

UTILITY RISER DIAGRAM
SCALE: NTS

1

PANEL BOARD SCHEDULE															
T-MOBILE PROJECT NAME: NSD				PANEL STATUS: NEW				N TO GROUND BOND: YES							
VOLTAGE: 240V/120				MODEL NUMBER: T.B.D.				INTERNAL TVSS: YES							
MAIN BREAKER: 200 AMP				PHASE: 1				WIRE: 3							
MOUNT: H-FRAME				BUSS RATING: 200 AMPS				AIC: 22,000							
ENCLOSURE TYPE: NEMA 3R				NEUTRAL BAR: YES				GROUND BAR: YES							
CKT	LOAD DESCRIPTION	BREAKER AMPS	BREAKER POLES	BREAKER STATUS	SERVICE LOAD VA	USAGE FACTOR	PHASE A VA	PHASE B VA	USAGE FACTOR	SERVICE LOAD VA	BREAKER STATUS	BREAKER POLES	BREAKER AMPS	LOAD DESCRIPTION	CKT
1	SURGE ARRESTOR	30	2	ON	0	1.00	8800	8800	1.00	8800	ON	4	200	SSC	2
3				ON	0	1.00	8800	8800	1.00	8800	ON				4
5	SERVICE LIGHT	20	1	ON	180	1.00	8980	8800	1.00	8800	ON				6
7				N/A	0	0.00			1.00	8800	ON				8
9				N/A	0	0.00	0	0	0.00	0	N/A				10
11				N/A	0	0.00	0	0	0.00	0	N/A				12
13				N/A	0	0.00	0	0	0.00	0	N/A				14
15				N/A	0	0.00	0	0	0.00	0	N/A				16
17				N/A	0	0.00	0	0	0.00	0	N/A				18
19				N/A	0	0.00	0	0	0.00	0	N/A				20
21				N/A	0	0.00	0	0	0.00	0	N/A				22
23				N/A	0	0.00	180	180	1.00	180	ON	1	20	GFI OUTLET	24
											TOTAL KVA	35.56			
											AMPS	148.17			

POWER BOARD SCHEDULE
SCALE: NTS

2



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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 ISSUED: 06/25/2024

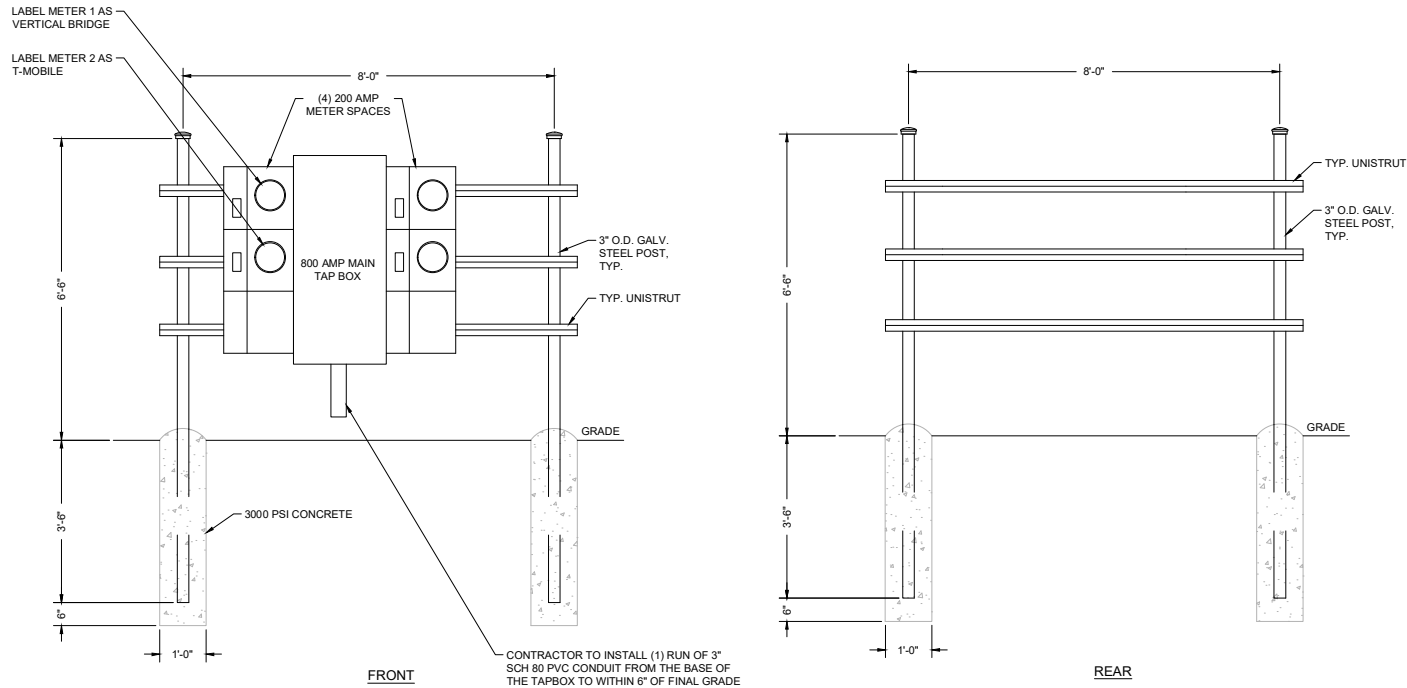
PROJECT TITLE:
US-CO-5091 / DN02546A

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

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

SCALE: NONE

PROJECT NUMBER: 58002
SHEET NUMBER: E-5T



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.

