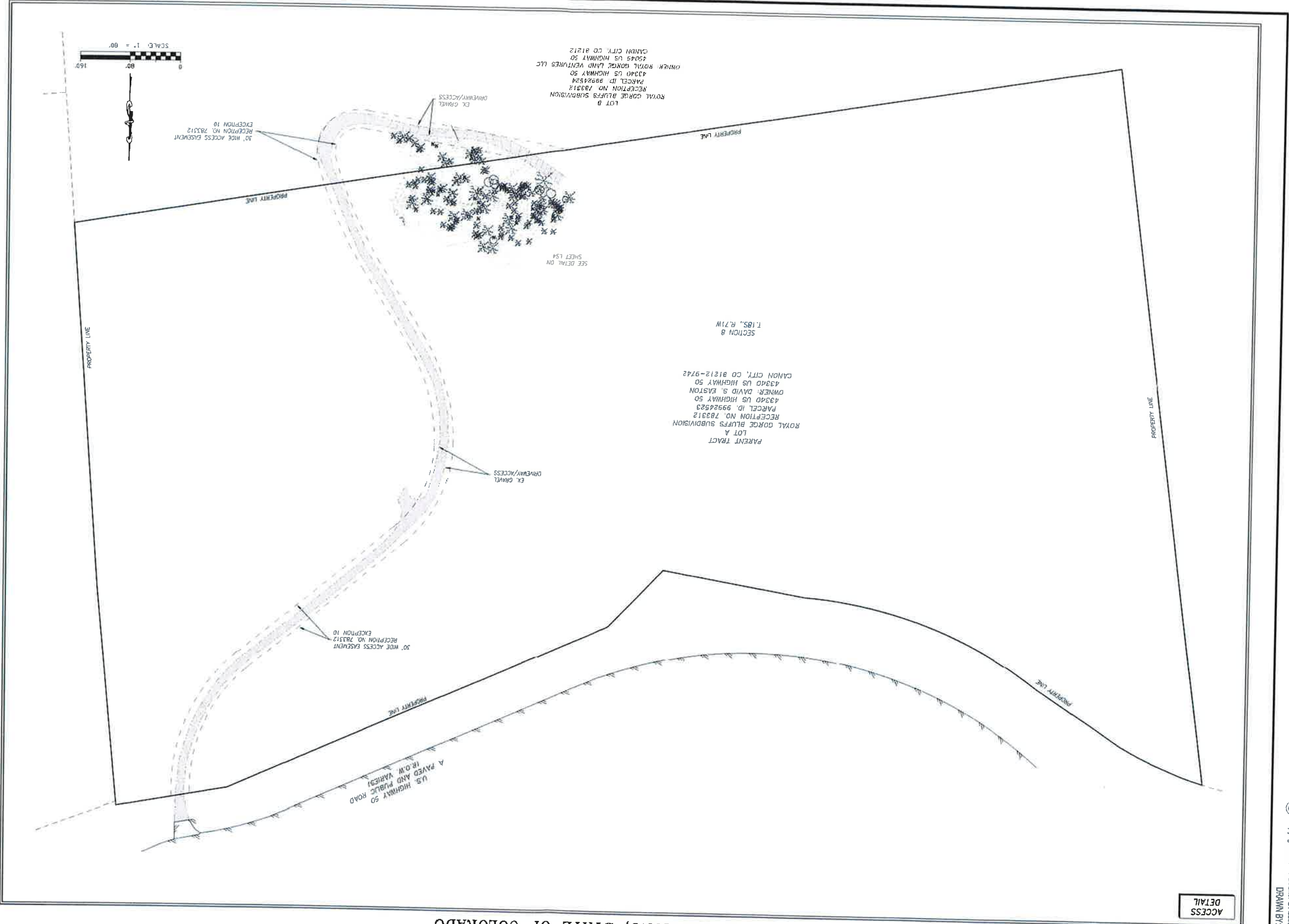


VERTICAL BRIDGE
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 BOCA RATON, FL 33487
 OFFICE: (561) 948-6367



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TOPOGRAPHIC SURVEY
 VERTICAL BRIDGE SITE US-CO-5091 TEXAS CREEK
 SITUATED IN SECTION 8, TOWNSHIP 18 SOUTH, RANGE 71 WEST OF THE 6TH P.M.
 COUNTY OF FREMONT, STATE OF COLORADO

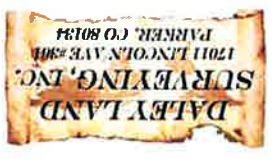


ACCESS
 DETAIL

VERTICAL BRIDGE
 750 PARK OF COMMERCE DR #200
 BOCA RATON, FL 33487
 OFFICE: (561) 948-6367



RAMAKER
 ENGINEERS
 (800) 643-4100 www.ramaker.com



MARK	DATE	DESCRIPTION	ISSUE PHASE
1	8/7/23	SURVEY	ISSUED
2	8/1/23	LEASE AND EASEMENT	ISSUED
3	8/11/23	REVISE ACCESS AND ADD UTILITY EASEMENT	ISSUED
4	9/28/23	REVISE CERTIFICATION	ISSUED
5	4/4/24	UPDATE EX. ACCESS ESMT LOT A	ISSUED

PROJECT TITLE:
 FA# XXXXXXXXX
 SITE # US-CO-5091
 TEXAS CREEK

PROJECT INFORMATION:
 43340 US HIGHWAY 50
 CANYON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE:
 TOPOGRAPHIC SURVEY

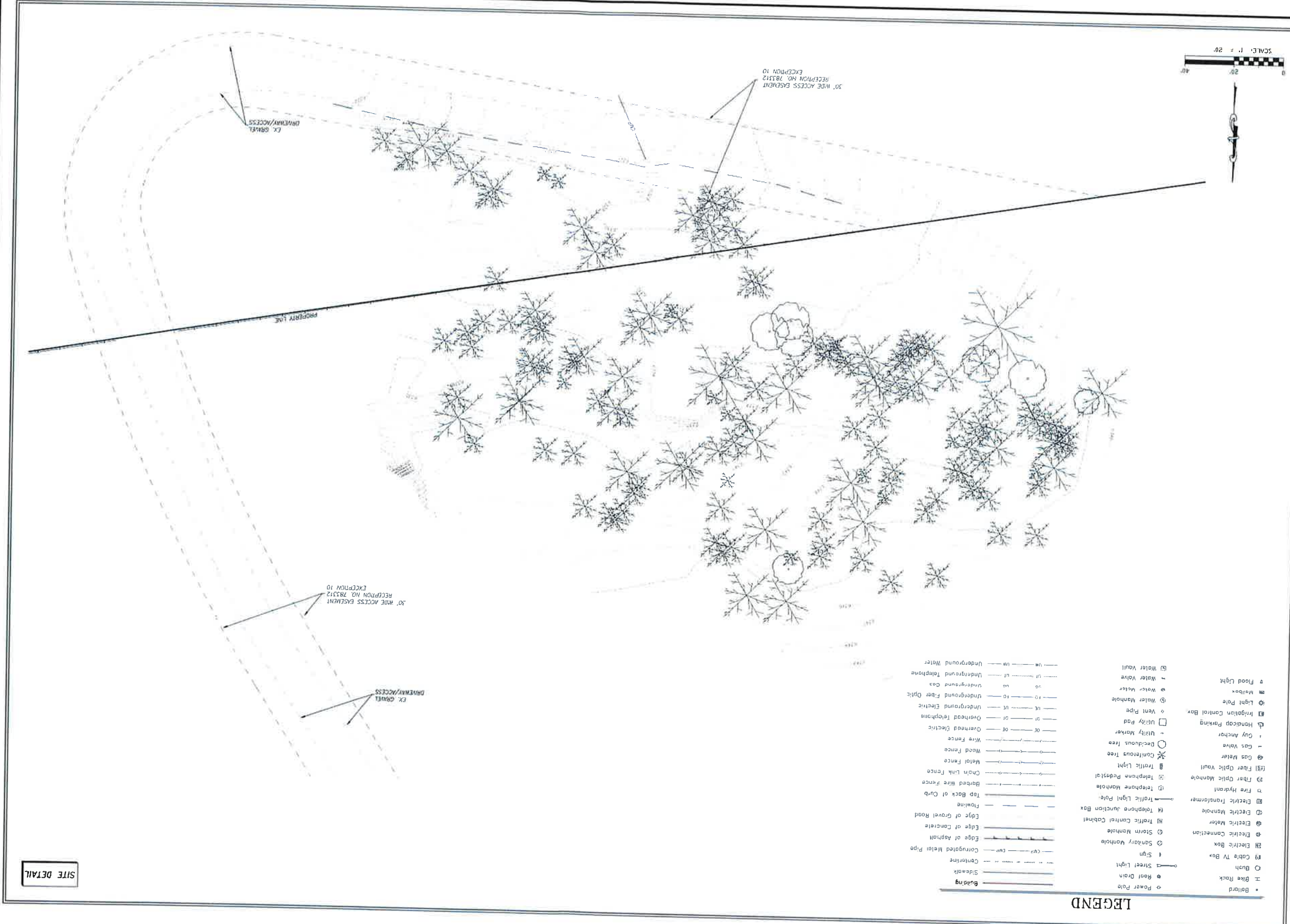


PROJECT NUMBER
 SHEET NUMBER
 22' x 34' - 1"=80'
 11' x 17' - 1"=80'

L53

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TOPOGRAPHIC SURVEY
VERTICAL BRIDGE SITE US-CO-5091 TEXAS CREEK
 SITUATED IN SECTION 8, TOWNSHIP 18 SOUTH, RANGE 71 WEST OF THE 6TH P.M.
 COUNTY OF FREMONT, STATE OF COLORADO



LEGEND

•	Building	o	Power Pole
□	Board	o	Road Drain
o	Bush	o	Street Light
o	Bike Rack	o	Sanitary Manhole
□	Cable TV Box	o	Sign
□	Electric Box	o	Sanitary Manhole
o	Electric Connection	o	Electric Cabinet
o	Electric Manhole	o	Traffic Control Cabinet
o	Electric Manhole	o	Telephone Junction Box
o	Electric Transformer	o	Traffic Light Pole
o	Fire Hydrant	o	Telephone Manhole
o	Riser Optic Manhole	o	Telephone Pedestal
o	Fiber Optic Vault	o	Traffic Light
o	Gas Meter	o	Confederous Tree
o	Gas Valve	o	Deciduous Tree
o	Curb Anchor	o	Utility Marker
o	Handicap Parking	o	Utility Pad
o	Irrigation Control Box	o	Overhead Electric
o	Light Pole	o	Overhead Telephone
o	Flood Light	o	Underground Fiber Optic
o	Water Valve	o	Underground Gas
o	Water Manhole	o	Underground Telephone
o	Water Valve	o	Underground Water

SITE DETAIL

PROJECT TITLE:		
FA# XXXXXXXXX	SITE # US-CO-5091	TEXAS CREEK
PROJECT INFORMATION:		
43340 US HIGHWAY 50	CANYON CITY, CO 81212	FREMONT COUNTY
SHEET TITLE:		
TOPOGRAPHIC SURVEY		
ISSUE PHASE		
MARK	DATE	DESCRIPTION
1	8/7/23	SURVEY
2	8/17/23	LEASE AND EASEMENT
3	9/11/23	REVISE ACCESS AND ADD UTILITY EASEMENT
4	9/28/23	REVISE CERTIFICATION
5	4/4/24	UPDATE EX. ACCESS ESMT LOT A
PROJECT NUMBER		
SHEET NUMBER		
154		

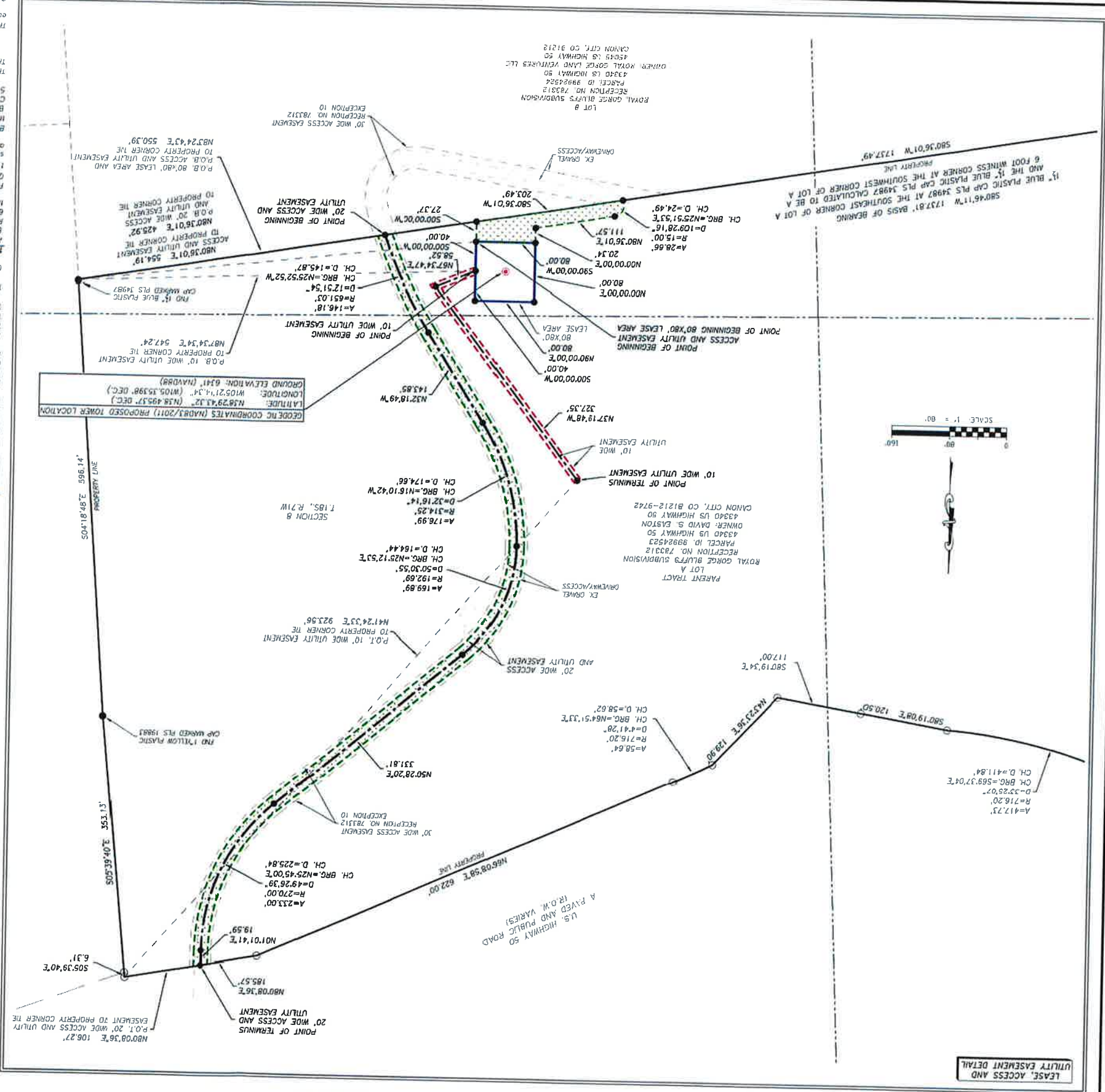


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verticalbridge
 VERTICAL BRIDGE
 750 PARK OF COMMERCE DR #200
 BOCA RATON, FL 33487
 OFFICE: (561) 948-6367

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TOPOGRAPHIC SURVEY
 VERTICAL BRIDGE SITE US-CO-5091 TEXAS CREEK
 SITUATED IN SECTION 8, TOWNSHIP 18 SOUTH, RANGE 71 WEST OF COLORADO
 COUNTY OF FREMONT, STATE OF COLORADO



UTILITY EASEMENT DETAIL

ACCESS AND UTILITY EASEMENT.
 A strip of land over and across that parcel of land described as Lot A, Royal Gorge Bluffs Subdivision (Parent Tract) in the records in the Clerk and Recorder's Office of Fremont County, located in Section 8, Township 18 South, Range 71 West of the 6th Principal Meridian, County of Fremont, State of Colorado, said strip being more particularly described as follows:
 Beginning at the southwest corner of the hereinafter described 80'x80' Lease Area, being the Point of Beginning of said Lease Area, whence the southeast corner of Lot A, Royal Gorge Bluffs Subdivision recorded at Reception No. 783312 (Parent Tract) in the records in the Clerk and Recorder's Office of Fremont County bears North 83°24'43" East, a distance of 550.39 feet;
 THENCE South 00°00'00" East, a distance of 27.37 feet to the southern line of said Lot A, where the southeast corner of said Lot A bears North 80°36'01" East, a distance of 203.49 feet;
 THENCE along a curve to the right, on arc length of 28.66 feet, said curve having a radius of 15.00 feet, a deflection angle of 109°28'16", a chord bearing of North 25°51'53" East, and a chord length of 24.49 feet;
 THENCE North 80°36'01" East, a distance of 11.57 feet;
 THENCE North 00°00'00" East, a distance of 20.34 feet to the southwest corner of said hereinafter described 80'x80' Lease Area;
 THENCE North 90°00'00" East, a distance of 80.00 feet to the Point of Beginning.
 Containing 5188 Square Feet, or 0.119 Acres, more or less.

20' WIDE ACCESS AND UTILITY EASEMENT.
 A 20 foot wide strip of land over and across that parcel of land described as Lot A, Royal Gorge Bluffs Subdivision (Parent Tract) in the records in the Clerk and Recorder's Office of Fremont County, located in Section 8, Township 18 South, Range 71 West of the 6th Principal Meridian, County of Fremont, said parcel described as follows:
 Beginning at a point on the southern line of Lot A, Royal Gorge Bluffs Subdivision recorded at Reception No. 783312 (Parent Tract) in the records in the Clerk and Recorder's Office of Fremont County, whence the southeast corner of said Lot A bears North 80°36'01" East, a distance of 425.92 feet;
 THENCE along a curve to the left, on arc length of 145.87 feet, said curve having a radius of 651.03 feet, a deflection angle of 127°51'54", a chord bearing of North 25°52'52" West, and a chord length of 145.87 feet;
 THENCE North 32°18'49" West, a distance of 143.85 feet;
 THENCE along a curve to the right, on arc length of 176.99 feet, said curve having a radius of 114.42 feet, a deflection angle of 32°16'14", a chord bearing of North 16°10'42" West, and a chord length of 176.99 feet, a deflection angle of 50°10'55", a chord bearing of North 25°12'53" East, and a chord length of 164.44 feet;
 THENCE North 50°28'20" East, a distance of 131.81 feet;
 THENCE along a curve to the left, on arc length of 233.00 feet, said curve having a radius of 270.00 feet, a deflection angle of 49°26'39", a chord bearing of North 25°45'00" East, and a chord length of 225.84 feet;
 THENCE North 01°01'41" East, a distance of 19.59 feet to the northern line of said Lot A, the southern right of way line of Colorado U.S. Highway 50 and the Point of Terminus, whence the northeast corner of said Lot A bears North 80°36'01" East, a distance of 106.27 feet.
 The sides of said 20 foot wide strip are to be lengthened or shortened or intersected southerly right of way line of Colorado U.S. Highway 50.

80'x80' LEASE AREA LEGAL DESCRIPTION.
 A parcel of land over and across that parcel of land described as Lot A, Royal Gorge Bluffs Subdivision recorded at Reception No. 783312 (Parent Tract) in the records in the Clerk and Recorder's Office of Fremont County, located in Section 8, Township 18 South, Range 71 West of the 6th Principal Meridian, County of Fremont, said parcel described as follows:
 Beginning at the southeast corner of the hereinafter described 80'x80' Lease Area, where the southeast corner of Lot A, Royal Gorge Bluffs Subdivision recorded at Reception No. 783312 (Parent Tract) in the records in the Clerk and Recorder's Office of Fremont County bears North 83°24'43" East, a distance of 550.39 feet;
 THENCE South 90°00'00" West, a distance of 80.00 feet;
 THENCE North 90°00'00" East, a distance of 80.00 feet;
 THENCE South 00°00'00" West, a distance of 40.00 feet to the Point of Beginning of the hereinafter described 10' wide Utility Easement;
 THENCE containing South 00°00'00" West, a distance of 80.00 feet to the Point of Beginning.
 Containing 6400 Square Feet, or 0.147 Acres, more or less.

10' WIDE UTILITY EASEMENT.
 A 10 foot wide strip of land over and across that parcel of land described as Lot A, Royal Gorge Bluffs Subdivision recorded at Reception No. 783312 (Parent Tract) in the records in the Clerk and Recorder's Office of Fremont County, located in Section 8, Township 18 South, Range 71 West of the 6th Principal Meridian, County of Fremont, said 10 foot wide strip being 5.00 feet on both sides of the following described centerline:
 For the purpose of this description the bearings are referenced to the southerly line of Lot A, Royal Gorge Bluffs Subdivision (Parent Tract), assumed to bear South 80°46'11" West, a distance of 1737.81 feet, monumented by a 1/2" blue plastic cap marked PLS 34987 at the southwest corner of said Lot A and by a 1/2" blue plastic cap marked PLS 34987 calculated to be a 6 foot witness corner at the southwest corner of said Lot A.
 Beginning at a point on the southern line of Lot A, Royal Gorge Bluffs Subdivision recorded at Reception No. 783312 (Parent Tract) in the records in the Clerk and Recorder's Office of Fremont County, whence the southeast corner of said Lot A bears North 80°36'01" East, a distance of 425.92 feet;
 THENCE along a curve to the left, on arc length of 145.87 feet, said curve having a radius of 651.03 feet, a deflection angle of 127°51'54", a chord bearing of North 25°52'52" West, and a chord length of 145.87 feet;
 THENCE North 32°18'49" West, a distance of 143.85 feet;
 THENCE along a curve to the right, on arc length of 176.99 feet, said curve having a radius of 114.42 feet, a deflection angle of 32°16'14", a chord bearing of North 16°10'42" West, and a chord length of 176.99 feet, a deflection angle of 50°10'55", a chord bearing of North 25°12'53" East, and a chord length of 164.44 feet;
 THENCE North 50°28'20" East, a distance of 131.81 feet;
 THENCE along a curve to the left, on arc length of 233.00 feet, said curve having a radius of 270.00 feet, a deflection angle of 49°26'39", a chord bearing of North 25°45'00" East, and a chord length of 225.84 feet;
 THENCE North 01°01'41" East, a distance of 19.59 feet to the northern line of said Lot A, the southern right of way line of Colorado U.S. Highway 50 and the Point of Terminus, whence the northeast corner of said Lot A bears North 80°36'01" East, a distance of 106.27 feet.
 The sides of said 20 foot wide strip are to be lengthened or shortened or intersected southerly right of way line of Colorado U.S. Highway 50.

10' WIDE UTILITY EASEMENT.
 A 10 foot wide strip of land over and across that parcel of land described as Lot A, Royal Gorge Bluffs Subdivision recorded at Reception No. 783312 (Parent Tract) in the records in the Clerk and Recorder's Office of Fremont County, located in Section 8, Township 18 South, Range 71 West of the 6th Principal Meridian, County of Fremont, said 10 foot wide strip being 5.00 feet on both sides of the following described centerline:
 For the purpose of this description the bearings are referenced to the southerly line of Lot A, Royal Gorge Bluffs Subdivision (Parent Tract), assumed to bear South 80°46'11" West, a distance of 1737.81 feet, monumented by a 1/2" blue plastic cap marked PLS 34987 at the southwest corner of said Lot A and by a 1/2" blue plastic cap marked PLS 34987 calculated to be a 6 foot witness corner at the southwest corner of said Lot A.
 Beginning at the southwest corner of the hereinafter described point of Beginning of the 10' wide Utility Easement on the east line of the 80'x80' Lease Area, whence the southeast corner of Lot A, Royal Gorge Bluffs Subdivision recorded at Reception No. 783312 (Parent Tract) in the records in the Clerk and Recorder's Office of Fremont County, bears North 87°34'34" East, a distance of 547.24 feet;
 THENCE North 67°34'47" East, a distance of 58.52 feet;
 THENCE North 37°19'48" West, a distance of 327.35 feet to the Point of Terminus, whence the northeast corner of said Lot A (Parent Tract) bears North 41°24'33" East, a distance of 925.56 feet.
 The sides of said 10 foot wide strip are to be lengthened or shortened or intersected east line of the 80'x80' Lease Area and to be perpendicular to intersect said

PROJECT INFORMATION:
 FA# XXXXXXXXX
 SITE # US-CO-5091
 TEXAS CREEK
 4340 US HIGHWAY 50
 CANYON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE:
 TOPOGRAPHIC SURVEY

PROJECT NUMBER:
 L55

SCALE:
 1" = 160'

VERTICAL BRIDGE
 750 PARK OF COMMERCE DR #200
 BOCA RATON, FL 33487
 OFFICE: (561) 948-6367

RAMAKER
 ENGINEERS
 (808) 843-4100 WWW.RAMAKER.COM

DAILY LAND SURVEYING, INC.
 1701 LINCOLN AVE #300
 PARKER, CO 80134

PROJECT TITLE:
 FA# XXXXXXXXX
 SITE # US-CO-5091
 TEXAS CREEK
 4340 US HIGHWAY 50
 CANYON CITY, CO 81212
 FREMONT COUNTY

ISSUE PHASE:

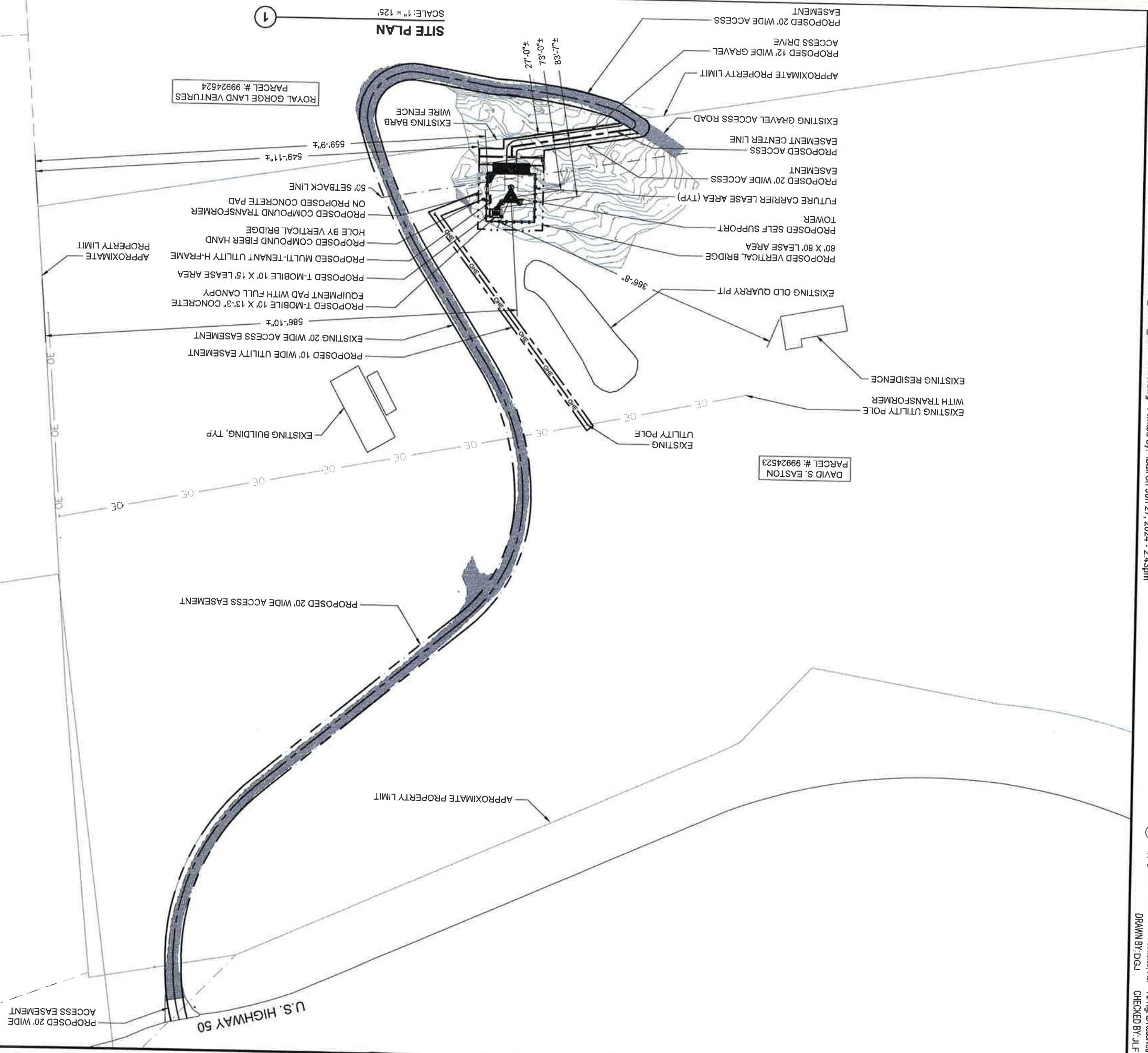
MARK	DATE	DESCRIPTION
1	8/7/23	SURVEY
2	9/17/23	LEASE AND EASEMENT
3	9/11/23	REVERSE ACCESS AND ADD UTILITY EASEMENT
4	9/28/23	REVERSE CERTIFICATION
5	4/1/24	UPDATE EX ACCESS ESMT LOT A

DATE ISSUED:

PROJECT NUMBER:
 L55

SHEET NUMBER:
 L55

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SITE PLAN
 SCALE: 1" = 125'

OVERALL SITE PLAN

SHEET TITLE:
 FREMONT COUNTY
 CANON CITY, CO 81212
 HWY 50 & HWY 9

PROJECT INFORMATION:
 US-CO-5091 / DN02546A

MARK	DATE	DESCRIPTION
2	06/26/24	JURISDICTION COMMENTS
1	04/11/24	JURISDICTION COMMENTS
0	01/26/24	FINAL CDS ISSUED
C	11/28/23	GRADING PLAN ADDED
B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES

ISSUE FINAL DATE 06/26/2024

PROJECT TITLE:
 US-CO-5091 / DN02546A

SCALE: 1" = 125'

11" x 17" - 1" = 125'
 22" x 34" - 1" = 250'

