AMENDMENT NO. 3

LEASE FOR ANTENNA COLLOCATION AND FACILITIES SITE
Between
INCORPORATED COUNTY OF LOS ALAMOS,
An Incorporated County of the State of New Mexico,
As Landlord
And
CELLCO PARTNERSHIP, D/B/A VERIZON WIRELESS,
As Tenant

This **AMENDMENT NO. 3** is entered into by and between the **Incorporated County of Los Alamos**, an incorporated county of the State of New Mexico ("County" or "Landlord"), and **Cellco Partnership, d/b/a Verizon Wireless** ("Tenant"), to be effective for all purposes May 6, 2024.

WHEREAS, the original solicitation for Wireless Communications Facilities Lease, Request for Proposals, No. 2002-1350 (the "RFP") was issued on November 13, 2001; and

WHEREAS, County and Tenant, or their predecessors-in-interest, entered into a Lease Agreement for Antenna Collocation and Facilities Site ("Lease Agreement") on July 21, 2005, with the Primary Term of sixty (60) months. The Lease Agreement gave Tenant the right to extend the lease term for five (5) periods of five (5) years each by giving written notice of renewal to County at least ninety (90) days prior to the expiration of the then-current lease term; and

WHEREAS, the Primary Term was extended on October 1, 2010; and

WHEREAS, the Lease Agreement was amended pursuant to a certain Amendment No. 1 effective April 30, 2011 ("Amendment No. 1"); and

WHEREAS, the Lease Agreement was amended pursuant to a certain Amendment No. 2 effective October 1, 2015 ("Amendment No. 2"); and

WHEREAS, Tenant wishes to modify some of the major equipment to be used on the site identified in amended Exhibit B-3 of the Lease Agreement. Tenant will replace all nine (9) existing panel antennas with nine (9) new panel antennas; remove six (6) existing Tower Mounted Amplifier (TMA) units; install three (3) new Remote Radio Head (RRH) units; retain six (6) RRH units; retain one (1) hybrid line of coax; retain twelve (12) coaxial cables, Remote Electrical Tilt (RET); and retain one (1) twelve port junction box. All new equipment will be mounted at the very same location and heights as the existing antennas, will not extend beyond their current top height, and the modification will have no impact on the current facility's ground footprint, nor will it require any ground or water tank disturbance, all and only as shown in the ten (10) page plan set last revised on April 6, 2023 ("Plans") that are attached hereto as Exhibit B-4 and incorporated herein by this reference; and

WHEREAS, Tenant intends that Landlord rely on and Landlord does rely on the accuracy and reliability of all of the information in Exhibits B-4 (engineered plans); and

WHEREAS, Council now ratifies and affirms the award of this Amendment No. 3 and finds that ratification and affirmation of this Amendment No. 3 is in the best interest of County; and

WHEREAS, The Board of Public Utilities approved this Amendment No. 3 at a public meeting held on February 21, 2024; and

WHEREAS, the County Council approved this Amendment No. 3, by Ordinance No. 730, at a public meeting held on March 26, 2024.

NOW, THEREFORE, for good and valuable consideration, County and Tenant agree as follows:

I. The Tenant agrees that in connection with this Amendment No. 3 the County is acting solely within its proprietary rights and authority as a property owner.

II. To include a new Exhibit B-3 attached hereto, in its entirety. Exhibit B-3 is intended to supplement Exhibit B and Exhibit B-1 to the Lease Agreement. To the extent of a conflict between Exhibit B or Exhibit B-1 and Exhibit B-3, Exhibit B-3 shall control.

III. ADMINITRATIVE AND SITE REVIEW FEE. Within ninety (90) days after the parties fully execute this Amendment No. 3, Tenant shall pay to Landlord a nonrefundable one-time administrative and site review fee equal to FIFTEEN THOUSAND DOLLARS ($15,000.00) to cover Landlord's costs to review and execute this Amendment No. 3. The Administrative and Site Review Fee shall not be any offset to any Rental owed under this Third Amendment and is fully earned and non-refundable by Landlord upon the full execution of this Third Amendment.

Except as expressly modified by this Amendment No. 3, the Lease Agreement is hereby ratified and reaffirmed, and the terms and conditions of the Lease Agreement remain unchanged and in effect.

IN WITNESS WHEREOF, the parties have executed this Amendment No. 3 on the date(s) set forth opposite the signatures of their authorized representatives to be effective for all purposes on May 6, 2024.

ATTEST

_____
NAOMI D. MAESTAS
COUNTY CLERK

INCORPORATED COUNTY OF LOS ALAMOS

BY: _____
PHILO S. SHELTON III, P.E. **DATE**
UTILITIES MANAGER

Approved as to form:

_____
J. ALVIN LEAPHART
COUNTY ATTORNEY

STATE OF NEW MEXICO)
: SS
COUNTY OF LOS ALAMOS)

The foregoing instrument was acknowledged before me this _____day of May 2024, by Philo S. Shelton III, P.E., Utilities Manager for the Incorporated County of Los Alamos.

NOTARY PUBLIC

My Commission Expires:

Cellco Partnership,
D/B/A Verizon Wireless

By: _____

Name: _____

Date: _____

Title: _____

STATE OF ARIZONA)
: SS
COUNTY OF MARICOPA)

On _____, 2024, before me, _____, Notary Public, _____, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Arizona that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
Signature of notary Public

(Seal)

EXHIBIT B-3

Amendment No. 3

Verizon North Mesa Water Tower Equipment Changes

REMOVING:

- Nine (9) existing panel antennas
- Six (6) existing TMA Units

INSTALLING:

- Nine (9) new panel antennas
- Three (3) RRH units

RETAINING:

- Six (6) RRH Units
- One (1) hybrid line of coax
- Twelve (12) coaxial cables (RET)
- One (1) twelve port junction box

verizonwireless

TI	TITLE SHEET	A
GN1	GENERAL NOTES	A
GN2	GENERAL NOTES	A
GN3	SYMBOLS & ABBREVIATIONS	A
CI	SITE PLAN	A
C2	EQUIPMEKT PLAN	A
C3	EXISTING AND PROPOSED TOWER ELEVATIONS	A
C4	EXISTING AND PROPOSED AKTENNA PLANS	A
CS	RF DATA SHEET & COAX AKTENNA DIAGRAM	A
G1	GROUNDING DETAILS	A

verizonwireless

ComSite
ENGINEERING, LLC
3060 MERCER UNIVERSITY DR.,
SUITE 210
ATLANTA, GA 30341
404•825•0081

PATRICK J. COLLINS
NEW MEXICO
22933
PROFESSIONAL ENGINEER

Attachment B

SITE WORK GENERAL NOTES

1. THE SUBCONTRACTOR SfW.I. CONTACT I/TILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER I/TIUTIES WHERE ENCOUNTERED IN THE WORK SfW.I. BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECI/TION OF THE WORK. SHLL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAI/TION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRIWNG PIERS AROUND OR NEAR I/TIUTIES. SUBCONTRACTOR SfW.I. PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.

3. ALL SITE WORK SfW.I. BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY RUBISH, STUMPS, DEBRIS, STONES AND OTHER REFUSE SHALL BE REMOVED **FROM** THE SITE AND DISPOSED OF LEGALLY.

5. ALL EXISTING UNACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER I/TIUTIES, WHICH INTERFERE WITH THE EXECI/TION OF THE WORK, SfW.I. BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECI/TION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL I/TIUTIES.

6. SUBCONTRACTOR SfW.I. MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.

7. THE SUBCONTRACTOR SfW.I. PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE VERIZON WIRELESS SPECIFICATION FOR SITE SIGNAGE.

8. THE SITE SfW.I. BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BIS EQUIPMENT AND TOWER AREAS.

9. NO FILL OR EMBANKMENT MATERIAL SfW.I. BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SfW.I. NOT BE PLACED IN ANY FILL OR EMBANKMENT.

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

11. THA AREAS OF THE OWNER'S PROPERTY DIISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SfW.I. BE GRADED TO A UNIFORM SLOPE, AND STABALIZED TO PREVENT EROSION.

12. SUBCONTRACTOR SfW.I. MINIMIZE DISTURBANCE TO EXISTING SIRE DURING CONSTRUCTIION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SfW.I. BE IN ACCORDANCE WITH THE LOCAL JUSISDICTION'S GUIDUNES FDR EROSIION AND SEDIMENT CONTROL

STRUCTURAL STEEL NOTES

1. ALL STEEL SfW.I. BE GALVANIZED PER ASTM A 123 AND CONFORM TO THE FOLLOWING MINIMUM SPECS.:

HSS SHAPES	ASTM >500, GR. B
W-SHAPES & CHANNELS	ASTM A572, GR. 50
MISC. ANGLES & PLATES	ASTM A36
BASE PLATES	ASTM GR. 36

2 ALL BOLTS SfW.I. BE GALVANIZED PER ASTM A153 AND CONFORM TO ASTM GRADE A325 UNLESS NOTED OTHERWISE. ALL BOLTED CONNECTIONS SfW.I. BE EQUIPED WITH A PROPER, AND APPROVED NUT-LOCKING DEVICE.

3 ALL WIELDING WORK SfW.I. CONFORM TO THE AWS D1.1 STRUCTURAL WELDING CODE. ALL WIELDING SfW.I. BE PERFORMED BY CERTIFIED WIELDERS ONLY. WIELDING ELECTRODES SfW.I. BE E70XX.

4 ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SfW.I. CONFORM TO AISC SPECS AND CODES, LATEST EDmON.

5 THE CONTRACTOR SfW.I. SUBMIT DETAILED, ENGINEERED, COORDINATED AND CHECKED SHOP DRAWINGS FOR ALL STRUCTURAL STEEL TO THE
ENGINEER OF RECORD TO REVIEW FOR COMPLIANCE WITH DESIGN INTENT PRIOR TO THE START OF FAB. AND/OR ERECTION.

6 TORCH-CI/TIING OF ANY KIND SfW.I. NOT BE PERMmED.1.

7. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIOINS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.

8. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODED AND WELDING SfW.I. CONFORM TO AISC. WHERE FILLET WIELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUN SIZE PER TABLE J2.4 IN THE AISC 'MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SfW.I. BE TOUCHED UP.

9. BOLTED CONNECTIONS SfW.I. BE ASTM A325 BEARING TYPE (3/4"•) CONNECTIONS AND SfW.I. HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.

10. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.

11. POST INSTALLED ANCHORS SHALL BE PROVIDED IN ACCORDANCE WITH SPECIFICATION 3GS-T18-00013 "sELECTION, DESIGN, INSTALLATION, INSPECTION AND TESTING OF ADHESIVE AND MECHANICAL EXPANSION ANCHORS FOR WIRELESS SITE FACILITIES". ANCHORS SfW.I. BE HILTI OR APPROVED EQUAL INSTALLED, INSPECTED AND TESTED AS SHOWN ON THE DESIGN DRAWINGS. NO REINFORCING STEEL SfW.I. BE CUT WITHOUT PRIOR ENGINEERING APPROVAL.

WOOD FRAMING NOTES

ALL TIMBER JOISTS & LEDGIER SfW.I. CONFORM TO THE
FOLLOWING MINIMUM STRUCTURAL PROPERTIES:
Fb = 1,300 psi
Fv = 70 psi
E = 1,300 ksi

CONCRETE NOTES:

1. CONCRfi COMPRESSIVE STRENGTH SfW.I. BE 4,000 PSI **028** DAYS

2. ALL REINFORCING STEEL SfW.I. CONIFORM TO ASTM A615 GRADE 60.

3. CONTRACTOR SfW.I. PROVIDE CLEARANCE FOR ALL REBAR OF 3" UNLESS NOTED OTHERWISE

4. ALL REBAR SfW.I. BE SUPPORTED ABOVE SOIL SURFACE WITH ACI-APPROVED METAL REBAR CHAIRS.

STUCCO NOTES:

1. METAL LATHING & ACCESSORIES SfW.I. CONFORM TO ASTM 1063-86, MLSFA "TECHNICAL BUIIfTIN 101 "AND ASTM C 841 FOR SELECTION OF METAL LATH FOR EACH APPLICATION INDICATED, AND FS QQ-L-101. MANUFACTURIER'S STANDARD STEEL GALVANIZED FINISH (ASTM A 525 G90) ON STEEL PRODUCTS.

2. STUCCO MESH SHALL BE GALVANIZED HEXAGONAL WOVEN SIDE MESH 1-1/2", 17 GA., SELF FURRED.

3. EXTERIOR GALVANIZED Dw.tOND MESH LATH OF 3.4 lbs. PER SQ. YD. MAY BE USED INSTEAD OF STUCCO NETTING.

4. THREE COAT STUCCO SYSTEM TO BE LISED CONSIISTING OF MANUFACTURER'S STANDARID PRODUCTS CONSIISTING OF SEPARATE BASE COAT, SCRATCH COAT AND FINISH COAT MATERIALS. FIBER-REINFORCED PORTLAND CEMENT PLASTER BASECOAT TO BE USED.

5. INSTALLATION OF METAL SUPPORT SYSTEMS SfW.I. COMPLY WITH ASTM C 754.

6. CONTRACTOR TO APPLY Dw.tOND MESH AT ALL CORNERS AND OPENINGS.

7. CONTRACTOR TO PROVIDE EXPANSION AND CONTROL JOINTS WHERE NOTED ON PLANS AND AT ALL DISSIMILAR MATERIALS JUNCTIONS.

8 CONTRACTOR TO **MOIST** CURE EACH BASECOAT WITH CLEAN POTABLE **WATER** FOR 48-72 HOURS FOLLOWING INmAL BASECOAT APPLICATION. ALLOW BROWN COAT TO AIR CURE FOR **AN** AOOmONAL 7-10 DAYS BEFORE THE APPLICATION OF THE CEMENT BASED FINISH COATS.

CONCRETE MASONRY UNIT (CMU) NOTES:

1. CONCRfi MASONRY UNITS (CMU) PER ASTM C90.
   - **A.** PROVIDE CMU WITH AN AVERAGE UNIT COMPRESSIVE STRENGTH OF 1900 PSI.
   - B. PROVIDE NOMINAL FACE DIMENSIONS OF 8"iix8"Hx16"1. & ACTUAL DIMENSIONS OF 7-5/8"x7-5/8"x15-5/8". PROVIDE SPECIAL SHAPES AS REQUIRED AT CORNERS, JAMBS, & BOND BEAMS
   - C. PROVIDE TYPE I, MOISTURE CONTROLLED UNITS.
   - D. PROVIDE NORMAL WEIGHT UNITS.

2. MORTAR
   - A. EXTERIOR WALLS ABOVE GRADE: TYPE S, 1/ 4 TO 1/2 PART HYDRATED LIME TO 1 PART PORTLAND CEMENT BY VOLUME.
   - B. EXTERIOR WALLS AT OR BELOW ON GRADE: TYPE M, 1/ 4 PART HYDRATED LIME TO 1 PART PORTLAND CEMENT BY VOLUME.
   - C. PORTLAND CEMENT: ASTM C150, TYPE I OR II.
   - D. HYDRATED LIME: ASTM C207, TYPE S.

3. GROUT PER ASTM C476.

4. PROVIDE REINFORCING STEEL AND GROUT SOLID THREE CORNER CELLS AT ALL CORNER LOCATIONS.

5. AT **WALL** OPENINGS & END OF **WALL** LOCATIONS, PROVIDE REINFORCING & GROUT SOLID LAST TWO CELLS, OR THE TWO CELLS ON EITHER SIDE OF OIPENING.

6. GROUT SOLID ALL BOND BEAMS. RUN REINFORCING CONTINUOUS AROUND ALL CORNERS WITH APPROPRIATE SPLICES.

7. ALL CMU BLOCK TO HAVE EXTERIOR DECORATIVE FINISH TO MATCH BLOCK **WALL** OF ADJACENT BUILDING. CMU BLOCK **WALL** TO BE PAINTED TO MATCH ADJACENT BUILDING.

GROUNDING NOTES

1. THE SUBCONTRACTOR SfW.I. REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ). THE SITE-SPECIFIC (UL. LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORIDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLI/TION.

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

3. THE SUBCONTRACTOR SfW.I. PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 100 AND 81) FOR NEW GROUNDING ELECTRODE SYSTEMS. THE SUBCONTRACTOR SfW.I. FURNISH AND INSTALL SUPPLEMENTAL GROUNDING ELECTRODES AS NEEDED TO ACHIEVE **A** TEST RESULT OF 5 OHMS OR LESS.

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

5. EACH BIS CABINET SfW.I. BE DIRECTLY CONNECTED TO THE MASTER GROUND **BAR WITH** GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BIS; 2 AWG STRANDED COPPER FOR OUTDOOR BIS.

6. EXOTHERMIC WEILDS SfW.I. BE LISED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SfW.I. BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SfW.I. BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.

9. ALUMINUM CONDUCTOS OR COPPER CLAD STEEL CONDUCTORS SHALL NOT BE USE FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SfW.I. BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NED.

11. METAL CONDUIT AND TRAY SfW.I. BE GROUNDED AND MADE ELECTR1CAILY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SfW.I. NOT BE ROUTED THROUGH METAWC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METAL CONDUITS, METAL SUPPORT CUPS OR SLEEVES THROLIGH **WALLS** OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIOT TO MEET CODE REQUIREMENTS OR LOCAL CONDmIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SfW.I. BE USED. WHERE USE OF METALLIC CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE THE GROUND CONDUCTOR SfW.I. BE BONDED TO EACH END OF THE METAL CONDUIT.)

ELECTRICAL INSTALLATION NOTES

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

2. SUBCONTRACTOR SHALL MOIDFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BIS EQUIPMENT. SUBCONTRACTOR SfW.I. SUBMIT MOIDFICATIONS TO CONTRACTOR FOR APPROVAL.

3. ALL CIRCUITS SfW.I. BE SEGREGATED AND MAINTAIN **MINIMUM** CABLE SEPARARTION AS REQUIRED BY THE NEC AND TELCORDIA.

4. CABLES SfW.I. NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTORS AND CABIE SfW.I. BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAI. TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SfW.I. BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.

7. ALL ELECTRICAL COMPONENTS SfW.I. BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SfW.I. BE LABELED WITH THEIR VOLTAGE RATING.PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).

8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SfW.I. BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS WHERE PERMITTED SfW.I. BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES. USE LOW PROFILES TIE WRAPS.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SfW.I. BE SINGLE CONDUCTOR (12 **AWG** OR LARGER). 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SfW.I. BE SINGLE CONDUCTOR (6 AWG OR LARGER), 600V. OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABIE RATED FOR 9D' C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SfW.I. BE SINGLE CONDUCTOR 2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (12 AWG OR LARGER), 600V OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABIE RATED FOR 9D' C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSIION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SfW.I. BE RATED FOR OPERATION AT NO LESS THAN 7'S C (90" C IF AVAILABLE).

15. RACEWAY AND CABLE TRAY SfW.I. BE LISTED OR LABELED FOR ELECTRICAI. USE IN ACCORDANCE WITH MENA. UL, ANSI/IEEE, AND NEC.

16. **NEW** RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAI METAWC TUBING (EMT) OR RIGID NONMETAWC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SfW.I. BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAI. METAWC TUBING (EMT), ELECTRICAL NONMETAWC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SfW.I. BE LISED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SfW.I. BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SfW.I. BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRfi IN AREAS OF HEAVY VEHICLE TRAFFIC.

21. LIQUID-TIGHT FLEXIBLE METAWC CONDUIT (LQUID-TITE FLEX) SfW.I. BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SfW.I. BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES, AND WIREWAYS SfW.I. BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA. ANSI/IEEE. AND NEC.

24. CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. WIREWAYS SfW.I. BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWINWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SfW.I. BE GALVANIZED OR EPOXY-COATED SHEET STEEL, MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SfW.I. BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SfW.I. MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP DR BETTER) OUTDOORS.

28. NONMETAWC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SfW.I. NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRfiITION PANELS.

30. THE SUBCONTRACTOR SfW.I. PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBI/TION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

verizonwireless
4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR.,
SUITE 210
ATLANTA, GA 30341
404•825•0081

DRAWN BY:	MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION	
A	04/05/23	ISSUED FOR REVIEW	
REV	DATE	DESCRIPTION	

PATRICK J. COLLINS
NEW MEXICO
22933
PROFESSIONAL ENGINEER
4/7/2023

SITE VAME: NM4 QUEMAZON

ADDRESS: 80 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATERTANK

SHEET TITLE:
GENERAL NOTES: SITE WORK, GROUNDING, STEEL & ELECTRICAL

SIIEET NUMBER:
GN1
Attachment B

DIVISION 01000 - GENERAL REQUIREMENTS

PART 1 - GENERAL

1. ALL WORK TO BE PERFORMED BY CERTIFIED NETWORK INSTALLATION PERSONNEL. MINIMUM OF TWO MEMBERS PER CREW.

2. REFER TO VERIZON WIRELESS STANDARD CONSTRUCTION SPECIFICATIONS. IN CASE OF A CONFLICT, VERIZON WIRELESS STANDARD CONSTRUCTION SPECIFICATIONS (LATEST EDITION) SHALL BE FOLLOWED.

3. A STRUCTURAL ANALYSIS SHALL BE PERFORMED BY THE OWNER'S AGENT TO CERTIFY THAT THE EXISTING/PROPOSED COMMUNICATION STRUCTURE AND ITS COMPONENTS ARE STRUCTURALLY ADEQUATE TO SUPPORT THE EXISTING AND PROPOSED ANTENNAS, COAXIAL CABLES AND APPURTENANCES. PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT OR MODIFICATION OF THE EXISTING STRUCTURE, THE OWNER'S AGENT SHALL FURNISH A CERTIFICATION LETTER SEALED BY A REGISTERED PROFESSIONAL ENGINEER.

PART 2 - GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) VERIZON WIRELESS'S REPRESENTATIVE OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK.

4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS.

6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS / CONTRACT DOCUMENTS.

7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

8. THE CONTRACTOR SHALL MAINTAIN A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUM'S OR CLARIFICATIONS AVAILABLE FOR THE USE OF ALL PERSONNEL INVOLVED WITH THE PROJECT.

9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SITE CONDITIONS DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE ALL UNNECESSARY MATERIAL.