UTILITY STAND DETAIL
 SCALE: NTS



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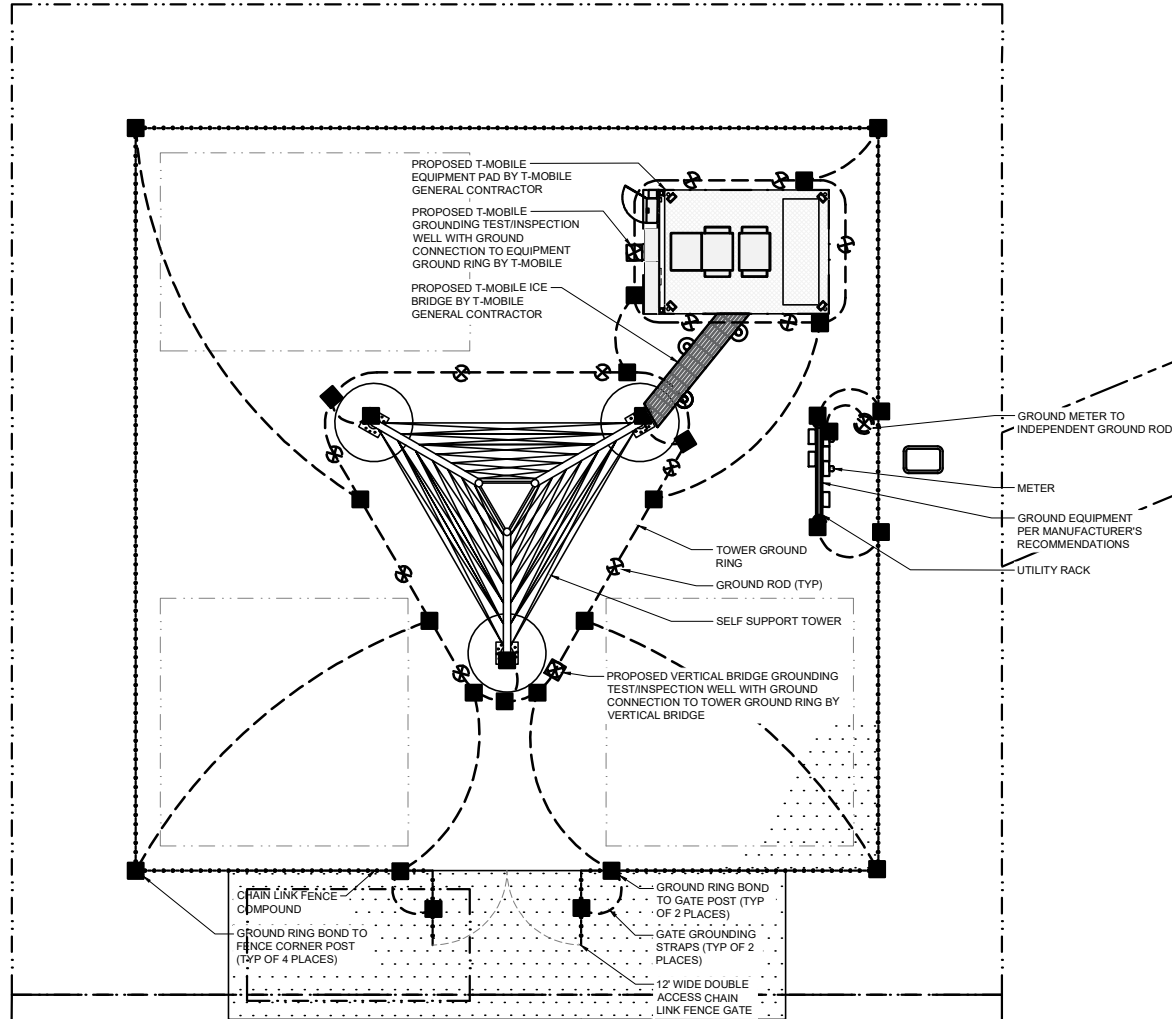
PROJECT TITLE:
US-CO-5091 / DN02546A

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

SHEET TITLE:
COMPOUND UTILITY DETAILS

SCALE: NONE

PROJECT NUMBER: 58002
 SHEET NUMBER: E-6



GROUNDING PLAN
SCALE: 1" = 10'

NOTE: SEE DETAIL PAGES E-8T AND E-9T FOR MORE T-MOBILE GROUNDING INFORMATION

LEGEND:	
-----	PROPOSED GROUND CABLE
▲	MECHANICAL CONNECTION
■	EXOTHERMIC CONNECTION
⊗	3/4" 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:**
- 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.
 - THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-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.
 - 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 & PROVIDE TESTING RESULTS.
 - METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED CODING FITTINGS OR BE BONDED ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE U/L APPROVED GROUNDING TYPE CONDUIT CLAMPS.
 - METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT. 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.
 - ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/ GROUND BARS AND THE GROUND RING SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
 - EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS ABOVE GRADE. (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
 - COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
 - ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND TOWER GROUND BAR.
 - APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
 - ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
 - BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH (1) #2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
 - 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 CONDUIT IS UNAVOIDABLE (E.G. NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.



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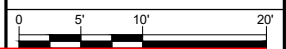
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ISSUE PHASE: FINAL DATE ISSUED: 06/25/2024

PROJECT TITLE:
US-CO-5091 / DN02546A

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

SHEET TITLE:
COMPOUND GROUNDING PLAN



11" x 17"	- 1" = 10'
22" x 34"	- 1" = 5'
PROJ. NO.	58008
SHEET NUMBER	E-7

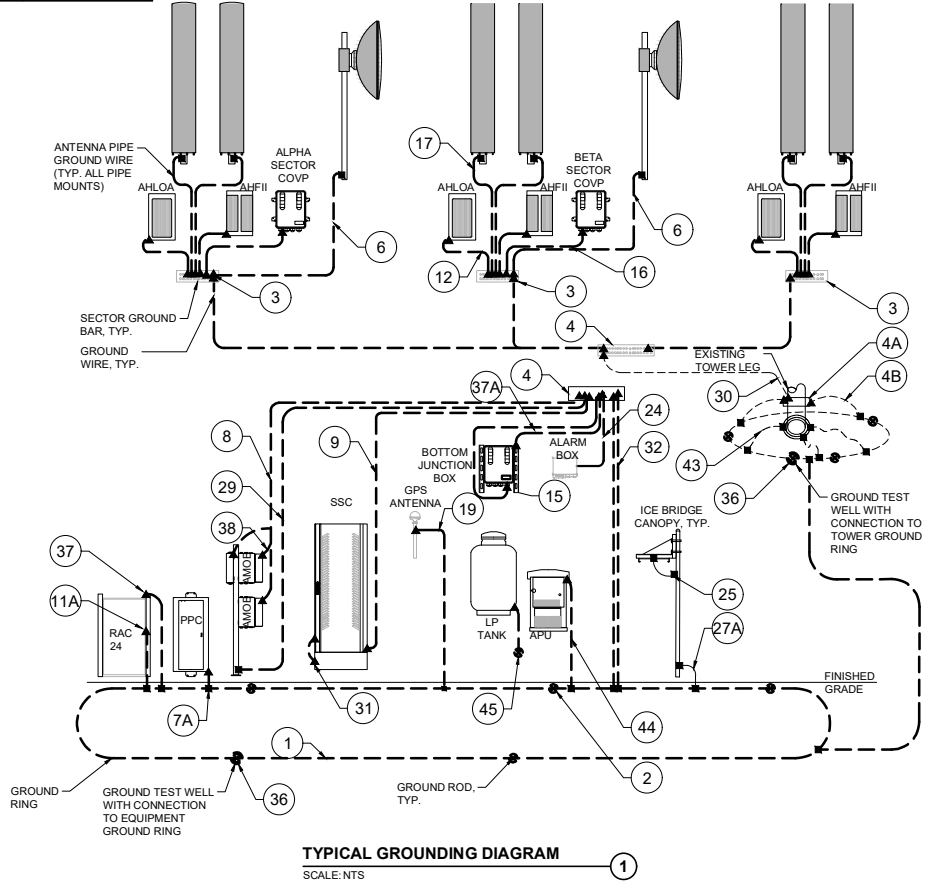
GROUNDING NOTES:

- 1.) UNDERGROUND AND OVERHEAD UTILITY LENGTHS TO BE DETERMINED FROM SITE PLAN.
- 2.) SEE ELECTRICAL SPECIFICATIONS SECTION 16000 FOR ALL ELECTRICAL AND GROUNDING INSTALLATION REQUIREMENTS.
- 3.) FOR ORIENTATION OF SITE LAYOUT SEE SITE PLAN, DRAWING.
- 4.) UDA CABINET FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
- 5.) GROUND KITS PROVIDED BY OWNER SHALL BE RETROFITTED TO ACCOMMODATE 2 HOLE LUG CONNECTION AND APPROPRIATE LENGTH.
- 6.) CONTRACTOR RESPONSIBLE TO PROVIDE OWNER CERTIFICATION OF RESISTIVITY TESTING.
- 7.) GROUND RODS TO BE INSTALLED AT 10' CENTERS.
- 8.) ALL GROUND LEADS TO BE SLEEVE IN 2" SCHEDULE 40 PVC CONDUIT AND SEALED W/ SILICONE.
- 9.) GROUND BAR SUPPLIED BY OWNER AND INSTALLED BY CONTRACTOR.
- 10.) ALL BENDS IN GROUNDING SYSTEM MUST BE SMOOTH AND WELL ROUNDED AND MAINTAIN BENDING RADIUS.
- 11.) SEE SITE PLAN FOR COAXIAL ROUTING THIS SHEET IS INTENDED FOR GROUNDING CLARITY ONLY AND IS SCHEMATIC IN DETAIL.
- 12.) GROUND KITS SHALL BE INSTALLED BETWEEN 1/8" OF ALL CONNECTORS.
- 13.) TOWER FOUNDATION DESIGN BY OWNER, INSTALLED BY CONTRACTOR.
- 14.) ADDITIONAL GROUND KITS TO BE PLACED AT 100' WHEN ANTENNA CENTERLINE IS 200' OR ABOVE.
- 15.) ALL CONDUITS TO BE SEALED W/ SILICONE TO PROVIDE A WATER TIGHT SEAL.

LEGEND:

---	EXISTING GROUND CABLE
---	PROPOSED GROUND CABLE
▲	MECHANICAL CONNECTION
■	EXOTHERMIC CONNECTION
⊕	GROUND ROD
⊗	GROUND TEST WELL

- | | |
|---|--|
| 1) GROUND RING, #2 SOLID, TINNED BARE COPPER WIRE CONSTRUCT RING FROM ONE CONTINUOUS PIECE. | 24A) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM NEW ALARM BOX TO GROUND RING |
| 2) 5/8" Ø X 10' COPPER CLAD GROUND ROD | 25) #2 AWG GREEN STRANDED COPPER GROUND WIRE FROM ICE BRIDGE TO ICE BRIDGE POST |
| 3) SECTOR GROUND BAR (TYP. OF 1 PER SECTOR) | 25A) #2 AWG GREEN STRANDED COPPER GROUND WIRE FROM FENCE TO FENCE POST |
| 4) MASTER GROUND BAR | 26) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM UTILITY POST TO GROUND RING |
| 4A) LOWER TOWER COPPER GROUND BAR | 27) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM GROUND RING TO FENCE POST |
| 4B) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE 4B FROM LOWER TOWER GROUND BAR TO GROUND RING (2 REQUIRED) | 27A) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM GROUND RING TO ICE BRIDGE POST |
| 5) #2 AWG GREEN STRANDED GROUND CU WIRE BOND DIRECTLY TO TOWER | 28) #2 AWG SOLID, TINNED BARE CU GROUND WIRE FROM JUNCTION BOX TO GROUND RING |
| 6) #6 AWG GREEN STRANDED GROUND CU WIRE FROM NEW MICROWAVE DISH TO LOWER TOWER GROUND BAR | 28A) #2 AWG GREEN STRANDED CU GROUND WIRE FROM JUNCTION BOX TO MASTER GROUND BAR |
| 7) #6 AWG GREEN STRANDED GROUND CU WIRE FROM PPC/AC PANEL TO MASTER GROUND BAR | 29) #2 AWG GREEN STRANDED CU GROUND WIRE FROM SYSTEM MODULE PLINTH TO MASTER GROUND BAR |
| 7A) #2 AWG SOLID, TINNED BARE CU GROUND WIRE FROM PPC TO GROUND RING | 30) #2 AWG GREEN STRANDED GROUND CU WIRE FROM UPPER TOWER GROUND BAR TO LOWER TOWER GROUND BAR |
| 8) #6 AWG GREEN STRANDED GROUND CU WIRE FROM STEEL CUBE W/ MODULES TO MASTER GROUND BAR | 30A) #2 AWG GREEN STRANDED GROUND CU WIRE FROM GROUND BAR TO GROUND RING |
| 9) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM NEW SSC TO MASTER GROUND BAR | 31) #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW SSC TO SSC PLINTH |
| 9A) #2 AWG SOLID, TINNED BARE CU GROUND WIRE FROM NEW SSC TO GROUND RING | 32) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM MASTER GROUND BAR TO GROUND RING |
| 10) #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW METER TO EXISTING SITE WATER MAIN | 33) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM NEW LIGHT TO GROUND RING |
| 11) #6 AWG GREEN STRANDED GROUND CU WIRE FROM NEW RAC 24 TO MASTER GROUND BAR | 33A) #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW LIGHT TO MASTER GROUND BAR |
| 11A) #2 AWG SOLID, TINNED BARE CU GROUND WIRE FROM NEW RAC 24 TO NEW GROUND RING | 34) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM STEEL PLATFORM TO GROUND RING |
| 12) #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW MODULE PLINTH TO NEW SECTOR GROUND BAR | 34A) #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW STEEL PLATFORM TO MASTER GROUND BAR |
| 13) #2 AWG GREEN JACKETED GROUND CU WIRE FROM MASTER GROUND BAR TO EXISTING SITE WATER MAIN | 35) #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW TMA TO MASTER GROUND BAR |
| 14) #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW SECTOR GROUND BAR TO MASTER GROUND BAR | 36) GROUND TEST WELL |
| 14A) #2 AWG SOLID, TINNED BARE CU GROUND WIRE FROM NEW SECTOR GROUND BAR TO NEW SECTOR GROUND BAR | 37) #2 AWG SOLID, TINNED BARE CU GROUND WIRE FROM UNISTRUT TO GROUND RING |
| 15) #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW BOTTOM JUNCTION BOX TO MASTER GROUND BAR | 37A) #2 AWG GREEN STRANDED GROUND CU WIRE FROM UNISTRUT TO MASTER GROUND BAR |
| 16A) #2 AWG SOLID, TINNED BARE CU GROUND WIRE FROM NEW BOTTOM COVP TO GROUND RING | 38) #6 AWG GREEN STRANDED CU GROUND WIRE FROM NEW SYSTEM MODULE PLINTH TO NEW SYSTEM MODULE |
| 16) #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW TOP COVP TO NEW SECTOR GROUND BAR | 39) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM NEW BATTERY CABINET TO MASTER GROUND BAR |
| 17) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM NEW ANTENNA PIPE TO NEW SECTOR GROUND BAR | 39A) #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW BATTERY CABINET TO BATTERY CABINET PLINTH |
| 18) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM METER SOCKET TO ISOLATED GROUND ROD | 40) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM NEW GROUND RING TO NEW TOWER GROUND RING |
| 19) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM NEW GPS ANTENNA TO GROUND RING | 41) #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW MASTER GROUND BAR TO NEW LADDER |
| 19A) #2 AWG GREEN STRANDED GROUND CU WIRE FROM NEW GPS ANTENNA TO MASTER GROUND BAR | 42) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM NEW TOWER GROUND RING TO THE EXTENT OF LEASE AREA (RADIAL LEAD) TO GROUND RING |
| 20) EXISTING GROUND RING | 43) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM TOWER BASE PLATE TO GROUND RING, (4) REQUIRED |
| 21) #6 AWG GREEN STRANDED GROUND CU WIRE FROM HYBRID CABLE & MICROWAVE COAX CABLE TO MASTER GROUND BAR | 44) #2 AGW SOLID, TINNED BARE COPPER GROUND WIRE FROM GENERATOR CABINET BUS BAR TO GROUND RING |
| 21A) #2 AWG SOLID, TINNED BARE CU GROUND WIRE FROM HYBRID CABLE TO GROUND RING | 45) #2 AWG SOLID, TINNED BARE COPPER GROUND WIRE FROM EXOTHERMIC WELD ON THE TANK BASE TO ISOLATED GROUND ROD |
| 22) EXISTING TOWER GROUND RING | |
| 23) #6 AWG GREEN STRANDED CU GROUND WIRE FROM NEW CABLE LADDER TO MASTER GROUND BAR | |
| 24) #2 AWG GREEN STRANDED COPPER GROUND WIRE FROM NEW ALARM BOX TO MASTER GROUND BAR | |



