verizon

WY1 MOUNT WASHBURN

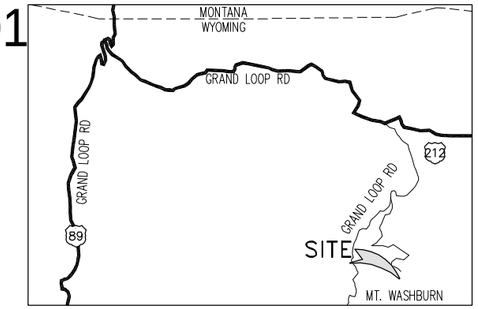
PUBLIC RECORD PARCEL NO. 99000100000001

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

VICINITY MAP
SCALE: N.T.S.

NORTH



SHEET INDEX:

SHEET	TITLE	REV.
T1	TITLE SHEET	7
SP1	SPECIFICATION & PHOTO SHEET	7
SP2	SPECIFICATIONS	6
IN	REQUIRED SPECIAL INSPECTION	6
SU1	SITE SURVEY	D
SU2	SITE SURVEY	D
SU3	SITE SURVEY	D
SU4	SITE SURVEY	D
SU5	SITE SURVEY	D
SU6	1A CERTIFICATION LETTER	–
C1	EXISTING GENERATOR SITE PLAN	7
C2	EXISTING SITE PLAN	7
C3	PROPOSED SITE PLAN	7
C4	OVERALL SITE PLAN	7
C5	ELEVATIONS	7
C6	ELEVATIONS	7
C7	ELEVATIONS	7
C8	COAX ENTRY PORT	7
C9	SHELTER MAPPING	7
C10	DETAILS	7
C11	DETAILS	7
C12	CUT SHEETS	7
RF1	EXISTING ANTENNA INFORMATION	7
RF2	PROPOSED ANTENNA INFORMATION	7
RF3	MICROWAVE INFORMATION	7
RF4	ANTENNA CUT SHEETS	7
RF5	ANTENNA CUT SHEETS	7
RS1	RESTORATION SHEET	7
RS2	RESTORATION SHEET	7
RS3	RESTORATION SHEET	7
RS4	RESTORATION SHEET	7
RS5	RESTORATION SHEET	7
RS6	RESTORATION SHEET	7
RS7	RESTORATION SHEET	7
RS8	RESTORATION SHEET	7
RS9	RESTORATION NOTES	7
RS10	NEWLY RESTORED SHEET	7
RS11	NEWLY RESTORED SHEET	7
S1	SELF SUPPORT TOWER & ISOMETRIC	1
S2	ENLARGED TOWER ELEVATION, DETAILS & SECTIONS	1
S3	BOX BEAM DETAILS & SECTIONS	1
S4	TOWER FOUNDATION PLAN, DETAILS & SECTIONS	1
S5	FOUNDATION SHORING SECTION & DETAILS	1
S6	VAULT LOCATION & ENLARGED VAULT PLANS	1
S7	VAULT SECTION & DETAILS	1
UC1	UTILITY COORDINATION SITE PLAN	3
E1	ELECTRICAL & GROUNDING GENERAL NOTES	3
E2	LOOKOUT SINGLE-LINE DIAGRAM	3
E3	GENERATOR SINGLE-LINE DIAGRAM	3
E4	EXISTING GENERATOR SITE PLAN	3
E5	ELECTRICAL SITE PLAN	3
E6	WEST ELEVATION	3
E7	SHELTER MAPPING	3
E8	SITEBOSS DETAILS	3
G1	GROUNDING SITE PLAN	3
G2	GROUNDING SITE PLAN	3
G3	GROUNDING DETAILS	3
G4	GROUNDING DETAILS	3

PROJECT INDEX:

APPLICANT:
VERIZON WIRELESS
2730 BOZEMAN AVENUE
HELENA, MONTANA 59601

CONTACT: KENT MCDERMOTT
PHONE: 406-461-1359

ENGINEERS/DESIGNERS:
J5 INFRASTRUCTURE
767 NORTH STAR RD.
STAR, ID 83669

CONTACT: MARK ANDERSON
PHONE: 208-286-0266 EXT. 106

ZONING/SITE AQ:
TAEC
4122 FACTORIA BLVD. SUITE 303
BELLEVUE, WA 98006

CONTACT: ANNE DREBIN
PHONE: 206-947-4025

FCC COMPLIANCE:

RADIATION FROM THIS FACILITY WILL NOT INTERFERE WITH OPERATION OF OTHER COMMUNICATION DEVICES.

GENERAL PROJECT NOTES:

1. PRIOR TO SUBMITTING A BID, THE CONTRACTOR SHALL FAMILIARIZE HIMSELF/HERSELF WITH THE SCOPE OF WORK AND ALL CONDITIONS AFFECTING THE NEW 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, U.N.O.
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 WORK AND CLEARANCES REQUIRED BY OTHERS RELATED TO SAID INSTALLATIONS.
10. ALL RADIO EQUIPMENT, SITE EQUIPMENT, ANTENNAS, CABLE TRAYS AND CABLES SHALL BE INSTALLED AND GROUNDED ACCORDING TO THE MOTOROLA R56 STANDARDS AND GUIDELINES FOR COMMUNICATION SITES. SEE ADDITIONAL INFORMATION ON E-SHEETS & G-SHEETS. THE STANDARDS IS AVAILABLE AS A FREE DOWNLOAD ON THE INTERNET.

DRIVING DIRECTIONS:

LATITUDE:	44°47'50.5854"N
LONGITUDE:	110°26'1.9314"W

DEPART 2730 BOZEMAN AVENUE TOWARD CARTER DRIVE (0.3MI). TURN RIGHT ONTO CARTER DRIVE (0.6MI). TURN LEFT ONTO US-12/US-287/PROSPECT AVENUE (31.5MI). KEEP STRAIGHT ONTO US-287/SOUTH FRONT STREET (30.5MI). TAKE RAMP LEFT FOR I-90 EAST TOWARD BILLINGS (57.7MI). AT EXIT 333, TAKE RAMP RIGHT FOR US-89 SOUTH TOWARD YELLOWSTONE NATIONAL PARK/CITY CENTER (0.3MI). TURN LEFT ONTO US-89 SOUTH/PARK STREET SOUTH (52.8MI). TURN RIGHT ONTO WEST PARK STREET (0.2MI). ROAD NAME CHANGES TO NORTH ENTRANCE ROAD (5.1MI). KEEP STRAIGHT ONTO MAMMOTH STREET (0.2MI). BEAR RIGHT ONTO NORTH ENTRANCE ROAD, AND THEN IMMEDIATELY TURN LEFT ONTO GRAND LOOP ROAD (26.7MI). TURN LEFT ONTO CHITTENDON ROAD (1.3MI). ARRIVE AT 44°47'50.5854" NORTH, 110°26'1.9314" WEST.

PROJECT INFORMATION:

PROPERTY OWNER:	YELLOWSTONE NATIONAL PARK PO BOX 168 YELLOWSTONE NATIONAL PARK, WY 82190-0168 PHONE: 307-344-7381
JURISDICTION:	YELLOWSTONE NATIONAL PARK
PUBLIC RECORD PARCEL NO:	99000100000001
PROJECT TYPE:	PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE
PROJECT NUMBER:	20151177755

APPROVED FOR CONSTRUCTION

PROJECT DESCRIPTION:

THIS PROJECT CONSISTS OF THE FOLLOWING:

REMOVAL
- ONE (1) EXISTING WOODEN FRAME
- ONE (1) EXISTING TRDU RACK
- TWO (2) EXISTING CONCRETE BLOCKS
- TWO (2) EXISTING 8" UNDERGROUND PIPES
- ONE (1) EXISTING COAX PORT
- ONE (1) EXISTING SMALL AC UNIT

INSTALLATION
- **THREE (3) PROPOSED TRANSFORMERS**
- **THREE (3) PROPOSED PANEL ANTENNAS**
- **THREE (3) PROPOSED 850 RRH UNITS**
- **THREE (3) PROPOSED 700 RRH UNITS**
- **FIVE (5) PROPOSED HP MICROWAVE ANTENNAS**
- **FOUR (4) PROPOSED SELF SUPPORT TOWERS**
- **TWO (2) PROPOSED MAIN OVP UNITS**
- **ONE (1) PROPOSED HYBRID CABLE**
- **ONE (1) PROPOSED 19" MICROWAVE RACK**
- **TWO (2) PROPOSED MICROWAVE VAULTS**
- **ONE (1) PROPOSED 19" MOVP RACK**
- **ONE (1) PROPOSED GENERATOR**
- **FOUR (4) PROPOSED 1000 GALLON PROPANE TANKS**
- **THREE (3) PROPOSED 200AMP PANELS**
- **TWO (2) PROPOSED ACCESS LADDERS**
- **ONE (1) PROPOSED COAX PORT**
- **TWO (2) PROPOSED WALL AC UNITS**
- **THIRTY-TWO (32) PROPOSED TRAFFIC RATED HAND HOLES**
- **THREE (3) PROPOSED ANTENNA MOUNTS**
- **TWO (2) PROPOSED ICE BRIDGE**

RELOCATION
- **SEVEN (7) EXISTING OMNI ANTENNAS**
- **THREE (3) EXISTING DI-POLES**
- **TWO (2) EXISTING GRID DISHES**
- **ONE (1) EXISTING GPS ANTENNA**
- **NINE (9) EXISTING VERIZON WIRELESS PANEL ANTENNAS**
- **ONE (1) EXISTING PANEL ANTENNA (NON-VERIZON WIRELESS)**
- **SIX (6) EXISTING RRH UNITS**
- **TWO (2) EXISTING DUEL CONE MW ANTENNAS**
- **FOUR (4) EXISTING RF EQUIPENT**
- **ONE (1) EXISTING WHIP ANTENNA**
- **ONE (1) EXISTING YAGGI ANTENNA**

DESIGNED FOR:
verizon
2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED 'NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 1/12/23

PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:
TITLE SHEET

SAVE DATE:
1/11/2023 2:13 PM

SHEET NUMBER:
T1

GENERAL PROJECT NOTES:

1.	CONTRACTOR IS RESPONSIBLE FOR ERECTING TEMPORARY BARRICADES AND/OR FENCING TO PROTECT THE SAFETY OF THE PUBLIC DURING CONSTRUCTION. THE CONTRACTOR SHALL REMOVE ALL TEMPORARY BARRIERS AND REPAIR ALL DAMAGE TO PROPERTY ON THE SITE CAUSED BY THIS CONSTRUCTION. THE COST OF REPAIR IS THE CONTRACTOR'S RESPONSIBILITY.
2.	ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS.
3.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE PRIOR TO ORDERING ANY MATERIALS OR CONDUCTING ANY WORK.
4.	EXCESS SOIL MATERIAL AND DEBRIS CAUSED BY THIS CONSTRUCTION SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL MANNER.
5.	CONTRACTOR SHALL MAKE ADJUSTMENTS TO GRADING ELEVATIONS AS NECESSARY TO ENSURE A SITE FREE OF DRAINAGE PROBLEMS.
6.	CONTRACTOR SHALL COORDINATE A CONSTRUCTION LAYDOWN AREA WITH THE PROPERTY OWNER. CONSTRUCTION LAYDOWN AREA SHALL BE FENCED-IN WITH TEMPORARY (45 DAY) CONSTRUCTION FENCE. THE TEMPORARY FENCE SHALL BE CONSTRUCTED OF 6' HIGH CHAIN LINK FABRIC AND IS TO BE REMOVED AT THE END OF CONSTRUCTION. LAYDOWN AREA IS TO BE RESTORED TO ITS ORIGINAL CONDITION AFTER FENCE REMOVAL.
7.	SURVEY INFORMATION SHOWN WAS CREATED FROM RECORD INFORMATION AND DOES NOT CONSTITUTE A LEGAL BOUNDARY SURVEY.
8.	THESE PLANS DO NOT ADDRESS THE SAFETY AND STABILITY OF THE STRUCTURE DURING ASSEMBLY AND ERECTION, WHICH ARE THE RESPONSIBILITY OF THE ERECTOR, BASED ON THE MEANS AND METHODS CHOSEN BY THE ERECTOR.

GENERAL CONTRACTOR NOTES:

1.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE PROJECT SCOPE OF WORK DEFINED UNDER THE REQUEST FOR PROPOSAL (RFP) FOR THIS PROJECT AND ALL ASSOCIATED ATTACHMENTS AND DOCUMENTS PROVIDED. THE RFP AND ALL ASSOCIATED DOCUMENTS SHALL DEFINE THE COMPLETE PROJECT SCOPE OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL DOCUMENTS AND IS SOLELY RESPONSIBLE FOR ALL WORK. ALL DOCUMENTS INCLUDED WITHIN THE PROJECT REQUEST FOR PROPOSAL ARE REQUIRED FOR THE COMPLETE PROJECT SCOPE OF WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK (EQUIPMENT, MATERIAL, INSTALLATION, TESTING, ETC.) INDICATED IN ALL DOCUMENTS. THE RFP, VERIZON WIRELESS NETWORK STANDARDS AND PROJECT ADDENDUMS AND CLARIFICATIONS ARE COMPLEMENTARY TO EACH OTHER. THE FORMAT OF THE SPECIFICATIONS AND DRAWING NUMBERING PER DISCIPLINE IS NOT INTENDED TO IMPLY SEGREGATION OF SUB CONTRACTOR WORK. CONTRACTOR SHALL ASSIGN ALL SUB CONTRACTOR WORK AND VERIZON WIRELESS WILL NOT ACCEPT ANY CHANGE ORDERS FOR INTERNAL CONTRACTOR WORK ASSIGNMENTS. CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTING ALL RFP DOCUMENTS TO THEIR SUB CONTRACTORS. ALL RFP DOCUMENTS ARE REQUIRED TO INDICATE THE PROJECT SCOPE OF WORK. PARTIAL SUB CONTRACTOR DOCUMENT PACKAGES ARE HIGHLY DISCOURAGED. IN THE EVENT OF A CONFLICT BETWEEN THE DRAWINGS, SPECIFICATIONS, REFERENCED STANDARDS, VERIZON WIRELESS STANDARDS, OR AGREEMENT TERMS AND CONDITIONS THE ARCHITECT/ ENGINEER SHALL BE CONTACTED FOR FORMAL INTERPRETATION OF THE REQUIREMENTS. THE CONTRACTOR SHALL BE DEEMED TO HAVE PROVIDED THE DETAILED AND EXTENSIVE INTERPRETATION. ANY WORK INSTALLED IN CONFLICT WITH THE ARCHITECT/ ENGINEER INTERPRETATIONS SHALL BE CORRECTED BY THE CONTRACTOR AT NO EXPENSE TO VERIZON WIRELESS.
2.	ALL ANTENNAS MUST BE PIM TESTED WITHIN 48 HOURS OF THEM BEING RECEIVED BY THE INSTALLATION CONTRACTOR. THOSE RESULTS MUST BE SENT BACK TO THE VERIZON WIRELESS CONSTRUCTION ENGINEER AND EQUIPMENT ENGINEER WITHIN THE SAME 48 HOURS. IF YOU MISS THE 48HR TIMELINE AND THE ANTENNAS DO NOT PASS UPON INSTALLATION, YOUR COMPANY WILL BE CHARGED FOR THE COST OF THE ANTENNAS FOR REPLACEMENT.
3.	ALL LOADS MUST BE SECURED PROPERLY TO THE VEHICLE OR TRAILER. VERIZON WIRELESS WILL PASS ALONG THE COST OF ANY REPLACEMENTS DUE TO DAMAGE OR LOSS WHETHER IT IS NEW OR USED.