PART 2 - GENERAL NOTES (CONTINUED)

13. THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT SECTIONS OF THE STATE BASIC BUILDING CODE, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ARCHITECT/ENGINEER.

14. THE CONTRACTOR SHALL NOTIFY VERIZON WIRELESS'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL THE CONFLICT IS RESOLVED BY VERIZON WIRELESS'S REPRESENTATIVE.

15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.

16. THE CONTRACTOR SHALL NOTIFY THE RF ENGINEER FOR ANTENNA AZIMUTH VERIFICATION (DURING ANTENNA INSTALLATION) PRIOR TO CONDUCTING SITE SWEEPING.

17. THE GENERAL CONTRACTOR SHALL IN ALL INSTANCES CONFORM TO THE SPECIFICATIONS ISSUED BY VERIZON WIRELESS.

18. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH THE BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT STRUCTURAL ENGINEER'S APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE STRUCTURE. FILL FOR FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.

,WQQQ

1. ALL MATERIALS INCLUDING PLYWOOD SHALL BE AS SPECIFIED ON THESE PLANS.

SPECIAL CONSTRUCTION ANTENNA INSTALLATION

PART 1 - GENERAL

1.01 WORK INCLUDED

A. ANTENNAS AND FIBER CABLES SHALL BE AS SPECIFIED ON THESE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND PROPERTY. STRICT ADHERENCE TO OSHA STANDARDS IS MANDATED.

B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND VERIZON WIRELESS SPECIFICATIONS.

C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

D. INSTALL FIBER CABLES AND TERMINATION'S BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL FIBER CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.

.MEIALS.

PART 1 - GENERAL

1.01 WORK INCLUDED

A. THE WORK CONSISTS OF THE FABRICATION AND INSTALLATION OF ALL MATERIALS TO BE FURNISHED, AND WITHOUT LIMITING THE GENERALITY THEREOF, INCLUDES ALL EQUIPMENT, LABOR AND SERVICES REQUIRED FOR ALL STRUCTURAL STEEL WORK, INCLUDING ALL ITEMS INCIDENTAL THERETO AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS. INCLUDING:

1. STEEL FRAMING INCLUDING BEAMS, ANGLES, CHANNELS AND PLATES.

2. WELDING AND BOLTING OF ATTACHMENTS.

1.02 REFIERENCE STANDARDS

A. THE WORK SHALL CONFORM TO THE CODES AND STANDARDS OF THE FOLLOWING AGENCIES AS FURTHER CITED HEREIN:

1. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS, AS PUBLISHED IN "COMPILATION OF ASTM STANDARDS IN BUILDING CODES"

2. AWS: AMERICAN WELDING SOCIETY INC., AS PUBLISHED IN "STANDARD D1.1-2006, STRUCTURAL WELDING CODE".

3. AISC: AMERICAN INSTITUTE FOR STEEL CONSTRUCTION, AS PUBLISHED IN "CODE FOR STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"; "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".

PART 2 - PRODUCTS

2.01 MATERIALS

A. STRUCTURAL STEEL SHALL COMPLY WITH THE REQUIREMENTS OF ASTM A36 AND A50 FOR STRUCTURAL STEEL.

2.02 WELDING

A. ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS. CERTIFICATION DOCUMENTS SHALL BE MADE AVAILABLE FOR ENGINEER'S AND/OR OWNER'S REVIEW IF REQUESTED.

B. WELDING ELECTRODES FOR MANUAL SHIELDED METAL ARC WELDING SHALL CONFORM TO ASTM A-233, E70 SERIES. BARE ELECTRODES AND GRANULAR FLUX USED IN THE SUBMERGED ARC PROCESS SHALL CONFORM TO AISC SPECIFICATIONS.

C. FIELD WELDING SHALL BE DONE AS PER AWSD1.1 REQUIREMENTS VISUAL INSPECTION IS ACCEPTABLE WHEN FILLET SIZES ARE NOT SHOWN.

D. STUD WELDING SHALL BE ACCOMPLISHED BY CAPACITOR DISCHARGE (CD) WELDING TECHNIQUE USING MIDWEST FASTENERS, INC. CD100 CAPACITOR DISCHARGE STUD WELDER, NELSON STUD WELDER OR EQUAL.

2.2 PROVIDE STUD FASTENERS OF MATERIALS AND SIZES SHOWN ON DRAWINGS OR AS RECOMMENDED BY THE MANUFACTURER FOR STRUCTURAL LOADINGS REQUIRED.

2.3 FOLLOW MANUFACTURES SPECIFICATIONS AND INSTRUCTIONS TO PROPERLY SELECT AND INSTALL STUD WELDS.

2.03 BOLTING

A. BOLTS SHALL BE 3/4" (MINIMUM) CONFORMING TO ASTM A325, HOT DIP GALVANIZED OR ASTM A153. NUTS SHALL BE HEAVY HEX TYPE.

B. ALL BOLTS SHALL BE INSTALLED IN SLIP CRITICAL CONNECTIONS CONFORMING TO AISC, USING THE 1/4" TURN METHOD.

2.04 FABRICATION

A. FABRICATION OF STEEL SHALL CONFORM TO THE AISC AND AWS STANDARDS AND CODES.

2.05 FINISH

A. ALL STRUCTURAL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123.

2.06 PROTECTION

A. UPON COMPLETION OF ERECTION INSPECT ALL GALVANIZED STEEL AND PAINT ANY FIELD CUTS, WELDS, OR GALVANIZED BREAKS WITH ZINC BASED PAINT. COLOR TO MATCH THE GALVANIZING PROCESS.

PART 3 - EXECUTION

3.01 ERECTION OF STEEL

A. PROVIDE ALL ERECTION EQUIPMENT, BRACING, PLANKING, FIELD BOLTS, NUTS, WASHERS, DRIFT PINS, AND SIMILAR MATERIALS WHICH DO NOT FORM A PART OF THE COMPETED CONSTRUCTION BUT ARE NECESSARY FOR ITS PROPER ERECTION.

B. ERECT AND ANCHOR ALL STRUCTURAL STEEL IN ACCORDANCE WITH AISC REFERENCE STANDARDS. ALL WORK SHALL BE ACCURATELY SET TO ESTABLISHED LINES AND ELEVATIONS AND RIGIDLY FASTENED IN PLACE WITH SUITABLE ATTACHMENTS TO THE CONSTRUCTION OF THE BUILDING.

C. TEMPORARY BRACING, GUYING AND SUPPORT SHALL BE PROVIDED TO KEEP THE STRUCTURE SAFE AND ALIGNED AT ALL TIMES DURING CONSTRUCTION, AND TEMPORARY LOADS AND STAY WITHIN SAFE CAPACITY OF ALL BUILDING COMPONENTS.

verizonwireless
4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR., SUITE 210
ATLANTA, GA 30341
404-825-0081

DRAWN BY:	MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION	
A	04/05/23	ISSUED FOR REVIEW	
REV	DATE	DESCRIPTION	

PATRICK J. COLLINS NEW MEXICO 22933 PROFESSIONAL ENGINEER
4/7/2023

SITE VAME: NM4 QUEMAZON

ADDRESS: 80 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATERTANK

SHEET TITLE:

GENERAL NOTES: TOWERS

SIIEET NUMBER:

GN2

Attachment B

SYMBOLS & ABBREVIATIONS

SYMBOLS USED AS ABBREVIATIONS

&	and
L	angle
@	at
<t.	centerline
[	channel
d	penny
..L	perpendicular
le.	plate
#	pound, number
</J	round
r/J	square
w/	with

ELEVATION SPECIFIC ABBREVIATIONS

C.O.R. =	CENTER OF RADIATION
A.L.	ATTACHMENT LEVEL
B.T. =	BOTTOM TIP LEVEL
T.T. =	TOP TIP LEVEL
T.O.S. =	TOP OF STRUCTURE
T.O.C. =	TOP OF CONCRETE
B.O.B.P. =	BOTTOM OF BASE PLATE

COMMON ABBREVIATIONS

ABV	above
AFF	above finished floor
ACC	**access**
ACFL	access floor
AC PNL	access panel
AC	acoustical
ACPL	acoustical plaster
ACT	acoustical tile
ADH	adhesive
A/C	air conditioning
ALT	alternate
ALUM	aluminum
ANCH	anchor, anchorage
AB	anchor bolt
ANOD	anodized
APPROX	approximate
ARCH	architect(ural)
AD	area drain
AUTO	automatic
BSMT	basement
BM	beam
BRG	bearing
BEL	below
BET	between
BVL	beveled
BIT	bituminous
BLK	block
BLKG	blocking
BO	board
BS	both sides
BW	both ways
BOT	bottom
BRK	brick
BRZ	bronze
BLDG	building
BUR	built-up roofing
CAB	cabinet
CPT	carpet(ed)
CSMT	casement
CI	cast iron
CB	catch basin
CLG	ceiling
CEM	cement
CEM PLAS	cement plaster (portland)
CER	ceramic
CT	ceramic tile
CIR	circle
CLR	clear(ance)
CLOS	closet
C.O.	cleanout
CW	cold water
COL	column
COMB	combination
COMP	composition, composite
CONC	concrete
CMU	concrete masonry unit
CONST	construction
CONT	continue
CONTR	contractor
CJ	control joint
CPR	copper
CORR	corridor
CG	corner guard
CTR	counter
CTR FLG	counter flashing
CRS	course(s)
COORD	coordinate
DP	dampproofing
DEM	demolish, demolition
DEPT	department
DTL	detail
DIAG	diagonal
DIAM	diameter
DIM	dimension
DBL	double
DIV	division
DR	door
DN	down
DS	downspout
DRN	drainage
DWR	drawer
DWG	drawing
EA	each
EF	each face
EW	each way
E	east
ELEC	electric(al)
EWC	electric water cooler
ELEV	elevator, elevation
EMER	emergency
ENCL	enclose(ure)
EQ	equal
EQP	equipment
ESC	escalator
EST	estimate
EXH	exhaust
EXG	existing
EXP	expansion
EB	expansion bolt
EJ	expansion joint
EXP	exposed
EXT	exterior
ETR	existing to remain
FM	Factory Mutual
FO	face of
FAST	fasten, fastener
FIN	finish(ed)
FFL	finished floor line
FA	fire alarm
FE	fire extinguisher
FEC	fire extinguisher cabinet
FPL	fireplace
FP	fireproof
FRT	fire-retardant
FIX	fixture
FLG	flashing
FLR	floor(ing)
FD	floor drain
FLUOR	fluorescent
FT	foot, feet
FTG	footing
FND	foundation
FRM	frame(d), (ing)
FUR	furred, furring
FUT	future
GA	gage, gauge
GALV	galvanized
GC	general contract(or)
GL	glass, glazing
GB	grab bar
GRD	grade, grading, ground
GRT	grout
GWB	gypsum wall board
GYP	gypsum
HC	handicapped
HDWR	hardware
HDWD	hardwood
HDR	header
HTG	heating
HVAC	heatina/ventilating/air condi ioning
HD	head
HT	height
HEX	hexagonal
HC	hollow core
HM	hollow metal
HOR	horizontal
HW	hot water
H_20	water
IN	inch
INCL	include(d), (ing)
ID	inside diameter
INSUL	insulate(d), (ion)
INT	interior
INTM	intermediate
INV	invert
JT	Joint
JB	Junction box
KIT	kitchen
KO	knockout
KO	knock(ed) down
LBL	label
LAB	laboratory
LAD	ladder
LAM	laminate(d)
LAV	lavatory
LH	left hand
L	length
LT	light
LTWT	lightweight
LTL	lintel
LVR	louver
L.C. CPR	lead coated copper
MH	manhole
MFR	manufacture(er)
MAS	masonry
MO	masonry opening
MTL	materials
MAX	**maximum**
MECH	mechanic(al)
MBRN	membrane
MTL	metal
MIN	minimum
MIR	mirror
MISC	miscellaneous
MLD	molding, moulding
MR	moisture resistant
MULL	mullion
NAT	natural
NOM	nominal
N	north
NIC	not in contract
NTS	not to scale
NO	number
OFF	office
OC	on center(s)
OPG	opening
OPP	opposite
OD	outside diameter
OA	overall
OH	overhead
PNT	paint(ed)
PR	pair
PNL	panel
PAR	parallel
PKG	parking
PART. BO	particle board
PTN	partition
PVMT	pavement
PERF	perforate(d)
PLAS	plaster
PLAM	plastic laminate
PL	plate
PLWD	plywood
PCF	pounds per cubic foot
PLF	pounds per lineal foot
PSF	pounds per square foot
PSI	pounds per square inch
P.C.	precast
PCCONC	precast concrete
PREFAB	prefabricate(ed)
PL	property line
P.C. PLAS	portland cement plaster
QT	quarry tile
RAD	radius
RWC	rainwater conductor
REC	recessed
REF	reference
REFR	refrigerator
REG	register
REINF	reinforce(d), (ing)
RCP	reinforced concrete pipe
REM	remove
REQ'D	required
RA	return air
RVS	reverse(side)
REV	revision
RH	right hand
ROW	right of way
R	riser
RVT	rivet
RD	roof drain
RFG	roofing
RM	room
RO	rough opening
RSLNT	resilient
SCHED	schedule
SCN	**screen**
SL	sealant
SL&BR	sealant & backer rod
SECT	section
SHTG	sheathing
SHT	sheet
SIM	similar
SGL	single
SK	sink
SC	solid core
S	south
SPK	speaker
SPEC	specification(s)
SQ	square
SSTL	stainless steel
STD	standard
STL	steel
STOR	storage
SD	storm drain
STRUCT	structural
SURF	surface
SUSP	suspended
SYM	symmetry(ical)
SYS	system
SLD SURF MTL	solid surface material
TEMP	temporary
TEL	telephone
TV	television
TC	terra cotta
TZ	terrazzo
THK	thick
THR	threshold
T&G	tongue & groove
TEMP GL	tempered glass
T.F.	transparent finish
T&B	toP. & bottom
TA	toilet accessory
TOC	top of curb(concrete
TOS	top of stee
T.O.	top of
T	tread
TYP	typical
UL	Underwriters Laboratory
UNFIN	unfinished
UNO	unless noted otherwise
UTIL	utility
U/S	underside
VAC	**vacuum**
VB	vapor barrier
VAR	varies
VNR	veneer
VERT	vertical
VEST	vestibule
VG	vertical grain
VCB	vinyl cove base
VCT	vinyl composition tile
VWC	vinyl wall covering
VIF	verify in field
WSCT	wainscot
WTW	wall to wall
WT	weight
WH	wall hung
WC	water closet
WP	waterproofing
WR	water repellent/resistant with
F	welded wire fabric
W	west
W	width, wide
WOW	window
WM	wire mesh
W/O	without
WD	wood

LEGEND

ELEVATION NO.
SHEET NO.

SHEET NO.

MULTIPLE ELEVATION TAG

* I SECTION NO.
SHEET NO.

@ DETAIL NO.
SHEET NO.

0----- COLUMN LINE

$— SPOT ELEVATION OR DATUM POINT

-- - - -- PROPERTY LINE

verizonwireless

4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR.,
SUITE 210
ATLANTA, GA 30341
404-825-0081

DRAWN BY:	MA	CHECKED BY:	PC

REV	DATE	DESCRIPTION
0	04/06/23	ISSUED FOR CONSTRUCTION
A	04/05/23	ISSUED FOR REVIEW

PATRICK J. COLLINS
NEW MEXICO
22933
PROFESSIONAL ENGINEER
4/7/2023

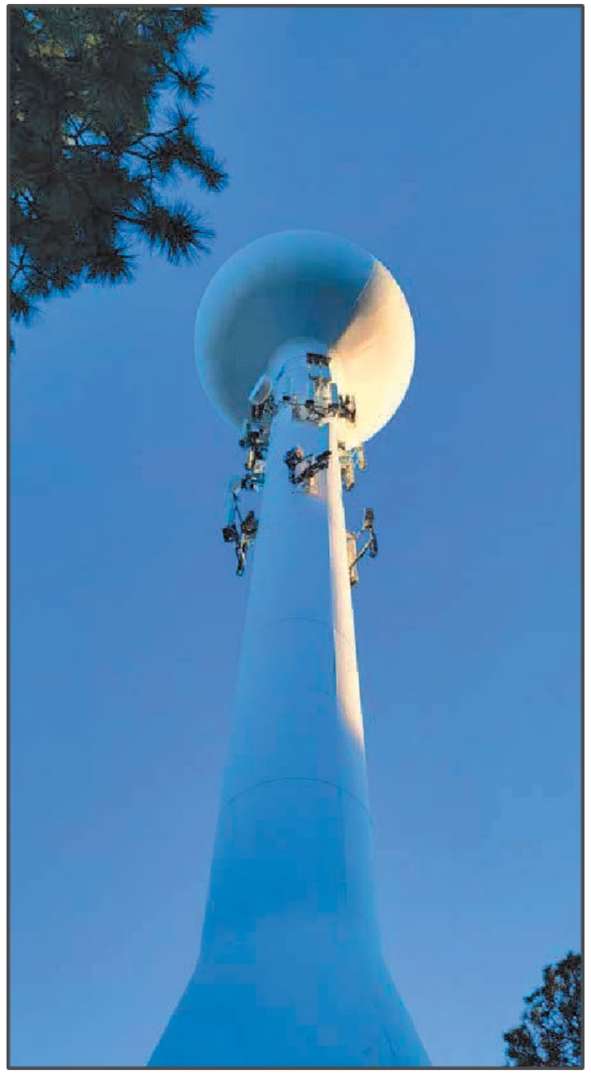
SITE VAME: NM4 QUEMAZON

ADDRESS: 80 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATERTANK

SHEET TITLE:
GENERAL NOTES: SYMBOLS, ABBREVIATIONS, & LEGEND

SIIEET NUMBER:
GN3
Attachment B

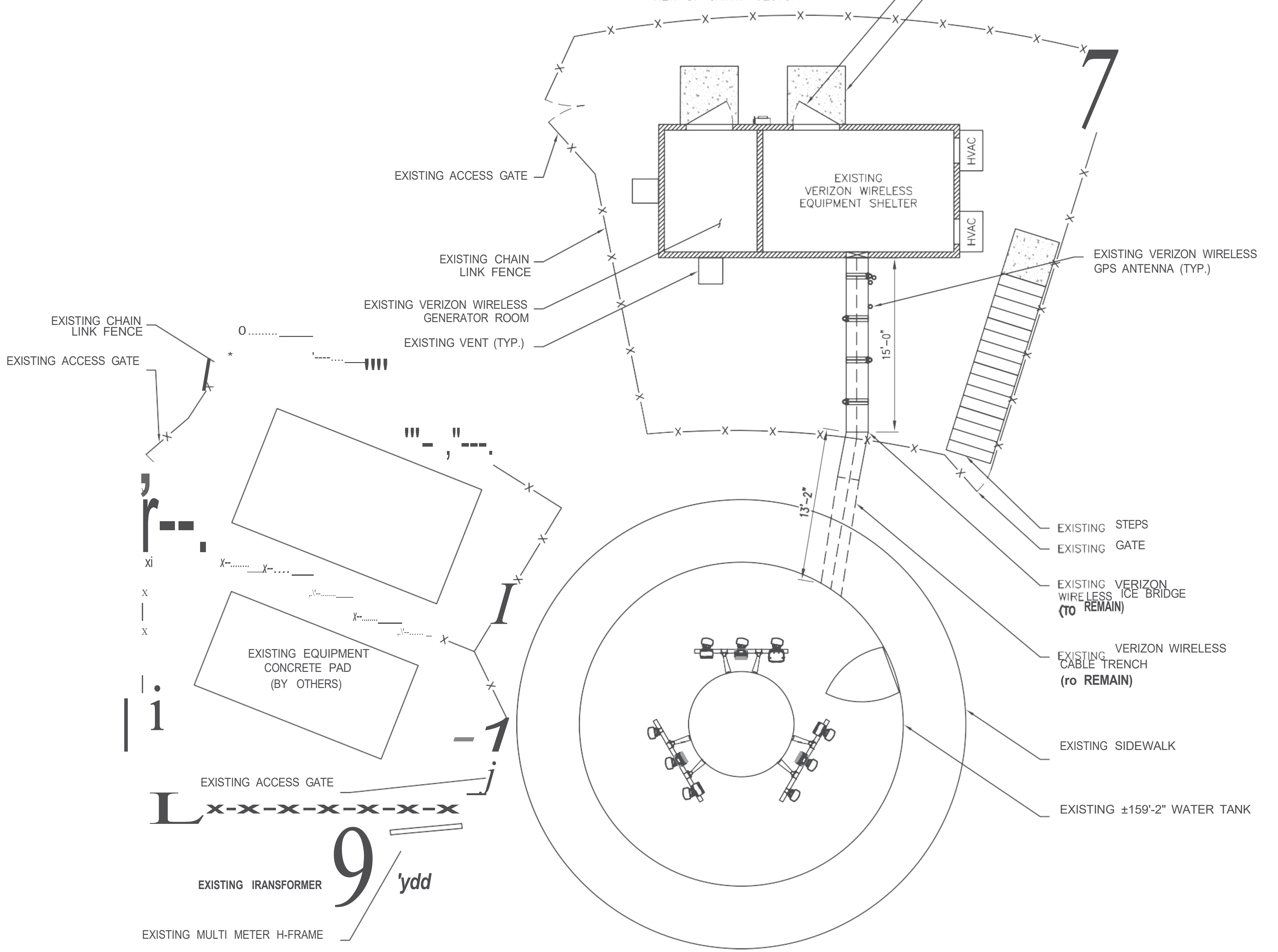


OVERALL VIEW OF EXISTING TOWER

VIEW OF ALPHA SECTOR

VIEW OF BETA SECTOR

VIEW OF GAMMA SECTOR



SITE PLAN

SCALE: 3/32" = 1'-0" (11" x 17") 64' 32' 0' 128'

SCALE: 3/16" = 1'-0" (22" x 34") 32' 16' 0' 64'

NOTE:

1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO VERIZON CONSTRUCTION MANAGER AND ENGINEER.
2. HVAC LOADING AND ELECTRICAL DESIGNS AND COORDINATION BY OTHERS.
3. INFORMATION SHOWN FOR DEPICTION PURPOSES ONLY. THIS INFORMATION IS NOT A LEGAL BOUNDARY SURVEY AND SHOULD NOT BE USED AS SUCH.
4. EXISTING UNDERGROUND UTILITIES ARE LIKELY TO BE PRESENT THROUGHOUT THE COMPOUND. THE EXACT LOCATIONS ARE UNKNOWN. CONTRACTOR TO CONDUCT UNDERGROUND UTILITY LOCATES PRIOR TO CONSTRUCTION.

verizon wireless

4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR.,
SUITE 210
ATLANTA, GA 30341
404-825-0281

DRAWN BY: MA CHECKED BY: PC

REV	DATE	DESCRIPTION
0	04/06/23	ISSUED FOR CONSTRUCTION
A	04/05/23	ISSUED FOR REVIEW

PATRICK J. COLLINS
NEW MEXICO
22933
PROFESSIONAL ENGINEER
4/7/2023

IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT. UNLESS EXPLICITLY TO THE COMSITE ENGINEERING LLC IN WRITING, ALL COMSITE ENGINEERING LLC DISCLAIMS ANY LIABILITY ASSOCIATED WITH THE REUSE, ALTERATION OR MODIFICATION OF THE CONTENTS HEREIN.