MARK	DATE	DESCRIPTION
2	06/26/24	JURISDICTION COMMENTS
1	04/11/24	JURISDICTION COMMENTS
0	01/26/24	FINAL CDS ISSUED
C	11/28/23	GRADING PLAN ADDED
B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES

ISSUE FINAL DATE 06/26/2024

PROJECT TITLE:
 US-CO-5091 / DN02546A

SHEET TITLE:
 FREMONT COUNTY
 CANON CITY, CO 81212
 HWY 50 & HWY 9

PROJECT INFORMATION:
 US-CO-5091 / DN02546A

PROFESSIONAL ENGINEER
 MICHAEL L. PINSKE
 PE, 0050800
 GOLDADO LICENSED
 6/27/2024

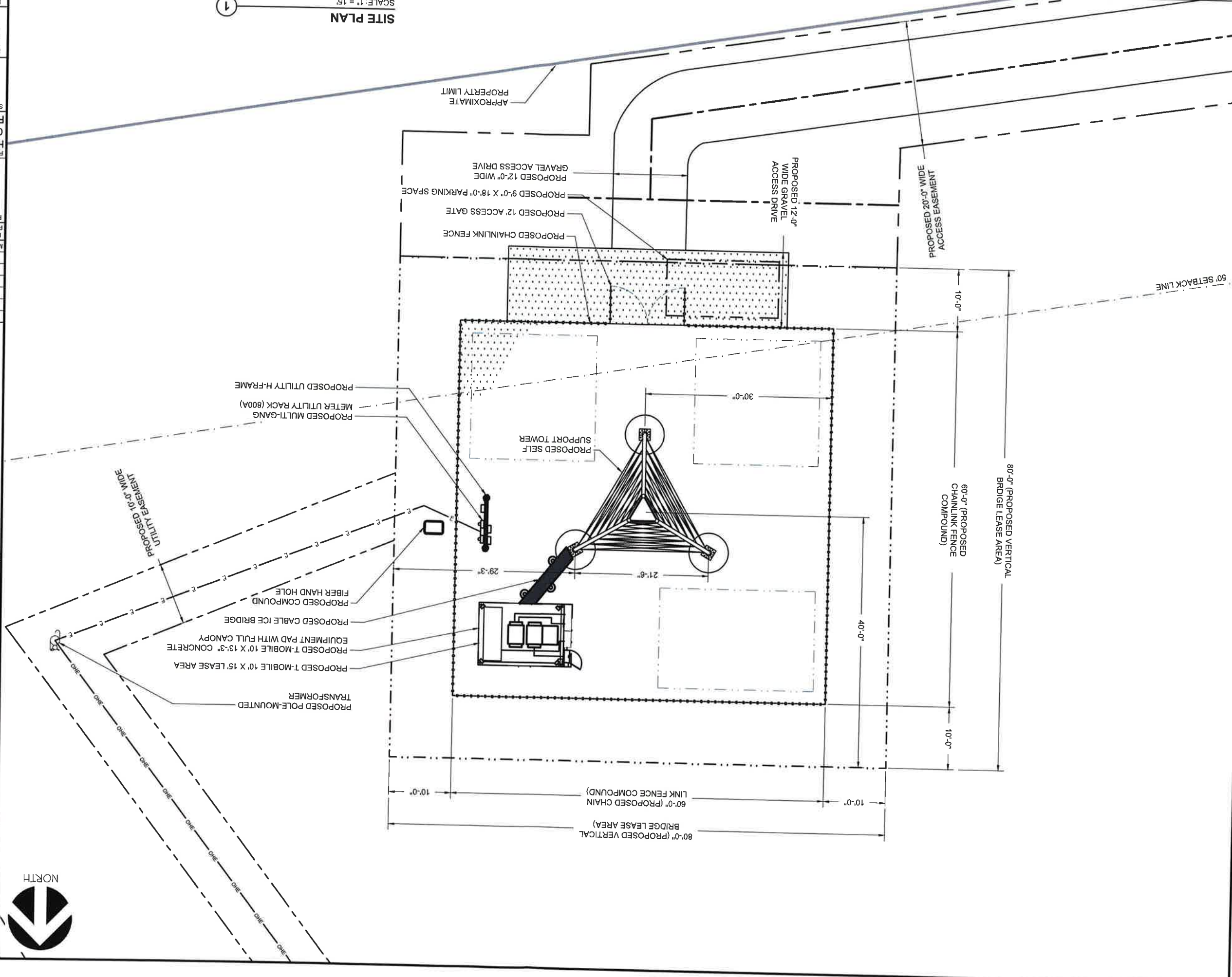
Professional Engineer under the laws of the State of Colorado.
 I hereby certify that this plan, specification, or report was prepared
 by me or under my direct supervision and that I am a duly Licensed
 Certification & Seal

RAMAKER
 employee-owned
 (608) 643-4100 www.ramaker.com

verticalbridge

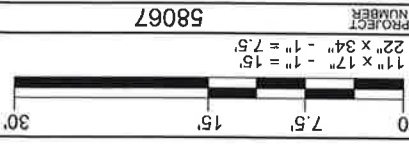
NORTH

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SCALE: 1" = 15'

1



COMPOUND SITE PLAN

SHEET TITLE:
 FREMONT COUNTY
 CANON CITY, CO 81212
 HWY 50 & HWY 9

PROJECT INFORMATION:
 US-CO-5091 / DN02546A

PROJECT TITLE:
 ISSUE FINAL
 DATE 06/25/2024
 ISSUED

MARK	DATE	DESCRIPTION
2	06/25/24	JURISDICTION COMMENTS
1	04/11/24	JURISDICTION COMMENTS
0	01/26/24	FINAL CD ISSUED
C	11/29/23	GRADING PLAN ADDED
B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES



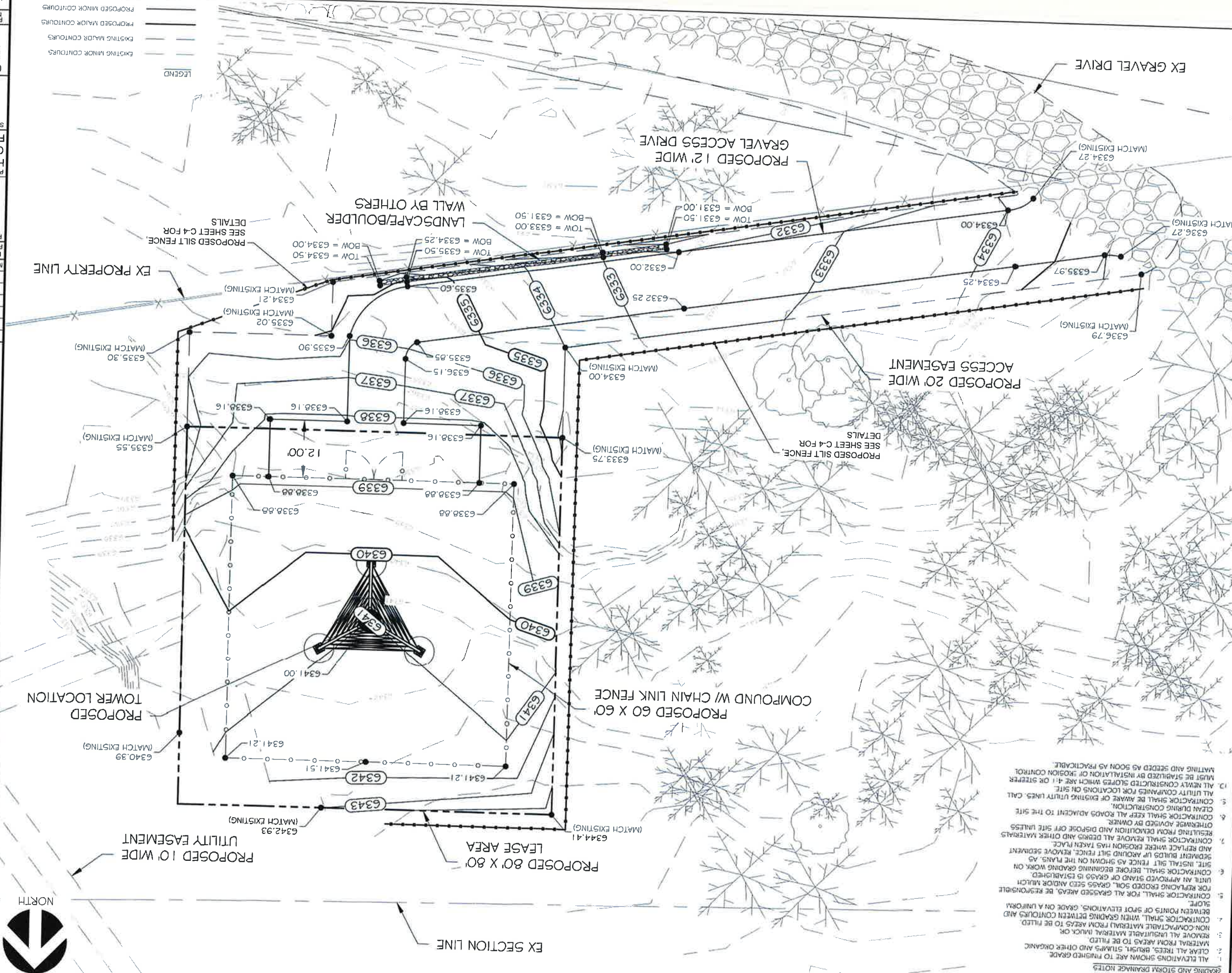
Professional Engineer under the laws of the State of Colorado.
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed

CONTACT & SEAL
 (608) 643-4100 www.ramaker.com
 employee-owned
RAMAKER



AREA OF SITE
 1. TOTAL AREA DISTURBED = ± 0.09 ACRES

- GRADING AND STORM DRAINAGE NOTES
1. ALL ELEVATIONS SHOWN ARE TO FINISHED GRADE.
 2. CLEAR ALL TREES, BRUSH, STUMPS AND OTHER ORGANIC MATERIAL FROM AREAS TO BE FILLED.
 3. REMOVE ALL UNSATURATED MATERIAL (MUCK OR NON-COMPACTABLE MATERIAL) FROM AREAS TO BE FILLED.
 4. CONTRACTOR SHALL WITH GRADING BETWEEN CONTOURS AND BETWEEN POINTS OF SPOT ELEVATIONS, GRADE ON A UNIFORM SLOPE.
 5. CONTRACTOR SHALL, FOR ALL GRASSED AREAS, BE RESPONSIBLE FOR REPLACING ERODED SOIL, GRASS SEED AND/OR MULCH UNTIL AN APPROVED STAND OF GRASS IS ESTABLISHED.
 6. CONTRACTOR SHALL, BEFORE BEGINNING GRADING WORK ON SITE, INSTALL SILT FENCE AS SHOWN ON THE PLANS, AS SEQUENTIAL BUILD UP AROUND SILT FENCE, REMOVE SEDIMENT AND REPLACE WHERE EROSION HAS TAKEN PLACE.
 7. CONTRACTOR SHALL REMOVE ALL DEBRIS AND OTHER MATERIALS RESULTING FROM DEMOLITION AND DISPOSE OFF SITE UNLESS OTHERWISE ADVISED BY OWNER.
 8. CONTRACTOR SHALL KEEP ALL ROADS ADJACENT TO THE SITE CLEAR DURING CONSTRUCTION.
 9. CONTRACTOR SHALL BE AWARE OF EXISTING UTILITY LINES. CALL ALL UTILITY COMPANIES FOR LOCATIONS ON SITE.
 10. ALL NEWLY CONSTRUCTED SLOPES WHICH ARE 4:1 OR STEEPER MUST BE STABILIZED BY INSTALLATION OF EROSION CONTROL MATTING AND SEEDS AS SOON AS PRACTICABLE.



LEGEND

	EXISTING MAJOR CONTOURS
	PROPOSED MAJOR CONTOURS
	EXISTING MINOR CONTOURS
	PROPOSED MINOR CONTOURS

COMPUND GRADING PLAN

1" = 17' - 1" = 20'
 22" x 34" - 1" = 10'

0 10' 20' 40'

SHEET TITLE: **COMPUND GRADING PLAN**

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

US-CO-5091 / DN02546A

PROJECT TITLE: **COMPUND GRADING PLAN**

MARK	DATE	DESCRIPTION
2	06/25/24	JURISDICTION COMMENTS
1	04/11/24	JURISDICTION COMMENTS
0	01/26/24	FINAL CDS ISSUED
C	11/28/23	GRADING PLAN ADDED
B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES

ISSUE FINAL DATE 06/25/2024

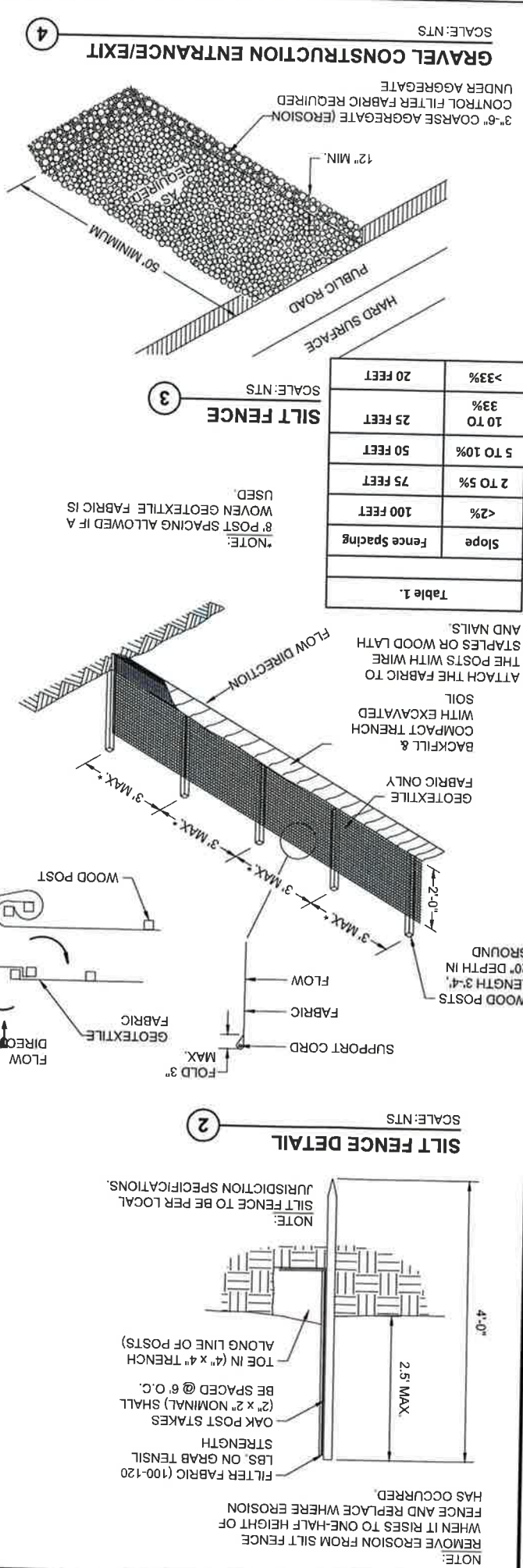
6/27/2024

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- #### EROSION CONTROL NOTES:
- CONTRACTOR SHALL HAVE ALL EROSION CONTROL MEASURES IN PLACE PER THESE CONSTRUCTION PLANS PRIOR TO COMMENCEMENT OF EXCAVATION ACTIVITIES.
 - ALL SILT FENCES SHALL BE INSPECTED DAILY, CLEANING, ADJUSTING AND REPLACING EROSION MEASURES SHALL BE DONE AS REQUIRED THROUGHOUT CONSTRUCTION. ALL EROSION MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORK DAY.
 - SEDIMENT FROM OVERLAND FLOW SHALL BE PREVENTED FROM LEAVING THE WORK SITE BY INSTALLING SILT FENCING PARALLEL TO THE CONTOURS LOCATED DOWNHILL FROM THE WORK AREA.
 - STONE TRACKING PADS SHALL BE INSTALLED AT ALL CONSTRUCTION SITE EXITS TO PREVENT TRACKING OF SOIL. TRACKED SOIL SHALL BE COLLECTED FROM PAVED ROADS LOCATED NEAR THE CONSTRUCTION SITE AT THE END OF EACH WORKING DAY OR AS DIRECTED BY THE ENGINEER.
 - EXISTING VEGETATION SHALL BE REMOVED ONLY AS NECESSARY TO PERFORM CONSTRUCTION ACTIVITIES. CLEARING OF LARGE AREAS THAT ARE CLEARLY OUTSIDE THE LIMITS OF CONSTRUCTION SHALL NOT BE PERMITTED.
 - ALL DISTURBED AREAS SHALL BE RESTORED AND VEGETATED AS SOON AS POSSIBLE AFTER DISTURBANCE.
 - EROSION MEASURES SHALL NOT BE REMOVED UNTIL THE AREAS SERVED HAVE ESTABLISHED VEGETATIVE COVER.
 - TEMPORARY MULCH SHALL BE PLACED WITHIN 14 DAYS OF GRADING OPERATIONS. ALL AREAS OF EXPOSED SOIL SHALL BE COVERED WITH A STRAW MULCH. MULCH SHALL BE APPLIED AT THE RATE OF 1.5 TONS PER ACRE. MINIMUM IMMEDIATELY AFTER SPREADING, THE STRAW MULCH SHALL BE PROTECTED BY COVERING WITH A MAT OR CRIMPING. MULCHING SHALL BE REPLACED AND CRIMPED AS NECESSARY TO MAINTAIN ADEQUATE COVER UNTIL PERMANENT.
 - AREAS OF THE SITE THAT ARE NOT UNDER THE BUILDING FOOTPRINT, PAVED AREAS OR EMBANKMENTS THAT ARE 3:1 SLOPES OR STEEPER, SHALL BE DEEP TILLED TO A DEPTH OF 2 FEET PRIOR TO FINAL GRADING FOR RESTORATION.
 - TEMPORARY SEEDING & MULCHING SHALL BE APPLIED TO ANY AREA OF THE SITE THAT WILL REMAIN INACTIVE FOR AT LEAST 7 DAYS BUT LESS THAN 1 YEAR.
 - TEMPORARY SEEDING SHALL CONSIST OF WINTER WHEAT, CEREAL RYE, OR SPRING OATS AND BE APPLIED AT A MINIMUM RATE OF 3 BUSHELS PER ACRE.
 - TEMPORARY MULCH SHALL BE APPLIED AT A MINIMUM RATE OF 1.5 TONS PER ACRE AND SHALL BE PROTECTED BY COVERING WITH A MAT OR CRIMPING. MULCHING SHALL BE REPLACED AND/OR CRIMPED AS NECESSARY TO MAINTAIN ADEQUATE COVER UNTIL PERMANENT SEEDING IS IN PLACE.
 - ALL DISTURBED AREAS OR AREAS THAT WILL REMAIN INACTIVE FOR GREATER THAN 1 YEAR SHALL BE RESTORED AND VEGETATED WITH PERMANENT SEEDING IMMEDIATELY AFTER LAND DISTURBING ACTIVITIES ARE COMPLETED.

- #### SILT FENCE NOTES:
- CROSS BRACE WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS AS DIRECTED BY THESE PLANS AND ASSOCIATED SPECIFICATIONS.
 - MINIMUM 14 GAUGE WIRE REQUIRED FOLD FABRIC 3" OVER THE WIRE AND STAPLE OR PLACE WIRE RINGS ON 12" C-C.
 - EXCAVATE A TRENCH A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
 - WIRE SUPPORT FENCE SHALL BE 14 GAUGE MINIMUM WOVEN WIRE WITH A MAXIMUM MESH SPACING OF 6". SECURE TOP OF GEOTEXTILE FABRIC TO TOP OF FENCE WITH STAPLES OR WIRE RINGS AT 12" C-C.
 - GEOTEXTILE FABRIC SHALL BE REINFORCED WITH AN INDUSTRIAL POLYPROPYLENE NETTING WITH A MAXIMUM MESH SPACING OF 3'-0" OR EQUAL. A HEAVY DUTY NYLON TOP SUPPORT CORD OR EQUIVALENT IS REQUIRED.
 - STEEL POSTS SHALL BE STUDDED "TEE" OR "U" TYPE WITH A MINIMUM WEIGHT OF 1.28 LBS/LINEAL FOOT (WITHOUT ANCHOR). PIN ANCHORS SUFFICIENT TO RESIST POST MOVEMENT ARE REQUIRED. WOOD POSTS SHALL BE A MINIMUM SIZE OF 4" DIA. OR 4" X 4" EXCEPT WOOD POSTS FOR GEOTEXTILE FABRIC REINFORCED WITH NETTING SHALL BE A MINIMUM SIZE OF 1-1/2" X 1-1/2" X 1-1/2" OAK OR HICKORY.
 - SILT FENCE SHALL BE INSPECTED WITHIN 24 HOURS AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE IMMEDIATELY.
 - SEDIMENT DEPOSITS SHALL BE REMOVED WHEN DEPOSITS REACH ONE THIRD OF THE HEIGHT OF THE SILT FENCE.
 - AFTER DITCH GRADING, SILT FENCE SHALL BE INSTALLED EVERY 75 FEET, FOR THE LENGTH OF THE SILT FENCE.
 - CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY, USE THE FOLLOWING METHOD: TWIST METHOD-OVERLAP THE END POSTS AND TWIST. OR ROTATE, AT LEAST 180 DEGREES. PROVIDE A TEMPORARY STONE SPLASH PAD AT ALL FIRE HYDRANTS OR OTHER POINTS OF DISCHARGE DURING TESTING OF THE WATER DISTRIBUTION SYSTEM.
 - PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES AS MAY BE TO CONTROL SOIL EROSION DURING OFF SITE UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEARED, GRADED AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION.
- FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
5. PERMANENT SEEDING SHALL CONFORM TO LOCAL JURISDICTION STANDARD SPECIFICATIONS

EROSION CONTROL DETAILS

SHEET TITLE

FREMONT COUNTY
CANON CITY, CO 81212
HWY 50 & HWY 9

PROJECT INFORMATION

US-CO-5091 / DN02546A

MARK	DATE	DESCRIPTION
A	09/13/23	REDLINES
B	09/18/23	CHANGE TOWER HEIGHT
C	11/28/23	GRADING PLAN ADDED
0	01/26/24	FINAL CDS ISSUED
1	04/11/24	JURISDICTION COMMENTS
2	06/25/24	JURISDICTION COMMENTS

ISSUE FINAL DATE 06/25/2024

PROJECT TITLE:

11" x 17" - 1" = 20'
22" x 34" - 1" = 10'

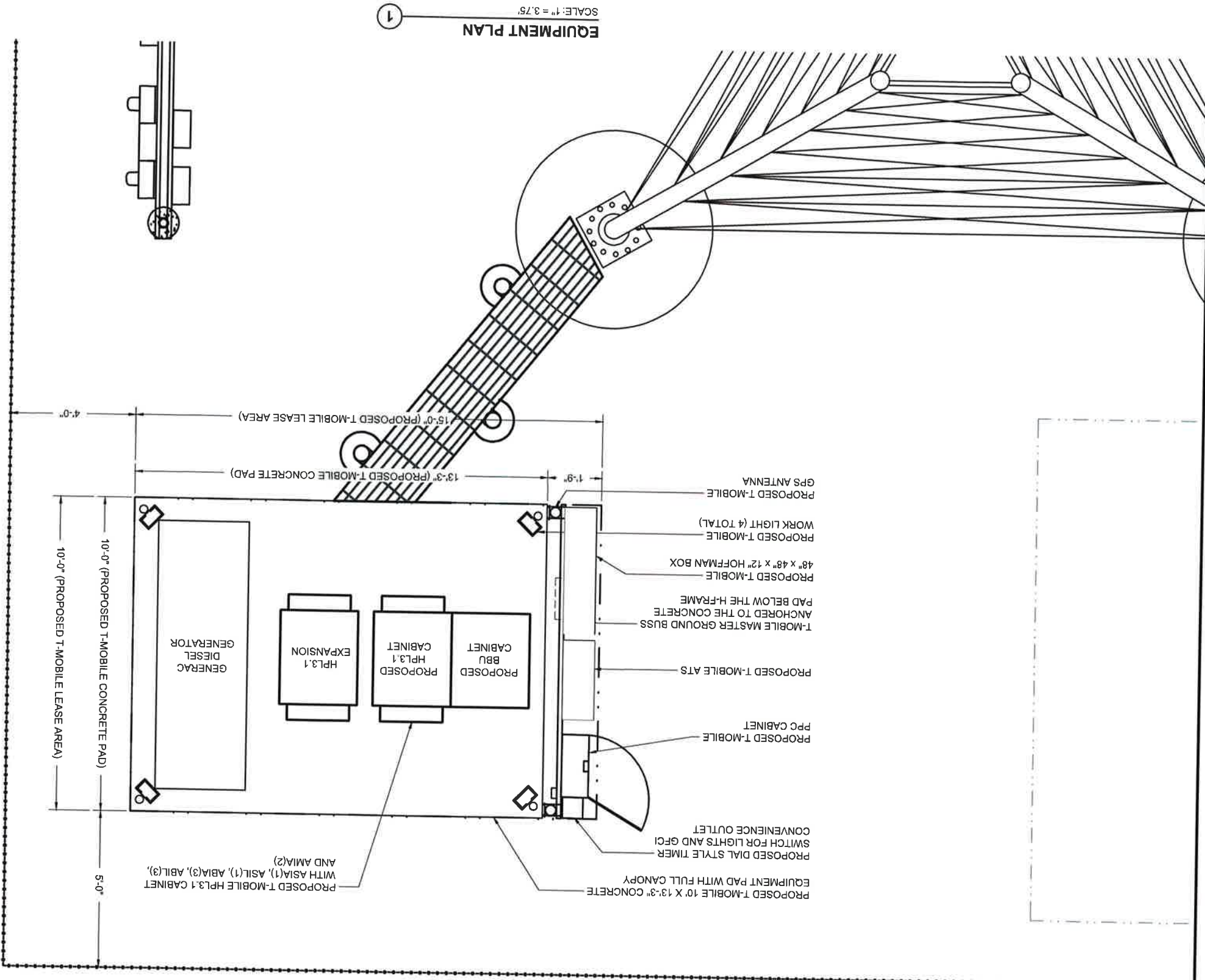
PROJECT NUMBER 58067

SHEET C-4

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PROJECT TITLE: US-CO-5091 / DN02546A

PROJECT INFORMATION: HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

PROJECT NUMBER: 58067

MARK	DATE	DESCRIPTION
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A	09/13/23	REDLINES

ISSUE PHASE: FINAL
 DATE: 06/26/2024

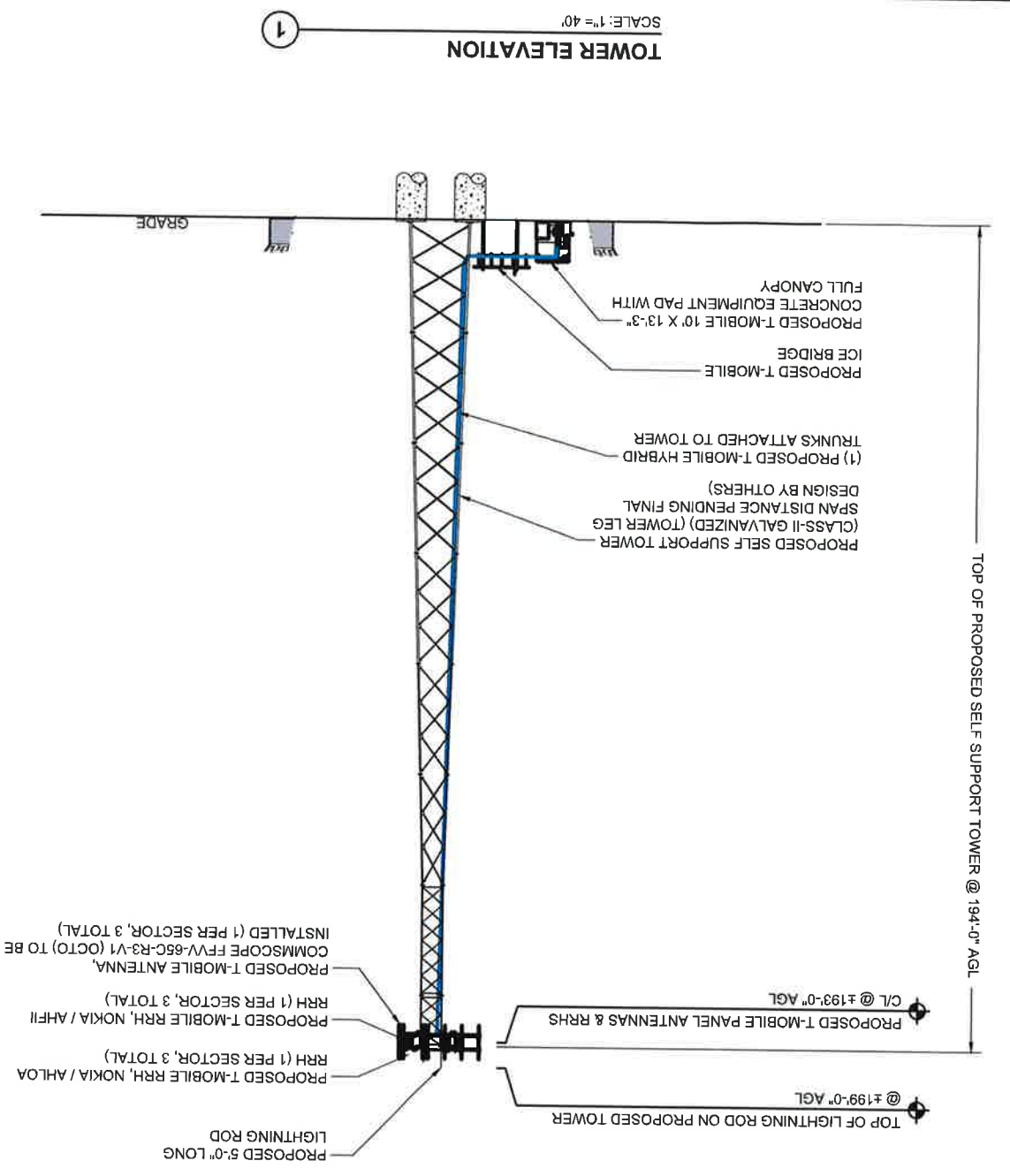
PROFESSIONAL ENGINEER
 MICHAEL L. PINSKE
 PE 0050880
 COLORADO LICENSED
 06/27/2024