ANTENNA, MOUNTS & HARDWARE INSTALLATION NOTES:

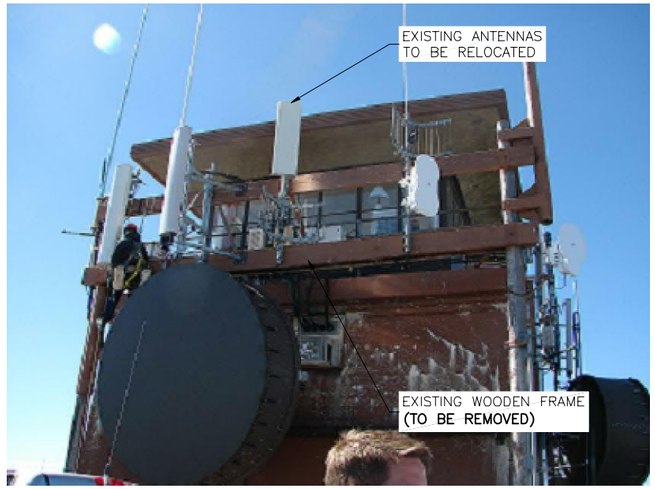
1.	CONTRACTOR TO INSTALL ANTENNAS, MOUNTS AND TOWER HARDWARE PER MANUFACTURER'S RECOMMENDATIONS (OR AS REQUIRED BY THE OWNER/PROVIDER).
2.	ALL BOLTS SHALL BE TIGHTENED PER AISC REQUIREMENTS.
3.	ANY GALVANIZED SURFACES THAT ARE DAMAGED BY ABRASIONS, CUTS, DRILLING OR FIELD WELDING DURING SHIPPING OR ERECTION SHALL BE TOUCHED-UP WITH TWO COATS OF COLD GALVANIZING COMPOUND MEETING THE REQUIREMENTS OF ASTM A780.
4.	ANTENNA MOUNTS SHALL NOT BE USED AS A CLIMBING DEVICE. WORKERS SHALL ALWAYS TIE OFF TO AN APPROVED CLIMBING POINT.
5.	SEE ALSO GENERAL ANTENNA NOTES ON SHEET RF1 (IF APPLICABLE).

MAIN OVP, SECTOR BOX, RRH, TMA, & DIPLEXER INSTALLATION NOTES:

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

COAX PORT NOTES:

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

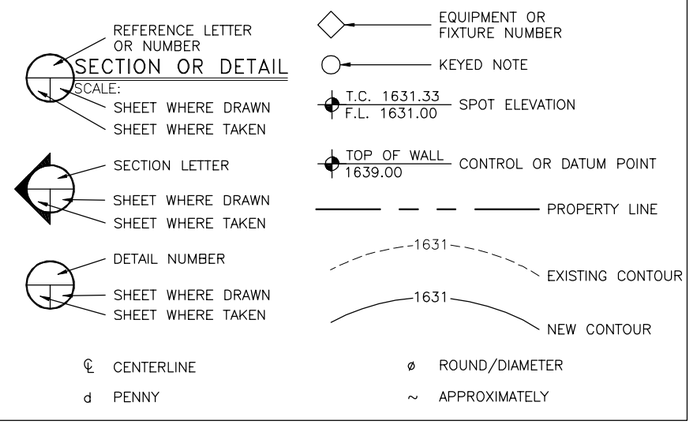


VIEW OF EXISTING ANTENNAS

VIEW OF EXISTING COAX PORT

VIEW OF EXISTING LOOKOUT TOWER
(LOOKING EAST)

LEGEND OF SYMBOLS:



EQUIPMENT INSTALLATION NOTES:

1.	ALL RADIO EQUIPMENT, SITE EQUIPMENT, ANTENNAS, CABLE TRAYS AND CABLES SHALL BE INSTALLED AND GROUNDED ACCORDING TO THE MOTOROLA R56 STANDARDS AND GUIDELINES FOR COMMUNICATION SITES. SEE ADDITIONAL INFORMATION ON E-SHEETS & G-SHEETS. THE STANDARDS IS AVAILABLE AS A FREE DOWNLOAD ON THE INTERNET.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/27/23
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

SPECIFICATION & PHOTO SHEET

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

SP1

GENERAL UPGRADE NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MEANS AND METHODS TO COMPLETE ALL UPGRADES AS INDICATED IN THIS DOCUMENT.
2. ALL DIMENSIONS, SECTIONS AND DETAILS OF THE EXISTING STRUCTURE ARE INCLUDED FOR INFORMATION PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY ALL RELEVANT INFORMATION PRIOR TO CONSTRUCTION OR FABRICATION. NOTIFY THE ENGINEER-OF-RECORD IMMEDIATELY OF ANY DISCREPANCIES. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS.
3. CONTRACTOR IS RESPONSIBLE FOR ERECTING TEMPORARY BARRICADES AND/OR FENCING TO PROTECT THE SAFETY OF THE PUBLIC DURING CONSTRUCTION. THE CONTRACTOR SHALL REMOVE ALL TEMPORARY BARRIERS AND REPAIR ALL DAMAGE TO PROPERTY ON THE SITE CAUSED BY THIS CONSTRUCTION. THE COST OF REPAIR IS THE CONTRACTOR'S RESPONSIBILITY.
4. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REQUIREMENTS.
5. COORDINATE WORK INDICATED ON THESE DRAWINGS WITH THE NEW EQUIPMENT, EXISTING EQUIPMENT, WAVEGUIDE ETC.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL MEASUREMENTS AT THE SITE PRIOR TO ORDERING ANY MATERIALS OR CONDUCTING ANY WORK.
7. ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO AISC SPECIFICATIONS AND CODES, LATEST EDITION.
8. CONTRACTOR SHALL COLD-GALVANIZE ALL RAW STEEL AS REQUIRED DURING CONSTRUCTION PROCESS.

STRUCTURAL DESIGN CRITERIA:

1. ALL LOADS DERIVED FROM REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE 2012 (IBC 2012), MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE 7-10), AND STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES (ANSI TIA-222-G).
2. WIND LOADS: IBC SECTION 1609 AND ASCE 7 SECTION 29.5 APPLIES
   EXP C, Vss = 90MPH
   HEIGHT & EXPOSURE COEF. = 1.0
   IMPORTANCE FACTOR = 1.0
3. SEISMIC LOADS: IBC SECTION 1613.3.5,2 AND ASCE 7 SECTION 12.14 APPLIES
   "SIMPLIFIED ANALYSIS PROCEDURE".

   SEISMIC DESIGN CATEGORY D, SITE CLASS D
   $V = \frac{1.2 S_{DS} W}{R}$
   FA = SITE COEF. = 1.114
   Ss = SPECTRAL ACCELERATION = 0.965
   SMS = FA Ss = 1.075
   SDS = (2/3) SMS = 0.717
4. ANSI TIA-222-G:
   V=90 MPH (3-SEC. GUST-IBC 2012)
   V=30 MPH (½" RADIAL ICE)
   EXPOSURE C
   CLASS II, TOPO 1
5. FIBER VAULT - VEHICLE LOADING:
   20,000lbs CRANE POINT LOAD LOCATED ANYWHERE
   80 PSF LIVE LOAD
   150 PSF SNOW LOAD
   50 PSF DEAD LOAD FOR ASPHALT TOPPING (IN ADDITION TO THE DEAD LOAD OF THE CONCRETE ITSELF).

STEEL NOTES:

1. ALL STEEL SHALL BE GALVANIZED PER ASTM A123 AND CONFORM TO THE FOLLOWING MINIMUM SPECIFICATIONS UNLESS NOTED OTHERWISE:

PLATE/ANGLE	ASTM	A36
THREADED ROD	ASTM	F1554 GR 55
PIPE	ASTM	A53 GR B

2. ALL BOLTS SHALL BE GALVANIZED PER ASTM A153 AND CONFORM TO ASTM GRADE A325 UNLESS NOTED OTHERWISE. ALL BOLTED CONNECTIONS SHALL BE EQUIPPED 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. AT HIS OWN DISCRETION, THE CONTRACTOR MAY 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 FABRICATION AND/OR ERECTION. TOWERCOM IS ABSOLVED OF ALL LIABILITY ASSOCIATED WITH THE MISINTERPRETATION OF THE CONSTRUCTION DOCUMENTS IF CONTRACTOR CHOOSES NOT TO SUBMIT SHOP DRAWINGS.
6. TORCH-CUTTING OF ANY KIND SHALL NOT BE PERMITTED.
7. ALL BOLTS SHALL BE TIGHTENED TO A "SNUG-TIGHT" CONDITION AS DEFINED IN AISC 13TH EDITION, PAGE 16.2-46, SECTION 8.1.

   THE SNUG-TIGHTENED CONDITION IS DEFINED AS THE TIGHTNESS THAT IS ATTAINED WITH A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER USING AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.

REINFORCING STEEL NOTES:

1. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615. VERTICAL/HORIZONTAL BARS SHALL BE GRADE 60; TIES OR STIRRUPS SHALL BE A MINIMUM OF GRADE 40. ALL REINFORCING STEEL SHALL HAVE 3" (± ⅜") OF CONCRETE COVER, U.N.O.
2. ALL BAR BENDS, HOOKS, SPLICES AND OTHER REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ACI 315.
3. ALL BARS SHALL BE SPLICED WITH A MINIMUM LAP OF 32 BAR DIAMETERS. LAP SPLICES OF DEFORMED BARS IN TENSION ZONES SHALL BE CLASS-B SPLICES. WELDING OF BARS IS NOT PERMITTED.
4. AT ALL CORNERS AND WALL INTERSECTIONS, PROVIDE BENT HORIZONTAL BARS TO MATCH THE HORIZONTAL REINFORCING STEEL.
5. PROVIDE VERTICAL DOWELS IN FOOTINGS AND AT CONSTRUCTION JOINTS TO MATCH VERTICAL REINFORCING BAR SIZE AND SPACING.
6. ACI-APPROVED PLASTIC-COATED BAR CHAIRS OR PRECAST CONCRETE BLOCKS SHALL BE PROVIDED FOR SUPPORT OF ALL GRADE-CAST REINFORCING STEEL & SHALL BE SUFFICIENT IN NUMBER TO PREVENT SAGGING. METAL CLIPS OR SUPPORTS SHALL NOT BE PLACED IN CONTACT WITH THE FORMS OR THE SUB-GRADE.
7. DOWELS AND ANCHOR BOLTS SHALL BE WIRED OR OTHERWISE HELD IN CORRECT POSITION PRIOR TO PLACING CONCRETE. IN NO CASE SHALL DOWELS OR ANCHOR BOLTS BE "STABBED" INTO FRESHLY-POURED CONCRETE.

EXCAVATION NOTES:

1. PRIOR TO EXCAVATION, THE AREA SHALL BE CHECKED FOR ALL UNDERGROUND FACILITIES.
2. EXCESS SOIL MATERIAL AND DEBRIS CAUSED BY CONSTRUCTION SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LEGAL MANNER.
3. CONTRACTOR SHALL DETERMINE THE MEANS AND METHODS TO SUPPORT THE EXCAVATION DURING CONSTRUCTION AND SHALL REFER TO THE GEOTECHNICAL INVESTIGATION REPORT (IF AVAILABLE) FOR RECOMMENDATIONS.
4. ALL SOIL COMPACTION SHALL BE A MINIMUM OF 95% MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-1557. CONTRACTOR TO COMPACT ALL SOIL INTENDED TO SUPPORT FOUNDATIONS AND FOOTINGS. CONTRACTOR SHALL REFER TO THE GEOTECHNICAL INVESTIGATION REPORT (IF AVAILABLE) FOR RECOMMENDATIONS AND/OR MORE STRINGENT REQUIREMENTS.
5. FOUNDATIONS SHALL BE PLACED ON FIRM UNDISTURBED, INORGANIC MATERIAL. LOCAL AREAS OF SOFT AND/OR UNACCEPTABLE MATERIAL ENCOUNTERED AT THE BOTTOM OF FOUNDATIONS MUST BE OVER-EXCAVATED AND BROUGHT UP TO DESIGN GRADE WITH COMPACTED "STRUCTURAL FILL". CONTRACTOR SHALL REFER TO THE GEOTECHNICAL INVESTIGATION REPORT (IF AVAILABLE) FOR RECOMMENDATIONS.

FOUNDATION NOTES:

1. THE CONTRACTOR SHALL READ THE GEOTECHNICAL REPORT (IF AVAILABLE) AND SHALL CONSULT THE GEOTECHNICAL ENGINEER AS NECESSARY PRIOR TO CONSTRUCTION.
2. THE GEOTECHNICAL ENGINEER (OR INSPECTOR) SHALL INSPECT THE EXCAVATION PRIOR TO THE PLACEMENT OF CONCRETE AND SHALL PROVIDE A NOTICE OF INSPECTION FOR THE BUILDING INSPECTOR FOR REVIEW AND RECORDS PURPOSES.
3. THE CONTRACTOR SHALL DETERMINE THE MEANS AND METHODS NECESSARY TO SUPPORT THE EXCAVATION DURING CONSTRUCTION.
4. REBAR AT BOTTOM OF FOUNDATIONS SHALL BE BONDED TO SITE GROUNDING SYSTEM (WHEN APPLICABLE). SEE ADDITIONAL DETAILS ON GROUNDING SITE PLAN.
5. ALL FOOTINGS TO BE PLACED ON FIRM, UNDISTURBED, INORGANIC MATERIAL. PROOF ROLL SUB-GRADE PRIOR TO PLACING CONCRETE WHERE THE MATERIAL HAS BEEN DISTURBED BY EQUIPMENT. UNACCEPTABLE/DISTURBED MATERIAL SHALL BE OVER-EXCAVATED AND REPLACED WITH "LEAN CONCRETE FILL".
6. STRUCTURAL BACKFILL SHALL BE GRANULAR FREE-DRAINING MATERIAL FREE OF DEBRIS, ORGANICS, REFUSE AND OTHERWISE DELETERIOUS MATERIALS. MATERIAL SHALL BE PLACED IN LIFTS NO GREATER THAN 6" IN DEPTH AND COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED PER ASTM D1557 (MODIFIED PROCTOR).

FIBERGLASS REINFORCED POLYMER (FRP) MEMBER:

1. ALL STRUCTURAL SHAPES SHALL BE STRONGWELL FRP SERIES 625 MANUFACTURED USING THE PULTRUSION PROCESS.
2. ALL CUT EDGES AND HOLES SHALL BE SEALED WITH A RESIN APPROVED BE THE MANUFACTURER.
3. ALL FRP STRUCTURAL FRAMING MEMBERS TO BE INSTALLED WITH CAUTION TO PREVENT BREAKAGE, NICKS, GOUGES, ETC. DURING FABRICATION, HANDLING, AND INSTALLATION.
4. FRP NUTS & BOLTS SHALL BE TIGHTENED PER MANUFACTURERS RECOMMENDATION.

MANUFACTURER INFORMATION:

1. FIBERGLASS REINFORCED POLYMER (FRP) PANELS AND STRUCTURAL FRAMING MEMBERS BY STEALTH CONCEALMENT SOLUTIONS (OR VERIZON WIRELESS APPROVED MANUFACTURER).