TYPICAL GROUNDING DIAGRAM
SCALE: NTS

GROUNDING NOTES:

1. 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.
2. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TINNED COPPER UNLESS NOTED OTHERWISE.
3. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
4. ALL GROUND CONNECTIONS ABOVE GRADE AND/OR INTERIOR SHALL BE COMPRESSION TYPE, TWO-HOLE LUGS OR DOUBLE-CRIMP "C" TAPS.
5. 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.
6. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS.
7. 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.
8. GROUND DEPTH SHALL BE 30" MINIMUM BELOW FINISHED GRADE, OR 6" BELOW FROST LINE, WHICHEVER IS GREATER.



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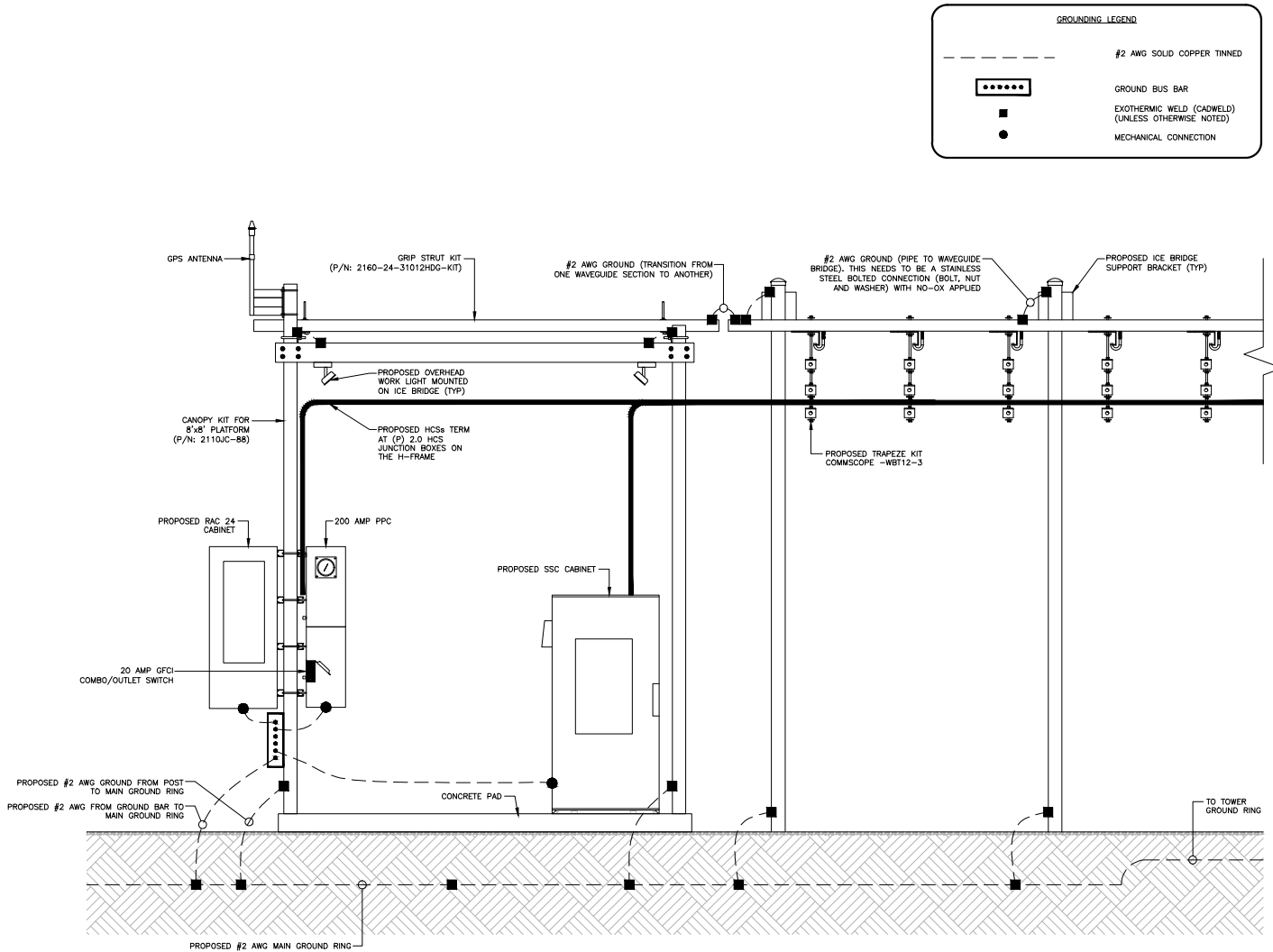
US-CO-5091 / DN02546A

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

SHEET TITLE:
TYPICAL T-MOBILE GROUNDING RISER

SCALE: NONE

PROJECT NO: 50000
SHEET NUMBER: E-8T



TYPICAL T-MOBILE EQUIPMENT GROUNDING ELEVATION ①
 SCALE: NTS



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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: 58003
 SHEET NUMBER: E-9T