Certification & Seal:
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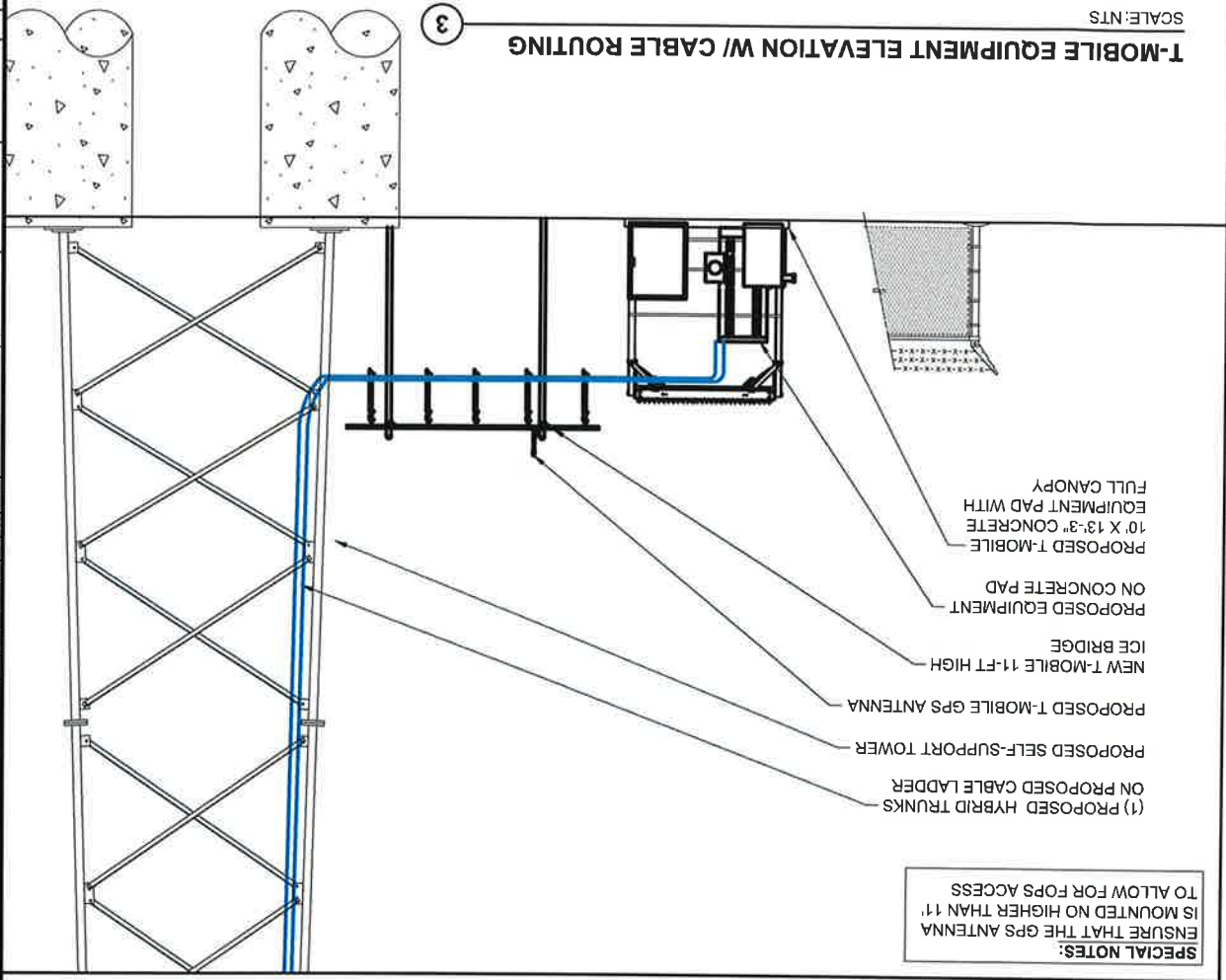
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NORTH



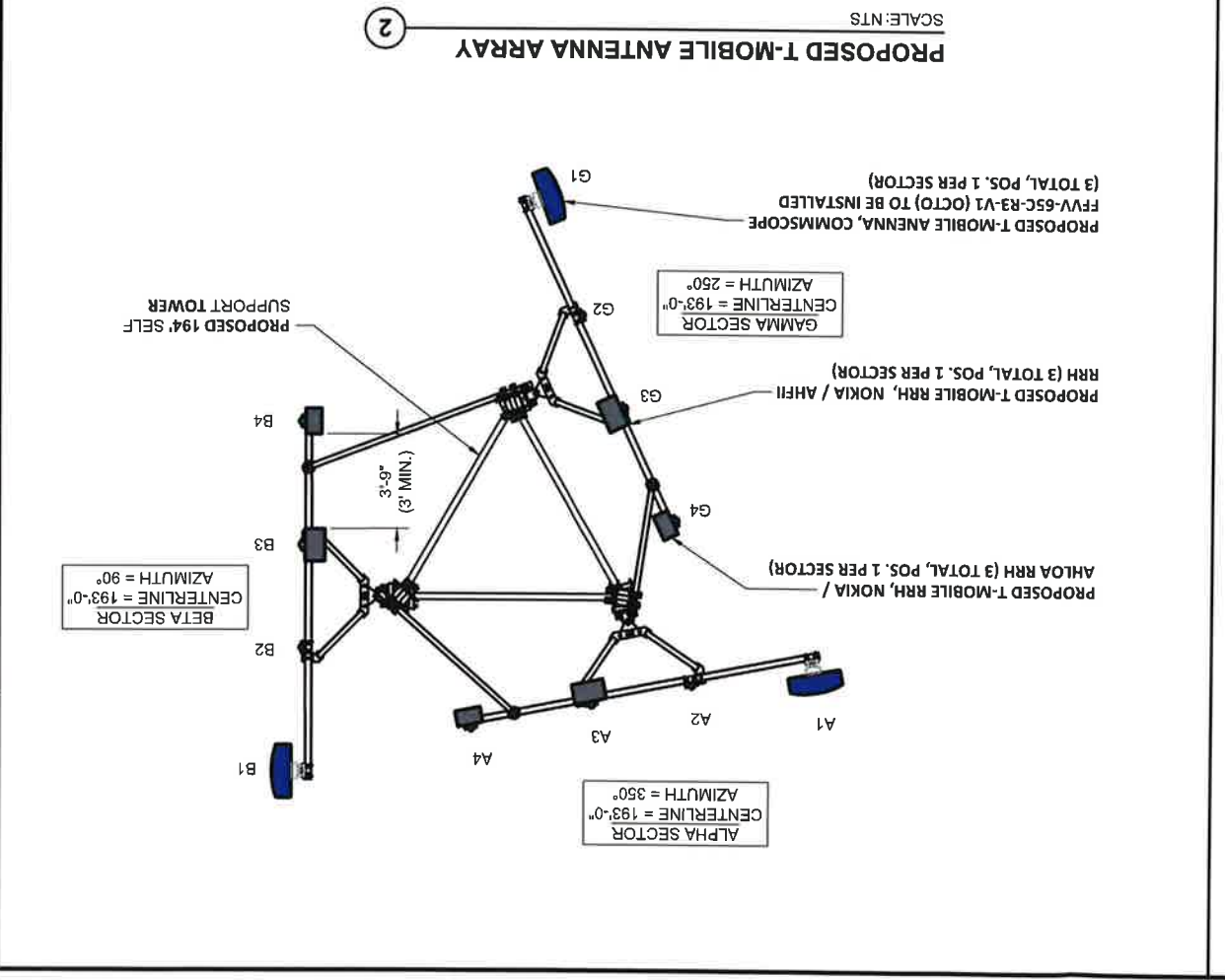
TOWER ELEVATION
 SCALE: 1" = 40'

1



T-MOBILE EQUIPMENT ELEVATION W/ CABLE ROUTING
 SCALE: NTS

3



PROPOSED T-MOBILE ANTENNA ARRAY
 SCALE: NTS

2

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ISSUE PHASE: FINAL
 DATE ISSUED: 06/25/2024

PROJECT TITLE: US-CO-5091 / DN02546A

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE: COMPOUND TOWER ELEVATION & T-MOBILE ANTENNA LAYOUT

PROJECT NUMBER: 58067
 A-11



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ANTENNA & LINE SCHEDULE

SECTOR	POS.	TECHNOLOGY	ANTENNA MODEL NUMBER	ANTENNA MANUFACTURER	ANTENNA CABLES	AZIMUTH	RAD CENTER	ELECT D-TILT	MECH D-TILT	RRH MODEL NUMBER	RRH MANUFACTURER	JUMPER SIZE	JUMPER QTY	JUMPER LENGTH	HYBRID CABLE LENGTH	TOP OF TOWER EQUIPMENT
ALPHA	A1	L600/N600/LAWS3	L700/L1900/L2100/N1900/N2100	FFV-65C-R3-V1 (OCTO)	COMMSCOPE	HYBRID TRUNK	-	-	6	-	-	-	-	-	-	-
	A2	-	-	-	-	-	-	6	193-0"	-	-	-	-	-	-	-
	A3	-	-	-	-	-	-	3	-	(1) AHFII	NOKIA	6x24HCS	(1)	15-0"	-	-
	A4	-	-	-	-	-	-	3	-	(1) AHL0A	NOKIA	6x24HCS	(2)	15-0"	-	-
BETA	B1	L600/N600/LAWS3	L700/L1900/L2100/N1900/N2100	FFV-65C-R3-V1 (OCTO)	COMMSCOPE	(SHARED)	-	-	6	-	-	-	-	-	-	-
	B2	-	-	-	-	-	-	6	193-0"	-	-	-	-	-	-	-
	B3	-	-	-	-	-	-	3	-	(1) AHFII	NOKIA	6x24HCS	(1)	15-0"	-	-
	B4	-	-	-	-	-	-	3	-	(1) AHL0A	NOKIA	6x24HCS	(2)	15-0"	-	-
GAMMA	G1	L600/N600/LAWS3	L700/L1900/L2100/N1900/N2100	FFV-65C-R3-V1 (OCTO)	COMMSCOPE	(SHARED)	-	-	6	-	-	-	-	-	-	-
	G2	-	-	-	-	-	-	6	193-0"	-	-	-	-	-	-	-
	G3	-	-	-	-	-	-	3	-	(1) AHFII	NOKIA	6x24HCS	(1)	15-0"	-	-
	G4	-	-	-	-	-	-	3	-	(1) AHL0A	NOKIA	6x24HCS	(2)	15-0"	-	-

RFDS DESIGN VERSION: 1
 DATE: 01/24/2023

NOTES:
 1. GENERAL CONTRACTOR TO VERIFY FINAL RF CONFIGURATION WITH T-MOBILE RF ENGINEER PRIOR TO INSTALLATION.

ANTENNA AND COAXIAL CABLE SCHEDULE:
 1. ALL ANTENNAS SHALL BE FURNISHED WITH DOWN TILT BRACKETS. CONTRACTOR SHALL COORDINATE REQUIRED MECHANICAL DOWN TILT FOR EACH ANTENNA WITH RF ENGINEER. ANTENNA DOWN TILT SHALL BE SET AND VERIFIED BY A SMART LEVEL.
 2. ANTENNA CENTERLINE HEIGHT IS IN REFERENCE TO ELEVATION 0'-0".
 3. CONTRACTOR SHALL INSTALL COLOR CODE RINGS AT EACH OF THE HYBRID CABLES AND JUMPER CABLES WITH UV RESISTANT TAPE. ALL CABLES SHALL BE MARKED AT TOP AND BOTTOM WITH 2" COLOR TAPE OR STENCIL TAG. COLOR TAPE WITH UV RESISTANT FROM GARY BAR ELECTRONICS.

T-MOBILE ANTENNA & LINE SCHEDULE

SCALE: N.T.S.

1



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A	09/13/23	REDLINES

ISSUE PHASE: FINAL
 DATE ISSUED: 06/25/2024

PROJECT TITLE: US-CO-5091 / DN02546A

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

T-MOBILE ANTENNA AND LINE SCHEDULE

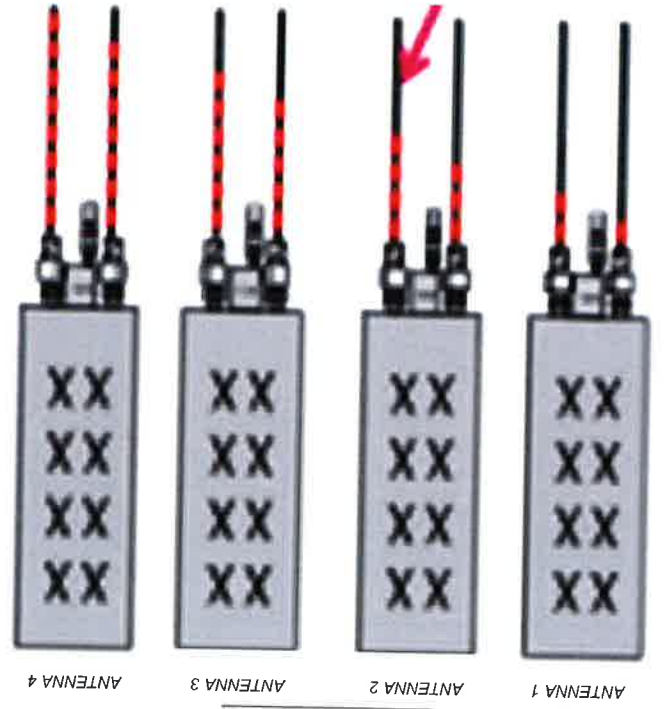
SCALE: NONE

SHEET NUMBER: 58067

COAX COLOR CODING:

- ANTENNAS WILL BE LABELLED (BACK OF ANTENNA VIEW) RIGHT TO LEFT 1 - X PORTS
- COAX/JUMPER LINES WILL BE IDENTIFIED B SECTOR COLOR AND BY NUMBER OF BANDS AROUND THE COAX/JUMPER

SECTOR A	SECTOR B	SECTOR C	SECTOR D	SECTOR E	SECTOR F	LMU	FIBER ID	UNUSED COAX	MICROWAVE	DWE T-1s + GPS DOWNLINK CABLE	ID W/ LABEL MAKER
RED	GREEN	BLUE	YELLOW	WHITE	PURPLE	LMU	GRAY	UNUSED COAX	ORANGE	DWE T-1s + GPS DOWNLINK CABLE	ID W/ LABEL MAKER



1. ALL ANTENNAS SHALL BE FINISHED WITH DOWNTILT BRACKETS. CONTRACTOR SHALL COORDINATE REQUIRED MECHANICAL DOWNTILT FOR EACH ANTENNA WITH RF ENGINEER. ANTENNA DOWNTILT SHALL BE SET AND VERIFIED BY A SMART LEVEL.

2. CONTRACTOR SHALL INSTALL COLOR CODE RINGS ON EACH OF THE COAX CABLES AND JUMPER CABLES WITH UV RESISTANT TAPE. ALL CABLES SHALL BE MARKED AT TOP AND BOTTOM WITH 2" COLOR TAPE OR STENCIL TAG. COLOR TAPE MAY BE OBTAINED FROM GRAYBAR ELECTRONICS.

COLOR CODING AND NOTES

EXAMPLE: COAX WITH FOUR BANDS OF RED TAPE WILL REPRESENT ALPHA SECTOR AND THE 4TH PORT OF THE ANTENNA.

SCALE:N.T.S.

1

FFV-65C-R3-V1

COMMSCOPE FFV-65C-R3-V1 DETAILS

SCALE: N.T.S.

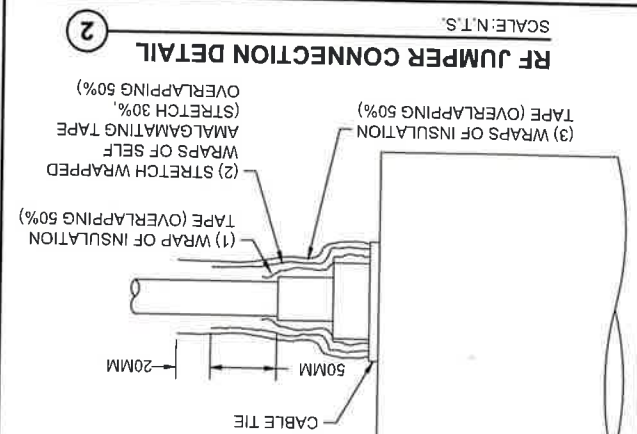
WEIGHT (WITHOUT MOUNTING HARDWARE): 118.6 LBS.
 SIZE (HXWXD): 96.0X25.2X9.3 IN.
 MOUNTING HARDWARE P/N: BSAMNT-4
 RATED WIND VELOCITY: 149.8 MPH
 COMMSCOPE FFV-65C-R3-V1

General Specifications
 Address Type: Standard
 Color: Blue
 Frequency Band: 1695 - 2650 MHz, 657 - 894 MHz
 Max. Power: 200 W
 Max. Temperature: 60°C
 Max. Humidity: 95% RH

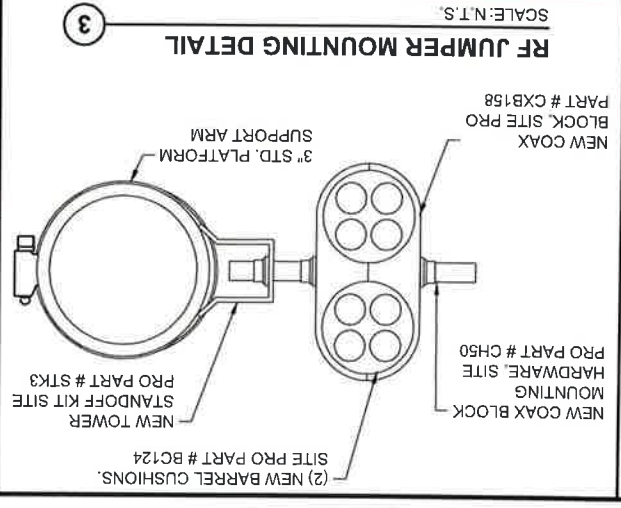
Electrical Specifications
 Frequency Band: 617-894, 1695-1880, 1850-1990, 1920-2200, 2200-2500, 2500-3190 MHz
 Frequency Band: 617-894, 1695-1880, 1850-1990, 1920-2200, 2200-2500, 2500-3190 MHz

Dimensions
 Overall Height: 96.0 in
 Overall Width: 25.2 in
 Overall Depth: 9.3 in

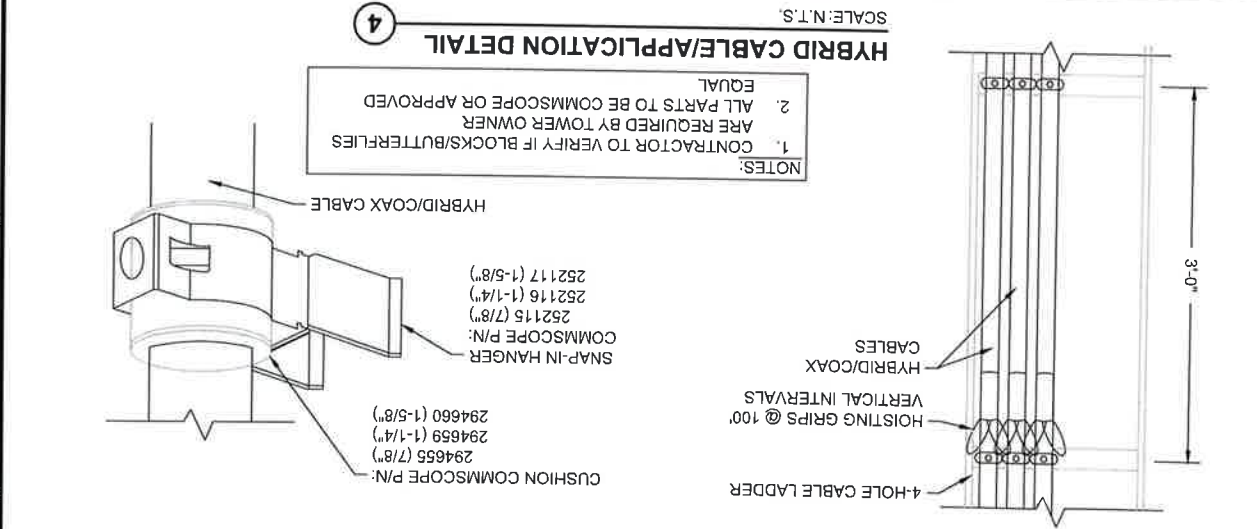
JUMPERS TO BE TORQUED TO 221.27 IN.LBS



2 RF JUMPER CONNECTION DETAIL SCALE:N.T.S.



3 RF JUMPER MOUNTING DETAIL SCALE:N.T.S.



4 HYBRID CABLE/APPLICATION DETAIL SCALE:N.T.S.

- NOTES:
1. CONTRACTOR TO VERIFY IF BLOCKS/BUTTERFLIES ARE REQUIRED BY TOWER OWNER
 2. ALL PARTS TO BE COMMSCOPE OR APPROVED EQUAL

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PROFESSIONAL ENGINEER
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 PE 0050800
 COLORADO LICENSED
 6/27/2024

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PROJECT TITLE: US-CO-5091 / DN02546A

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

T-MOBILE ANTENNA EQUIPMENT AND COAX DETAILS

SCALE: NONE

PROJECT NUMBER: 58067 SHEET NUMBER: A-31

AHFII AirScale RRH 4T4R B25/66 480W

Specification Details	
Standard	3GPP compliant, FDD-LTE, NR, GSM, WCDMA
Band / Frequency range	Band 25: RX 1850 MHz - 1915 MHz, TX 1930 MHz - 1995 MHz Band 66: RX 1710 MHz - 1780 MHz, TX 2110 MHz - 2200 MHz
Max. supported modulation	256QAM UL / 1024 QAM DL
Number of TX/RX paths	4T4R
Instantaneous bandwidth BW	Full Band
Occupied bandwidth OBW	OBW B25: 65MHz (UL/DL), B66: 70MHz (UL) 90MHz (DL)
Max. output power per TRX	480W in any band while 4x4W in other band
Core Dimensions (mm) W x H x D	350 x 645 x 120
Envelope Dimensions (mm) W x H x D	370 x 676 x 150 (Not to exceed)
Volume	< 25 l
Weight	< 32.5 Kg
Supply voltage / Connector type	DC -40.5 V ... -60 V / 2 pole connector
Power consumption	100% RF Loading: 1869 W 24hr weight: 1103 W
Antenna ports	4 x 4, 10
Optical ports	3 x SFP8 Ports CPRI 9.8 Gbps (Rate 7)
Other interfaces / Connector type	RET RS485, AISG 3.0, EAC MDR26
Operational temperature range	-40 C ... 155 C
Cooling	Forced Convection (fans)
Installation options	Pole, wall, rail
Ingress / Surge protection	IP65, DC Power Port: 20 KA 8/20 µs

PROPOSED AHFII DETAILS

SCALE: NTS

1



AirScale Multiband RRH Benefits

- Up to 4x80W in either AWS or PCS bands while 4x40W in the other band
- CPRI Fronthaul interface
- Up to 1024 QAM DL capable hardware
- 480W in any band while 4x40W in other band
- Up to 3xSFP8 ports
- Integrated PIM Cancellation
- Wide NR carrier (up to 40MHz)
- Up to max 8 carrier per TX across both bands

PROPOSED AHLQA DETAILS

SCALE: NTS

2



Nokia Dual Low Band Radio Specification

AHLQA: 600MHz/700MHz Radio (4Tx4Rx RRH)

Configuration	Output Power	PIM Cancellation	Power Sharing	Weight	Size	Dimensions
4T4R Dual Band	4x30W	Yes (Multi Band)	Yes	83.7 lbs with no covers & brackets	Approx 32.6L	560 mm x 308 mm x 189 mm
4T4R Dual Band	4x30W	Yes (Multi Band)	Yes	83.7 lbs with no covers & brackets	Approx 32.6L	560 mm x 308 mm x 189 mm
4T4R Dual Band	4x30W	Yes (Multi Band)	Yes	83.7 lbs with no covers & brackets	Approx 32.6L	560 mm x 308 mm x 189 mm

- Based on Airscale Platform
- Tower installation only (No Ground installation)
- License requirement for MIMO Functions and Dual Band
- Utilizes 4.3-10 RF Connector
- CPRI fiber front haul
- Product expected Q2 2018



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JURISDICTION COMMENTS

2 06/25/24 JURISDICTION COMMENTS

1 04/11/24 JURISDICTION COMMENTS

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PROJECT INFORMATION:

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SHEET TITLE:

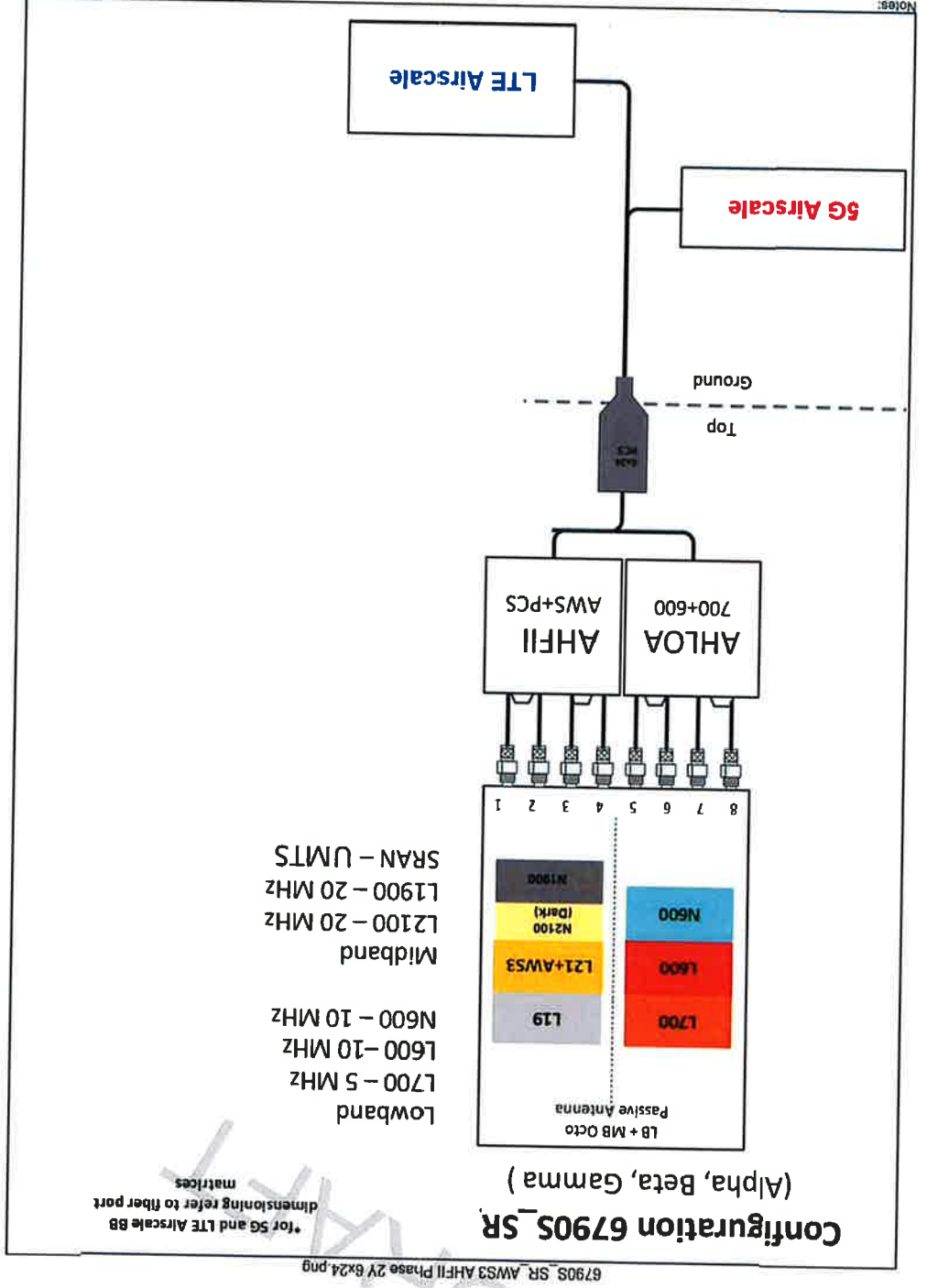
T-MOBILE ANTENNA EQUIPMENT
 AND COAX DETAILS

SCALE:

AS NOTED

PROJECT NUMBER 58067

SHEET NUMBER A-4T



Notes:

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Colorado Licensed Professional Engineer
 MICHAEL L. PINSKE
 PE 0050800
 06/25/24

MARK	DATE	DESCRIPTION
2	06/25/24	JURISDICTION COMMENTS
1	04/11/24	JURISDICTION COMMENTS
0	01/26/24	FINAL CDs ISSUED
C	11/28/23	GRADING PLAN ADDED
B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES

ISSUE PHASE FINAL DATE 06/25/2024

PROJECT TITLE: US-CO-5091 / DN02546A

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

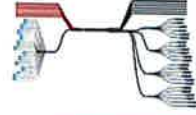
SHEET TITLE: PLUMBING DIAGRAM

SCALE: NONE

PROJECT NUMBER 58067

SHEET NUMBER A-5

FDH1204-48SE2



- RRU (top) breakout, 6 blunt cut power cords (6 6AWG pairs), 6B single mode fibers in outdoor rated tabs with ODC-compatible interface
- BBU (bottom) breakout, 12-4AWG power conductors blunt cut, 4B single mode fibers within 24 DCL tabs.