CONCRETE NOTES:

1. ALL CONCRETE SHALL BE IN ACCORDANCE WITH CHAPTER 19 OF THE IBC & ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION & HAVE THE FOLLOWING PROPERTIES:
   A MINIMUM 7-DAY COMPRESSIVE STRENGTH (f'c) OF 4,000 PSI.
   B CEMENT SHALL BE "LOW-ALKALI" TYPE IIIA (HIGH-EARLY, AIR ENTRAINING) CONFORMING TO ASTM C150.
   C MAXIMUM WATER/CEMENT RATIO OF 0.45 AND AIR-ENTRAINED 4% TO 7%.
   D CONCRETE PROPORTIONING SHALL BE DESIGNED BY AN APPROVED LABORATORY. TOLERANCES IN ACCORDANCE WITH ACI 117. COPIES OF CONCRETE MIX SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO PLACEMENT.
   E ALL AGGREGATE USED IN CONCRETE SHALL CONFORM TO ASTM C33. USE ONLY AGGREGATES KNOWN NOT TO CAUSE EXCESSIVE SHRINKAGE. MAXIMUM AGGREGATE SIZE TO BE 1½".
   F MAXIMUM SLUMP: 3" (FOUNDATION, FOOTING, SLAB), 4" (WALL, COLUMN, BEAM)
2. ALL EXPOSED CORNERS SHALL BE CHAMFERED ¾".
3. ALL CONCRETE SURFACES SHALL BE CURED PER THE SPECIFICATIONS AND CONFORMANCE WITH ACI 318, "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION.
4. FORMWORK FOR CONCRETE SHALL CONFORM TO ACI 347 AND THE FOLLOWING SPECIFICATIONS:
   A TOLERANCES FOR FINISHED CONCRETE SURFACES SHALL MEET CLASS-C REQUIREMENTS.
   B IN NO CASE SHALL FINISHED CONCRETE SURFACES EXCEED THE FOLLOWING VALUES AS MEASURED FROM NEAT PLAN LINES AND FINISHED GRADES: ± ¼" VERTICAL, ± 1" HORIZONTAL.
   C FORM LUMBER SHALL BE NO. 2 OR BETTER CONSTRUCTION-GRADE FIR OR ¾" PLY MIN.
   D FORMS SHALL BE REMOVED AFTER CONCRETE HAS SUFFICIENTLY CURED TO MAINTAIN OWN WEIGHT.
   E NO LOADS SHALL BE PLACED ON CONCRETE FOR A MINIMUM OF 7 DAYS AFTER PLACEMENT.
5. IN NO CASE SHALL THE TOLERANCE FOR FINISHED CONCRETE SURFACES EXCEED THE FOLLOWING VALUES AS MEASURED FROM NEAT PLAN LINES AND FINISHED GRADES.
   • FOOTINGS ± 1/16 IN. VERTICAL, ± 1 IN. HORIZONTAL, ± 1/16 IN. @ TOWER BASE PLATE.
6. THE TOLERANCE, MEASURED FROM NEAT PLAN LINES AND ELEVATIONS FOR PLACEMENT OF REINFORCING STEEL SHALL BE:
   A MEMBERS 8-IN THICK OR LESS: ± ½ IN.
   B MEMBERS THICKER THAN 8-IN: ± ⅝ IN.
7. CONCRETE FINISHING:
   CONCRETE SURFACES SHALL BE FINISHED IN ACCORDANCE WITH ACI 301 SECTIONS 5.3, 6.3, AND 7.3. PROVIDE ROUGH FINISH FOR ALL SURFACES NOT EXPOSED TO VIEW AND SMOOTH FINISH FOR ALL OTHERS, U.N.O.

   ALL CONCRETE SHALL BE FINISHED WITH "PRO-SEAL DP-36" DEEP PENETRATING SEALER AND "PRO-SEAL ULTRA SHIELD II-A" POLYCARBONATE FILM SEALER IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. SEE SHEET SP2 FOR PRODUCT INFORMATION.
8. A MINIMUM OF ONE (1) SET OF CONCRETE CYLINDERS SHALL BE TAKEN (IF REQUIRED BY SPECIAL INSPECTIONS ON SHEET IN1). EACH SET SHALL CONSIST OF THREE (3) CYLINDERS. ONE (1) SHALL BE TESTED AT 7 DAYS, TWO (2) SHALL BE TESTED AT 28 DAYS. ALL CYLINDERS SHALL BE TAKEN, PREPARED AND TESTED BY A TESTING LAB IN ACCORDANCE WITH ASTM C172, C31 AND C39.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 1/12/23

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

SPECIFICATION SHEET

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

SP2

REQUIRED SPECIAL INSPECTIONS:

STEEL CONSTRUCTION (IBC 1705.2.1, 1705.11.1 & 1705.12.2):

REQ'D	VERIFICATION & INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD
	1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:	–	–	
X	A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	–	√	APPLICABLE ASTM MATERIAL SPECIFICATIONS: AISC 360, SECTION A3.3.
	B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	–	–	–
	2. INSPECTION OF HIGH-STRENGTH BOLTING:	–	–	–
X	2. FASTENERS MARKED	–	√	
	3. PROPER FASTENERS FOR JOINT	√	√	
	3. MATERIAL VERIFICATION OF STRUCTURAL STEEL	–	–	–
	A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	–	√	ASTM A6 OR ASTM A568
X	B. MANUFACTURER'S CERTIFICATED MILL TEST REPORTS.	–	√	
	4. INSPECTION OF WELDING:	–		
	A. STRUCTURAL STEEL	–	–	
	1. COMPLETE AND PARTIAL PENETRATION GROOVE WELDS.	√	–	PER SEC N5.4-1, AISC 360-10
X	4. FIT-UP GROOVE WELDS	√	–	
X	6. FIT-UP OF FILLET WELDS	√	–	
	3. CRACKED TACK WELDS	–	√	
	1. CJP WELDS (RISK CAT. II)	–	√	

OTHER STEEL INSPECTIONS (SECTION N5.7, AISC 360-10; TABLES J8-1 & J10-1, AISC 341-10):

REQ'D	VERIFICATION & INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD
X	1. STANDARD STEEL DETAILS	–	√	PER SEC N5.7, AISC 360-10; TABLES J8-1 & J10-1, AISC 341-10
X	2. ANCHOR RODS AND OTHER EMBEDMENTS SUPPORTING STRUCTURAL STEEL	–	√	
	3. REDUCED BEAM SECTION (RBS)	–	√	ACI 318: CH 4, 5.2-5.4
	4. PROTECTED ZONES	–	√	ASTM C172 ASTM C31 ACI 318: 5.6, 5.8

TABLE 1705.3 REQUIRED SPECIAL INSPECTION AND TESTS OF CONCRETE CONSTRUCTION

REQ'D	TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
X	1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	–	√	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
	3. INSPECT ANCHORS CAST IN CONCRETE.	√	–	ACI 318: 17.8.2	–
	4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	√	–	ACI 318: 17.8.2.4	–
	b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	√	–	ACI 318: 17.8.2	
X	5. VERIFY USE OF REQUIRED DESIGN MIX.	–	√	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
X	6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	√	–	ASTM C172 ASTM C31 ACI 318: 26.4, 26.12	1908.10
X	12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSION OF THE CONCRETE MEMBER BEING FORMED.	–	√	ACI 318: Ch. 26.11.2(b)	–

SOILS (IBC TABLE 1705.6):

REQ'D	VERIFICATION & INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD
X	2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	-	√	-

SPECIAL INSPECTION COORDINATION:

1. ALL SPECIAL INSPECTIONS MUST BE PERFORMED BY A QUALIFIED INSPECTOR.
2. ALL INSPECTION REPORTS SHALL BE ORGANIZED INTO A CONCISE DOCUMENT AND DELIVERED TO THE ENGINEER OF RECORD FOR APPROVAL.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/27/23
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

INSPECTION SHEET

SAVE DATE:

1/11/2023 2:13 PM

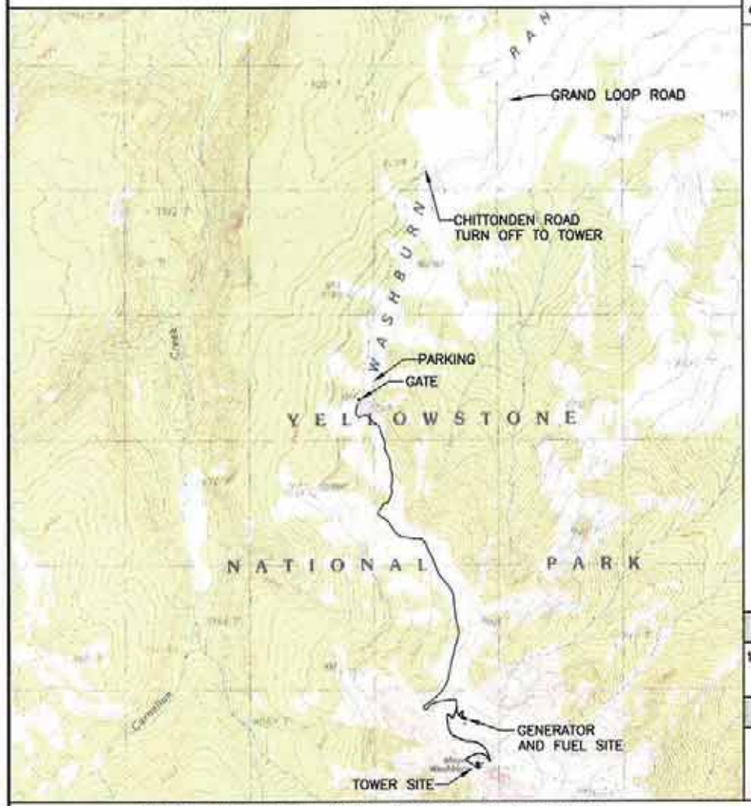
SHEET NUMBER:

IN

SITE AREA SURVEY

GENERAL OVERLAY OF PROJECT AREA ON USGS QUADRANGLE MAP

MOUNT WASHBURN,
YELLOWSTONE NATIONAL PARK,
PARK COUNTY, WYOMING



SITE LOCATION AND ACCESS OVERVIEW

SCALE: 1" = 4000'

TITLE REFERENCE:

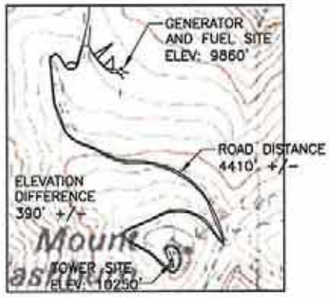
This Survey was done with sufficient research and field gathered data to verify the Parent Parcel of the subject property, however, this Surveyor has relied upon the title provider referenced herein for documents of record. This Surveyor makes no guarantee, either expressed or implied as to the quality of the title report/abstract and reference documents provided and the documents provided affecting the Lease and immediate area have been plotted.

KEYED NOTES

(A) FOUND 3¼" USC&GS BRASS CAP
"WASHBURN" DATE: 1950
NGS DATA SHEET NAVD88 ORTHO
HEIGHT: 10249'

(B) FOUND 3¼" USC&GS BRASS CAP
WASHBURN AZ MARK NO 1, DATE: 1950

(C) FOUND 3¼" USC&GS BRASS CAP
WASHBURN AZ MARK NO 2, DATE: 1950



UTILITY ROUTE DETAIL

SCALE: 1" = 1000'

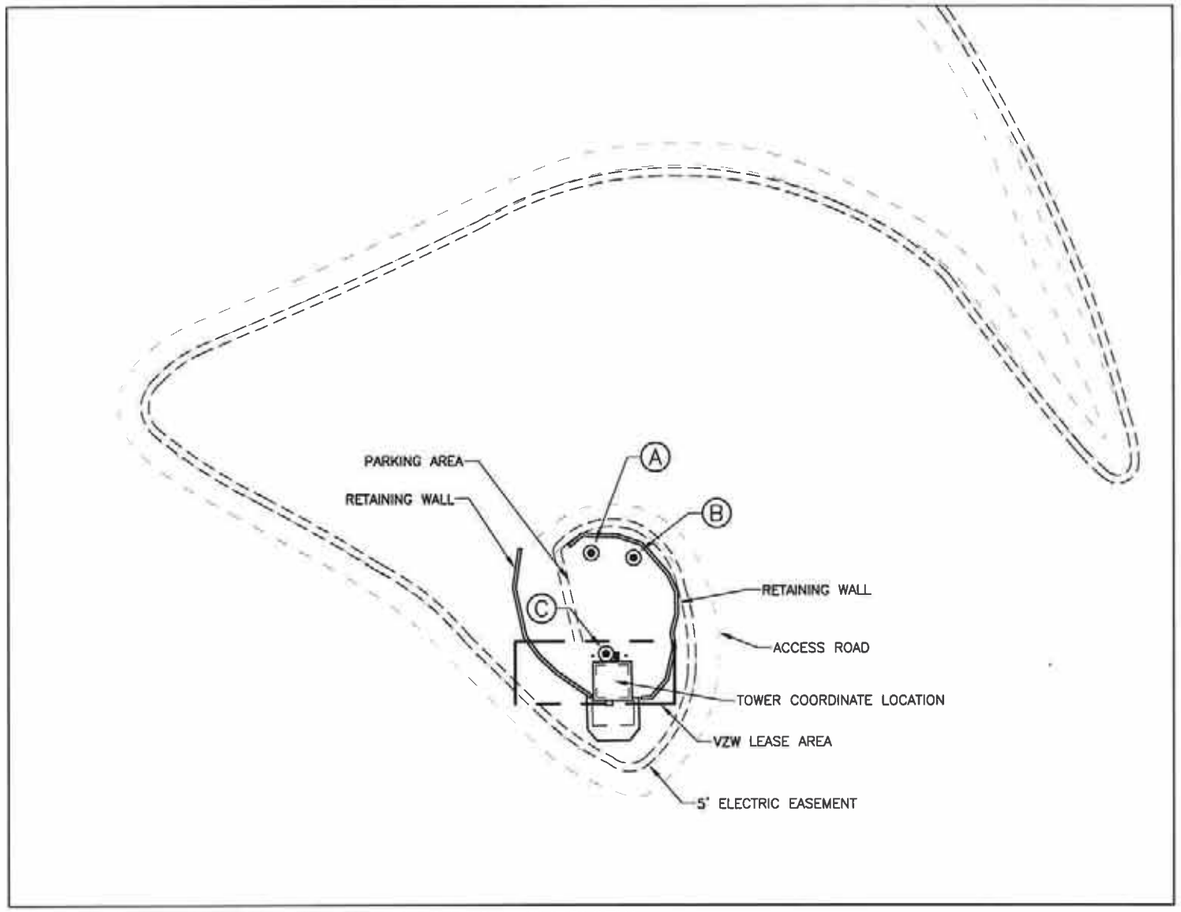
LEGEND

◉ FOUND SURVEY MONUMENT (AS NOTED).

REFERENCE DOCUMENTS:

1. National Geodetic Survey Datasheet for Cooperative Base Network Control Station "WASHBURN", PID PY1215.

NO EASEMENT CERTIFICATION:



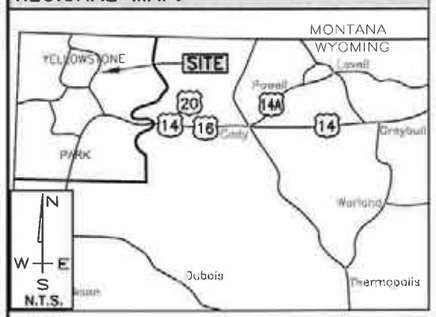
SURVEY CONTROL AND SITE LOCATION OVERVIEW

SCALE: 1" = 100'

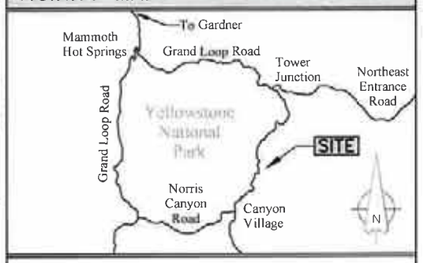
0 50 100 200

SCALE (FT)

REGIONAL MAP:



VICINITY MAP:



PROPOSED STRUCTURE REPORT:

NAD 83: 44°47'50.73" N
110°26'01.76" W

DECIMAL DEGREES: 44.797425° N
110.433822° W

NAD 27: 44°47'50.95" N
110°25'59.04" W

NAVD88: 10250.0' (GROUND)
NGVD 29: 10245.1'

BASIS OF BEARING AND DATUM NOTE:

1.) BEARINGS AND DISTANCES SHOWN ARE GRID BEARINGS AND GRID DISTANCES ON A TRANSVERSE MERCATOR PROJECTION WITH CENTRAL MERIDIAN THROUGH "WASHBURN", WITH A CENTRAL MERIDIAN SCALE FACTOR OF 1.0004770887, CORRESPONDING TO A PROJECTION HEIGHT OF 10,000.0 FEET.