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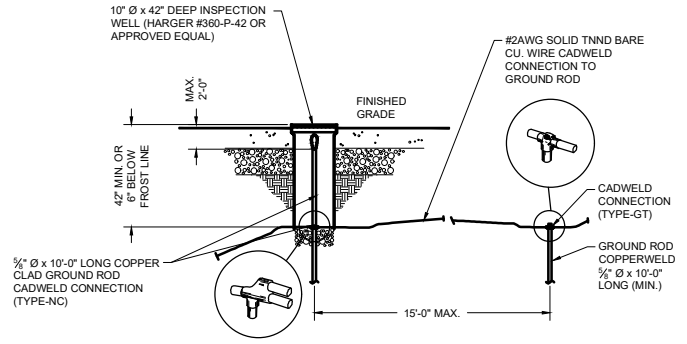
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FREMONT COUNTY

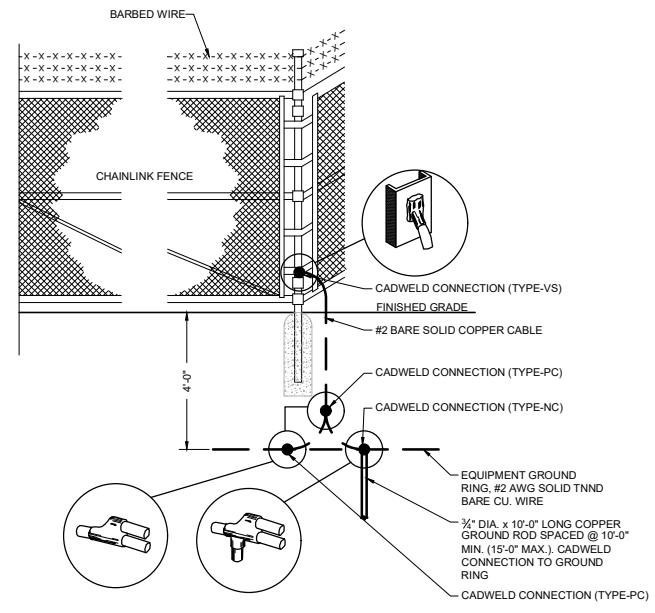
SHEET TITLE:
COMPOUND GROUNDING DETAILS

SCALE: NONE

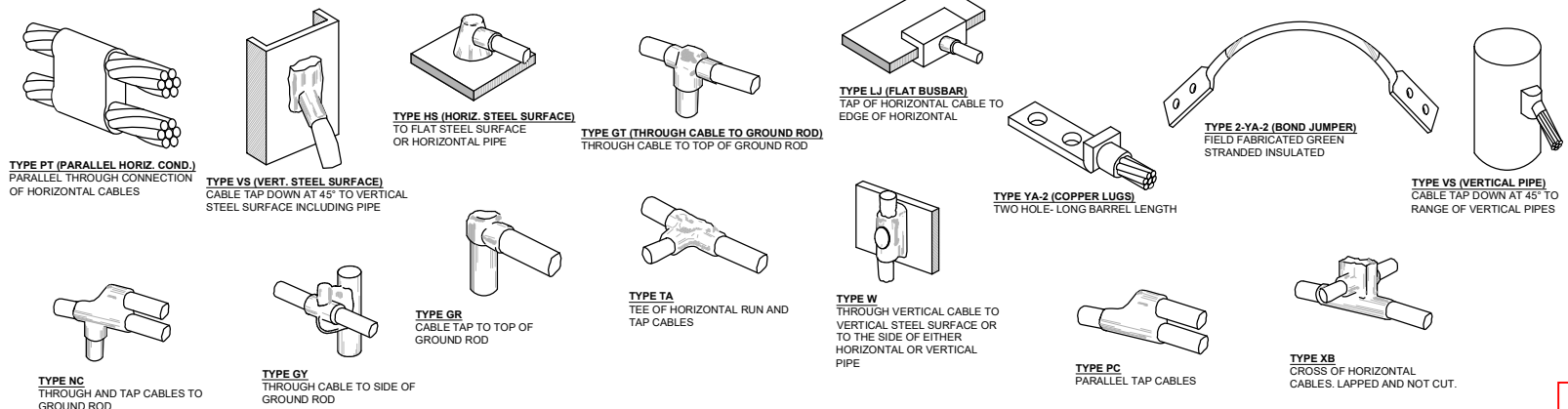
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SHEET NUMBER: E-10



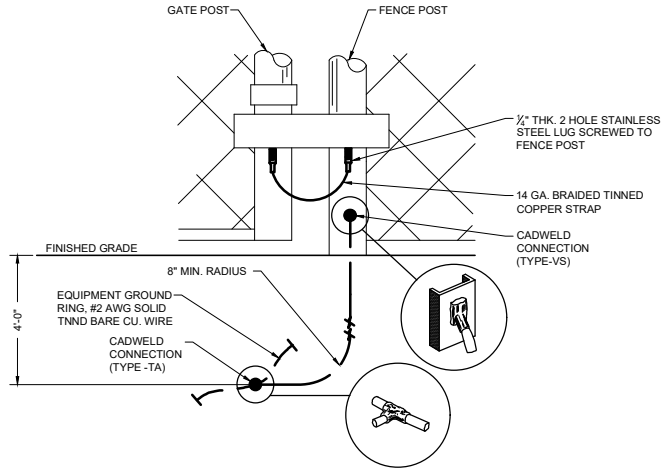
INSPECTION WELL & GROUND ROD DETAIL
SCALE: NTS



FENCE CORNER POST GROUNDING DETAIL
SCALE: NTS



TYPICAL CADWELD TYPES DETAIL
SCALE: NTS



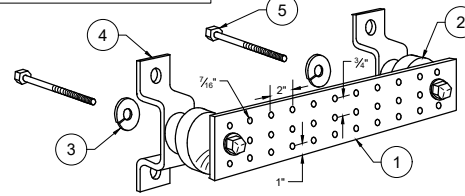
GATE POST GROUNDING DETAIL

SCALE: NTS

1

NOTES:

1. ALL MOUNTING HARDWARE CAN BE USED ON 6", 12", 18", ETC. GROUND BARS.
2. ENTIRE ASSEMBLY AVAILABLE FROM NEWTON INSTRUMENT CO. CAT. NO. 210608010 OR AS HARGER TGBI14420M.



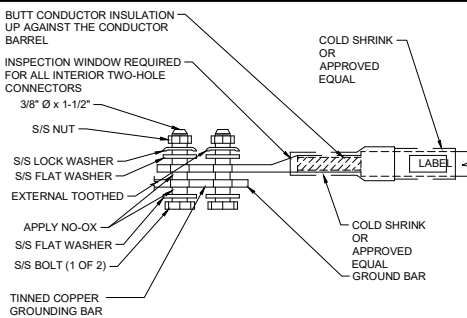
LEGEND

1. TINNED COPPER GROUND BAR, 1/2" x 4" x 20", NEWTON CO., HARGER TGBI14420M, OR EQUIVALENT. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS, INSTRUMENT CO. CAT. NO. 3061-4 OR HARGER EQUIVALENT.
3. 3/16" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8 OR EQUIVALENT.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056 OR HARGER EQUIVALENT.
5. 3/8" x 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1 OR HARGER EQUIVALENT.