SITE NAME: NM4 QUEMAZON

ADDRESS: 80 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATER TANK

SHEET TITLE:

SITE PLAN

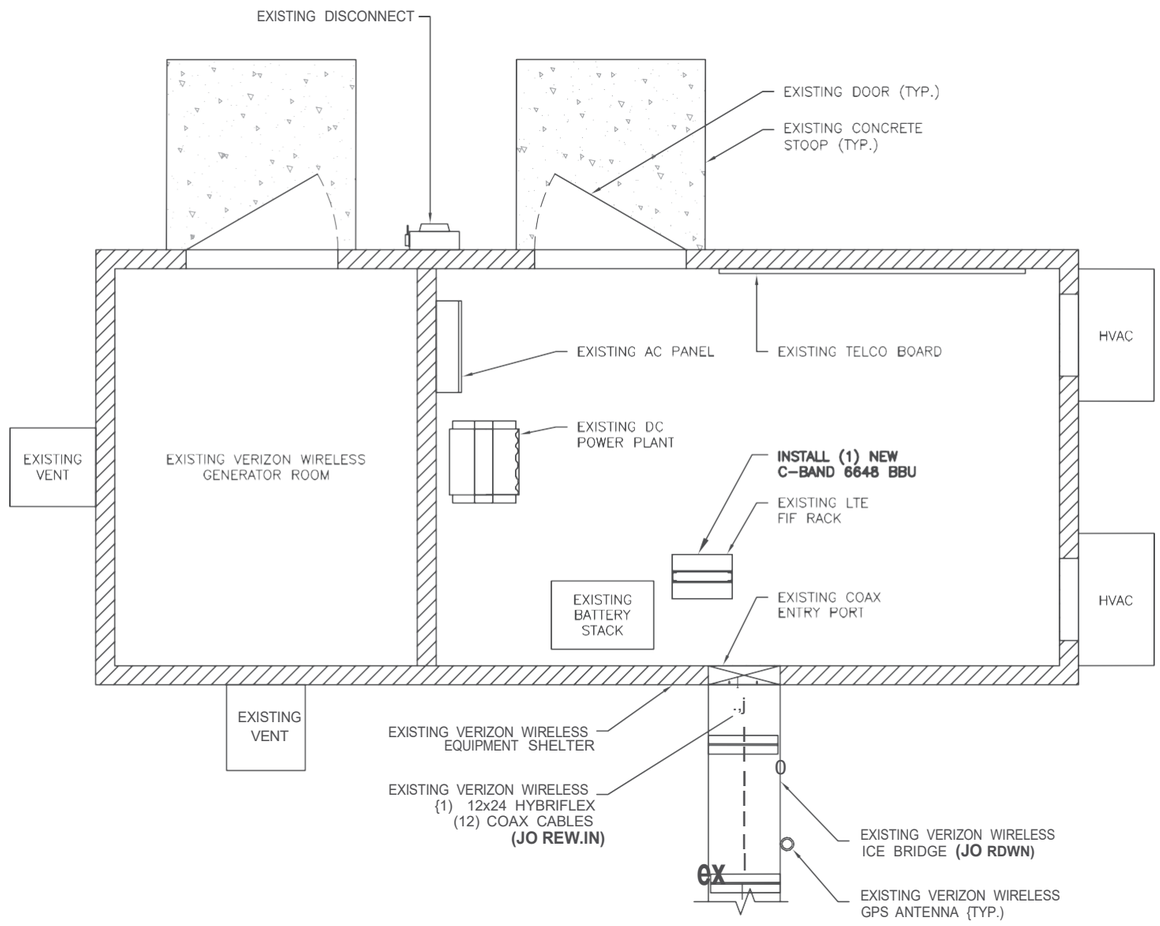
SHEET NUMBER:

C1

Attachment B

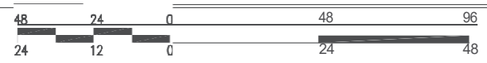
NOTE:

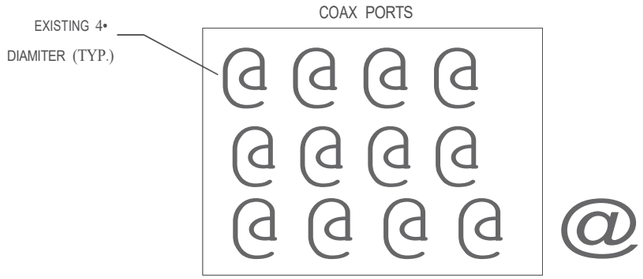
1. CONTRACTOR TO VERIFY All DIMENSIONS AND REPORT Afff DISCREPANCIES TO VERIZON, CONSTRUCTION MANAGER, AND ENGINEER.
2. HVAC LOADING AND ELECTRICAL DESIGNS AND COORDINATION BY OTHERS.
3. INFORMATION SHOWN FOR DEPICTION PURPOSES ONLY. THIS INFORMATION IS NOT A LEGAL BOUNDARY SURVEY AND SHOULD NOT BE USED AS SUCH.
4. EXISTING UNDERGROUND UTIUTIES ARE LIKELY TO BE PRESENT THROUGHOUT THE COMPOUND. THE EXACT LOCATIONS ARE UNKNOWN. CONTRACTOR TO CONDUCT UNDERGROUND UTILITY LOCATES PRIOR TO CONSTRUCTION.



I EXISTING EQUIPMENT PLAN

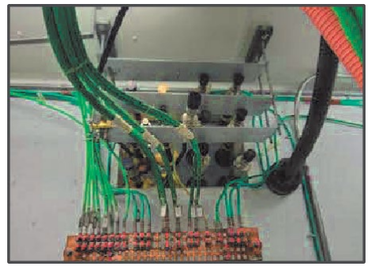
SCALE: 1/4" = 1'-o• (11" x 17")
SCALE: 1/2" = 1'-o• (22" x 34")



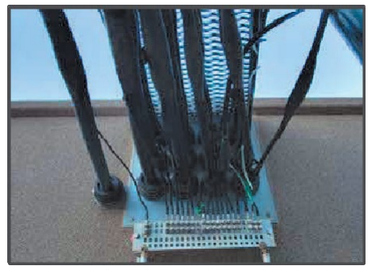


TDIAGRAM

LJ =EMPTY
U=USED



INSIDE VIEW OF COAX ENTRY PORT



OUTSIDE VIEW OF COAX ENTRY PORT

EXISTING ESTIMATED CABLE LENGTHS*			
SECTOR	ALPHA	BETA	GAMMA
H□RZ.	±38'	±38'	±38'
VERT	±107'	±107'	±107'
+10%	±15'	±15'	±15'
TOTAL (FT)	±160'	±160'	±160'
*ALL DIMENSIONS TD BE VERIFIED IN FIELD (V.I.F.)			

0 COAX CONFIGURATION & CABLE LENGTHS

verizonwireless

4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR., SUITE 210
ATLANTA, GA 30341
404•825•0081

DRAWN BY:	MA	CHECKED BY:	PC

REV	DATE	DESCRIPTION
0	04/06/23	ISSUED FOR CONSTRUCTION
A	04/05/23	ISSUED FOR REVIEW

PATRICK J. COLLINS NEW MEXICO 22933 PROFESSIONAL ENGINEER
4/7/2023

SITE VAME: NM4 QUEMAZON

ADDRESS: 80 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATER TANK

SHEET TITLE:

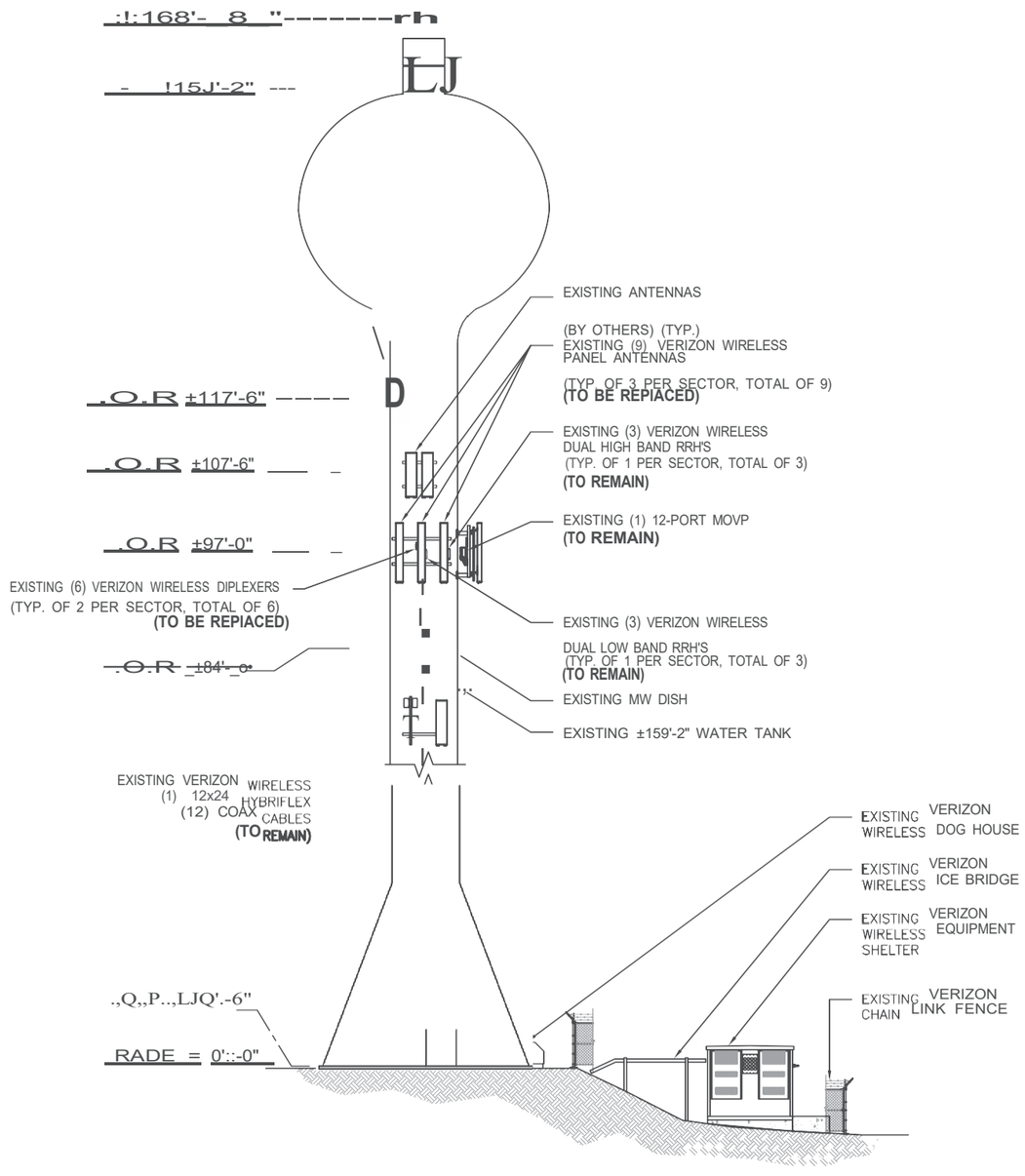
EXISTING EQUIPMENT PLAN

SHIEET NUMBER:

C2

Attachment B

NOTE:
CONTRACTOR TO VERIFY All DIMENSIONS AND REPORT *Afr* DISCREPANCIES TO VERIZON CONSTRUCTION MANAGER AND ENGINEER

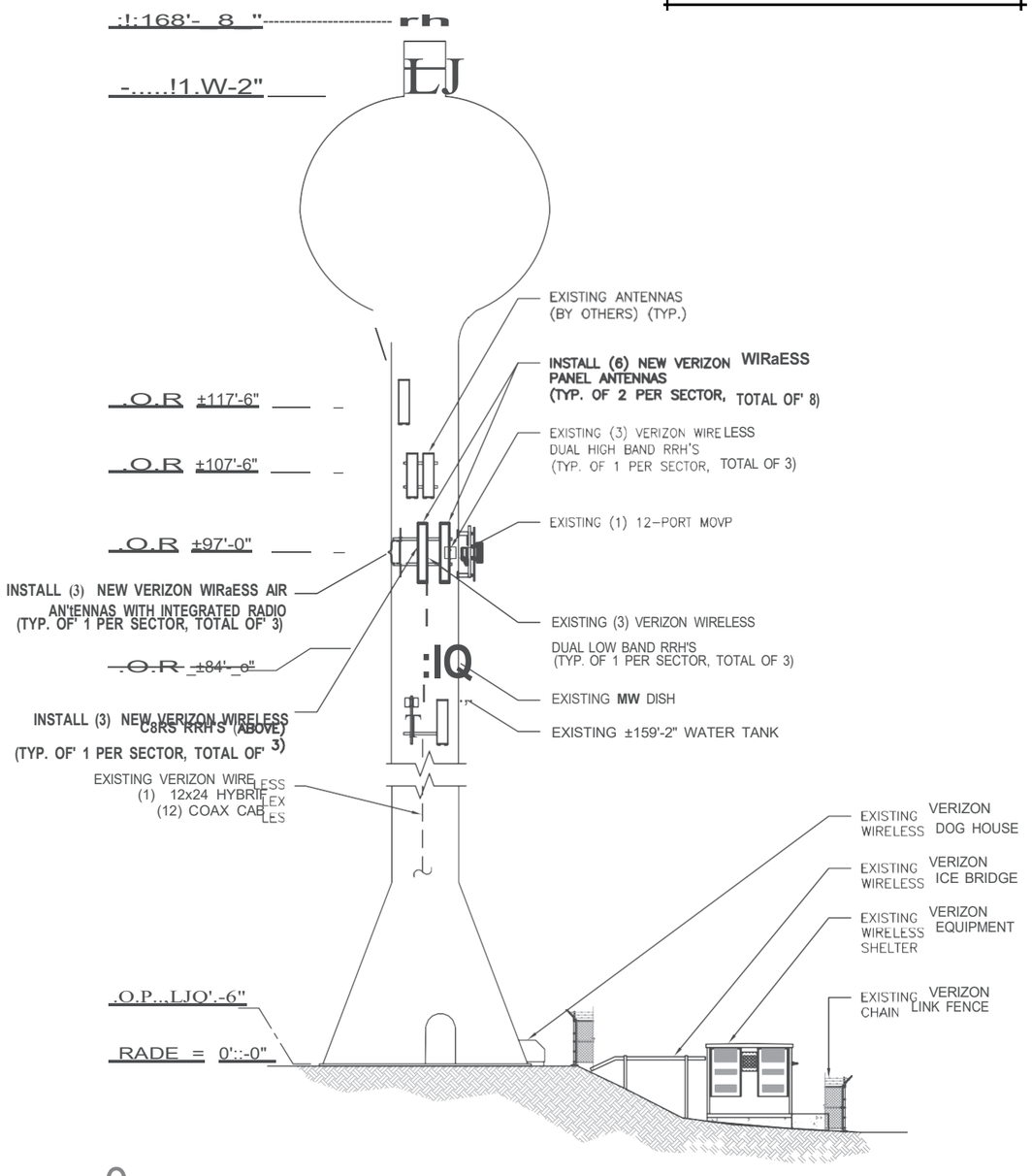


EXISTING ELEVATION

SCALE: •1 = 1/B'-0· (ff x 17')
SCALE: 1' = 1/4'-o' (22' x 34')

0 96' 192'
48' 24'
0 48' 96'

NOTE:
INSTALL All ANTENNAS AND EQUIPMENT PER THE MOUNT & STRUCTURAL ANALYSIS. COORDINATE *Afr* MODIFICATIONS **WITH** VERIZON WIRELESS CM AND ENGINEER.



0 PROPOSED ELEVATION
2

1. COMSITE ENGINEERING, LLC HAS NOT PERFORMED A STRUCTURAL ANALYSIS FOR THE STRUCTURAL CAPACITY OF THE TOWER, FOUNDATION, MOUNTS, **ANTENNAS,** RADIOS, CABLES OR *Afr* OTHER APPURTENANCE ON THE STRUCTURE. THE CONTRACTOR AND SUBCONTRACTOR SHALL COORDINATE WITH AND COMPLY WITH THE PROVISIONS OF THE STRUCTURAL ANALYSIS PREPARED BY OTHERS FOR THIS SITE AND PROJECT PRIOR TO THE INSTALLATION OF *Afr* EQUIPMENT ON THE STRUCTURE. IMMEDIATELY REPORT *Afr* DISCREPANCIES BETWEEN THE CONSTRUCTION DRAWINGS AND THE STRUCTURAL ANALYSIS TO VERIZON AND THE ENGINEER.
2. REFER TO THE STRUCTURAL ANALYSIS AND/OR STRUCTURAL LETTER FOR THE APPROVAL OF All MODIFICATIONS TO AND ADDING EQUIPMENT OF NEW APPURTENANCES.
3. REFER TO ADDmONAL DRAWINGS SPECIFIC TO STRUCTURE REINFORCEMENT FOR THIS SITE SHOULD THERE BE A REQUIREMENT FOR *Afr* REINFORCEMENT.
4. REFER TO STRUCTURAL ANALYSIS FOR COAXIAL AND OTHER CABLE SUPPORT AND CONFIGURATION DETAILS.
5. REFER TO STRUCTURAL ANALYSIS FOR All CARRIERS' APPURTENANCES AS THEY MAY NOT BE SHOWN IN ELEVATION DETAIL

verizonwireless

4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR., SUITE 210
ATLANTA, GA 30341
404-825-0081

DRAWN BY:	MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION	
A	04/05/23	ISSUED FOR REVIEW	
REV	DATE	DESCRIPTION	

PATRICK J. COLLINS NEW MEXICO 22933 PROFESSIONAL ENGINEER
4/7/2023

SITE VAME: NM4 QUEMAZON

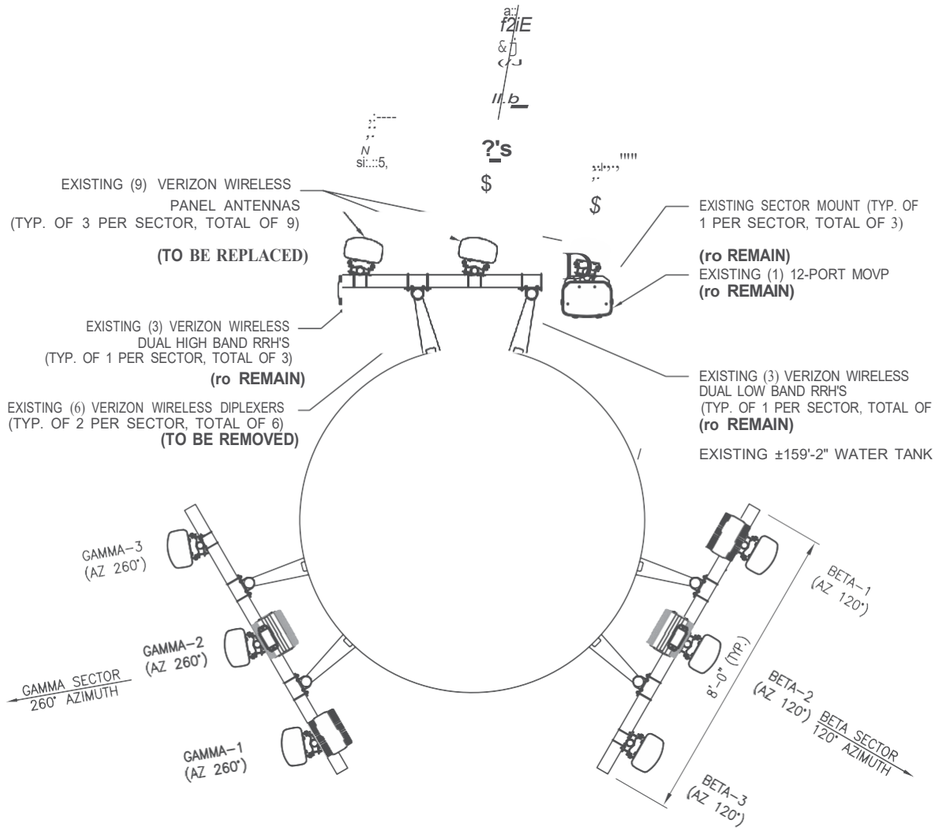
ADDRESS: 80 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATER TANK

SHEET TITLE:
TOWER ELEVATION EXISTING/ PROPOSED

SHEET NUMBER:
C3
Attachment B

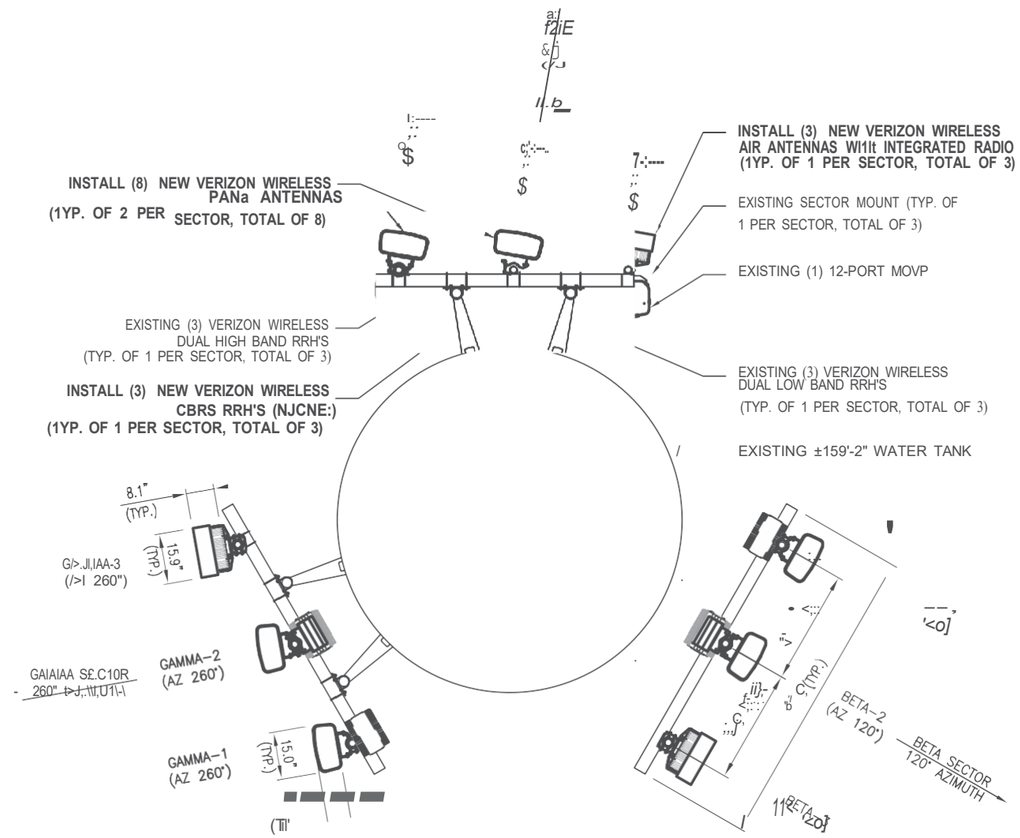
NOTE:
CONIRACTOR TO VERIFY THE FINAL RF CONFIGURATION MATCHES THESE DRAWINGS PRIOR TO THE REMOVAL AND INSTALLATION OF *Nff* EQUIPMENT. CONTRACTOR TO REPORT All DISCREPANCIES TO VERIZON CONSTRUCTION MANAGER AND ENGINEER.