2.) Project is tied to National CORS via the OPUS utility. Geodetic Position of NGS Point "WASHBURN" is:

LATITUDE: 44°47'51.558"
LONGITUDE: 110°26'01.956"
ELLIPSOID HEIGHT: 10221.7

HOR. DATUM NAD83[2011] VERT. DATUM NAVD88[GEOID12A]

PROJECT NAME:

VERIZON WIRELESS
WY1 MOUNT WASHBURN

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY
WYOMING

DATE OF SURV.: 08/12/14

DESIGNED FOR:

verizonwireless

DESIGNED BY:

J5 INFRASTRUCTURE
AZ - CA - CO - ID - NM - NV - TX - UT

PARENT PARCEL OWNER:

YELLOWSTONE NATIONAL PARK	CONTACT: _____ PHONE: _____

PUBLIC RECORD PARCEL I.D.:

YELLOWSTONE NATIONAL PARK

COMMUNICATIONS FACILITY OWNER:

EXISTING TOWER	EXISTING TOWER

DRIVING DIRECTIONS:

From Cody, Wyoming take US-14/US-16/US-20/WY-120 west, drive West to the East entrance of Yellowstone National Park, turn right on the Grand Loop Road and head to Canyon Village continue on towards Tower Junction for 9.3 miles to the turn off to Chittenden Road to Mount Washburn Lookout Tower, go through locked gate and continue on to site.

SURVEYOR'S NOTE & CERTIFICATION:

This "Site Survey" is based on an actual field survey performed under my direction. It correctly depicts existing, readily visible improvements and above ground utilities, and the location and elevations shown are from field and record information. This "Site Survey" was developed to support the communications facility plan set named hereon.

Professional Land Surveyor
LYLE J. CASCIATO
12600
Date 7/12/17
WYOMING

LYLE J. CASCIATO WY Registration No. 12600 07/12/17

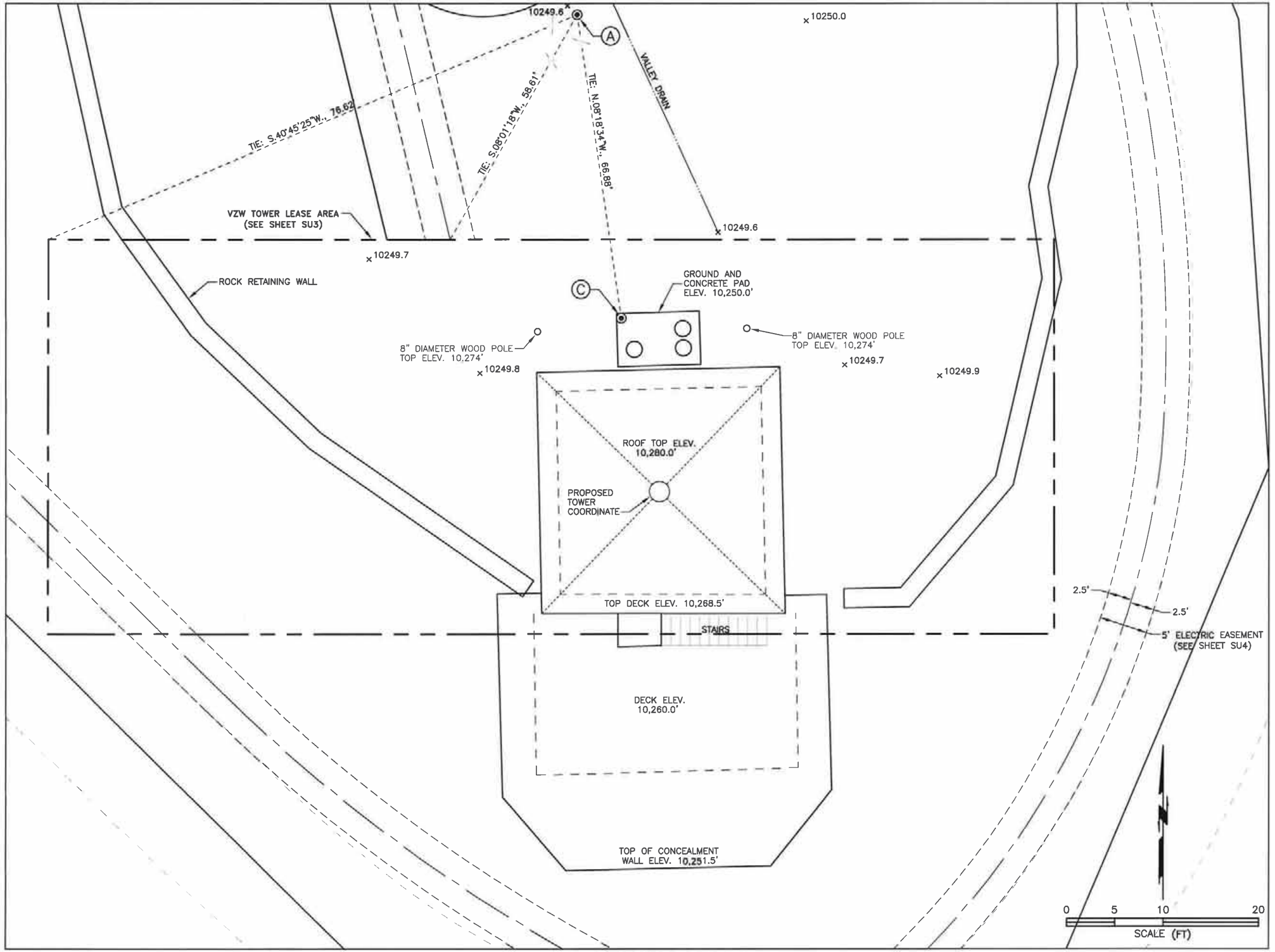
REV.	DESCRIPTION	DATE	BY	CHK
A	90% PRELIMINARY FOR CLIENT REVIEW ONLY	08/25/14	CRA	LJC
B	ADDITION OF UTILITY ROUTE DETAIL	12/07/14	LJC	LJC
C	ADD LEASE AREA AND SHEET SU3	01/09/15	CRA	LJC
D	100% DRAWINGS WITH LEASE AND RIGHTS-OF-WAY	07/12/17	RMN	LJC

SHEET TITLE:

SITE LOCATION AND ACCESS OVERVIEW
SURVEY CONTROL OVERVIEW
SITE LOCATION OVERVIEW

TCT SITE I.D.:	WY1 MOUNT WASHBURN	
SHEET INFO.:	Sheet 1 of 5	SU1

P:\2014\14015 TOWERCOM\14015.33 WY1 Mount Washburn\ACAD\WY1 MOUNT WASHBURN.dwg SU 7/12/17 LYLE



KEYED NOTES

(A) FOUND 3¼" USC&GS BRASS CAP "WASHBURN" DATE: 1950
NGS DATA SHEET NAVD88 ORTHO HEIGHT: 10249'

(B) FOUND 3¼" USC&GS BRASS CAP WASHBURN AZ MARK NO 1, DATE: 1950

(C) FOUND 3¼" USC&GS BRASS CAP WASHBURN AZ MARK NO 2, DATE: 1950

LEGEND

◉ FOUND SURVEY MONUMENT (AS NOTED).

SITE AND STRUCTURE DETAIL

SCALE: 1" = 10'

DESIGNED FOR:

verizonwireless

DESIGNED BY:

J5 INFRASTRUCTURE

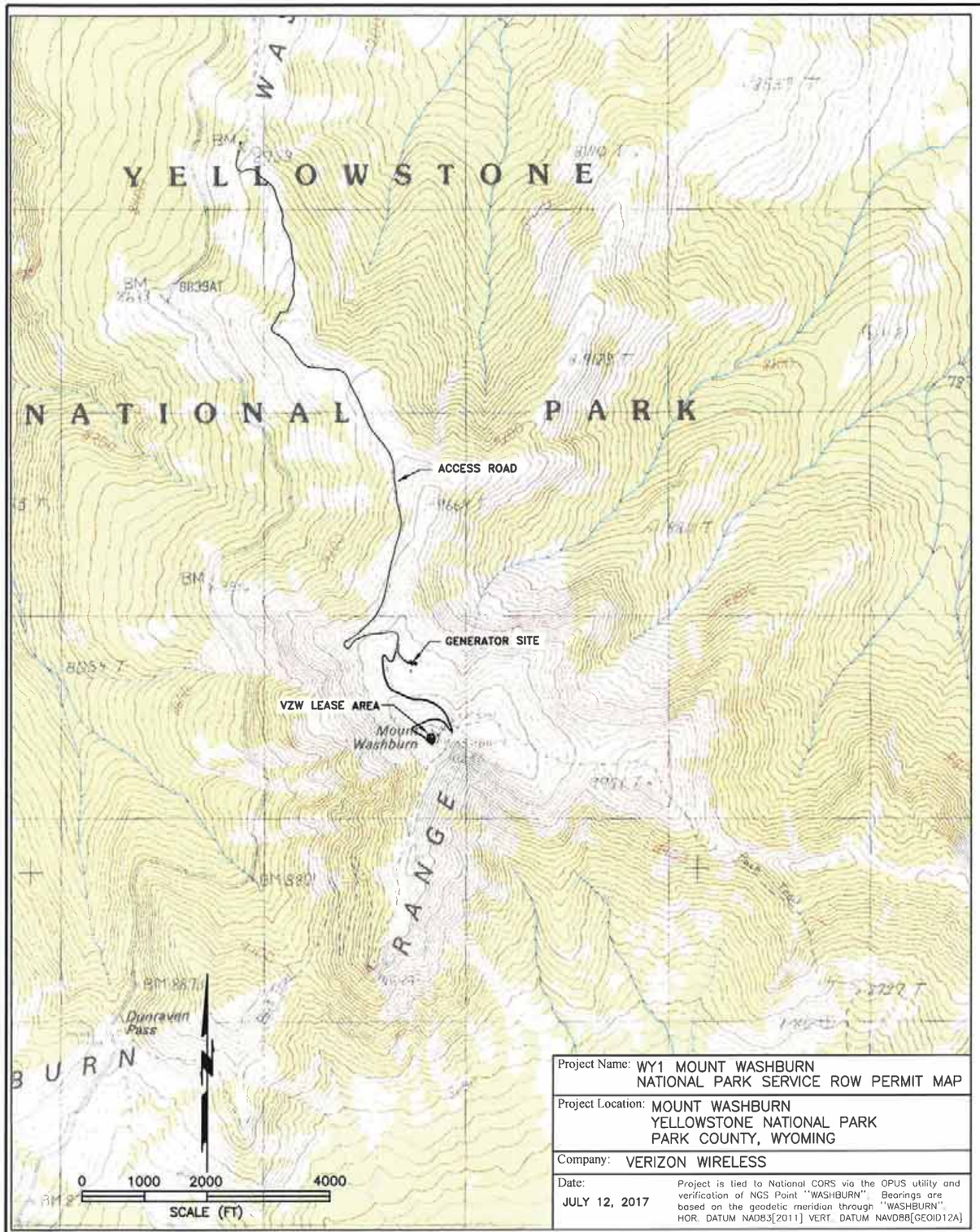
AZ - CA - CO - ID - NM - NV - TX - UT

SHEET TITLE:

SITE AND STRUCTURE DETAIL

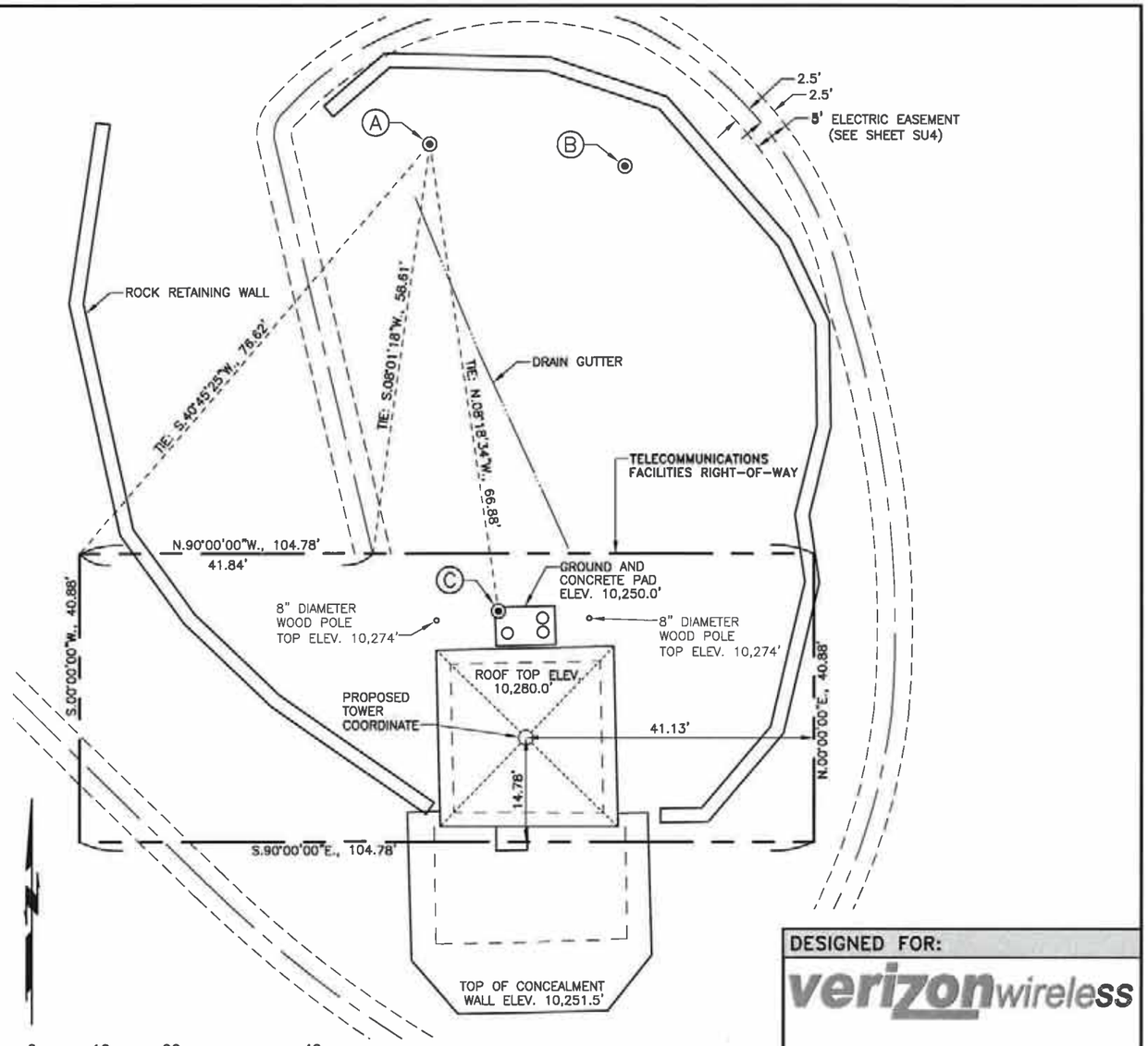
TCT SITE I.D.:	WY1 MOUNT WASHBURN	
SHEET INFO.:	Sheet 2 of 5	SU2

P:\2014\14015 TOWERCOM\14015.33 WY1 Mount Washburn\ACAD\WY1 MOUNT WASHBURN.dwg SU2 7/12/17 LYLE



YELLOWSTONE NATIONAL PARK
SCALE: 1" = 2000'

Project Name:	WY1 MOUNT WASHBURN NATIONAL PARK SERVICE ROW PERMIT MAP
Project Location:	MOUNT WASHBURN YELLOWSTONE NATIONAL PARK PARK COUNTY, WYOMING
Company:	VERIZON WIRELESS
Date: JULY 12, 2017	Project is tied to National CORS via the OPUS utility and verification of NGS Point "WASHBURN". Bearings are based on the geodetic meridian through "WASHBURN". HOR. DATUM NAD83[2011] VERT. DATUM NAVD88[GEOID12A]



SITE DETAIL
SCALE: 1" = 20'

A parcel of land for the purpose of telecommunication facilities right-of-way, situate within Yellowstone National Park, more particularly described as follows;

Commencing at an Aluminum Cap USC&GS Benchmark designated "WASHBURN" for which the basis of bearings for this description are based on the geodetic meridian; thence S.40°45'25"W. for a distance of 76.62 feet to the POINT OF BEGINNING;
thence S.00°00'00"W. for a distance of 40.88 feet;
thence S.90°00'00"E. for a distance of 104.78 feet;
thence N.00°00'00"E. for a distance of 40.88 feet;
thence N.90°00'00"W. for a distance of 104.78 feet to the POINT OF BEGINNING;
said parcel of land contains 4283.4 square feet or 0.098 acres.