TYPICAL GROUND BAR DETAIL

SCALE: NTS

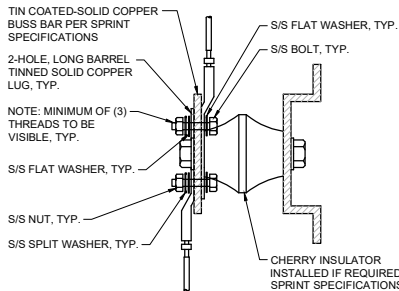
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MECHANICAL GROUND CONNECTION

SCALE: NTS

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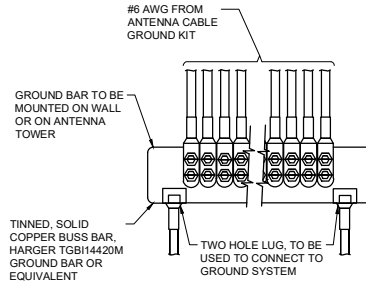
STANDARD GROUND BAR DETAIL

SCALE: NTS

4

NOTES:

1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING SPLIT WASHERS.
2. COAT WIRE END WITH ANTI-OXIDATION COMPOUND PRIOR TO INSERTION INTO LUG BARREL & CRIMPING.
3. APPLY ANTI-OXIDATION COMPOUND BETWEEN ALL LUGS & BUSS BARS PRIOR TO MATING & BOLTING.



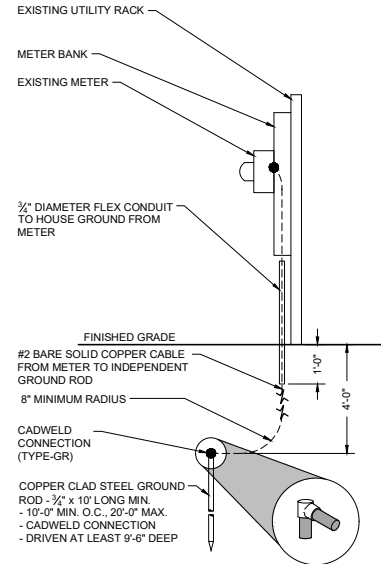
NOTE:

CONTRACTOR TO UTILIZE KOPR-SHIELD (THOMAS & BETTS) OR EQUIVALENT ON ALL LUG CONNECTIONS

GROUND BAR DETAIL

SCALE: NTS

5



SERVICE ENTRANCE GROUNDING

SCALE: NTS

6



Confirmation & 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.



ISSUE	DATE	DESCRIPTION	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	

US-CO-5091 / DN02546A

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

SHEET TITLE:
COMPOUND GROUNDING DETAILS

SCALE: NONE

PROJECT NUMBER: 58002
SHEET NUMBER: E-11



Planning and Zoning Department

615 Macon Avenue Room 210, Canon City, Colorado 81212

Telephone (719) 276-7360 / Facsimile (719) 276-7374

Email planning@fremontco.com

Inspection Checklist

Date **2/28/2024**

Any Current Permits? Yes or No

Any Past Permits? Yes or No

Current Violation? Yes or No

Past Violations Yes or No

Project Name: **SRU-24-001 VB BTS II LLC Tower**

VISUAL OBSERVATIONS CHECK LIST

of buildings: **4**

Types: Dwelling, Shop, Poultry sheds

SMM on site? **No**

Does the site plan match site conditions? **Yes**

Structures Code/Zoning Compliant: **No**

Land Use Compliant: **Yes**

	Notes/Concerns
At the time of this inspection there were no issues.	

Kyle Yarberry

2/28/24

Mike Fowler

2/28/24

Allen Zadroga

2/28/24



02/28/2024

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02/28/2024

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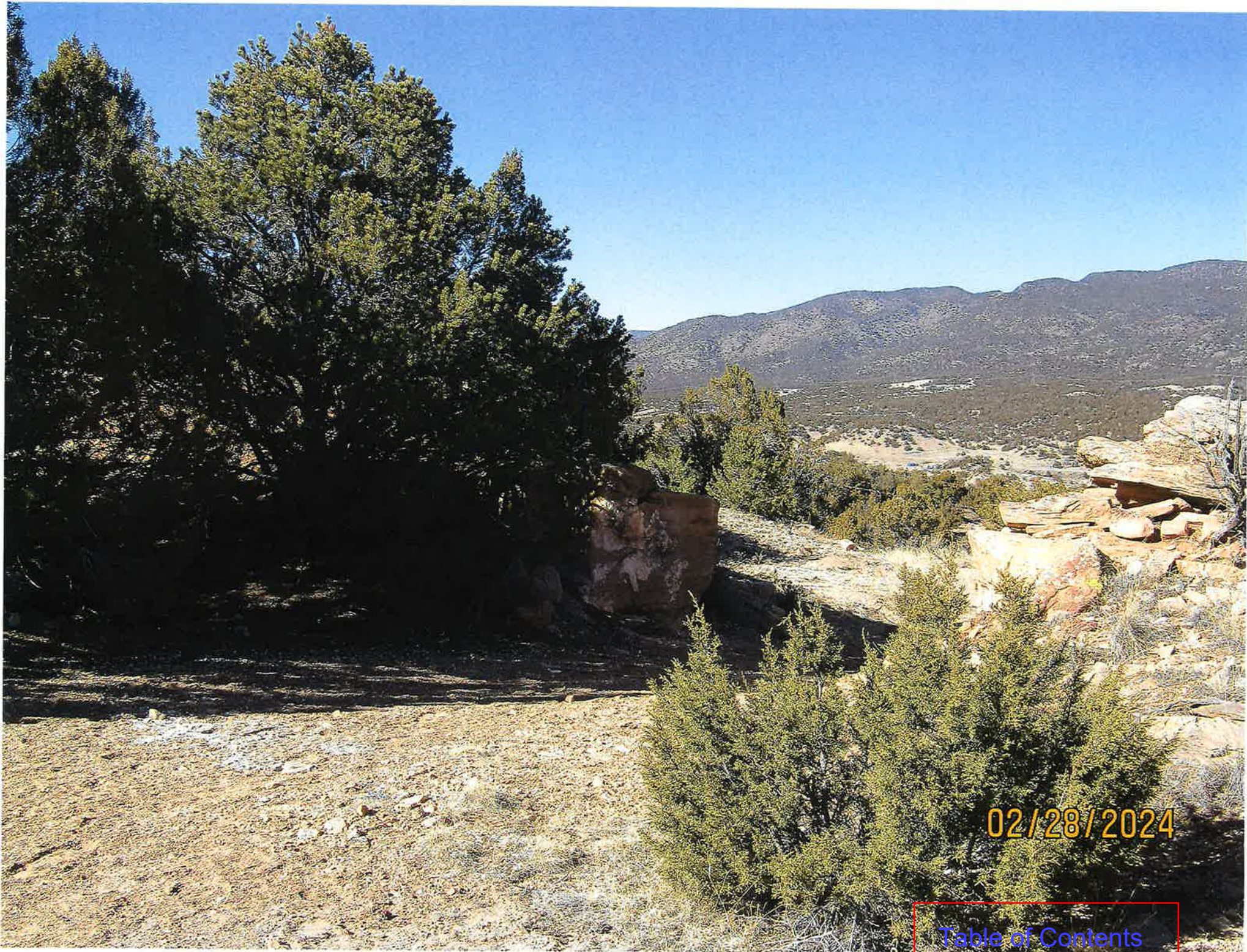
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FREMONT COUNTY
Project Engineer
615 Macon Avenue, Room 203b
Canon City, Colorado 81212
Office (719) 276-7367 Cell (719) 792-9372
Email: j.bunderson@fremontco.com