[2J EXISTING ANTENNA PLAN

ELEMENTS OF THE ORIENTATION DIAGRAM SHOWN ABOVE ARE SCALED TO:
SCALE: 1/4" = 1'-o• (11" x 17") 32 16 0 32 64
SCALE: 1/8" = 1'-0" (22" x 34") 64 32 0 64 128
THESE ELEMENTS ARE: THE ANTENNA MOUNT FACE WIDTH, ANTENNA WIDTH, DISTANCE BETWEEN ANTENNAS (EDGE-TO-EDGE) & DETAIL

NOTE:
INSTAI.I All ANTENNAS AND EQUIPMENT PER THE MOUNT & STRUCTURAL ANALYSIS. COORDINATE *Nff* MODIFICATIONS **WITH** VERIZON WIRELfSS CM AND ENGINEER.



0 PROPOSED ANTENNA PLAN

1. COMSITE ENGINEERING, LLC HAS NOT PERFORMED A STRUCTURAL ANALYSIS FOR THE STRUCTURAL CAPACITY OF THE TOWER, FOUNDATION, MOUNTS, ANTENNAS, RADIOS, CABLES OR *Nff* OTHER APPURTENANCE ON THE STRUCTURE. THE CONIRACTOR AND SUBCONIRACTOR SHAI.I COORDINATE WITH AND COMPLY WITH THE PROVISIONS OF THE STRUCTURAL ANALYSIS PREPARED BY OTHERS FOR THIS SITE AND PROJECT PRIOR TO THE INSTALLATION OF *Nff* EQUIPMENT ON THE STRUCTURE. IMMEDIATELY REPORT ***Nff*** DISCREPANCIES BETWEEN THE CONSTRUCTION DRAWINGS AND THE STRUCTURAL ANALYSIS TO VERIZON AND THE ENGINEER.
2. REFER TO THE STRUCTURAL ANALYSIS AND/OR STRUCTURAL LETTER FOR THE APPROVAL OF All MODIFICATIONS TO AND ADDING EQUIPMENT OF NEW APPURTENANCES.
3. REFER TO ADDmONAL DRAWINGS SPECIFIC TO STRUCTURE REINFORCEMENT FOR THIS SITE SHOULD THERE BE A REQUIREMENT FOR *Nff* REINFORCEMENT.
4. REFER TO STRUCTURAL ANALYSIS FOR COAXIAL AND OTHER CABLE SUPPORT AND CONFIGURATION DETAILS.
5. REFER TO STRUCTURAL ANALYSIS FOR All CARRIERS' APPURTENANCES AS THEY MAY NOT BE SHOWN IN ELEVATION DETAIL

verizonwireless
4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3960 MERCER UNIVERSITY DR., SUITE 210
ATLANTA, GA 30341
404-825-0081

DRAWN BY:	MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION	
A	04/05/23	ISSUED FOR REVIEW	
REV	DATE	DESCRIPTION	

PATRICK J. COLLINS NEW MEXICO 22933 PROFESSIONAL ENGINEER
4/7/2023

SITE VAME: NM4 QUEMAZON

ADDRESS: 80 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATERTANK

SHEET TITLE:
ANTENNA PLAN
EXISTING / PROPOSED

SIIEET NUMBER:
C4
Attachment B

NOTE:
CONTRACTOR TO REFER TO CM FOR FINAL RF CONFIGURATION AND ANTENNA AND RADIO PLUMBING

Added

700	850	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
						5G	Ericsson	PANEL ANTENNA	97	98.3	10(0001) 120(0002) 260(0003)	false	false	PHYSICAL	3	
LTE	5G	LTE	LTE	LTE	LTE		JMA	PANEL ANTENNA	97	101	10(01) 120(02) 260(03)	false	false	PHYSICAL	6	MX10FRO860-03

Removed

700	850	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
	CDMA										10(0001) 10(01) 120(0002)					
LTE	LTE 5G	LTE	LTE				ANDREW	PANEL ANTENNA	97	101	120(02) 260(0003) 260(03)	false	false	PHYSICAL	9	

Retained

700	850	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID

No Data Available

Added: 9 | Removed: 9 | Retained: 0

[2J PROPOSED ANTENNA CONFIGURATION

Equipment Summary

Added

Equipment Type	Location	700	850	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
RRU	Tower						LTE		Ericsson	4408 B48 (w/out Antenna)			PHYSICAL	3	

Removed

Equipment Type	Location	700	850	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Retained

Equipment Type	Location	700	850	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
Hybrid Cable	Tower								Commscope	DC24 Hybriflex			PHYSICAL	1	
Coaxial Cables	Tower								Commscope	AVA5-50			PHYSICAL	6	
Coaxial Cables	Tower								Commscope	AVA7-50			PHYSICAL	6	
RRU	Tower	LTE	5G						Ericsson	4449			PHYSICAL	3	
RRU	Tower			LTE	LTE				Ericsson	8843			PHYSICAL	3	
OVP Box	Tower								Raycap	OVP-12			PHYSICAL	1	
OVP Box	Shelter								Raycap	OVP-12			PHYSICAL	1	

0 PROPOSED NON ANTENNA EQUIPMENT

verizonwireless
4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR., SUITE 210
ATLANTA, GA 30341
404-825-0081

DRAWN BY:	MA	CHECKED BY:	PC

REV	DATE	DESCRIPTION
0	04/06/23	ISSUED FOR CONSTRUCTION
A	04/05/23	ISSUED FOR REVIEW

PATRICK J. COLLINS NEW MEXICO 22933 PROFESSIONAL ENGINEER
4/7/2023

SITE NAME: NM4 QUEMAZON

ADDRESS: 80 N MESA RD
LOS ALAMOS, NM 87544

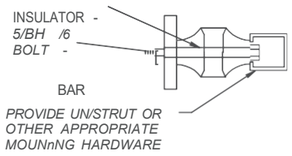
SITE TYPE: WATER TANK

SHEET TITLE:
RF DATA SHEET & COAX ANTENNA DIAGRAM

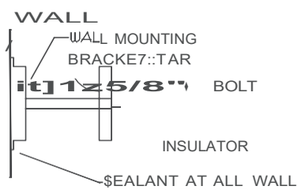
SHEET NUMBER:
CS
Attachment B

NOTES;

I. ALL I-IARDWARE: STAINLESS STEEL INCLUDING BELLYILLES.
2. ALL I-IOLES ARE COUNTERSUNK 1/16".
3. ALL LUGS *TO* BE DOUBLE -LUGGED.
4. ALL INDOOR & *OUTDOOR* e,tJ6 e>ARS ARE *TO* e>E 4"x24"xl/4" WITH MIN (2.) 7/lt," *e,/e,* HOLES. ALL NEW *OUTDOOR* e,tJ6 e>ARS ARE *TO* e,E EiALVANIZED STEEL: APPROVEI' e,y E05 (AVAILAe,LE FROM ALLTEC, C,ORPORATION C,ANTON NC,). ALL INDOOR e,tJ6 f,ARS ARE *TO* e>E TINNED C,OPPER (ELEC,TRIC, MOTIAN ?OMPANY P/N EM €i C,I4424e>IM-PHAREiER Eie>II4424M *OR* E6(UIVALENTS).
5. STEEL e>U6 e>ARS MU6T e>E ISOLATED FROM TOWER U61N€i INSL,LATORS.
6. *TOWER* e>U5 e>ARS MU5T e>E ISOLATED FROM *TOWER* STEEL WITH A #2. SOLID WHIP FROM f,AR *TO* A LL APPROVED e>ONDINEi ?LAMP. FLANEiE TYPE ?LAMP *TO* FAC,E *OR* ROUND MEMe>ER ?LAMP *TO* PIPE. e>ONDINEi C,LAMPS MU5T e>E LL APPROVED.



INTERNAL MOUNTING DETAIL

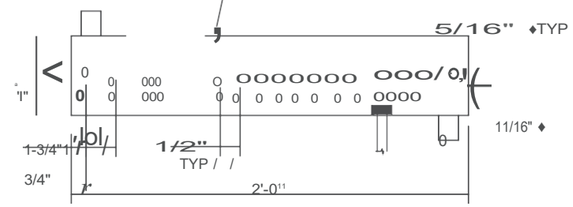


EXTERNAL MOUNTING DETAIL

#2. AWE, *OR* #t, AWE, 5TRANDED--
.LMPER *W* / LONE, e>ARREL
c:;OMPRE5SION Lue,5 *(OUTDOOR* ONLY), 55 NUT" 55 LOI-K WASHER, DRAEiONTOOTH WA5HER5, 55 WASHER AND 55 e>OLT *TO* 5Ec:;URE *TO* EXTERNAL €,ROUND e>AR e,y EIENERAL c:;ONTRA.:;TOR

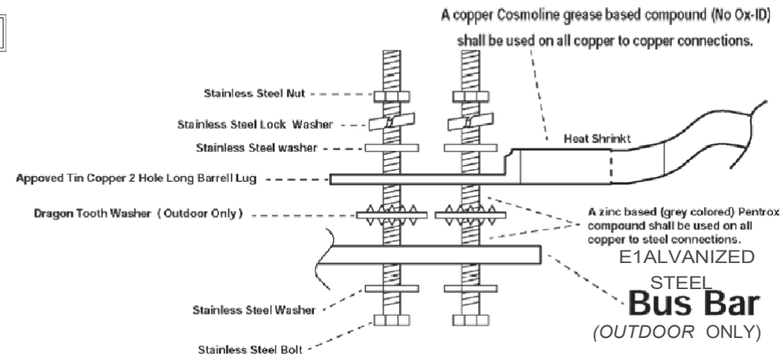
NEW COAXIAL GROUND KITS W/ LONG BARREL COMPRESSION LUGS W/ (2) 3/8" 60L TS AND LOCK WASI-IERS SIMILAR *TO* ANDREW 3241088-'3. R.IRNISI-IED BY LESSEE/OPERATOR AND INSTALLED BY CONTRACTOR

NEW 4"x 24"x 1/4" GROUND BAR. SUPPLIED AND INSTALLED BY GENERAL CONTRACTOR

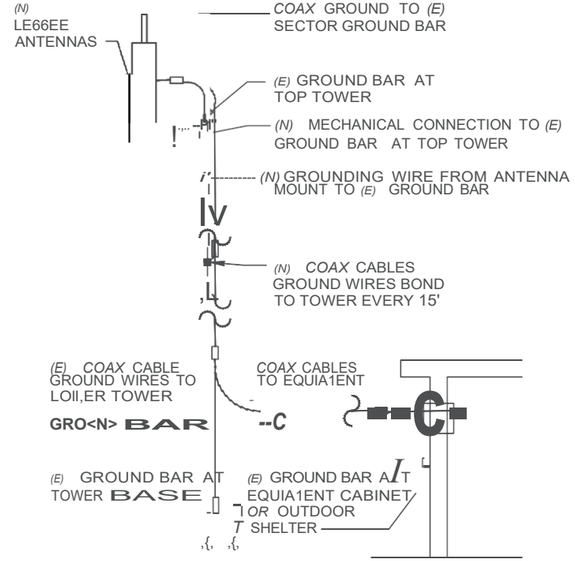


~~CONNECTIONS TO~~ GROUND **BAR**

#2. AWE, TNND SOLID C,OPPER :ONDUC,TOR C,ADWELD *TO* E>ROUND e>AR & C,ADWELD C,ONNEC,TION *TO* EXTERIOR E>ROUND SYSTEM, TYP. OF 2.

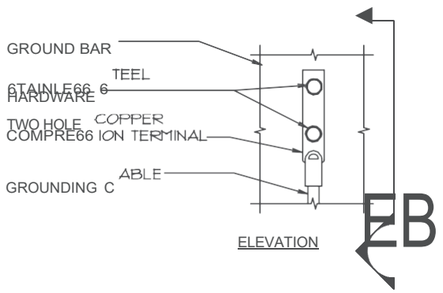


GROUNDING BAR
NOT TO SCALE



2 ~~:-;E;ts=UNDINGDIAGRAM~~

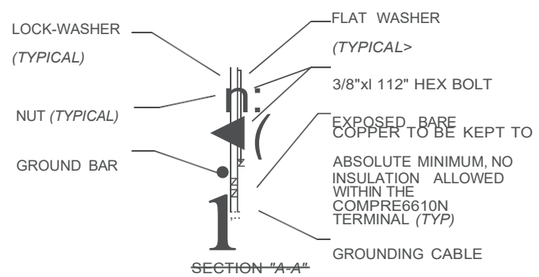
NOT USED
NOT TO SCALE



NOTE,

I. "DOUBLING UP" *OR* "6TACKING " OF CONNECTION 16 NOT PERMITTED.

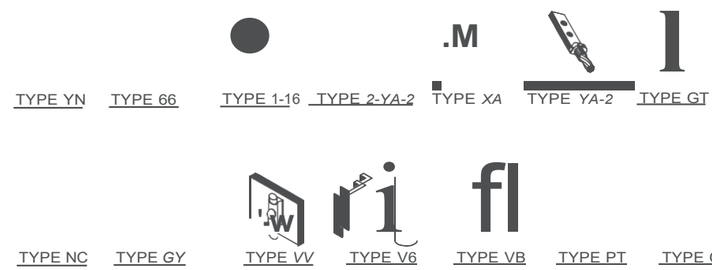
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.



NOTE, ALL SOLID WIRE 61-!ALL BE CADWELD TYPE CONNECTION UNLE66 OTHERWISE NOTED

4 TYPICAL GROUND BAR CONNECTIONS DETAIL
NOT TO SCALE

TYPE TA



5 TYPICAL EXOTHERMIC WELD DETAILS
NOT TO SCALE

verizonwireless
4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR., SUITE 210
ATLANTA, GA 30341
404•825•0084

DRAWN BY:	MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION	
A	04/05/23	ISSUED FOR REVIEW	
REV	DATE	DESCRIPTION	

PATRICK J. COLLINS NEW MEXICO 22933 PROFESSIONAL ENGINEER
4/7/2023

SITE VAME: NM4 QUEMAZON

ADDRESS: 80 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATER TANK

SHEET TITLE:
GROUNDING DETAILS

SIIEET NUMBER:
G1
Attachment B

AMENDMENT NO. 3

LEASE FOR ANTENNA COLLOCATION AND FACILITIES SITE
Between
INCORPORATED COUNTY OF LOS ALAMOS,
An Incorporated County of the State of New Mexico,
As Landlord
And
CELLCO PARTNERSHIP, D/B/A VERIZON WIRELESS,
As Tenant

This **AMENDMENT NO. 3** is entered into by and between the **Incorporated County of Los Alamos**, an incorporated county of the State of New Mexico ("County" or "Landlord"), and **Cellco Partnership, d/b/a Verizon Wireless** ("Tenant"), to be effective for all purposes May 6, 2024.

WHEREAS, the original solicitation for Wireless Communications Facilities Lease, Request for Proposals, No. 2002-1350 (the "RFP") was issued on November 13, 2001; and

WHEREAS, County and Tenant, or their predecessors-in-interest, entered into a Lease Agreement for Antenna Collocation and Facilities Site ("Lease Agreement") on July 21, 2005, with the Primary Term of sixty (60) months. The Lease Agreement gave Tenant the right to extend the lease term for five (5) periods of five (5) years each by giving written notice of renewal to County at least ninety (90) days prior to the expiration of the then-current lease term; and

WHEREAS, the Primary Term was extended on October 1, 2010; and

WHEREAS, the Lease Agreement was amended pursuant to a certain Amendment No. 1 effective April 30, 2011 ("Amendment No. 1"); and

WHEREAS, the Lease Agreement was amended pursuant to a certain Amendment No. 2 effective October 1, 2015 ("Amendment No. 2"); and

WHEREAS, Tenant wishes to modify some of the major equipment to be used on the site identified in amended Exhibit B-3 of the Lease Agreement. Tenant will replace all nine (9) existing panel antennas with nine (9) new panel antennas; remove six (6) existing Tower Mounted Amplifier (TMA) units; install three (3) new Remote Radio Head (RRH) units; retain six (6) RRH units; retain one (1) hybrid line of coax; retain twelve (12) coaxial cables, Remote Electrical Tilt (RET); and retain one (1) twelve port junction box. All new equipment will be mounted at the very same location and heights as the existing antennas, will not extend beyond their current top height, and the modification will have no impact on the current facility's ground footprint, nor will it require any ground or water tank disturbance, all and only as shown in the ten (10) page plan set last revised on April 6, 2023 ("Plans") that are attached hereto as Exhibit B-4 and incorporated herein by this reference; and

WHEREAS, Tenant intends that Landlord rely on and Landlord does rely on the accuracy and reliability of all of the information in Exhibits B-4 (engineered plans); and

WHEREAS, Council now ratifies and affirms the award of this Amendment No. 3 and finds that ratification and affirmation of this Amendment No. 3 is in the best interest of County; and

WHEREAS, The Board of Public Utilities approved this Amendment No. 3 at a public meeting held on February 21, 2024; and

WHEREAS, the County Council approved this Amendment No. 3, by Ordinance No. 730, at a public meeting held on March 26, 2024.

NOW, THEREFORE, for good and valuable consideration, County and Tenant agree as follows:

I. The Tenant agrees that in connection with this Amendment No. 3 the County is acting solely within its proprietary rights and authority as a property owner.

II. To include a new Exhibit B-3 attached hereto, in its entirety. Exhibit B-3 is intended to supplement Exhibit B and Exhibit B-1 to the Lease Agreement. To the extent of a conflict between Exhibit B or Exhibit B-1 and Exhibit B-3, Exhibit B-3 shall control.

III. ADMINITRATIVE AND SITE REVIEW FEE. Within ninety (90) days after the parties fully execute this Amendment No. 3, Tenant shall pay to Landlord a nonrefundable one-time administrative and site review fee equal to FIFTEEN THOUSAND DOLLARS ($15,000.00) to cover Landlord's costs to review and execute this Amendment No. 3. The Administrative and Site Review Fee shall not be any offset to any Rental owed under this Third Amendment and is fully earned and non-refundable by Landlord upon the full execution of this Third Amendment.

Except as expressly modified by this Amendment No. 3, the Lease Agreement is hereby ratified and reaffirmed, and the terms and conditions of the Lease Agreement remain unchanged and in effect.

IN WITNESS WHEREOF, the parties have executed this Amendment No. 3 on the date(s) set forth opposite the signatures of their authorized representatives to be effective for all purposes on April 1, 2024.

ATTEST

_____
NAOMI D. MAESTAS
COUNTY CLERK

INCORPORATED COUNTY OF LOS ALAMOS

BY: _____
PHILO S. SHELTON III, P.E. **DATE**
UTILITIES MANAGER

Approved as to form:

_____
J. ALVIN LEAPHART
COUNTY ATTORNEY

STATE OF NEW MEXICO)
: SS
COUNTY OF LOS ALAMOS)

The foregoing instrument was acknowledged before me this _____day of May 2024, by Philo S. Shelton III, P.E., Utilities Manager for the Incorporated County of Los Alamos.