Product Classification

Regional Availability: Asia | Australia/New Zealand | EMEA | Latin America | North America

Product Type

Product Brand: HELIAX®
 Product Series: FDH

General Specifications

Construction Type: Direct breakout trunk
 Interface, Connector A: ODC-LC
 Interface Feature, connector A: Outdoor
 Interface, Connector B: OLC
 Interface Feature, connector B: Standard
 Interface Body Style, connector B: Straight
 Interface, Connector A: OLC
 Interface Feature, connector A: Outdoor
 Interface Body Style, connector A: Straight
 Jacket Color: Black
 Total Fibers, quantity: 48
 Dimensions: Cable Assembly Length Range (m): 10 - 130
 Diameter Over Jacket: 44.78 mm | 1.763 in
 Center Conductor Gauge: 4 AWG
 Mechanical Specifications: Minimum Bend Radius: 52.2 mm | 2.058 in

FDH1204-48SE2

Minimum Bend Radius, luration: 30 mm | 1.181 in

Optical Specifications

Fiber Type: G.657 A2/B2

Insertion Loss, typical note: Insertion loss is measured at 1310 and 1550 nm

Insertion Loss, typical note: Insertion loss is measured at 1310 and 1550 nm

Operating Temperature: -40 °C to +75 °C (-40 °F to +167 °F)

Environmental Specifications

Packaging and Weights: Cable weight: 3.4 kg/m | 2.285 lb/ft

Footnotes: Insertion Loss, typical note: Insertion loss is measured at a room temp of +20°C (+68°F)

6x24 HYBRID TRUNK SPECIFICATIONS

SCALE: NTS

1

CON	LANE	PAIR	CONDUCTOR	MODE	WAVELENGTH (nm)	LOSS (dB/km)	DIAMETER (mm)	WEIGHT (kg/m)	TEMPERATURE RANGE (°C)	MIN. BEND RADIUS (mm)
FIBER	LANE 1	PAIR 1	CONDUCTOR 1	MODE 1	1310	0.25	0.75	3.4	-40 to +75	30
	LANE 2	PAIR 2	CONDUCTOR 2	MODE 2	1550	0.25	0.75	3.4	-40 to +75	30
CONDUCTOR	CONDUCTOR 1	CONDUCTOR 2	CONDUCTOR 3	CONDUCTOR 4	CONDUCTOR 5	CONDUCTOR 6	CONDUCTOR 7	CONDUCTOR 8	CONDUCTOR 9	CONDUCTOR 10
	CONDUCTOR 11	CONDUCTOR 12	CONDUCTOR 13	CONDUCTOR 14	CONDUCTOR 15	CONDUCTOR 16	CONDUCTOR 17	CONDUCTOR 18	CONDUCTOR 19	CONDUCTOR 20
MODE	MODE 1	MODE 2	MODE 3	MODE 4	MODE 5	MODE 6	MODE 7	MODE 8	MODE 9	MODE 10
	MODE 11	MODE 12	MODE 13	MODE 14	MODE 15	MODE 16	MODE 17	MODE 18	MODE 19	MODE 20
WAVELENGTH	1310	1310	1310	1310	1310	1310	1310	1310	1310	1310
	1550	1550	1550	1550	1550	1550	1550	1550	1550	1550
LOSS	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
DIAMETER	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
WEIGHT	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
TEMPERATURE	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75
	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75	-40 to +75
MIN. BEND RADIUS	30	30	30	30	30	30	30	30	30	30
	30	30	30	30	30	30	30	30	30	30

FDH1204-48SE2

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE:
**T-MOBILE EQUIPMENT AND
 COAX DETAILS**

SCALE:
 AS NOTED

PROJECT NUMBER:
 58067

SHEET NUMBER:
 A-61

PROJECT TITLE: US-CO-5091 / DN02546A

ISSUE	FINAL	DATE	ISSUED
2		06/25/24	JURISDICTION COMMENTS
1		04/11/24	JURISDICTION COMMENTS
0		01/26/24	FINAL CDS ISSUED
C		11/28/23	GRADING PLAN ADDED
B		09/18/23	CHANGE TOWER HEIGHT
A		09/13/23	REDLINES

Professional Engineer under the laws of the State of Colorado.
 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Colorado.

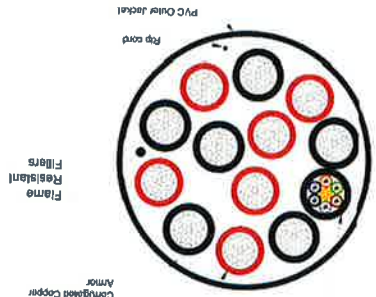
MICHAEL L. PINSKE
 PE.0050800
 COLORADO LICENSED PROFESSIONAL ENGINEER
 6/27/2024

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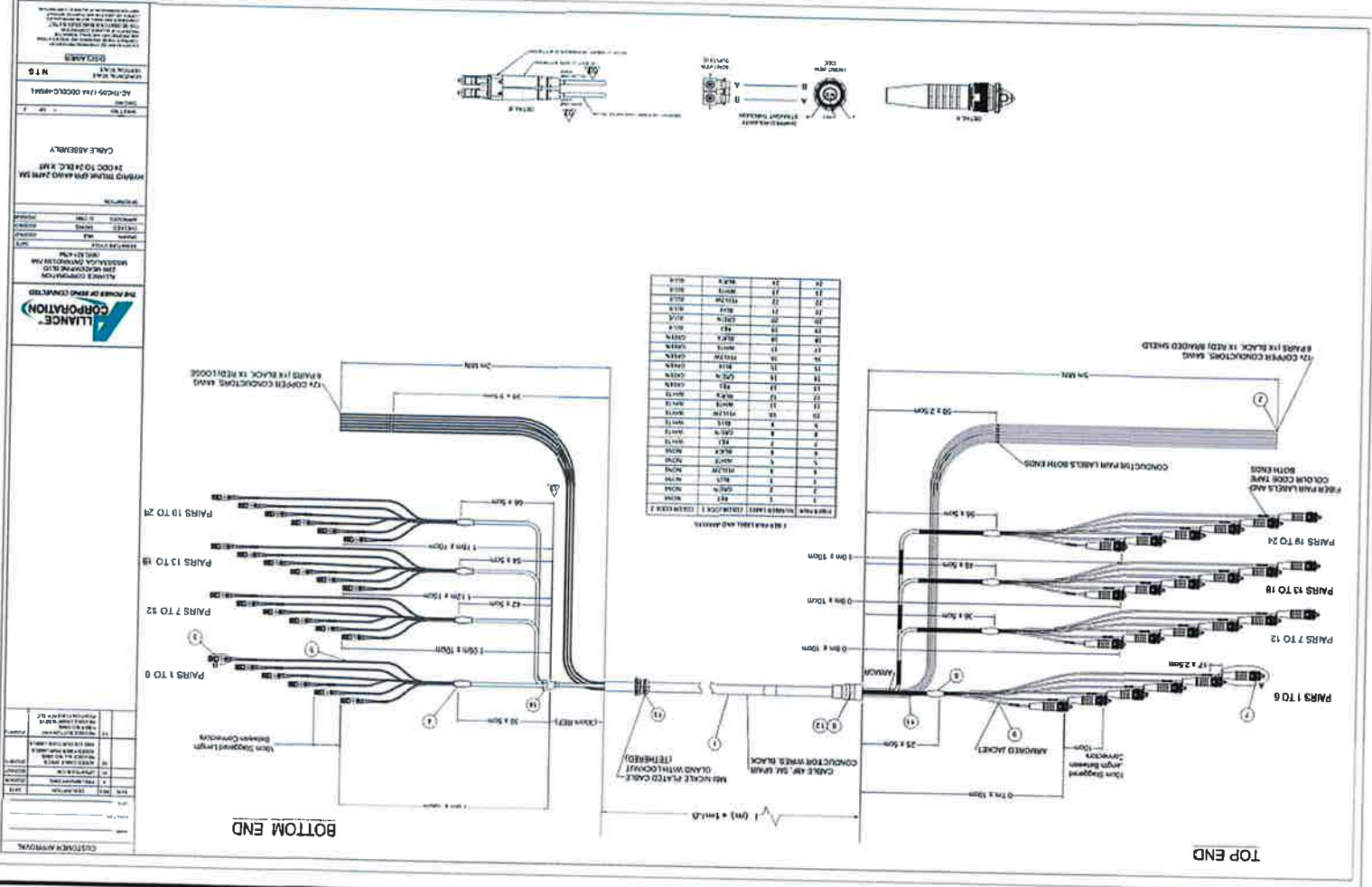
MECHANICAL	ELECTRICAL	OPTICAL	ENVIRON
JACKET COLOR	CONDUCTOR MATERIAL	FIBER TYPE	OPERATING TEMP(F)
BLACK	CONDUCTOR COLOR	UL RATING	STORAGE TEMP(F)
1.8	CONDUCTOR CONSTRUCTION	EMI SHIELD	UV
36	CONDUCTOR SIZE(AWG)	CONDUCTORS, QTY	THERMAL CYCLE
18	RESISTIVITY($\Omega @ 20^{\circ}C$)	CONDUCTORS, QTY	VIBRATION
12.6	TENSILE LOAD, SHORT TERM(lbf)	CONDUCTORS, QTY	IMPACT(1b)
1.2	TENSILE LOAD, LONG TERM(lbf)	CONDUCTORS, QTY	
2480	COMPRESSION(lb/in)	WEIGHT(lb/ft)	
250	WEIGHT(lb/ft)	ARMOR	
180	ARMOR	MIN BENDING RADIUS(IN), UNLOADED	
600	CORRUGATED COPPER	MIN BENDING RADIUS(IN), SINGLE BEND, UNLOADED	
STRAND	RED/BLACK	MIN BENDING RADIUS(IN), MULTIPLE BENDS, UNLOADED	
16.78 mm-M	UL TC-Q-ER	MIN BENDING RADIUS(IN), MULTIPLE BENDS, LOADED	
4	SINGLE MODE(G.657.A2)	OUTER DIAMETER (IN)	
48	DISPERSION, MAX, 1550/1285-1330 nm		
0.5	ATTENUATION(dB/km), MAX, 1550/1285-1330 nm		
>50	RETURN LOSS(dB)		
REDUCTION < 0.65	RETURN LOSS(dB), POST ENVIRONMENTAL		
REDUCTION < 5	RETURN LOSS(dB), POST ENVIRONMENTAL		
1260	CUTOFF WAVELENGTH(nm)		
LC PAIR, STRAIGHT	PIGTAIL TERMINATION		
-40 TO +167	OPERATING TEMP(F)		
4.4 NM PER IEC A696			



NOTE: CABLE CROSS-SECTION NOT DRAWN TO SCALE

ALLIANCE CORPORATION
THE POWER OF PROTECTIVE COATINGS

10000 TRUNK CREEK DRIVE SUITE 200
DENVER, CO 80231
TEL: 303.750.0000
WWW.ALIANCECORP.COM



6x24 HYBRID TRUNK SPECIFICATIONS

1

PROJECT INFORMATION:
HWY 50 & HWY 9
CANON CITY, CO 81212
FREMONT COUNTY

SHEET TITLE:
T-MOBILE EQUIPMENT AND COAX DETAILS

SCALE:
AS NOTED

PROJECT NUMBER
58067

PROJECT TITLE:
US-CO-5091 / DN02546A

ISSUE	DATE	DESCRIPTION
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A	09/13/23	REDLINES

ISSUE PHASE FINAL DATE 06/25/2024

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1 SCALE: NTS

TRUNK CABLE GENERAL SPECIFICATIONS

Characteristic	Alliance	Commscop	NWS
Outer Diam.	1.46"	1.55"	1.48"
Weight	1.61 lb/ft	1.71 lb/ft	1.61 lb/ft
Min. Bend Rad	14.6"	18.6"	21.5"
DC Conductors	12 x 6AWG	12 x 6AWG	12 x 6AWG
Armor	Cu	Corrugated	Cu tape, PVC
Conductor Termination	None	None	None
Fiber Single-Mode	48	48	48
Fiber Termination	LC pair	LC pair	LC pair

Characteristics: Alliance, Commscop, NWS

3 SCALE: NTS

HYBRID JUMPER CABLE GENERAL SPECIFICATIONS

- Outer diameter: 0.72"
- Weight: 0.34 lb/ft
- Operating Temp: -40 °C to +75 °C
- Connectors for mating with tower top trunk cable breakout or roof top box
- Nokia Airscale and Flexi RRUs
- Short (tower top 15') & long (roof top 20' - 250') Airscale versions available
- Also available with legacy booted LC connectors and blunt cut DC connectors for Flexi RRU applications

Characteristics: Alliance, Commscop, NWS

2 SCALE: NTS

BREAKOUT FEATURE GENERAL SPECIFICATIONS

Characteristic	Alliance	Commscop	NWS
Dimensions, in.	9.3x14.9x5.5	6.7x16.9x4.7	10.2x16.0x3.2
Weight	1.61 lb/ft	0.970 lb/ft	1.61 lb/ft
Port Interface	Senko U	Senko U	Senko U
Hybrid Ports	12	12	12
Conductor Termination	None	None	None
Fiber Single Mode	48	48	48
Fiber Termination	LC pair	LC pair	LC pair

Note: Main RRU termination attached to trunk cable, not field termination.

Characteristics: Alliance, Commscop, NWS

4 SCALE: NTS

BOTTOM JUNCTION BOX COLOR CODE MAPPING

Bottom Junction Box Fiber Patch Panel

5 SCALE: NTS

GROUNDING

- Extremely important to ground each and every piece of equipment for lightning protection
- Roof top box
- Bottom junction box
- Trunk cable (uses same ground straps as coax)
- OVP devices will work properly per design only if ground path is established, i.e. grounding is mandatory
- Reference: Grounding Standard

Characteristics: Alliance, Commscop, NWS

5 SCALE: NTS

T-MOBILE EQUIPMENT AND COAX DETAILS

US-CO-5091 / DN02546A

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE:
 T-MOBILE EQUIPMENT AND COAX DETAILS

SCALE:
 AS NOTED

PROJECT NUMBER: 58067

PROJECT TITLE:
 US-CO-5091 / DN02546A

ISSUE FINAL DATE 06/25/2024

MARK	DATE	DESCRIPTION
2	06/25/24	JURISDICTION COMMENTS
1	04/11/24	JURISDICTION COMMENTS
0	01/26/24	FINAL CDS ISSUED
C	11/29/23	GRADING PLAN ADDED
B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES



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PROFESSIONAL ENGINEER
 MICHAEL L. PINSKE
 PE 0050800
 COLORADO LICENSED
 PROFESSIONAL ENGINEER

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE:
 T-MOBILE EQUIPMENT AND COAX DETAILS

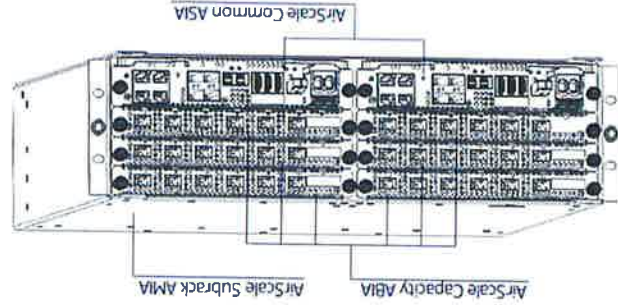
SCALE:
 AS NOTED

PROJECT NUMBER: 58067

AIRSCALE SYSTEM RADIO MODULES

SCALE: NTS

1



AIRSCALE SYSTEM RADIO MODULES

SCALE: NTS

5

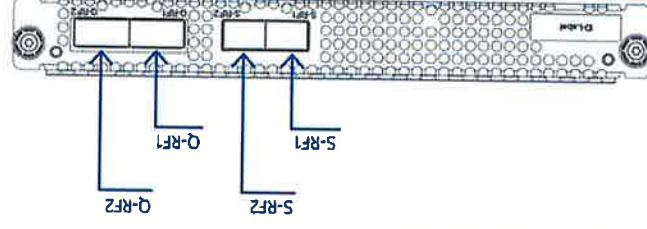
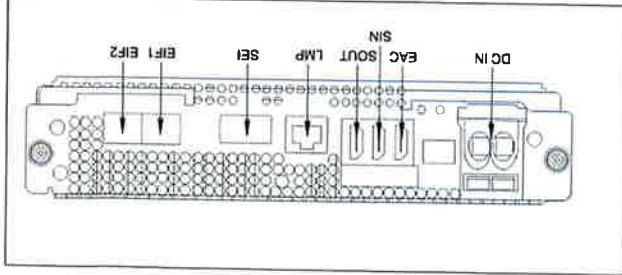


Figure 1 ABIL external interfaces

AIRSCALE SYSTEM RADIO SUBMODULE - ABIL

SCALE: NTS

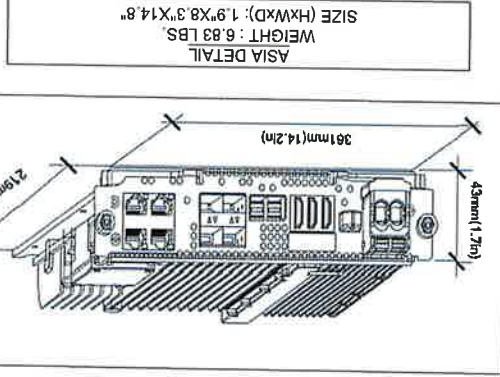
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AIRSCALE SYSTEM RADIO MODULES - ASIA

SCALE: NTS

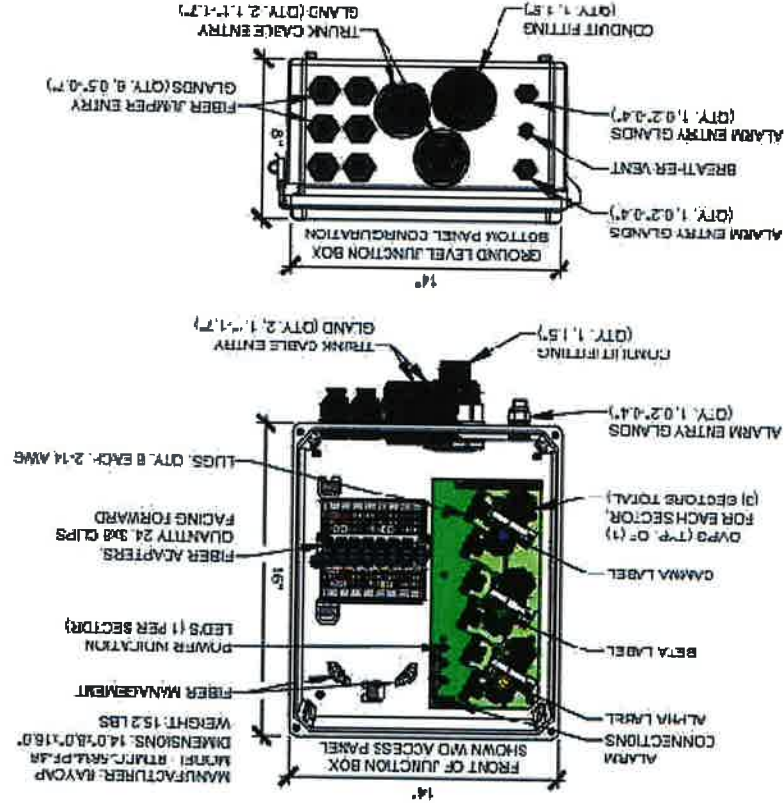
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AIRSCALE SYSTEM RADIO MODULE - ASIL

SCALE: NTS

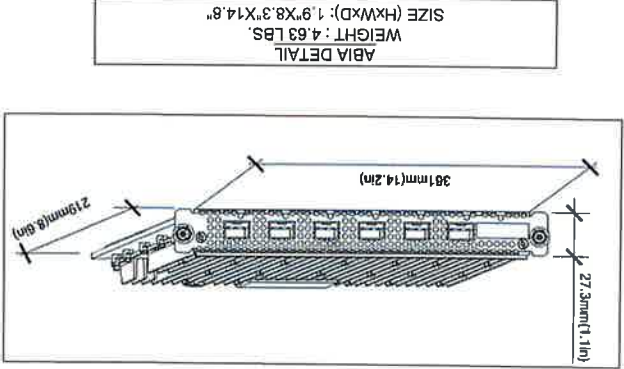
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AIRSCALE SYSTEM RADIO SUBMODULES - ABIA

SCALE: NTS

4



7250 IXR-e 145FP+ 4RJ45



7250 IXR-e 2QSFP28 8SFP28 24SFP+



NOKIA IXR-e ROUTERS

SCALE: NTS

7

US-CO-5091 / DN02546A

PROJECT TITLE: US-CO-5091 / DN02546A	
ISSUE	FINAL
DATE	ISSUED 06/25/2024
MARK	DESCRIPTION
A	09/13/23 REDLINES
B	09/18/23 CHANGE TOWER HEIGHT
C	11/28/23 GRADING PLAN ADDED
0	01/26/24 FINAL CDS ISSUED
1	04/11/24 JURISDICTION COMMENTS
2	06/25/24 JURISDICTION COMMENTS

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY
 SHEET TITLE:
T-MOBILE EQUIPMENT DETAILS
 SCALE:
 AS NOTED

A-9T

58067



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PROFESSIONAL ENGINEER
 PE: 0050800
 MICHAEL L. PINSKE
 COLORADO LICENSED
 6/27/2024

1 hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am duly Licensed Professional Engineer under the laws of the State of Colorado.
 Contraction & Seal

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HYPERBOOST
SCALE: NTS



Mechanical	Dimensions H x W x D (44 mm x 434.5 mm x 420.8 mm) (5.2 in. x 17.1 in. x 16.6 in.)
Weight	18.4 kg (40.5 lb)
Mounting	<ul style="list-style-type: none"> • 3RU height • Flush mount • Offset mount • Center mount
CAN Communication	RJ12 offset

BOOSTER RECTIFIER
SCALE: NTS



Mechanical - Module	Dimensions H x W x D (1.6 in. x 4.1 in. x 13.1 in.)	Weight 1.83 kg (4 lb)
Mechanical - Shelf	Dimensions H x W x D (44 mm x 434.3 mm x 420.8 mm) (1.7 in. x 17.1 in. x 16.6 in.)	Weight 7.3 kg (16 lb)
Modules per shelf	4	
Mounting	<ul style="list-style-type: none"> • 1RU height • Flush mount • 6 in. offset center mount 	
CAN Communication	RJ12 offset	

DC POWER FEEDS FROM RECTIFIER DISTRIBUTION
SCALE: NTS



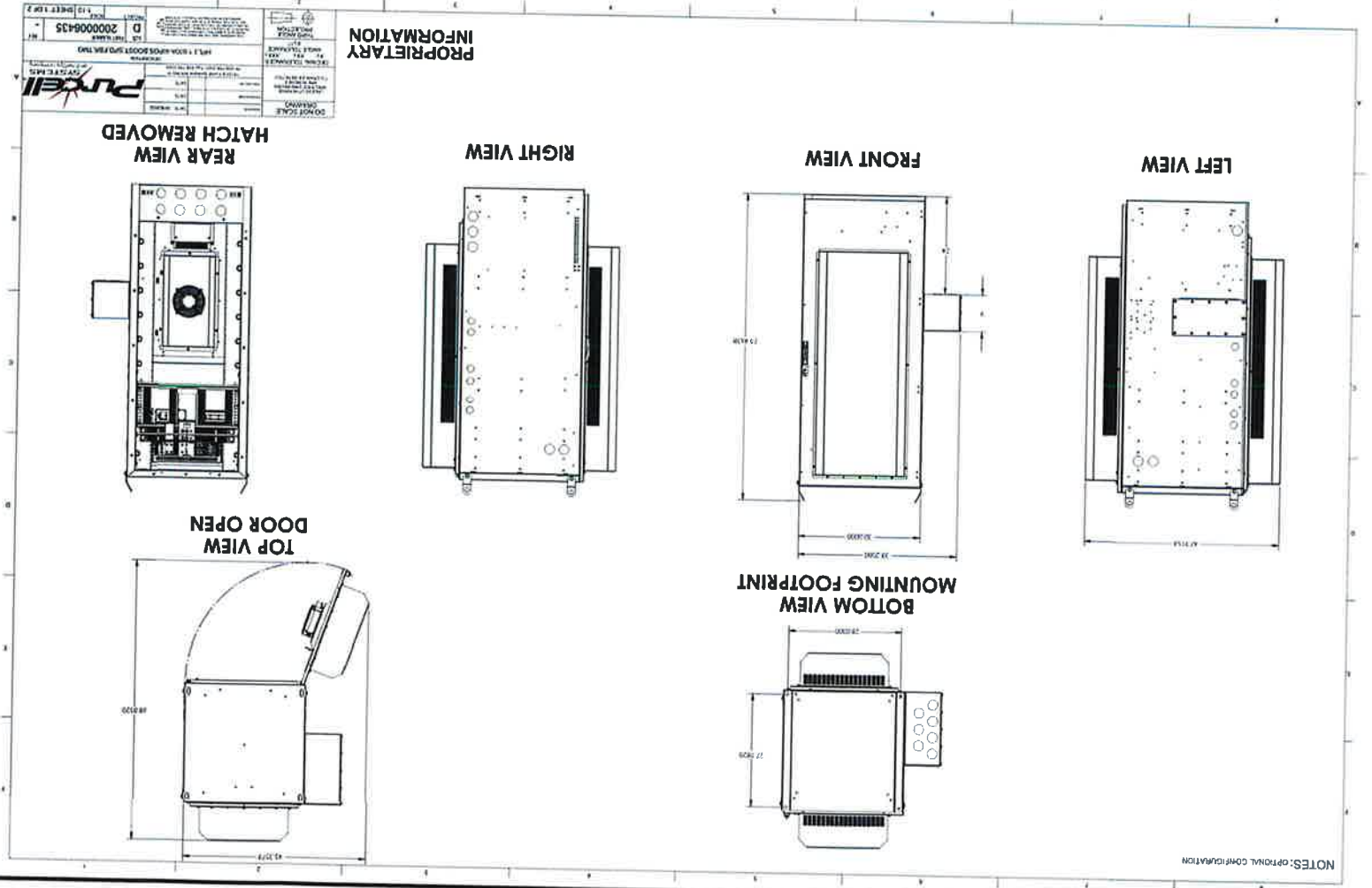
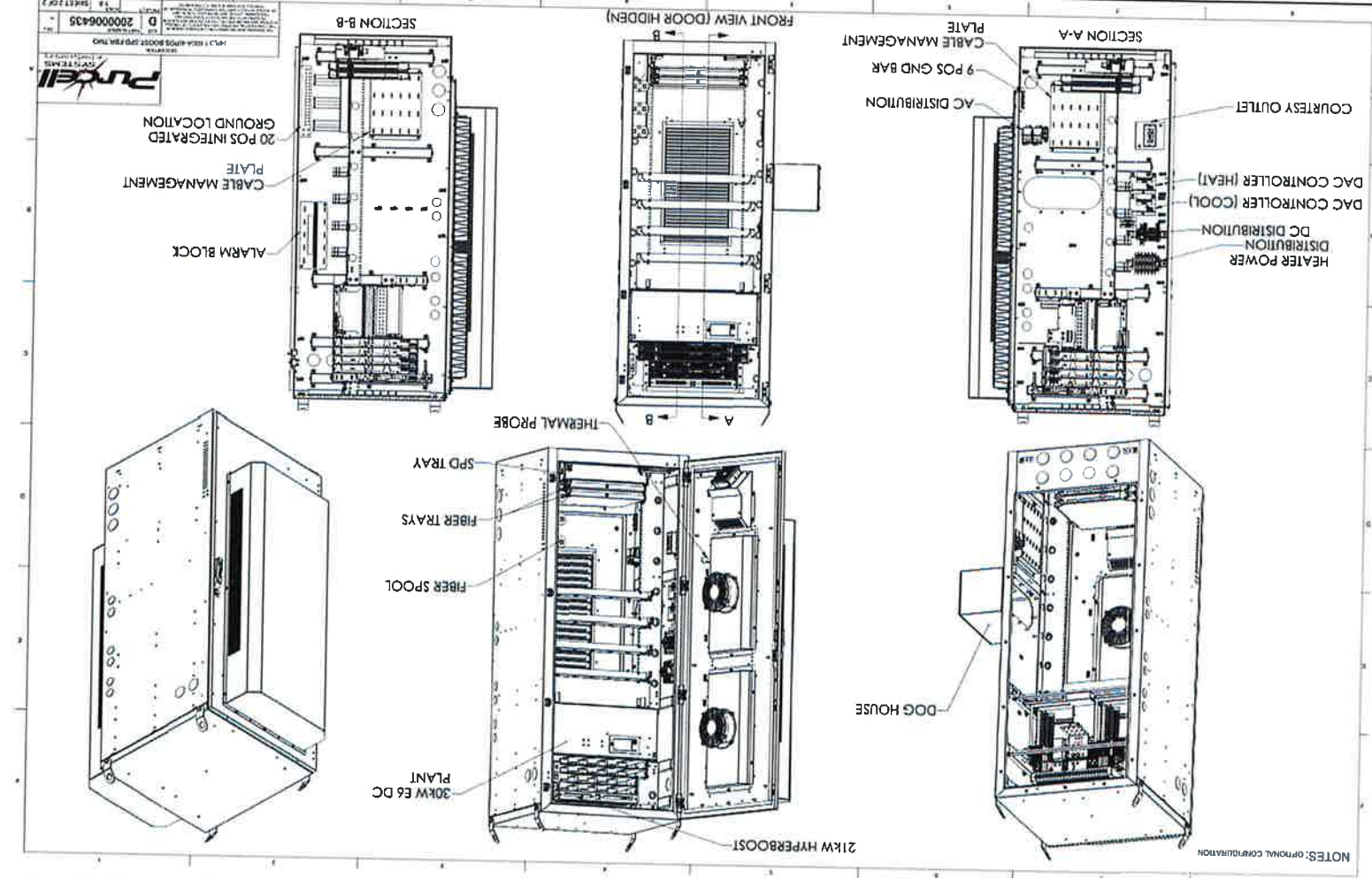
- Bottom Junction Box and Roof Top Box requires 3 DC-breakered feeds each
- Allows each sector to be energized individually for maintenance without service impact to the other sectors

6/27/2024

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2	06/25/24	JURISDICTION COMMENTS
1	04/11/24	JURISDICTION COMMENTS
0	01/26/24	FINAL CDS ISSUED
C	11/28/23	GRADING PLAN ADDED
B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES
ISSUE PHASE	FINAL	
DATE ISSUED	06/25/2024	
PROJECT TITLE:		
US-CO-5091 / DN02546A		
PROJECT INFORMATION:		
HWY 50 & HWY 9 CANON CITY, CO 81212 FREMONT COUNTY		
SHEET TITLE:		
T-MOBILE EQUIPMENT DETAILS		
SCALE: AS NOTED		
PROJECT NUMBER 58067		
SHEET NUMBER A-101		



PURCELL HPL3.1 POWER CABINET DETAILS
 SCALE: NTS
 SHEET NUMBER 58067
 PROJECT NUMBER A-111

CABINET DETAIL
 WEIGHT: 480 LBS (WITHOUT EQUIP)
 SIZE (HxWxD): 75"x30"x48"