July 17, 2024

Daniel Victoria, Director
Fremont County Department of Planning and Zoning
615 Macon Avenue, Room 210
Canon City, CO 81212

Subject: VB BTS II LLC Tower SRU 24-001 (Resubmitted) Revised

I have reviewed the subject resubmitted application and after discussion with the applicant and engineer find that all my earlier concerns and comments have been addressed.

1. The apparent discrepancy in the Exhibit book has been corrected.
2. My comment on turning radius/backing is withdrawn. The parking and driveway design are adequate for the site.
3. My comment on RF hazard is also withdrawn as that topic is in the purview of the FCC.
4. Control of erosion around the main pad, the new road and existing road near the tower have been addressed in the re-submittal.
5. CDOT is reviewing the road access according to Item 15 of the SRU Application.

If you have questions or need further assistance, please don't hesitate to contact me.

Thank you.

J Bunderson

J K Bunderson
Fremont County Engineer



TELECOM SERVICES

10700 W. Higgins Rd., Ste. 240,
Rosemont, IL 60018
847 608-6300 Office
847 608-1299 Fax
www.lcctelecom.com

June 25, 2024

Mr. JK Bunderson
Fremont County Engineer
615 Macon Avenue, Room 210
Canon City, CO 81212

RE: SRU 24-001 VB BTS II LLC Tower (T-Mobile Texas Creek)

Dear Mr. Bunderson:

Please see the below responses to your letter dated May 8, 2024, regarding the application sited above.

1. It is not clear from the applicant's responses if my comment #1 has been addressed concerning the apparent conflict in location and orientation in the Exhibit Book.

Per the call we had on June 11, 2024, you stated this is not an issue, you have since looked at the drawings and this is clear.

2. My comment #2 on turning radius/backing has not been addressed.

Per the call we had on June 11, 2024, Adam Sindermann, Ramaker, and I stated there will be typically one SUV sized vehicle visiting the site approximately one time per month for approximately one hour for routine maintenance of the equipment on the site. There will be infrequent visits by more vehicles than that.

a. There is now a parking space identified, but it also does not appear to be adequate to reasonably turn in or out with a vehicle.

Per the call we had on June 11, 2024, Adam Sindermann, Ramaker, and I stated there will be typically one SUV sized vehicle visiting the site approximately one time per month for approximately one hour for routine maintenance of the equipment on the site. There will be infrequent visits by more vehicles than that. This layout is typical for cell sites throughout the country, technicians visiting the site are accustomed to this layout and the maneuvering on a site.

b. If other future carriers use the tower site, traffic will increase and the importance of adequate turning radius and parking will only increase.

Additional carriers on this site will not increase traffic to the site. Each carrier will have their own personnel visit the site as stated above in item a. The likelihood of multiple technicians visiting the site at the same time is minimal.

3. My comment #3 on building proximity to the tower is partially addressed in in regard to identifying the building and distance, but not in terms of possible RE hazard for the residence occupants. Is there a danger to the occupants of the on-site residence from RF exposure from a tower that is 366 feet away? Will the current and future occupants be made aware of any potential danger?

As you stated there is an existing on-site residence owned by our landlord David Easton. As I mentioned on our call, this is not an item Fremont County should address. The Federal Telecommunications Act of 1996 precludes municipalities from ruling on health and safety concerns. The basis for that is that the Federal Communications Commission (FCC) is responsible for the spectrum used by the various carriers. The emissions are reviewed by the FCC on a regular basis and deemed safe. The restriction is not geared to be a restriction, it is because most local officials do not have expertise in RF emissions. Having said that, the signal from a typical carrier is a non-ionizing energy which means there is no heating of the cells, therefore there is no negative impact on anyone in the area. A person would have to stand for a prolonged period of time, immediately in front of the antennas, at the height of the antennas, not on the ground.

a. In the applicant's responses in red under 'Site Plan' #3 he states that the distance is to the nearest off-site residence and that insurance covers damage for the landlord concerning the on-site residence. I am sure insurance is there to cover the tower fall risk but am not sure about the danger of RF energy to occupants of the on-site dwelling.

As stated above, there is no risk from RF emissions. As part of the lease with our landlord, the property is covered by Vertical Bridge from any damage to the property relating to the tower.

b. Additionally, Item 9 of CDWR form concerning wastewater disposal is answered 'N/A' by the applicant. The application is for Commercial AND Residential, and I think it needs to be clarified whether there is a septic tank and leach field, or if sewage is hauled out.

As discussed on June 11, 2024, although this is considered a "Commercial" installation, there will be no impact on the septic tank, leach field or sewage on the site. The only utilities needed for the proposed tower are fiber and power, both of which have been arranged with the local utility companies.

4. I could support a waiver of a full-fledged drainage plan, but I would first like to see some description in the site plan of drainage features such as ditches, culverts, riprap slope protection, etc for control of erosion around the main pad, the new road and existing road near the tower.

In our discussion, Adam Sindermann, Ramaker explained there will be no need for a Drainage Plan and you were in agreement. An Erosion Control Plan has been added to the attached drawings on sheets C-3 and C-4.

5. Did CDOT give approval according to Item 15 of the SRU Application?

We have been working with Michelle Regalado, with the Colorado Department of Transportation. Per the letter received from CDOT, we are required to provide construction (haul routes) information and they will make a determination if we will need an Access Permit. That information is included in the CDOT response letter.

Sincerely,



Michael Bieniek, AICP
Zoning Director
LCC Telecom Services
10700 Higgins Road, Suite 240
Rosemont, IL 60018
mbieniek@lcctelecom.com
Cell – (847) 287-1156
Fax – (847) 608-1299

**FREMONT COUNTY
ENVIRONMENTAL HEALTH DEPARTMENT**



615 MACON AVENUE, ROOM 212
CAÑON CITY, COLORADO
(719) 276-7460 FAX (719) 276-7461
wyatt.sanders@fremontco.com

TO: Planning and Zoning

ATTN: Director, Dan Victoria,
Planning Coordinator, Danielle Adamic

FROM: Wyatt Sanders, Fremont County Building Official
Fremont County Environmental Health

SUBJECT: SRU 24-001

DATE: February 12, 2024

This department has received the application for SRU 24-001 the VBTSII LLC Tower (T-Mobile Texas Creek) after my review of the application, this department has no existing violations against the property. Because the equipment is to be placed on a concrete slab and protected under a canopy, the applicant will need to apply for a building permit for this structure.