NOTARY PUBLIC

My Commission Expires:

Cellco Partnership,
D/B/A Verizon Wireless

By: _____

Name: _____

Date: _____

Title: _____

STATE OF ARIZONA)
: SS
COUNTY OF MARICOPA)

On _____, 2024, before me, _____, Notary Public, _____, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of Arizona that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
Signature of notary Public

(Seal)

EXHIBIT B-3

Amendment No. 3

Verizon North Mesa Water Tower Equipment Changes

REMOVING:

- Nine (9) existing panel antennas
- Six (6) existing TMA Units

INSTALLING:

- Nine (9) new panel antennas
- Three (3) RRH units

RETAINING:

- Six (6) RRH Units
- One (1) hybrid line of coax
- Twelve (12) coaxial cables (RET)
- One (1) twelve port junction box

verizonwireless

VERIZON SITE NAME: **NM4 QUEMAZON**

SITE ADDRESS: 280 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: EXISTING COMMUNICATION SITE

PROJECT TYPE: 5G L-SUB6 - CARRIER ADD

PROPERTY INFORMATION

SITE COORDINATES: (LAT/LONG)	35.896674° / −106.295104° 35° 53' 48.02"N / 106° 17' 42.37"W
GROUND ELEV:	7349'± AMSL (NAVD88)
JURISDICTION:	LOS ALAMOS COUNTY
COUNTY:	LOS ALAMOS COUNTY
CITY/TOWN:	LOS ALAMOS
APPLICANT/LESSEE: ADDRESS:	VERIZON WIRELESS 4821 EUBANK BLVD NE ALBUQUERQUE, NM 87111
TOTAL LEASE AREA:	XXXX SQ. FT.
PROPERTY OWNER: ADDRESS:	INCORPORATED COUNTY OF LOS ALAMOS 2451 CENTRAL AVE, STE A LOS ALAMOS, NM 87544
CONTACT: PHONE:	TIM GLASCO 505.662.8148
TOWER OWNER: ADDRESS:	INCORPORATED COUNTY OF LOS ALAMOS 2451 CENTRAL AVE, STE A LOS ALAMOS, NM 87544
CONTACT: PHONE:	TIM GLASCO 505.662.8148
POWER COMPANY:	XXXX
TELCO COMPANY:	XXXX

PROJECT TEAM

SITE REP:	VERIZON CONSTRUCTION MANAGER BRANDON STATION
PHONE:	505.991.6330
ENGINEERING FIRM: ADDRESS:	COMSITE ENGINEERING, LLC 3060 MERCER UNIVERSITY DR. SUITE 210 ATLANTA, GA 30341
CONTACT: PHONE:	PATRICK COLLINS 404.825.0981
STRUCTURAL ENGINEER: ADDRESS:	GEOSTRUCTURAL, LLC. P.O. BOX 2621 BOISE, ID 83701

APPROVALS

	DATE:
VERIZON SITE AQ:	
VERIZON RF:	
VERIZON CONST.:	
VERIZON OPS:	
LANDLORD:	

DRAWING INDEX

SHEET	SHEET DESCRIPTION	REV
T1	TITLE SHEET	A
GN1	GENERAL NOTES	A
GN2	GENERAL NOTES	A
GN3	SYMBOLS & ABBREVIATIONS	A
C1	SITE PLAN	A
C2	EQUIPMENT PLAN	A
C3	EXISTING AND PROPOSED TOWER ELEVATIONS	A
C4	EXISTING AND PROPOSED ANTENNA PLANS	A
C5	RF DATA SHEET & COAX ANTENNA DIAGRAM	A
G1	GROUNDING DETAILS	A

N

SPECIFIC LOCATION MAP

DRIVING DIRECTIONS

DIRECTION: FROM 4821 EUBANK BLVD NE HEAD SOUTH ON EUBANK BLVD., TURN RIGHT AND HEAD WEST ONTO MONTGOMERY BLVD., TURN RIGHT AND HEAD NORTH ONTO I-25 FOR 60 MILES TO EXIT #282 IN SANTA FE, TAKE US84/US 285 NORTH TO POJOAQUE AND HWY 502, TURN LEFT HEADING WEST FOR 16 MILES TO LOS ALAMOS, PASSING THE AIRPORT ON THE MESA, CONTINUE PAST THE "Y" IN THE ROAD AT CENTRAL AND STAY ON TRINITY FOR ABOUT 1.5 MILES UNTIL DIAMOND DRIVE. TURN RIGHT ON DIAMOND AND HEAD NORTHEAST FOR ABOUT 1.5 MILES, PASSING THE GOLF COURSE TO THE ROUND ABOUT, PROCEED THROUGH ROUND ABOUT TO MESA, FOLLOW MESA TO THE TOP OF THE HILL AND THE WATER TANK.

nm811 Know what's below. Call before you dig.

Attachment B

PROJECT DESCRIPTION & SCOPE

THIS PROJECT WILL BE COMPRISED OF:

CHANGES TO THE EXISTING VERIZON TOWER EQUIPMENT:
- REMOVE (9) EXISTING ANTENNAS
- REMOVE (6) EXISTING DIPLEXERS
- INSTALL (9) NEW ANTENNAS
- INSTALL (3) NEW CBRS RRH'S

CHANGES IN THE EXISTING VERIZON EQUIPMENT AREA:
- INSTALL (1) NEW C-BAND 6648 BBU

CONTRACTOR GENERAL NOTES

1. PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF/HERSELF WITH THE SCOPE OF WORK AND ALL CONDITIONS AFFECTING THE PROPOSED PROJECT.
2. CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS AND DIMENSIONS OF THE JOB SITE AND CONFIRM THAT WORK AS INDICATED ON THESE CONSTRUCTION DOCUMENTS CAN BE ACCOMPLISHED
AS SHOWN PRIOR TO COMMENCEMENT OF ANY WORK.
3. ALL FIELD MODIFICATIONS BEFORE, DURING, OR AFTER CONSTRUCTION SHALL BE APPROVED IN WRITING BY A VERIZON WIRELESS REPRESENTATIVE.
4 INSTALL ALL EQUIPMENT AND MATERIALS PER THE MANUFACTURER'S RECOMMENDATIONS, UNLESS INDICATED OTHERWISE.
5. NOTIFY VERIZON WIRELESS, IN WRITING, OF ANY MAJOR DISCREPANCIES REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS, AND DESIGN INTENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATIONS FROM A VERIZON WIRELESS REPRESENTATIVE AND ADJUSTING THE BID ACCORDINGLY.
6. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES OF THE WORK UNDER THE CONTRACT.
7. CONTRACTOR SHALL PROTECT ALL EXISTING IMPROVEMENTS AND FINISHES THAT ARE TO REMAIN. CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY OCCUR DURING THE CONSTRUCTION TO THE SATISFACTION OF A VERIZON WIRELESS REPRESENTATIVE.
8. THE CONTRACTOR IS RESPONSIBLE FOR RED-LINING THE CONSTRUCTION PLANS TO ILLUSTRATE THE AS-BUILT CONDITION OF THE SITE. FOLLOWING THE FINAL INSPECTION BY VERIZON WIRELESS, THE CONTRACTOR SHALL PROVIDE VERIZON WIRELESS WITH ONE COPY OF ALL RED-LINED DRAWINGS.
9. VERIFY ALL FINAL EQUIPMENT WITH A VERIZON WIRELESS REPRESENTATIVE. ALL EQUIPMENT LAYOUT, SPECS, PERFORMANCE INSTALLATION AND THEIR FINAL LOCATION ARE TO BE APPROVED BY VERIZON WIRELESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS/HER WORK WITH THE CLEARANCES REQUIRED BY OTHERS RELATED TO SAID INSTALLATIONS.

ZONING NOTES

ABANDONMENT:
ALL WIRELESS TELECOMMUNICATIONS FACILITIES WHICH ARE NOT IN USE FOR THREE CONSECUTIVE MONTHS SHALL BE REMOVED BY THE WIRELESS TELECOMMUNICATIONS FACILITY OWNER. THIS REMOVAL SHALL TAKE PLACE WITHIN THREE MONTHS OF THE END OF SUCH THREE MONTH PERIOD. UPON REMOVAL THE SITE SHALL BE REVEGETATED TO BLEND IN WITH THE EXISTING SURROUNDING VEGETATION.
HEALTH ISSUES:
EVERY WIRELESS TELECOMMUNICATIONS FACILITY SHALL MEET HEALTH AND SAFETY STANDARDS FOR ELECTROMAGNETIC FIELD EMISSIONS AS ESTABLISHED BY THE FEDERAL COMMUNICATIONS COMMISSION OR ANY SUCCESSOR THEREOF , AND ANY OTHER FEDERAL OR STATE AGENCY.
FCC:
EVERY WIRELESS COMMUNICATIONS FACILITY SHALL MEET THE REGULATIONS OF THE FCC REGARDING PHYSICAL AND ELECTROMAGNETIC INTERFERENCE. THE ONLY SIGNAGE
WHICH IS PERMITTED IS THAT WHICH IS REQUIRED BY STATE AND FEDERAL LAW.
LIGHTING/SIGNAGE:
EVERY WIRELESS TELECOMMUNICATIONS FACILITY SHALL MEET THE NIGHT SKY RESTRICTIONS OF THE COMPREHENSIVE CITY ZONING CODE. LIGHTING OR SIGNS WILL BE PROVIDED ONLY AS REQUIRED BY FEDERAL OR STATE AGENCIES.
FCC COMPLIANCE
RADIATION FROM THIS FACILITY WILL NOT INTERFERE WITH OPERATION OF OTHER COMMUNICATION DEVICES.
ADA COMPLIANCE
THIS FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. LANDINGS AND EXITS SHALL COMPLY WITH ALL APPLICABLE BUILDINGS CODES.

CODE COMPLIANCE NOTES

ALL CONTRACTOR'S & SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE: INTERNATIONAL BUILDING CODE 2015
ELECTRICAL CODE: NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70
NATIONAL ELECTRICAL CODE 2014
LIGHTNING PROTECTION CODE: NFPA 780 – 2014, LIGHTNING PROTECTION CODE

ALL CONTRACTOR'S & SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
- AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
- TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
- TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
- INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
- IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
- IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")
- TELCORDIA GR-1275, GENERAL INSTALLATION REQUIREMENTS
- TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS
- ANSI T1.311, FOR TELECOM – DC POWER SYSTEMS – TELECOM, ENVIRONMENTAL PROTECTION

GENERAL COMPLIANCE
1. NO HAZARDOUS OR COMBUSTIBLE MATERIAL WILL BE STORED WITHIN THE FACILITY.
2 DEVELOPMENT AND USE OF THIS SITE WILL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES..
FIRE COMPLIANCE
1. CONTRACTOR TO PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF 2A-10BC OR BETTER.
2. CONTRACTOR TO INSTALL FIRE DEPARTMENT APPROVED "KNOX BOX" PER DEPARTMENT REGULATIONS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

verizonwireless
4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR.,
SUITE 210
ATLANTA, GA 30341
404•825•0981

DRAWN BY:	MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION	
A	04/05/23	ISSUED FOR REVIEW	
REV	DATE	DESCRIPTION	

PATRICK J. COLLINS
NEW MEXICO
22933
PROFESSIONAL ENGINEER
4/7/2023

SITE NAME: NM4 QUEMAZON

ADDRESS: 280 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATER TANK

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T1

SITE WORK GENERAL NOTES

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

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

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY RUBISH, STUMPS, DEBRIS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. ALL EXISTING UNACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.

6. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.

7. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE VERIZON WIRELESS SPECIFICATION FOR SITE SIGNAGE.

8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

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

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

11. THA AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABALIZED TO PREVENT EROSION.

12. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SIRE DURING CONSTRUCTIION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN ACCORDANCE WITH THE LOCAL JUSISDICTION'S GUIDLINES FOR EROSIION AND SEDIMENT CONTROL.

STRUCTURAL STEEL NOTES

1. ALL STEEL SHALL BE GALVANIZED PER ASTM A 123 AND CONFORM TO THE FOLLOWING MINIMUM SPECS.:

HSS SHAPES	ASTM A500, GR. B
W-SHAPES & CHANNELS	ASTM A572, GR. 50
MISC. ANGLES & PLATES	ASTM A36
BASE PLATES	ASTM GR. 36

2 ALL BOLTS SHALL BE GALVANIZED PER ASTM A153 AND CONFORM TO ASTM GRADE A325 UNLESS NOTED OTHERWISE. ALL BOLTED CONNECTIONS SHALL BE EQUIPED WITH A PROPER, AND APPROVED NUT-LOCKING DEVICE.

3 ALL WELDING WORK SHALL CONFORM TO THE AWS D1.1 STRUCTURAL WELDING CODE. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS ONLY. WELDING ELECTRODES SHALL BE E70XX.

4 ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO AISC SPECS AND CODES, LATEST EDITION.

5 THE CONTRACTOR SHALL SUBMIT DETAILED, ENGINEERED, COORDINATED AND CHECKED SHOP DRAWINGS FOR ALL STRUCTURAL STEEL TO THE
ENGINEER OF RECORD TO REVIEW FOR COMPLIANCE WITH DESIGN INTENT PRIOR TO THE START OF FAB. AND/OR ERECTION.

6 TORCH-CUTIING OF ANY KIND SHALL NOT BE PERMITIED.1.

7. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIOINS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.

8. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODED AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUN SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.

9. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.

10. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.

11. POST INSTALLED ANCHORS SHALL BE PROVIDED IN ACCORDANCE WITH SPECIFICATION 3GS-T18-00013 "SELECTION, DESIGN, INSTALLATION, INSPECTION AND TESTING OF ADHESIVE AND MECHANICAL EXPANSION ANCHORS FOR WIRELESS SITE FACILITIES". ANCHORS SHALL BE HILTI OR APPROVED EQUAL INSTALLED, INSPECTED AND TESTED AS SHOWN ON THE DESIGN DRAWINGS. NO REINFORCING STEEL SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL.

WOOD FRAMING NOTES

ALL TIMBER JOISTS & LEDGER SHALL CONFORM TO THE
FOLLOWING MINIMUM STRUCTURAL PROPERTIES:
Fb = 1,300 psi
Fv = 70 psi
E = 1,300 ksi

CONCRETE NOTES:

1. CONCRETE COMPRESSIVE STRENGTH SHALL BE 4,000 PSI @28 DAYS

2. ALL REINFORCING STEEL SHALL CONIFORM TO ASTM A615 GRADE 60.

3. CONTRACTOR SHALL PROVIDE CLEARANCE FOR ALL REBAR OF 3" UNLESS NOTED OTHERWISE

4. ALL REBAR SHALL BE SUPPORTED ABOVE SOIL SURFACE WITH ACI-APPROVED METAL REBAR CHAIRS.

STUCCO NOTES:

1. METAL LATHING & ACCESSORIES SHALL CONFORM TO ASTM 1063-86, MLSFA "TECHNICAL BULLETIN 101 " AND ASTM C 841 FOR SELECTION OF METAL LATH FOR EACH APPLICATION INDICATED, AND FS QQ-L-101. MANUFACTURER'S STANDARD STEEL GALVANIZED FINISH (ASTM A 525 G90) ON STEEL PRODUCTS.

2. STUCCO MESH SHALL BE GALVANIZED HEXAGONAL WOVEN SIDE MESH 1-1/2", 17 GA., SELF FURRED.

3. EXTERIOR GALVANIZED DIAMOND MESH LATH OF 3.4 lbs. PER SQ. YD. MAY BE USED INSTEAD OF STUCCO NETTING.

4. THREE COAT STUCCO SYSTEM TO BE USED CONSISTING OF MANUFACTURER'S STANDARD PRODUCTS CONSISTING OF SEPARATE BASE COAT, SCRATCH COAT AND FINISH COAT MATERIALS. FIBER-REINFORCED PORTLAND CEMENT PLASTER BASECOAT TO BE USED.

5. INSTALLATION OF METAL SUPPORT SYSTEMS SHALL COMPLY WITH ASTM C 754.

6. CONTRACTOR TO APPLY DIAMOND MESH AT ALL CORNERS AND OPENINGS.

7. CONTRACTOR TO PROVIDE EXPANSION AND CONTROL JOINTS WHERE NOTED ON PLANS AND AT ALL DISSIMILAR MATERIALS JUNCTIONS.

8 CONTRACTOR TO MOIST CURE EACH BASECOAT WITH CLEAN POTABLE WATER FOR 48-72 HOURS FOLLOWING INITIAL BASECOAT APPLICATION. ALLOW BROWN COAT TO AIR CURE FOR AN ADDITIONAL 7-10 DAYS BEFORE THE APPLICATION OF THE CEMENT BASED FINISH COATS.

CONCRETE MASONRY UNIT (CMU) NOTES:

1. CONCRETE MASONRY UNITS (CMU) PER ASTM C90.
   A. PROVIDE CMU WITH AN AVERAGE UNIT COMPRESSIVE STRENGTH OF 1900 PSI.
   B. PROVIDE NOMINAL FACE DIMENSIONS OF 8"Wx8"Hx16"L & ACTUAL DIMENSIONS OF 7-5/8"x7-5/8"x15-5/8". PROVIDE SPECIAL SHAPES AS REQUIRED AT CORNERS, JAMBS, & BOND BEAMS
   C. PROVIDE TYPE I, MOISTURE CONTROLLED UNITS.
   D. PROVIDE NORMAL WEIGHT UNITS.

2. MORTAR
   A. EXTERIOR WALLS ABOVE GRADE: TYPE S, 1/4 TO 1/2 PART HYDRATED LIME TO 1 PART PORTLAND CEMENT BY VOLUME.
   B. EXTERIOR WALLS AT OR BELOW ON GRADE: TYPE M, 1/4 PART HYDRATED LIME TO 1 PART PORTLAND CEMENT BY VOLUME.
   C. PORTLAND CEMENT: ASTM C150, TYPE I OR II.
   D. HYDRATED LIME: ASTM C207, TYPE S.

3. GROUT PER ASTM C476.

4. PROVIDE REINFORCING STEEL AND GROUT SOLID THREE CORNER CELLS AT ALL CORNER LOCATIONS.

5. AT WALL OPENINGS & END OF WALL LOCATIONS, PROVIDE REINFORCING & GROUT SOLID LAST TWO CELLS, OR THE TWO CELLS ON EITHER SIDE OF OPENING.

6. GROUT SOLID ALL BOND BEAMS. RUN REINFORCING CONTINUOUS AROUND ALL CORNERS WITH APPROPRIATE SPLICES.

7. ALL CMU BLOCK TO HAVE EXTERIOR DECORATIVE FINISH TO MATCH BLOCK WALL OF ADJACENT BUILDING. CMU BLOCK WALL TO BE PAINTED TO MATCH ADJACENT BUILDING.

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ). THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

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

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 100 AND 81) FOR NEW GROUNDING ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUNDING ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. 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.

5. EACH BTS CABINET 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.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.

9. ALUMINUM CONDUCTOS OR COPPER CLAD STEEL CONDUCTORS SHALL NOT BE USE FOR GROUNDING CONNECTIONS.

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

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

12. 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 METAL CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIOT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METALLIC 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.)

ELECTRICAL INSTALLATION NOTES

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

2. SUBCONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARARTION AS REQUIRED BY THE NEC AND TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTORS AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING,PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).

8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS WHERE PERMITTED SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES. USE LOW PROFILES TIE WRAPS.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (12 AWG OR LARGER). 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR 2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (12 AWG OR LARGER), 600V OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSIION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75° C (90° C IF AVAILABLE).

15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH MENA, UL, ANSI/IEEE, AND NEC.

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

21. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, ANSI/IEEE, AND NEC.

24. CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

verizonwireless

4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR.,
SUITE 210
ATLANTA, GA 30341
404 • 825 • 0981

DRAWN BY:		MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION		
A	04/05/23	ISSUED FOR REVIEW		
REV	DATE	DESCRIPTION		

PATRICK J. COLLINS
NEW MEXICO
22933
PROFESSIONAL ENGINEER
4/7/2023

SITE NAME: NM4 QUEMAZON

ADDRESS: 280 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATER TANK

SHEET TITLE:
GENERAL NOTES: SITE WORK, GROUNDING, STEEL & ELECTRICAL

SHEET NUMBER:
GN1

Attachment B

DIVISION 01000 – GENERAL REQUIREMENTS

PART 1 – GENERAL

1. ALL WORK TO BE PERFORMED BY CERTIFIED NETWORK INSTALLATION PERSONNEL. MINIMUM OF TWO MEMBERS PER CREW.

2. REFER TO VERIZON WIRELESS STANDARD CONSTRUCTION SPECIFICATIONS. IN CASE OF A CONFLICT, VERIZON WIRELESS STANDARD CONSTRUCTION SPECIFICATIONS (LATEST EDITION) SHALL BE FOLLOWED.

3. A STRUCTURAL ANALYSIS SHALL BE PERFORMED BY THE OWNER'S AGENT TO CERTIFY THAT THE EXISTING/PROPOSED COMMUNICATION STRUCTURE AND ITS COMPONENTS ARE STRUCTURALLY ADEQUATE TO SUPPORT THE EXISTING AND PROPOSED ANTENNAS, COAXIAL CABLES AND APPURTENANCES. PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT OR MODIFICATION OF THE EXISTING STRUCTURE, THE OWNER'S AGENT SHALL FURNISH A CERTIFICATION LETTER SEALED BY A REGISTERED PROFESSIONAL ENGINEER.

PART 2 – GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) VERIZON WIRELESS'S REPRESENTATIVE OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK.

4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONSTRUCTION DRAWINGS.

6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS / CONTRACT DOCUMENTS.

7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

8. THE CONTRACTOR SHALL MAINTAIN A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUM'S OR CLARIFICATIONS AVAILABLE FOR THE USE OF ALL PERSONNEL INVOLVED WITH THE PROJECT.

9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING SITE CONDITIONS DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE ALL UNNECESSARY MATERIAL.

PART 2 – GENERAL NOTES (CONTINUED)

13. THE CONTRACTOR SHALL COMPLY WITH ALL PERTINENT SECTIONS OF THE STATE BASIC BUILDING CODE, LATEST EDITION, AND ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ARCHITECT/ENGINEER.

14. THE CONTRACTOR SHALL NOTIFY VERIZON WIRELESS'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL THE CONFLICT IS RESOLVED BY VERIZON WIRELESS'S REPRESENTATIVE.

15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.

16. THE CONTRACTOR SHALL NOTIFY THE RF ENGINEER FOR ANTENNA AZIMUTH VERIFICATION (DURING ANTENNA INSTALLATION) PRIOR TO CONDUCTING SITE SWEEPING.