MARK	DATE	DESCRIPTION
2	06/25/24	JURISDICTION COMMENTS
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ISSUE FINAL DATE 06/25/2024
 PROJECT TITLE: US-CO-5091 / DN02546A
 PROJECT INFORMATION: HWY 50 & HWY 9 CANON CITY, CO 81212 FREMONT COUNTY

PROFESSIONAL ENGINEER
 MICHAEL L. PINSKE
 PE 0050800
 COLORADO LICENSED
 6/27/2024

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Purcell HPL3 Large Battery Cabinet

(4) -48V 190Ahr Battery Strings

The Battery Cabinet is designed to house four 48V strings of 190Ahr batteries as part of the HPL3 Site Support Lineup

Cabinet Features

- Polyester powder coated aluminum, GR-487 process control, off white, texture
- Weight: 350 lbs.
- Four battery shelves / four batteries per shelf
- Front door pad lockable with three point latching system
- Left and Right lineup interconnections or remote mounting

Thermal Management

- Direct Air Cooling (DAC) with two fans
- Ambient operating temperature -40°C to +50°C
- Optional battery heater mats – one mat per shelf

Standards

- UL 508A standards
- Designed to standard GR-487, issue 5, hydrogen out gassing, external paint, zone 4 seismic loading, safety, thermal, intrusion and impact

T-Mobile SAP	Purcell PN	Description
33966	2000005434	Battery Cabinet (4 string)



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CABINET DETAIL
 WEIGHT : 350 LBS. (WITHOUT EQUIP.)
 SIZE (HxWxD): 60.4"x30"x33.8"

SCALE: NTS
 PURCELL HPL3.1 BATTERY CABINET DETAILS
 1

MICHAEL L. PINSKY
 PROFESSIONAL ENGINEER
 PE 0050800
 6/27/2024

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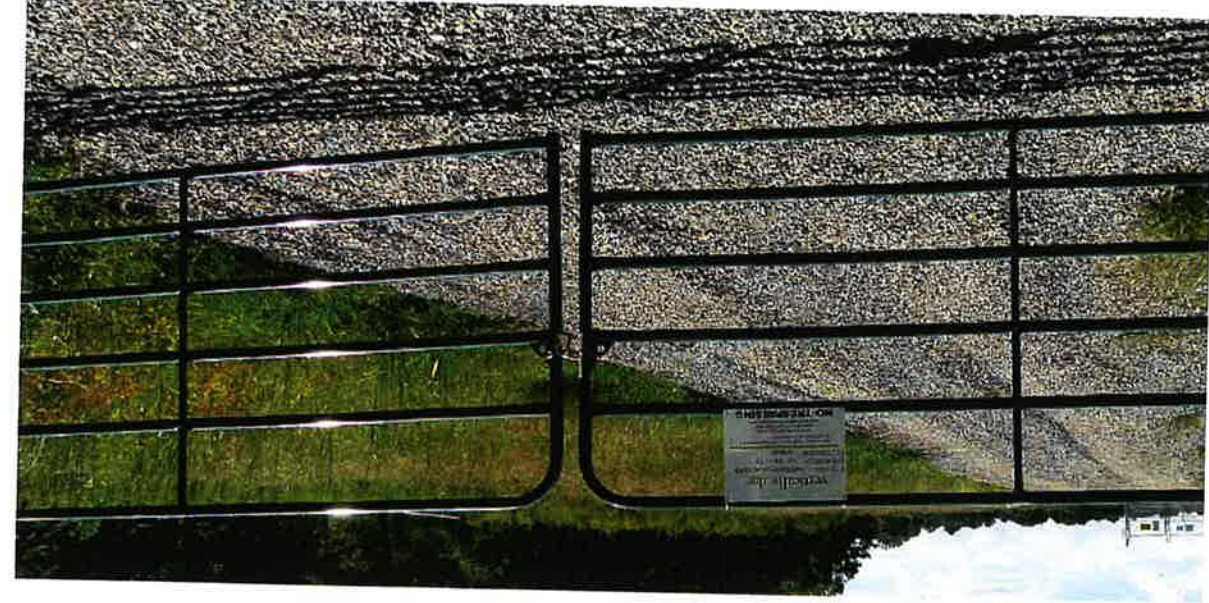
PROJECT INFORMATION:	HWY 50 & HWY 9 CANON CITY, CO 81212 FREMONT COUNTY		
SHEET TITLE:	T-MOBILE EQUIPMENT DETAILS		
SCALE:	AS NOTED		
SHEET NUMBER:	A-12T		
PROJECT NUMBER:	58067		
PROJECT TITLE:	US-CO-5091 / DN02546A		
ISSUE PHASE:	FINAL	DATE ISSUED:	06/25/2024
MARK	DATE	DESCRIPTION	
A	09/13/23	REDLINES	
B	09/18/23	CHANGE TOWER HEIGHT	
C	11/28/23	GRADING PLAN ADDED	
0	01/28/24	FINAL CDS ISSUED	
1	04/11/24	JURISDICTION COMMENTS	
2	06/25/24	JURISDICTION COMMENTS	

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Typical Sign Layout

Please use galvanized or stainless "hog rings" to install the signs.
 Place the "Vertical Bridge" sign on the Left Gate.
 Place the "Caution" and "Notice" signs on the Right Gate.
 For Access Road Gates, "Vertical Bridge" sign only on the Left Gate.
 Purchase and place Vertical Bridge locks on all fence and access gates. (Set Combo To: 0951)



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 I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Colorado.



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ISSUE PHASE: FINAL
 DATE ISSUED: 06/25/2024

PROJECT TITLE:
US-CO-5091 / DN02546A

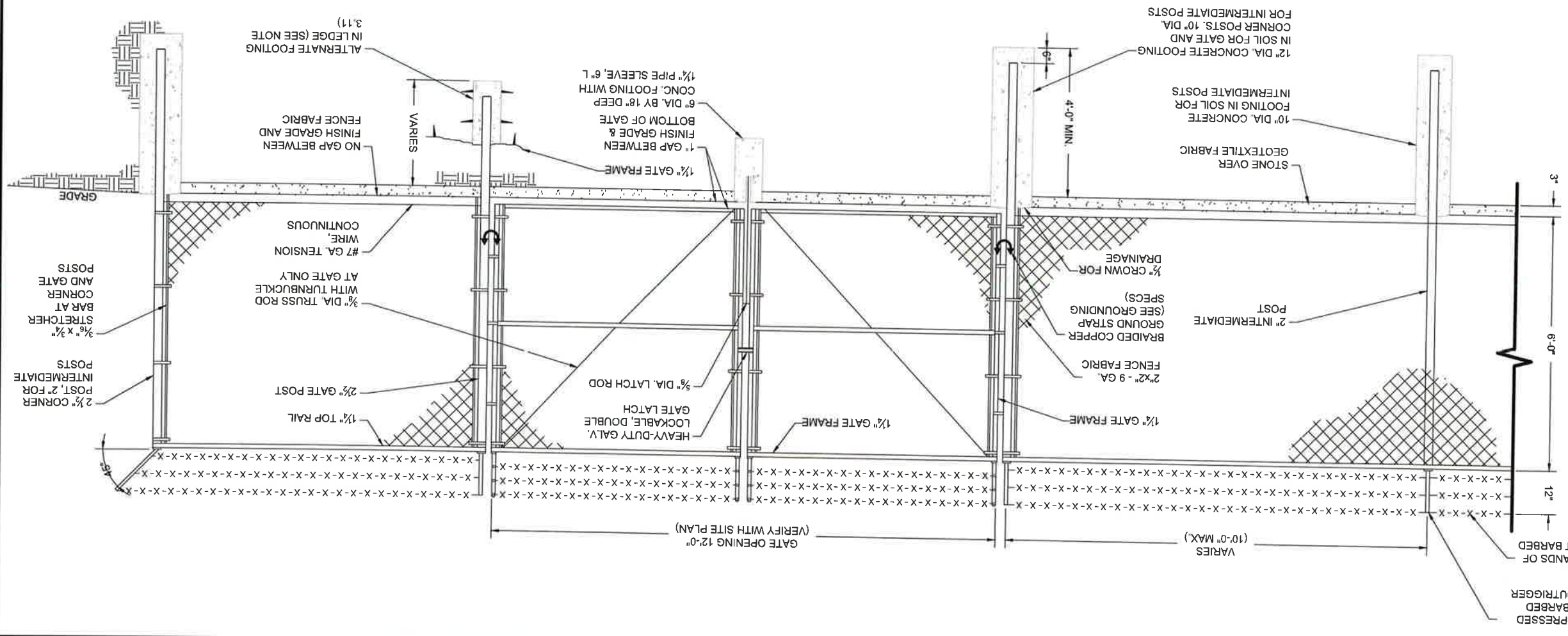
PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE:
SIGNAGE

SCALE: NONE

PROJECT NUMBER: 58067
 SHEET NUMBER: A-13

- 1.SCOPE:**
 1.1 THIS SECTION COVERS THE REQUIREMENTS FOR THE MATERIALS AND THE CONSTRUCTION OF SITE FENCING, GUY AREA FENCING, ACCESS ROAD GATES AND CATTLE GUARDS. SEE SITE PLAN AND DRAWINGS FOR DETAILS.
2. SPECIAL REQUIREMENTS:
 2.1 ALL WIRE, FABRIC, FITTINGS, HARDWARE AND STEEL MEMBERS USED FOR SITE AREA FENCING, GUY ANCHOR FENCING AND ACCESS ROAD GATES SHALL BE HOT DIPPED GALVANIZED OR OTHER APPROVED NON-CORROSIVE MATERIAL.
 2.2 ALL NON-CORROSIVE MATERIAL SHALL BE APPROVED BY THE PROJECT MANAGER.
 2.3 ANY DAMAGE TO GALVANIZING OR NON-CORROSIVE COATING DURING CONSTRUCTION SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S RECOMMENDED METHODS.
3. FENCE POSTS:
 3.1 LOCATION OF CORNER POSTS SHALL BE DETERMINED FROM STAKES AND PROPERTY PINS INSTALLED BY THE REGISTERED LAND SURVEYOR UNDER CONTRACT. IF THE STAKES ARE NOT PRESENT OR DO NOT CONFORM TO THE SITE PLAN, CONSULT WITH THE PROJECT MANAGER.
 3.2 CORNER POSTS SHALL BE SET WITHIN ONE INCH (1") OF DIMENSIONS INDICATED ON THE SITE PLAN.
 3.3 FENCE POSTS SHALL BE VERTICALLY PLUMB IN ALL PLANS WITHIN 1/8" INCH.
 3.4 CORNER & GATE POST FOUNDATIONS SHALL BE A MINIMUM FOUR FEET (4') DEEP OR SIX INCHES (6") BELOW THE POST LINE, WHICHEVER IS GREATER, WITH MINIMUM SIX INCH (6") CLEARANCE BETWEEN BOTTOM OF POST AND BOTTOM OF THE HOLE.
 3.5 CORNER POSTS AND GATE POSTS SPACING SHALL BE EQUAL WITH A TEN FOOT (10') MAXIMUM SPACING. GATE POST SPACING AND SPECIFIC LOCATIONS SHALL BE IN ACCORDANCE WITH SITE PLAN AND SHALL BE VERIFIED WITH THE PROJECT MANAGER.
4. GATE:
 4.1 LOCATION OF GATE SHALL CONFORM TO THE SITE PLAN
 4.2 GATE HINGES SHALL PROVIDE FOR 180 DEGREE RADIUS GATE SWING. ALL HINGE NUTS SHALL BE ON THE INSIDE AND DOUBLE NUT TO DETER UNAUTHORIZED ENTRY.
 4.3 GATE STOPS SHALL BE INSTALLED PLUMB AND SHALL HOLD GATE IN "OPEN" POSITION.
 4.4 GATE SHALL BE INSTALLED PLUMB AND SHALL OPEN AND CLOSE FREELY.
 4.5 GATE POSTS SHALL NOT BE SHARED AS A CORNER POST.



FENCE AND GATE DETAIL
 SCALE: NTS
 1

US-CO-5091 / DN02546A

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

PROJECT TITLE:
 ISSUE FINAL
 DATE 06/25/2024
 ISSUED

MARK	DATE	DESCRIPTION
2	06/25/24	JURISDICTION COMMENTS
1	04/11/24	JURISDICTION COMMENTS
0	01/26/24	FINAL CDS ISSUED
C	11/28/23	GRADING PLAN ADDED
B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES

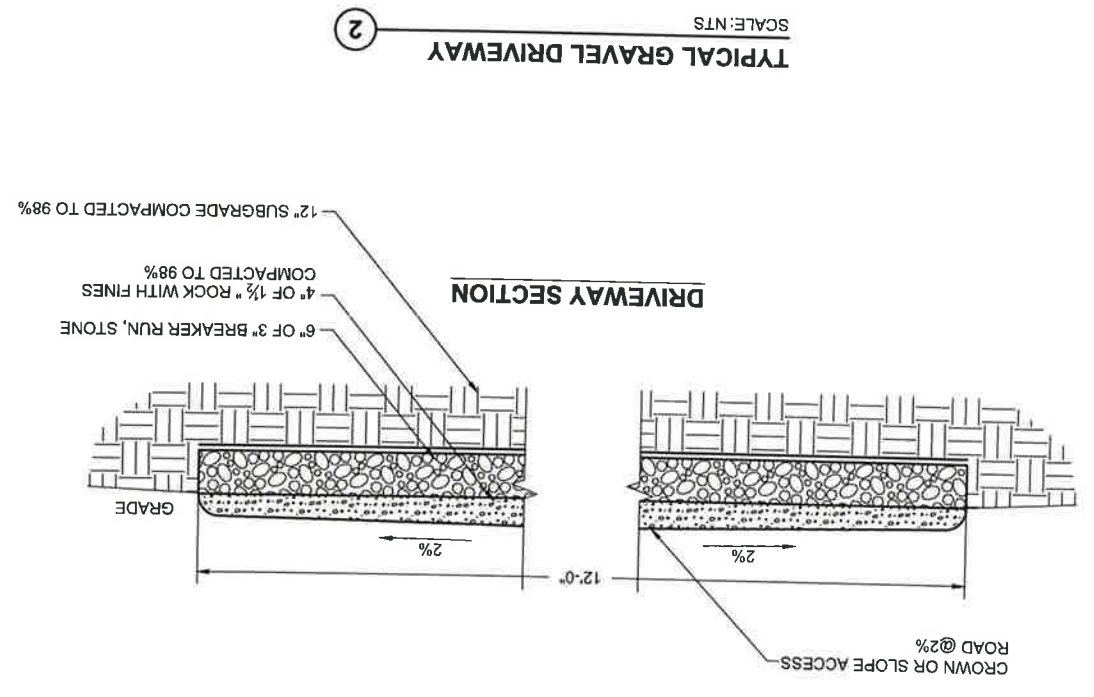
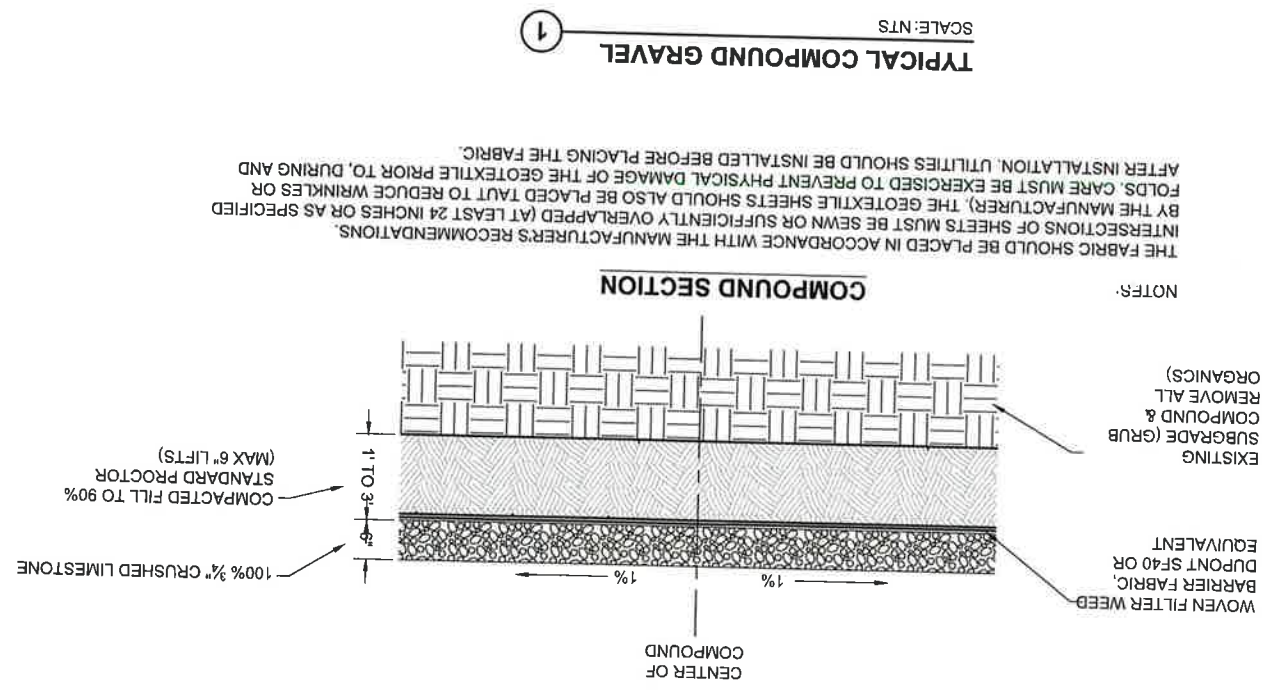


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MARK	DATE	DESCRIPTION
2	08/25/24	JURISDICTION COMMENTS
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0	01/28/24	FINAL CDs ISSUED
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A	09/13/23	REDLINES

ISSUE PHASE FINAL
 DATE 06/25/2024
 PROJECT TITLE: US-CO-5091 / DN02546A

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

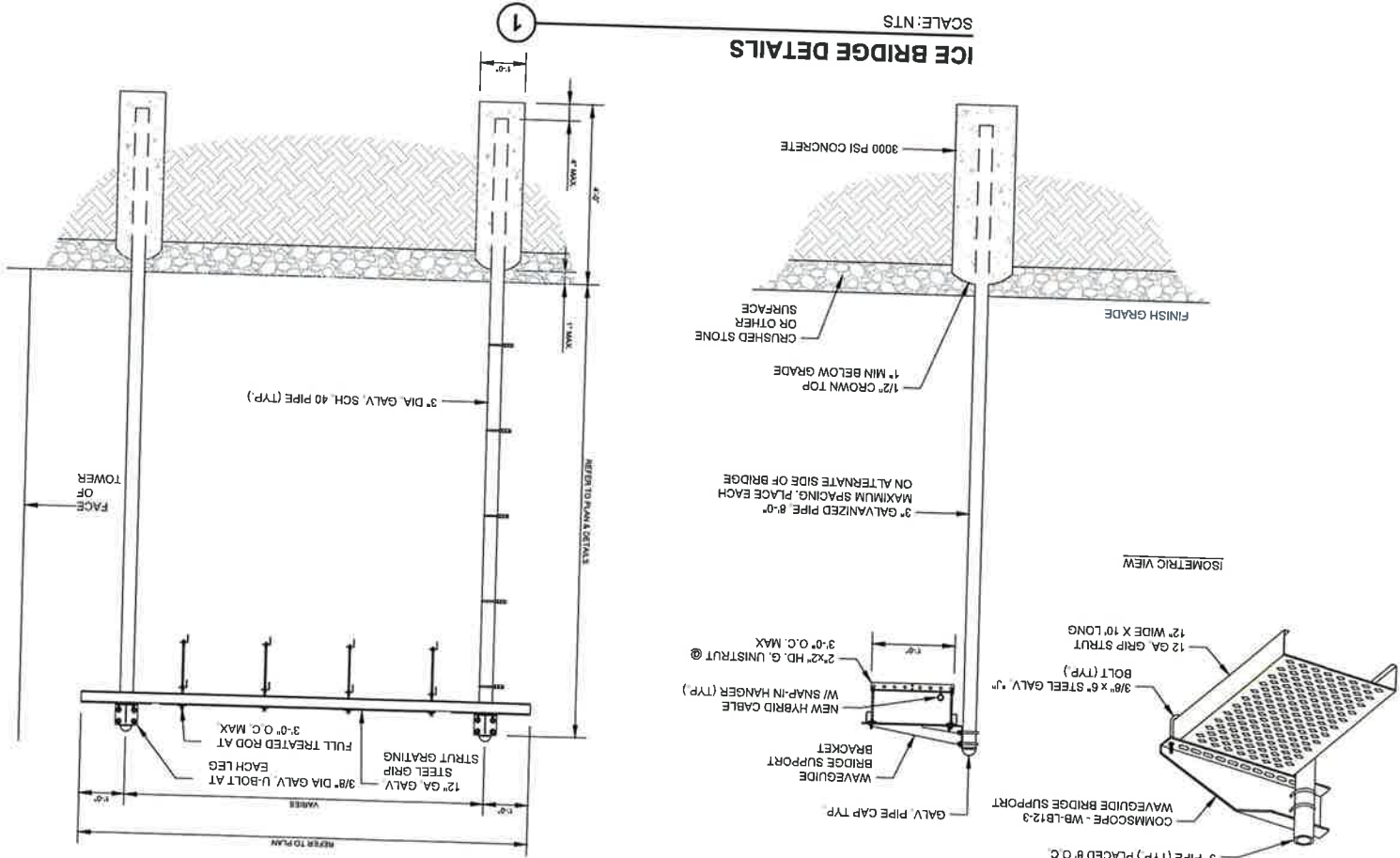
SHEET TITLE:
COMPOUND SITE DETAILS

SCALE:
 AS NOTED

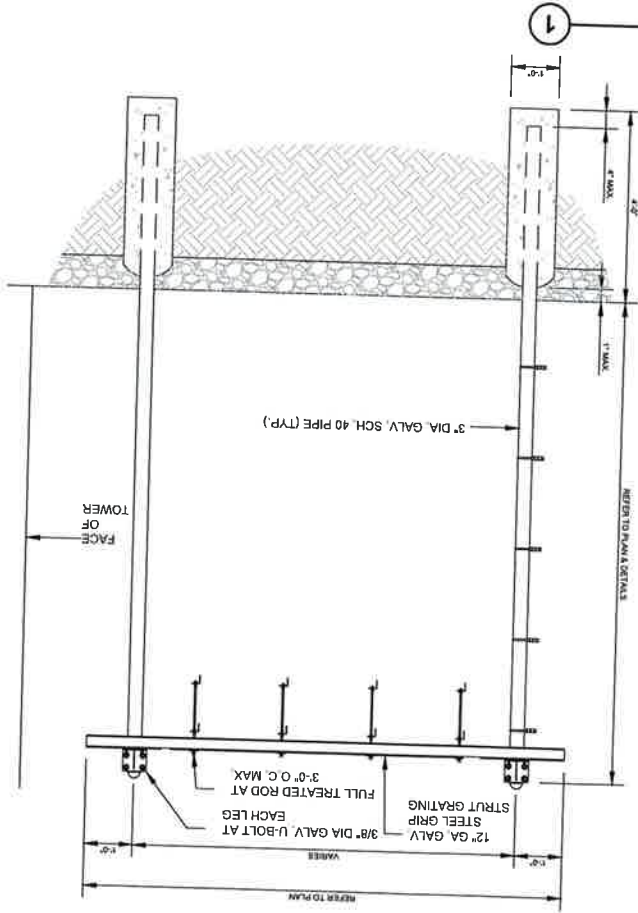
PROJECT NUMBER
 58067

SHEET NUMBER
 A-15

ICE BRIDGE DETAILS
 SCALE: NTS



ICE BRIDGE DETAILS
 SCALE: NTS



IC-0810-S

Product Classification
Ice canopies and sheds

Product Type
Ice canopies and sheds

General Specifications
Ice canopies and sheds

Pipe, quantity
4

Dimensions
Height: 2,300.4 mm | 120 in
Length: 3,048 mm | 120 in
Width: 3,048 mm | 120 in

Pipe Length
3,200.4 mm | 126 in

Ice Canopy, 8 ft x 10 ft, four 10 ft in base shoe pipes

IC-1010-S

Product Classification
Ice canopies and sheds

Product Type
Ice canopies and sheds

General Specifications
Ice canopies and sheds

Pipe, quantity
4

Dimensions
Height: 2,300.4 mm | 120 in
Length: 3,048 mm | 120 in
Width: 3,048 mm | 120 in

Pipe Length
3,200.4 mm | 126 in

Ice Canopy, 10 ft x 10 ft, four 10 ft in base shoe pipes

ICE CANOPY DETAILS
 SCALE: NTS



MARK	DATE	DESCRIPTION
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ISSUE PHASE: FINAL
 DATE ISSUED: 06/25/2024

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

STRUCTURAL DETAILS

SCALE:
 AS NOTED

PROJECT NUMBER:
 58067

US-CO-5091 / DN02546A

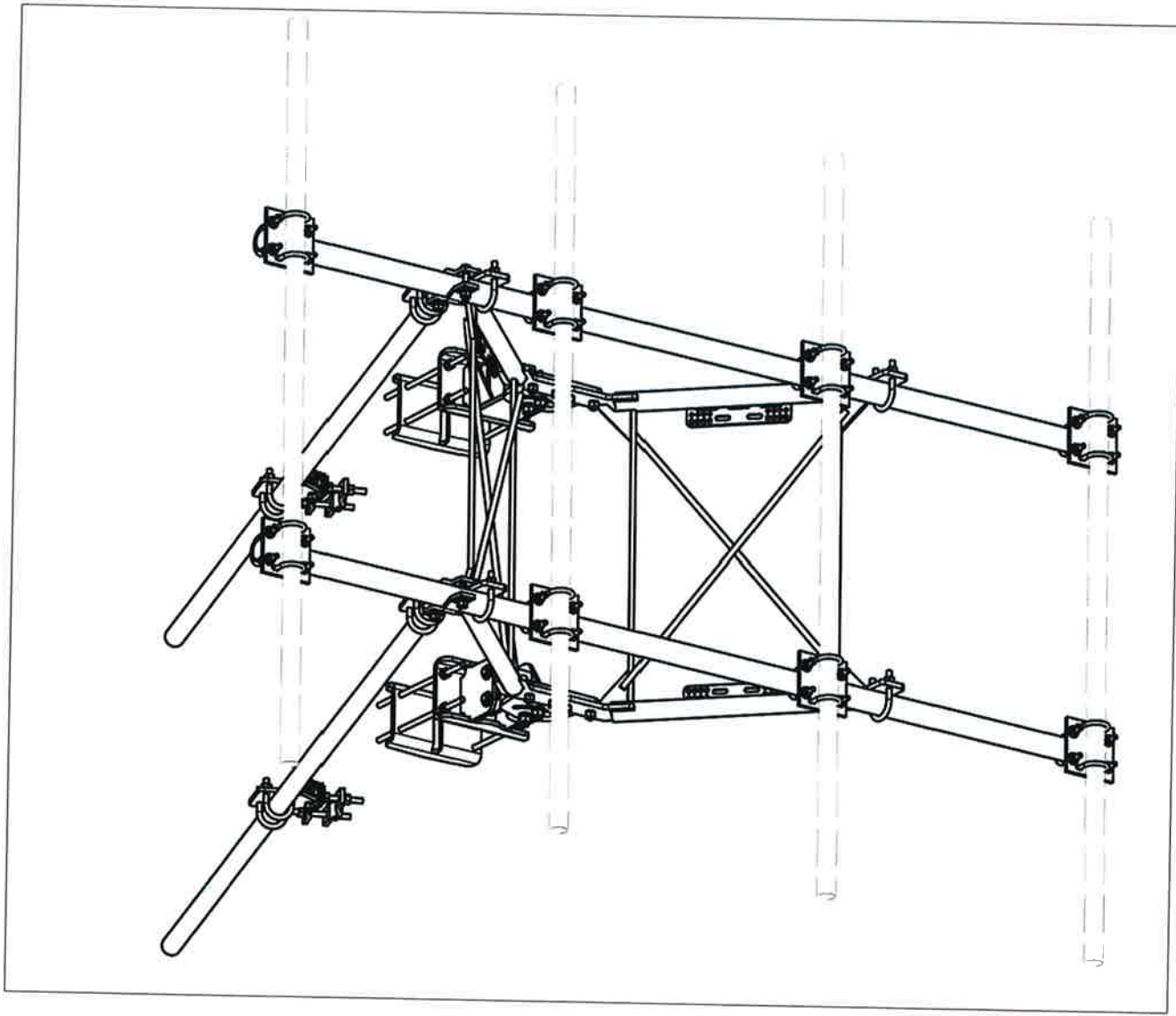


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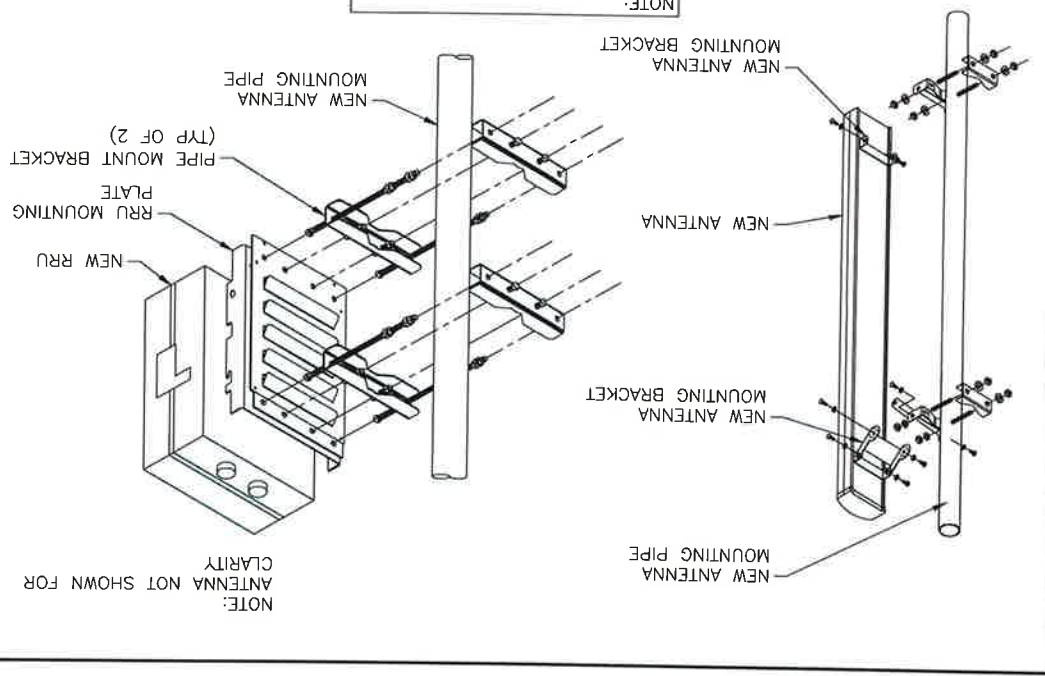


verticalbridge



10' VFA10-HD SECTOR FRAME OR EQUIVALENT
 SCALE: NTS

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	2	X-VFAW	SUPPORT ARM		71.41	142.81
2	1	X-HDCAMTBW	CLAMP WELDMENT FOR BCAM-HD		33.86	33.86
3	1	X-MHTPHD	MULTI-HOLE TAPER PLATE WELDMENT		36.24	36.24
4	2	X-VFAPL4	VFA-HD PIVOT PLATE	12 in	15.88	31.77
5	2	X-LCBP4	BENT BACKING PLATE	13 in	19.00	38.01
6	1	X-HDCAMSS	ANGLE ADJUSTMENT WELDMENT FOR BCAM-HD		16.39	16.39
7	4	X-SPTB	SLIDING PIPE TIE BACK PLATE	5 1/2 in	5.87	23.49
8	1	X-HDCAMSP	POSITIONING PLATE WELDMENT FOR BCAM-HD		2.58	2.58
9	4	X-TBCA	THE BACK CLIP ANGLE		2.01	8.02
10	8	SCX2	CROSSOVER PLATE	7 in	4.80	38.37
11	4	MCP	CLAMP HALF 1/2" THICK, 11-5/8" LONG		3.59	14.37
12	8	DCP	1/2" THICK, 5-3/4" CENTER TO CENTER CLAMP HALF	8 1/8 in	2.36	18.90
13	2	P2126	2-3/8" X 126" (2" SCH. 40) GALVANIZED PIPE	126 in	40.75	81.50
14	2	P30126	2-7/8" O.D. X 126" SCH. 40 PIPE	126 in	64.63	129.25
15	4	A34212	3/4" X 2-1/2" UNC HEX BOLT (A325)	2 1/2 in	0.48	1.92
16	4	G34FW	3/4" HDG USS FLATWASHER		0.06	0.24
17	4	G34LW	3/4" HDG LOCKWASHER		0.04	0.17
18	4	G34NUT	3/4" HDG HEAVY 2H HEX NUT		0.21	0.85
19	8	G58R-18	5/8" X 18" THREADED ROD (HDG.)	18 in	0.40	3.19
20	4	G58R-12	5/8" X 12" THREADED ROD (HDG.)		1.05	4.18
21	4	G58R-8	5/8" X 8" THREADED ROD (HDG.)		0.70	2.79
22	4	X-UBS300	5/8" X 3" X 5-1/4" X 2-1/2" U-BOLT (HDG.)		1.15	4.60
23	8	X-UBS258	5/8" X 2-5/8" X 4-1/2" X 2" U-BOLT (HDG.)		1.00	8.00
24	2	G5807	5/8" X 7" HDG HEX BOLT GRS FULL THREAD	7 in	0.70	1.41
25	1	G5806	5/8" X 6" HDG HEX BOLT GRS FULL THREAD	6 in	0.62	0.62
26	8	G5804	5/8" X 4" HDG HEX BOLT GRS		0.44	3.55
27	4	G5802	5/8" X 2" HDG HEX BOLT GRS		0.27	1.08
28	8	A58214	5/8" X 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	2.50
29	25	G58FW	5/8" HDG USS FLATWASHER		0.07	1.76
30	66	G58LW	5/8" HDG LOCKWASHER	1/8 in	0.03	1.72
31	71	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	9.22
32	32	X-UB1300	1/2" X 3" X 5" X 2" GALV U-BOLT		0.74	23.64
33	16	X-UB1212	1/2" X 2" X 3" X 1-1/4" U-BOLT (HDG.)		0.60	9.56
34	64	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	2.18
35	64	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.89
36	64	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	4.58
					TOTAL WT. #	713.44