**FREMONT COUNTY
PLANNING COMMISSION MEETING MINUTES
August 6, 2024, AT 3:00 P.M.**

MEMBERS PRESENT

John Hamrick
Gardner Fey
Rudl Mergelman
Larry Brown
John Carper
Dale McCullough

STAFF PRESENT

Dan Victoria, Planning Director
Joanne Kohl, Office Manager

1. CALL TO ORDER

Chairman Hamrick Called the meeting to order at 3:00 pm.

2. PLEDGE OF ALLEGIANCE

Pledge of Allegiance was recited.

3. APPROVAL OF THE August 6, 2024, PLANNING COMMISSION AGENDA

Chairman Hamrick asked if there were any changes, additions or corrections to the August 6, 2024, Fremont County Planning Commission Agenda.

MOTION

Mr. Brown motioned to accept the August 6, 2024, Fremont County Planning Commission Meeting agenda.

SECOND

Mr. Fey second the motion.

Chairman Hamrick called for a roll call vote, and the motion passed unanimously. (6 of 6)

4. APPROVAL OF THE July 2, 2024, PLANNING COMMISSION MEETING MINUTES

Chairman Hamrick asked if there were any changes, additions or corrections to the July 2, 2024, Fremont County Planning Commission Meeting Minutes.

MOTION

Mr. Fey motioned for approval of the July 2, 2024, minutes.

SECOND

Mr. Brown second the motion.

Vice Chairman Hamrick called for a roll call vote, and the motion passed unanimously. (6 of 6)

5. UNFINISHED BUSINESS

None

6. NEW BUSINESS

Chairman Hamrick asks Director Victoria what the schedule is for replacing old chrome books for new chrome books for each of the board members.

Director Victoria states that the new chrome books are in, after this meeting the board members will turn in the old ones and IT will set up the new ones and members will be notified when the new ones will be available to pick up.

Chairman Hamrick calls Mr. Michael Bieniek to present the next item on the agenda.

1. SRU 24-001 VERTICAL BRIGDE WIRELESS COMMUNICATIONS FACILITY.

Mr. Bieniek states he is with a company called LCC Telecom services, located at 10700 West Higgins Rd. suite 240 in Rosemont, Illinois, and they represent Vertical Bridge and T-Mobile in this area and they are requesting to erect a 194' self-supporting lattice tower with a 5' lighting rod for a total height of 199'. States that it was mentioned to be 80' x 80' and actually, the tower will be located within a 60' x 60' ground area. Located at: 43340 US Highway 50, Canon City 81212. It is located approximately 73 ft. from the south property line for the tower. In the packet they included a fall zone letter, in the unlikely event of a failure, it will collapse in a coordinated manner. The fall zone radius is 50 ft. Lightning is actually not a problem for these towers, they have a 5ft. lightning rod on top and in fact towers do get struck quite a bit, they have a grounding bar that runs down in a grounding ring around the base of the tower, so it actually goes down into the soil. So, houses in the area are actually safer to have a cell tower in the area.

Chairman Hamrick asks Director Victoria for the staff report.

Director Victoria states that the applicant is requesting approval to erect a 194' self-supporting lattice tower with a 5' lightning rod for a total height of 199'.
The tower will be located within an 80' x 80' ground area. This parcel currently has a residential use with 1 single family dwelling.

ZONING/ LAND USE

PARCEL ZONING: Agricultural Forestry- Residential Use

NORTH: Agricultural Forestry- Residential Use

EAST: Agricultural Rural- Travel Trailer Park & Campground

SOUTH: Agricultural Forestry- Undeveloped

WEST: Agricultural Forestry- Undeveloped

Estimated traffic Count: Standard residential use traffic with 1 trip monthly for the tower
(amendment to current CDOT permit required)

Number of Access Points: 1

ACCESS: US HWY 50

Fire Protection: Tallahassee Fire Protection District

Floodplain: N/A

Water: N/A

Sanitation: None proposed.

Electric: Black Hills Energy

Refuse: Pack in/ Pack out

Natural Gas/Propane: N/A

Lighting: No lighting is proposed with this application as it falls below the 200' FAA threshold for lighting. (per application)

PUBLIC COMMENTS/CONCERNS:

None Received

AGENCY COMMENTS

Staff requested comments from various review agencies. Staff has incorporated comments received to date either in their entirety or in part into this staff report.

All comments received have been favorable.

Weed Management: Signed plan dated 4/10/2024.

Building Department: The applicant will need to apply for building permits.

Engineer: All concerns and comments have been addressed.

Fire Protection Authority: No additional improvements recommended.

WAIVERS:

1. Weed Management
2. Sanitation Plan
3. Refuse Plan
4. Landscaping Plan
5. Drainage Plan
6. Lighting Plan

RECOMMENDATION

Having found the application is in compliance with the requirements of the Fremont County Zoning Resolution, staff recommends **APPROVAL** of the Special Review Use Permit with the following contingencies/Conditions:

CONTINGENCIES:

Submittal of an amended CDOT permit.
Redline corrections on site plan.

CONDITIONS:

N/A

Chairman Hamrick asks the board if they have any comments or questions.

Mr. Carper asks if the Fremont County Airport was involved in any of this, were they made aware of this. Also that someone communicates to make sure the navigational maps are updated to show that on there.

Director Victoria states yes, the packet was sent to the Airport Manager and he can reach out to the helicopter company and let them know of this application.

Chairman Hamrick asks Director Victoria, the SRU is for the leased area or for the parcel.

Director Victoria states it will be for the leased area.

Chairman Hamrick states that is where he has a dilemma because the leased area is 80 x 80, but in the rules, the setback has to be 50ft. so with an 80 x 80 leased area, you can't achieve the setback. Just to note or put a flag noting this.

Mr. Fey states that isn't a tower kind of a hybrid structure as opposed to a garage or house.

Chairman Hamrick states, yes

Chairman Hamrick is open to a motion.

MOTION

Mr. Carper motioned to approve SRU 24-001 Vertical Bridge Wireless Communications Facility with the following Contingencies, Waivers and Conditions:

Waivers:

1. Weed Management
2. Sanitation Plan
3. Refuse Plan
4. Landscaping Plan
5. Drainage Plan
6. Lighting Plan

Contingencies:

1. Submittal of an amended CDOT permit.
2. Redline corrections on site plan.

SECOND

Mr. Fey second the motion.

Chairman Hamrick called for a roll call vote, and the motion passed unanimously. (6 of 6)

7. ADJOURNMENT

Chairman Hamrick adjourned the meeting at 3:18 p.m.

CHAIRMAN, FREMONT COUNTY PLANNING COMMISSION DATE