40.88' x 104.78' TELECOMMUNICATION FACILITIES RIGHT-OF-WAY DESCRIPTION

KEYED NOTES

(A) FOUND 3¼" USC&GS BRASS CAP "WASHBURN" DATE: 1950 NGS DATA SHEET NAVD88 ORTHO HEIGHT: 10249'

(B) FOUND 3¼" USC&GS BRASS CAP WASHBURN AZ MARK NO 1, DATE: 1950

(C) FOUND 3¼" USC&GS BRASS CAP WASHBURN AZ MARK NO 2, DATE: 1950

LEGEND

◉ FOUND SURVEY MONUMENT (AS NOTED).

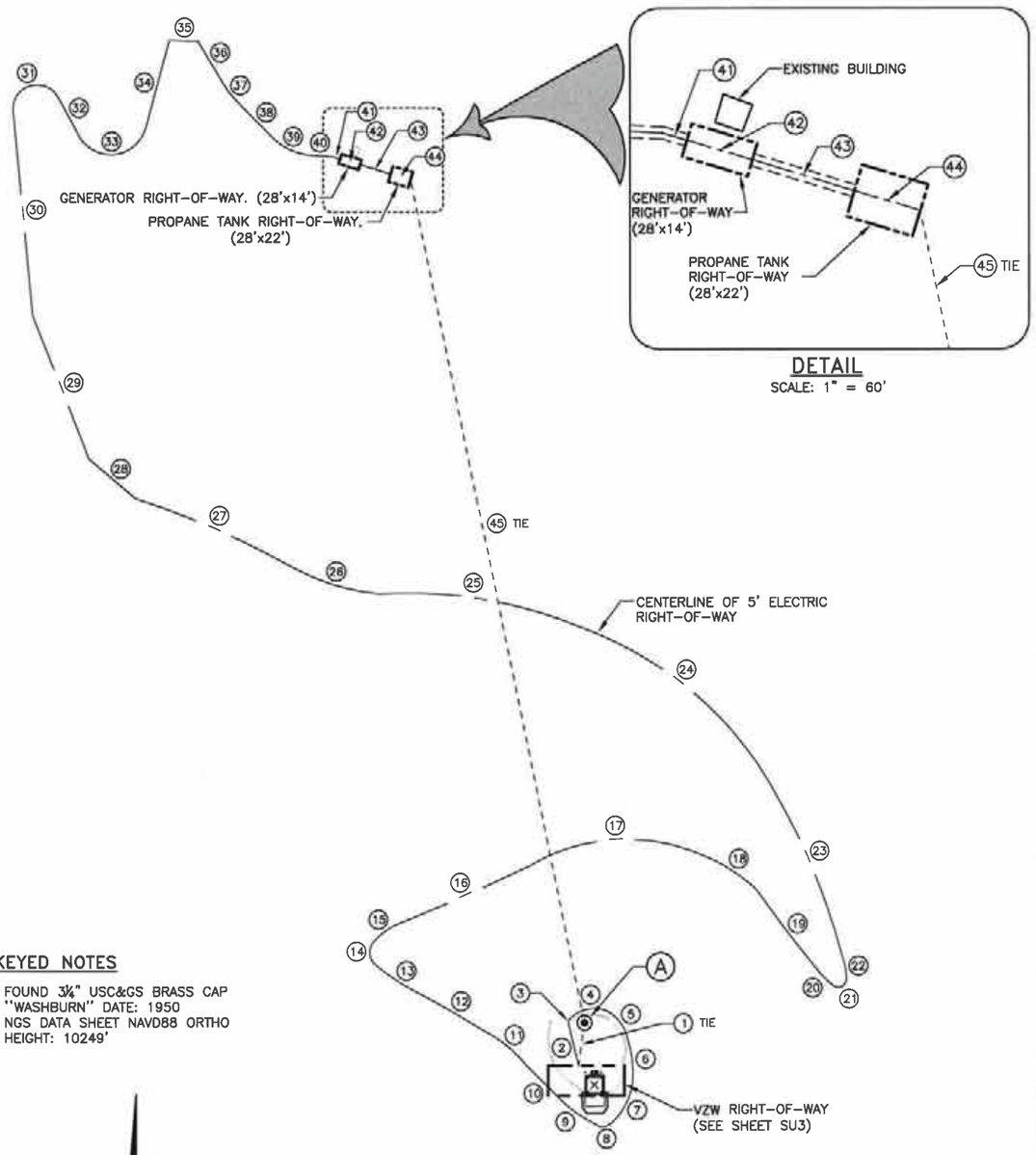
DESIGNED FOR:
verizonwireless

DESIGNED BY:
J5 INFRASTRUCTURE
AZ - CA - CO - ID - NM - NV - TX - UT

SHEET TITLE:
TOWER LEASE AREA

TCT SITE I.D.:	WY1 MOUNT WASHBURN	
SHEET INFO.:	Sheet 3 of 5	SU3

P:\2014\14015 TOWERCOM\14015.33 WY1 Mount Washburn\ACAD\WY1 MOUNT WASHBURN.dwg SU3 7/12/17 LYLE



KEYED NOTES

(A) FOUND 3¼" USC&GS BRASS CAP "WASHBURN" DATE: 1950 NGS DATA SHEET NAVD88 ORTHO HEIGHT: 10249'

0 100 200 400
SCALE (FT)

Project Name:	WY1 MOUNT WASHBURN NATIONAL PARK SERVICE ROW PERMIT MAP
Project Location:	MOUNT WASHBURN YELLOWSTONE NATIONAL PARK PARK COUNTY, WYOMING
Company:	VERIZON WIRELESS
Date: JULY 12, 2017	Project is tied to National CORS via the OPUS utility and verification of NGS Point "WASHBURN". Bearings are based on the geodetic meridian through "WASHBURN". HOR. DATUM NAD83[2011] VERT. DATUM NAV088[GEOID12A]

5.00' ELECTRIC, 14.00' GENERATOR AND 22.00' PROPANE TANK RIGHTS-OF-WAY

SCALE: 1" = 200'

CURVE / COURSE	RADIUS	DELTA	LENGTH	CHORD / BEARING, DISTANCE
(1)				S.08°01'18"W., 58.61' (TIE TO 3¼" BRASS CAP "WASHBURN")
(2)				N.13°24'52"W., 59.77'
(3)	4.47'	69°46'15"	5.45'	N.18°14'06"E., 5.12'
(4)	46.44'	67°04'27"	54.37'	N.76°11'24"E., 51.32'
(5)	55.06'	53°19'58"	51.26'	S.37°03'02"E., 49.42'
(6)	149.83'	22°36'06"	59.10'	S.06°34'41"E., 58.72'
(7)	88.67'	41°31'12"	64.26'	S.27°38'36"W., 62.86'
(8)	18.33'	82°28'33"	26.38'	S.89°56'27"W., 24.16'
(9)	172.80'	18°02'06"	54.39'	N.54°51'31"W., 54.17'
(10)	13376.76'	0°17'47"	69.20'	N.45°38'03"W., 69.20'
(11)	185.37'	23°10'57"	75.00'	N.51°07'16"W., 74.49'
(12)	1138.38'	4°36'30"	91.56'	N.60°00'13"W., 91.54'
(13)	352.68'	13°08'02"	80.84'	N.57°22'07"W., 80.67'
(14)	22.00'	100°37'09"	38.63'	N.00°13'23"E., 33.85'
(15)	88.35'	24°56'46"	38.47'	N.55°09'47"E., 38.16'
(16)	2936.64'	3°52'08"	198.30'	N.66°12'36"E., 198.26'
(17)	258.55'	54°20'15"	245.20'	N.86°57'07"E., 236.11'
(18)	224.95'	22°03'55"	86.63'	S.57°24'30"E., 86.10'
(19)	1894.39'	4°20'11"	143.38'	S.37°47'46"E., 143.34'
(20)	132.64'	10°53'06"	25.20'	S.46°14'27"E., 25.16'
(21)	11.38'	128°38'39"	25.54'	N.63°59'41"E., 20.51'
(22)	82.13'	20°41'51"	29.67'	N.10°40'34"W., 29.51'
(23)	896.51'	18°36'55"	291.28'	N.23°59'51"W., 290.00'
(24)	507.26'	35°21'44"	313.07'	N.52°38'48"W., 308.13'
(25)	628.76'	25°24'58"	278.92'	N.80°52'55"W., 276.63'
(26)	313.03'	23°37'39"	129.09'	N.72°21'00"W., 128.18'
(27)	1240.20'	10°36'12"	229.51'	N.66°32'25"W., 229.19'
(28)				N.50°00'44"W., 83.15'
(29)				N.21°24'16"W., 209.42'
(30)				N.05°23'43"W., 280.14'
(31)	32.50'	157°14'46"	89.20'	N.73°13'40"E., 63.72'
(32)				S.28°08'57"E., 58.55'
(33)	50.00'	136°43'16"	119.31'	N.83°29'25"E., 92.95'
(34)				N.15°07'47"E., 123.18'
(35)				S.87°58'10"E., 39.42'
(36)				S.30°31'47"E., 64.47'
(37)	146.00'	14°11'06"	36.15'	S.37°37'20"E., 36.05'
(38)				S.44°42'54"E., 65.06'
(39)	87.00'	42°09'39"	64.02'	S.65°47'43"E., 62.58'
(40)				S.86°52'33"E., 26.73'
(41)				S.73°18'15"E., 10.52'
(42)				S.73°18'15"E., 28.00' (CENTERLINE OF 28'x14' GENERATOR LEASE AREA)
(43)				S.73°18'15"E., 44.08'
(44)				S.73°30'50"E., 28.00' (CENTERLINE OF 28'x22' PROPANE LEASE AREA)
(45)				S.11°44'01"E., 1171.73' (TIE TO 3¼" BRASS CAP "WASHBURN")

RIGHT-OF-WAY CENTERLINE TABULATION

NOTES:

- ALL BEARINGS ARE BASED ON THE GEODETIC MERIDIAN THROUGH POINT "WASHBURN".
- ALL DISTANCES ARE GROUND, BASED ON A PROJECTION HEIGHT OF 10,000 FEET.
- 5' ELECTRIC RIGHT-OF-WAY
  LENGTH: 4078.8 FEET
  AREA: 0.468 ACRES
- 14' GENERATOR RIGHT-OF-WAY
  LENGTH: 28.0 FEET
  AREA: 0.009 ACRES
- 22' PROPANE TANK RIGHT-OF-WAY
  LENGTH: 28.0 FEET
  AREA: 0.014

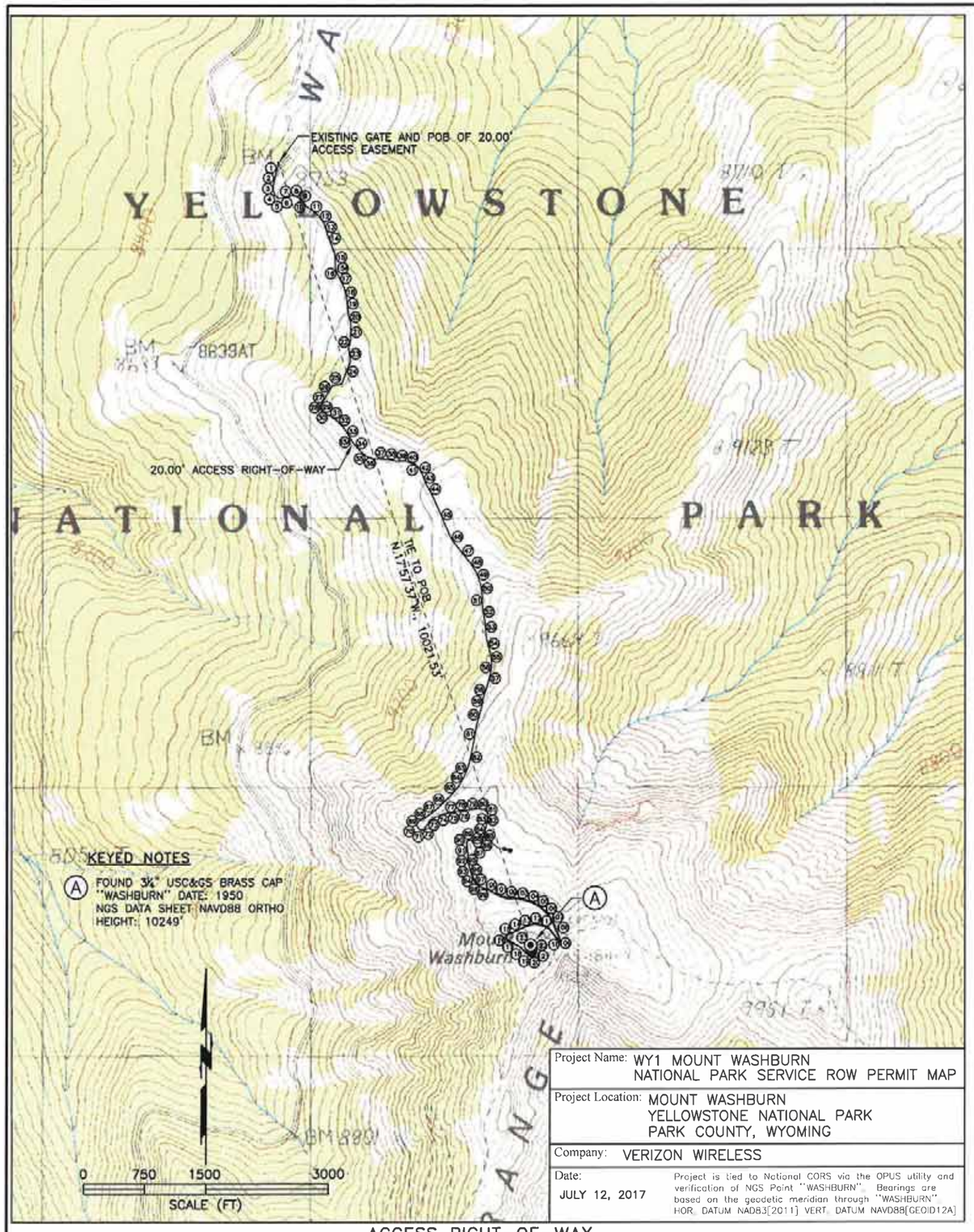
DESIGNED FOR: verizonwireless

DESIGNED BY: J5 INFRASTRUCTURE
AZ - CA - CO - ID - NM - NV - TX - UT

SHEET TITLE:
5.00' ELECTRIC RIGHT-OF-WAY
14.00' GENERATOR RIGHT-OF-WAY
22.00' PROPANE TANK RIGHT-OF-WAY

TCT SITE I.D.:	WY1 MOUNT WASHBURN
SHEET INFO.:	Sheet 4 of 5 — SU4

P:\2014\14015 TOWERCOM\14015.33 WY1 Mount Washburn\ACAD\WY1 MOUNT WASHBURN.dwg SU4 7/12/17 LYLE



ACCESS RIGHT-OF-WAY

SCALE: 1" = 1500'