TYPICAL ANTENNA AND RRU MOUNTING DETAIL
 SCALE: NTS

NOTE:
 ALL PIPES BRACKETS AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE

T-MOBILE ANTENNA SECTOR
 FRAME DETAILS

MARK	DATE	DESCRIPTION
2	06/25/24	JURISDICTION COMMENTS
1	04/11/24	JURISDICTION COMMENTS
0	01/26/24	FINAL CDS ISSUED
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B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES

ISSUE PHASE FINAL
 DATE 06/25/2024

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

PROJECT TITLE:
 US-CO-5091 / DN02546A

6/27/2024

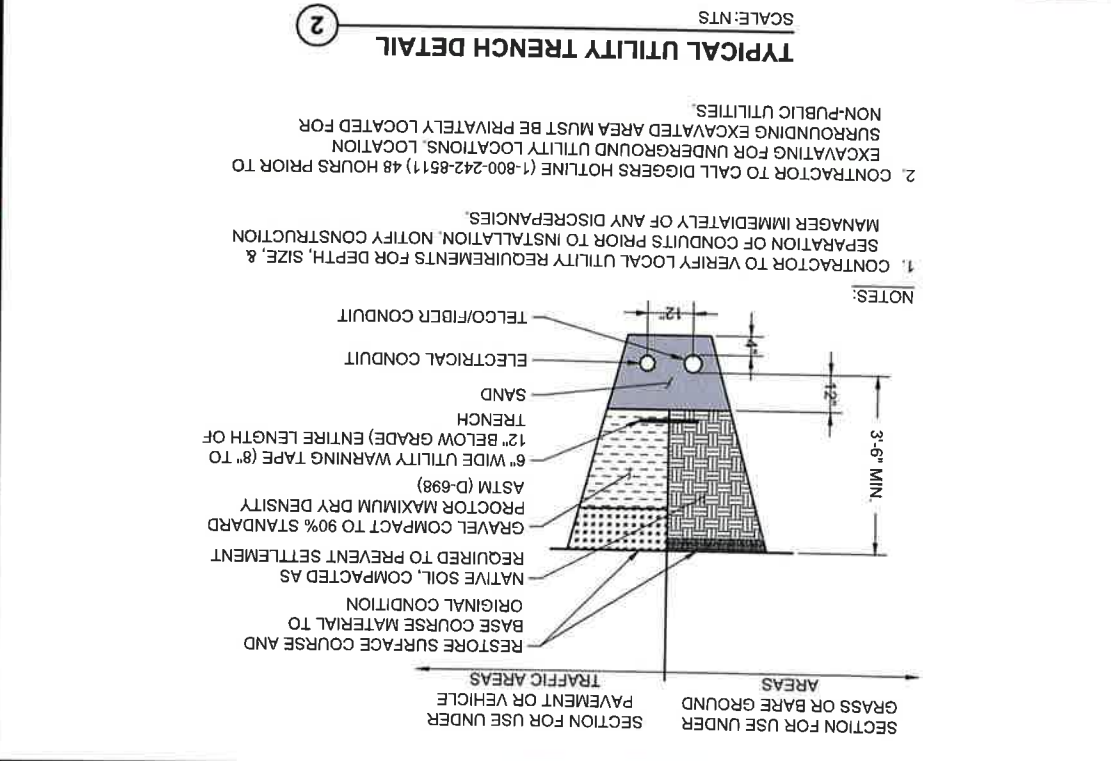
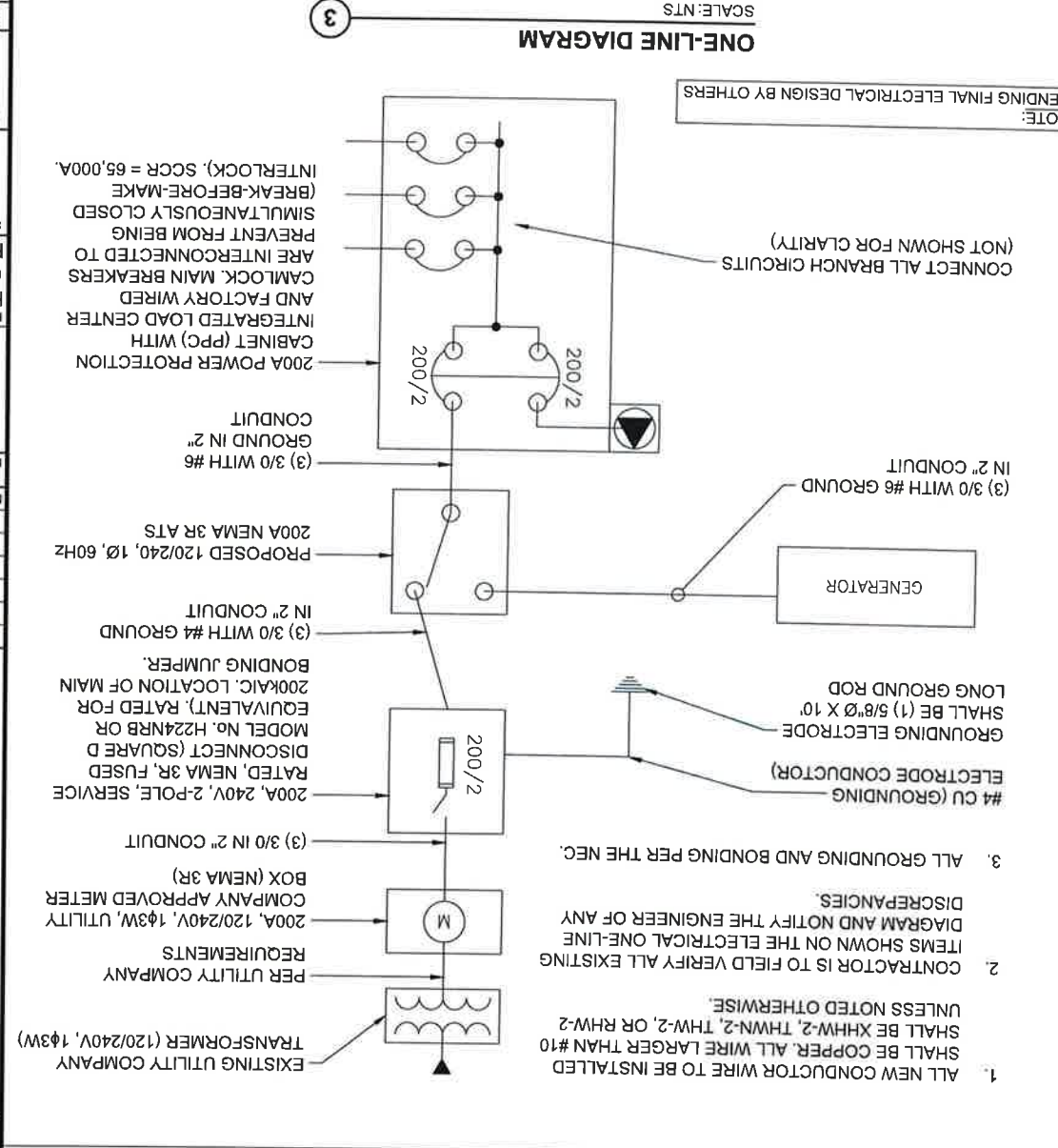
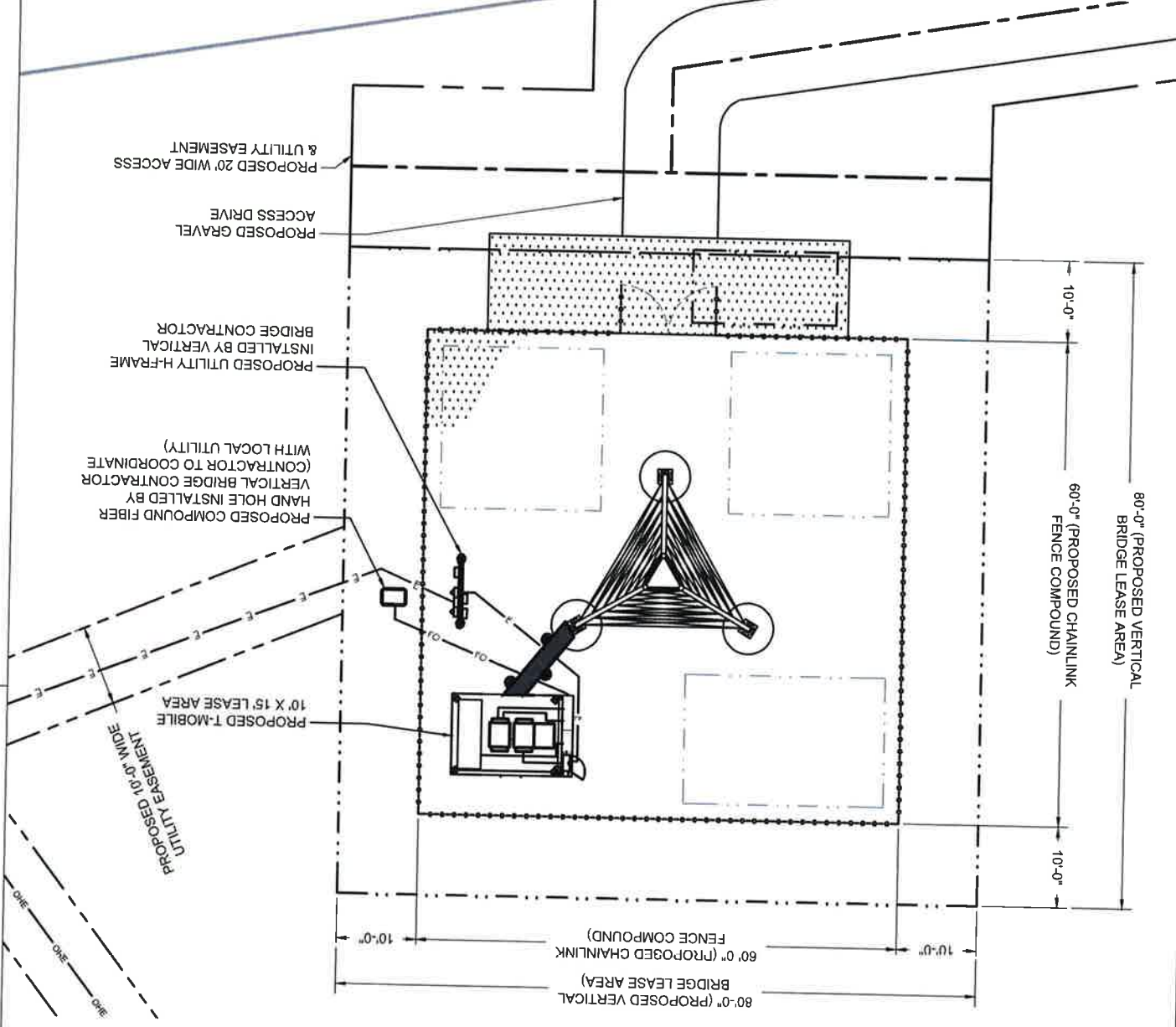
Professional Engineer under the laws of the State of Colorado.
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Verticalbridge

Verticalbridge

LEGEND:	
—●—●—●—	PROPOSED FIBER
— — — — —	PROPOSED TELCO
—E—E—E—E—	PROPOSED ELECTRIC

NOTE:
 UTILITY/GROUNDING LINES ARE SHOWN FOR SCHEMATIC PURPOSES ONLY & DO NOT REPRESENT THE EXACT LOCATION OF THE RUN. CONTRACTOR SHALL FIELD VERIFY PROPOSED & EXISTING SERVICE LOCATIONS. NOTIFY CONSTRUCTION/ PROJECT MANAGER IMMEDIATELY OF ANY DISCREPANCIES.



US-CO-5091 / DN02546A

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE:
OVERALL UTILITY SITE PLAN

PROJECT TITLE:
 ISSUE FINAL
 DATE 06/25/2024
 MARK DATE DESCRIPTION

2	06/25/24	JURISDICTION COMMENTS
1	04/11/24	JURISDICTION COMMENTS
0	07/26/24	FINAL CDS ISSUED
C	11/28/23	GRADING PLAN ADDED
B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES

PROJECT NUMBER: 58067

Professional Engineer Seal for Michael L. Pinski, PE 0050800, Colorado Licensed Professional Engineer. Signature and date 6/27/2024.

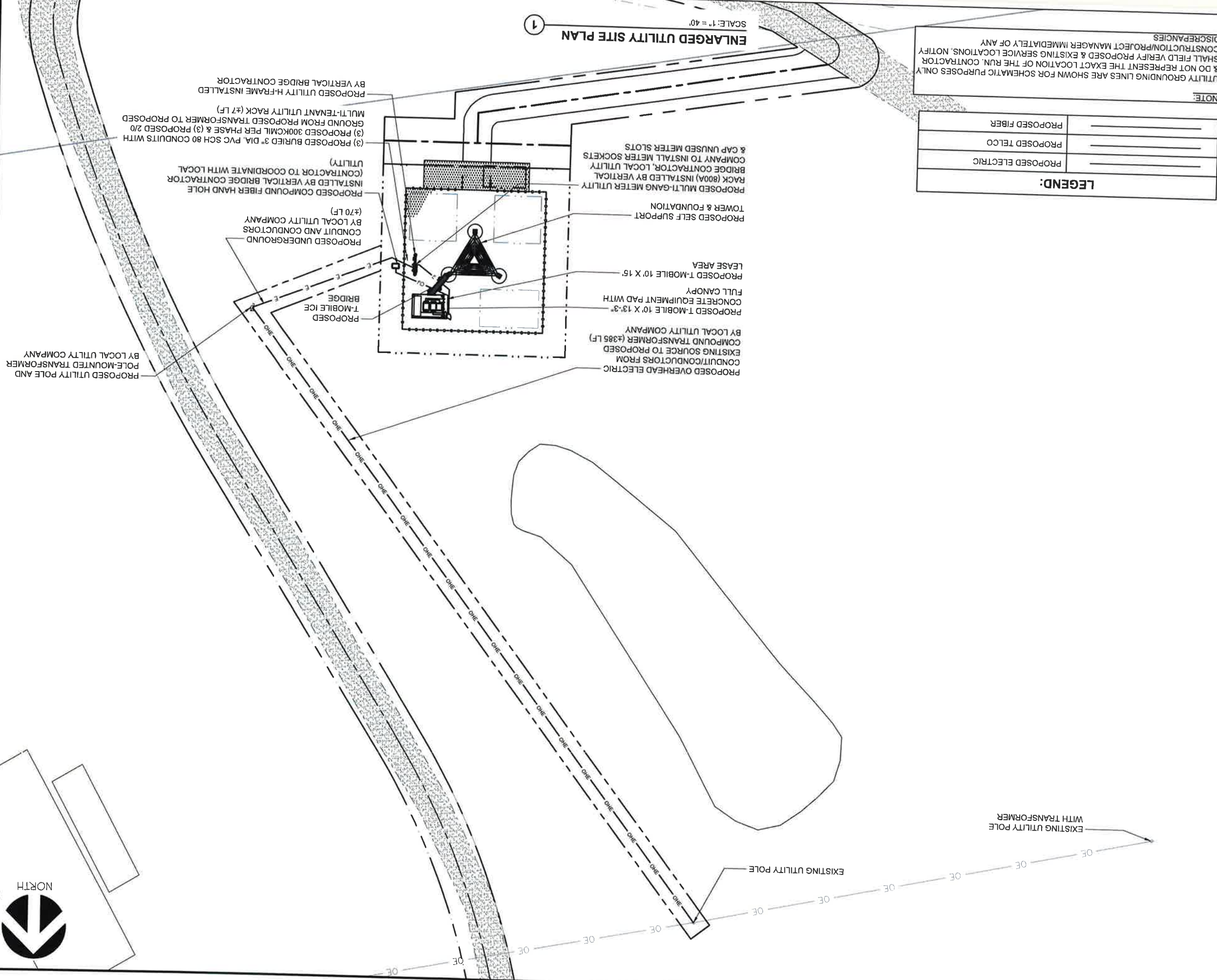
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NOTE:
 UTILITY GROUNDING LINES ARE SHOWN FOR SCHEMATIC PURPOSES ONLY & DO NOT REPRESENT THE EXACT LOCATION OF THE RUN. CONTRACTOR SHALL FIELD VERIFY PROPOSED & EXISTING SERVICE LOCATIONS. NOTIFY DISCREPANCIES

LEGEND:

PROPOSED FIBER	_____
PROPOSED TELCO	_____
PROPOSED ELECTRIC	_____



ENLARGED UTILITY SITE PLAN
 SHEET TITLE

US-CO-5091 / DN02546A
 PROJECT INFORMATION

HWY 50 & HWY 9
CANON CITY, CO 81212
FREMONT COUNTY

PROJECT TITLE: US-CO-5091 / DN02546A

MARK	DATE	DESCRIPTION
2	06/25/24	JURISDICTION COMMENTS
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0	01/26/24	FINAL CDs ISSUED
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A	09/13/23	REDLINES

ISSUE PHASE: FINAL
DATE ISSUED: 06/25/2024

PROFESSIONAL ENGINEER
MICHAEL L. PINSKE
PE 0050800
 COLORADO LICENSED
 PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF COLORADO

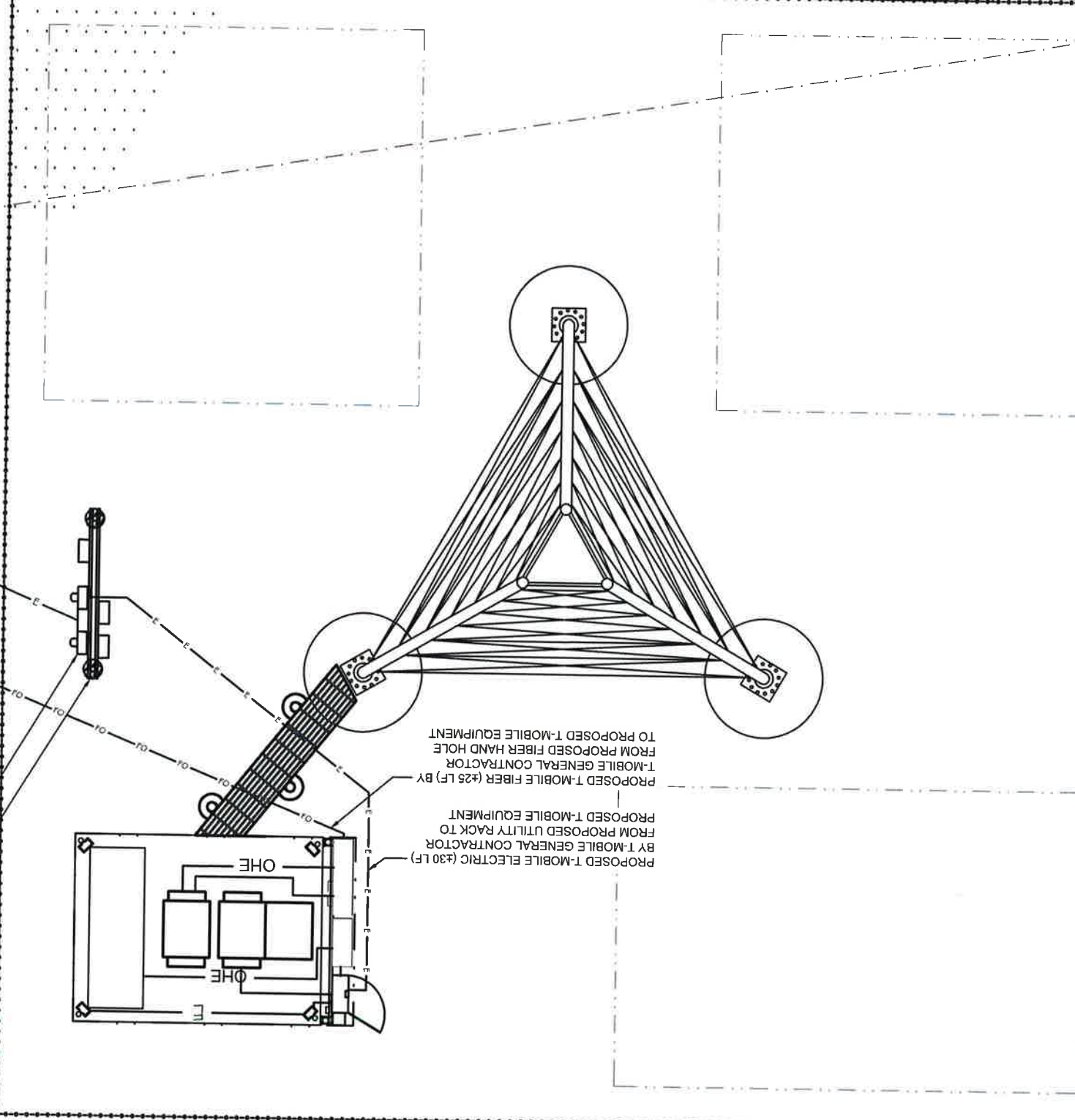
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6/27/2024

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NORTH



SCALE: 1" = 7.5'
 OVER ALL UTILITY SITE PLAN

PROPOSED UNDERGROUND CONDUIT AND CONDUCTORS FROM POLE-MOUNTED TRANSFORMER BY LOCAL UTILITY COMPANY (#70 LF)

PROPOSED UTILITY H-FRAME INSTALLED BY VERTICAL BRIDGE CONTRACTOR

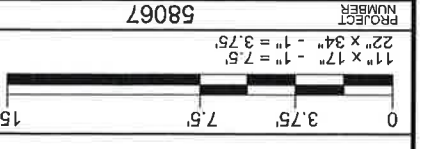
PROPOSED MULTI-GANG METER UTILITY RACK (800A) INSTALLED BY VERTICAL BRIDGE CONTRACTOR, LOCAL UTILITY COMPANY TO INSTALL METER SOCKETS & CAP UNUSED METER SLOTS

PROPOSED COMPOUND FIBER HAND HOLE INSTALLED BY VERTICAL BRIDGE CONTRACTOR (CONTRACTOR TO COORDINATE WITH LOCAL UTILITY)

NOTE:
 UTILITY/GROUNDING LINES ARE SHOWN FOR SCHEMATIC PURPOSES ONLY & DO NOT REPRESENT THE EXACT LOCATION OF THE RUN. CONTRACTOR SHALL FIELD VERIFY PROPOSED & EXISTING SERVICE LOCATIONS. NOTIFY CONSTRUCTION/PROJECT MANAGER IMMEDIATELY OF ANY DISCREPANCIES.

LEGEND:

PROPOSED ELECTRIC	---
PROPOSED TELCO	---
PROPOSED FIBER	---



T-MOBILE UTILITY PLAN

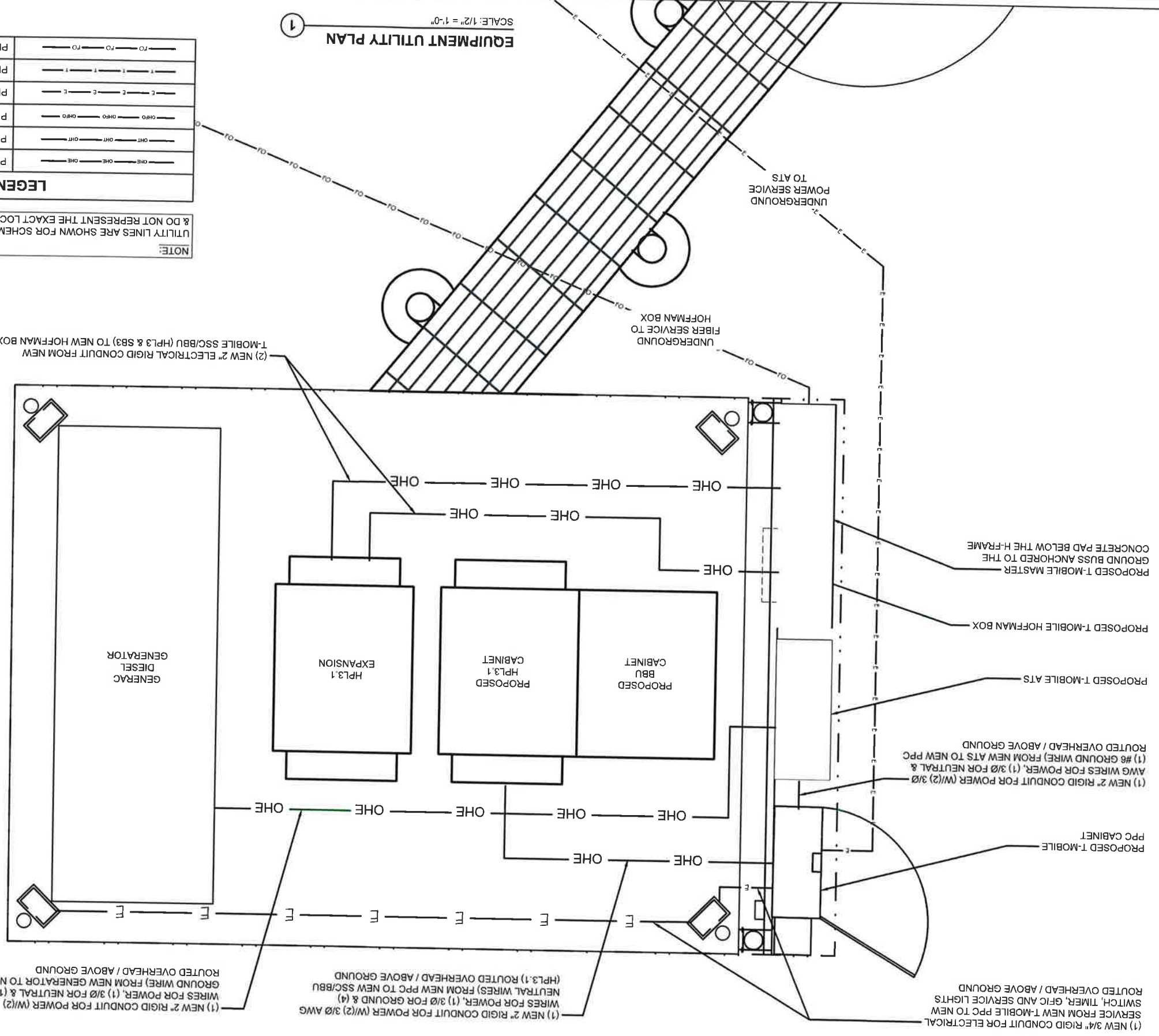
SHEET TITLE:
 FREMONT COUNTY
 CANON CITY, CO 81212
 HWY 50 & HWY 9

US-CO-5091 / DN02546A

PROJECT TITLE:
 ISSUE DATE
 PHASE FINAL
 06/25/2024

MARK	DATE	DESCRIPTION
2	06/25/24	JURISDICTION COMMENTS
1	04/11/24	JURISDICTION COMMENTS
0	01/26/24	FINAL CDS ISSUED
C	11/28/23	GRADING PLAN ADDED
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A	09/13/23	REDLINES


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LEGEND:

	PROPOSED OVERHEAD ELECTRIC
	PROPOSED OVERHEAD TELCO
	PROPOSED OVERHEAD FIBER
	PROPOSED BURIED ELECTRIC
	PROPOSED BURIED TELCO
	PROPOSED BURIED FIBER

NOTE:
UTILITY LINES ARE SHOWN FOR SCHEMATIC PURPOSES ONLY & DO NOT REPRESENT THE EXACT LOCATION OF THE RUN.