17. THE GENERAL CONTRACTOR SHALL IN ALL INSTANCES CONFORM TO THE SPECIFICATIONS ISSUED BY VERIZON WIRELESS.

18. PROVIDE CORE DRILLING AS NECESSARY FOR PENETRATIONS OR RISERS THROUGH THE BUILDING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT STRUCTURAL ENGINEER'S APPROVAL. SLEEVES AND/OR PENETRATIONS IN FIRE RATED CONSTRUCTION SHALL BE PACKED WITH FIRE RATED MATERIAL WHICH SHALL MAINTAIN THE FIRE RATING OF THE STRUCTURE. FILL FOR FLOOR PENETRATIONS SHALL PREVENT PASSAGE OF WATER, SMOKE FIRE AND FUMES. ALL MATERIAL SHALL BE UL APPROVED FOR THIS PURPOSE.

WOOD

1. ALL MATERIALS INCLUDING PLYWOOD SHALL BE AS SPECIFIED ON THESE PLANS.

SPECIAL CONSTRUCTION ANTENNA INSTALLATION

PART 1 – GENERAL

1.01 WORK INCLUDED

A. ANTENNAS AND FIBER CABLES SHALL BE AS SPECIFIED ON THESE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND PROPERTY. STRICT ADHERENCE TO OSHA STANDARDS IS MANDATED.

B. INSTALL ANTENNAS AS INDICATED ON DRAWINGS AND VERIZON WIRELESS SPECIFICATIONS.

C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.

D. INSTALL FIBER CABLES AND TERMINATION'S BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTORS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL FIBER CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.

METALS

PART 1 – GENERAL

1.01 WORK INCLUDED

A. THE WORK CONSISTS OF THE FABRICATION AND INSTALLATION OF ALL MATERIALS TO BE FURNISHED, AND WITHOUT LIMITING THE GENERALITY THEREOF, INCLUDES ALL EQUIPMENT, LABOR AND SERVICES REQUIRED FOR ALL STRUCTURAL STEEL WORK, INCLUDING ALL ITEMS INCIDENTAL THERETO AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS. INCLUDING:

1. STEEL FRAMING INCLUDING BEAMS, ANGLES, CHANNELS AND PLATES.

2. WELDING AND BOLTING OF ATTACHMENTS.

1.02 REFERENCE STANDARDS

A. THE WORK SHALL CONFORM TO THE CODES AND STANDARDS OF THE FOLLOWING AGENCIES AS FURTHER CITED HEREIN:

1. ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS, AS PUBLISHED IN "COMPILATION OF ASTM STANDARDS IN BUILDING CODES"

2. AWS: AMERICAN WELDING SOCIETY INC., AS PUBLISHED IN "STANDARD D1.1–2006, STRUCTURAL WELDING CODE".

3. AISC: AMERICAN INSTITUTE FOR STEEL CONSTRUCTION, AS PUBLISHED IN "CODE FOR STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES"; "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".

PART 2 – PRODUCTS

2.01 MATERIALS

A. STRUCTURAL STEEL SHALL COMPLY WITH THE REQUIREMENTS OF ASTM A36 AND A50 FOR STRUCTURAL STEEL.

2.02 WELDING

A. ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS. CERTIFICATION DOCUMENTS SHALL BE MADE AVAILABLE FOR ENGINEER'S AND/OR OWNER'S REVIEW IF REQUESTED.

B. WELDING ELECTRODES FOR MANUAL SHIELDED METAL ARC WELDING SHALL CONFORM TO ASTM A–233, E70 SERIES. BARE ELECTRODES AND GRANULAR FLUX USED IN THE SUBMERGED ARC PROCESS SHALL CONFORM TO AISC SPECIFICATIONS.

C. FIELD WELDING SHALL BE DONE AS PER AWSD1.1 REQUIREMENTS VISUAL INSPECTION IS ACCEPTABLE WHEN FILLET SIZES ARE NOT SHOWN.

D. STUD WELDING SHALL BE ACCOMPLISHED BY CAPACITOR DISCHARGE (CD) WELDING TECHNIQUE USING MIDWEST FASTENERS, INC. CD100 CAPACITOR DISCHARGE STUD WELDER, NELSON STUD WELDER OR EQUAL.

2.2 PROVIDE STUD FASTENERS OF MATERIALS AND SIZES SHOWN ON DRAWINGS OR AS RECOMMENDED BY THE MANUFACTURER FOR STRUCTURAL LOADINGS REQUIRED.

2.3 FOLLOW MANUFACTURES SPECIFICATIONS AND INSTRUCTIONS TO PROPERLY SELECT AND INSTALL STUD WELDS.

2.03 BOLTING

A. BOLTS SHALL BE 3/4" ø (MINIMUM) CONFORMING TO ASTM A325, HOT DIP GALVANIZED OR ASTM A153. NUTS SHALL BE HEAVY HEX TYPE.

B. ALL BOLTS SHALL BE INSTALLED IN SLIP CRITICAL CONNECTIONS CONFORMING TO AISC, USING THE 1/4" TURN METHOD.

2.04 FABRICATION

A. FABRICATION OF STEEL SHALL CONFORM TO THE AISC AND AWS STANDARDS AND CODES.

2.05 FINISH

A. ALL STRUCTURAL STEEL SHALL BE HOT–DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123.

2.06 PROTECTION

A. UPON COMPLETION OF ERECTION INSPECT ALL GALVANIZED STEEL AND PAINT ANY FIELD CUTS, WELDS, OR GALVANIZED BREAKS WITH ZINC BASED PAINT. COLOR TO MATCH THE GALVANIZING PROCESS.

PART 3 – EXECUTION

3.01 ERECTION OF STEEL

A. PROVIDE ALL ERECTION EQUIPMENT, BRACING, PLANKING, FIELD BOLTS, NUTS, WASHERS, DRIFT PINS, AND SIMILAR MATERIALS WHICH DO NOT FORM A PART OF THE COMPETED CONSTRUCTION BUT ARE NECESSARY FOR ITS PROPER ERECTION.

B. ERECT AND ANCHOR ALL STRUCTURAL STEEL IN ACCORDANCE WITH AISC REFERENCE STANDARDS. ALL WORK SHALL BE ACCURATELY SET TO ESTABLISHED LINES AND ELEVATIONS AND RIGIDLY FASTENED IN PLACE WITH SUITABLE ATTACHMENTS TO THE CONSTRUCTION OF THE BUILDING.

C. TEMPORARY BRACING, GUYING AND SUPPORT SHALL BE PROVIDED TO KEEP THE STRUCTURE SAFE AND ALIGNED AT ALL TIMES DURING CONSTRUCTION, AND TEMPORARY LOADS AND STAY WITHIN SAFE CAPACITY OF ALL BUILDING COMPONENTS.

verizonwireless
4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR.,
SUITE 210
ATLANTA, GA 30341
404•825•0981

DRAWN BY:	MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION	
A	04/05/23	ISSUED FOR REVIEW	
REV	DATE	DESCRIPTION	

PATRICK J. COLLINS
NEW MEXICO
22933
PROFESSIONAL ENGINEER
4/7/2023

SITE NAME: NM4 QUEMAZON

ADDRESS: 280 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATER TANK

SHEET TITLE:

GENERAL NOTES: TOWERS

SHEET NUMBER:

GN2

Attachment B

SYMBOLS & ABBREVIATIONS

SYMBOLS USED AS ABBREVIATIONS

&	and
∠	angle
@	at
℄	centerline
⊏	channel
d	penny
⊥	perpendicular
ℙ	plate
#	pound, number
∅	round
⌑	square
w/	with

ELEVATION SPECIFIC ABBREVIATIONS

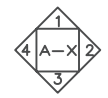
C.O.R. =	CENTER OF RADIATION
A.L. =	ATTACHMENT LEVEL
B.T. =	BOTTOM TIP LEVEL
T.T. =	TOP TIP LEVEL
T.O.S. =	TOP OF STRUCTURE
T.O.C. =	TOP OF CONCRETE
B.O.B.P. =	BOTTOM OF BASE PLATE

COMMON ABBREVIATIONS

ABV	above
AFF	above finished floor
ACC	access
ACFL	access floor
AC PNL	access panel
AC	acoustical
ACPL	acoustical plaster
ACT	acoustical tile
ADH	adhesive
A/C	air conditioning
ALT	alternate
ALUM	aluminum
ANCH	anchor, anchorage
AB	anchor bolt
ANOD	anodized
APPROX	approximate
ARCH	architect(ural)
AD	area drain
AUTO	automatic
BSMT	basement
BM	beam
BRG	bearing
BEL	below
BET	between
BVL	beveled
BIT	bituminous
BLK	block
BLKG	blocking
BD	board
BS	both sides
BW	both ways
BOT	bottom
BRK	brick
BRZ	bronze
BLDG	building
BUR	built–up roofing
CAB	cabinet
CPT	carpet(ed)
CSMT	casement
CI	cast iron
CB	catch basin
CLG	ceiling
CEM	cement
CEM PLAS	cement plaster (portland)
CER	ceramic
CT	ceramic tile
CIR	circle
CLR	clear(ance)
CLOS	closet
C.O.	cleanout
CW	cold water
COL	column
COMB	combination
COMP	composition, composite
CONC	concrete
CMU	concrete masonry unit
CONST	construction
CONT	continue
CONTR	contractor
CJ	control joint
CPR	copper
CORR	corridor
CG	corner guard
CTR	counter
CTR FLG	counter flashing
CRS	course(s)
COORD	coordinate
DP	dampproofing
DEM	demolish, demolition
DEPT	department
DTL	detail
DIAG	diagonal
DIAM	diameter
DIM	dimension
DBL	double
DIV	division
DR	door
DN	down
DS	downspout
DRN	drainage
DWR	drawer
DWG	drawing
EA	each
EF	each face
EW	each way
E	east
ELEC	electric(al)
EWC	electric water cooler
ELEV	elevator, elevation
EMER	emergency
ENCL	enclose(ure)
EQ	equal
EQP	equipment
ESC	escalator
EST	estimate
EXH	exhaust
EXG	existing
EXP	expansion
EB	expansion bolt
EJ	expansion joint
EXP	exposed
EXT	exterior
ETR	existing to remain
FM	Factory Mutual
FO	face of
FAST	fasten, fastener
FIN	finish(ed)
FFL	finished floor line
FA	fire alarm
FE	fire extinguisher
FEC	fire extinguisher cabinet
FPL	fireplace
FP	fireproof
FRT	fire–retardant
FIX	fixture
FLG	flashing
FLR	floor(ing)
FD	floor drain
FLUOR	fluorescent
FT	foot, feet
FTG	footing
FND	foundation
FRM	frame(d), (ing)
FUR	furred, furring
FUT	future
GA	gage, gauge
GALV	galvanized
GC	general contract(or)
GL	glass, glazing
GB	grab bar
GRD	grade, grading, ground
GRT	grout
GWB	gypsum wall board
GYP	gypsum
HC	handicapped
HDWR	hardware
HDWD	hardwood
HDR	header
HTG	heating
HVAC	heating/ventilating/air conditioning
HD	head
HT	height
HEX	hexagonal
HC	hollow core
HM	hollow metal
HOR	horizontal
HW	hot water
H_2O	water
IN	inch
INCL	include(d), (ing)
ID	inside diameter
INSUL	insulate(d), (ion)
INT	interior
INTM	intermediate
INV	invert
JT	joint
JB	junction box
KIT	kitchen
KO	knockout
KD	knock(ed) down
LBL	label
LAB	laboratory
LAD	ladder
LAM	laminate(d)
LAV	lavatory
LH	left hand
L	length
LT	light
LTWT	lightweight
LTL	lintel
LVR	louver
L.C. CPR	lead coated copper
MH	manhole
MFR	manufacture(er)
MAS	masonry
MO	masonry opening
MTL	materials
MAX	maximum
MECH	mechanic(al)
MBRN	membrane
MTL	metal
MIN	minimum
MIR	mirror
MISC	miscellaneous
MLD	molding, moulding
MR	moisture resistant
MULL	mullion
NAT	natural
NOM	nominal
N	north
NIC	not in contract
NTS	not to scale
NO	number
OFF	office
OC	on center(s)
OPG	opening
OPP	opposite
OD	outside diameter
OA	overall
OH	overhead
PNT	paint(ed)
PR	pair
PNL	panel
PAR	parallel
PKG	parking
PART. BD	particle board
PTN	partition
PVMT	pavement
PERF	perforate(d)
PLAS	plaster
PLAM	plastic laminate
PL	plate
PLWD	plywood
PCF	pounds per cubic foot
PLF	pounds per lineal foot
PSF	pounds per square foot
PSI	pounds per square inch
P.C.	precast
PCCONC	precast concrete
PREFAB	prefabricate(ed)
PL	property line
P.C. PLAS	portland cement plaster
QT	quarry tile
RAD	radius
RWC	rainwater conductor
REC	recessed
REF	reference
REFR	refrigerator
REG	register
REINF	reinforce(d), (ing)
RCP	reinforced concrete pipe
REM	remove
REQ'D	required
RA	return air
RVS	reverse(side)
REV	revision
RH	right hand
ROW	right of way
R	riser
RVT	rivet
RD	roof drain
RFG	roofing
RM	room
RO	rough opening
RSLNT	resilient
SCHED	schedule
SCN	screen
SL	sealant
SL&BR	sealant & backer rod
SECT	section
SHTG	sheathing
SHT	sheet
SIM	similar
SGL	single
SK	sink
SC	solid core
S	south
SPK	speaker
SPEC	specification(s)
SQ	square
SSTL	stainless steel
STD	standard
STL	steel
STOR	storage
SD	storm drain
STRUCT	structural
SURF	surface
SUSP	suspended
SYM	symmetry(ical)
SYS	system
SLD SURF MTL	solid surface material
TEMP	temporary
TEL	telephone
TV	television
TC	terra cotta
TZ	terrazzo
THK	thick
THR	threshold
T&G	tongue & groove
TEMP GL	tempered glass
T.F.	transparent finish
T&B	top & bottom
TA	toilet accessory
TOC	top of curb/concrete
TOS	top of steel
T.O.	top of
T	tread
TYP	typical
UL	Underwriters Laboratory
UNFIN	unfinished
UNO	unless noted otherwise
UTIL	utility
U/S	underside
VAC	vacuum
VB	vapor barrier
VAR	varies
VNR	veneer
VERT	vertical
VEST	vestibule
VG	vertical grain
VCB	vinyl cove base
VCT	vinyl composition tile
VWC	vinyl wall covering
VIF	verify in field
WSCT	wainscot
WTW	wall to wall
WT	weight
WH	wall hung
WC	water closet
WP	waterproofing
WR	water repellent/resistant
W/	with
WWF	welded wire fabric
W	west
W	width, wide
WDW	window
WM	wire mesh
W/O	without
WD	wood

LEGEND

ELEVATION NO.
SHEET NO.



SHEET NO.

MULTIPLE ELEVATION TAG

SECTION NO.
SHEET NO.

DETAIL NO.
SHEET NO.

COLUMN LINE


SPOT ELEVATION OR DATUM POINT

PROPERTY LINE

verizonwireless
4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite
ENGINEERING, LLC
3060 MERCER UNIVERSITY DR.,
SUITE 210
ATLANTA, GA 30341
404•825•0981

DRAWN BY:	MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION	
A	04/05/23	ISSUED FOR REVIEW	
REV	DATE	DESCRIPTION	

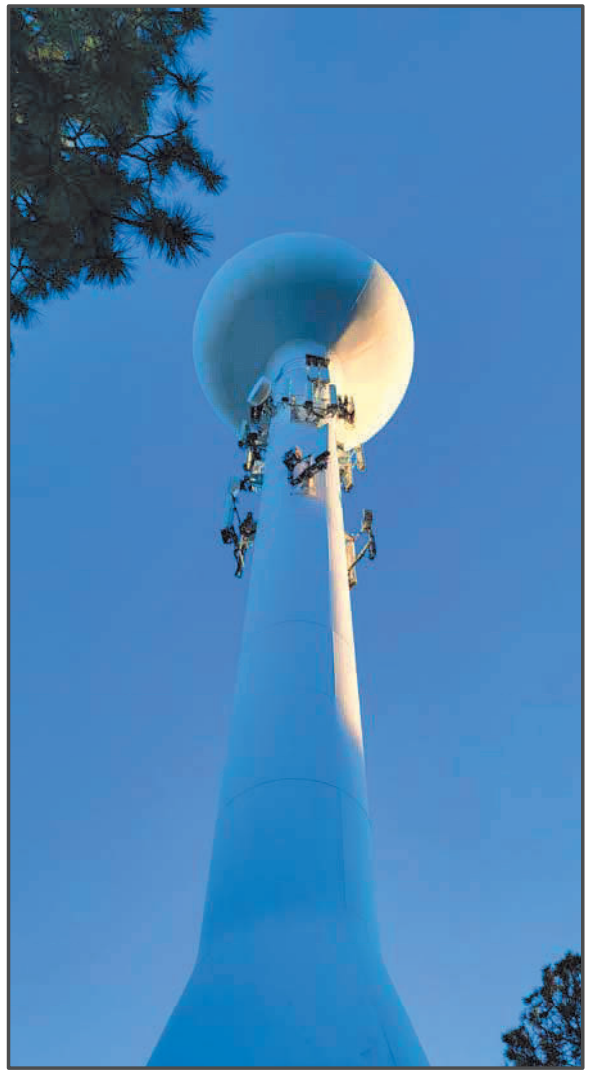
SITE NAME: NM4 QUEMAZON

ADDRESS: 280 N MESA RD
LOS ALAMOS, NM 87544

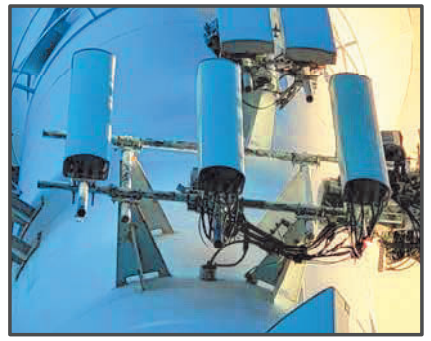
SITE TYPE: WATER TANK

SHEET TITLE:
GENERAL NOTES: SYMBOLS, ABBREVIATIONS, & LEGEND

SHEET NUMBER:
GN3



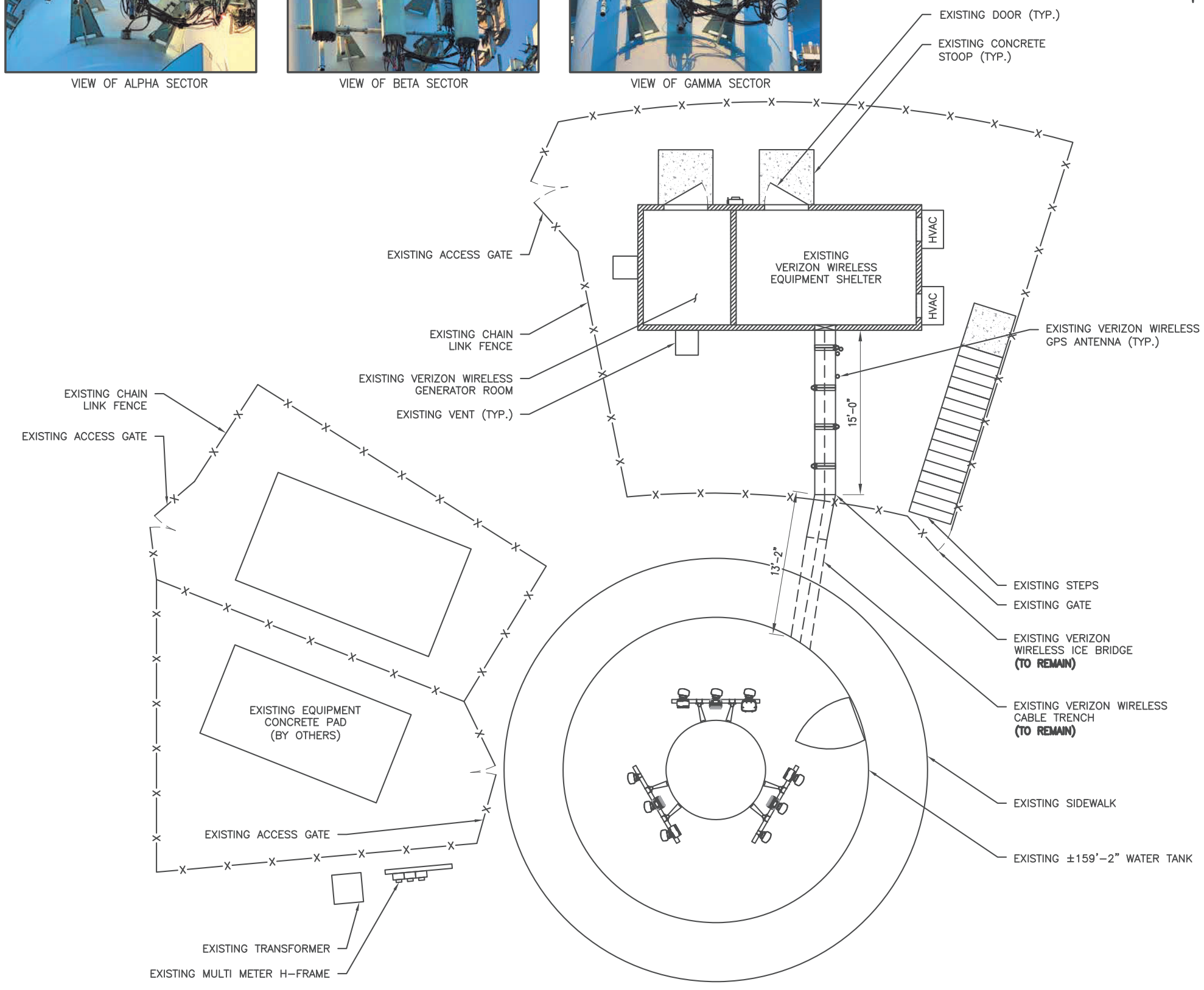
OVERALL VIEW OF EXISTING TOWER



VIEW OF ALPHA SECTOR

VIEW OF BETA SECTOR

VIEW OF GAMMA SECTOR



1 SITE PLAN

SCALE: 3/32" = 1'-0" (11" x 17")
SCALE: 3/16" = 1'-0" (22" x 34")

64' 32' 0' 128'
32' 16' 0' 64'

NOTE:
1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO VERIZON, CONSTRUCTION MANAGER, AND ENGINEER.
2. HVAC LOADING AND ELECTRICAL DESIGNS AND COORDINATION BY OTHERS.
3. INFORMATION SHOWN FOR DEPICTION PURPOSES ONLY. THIS INFORMATION IS NOT A LEGAL BOUNDARY SURVEY AND SHOULD NOT BE USED AS SUCH.
4. EXISTING UNDERGROUND UTILITIES ARE LIKELY TO BE PRESENT THROUGHOUT THE COMPOUND. THE EXACT LOCATIONS ARE UNKNOWN. CONTRACTOR TO CONDUCT UNDERGROUND UTILITY LOCATES PRIOR TO CONSTRUCTION.