ALL COURSES FOLLOW AN EXISTING GRAVEL ROAD

COURSE	BEARING, DISTANCE	COURSE	BEARING, DISTANCE	COURSE	BEARING, DISTANCE
POB (1)	S.13°34'33"W., 147.67'	(54)	S.14°37'12"E., 190.87'	(09)	N.38°21'00"W., 113.92'
(2)	S.11°41'37"W., 127.89'	(55)	S.07°37'00"E., 135.44'	(10)	N.38°39'52"W., 100.68'
(3)	S.05°05'22"W., 66.34'	(56)	S.06°02'05"W., 86.52'	(11)	N.67°08'59"W., 129.83'
(4)	S.17°44'03"E., 67.17'	(57)	S.14°19'03"W., 202.24'	(12)	S.89°04'55"W., 100.12'
(5)	S.51°15'59"E., 63.91'	(58)	S.19°37'04"W., 125.29'	(13)	S.66°14'27"W., 166.52'
(6)	N.82°48'13"E., 63.69'	(59)	S.10°45'27"W., 124.64'	(14)	S.67°54'33"W., 140.75'
(7)	N.74°51'46"E., 102.78'	(60)	S.15°24'10"W., 212.90'	(15)	S.44°18'09"W., 47.75'
(8)	N.78°56'23"W., 64.07'	(61)	S.10°55'01"W., 324.20'	(16)	S.21°37'59"E., 39.17'
(9)	S.48°43'11"E., 61.61'	(62)	S.12°24'25"W., 193.87'	(17)	S.61°31'45"E., 193.33'
(10)	S.40°37'24"E., 108.08'	(63)	S.23°38'00"W., 146.37'	(18)	S.45°25'50"E., 155.11'
(11)	S.53°05'34"E., 170.44'	(64)	S.28°20'40"W., 148.61'	(19)	S.67°58'58"E., 50.25'
(12)	S.36°50'48"E., 128.66'	(65)	S.41°54'25"W., 154.59'	(20)	N.50°55'23"E., 33.20'
(13)	S.16°20'00"E., 149.25'	(66)	S.47°15'49"W., 256.61'	(21)	N.22°53'38"E., 54.65'
(14)	S.20°54'24"E., 245.24'	(67)	S.54°39'44"W., 132.22'	(22)	N.03°48'21"W., 46.55'
(15)	S.02°25'28"E., 80.82'	(68)	S.60°01'13"W., 105.33'	(23)	N.22°10'05"W., 41.81'
(54)	S.01°20'46"W., 85.05'	(69)	S.28°12'05"W., 41.49'	(24)	N.57°04'46"W., 39.99'
(16)	S.20°00'26"E., 86.50'	(70)	S.15°36'09"E., 40.31'	(25)	N.89°53'25"W., 32.64'
(17)	S.26°16'59"E., 188.05'	(71)	S.50°34'57"E., 42.52'	(26)	S.47°40'25"W., 30.03'
(18)	S.12°03'06"E., 132.26'	(72)	N.83°46'14"E., 40.87'	(27)	S.13°42'43"E., 64.94' LEASE AREA
(19)	S.06°37'07"E., 198.08'	(73)	N.38°48'43"E., 42.28'		
(20)	S.15°52'48"W., 109.65'	(74)	N.32°48'38"E., 82.32'		
(21)	S.01°00'29"W., 198.43'	(75)	N.56°22'31"E., 65.39'		
(22)	S.14°01'27"W., 105.89'	(76)	N.65°51'21"E., 107.99'		
(23)	S.09°26'07"E., 151.63'	(77)	N.74°52'21"E., 108.28'		
(24)	S.21°18'50"W., 301.02'	(78)	N.83°09'12"E., 212.66'		
(25)	S.78°50'34"W., 116.08'	(79)	N.82°22'03"E., 130.40'		
(26)	S.30°07'15"W., 210.93'	(80)	S.82°09'30"E., 85.08'		
(27)	S.36°20'31"W., 65.67'	(81)	S.43°47'02"E., 39.54'		
(28)	S.03°25'31"W., 40.87'	(82)	S.15°08'54"E., 41.09'		
(29)	S.36°39'02"E., 41.69'	(83)	S.03°59'20"W., 64.76'		
(30)	S.58°39'31"E., 105.42'	(84)	S.12°59'44"W., 151.39'		
(31)	S.55°30'08"E., 104.49'	(85)	S.17°05'17"W., 132.50'		
(32)	S.43°22'57"E., 131.01'	(86)	S.17°25'43"W., 41.03'		
(33)	S.32°41'23"E., 135.70'	(87)	S.60°11'15"W., 38.93'		
(34)	S.30°54'56"E., 85.57'	(88)	N.58°41'26"W., 39.77'		
(34)	S.43°10'42"W., 168.92'	(89)	N.30°04'40"W., 68.15'		
(35)	S.54°24'25"E., 61.81'	(90)	N.55°41'03"E., 41.13'		
(36)	S.73°50'33"E., 71.72'	(91)	S.55°43'07"W., 42.52'		
(37)	S.86°11'47"E., 175.68'	(92)	S.00°46'43"W., 43.78'		
(38)	S.79°17'37"E., 112.29'	(93)	S.06°29'16"E., 83.23'		
(39)	S.88°50'56"E., 129.97'	(94)	S.04°37'32"E., 137.88'		
(40)	S.72°20'11"E., 84.28'	(95)	S.13°51'43"E., 109.38'		
(41)	S.48°39'29"E., 84.15'	(96)	S.22°47'32"E., 125.31'		
(42)	S.30°37'30"E., 85.53'	(97)	S.42°01'11"E., 67.41'		
(43)	S.19°50'19"E., 107.84'	(98)	S.60°54'12"E., 86.52'		
(44)	S.28°19'00"E., 222.67'	(99)	S.71°21'22"E., 70.72'		
(45)	S.23°31'23"E., 516.19'	(100)	S.62°37'17"E., 155.09'		
(46)	S.33°39'37"E., 88.11'	(101)	S.73°18'08"E., 88.45'		
(47)	S.38°53'53"E., 323.30'	(102)	N.89°26'27"E., 125.40'		
(48)	S.31°59'37"E., 132.11'	(103)	S.74°46'50"E., 154.68'		
(49)	S.20°11'34"E., 150.80'	(104)	S.61°57'42"E., 134.67'		
(50)	S.07°13'08"E., 125.12'	(105)	S.47°33'08"W., 127.49'		
(51)	S.01°20'34"E., 132.15'	(106)	S.36°39'36"E., 75.38'		
(52)	S.09°35'43"W., 182.17'	(107)	S.22°28'03"E., 235.53'		
(53)	S.05°34'33"E., 212.25'	(108)	S.16°24'04"E., 61.47'		

NOTES:

- ALL BEARINGS ARE BASED ON THE GEODETIC MERIDIAN THROUGH POINT "WASHBURN".
- ALL DISTANCES ARE GROUND, BASED ON A PROJECTION HEIGHT OF 10,000 FEET.
- TOTAL CENTERLINE LENGTH: 15112.4 FEET.
- TOTAL AREA: 6.939 ACRES.

20.00' ACCESS RIGHT-OF-WAY TABULATION

DESIGNED FOR: verizonwireless

DESIGNED BY: J5 INFRASTRUCTURE
AZ - CA - CO - ID - NM - NV - TX - UT

SHEET TITLE: 20.00' ACCESS RIGHT OF WAY

TCT SITE I.D.:	WY1 MOUNT WASHBURN	
SHEET INFO.:	Sheet 5 of 5	SU5

P:\2014\14015 TOWERCOM\14015.33 WY1 Mount Washburn\ACAD\WY1 MOUNT WASHBURN.dwg SU5 7/12/17 LYLE

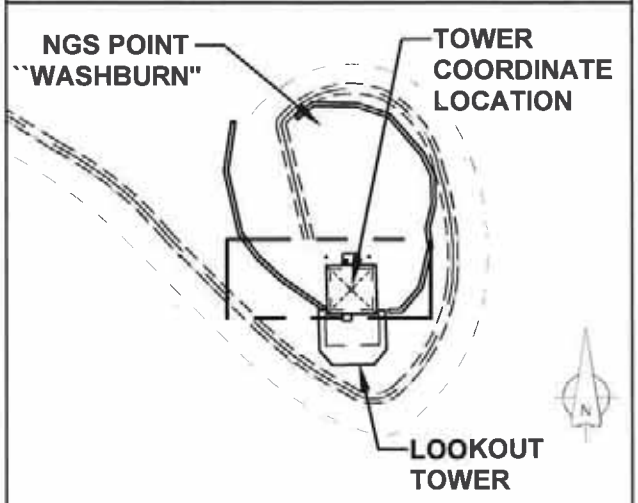
verizonwireless

1A CERTIFICATION LETTER
FOR
VERIZON WIRELESS
FACILITY KNOWN AS:
WY1 MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK

NAVD88 – GROUND ELEVATION:	10250.0'
[ELEVATION METERS]	3124.2

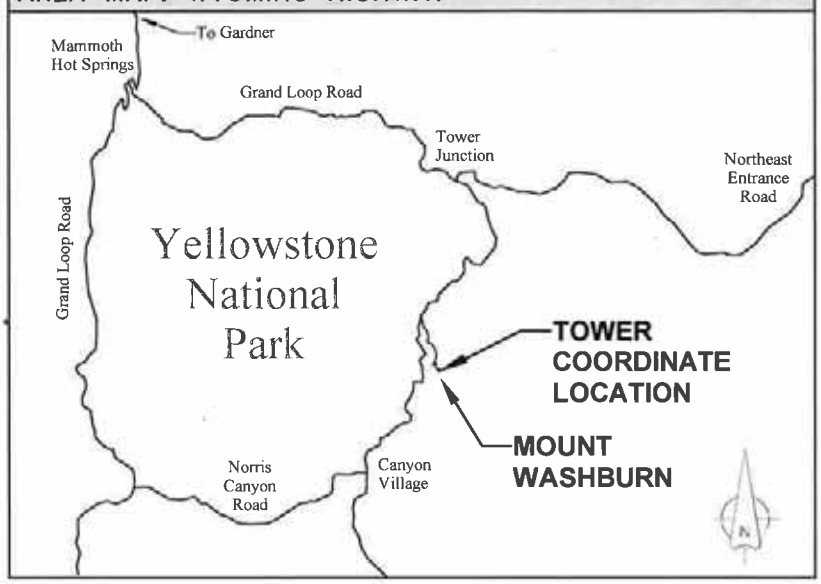
From Cody, Wyoming take US-14/US-16/US-20/WY-120 west, drive West to the East entrance of Yellowstone National Park, continue past Fishing Bridge and turn right on the Grand Loop Road and head to Canyon Village continue on towards Tower Junction for 9.3 miles to the turn right on Chittenden Road to Mount Washburn Lookout Tower, go through locked gate and continue on to site.

PLAN VIEW: 1" = 100'



MOUNT WASHBURN, YELLOWSTONE NATIONAL PARK, PARK COUNTY, WYOMING.

AREA MAP: WYOMING HIGHWAY



BASIS OF GEODETIC COORDINATES:

(1) HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD83)(CORS96) [PRIMARY] & NORTH AMERICAN DATUM OF 1927 (NAD27) [SECONDARY] EXPRESSED IN DEGREES (°) MINUTES (') AND SECONDS (") AND CARRIED TO THE 100TH OF A SECOND, AND ALSO EXPRESSED IN DEGREES AND DECIMAL DEGREES.

(2) VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) & NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD29) EXPRESSED IN U.S. SURVEY FEET AND METERS (METER EQUIVALENT TO 39.37 INCHES).

(3) NAD83 GEODETIC DATA SHOWN HEREON WAS DERIVED FROM AND IS TIED TO THE NATIONAL GEODETIC SURVEY, NATIONAL C.O.R.S. VIA THE O.P.U.S. UTILITY AND OR TRIMBLE GEOMATICS SOFTWARE.

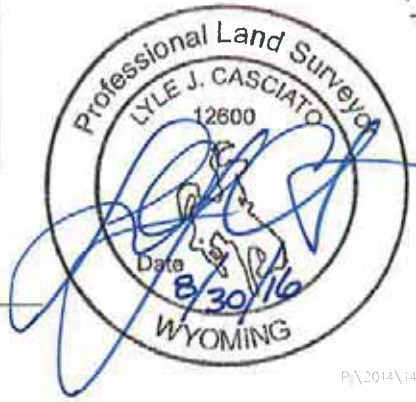
(4) NAD 27 AND NGVD29 DATA SHOWN HEREON WAS DERIVED FROM THE NATIONAL GEODETIC SURVEY, NADCON AND VERTCON UTILITIES.

PROPOSED TOWER COORDINATES:

NAD 83:	44°47'50.73" N 110°26'01.76" W
DECIMAL DEGREES:	44.797425° N 110.433822° W
NAD 27:	44°47'50.95" N 110°25'59.04" W
NAVD 88:	10250.0' (GROUND)
NGVD 29:	10245.1'

SURVEYOR'S CERTIFICATION:

I HEREBY CERTIFY THAT THE GEODETIC COORDINATES REPORTED HEREON ARE ACCURATE AND MEET FAA/FCC REPORTING REQUIREMENTS OF 1A: FIFTEEN FEET (15') HORIZONTALLY AND THREE FEET (3') VERTICALLY.



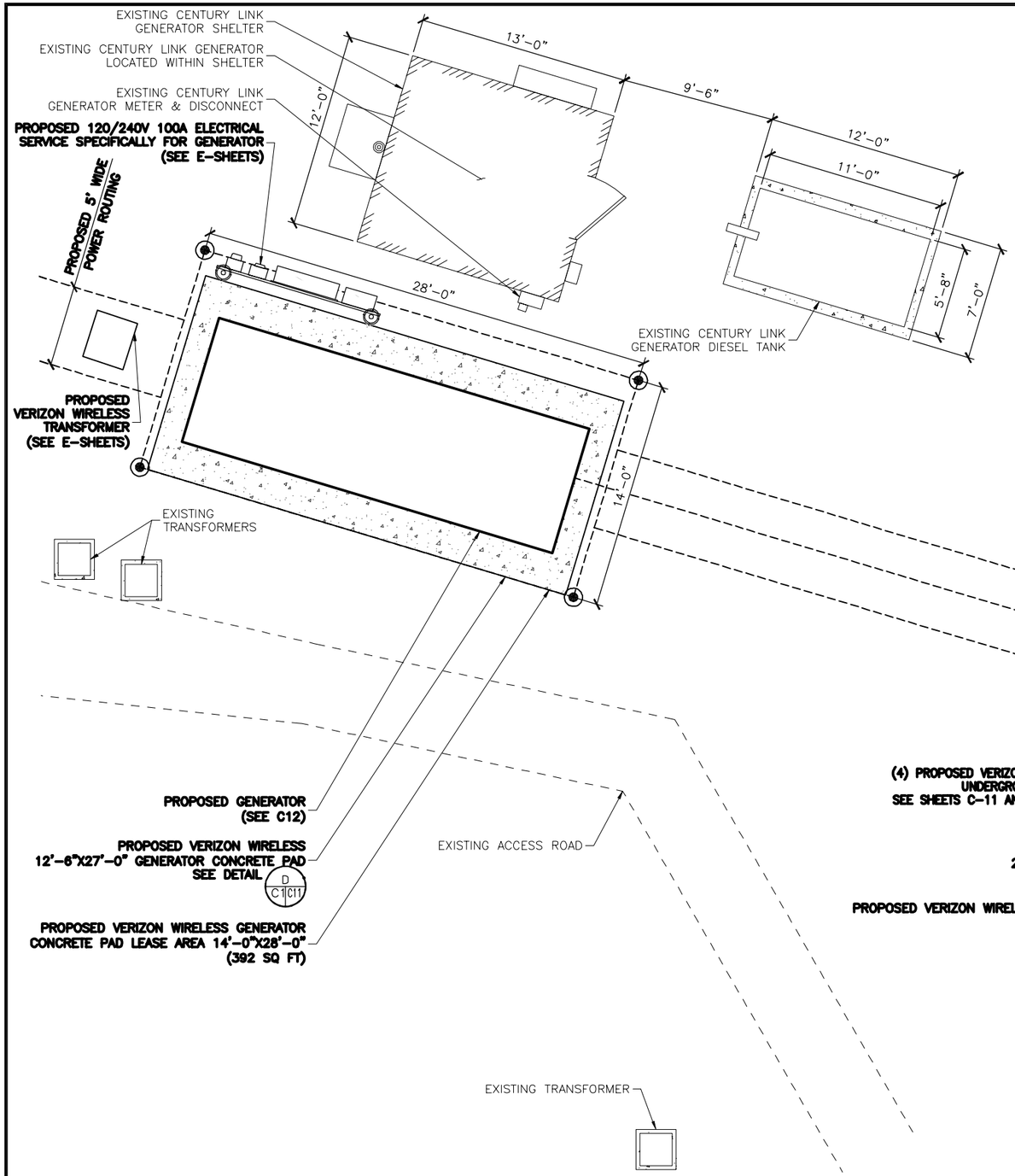
Lyle J. Casciato
WY Registration No. 12600