SCALE: 1/2" = 1'-0"
 ①

T-MOBILE EQUIPMENT UTILITY PLAN

SHEET TITLE:

CANON CITY, CO 81212
 HWY 50 & HWY 9
 FREMONT COUNTY

PROJECT INFORMATION:
 US-CO-5091 / DN02546A

ISSUE DATE: 06/25/2024
 PHASE: FINAL

MARK	DATE	DESCRIPTION
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0	01/26/24	FINAL CDS ISSUED
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B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES

PROJECT NUMBER: 58067
 SHEET NUMBER: E-4T

PROJECT TITLE: US-CO-5091 / DN02546A

ISSUE DATE: 06/25/2024
 PHASE: FINAL

MARK	DATE	DESCRIPTION
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Continuation & Seal

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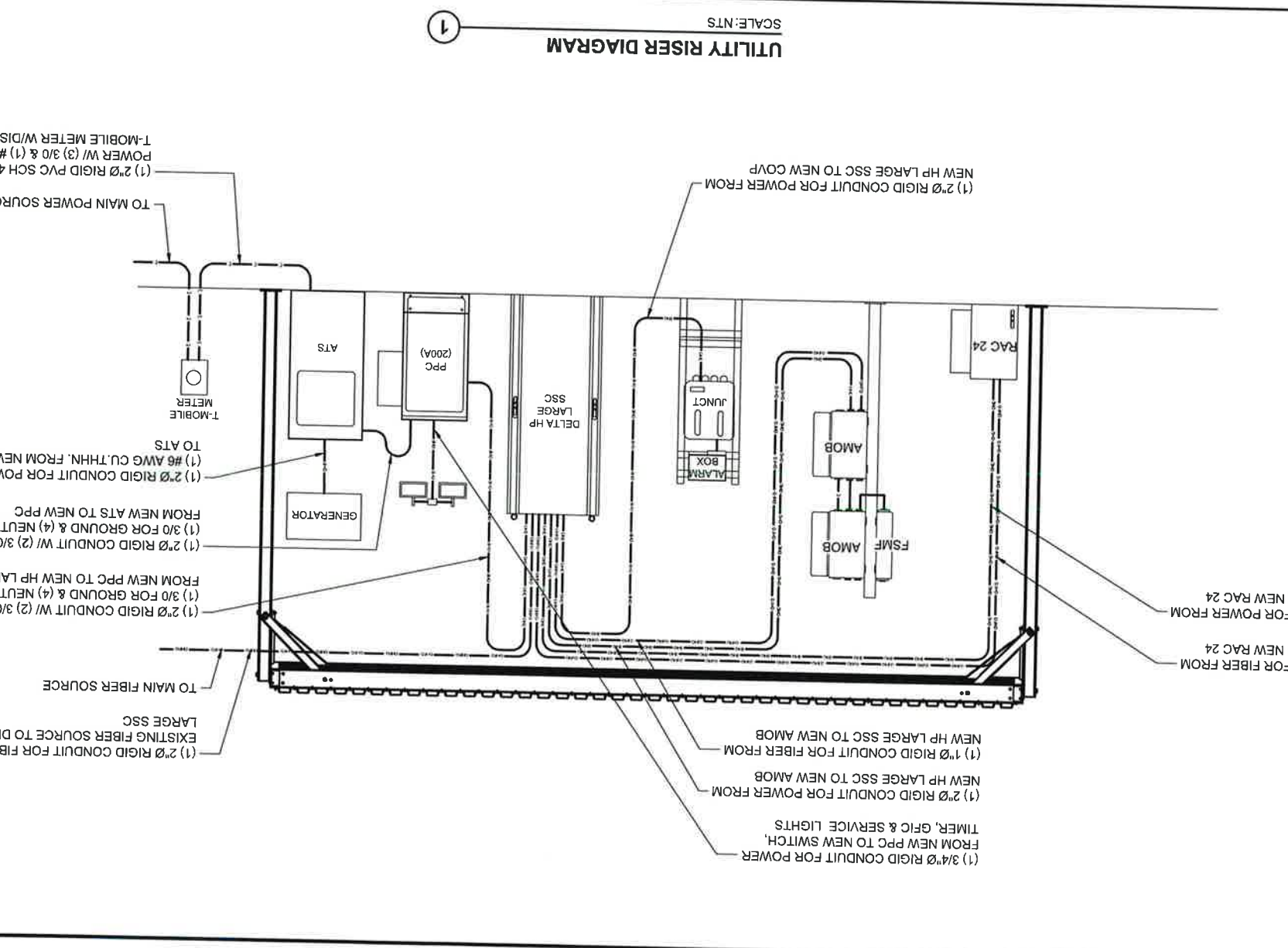
verticalbridge

NORTH

POWER BOARD SCHEDULE

SCALE: NTS

CT	LOAD DESCRIPTION	BREAKER AMP	BREAKER POLES	BREAKER STATUS	SERVICE LOAD VA	USAGE FACTOR VA	PHASE A VA	PHASE B VA	PHASE C VA	NEUTRAL BAR:	GROUND BAR:
1	SURGE ARRESTOR	30	2	ON	0	0	0	0	0	YES	YES
5	SERVICE LIGHT	20	1	ON	1.00	8800	8800	8800	8800	YES	YES
7		180	1	ON	1.00	8800	8800	8800	8800	YES	YES
9		0	0	N/A	0.00	0	0	0	0	YES	YES
11		0	0	N/A	0.00	0	0	0	0	YES	YES
13		0	0	N/A	0.00	0	0	0	0	YES	YES
17		0	0	N/A	0.00	0	0	0	0	YES	YES
19		0	0	N/A	0.00	0	0	0	0	YES	YES
21		0	0	N/A	0.00	0	0	0	0	YES	YES
23		0	0	N/A	0.00	0	0	0	0	YES	YES
24	GFI OUTLET	20	1	ON	1.00	180	180	180	180	YES	YES
		TOTAL KVA									
		35.56									148.17



PANEL BOARD SCHEDULE

SCALE: NTS

CT	LOAD DESCRIPTION	BREAKER AMP	BREAKER POLES	BREAKER STATUS	SERVICE LOAD VA	USAGE FACTOR VA	PHASE A VA	PHASE B VA	PHASE C VA	NEUTRAL BAR:	GROUND BAR:
1	SURGE ARRESTOR	30	2	ON	0	0	0	0	0	YES	YES
5	SERVICE LIGHT	20	1	ON	1.00	8800	8800	8800	8800	YES	YES
7		180	1	ON	1.00	8800	8800	8800	8800	YES	YES
9		0	0	N/A	0.00	0	0	0	0	YES	YES
11		0	0	N/A	0.00	0	0	0	0	YES	YES
13		0	0	N/A	0.00	0	0	0	0	YES	YES
17		0	0	N/A	0.00	0	0	0	0	YES	YES
19		0	0	N/A	0.00	0	0	0	0	YES	YES
21		0	0	N/A	0.00	0	0	0	0	YES	YES
23		0	0	N/A	0.00	0	0	0	0	YES	YES
24	GFI OUTLET	20	1	ON	1.00	180	180	180	180	YES	YES
		TOTAL KVA									
		35.56									148.17

US-CO-5091 / DN02546A
 PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE:
T-MOBILE UTILITY RISER AND POWER BOARD SCHEDULE

SCALE: NONE

PROJECT NUMBER
58067

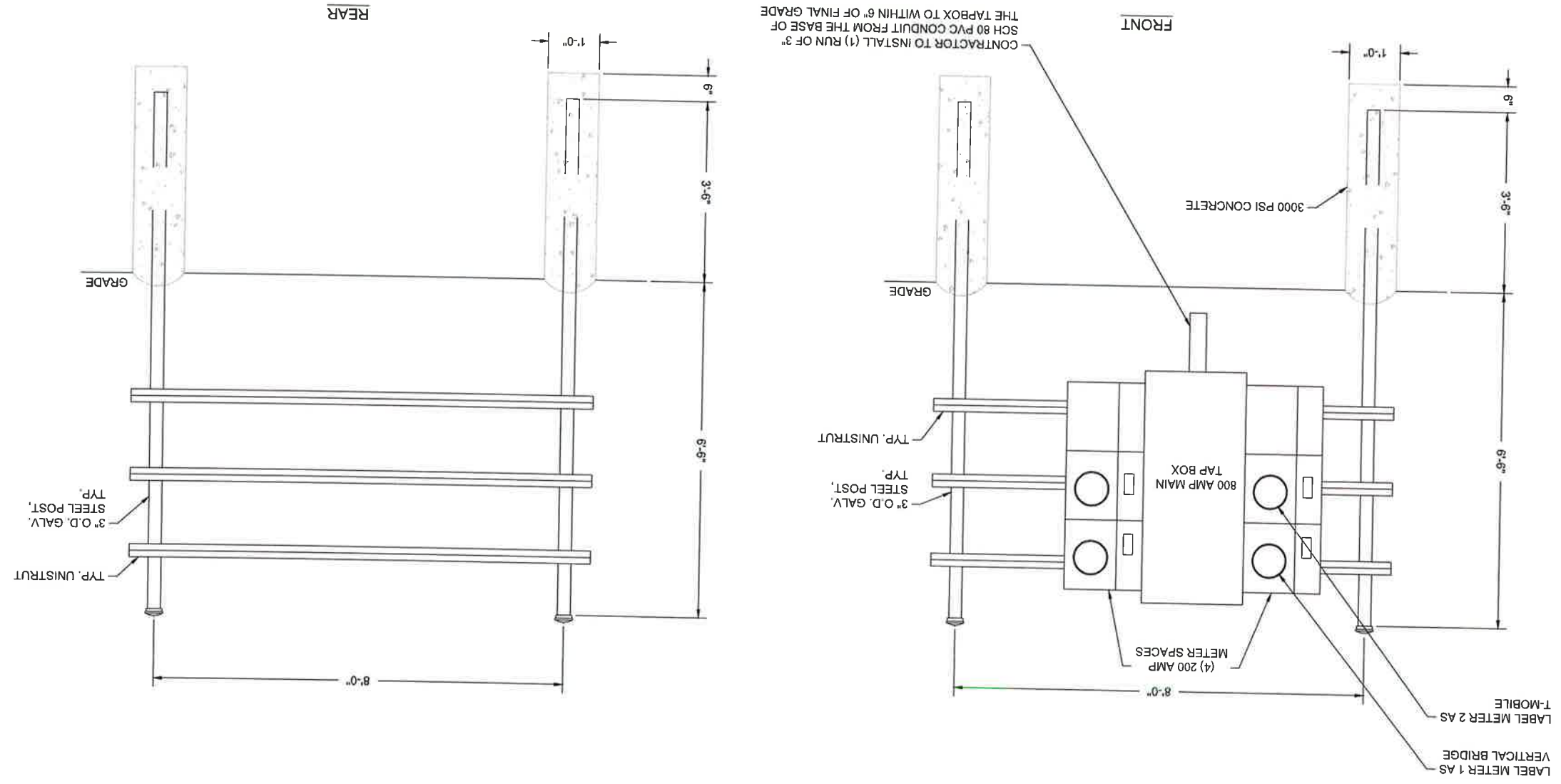
PROJECT TITLE:
 ISSUE FINAL
 DATE 06/25/2024

MARK	DATE	DESCRIPTION
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A	09/13/23	REDLINES

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UTILITY STAND DETAIL

NOTE:
 -FINAL LAYOUT & DESIGN DETERMINED BY CONTRACTOR/UTILITY PROVIDER. VERIFY DESIGN WITH CONSTRUCTION MANAGER.
 -PROVIDE PHENOLIC ENGRAVED NAME PLATES FOR EQUIPMENT AT UTILITY RACK.
 -METERING TO BE RINGLESS WITH A LEVER BYPASS. LOCAL UTILITY COMPANY MUST APPROVE METERING PRIOR TO PURCHASE.



1

SCALE: NTS

PROJECT NUMBER 58067

SCALE: NONE

COMPOUND UTILITY DETAILS

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

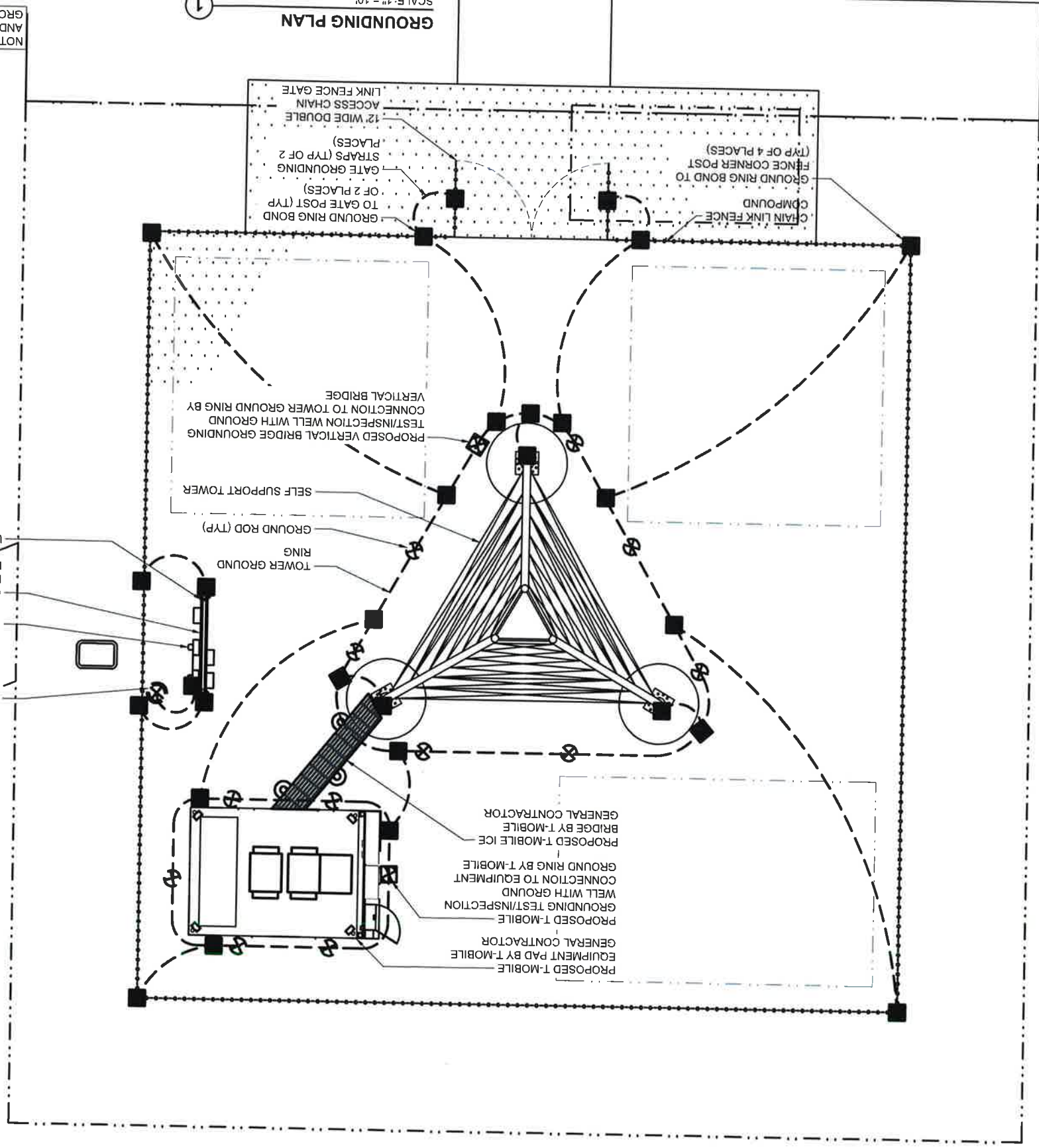
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B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES
ISSUE PHASE		
FINAL	DATE	ISSUED
FINAL	06/25/2024	ISSUED



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NOTE: SEE DETAIL PAGES E-87 AND E-97 FOR MORE T-MOBILE GROUNDING INFORMATION

SCALE: 1" = 10'
GROUNDING PLAN

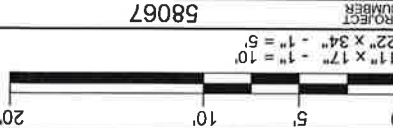
LEGEND:

PROPOSED GROUND CABLE	---
MECHANICAL CONNECTION	▲
EXOTHERMIC CONNECTION	■
% DIA. x 10'-0" GROUND ROD	⊗
GROUND TEST WELL	⊗

GROUNDING LINES ARE SHOWN FOR SCHEMATIC PURPOSES ONLY & DO NOT REPRESENT THE EXACT LOCATION OF THE RUN. CONTRACTOR SHALL FIELD VERIFY PROPOSED & EXISTING SERVICE LOCATIONS. NOTIFY CONSTRUCTION/PROJECT MANAGER IMMEDIATELY OF ANY DISCREPANCIES.

GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER SHALL BE BONDED TOGETHER BELOW GRADE BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE 2011 NATIONAL ELECTRICAL CODE.
2. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OFF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE SUBCONTRACTOR 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 & METAL CONDUIT AND TRAY SHALL BE GROUND AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUND AND MADE ELECTRICALLY CONTINUOUS WITH LISTED CODING FITTINGS OR BE BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMP. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. INSULATION, SIZED IN ACCORDANCE WITH THE NEC SHALL BE FURNISHED AND INSTALLED WITH THE EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS, #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
5. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/ GROUND BARS AND THE GROUND RING SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
8. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
9. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND TOWER GROUND BAR.
10. APPROVED ANTI-OXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
11. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
12. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH (1) #2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
13. GROUND CONDUCTORS USED IN THE FACILITY GROUND 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. NONMETALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED, WHERE USE OF METAL CONDUITS IS UNAVOIDABLE (E.G. NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.



COMPOUND GROUNDING PLAN

SHEET TITLE:
 FREMONT COUNTY
 CANON CITY, CO 81212
 HWY 50 & HWY 9

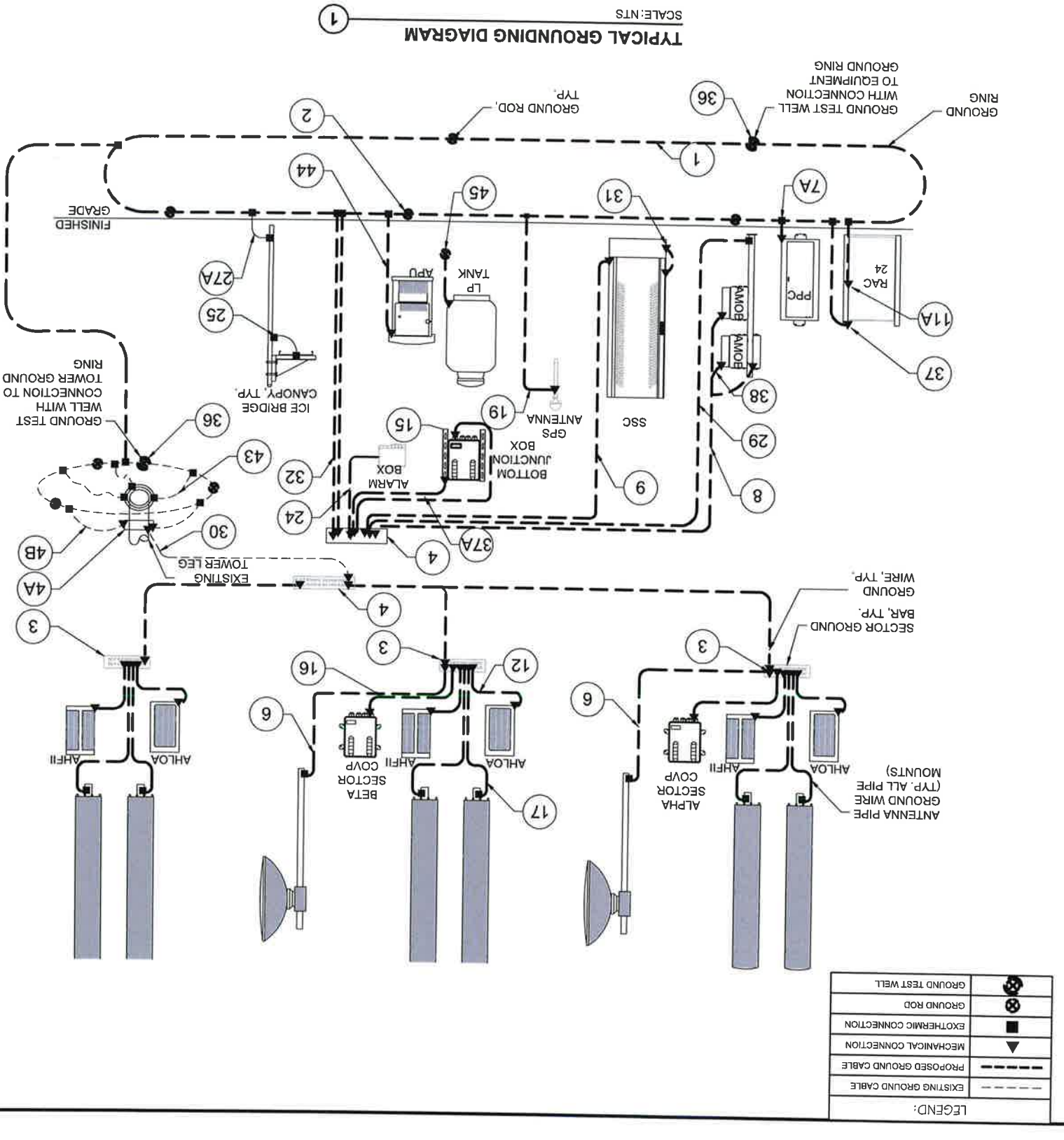
PROJECT INFORMATION:
 US-CO-5091 / DN02546A

ISSUE PHASE: FINAL
 DATE: 06/25/2024

MARK	DATE	DESCRIPTION
A	09/13/23	REDLINES
B	09/19/23	CHANGE TOWER HEIGHT
C	11/28/23	GRADING PLAN ADDED
0	01/26/24	FINAL CDS ISSUED
1	04/11/24	JURISDICTION COMMENTS
2	06/25/24	JURISDICTION COMMENTS

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 Contractor & Seal:
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- GROUNDING NOTES:**
- UNDERGROUND AND OVERHEAD UTILITY LENGTHS TO BE DETERMINED FROM SITE PLAN.
 - SEE ELECTRICAL SPECIFICATIONS SECTION 16000 FOR ALL ELECTRICAL AND GROUNDING INSTALLATION REQUIREMENTS.
 - FOR ORIENTATION OF SITE LAYOUT SEE SITE PLAN, DRAWING.
 - UDA CABINET FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
 - CONDUCTORS TO BE PROVIDED BY OWNER SHALL BE RETROFITTED TO ACCOMMODATE 2 HOLE LUG CONNECTION AND APPROPRIATE LENGTH.
 - GROUND RINGS TO BE PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR.
 - GROUND LEADS TO BE INSTALLED AT 10' CENTERS.
 - GROUND LEADS TO BE SCHEDULE 40 PVC CONDUIT AND SEALED W/ SILICONE.
 - GROUND BAR SUPPLIED BY OWNER AND INSTALLED BY CONTRACTOR.
 - ALL BENDS IN GROUNDING SYSTEM MUST BE SMOOTH AND MAINTAIN BENDING RADIUS.
 - GROUND BAR SHALL BE SCHEDULE 40 PVC CONDUIT AND INSTALLED BY CONTRACTOR.
 - SEE SITE PLAN FOR COAXIAL ROUTING THIS SHEET IS INTENDED FOR GROUNDING CLARITY ONLY AND IS SCHEMATIC IN DETAIL.
 - GROUND RINGS SHALL BE INSTALLED BETWEEN 8'-18" OF ALL CONNECTORS.
 - TOWER FOUNDATION DESIGN BY OWNER, INSTALLED BY CONTRACTOR.
 - ADDITIONAL GROUND RINGS TO BE PLACED AT 100' WHEN ANTENNA CERTIFIERS IS 200' OR ABOVE.
 - ALL CONDUITS TO BE SEALED W/ SILICONE TO PROVIDE A WATER TIGHT SEAL.
- GROUNDING NOTES (CONTINUED):**
- CONSTRUCT RING, #2 SOLID, TINNED BARE COPPER WIRE FROM ONE CONTINUOUS PIECE.
 - 5/8" x 10' COPPER CLAD GROUND ROD
 - SECTOR GROUND BAR (TYP. OF 1 PER SECTOR)
 - MASTER GROUND BAR
 - LOWER TOWER COPPER GROUND BAR
 - LOWER TOWER COPPER GROUND WIRE FROM LOWER TOWER COPPER GROUND BAR TO GROUND RING (2 REQUIRED)
 - #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM DIRECTLY TO TOWER
 - #2 AWG GREEN STRANDED GROUND CU WIRE BOND
 - #2 AWG GREEN STRANDED GROUND CU WIRE FROM MICROWAVE DISH TO LOWER TOWER GROUND BAR
 - #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW PANEL TO MASTER GROUND BAR
 - #2 AWG SOLID, TINNED BARE COPPER WIRE FROM JUNCTION BOX TO MASTER GROUND BAR
 - GROUND RING
 - #2 AWG GREEN STRANDED GROUND CU WIRE FROM SYSTEM MODULE PLINTH TO MASTER GROUND BAR
 - #2 AWG GREEN STRANDED GROUND CU WIRE FROM UPPER TOWER GROUND BAR TO LOWER TOWER GROUND BAR
 - #2 AWG SOLID, TINNED BARE COPPER WIRE FROM GROUND BAR TO GROUND RING
 - #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW SSC TO SSC PLINTH
 - #2 AWG SOLID, TINNED BARE COPPER WIRE FROM NEW SSC TO MASTER GROUND BAR
 - #2 AWG SOLID, TINNED BARE COPPER WIRE FROM NEW METER TO EXISTING SITE WATER MAIN
 - #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW METER TO EXISTING SITE WATER MAIN
 - #2 AWG SOLID, TINNED BARE COPPER WIRE FROM NEW METER TO NEW SECTOR GROUND BAR
 - #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW METER TO NEW SECTOR GROUND BAR
 - #2 AWG SOLID, TINNED BARE COPPER WIRE FROM NEW METER SOCKET TO ISOLATED GROUND ROD
 - #2 AWG SOLID, TINNED BARE COPPER WIRE FROM NEW GPS ANTENNA TO GROUND RING
 - #2 AWG SOLID, TINNED BARE COPPER WIRE FROM NEW GPS ANTENNA TO GROUND RING
 - #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW ANTENNA TO MASTER GROUND BAR
 - EXISTING GROUND RING
 - #2 AWG SOLID, TINNED BARE COPPER WIRE FROM TOWER BASE PLATE TO GROUND RING; (4) REQUIRED
 - #2 AWG SOLID, TINNED BARE COPPER WIRE FROM GENERATOR CABINET BUS BAR TO GROUND RING
 - #2 AWG SOLID, TINNED BARE COPPER WIRE FROM CABLE & MICROWAVE COAX CABLE TO MASTER GROUND BAR
 - #2 AWG SOLID, TINNED BARE COPPER WIRE FROM CABLE LADDER TO MASTER GROUND BAR
 - #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW NEW ALARM BOX TO MASTER GROUND BAR



GROUNDING NOTES:

- CONTRACTOR TO ENSURE PROPER SEQUENCING OF GROUNDING AND UNDERGROUND CONDUIT INSTALLATION TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM AND/OR DAMAGE TO THE CONDUIT.
- ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TINNED COPPER UNLESS NOTED OTHERWISE.
- ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
- ALL GROUND CONNECTIONS ABOVE GRADE AND/OR INTERIOR SHALL BE COMPRESSION TYPE, TWO-HOLE LUGS OR DOUBLE-CRIMP "C" TAPS.
- CONTACT AREAS WHERE CONNECTIONS ARE MADE SHALL BE PREPARED TO A BARE BRIGHT FINISH AND COATED WITH AN ANTI-OXIDATION MATERIAL BEFORE CONNECTIONS ARE MADE.
- MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
- WHERE GROUNDING CONNECTIONS ARE MADE TO PAINTED METAL SURFACES, PAINT SHALL BE REMOVED TO BEAR METAL TO ENSURE PROPER CONTACT AND RESTORED/PAINTED TO ORIGINAL FINISH.
- GROUND DEPTH SHALL BE 30" MINIMUM BELOW FINISHED GRADE, OR 6" BELOW FROST LINE, WHICHEVER IS GREATER.