Attachment B

verizonwireless

4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR., SUITE 210
ATLANTA, GA 30341
404•825•0981

DRAWN BY:		MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION		
A	04/05/23	ISSUED FOR REVIEW		
REV	DATE	DESCRIPTION		

PATRICK J. COLLINS NEW MEXICO 22933 PROFESSIONAL ENGINEER
4/7/2023

SITE NAME: NM4 QUEMAZON

ADDRESS: 280 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATER TANK

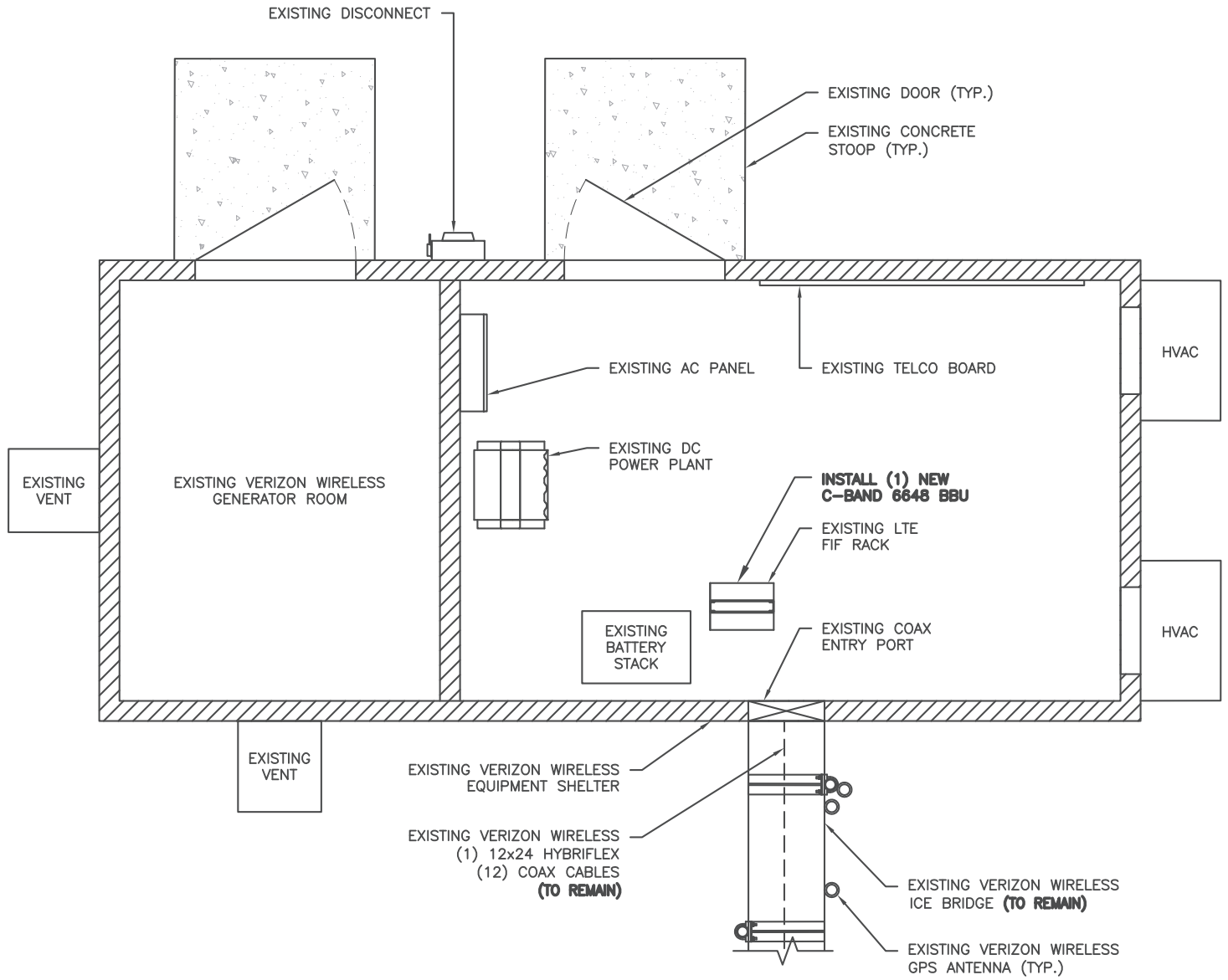
SHEET TITLE:

SITE PLAN

SHEET NUMBER:

C1

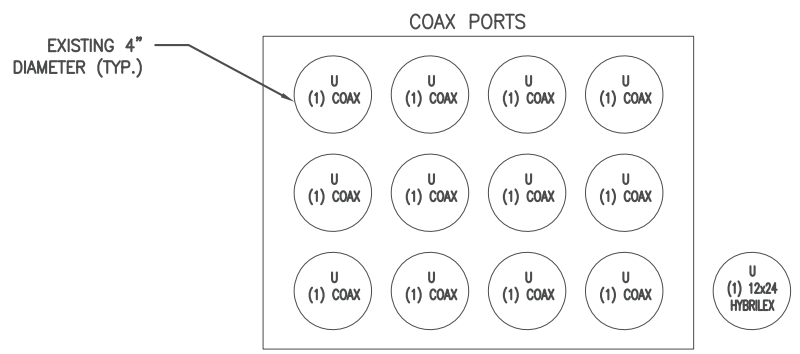
NOTE:
1. CONTRACTOR TO VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO VERIZON, CONSTRUCTION MANAGER, AND ENGINEER.
2. HVAC LOADING AND ELECTRICAL DESIGNS AND COORDINATION BY OTHERS.
3. INFORMATION SHOWN FOR DEPICTION PURPOSES ONLY. THIS INFORMATION IS NOT A LEGAL BOUNDARY SURVEY AND SHOULD NOT BE USED AS SUCH.
4. EXISTING UNDERGROUND UTILITIES ARE LIKELY TO BE PRESENT THROUGHOUT THE COMPOUND. THE EXACT LOCATIONS ARE UNKNOWN. CONTRACTOR TO CONDUCT UNDERGROUND UTILITY LOCATES PRIOR TO CONSTRUCTION.



1 EXISTING EQUIPMENT PLAN

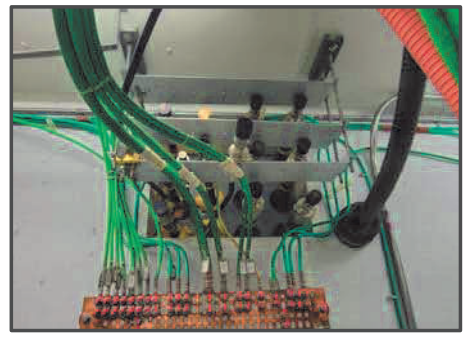
SCALE: 1/4" = 1'-0" (11" x 17")
SCALE: 1/2" = 1'-0" (22" x 34")

48 24 0 48 96
24 12 0 24 48

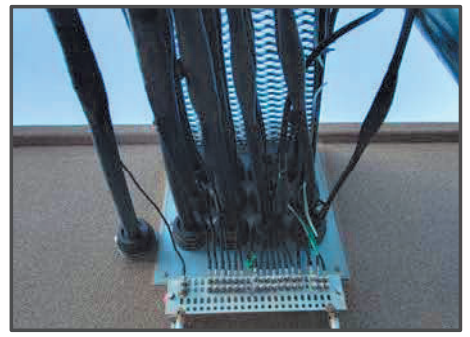


3 ENTRY PORT DIAGRAM

E=EMPTY
U=USED



INSIDE VIEW OF COAX ENTRY PORT



OUTSIDE VIEW OF COAX ENTRY PORT

EXISTING ESTIMATED CABLE LENGTHS*

SECTOR	ALPHA	BETA	GAMMA
HORZ.	±38'	±38'	±38'
VERT	±107'	±107'	±107'
+10%	±15'	±15'	±15'
TOTAL (FT)	±160'	±160'	±160'

*ALL DIMENSIONS TO BE VERIFIED IN FIELD (V.I.F.)

2 COAX CONFIGURATION & CABLE LENGTHS

verizonwireless
4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite
ENGINEERING, LLC
3060 MERCER UNIVERSITY DR.,
SUITE 210
ATLANTA, GA 30341
404•825•0981

DRAWN BY:	MA	CHECKED BY:	PC

REV	DATE	DESCRIPTION
0	04/06/23	ISSUED FOR CONSTRUCTION
A	04/05/23	ISSUED FOR REVIEW

PATRICK J. COLLINS
NEW MEXICO
22933
PROFESSIONAL ENGINEER
4/7/2023

SITE NAME: NM4 QUEMAZON

ADDRESS: 280 N MESA RD
LOS ALAMOS, NM 87544

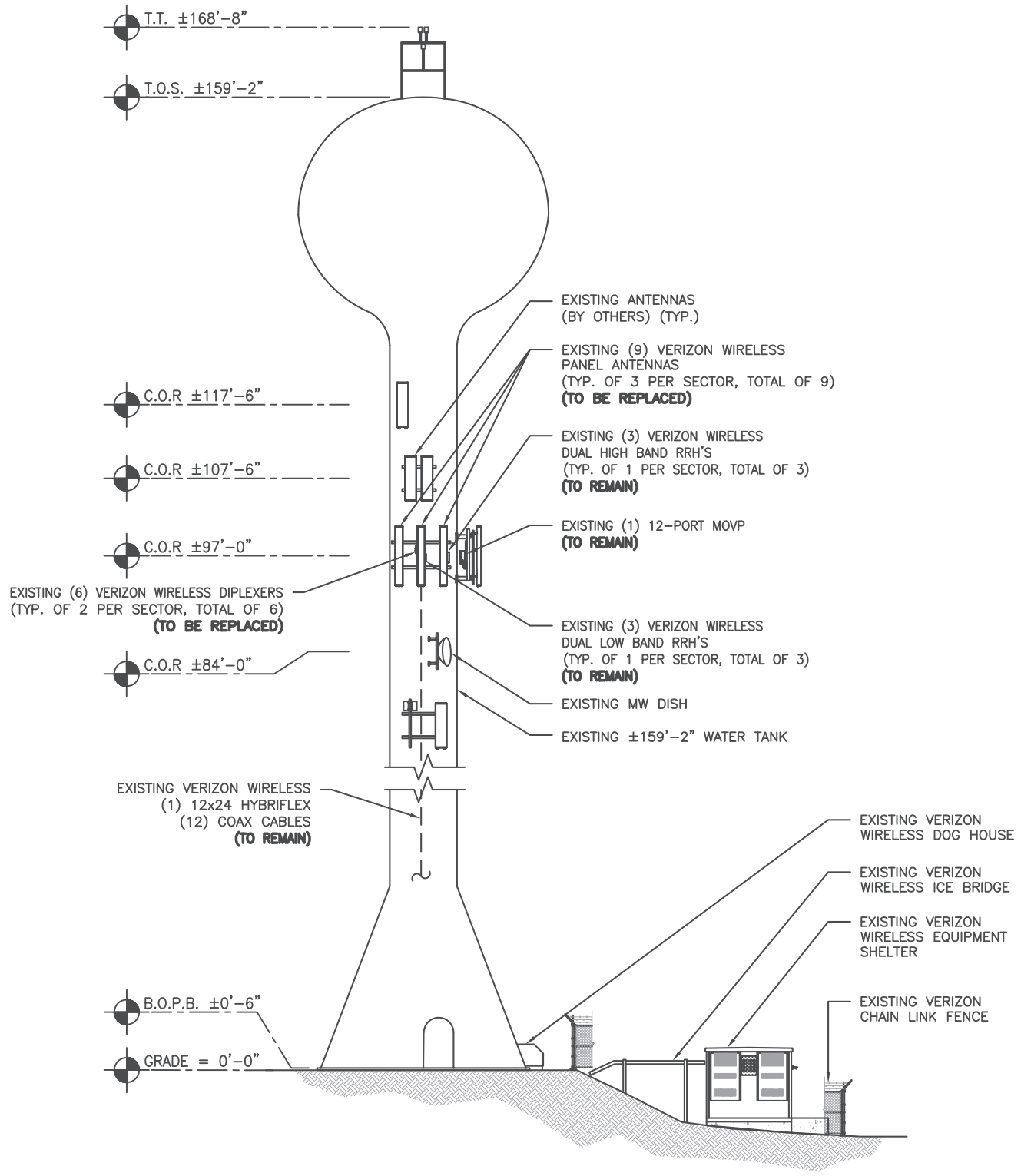
SITE TYPE: WATER TANK

SHEET TITLE:
EXISTING EQUIPMENT PLAN

SHEET NUMBER:
C2

Attachment B

NOTE:
CONTRACTOR TO VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO VERIZON CONSTRUCTION MANAGER AND ENGINEER

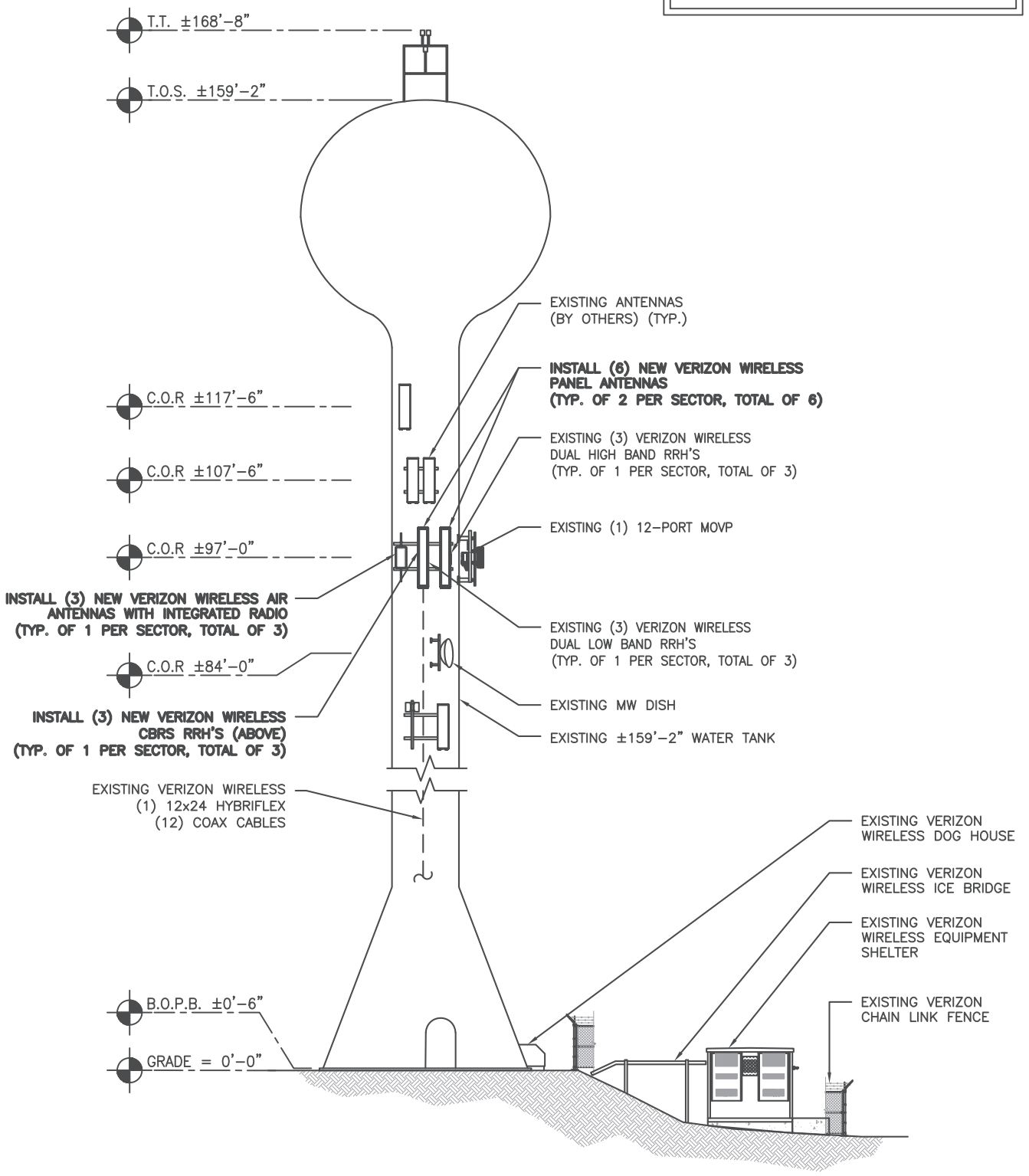


1 EXISTING ELEVATION

SCALE: 1" = 1/8'-0" (11" x 17")
SCALE: 1" = 1/4'-0" (22" x 34")

96' 48' 0 96' 192'
48' 24' 0 48' 96'

NOTE:
INSTALL ALL ANTENNAS AND EQUIPMENT PER THE MOUNT & STRUCTURAL ANALYSIS. COORDINATE ANY MODIFICATIONS WITH VERIZON WIRELESS CM AND ENGINEER.



2 PROPOSED ELEVATION

1. COMSITE ENGINEERING, LLC HAS NOT PERFORMED A STRUCTURAL ANALYSIS FOR THE STRUCTURAL CAPACITY OF THE TOWER, FOUNDATION, MOUNTS, ANTENNAS, RADIOS, CABLES OR ANY OTHER APPURTENANCE ON THE STRUCTURE. THE CONTRACTOR AND SUBCONTRACTOR SHALL COORDINATE WITH AND COMPLY WITH THE PROVISIONS OF THE STRUCTURAL ANALYSIS PREPARED BY OTHERS FOR THIS SITE AND PROJECT PRIOR TO THE INSTALLATION OF ANY EQUIPMENT ON THE STRUCTURE. IMMEDIATELY REPORT ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DRAWINGS AND THE STRUCTURAL ANALYSIS TO VERIZON AND THE ENGINEER.
2. REFER TO THE STRUCTURAL ANALYSIS AND/OR STRUCTURAL LETTER FOR THE APPROVAL OF ALL MODIFICATIONS TO AND ADDING EQUIPMENT OF NEW APPURTENANCES.
3. REFER TO ADDITIONAL DRAWINGS SPECIFIC TO STRUCTURE REINFORCEMENT FOR THIS SITE SHOULD THERE BE A REQUIREMENT FOR ANY REINFORCEMENT.
4. REFER TO STRUCTURAL ANALYSIS FOR COAXIAL AND OTHER CABLE SUPPORT AND CONFIGURATION DETAILS.
5. REFER TO STRUCTURAL ANALYSIS FOR ALL CARRIERS' APPURTENANCES AS THEY MAY NOT BE SHOWN IN ELEVATION DETAIL.

verizonwireless
4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite
ENGINEERING, LLC
3060 MERCER UNIVERSITY DR.,
SUITE 210
ATLANTA, GA 30341
404•825•0981

DRAWN BY:		MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION		
A	04/05/23	ISSUED FOR REVIEW		
REV	DATE	DESCRIPTION		

PATRICK J. COLLINS
NEW MEXICO
22933
PROFESSIONAL ENGINEER
4/7/2023

SITE NAME: NM4 QUEMAZON

ADDRESS: 280 N MESA RD
LOS ALAMOS, NM 87544

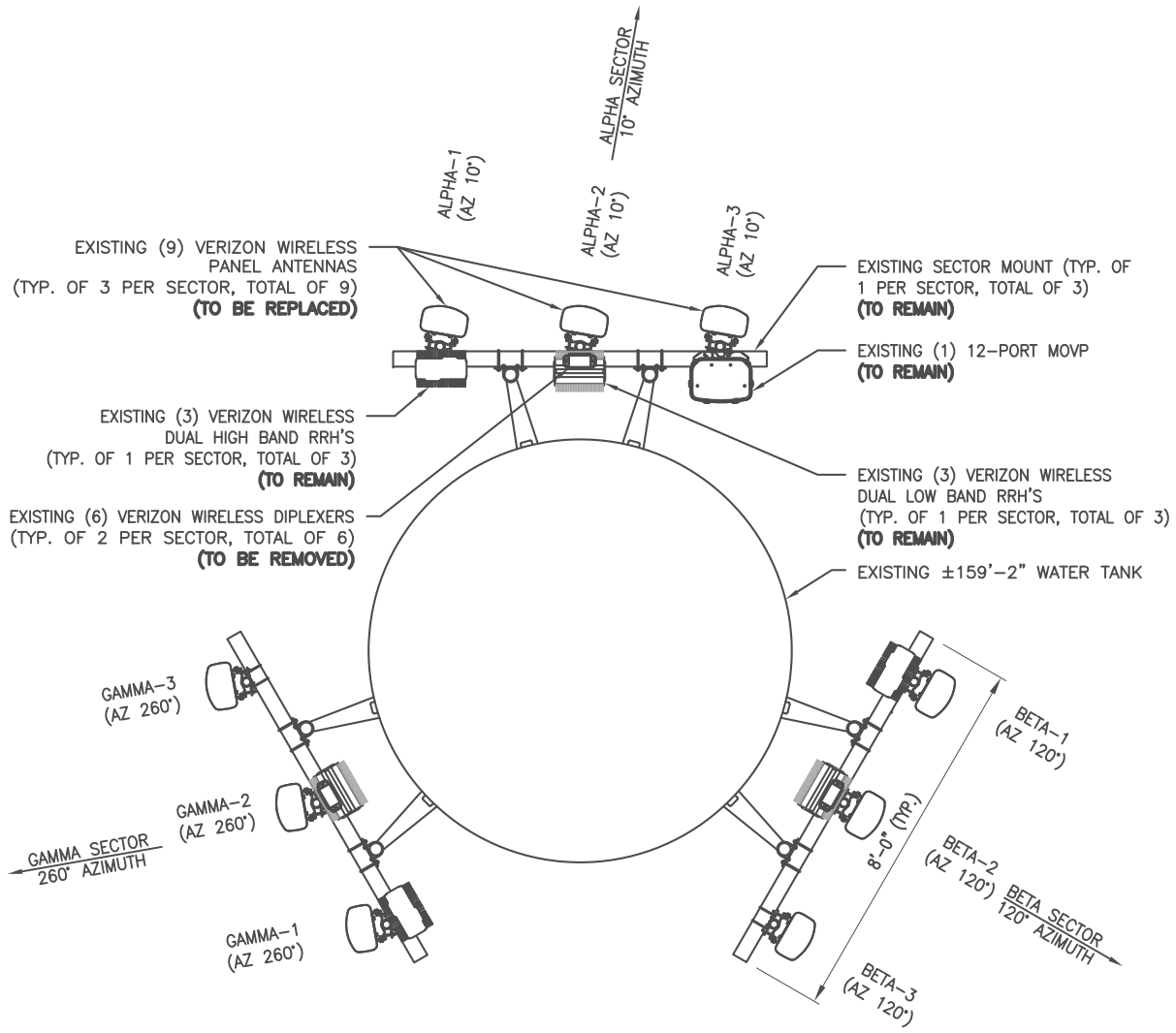
SITE TYPE: WATER TANK

SHEET TITLE:
TOWER ELEVATION EXISTING/ PROPOSED

SHEET NUMBER:
C3

Attachment B

NOTE:
CONTRACTOR TO VERIFY THE FINAL RF CONFIGURATION MATCHES THESE DRAWINGS PRIOR TO THE REMOVAL AND INSTALLATION OF ANY EQUIPMENT. CONTRACTOR TO REPORT ALL DISCREPANCIES TO VERIZON CONSTRUCTION MANAGER AND ENGINEER.