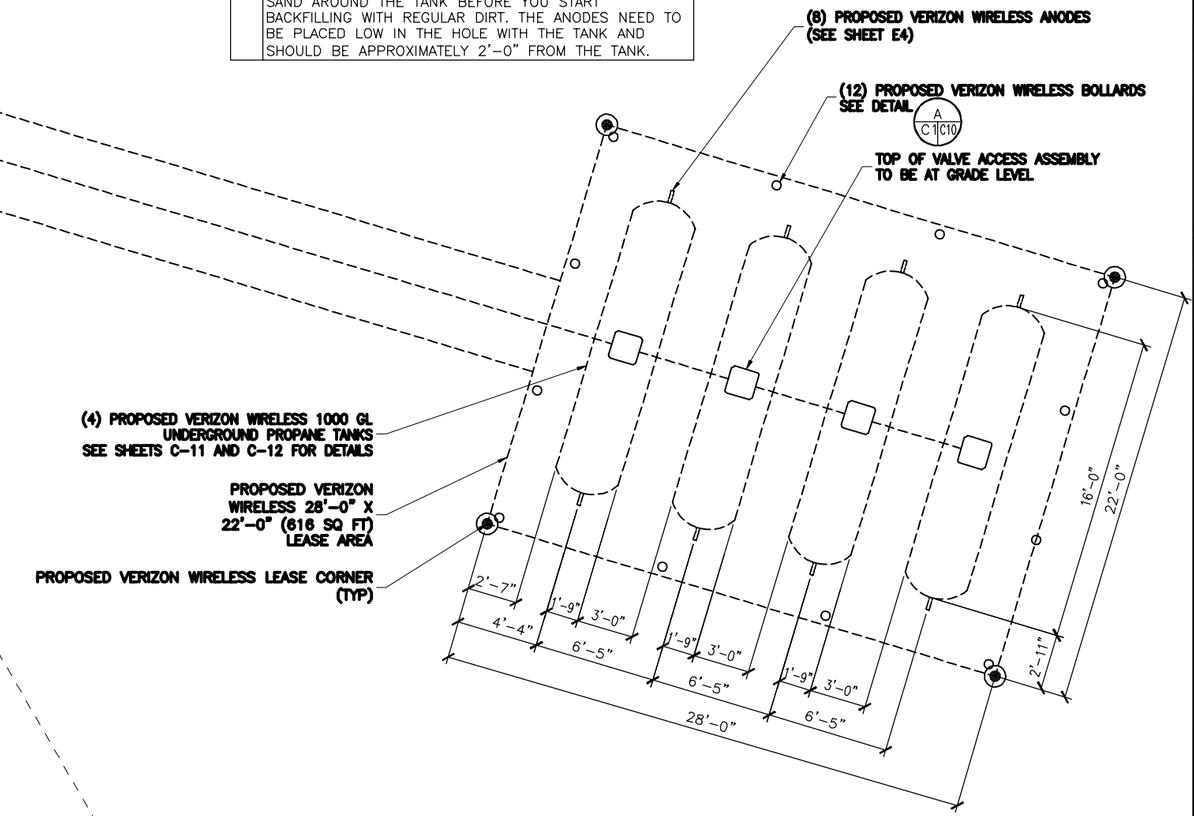
Date

PREPARED BY:

TowerCom TECHNOLOGIES

ALBUQUERQUE/ STAR /EL PASO /LAS VEGAS/ DENVER
NEW MEXICO/ IDAHO/ TEXAS / NEVADA /COLORADO





NOTE:	
1.	PRIOR TO BURIAL, THE CONTAINER SHOULD BE INSPECTED FOR ANY COATING DAMAGE THAT MAY HAVE BEEN CAUSED DURING TRANSPORT OR THE INSTALLATION PROCESS.
2.	TO MINIMIZE CORROSION, CATHODIC PROTECTION IS TO BE USED. ANODES SHALL BE ATTACHED TO THE CONTAINER ACCORDING TO THE ANODE MANUFACTURER'S INSTRUCTIONS. THE NUMBER OF ANODES IS TO BE BASED ON THE MANUFACTURER'S REQUIREMENTS.
3.	DIELECTIC COUPLINGS ARE TO BE USED TO ISOLATE THE CONTAINER FROM THE PIPING WHEN USING METALLIC PIPING.
4.	BACKFILL MATERIAL USED TO COVER THE CONTAINER IS TO BE COMPACTED SOIL OR COARSE SAND. BACKFILL MATERIAL THAT CONTAINS CRUSHED ROCK OR OTHER MATERIAL THAT COULD DAMAGE THE CONTAINER'S COATING IS TO BE AVOIDED.
5.	EACH SET OF TANK LEGS ARE TO BE PLACED ON A CONCRETE GRADE BEAM. THE GRADE BEAM IS TO BE: 36" LONG x 12" WIDE x 12" DEEP WITH (2) #4 BAR CONTINUOUS.
6.	THE TOP OF THE PROPANE TANK (NOT CONSIDERING THE RISER) NEEDS TO BE 8"-16" BELOW GRADE AND THERE NEEDS TO BE A 4" SAND BED (FREE OF SHARP EDGES). THEN THE HOLE NEEDS TO BE FILLED WITH SAND AROUND THE TANK BEFORE YOU START BACKFILLING WITH REGULAR DIRT. THE ANODES NEED TO BE PLACED LOW IN THE HOLE WITH THE TANK AND SHOULD BE APPROXIMATELY 2'-0" FROM THE TANK.

GENERAL SITE PLAN NOTES:	
1.	INFORMATION SHOWN BELOW FOR DEPICTION PURPOSES ONLY. ALL DATA GATHERED FROM PUBLIC RECORDS AND GENERATED FROM AERIAL IMAGES AND SITE VISITS. INFORMATION DOES NOT CONSTITUTE A LEGAL BOUNDARY SURVEY AND SHOULD NOT BE USED FOR SURVEYING OR OTHER RELATED PURPOSES.
2.	SITE PLAN DATA AS SHOWN IS BASED UPON A LIMITED SITE MAPPING OF THE SURROUNDING AREA AND ARCHIVED SURVEY DOCUMENTS. DATA AS SHOWN IS FOR REFERENCE ONLY. CONFIRMATION AND PROOF OF LEASE AREA AND/OR EASEMENTS IS BEYOND THE SCOPE OF THIS PROJECT.

NOTE:	
1.	EXISTING UNDERGROUND UTILITIES ARE BELIEVED TO BE PRESENT THROUGHOUT THE SITE. EXACT LOCATIONS ARE NOT CONFIRMED NOR PROVEN BY THIS DOCUMENT. CONTRACTOR TO CONDUCT LINE LOCATES PRIOR TO CONSTRUCTION.

EXISTING GENERATOR SITE PLAN

NORTH

8'-0" 0 8'-0"
6' 4' 2'
SCALE: ⅛" = 1'-0"

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

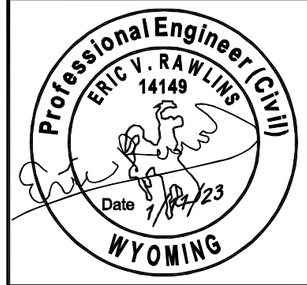
verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC



PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

EXISTING GENERATOR SITE PLAN

SAVE DATE:

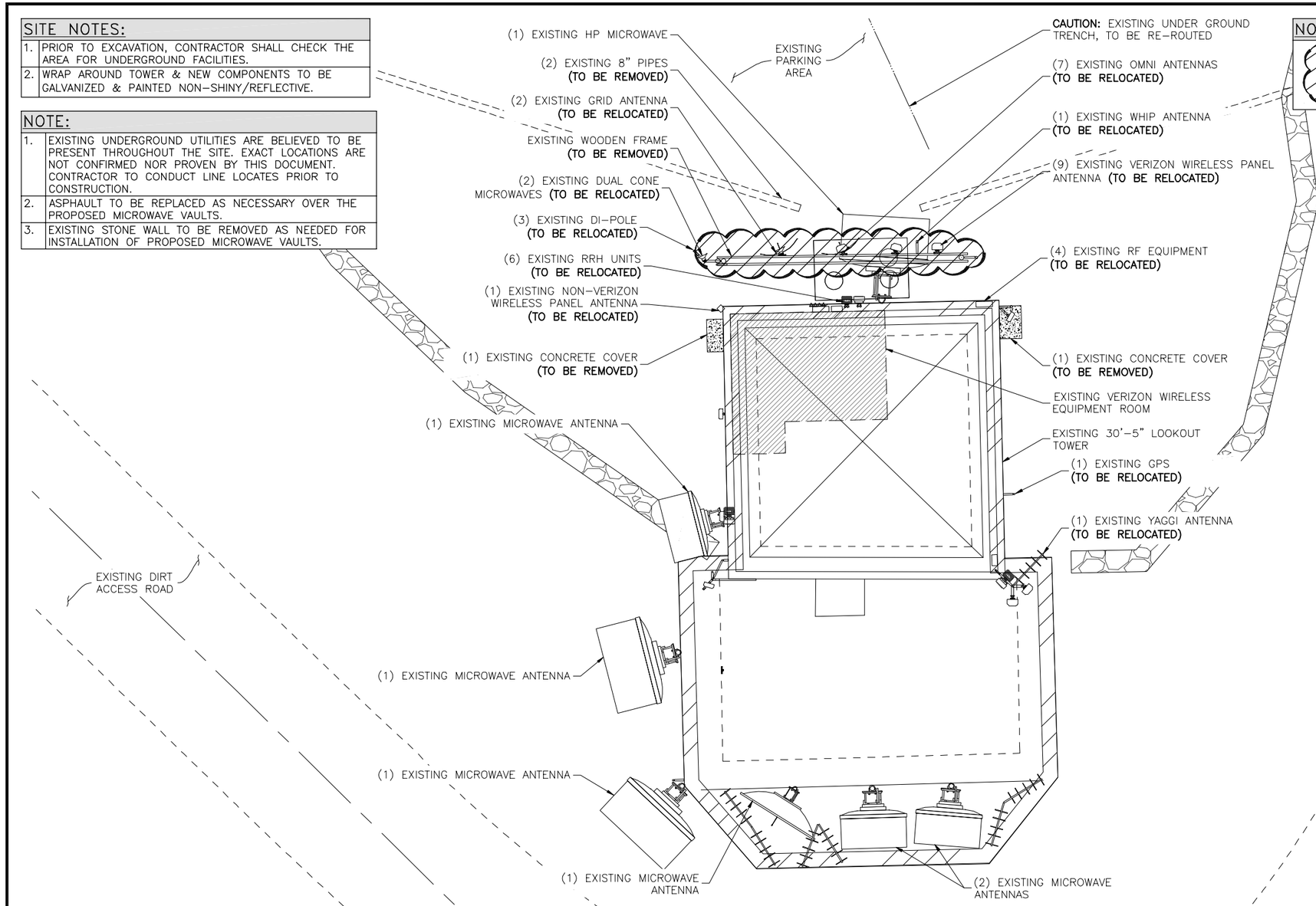
1/11/2023 2:13 PM

SHEET NUMBER:

C1

SITE NOTES:	
1.	PRIOR TO EXCAVATION, CONTRACTOR SHALL CHECK THE AREA FOR UNDERGROUND FACILITIES.
2.	WRAP AROUND TOWER & NEW COMPONENTS TO BE GALVANIZED & PAINTED NON-SHINY/REFLECTIVE.

NOTE:	
1.	EXISTING UNDERGROUND UTILITIES ARE BELIEVED TO BE PRESENT THROUGHOUT THE SITE. EXACT LOCATIONS ARE NOT CONFIRMED NOR PROVEN BY THIS DOCUMENT. CONTRACTOR TO CONDUCT LINE LOCATES PRIOR TO CONSTRUCTION.
2.	ASPHAULT TO BE REPLACED AS NECESSARY OVER THE PROPOSED MICROWAVE VAULTS.
3.	EXISTING STONE WALL TO BE REMOVED AS NEEDED FOR INSTALLATION OF PROPOSED MICROWAVE VAULTS.



NOTE:	
	TO BE REMOVED AND DISPOSED OF IN A LEGAL MANNER.

EXISTING SITE PLAN

NORTH

12'-0" 0 12'-0"
10' 6' 2'
SCALE: 3/32" = 1'-0"

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/27/23
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

EXISTING SITE PLAN

SAVE DATE:

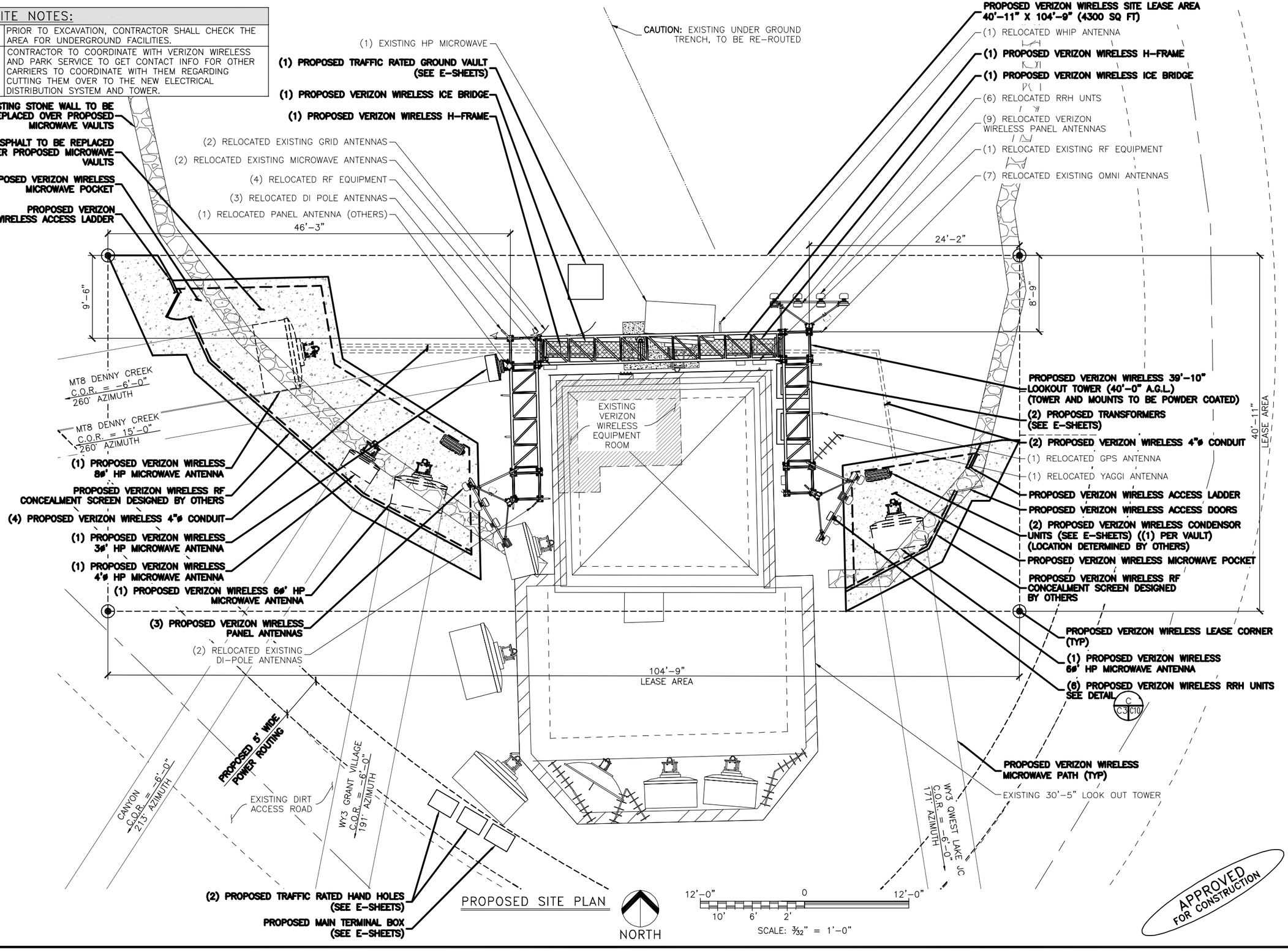
1/11/2023 2:13 PM

SHEET NUMBER:

C2

SITE NOTES:

1	PRIOR TO EXCAVATION, CONTRACTOR SHALL CHECK THE AREA FOR UNDERGROUND FACILITIES.
2	CONTRACTOR TO COORDINATE WITH VERIZON WIRELESS AND PARK SERVICE TO GET CONTACT INFO FOR OTHER CARRIERS TO COORDINATE WITH THEM REGARDING CUTTING THEM OVER TO THE NEW ELECTRICAL DISTRIBUTION SYSTEM AND TOWER.