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE:
TYPICAL T-MOBILE GROUNDING RISER

SCALE: NONE

PROJECT NUMBER: 58067

PROJECT TITLE: US-CO-5091 / DN2546A

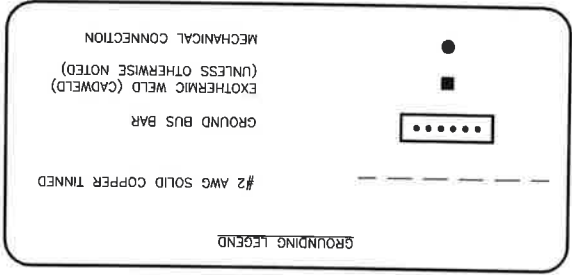
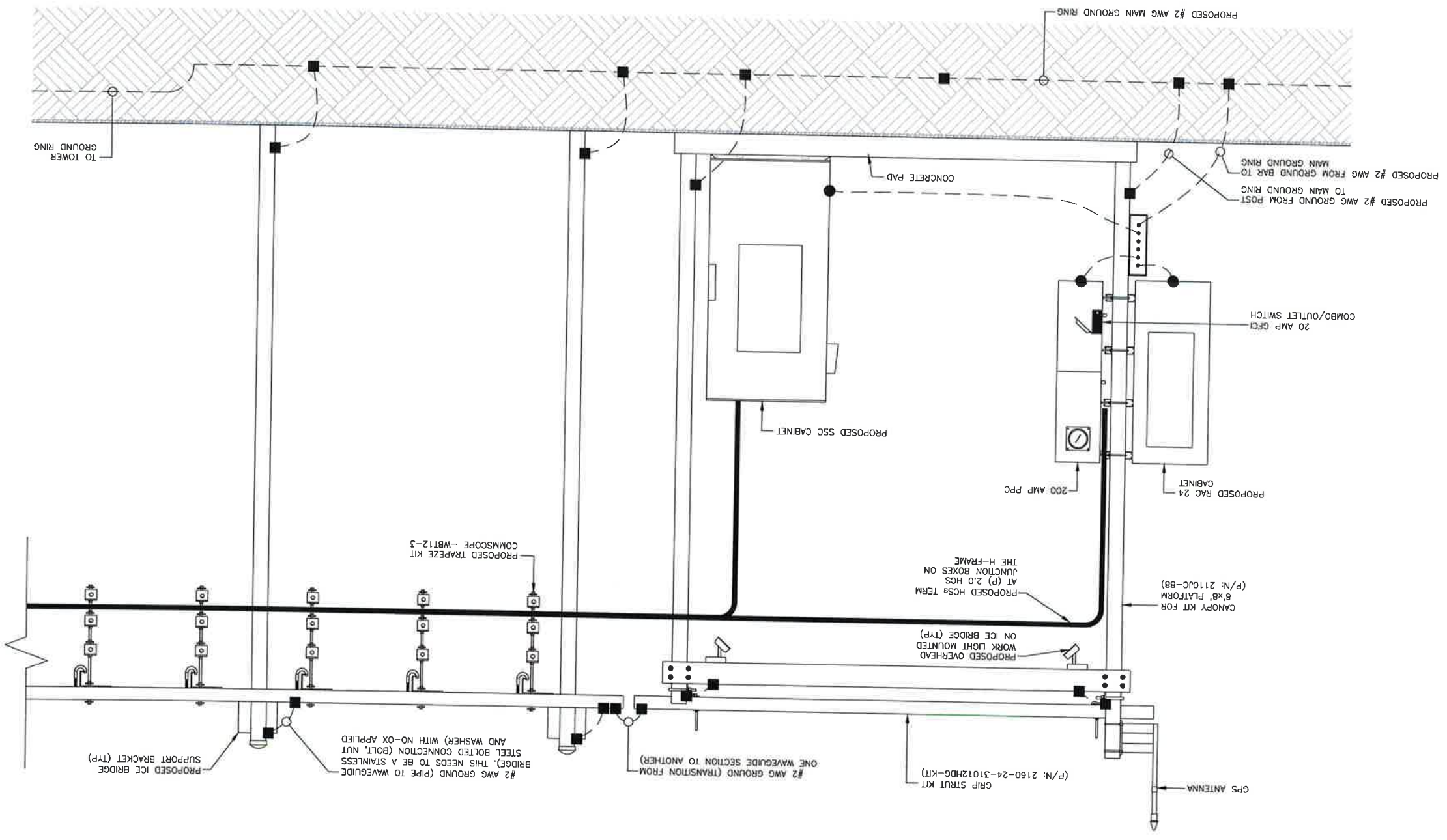
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2	06/28/24	JURISDICTION COMMENTS
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B	09/18/23	CHANGE TOWER HEIGHT
A	09/13/23	REDLINES

ISSUE PHASE: FINAL
 DATE: 06/25/2024

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Verticalbridge



TYPICAL T-MOBILE EQUIPMENT GROUNDING ELEVATION
 SCALE: NTS
 1

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ISSUE PHASE FINAL
 DATE ISSUED 06/25/2024
 PROJECT TITLE: US-CO-5091 / DN02546A

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE:
 TYPICAL T-MOBILE EQUIPMENT
 GROUNDING ELEVATION

SCALE: NONE

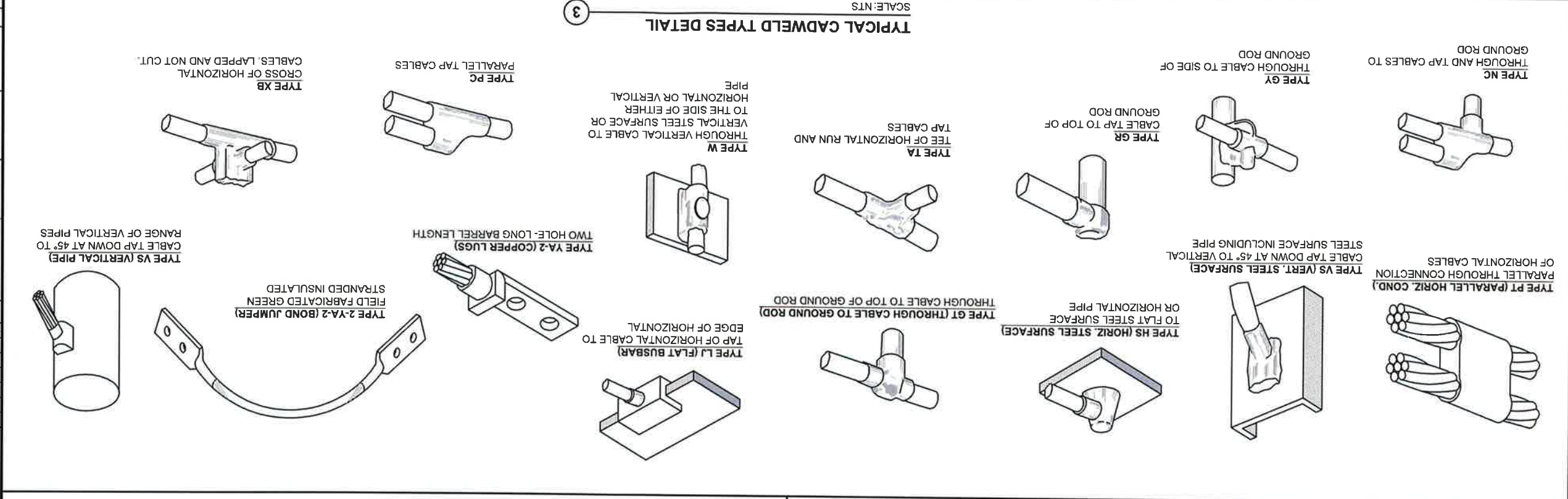
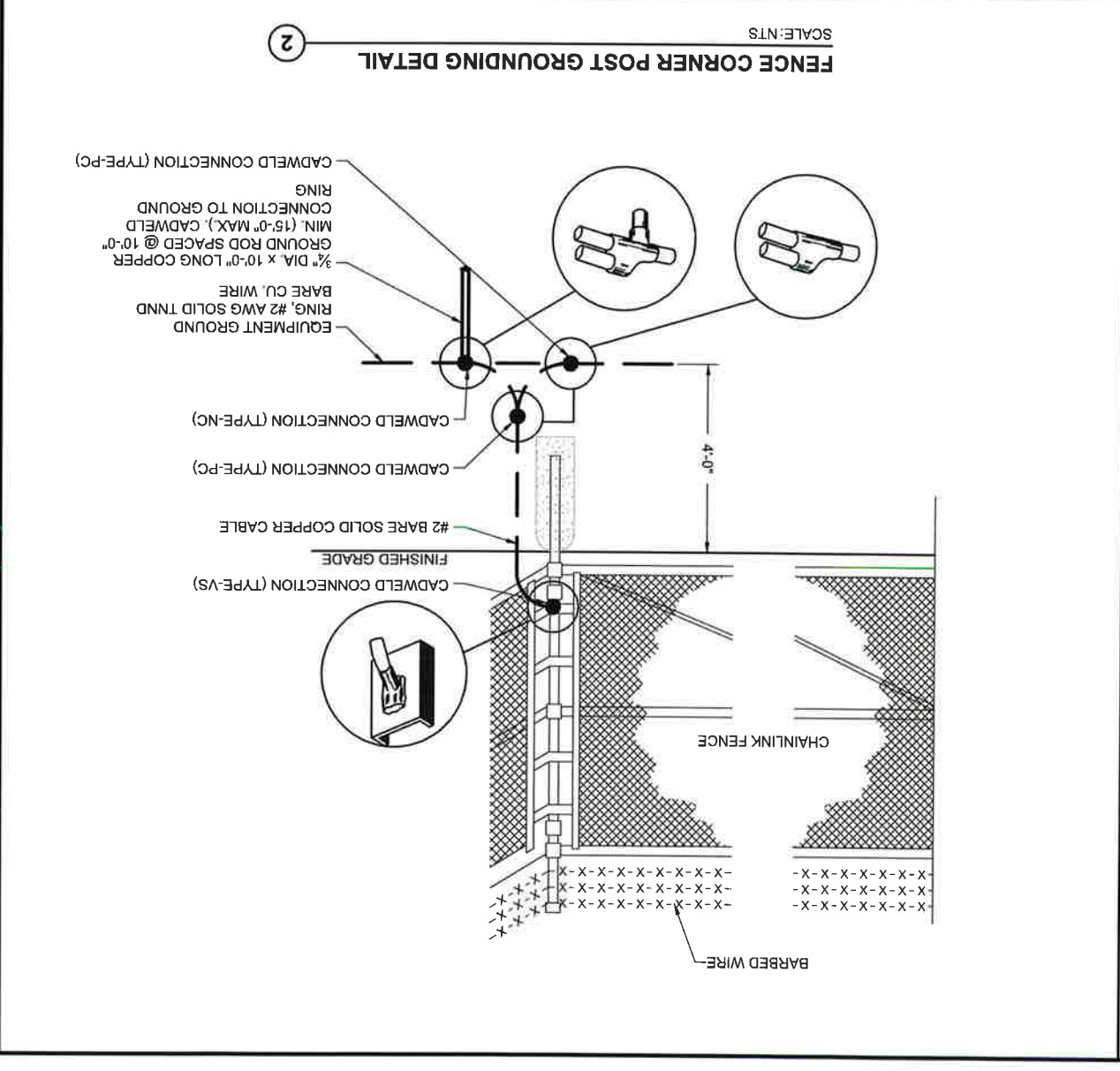
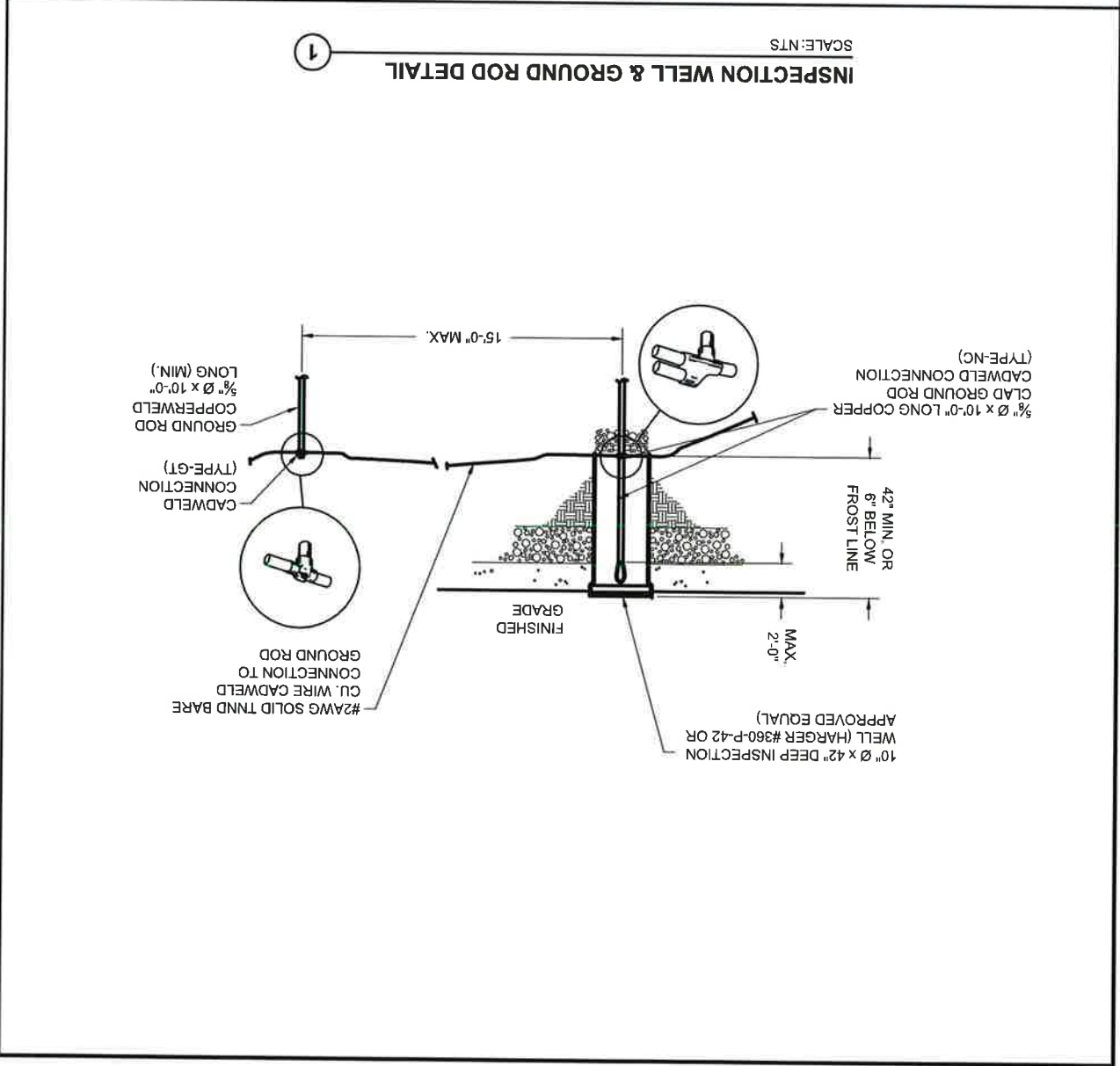
PROJECT NUMBER 58067
 SHEET NUMBER E-91



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Vertical Bridge

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Michael L. Pinski
 PE 0050800
 Colorado Licensed Professional Engineer
 6/27/2024

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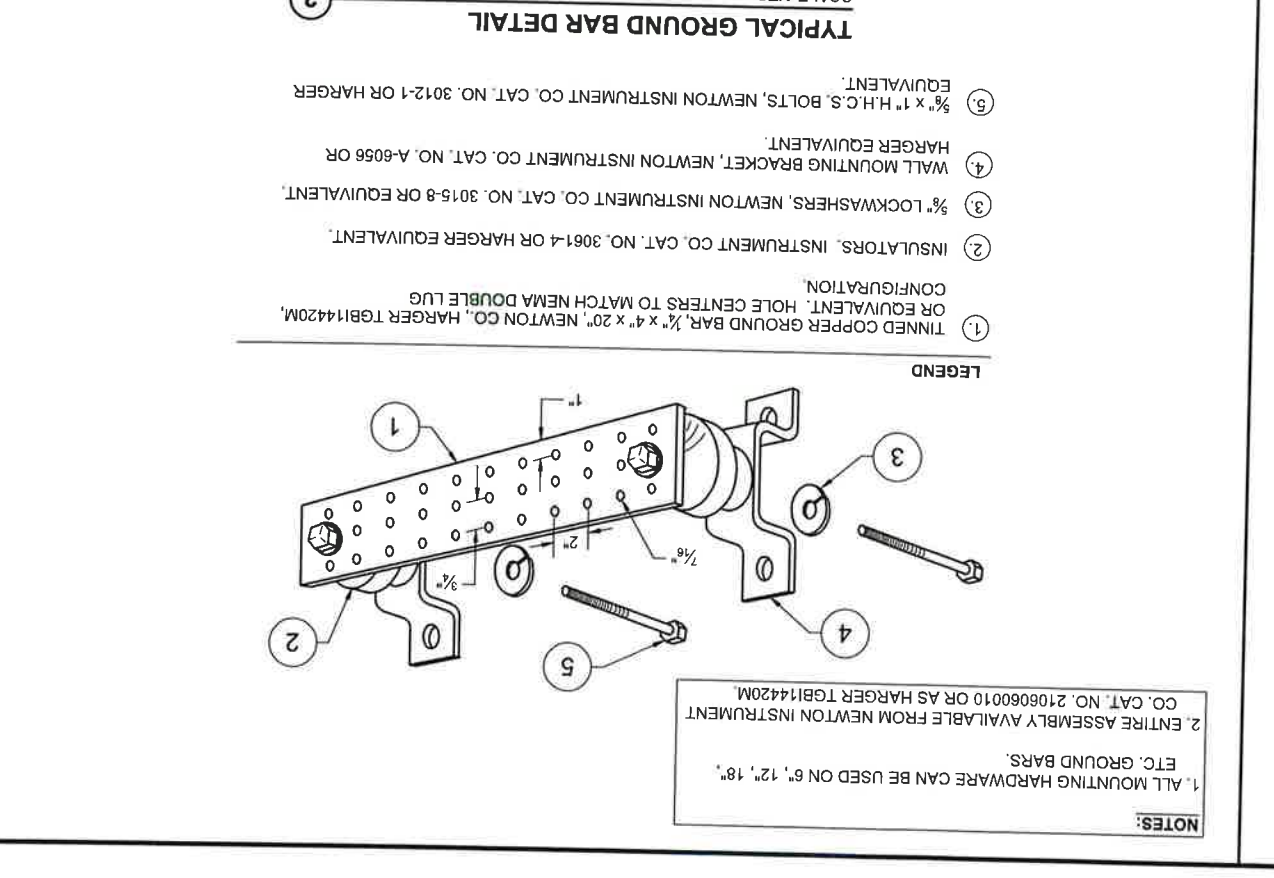
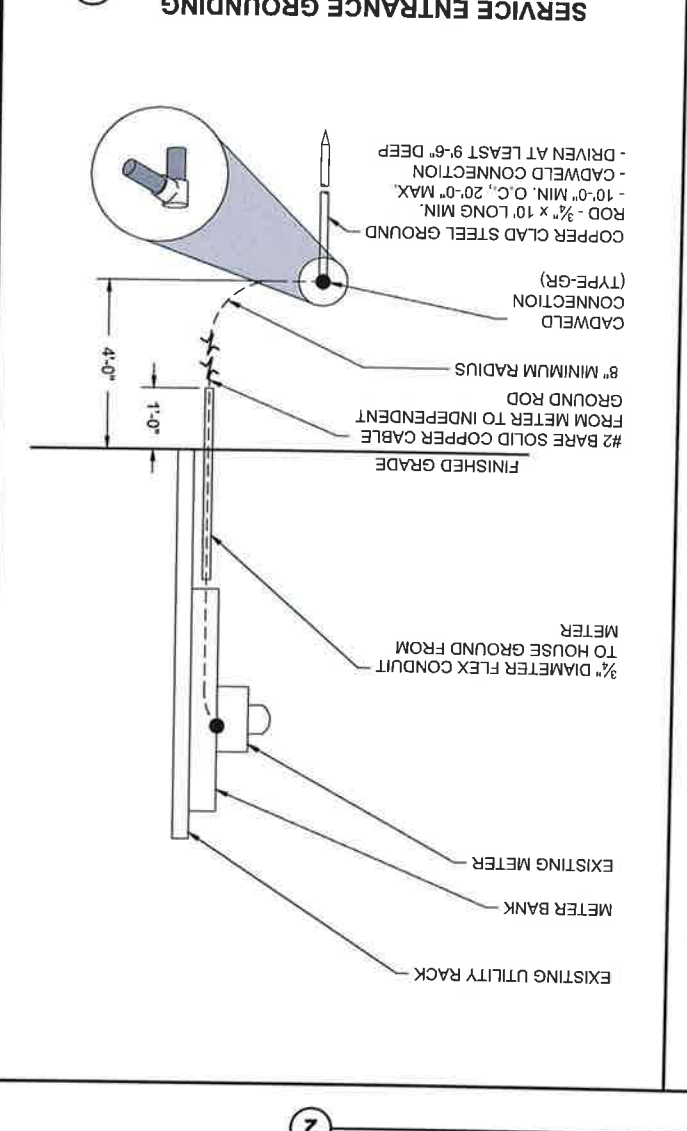
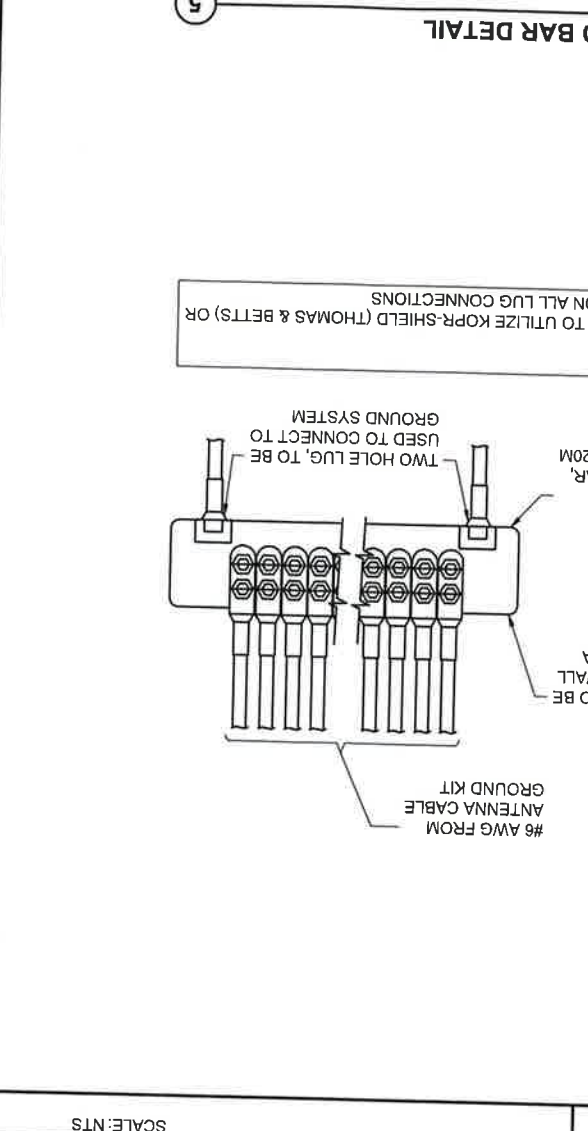
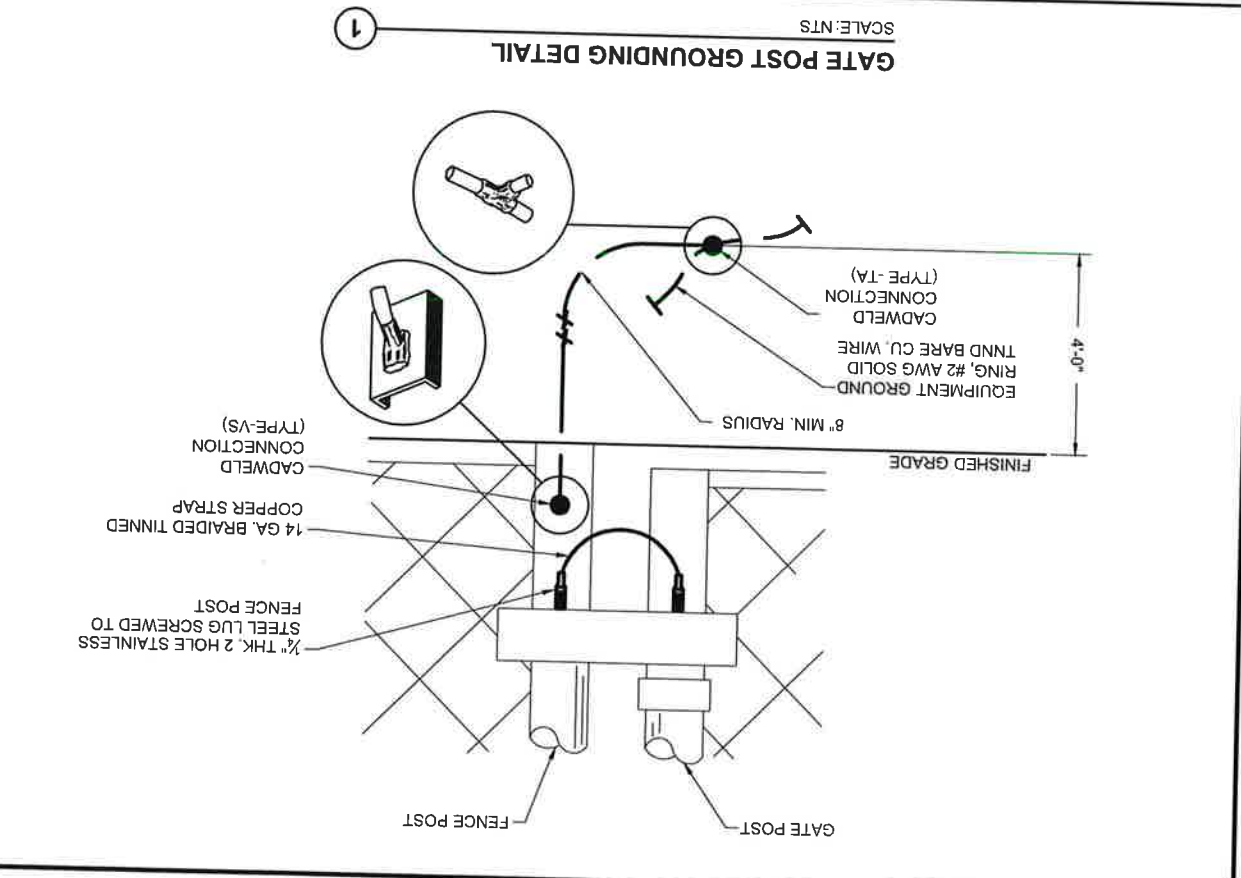
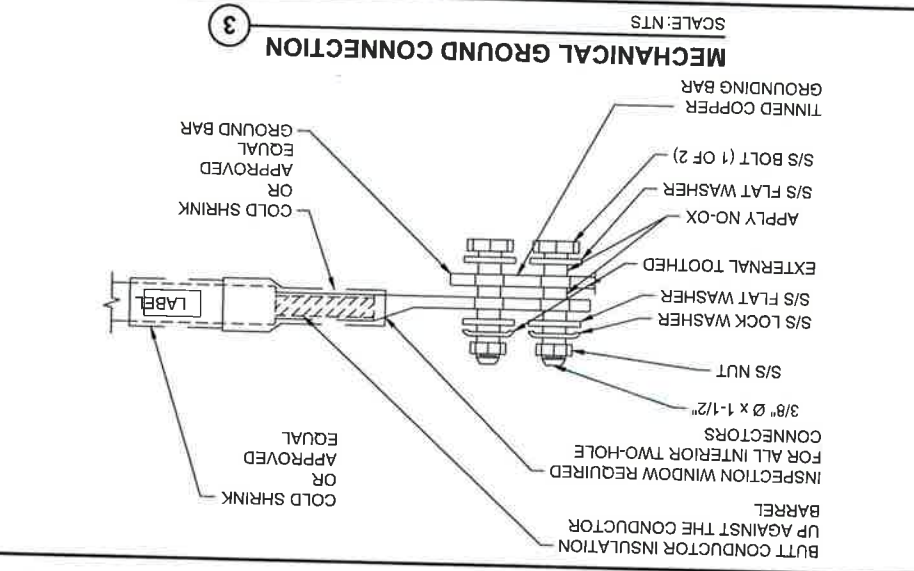
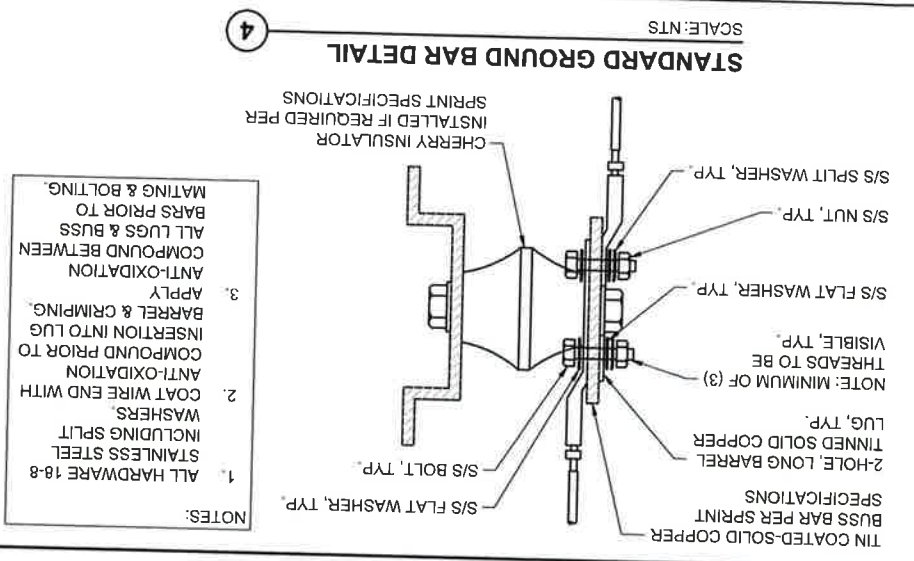
PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

SHEET TITLE: COMPOUND GROUNDING DETAILS

SCALE: NONE

PROJECT NUMBER: 58067 E-10

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US-CO-5091 / DN02546A

PROJECT INFORMATION:
 HWY 50 & HWY 9
 CANON CITY, CO 81212
 FREMONT COUNTY

PROJECT TITLE:
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SCALE: NONE

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ISSUE FINAL DATE 06/25/2024

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6/27/2024

MICHAEL L. PINSKE
 PE 0050800
 COLORADO LICENSED PROFESSIONAL ENGINEER

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