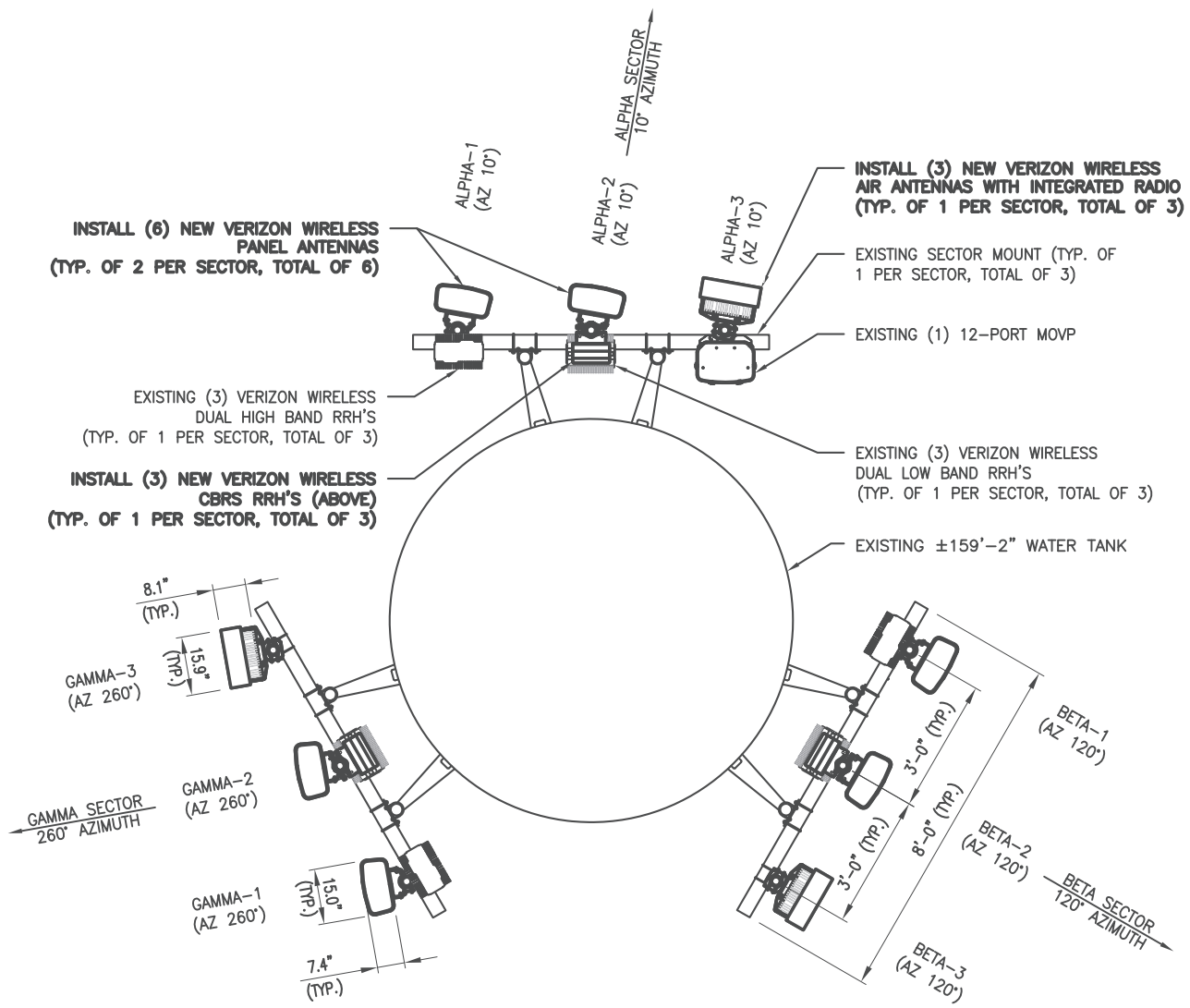


1 EXISTING ANTENNA PLAN

ELEMENTS OF THE ORIENTATION DIAGRAM SHOWN ABOVE ARE SCALED TO:
SCALE: 1/4" = 1'-0" (11" x 17")
SCALE: 1/8" = 1'-0" (22" x 34")

THESE ELEMENTS ARE: THE ANTENNA MOUNT FACE WIDTH, ANTENNA WIDTH, DISTANCE BETWEEN ANTENNAS (EDGE-TO-EDGE) & DETAIL

NOTE:
INSTALL ALL ANTENNAS AND EQUIPMENT PER THE MOUNT & STRUCTURAL ANALYSIS. COORDINATE ANY MODIFICATIONS WITH VERIZON WIRELESS CM AND ENGINEER.



2 PROPOSED ANTENNA PLAN

1. COMSITE ENGINEERING, LLC HAS NOT PERFORMED A STRUCTURAL ANALYSIS FOR THE STRUCTURAL CAPACITY OF THE TOWER, FOUNDATION, MOUNTS, ANTENNAS, RADIOS, CABLES OR ANY OTHER APPURTENANCE ON THE STRUCTURE. THE CONTRACTOR AND SUBCONTRACTOR SHALL COORDINATE WITH AND COMPLY WITH THE PROVISIONS OF THE STRUCTURAL ANALYSIS PREPARED BY OTHERS FOR THIS SITE AND PROJECT PRIOR TO THE INSTALLATION OF ANY EQUIPMENT ON THE STRUCTURE. IMMEDIATELY REPORT ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DRAWINGS AND THE STRUCTURAL ANALYSIS TO VERIZON AND THE ENGINEER.
2. REFER TO THE STRUCTURAL ANALYSIS AND/OR STRUCTURAL LETTER FOR THE APPROVAL OF ALL MODIFICATIONS TO AND ADDING EQUIPMENT OF NEW APPURTENANCES.
3. REFER TO ADDITIONAL DRAWINGS SPECIFIC TO STRUCTURE REINFORCEMENT FOR THIS SITE SHOULD THERE BE A REQUIREMENT FOR ANY REINFORCEMENT.
4. REFER TO STRUCTURAL ANALYSIS FOR COAXIAL AND OTHER CABLE SUPPORT AND CONFIGURATION DETAILS.
5. REFER TO STRUCTURAL ANALYSIS FOR ALL CARRIERS' APPURTENANCES AS THEY MAY NOT BE SHOWN IN ELEVATION DETAIL.

verizonwireless
4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR., SUITE 210
ATLANTA, GA 30341
404•825•0981

DRAWN BY:	MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION	
A	04/05/23	ISSUED FOR REVIEW	
REV	DATE	DESCRIPTION	

PATRICK J. COLLINS NEW MEXICO 22933 PROFESSIONAL ENGINEER
4/7/2023

SITE NAME: NM4 QUEMAZON

ADDRESS: 280 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATER TANK

SHEET TITLE:
ANTENNA PLAN EXISTING / PROPOSED

SHEET NUMBER:
C4

Attachment B

NOTE:
CONTRACTOR TO REFER TO CM FOR FINAL RF CONFIGURATION AND ANTENNA AND RADIO PLUMBING

1 PROPOSED ANTENNA CONFIGURATION

Added

700	850	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
						5G	Ericsson	PANEL ANTENNA	97	98.3	10(0001) 120(0002) 260(0003)	false	false	PHYSICAL	3	
LTE	5G	LTE	LTE	LTE	LTE		JMA	PANEL ANTENNA	97	101	10(01) 120(02) 260(03)	false	false	PHYSICAL	6	MX10FRO860-03

Removed

700	850	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
LTE	CDMA LTE 5G	LTE	LTE				ANDREW	PANEL ANTENNA	97	101	10(0001) 10(01) 120(0002) 120(02) 260(0003) 260(03)	false	false	PHYSICAL	9	

Retained

700	850	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID

No Data Available

Added: 9 | Removed: 9 | Retained: 0

2 PROPOSED NON ANTENNA EQUIPMENT

Equipment Summary

Added

Equipment Type	Location	700	850	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
RRU	Tower						LTE		Ericsson	4408 B48 (w/out Antenna)			PHYSICAL	3	KRC161746/1

Removed

Equipment Type	Location	700	850	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Retained

Equipment Type	Location	700	850	1900	AWS	AWS3	CBRS	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
Hybrid Cable	Tower								Commscope	12x24 HybriFlex			PHYSICAL	1	
Coaxial Cables	Tower								Commscope	AVA5-50			PHYSICAL	6	
Coaxial Cables	Tower								Commscope	AVA7-50			PHYSICAL	6	
RRU	Tower	LTE	5G						Ericsson	4449			PHYSICAL	3	
RRU	Tower			LTE	LTE				Ericsson	8843			PHYSICAL	3	
OVP Box	Tower								Raycap	OVP-12			PHYSICAL	1	
OVP Box	Shelter								Raycap	OVP-12			PHYSICAL	1	

Attachment B

verizonwireless
4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite
ENGINEERING, LLC
3060 MERCER UNIVERSITY DR.,
SUITE 210
ATLANTA, GA 30341
404 • 825 • 0981

DRAWN BY:	MA	CHECKED BY:	PC

REV	DATE	DESCRIPTION
0	04/06/23	ISSUED FOR CONSTRUCTION
A	04/05/23	ISSUED FOR REVIEW

PATRICK J. COLLINS
NEW MEXICO
22933
PROFESSIONAL ENGINEER
4/7/2023

SITE NAME: NM4 QUEMAZON

ADDRESS: 280 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATER TANK

SHEET TITLE:

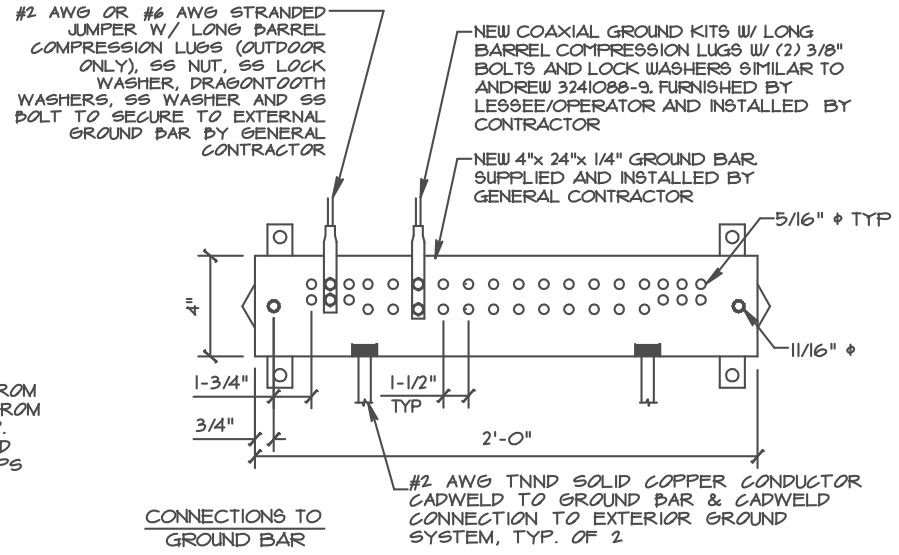
RF DATA SHEET & COAX ANTENNA DIAGRAM

SHEET NUMBER:

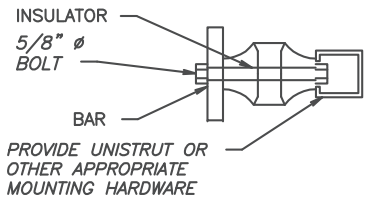
C5

NOTES:

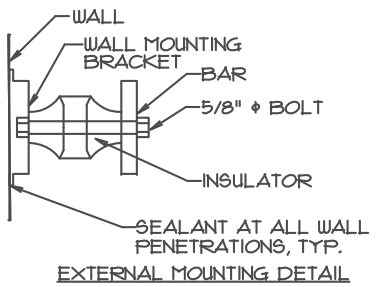
1. ALL HARDWARE STAINLESS STEEL INCLUDING BELLVILLES.
2. ALL HOLES ARE COUNTERSUNK 1/16".
3. ALL LUGS TO BE DOUBLE -LUGGED.
4. ALL INDOOR & OUTDOOR BUS BARS ARE TO BE 4"x24"x1/4" WITH MIN (2) 7/16" C/C HOLES. ALL NEW OUTDOOR BUS BARS ARE TO BE GALVANIZED STEEL: APPROVED BY EOS (AVAILABLE FROM ALLTEC CORPORATION CANTON NC). ALL INDOOR BUS BARS ARE TO BE TINNED COPPER (ELECTRIC MOTIAN COMPANY P/N EM G C14424DIM-PHARGER GD14424M OR EQUIVALENTS).
5. STEEL BUS BARS MUST BE ISOLATED FROM TOWER USING INSULATORS.
6. TOWER BUS BARS MUST BE ISOLATED FROM TOWER STEEL WITH A #2 SOLID WHIP FROM BAR TO A UL APPROVED BONDING CLAMP. FLANGE TYPE CLAMP TO FACE OR ROUND MEMBER CLAMP TO PIPE. BONDING CLAMPS MUST BE UL APPROVED.



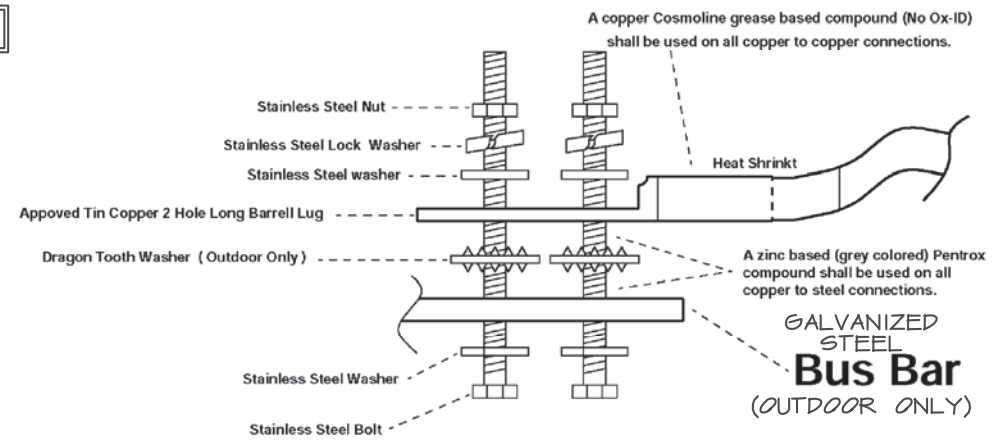
CONNECTIONS TO GROUND BAR



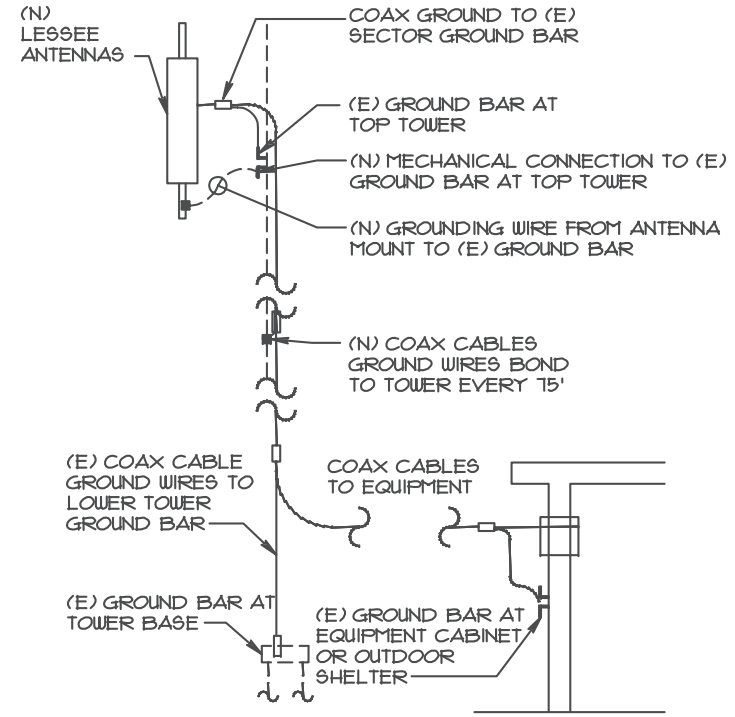
INTERNAL MOUNTING DETAIL



EXTERNAL MOUNTING DETAIL

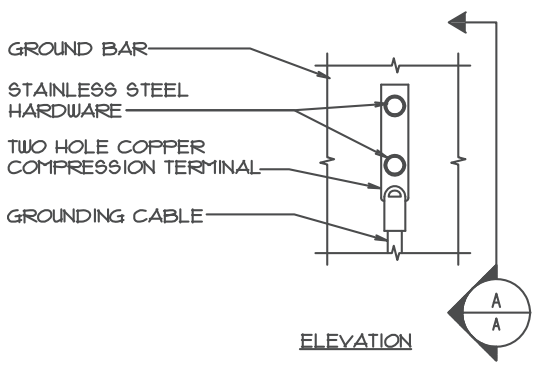


1 GROUNDING BAR
NOT TO SCALE

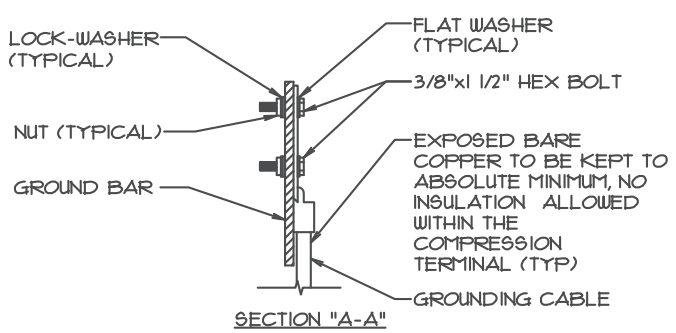


2 ANTENNA GROUNDING DIAGRAM
NOT TO SCALE

3 NOT USED
NOT TO SCALE



ELEVATION



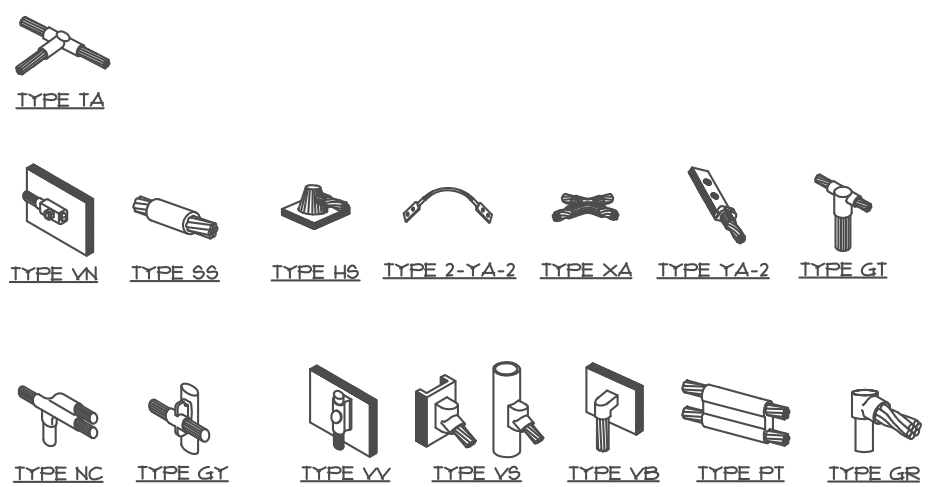
SECTION "A-A"

NOTE:

1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

NOTE: ALL SOLID WIRE SHALL BE CADWELD TYPE CONNECTION UNLESS OTHERWISE NOTED

4 TYPICAL GROUND BAR CONNECTIONS DETAIL
NOT TO SCALE



5 TYPICAL EXOTHERMIC WELD DETAILS
NOT TO SCALE

Attachment B

verizonwireless

4821 EUBANK BLVD NE
ALBUQUERQUE, NM 87111

ComSite ENGINEERING, LLC
3060 MERCER UNIVERSITY DR., SUITE 210
ATLANTA, GA 30341
404•825•0981

DRAWN BY:	MA	CHECKED BY:	PC
0	04/06/23	ISSUED FOR CONSTRUCTION	
A	04/05/23	ISSUED FOR REVIEW	
REV	DATE	DESCRIPTION	

PATRICK J. COLLINS NEW MEXICO 22933 PROFESSIONAL ENGINEER
4/7/2023

SITE NAME: NM4 QUEMAZON

ADDRESS: 280 N MESA RD
LOS ALAMOS, NM 87544

SITE TYPE: WATER TANK

SHEET TITLE:

GROUNDING DETAILS

SHEET NUMBER:

G1