PROPOSED SITE PLAN

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/27/23
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

PROPOSED SITE PLAN

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

C3

GENERAL SITE PLAN NOTES:

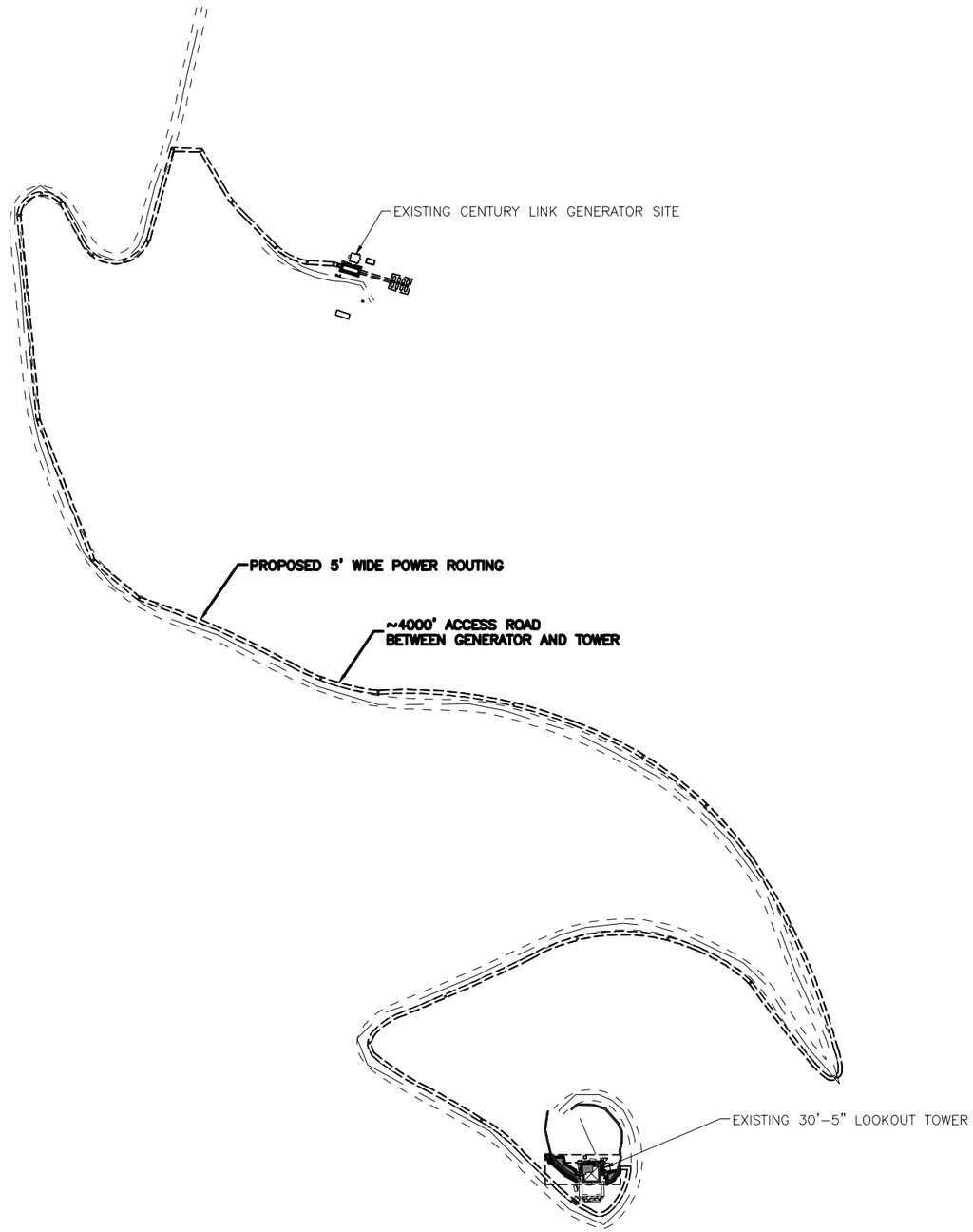
1.	INFORMATION SHOWN BELOW FOR DEPICTION PURPOSES ONLY. ALL DATA GATHERED FROM PUBLIC RECORDS AND GENERATED FROM AERIAL IMAGES AND SITE VISITS. INFORMATION DOES NOT CONSTITUTE A LEGAL BOUNDARY SURVEY AND SHOULD NOT BE USED FOR SURVEYING OR OTHER RELATED PURPOSES.
2.	SITE PLAN DATA AS SHOWN IS BASED UPON A LIMITED SITE MAPPING OF THE SURROUNDING AREA AND ARCHIVED SURVEY DOCUMENTS. DATA AS SHOWN IS FOR REFERENCE ONLY. CONFIRMATION AND PROOF OF LEASE AREA AND/OR EASEMENTS IS BEYOND THE SCOPE OF THIS PROJECT.

NOTE:

1.	EXISTING UNDERGROUND UTILITIES ARE BELIEVED TO BE PRESENT THROUGHOUT THE SITE. EXACT LOCATIONS ARE NOT CONFIRMED NOR PROVEN BY THIS DOCUMENT. CONTRACTOR TO CONDUCT LINE LOCATES PRIOR TO CONSTRUCTION.

ADDITIONAL NOTE:

1.	REFERENCE SHEET UC1 FOR MORE DETAILS



OVERALL SITE PLAN

NORTH

200'-0" 0 200'-0"
120' 40'
SCALE: 1" = 200'-0"

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/12/23
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

OVERALL SITE PLAN

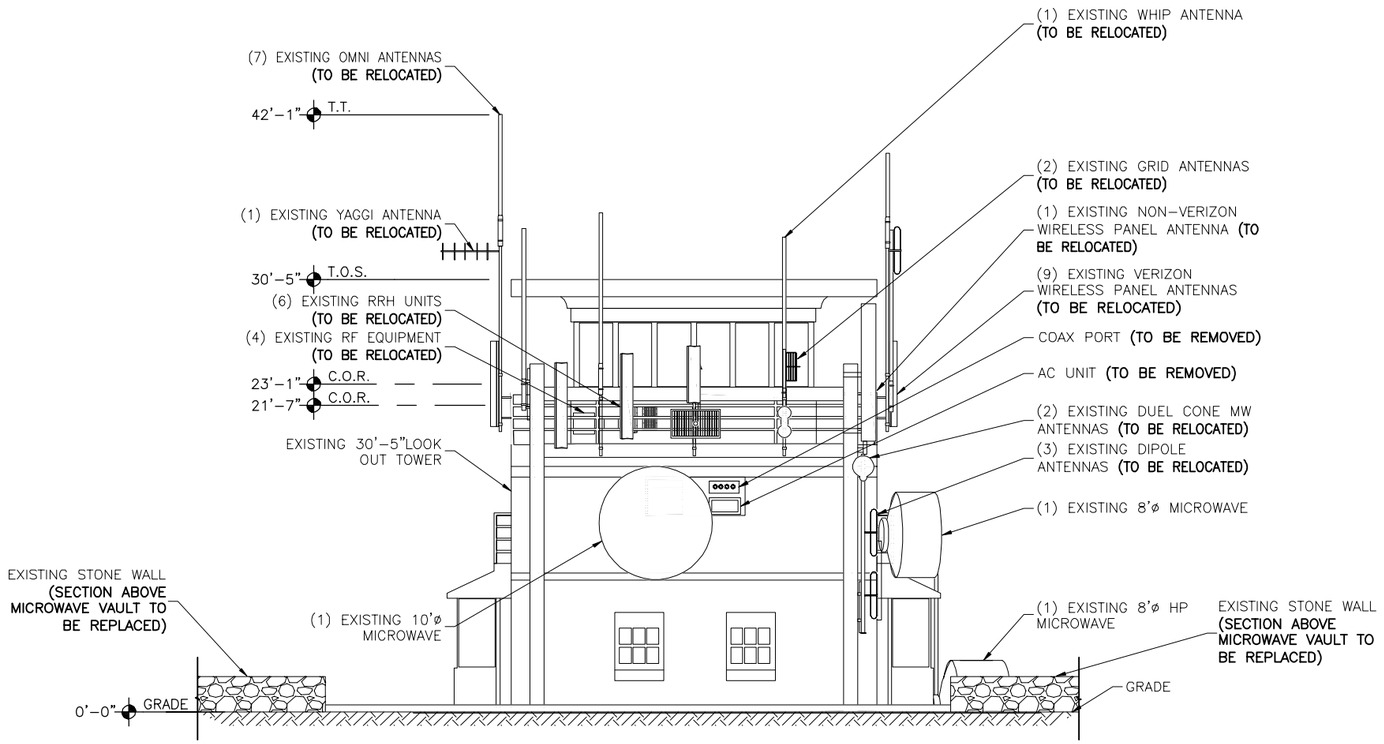
SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

C4

KEY:	
C.O.R. =	CENTER OF RADIATION
A.L. =	ATTACHMENT LEVEL
B.T. =	BOTTOM TIP LEVEL
T.T. =	TOP TIP LEVEL
A.G.L. =	ABOVE GRADE LEVEL
B.O.B.P. =	BOTTOM OF BASE PLATE
T.O.S. =	TOP OF STRUCTURE



EXISTING NORTH ELEVATION
SCALE: N.T.S.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 1/12/23

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

ELEVATIONS

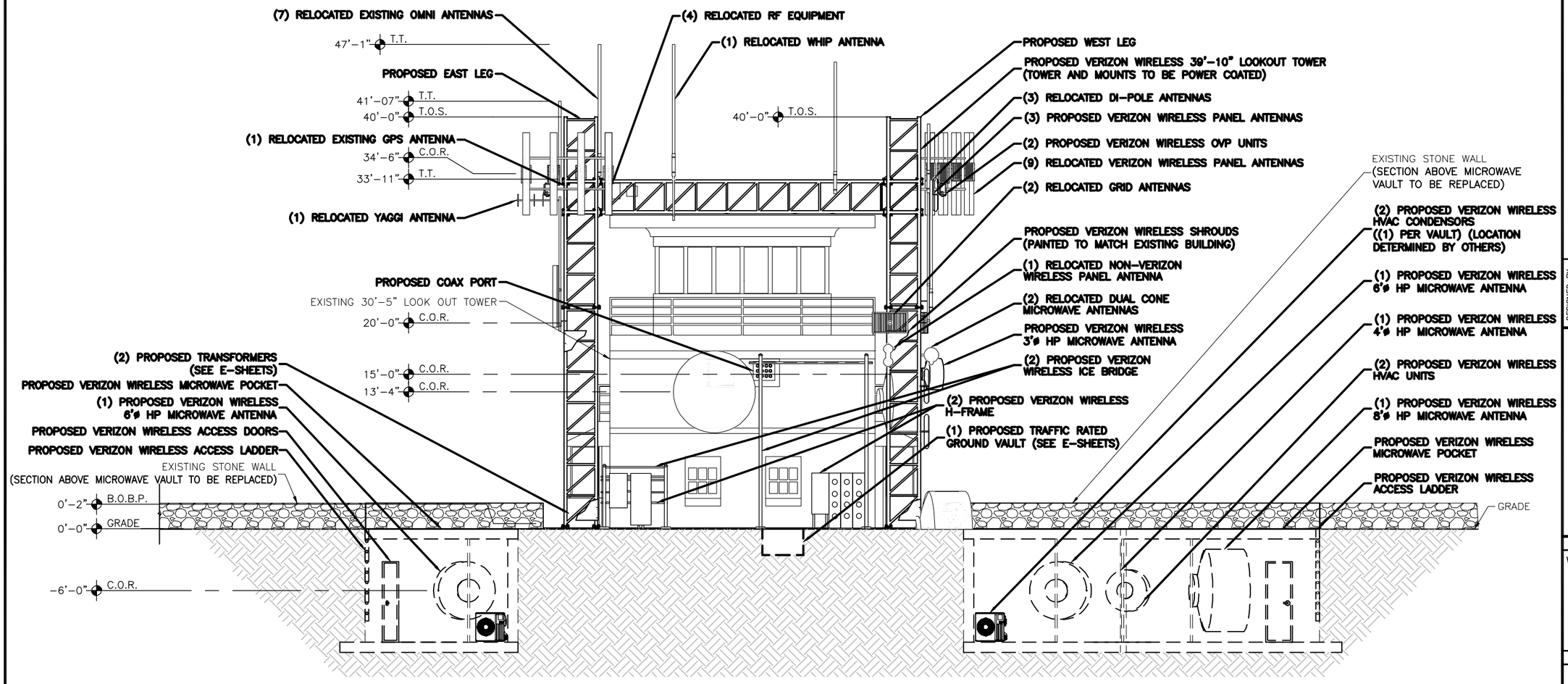
SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

C5

KEY:	
C.O.R. =	CENTER OF RADIATION
A.L. =	ATTACHMENT LEVEL
B.T. =	BOTTOM TIP LEVEL
T.T. =	TOP TIP LEVEL
A.G.L. =	ABOVE GRADE LEVEL
B.O.B.P. =	BOTTOM OF BASE PLATE
T.O.S. =	TOP OF STRUCTURE



PROPOSED NORTH ELEVATION

SCALE: N.T.S.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 1/27/23

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

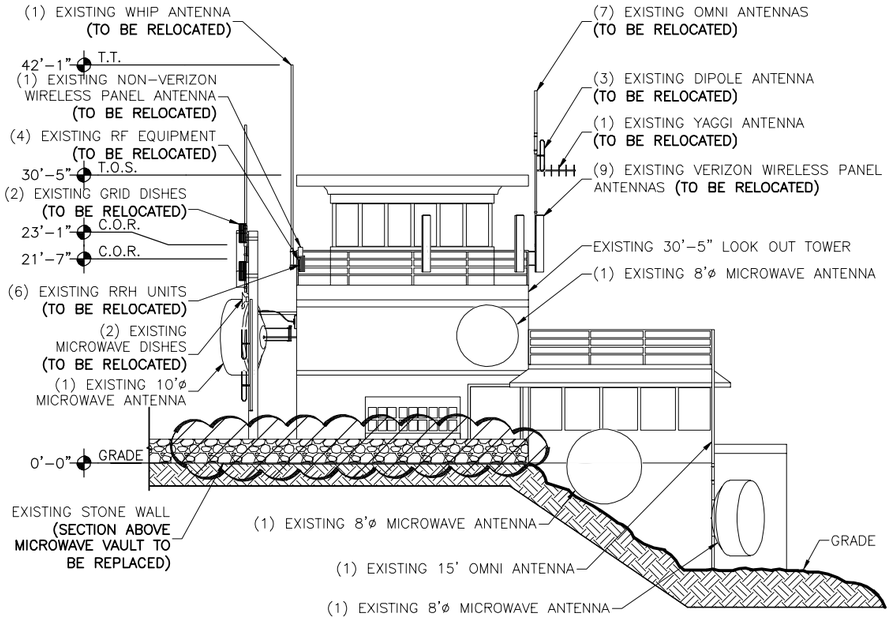
ELEVATIONS

SAVE DATE:

1/11/2023 2:13 PM

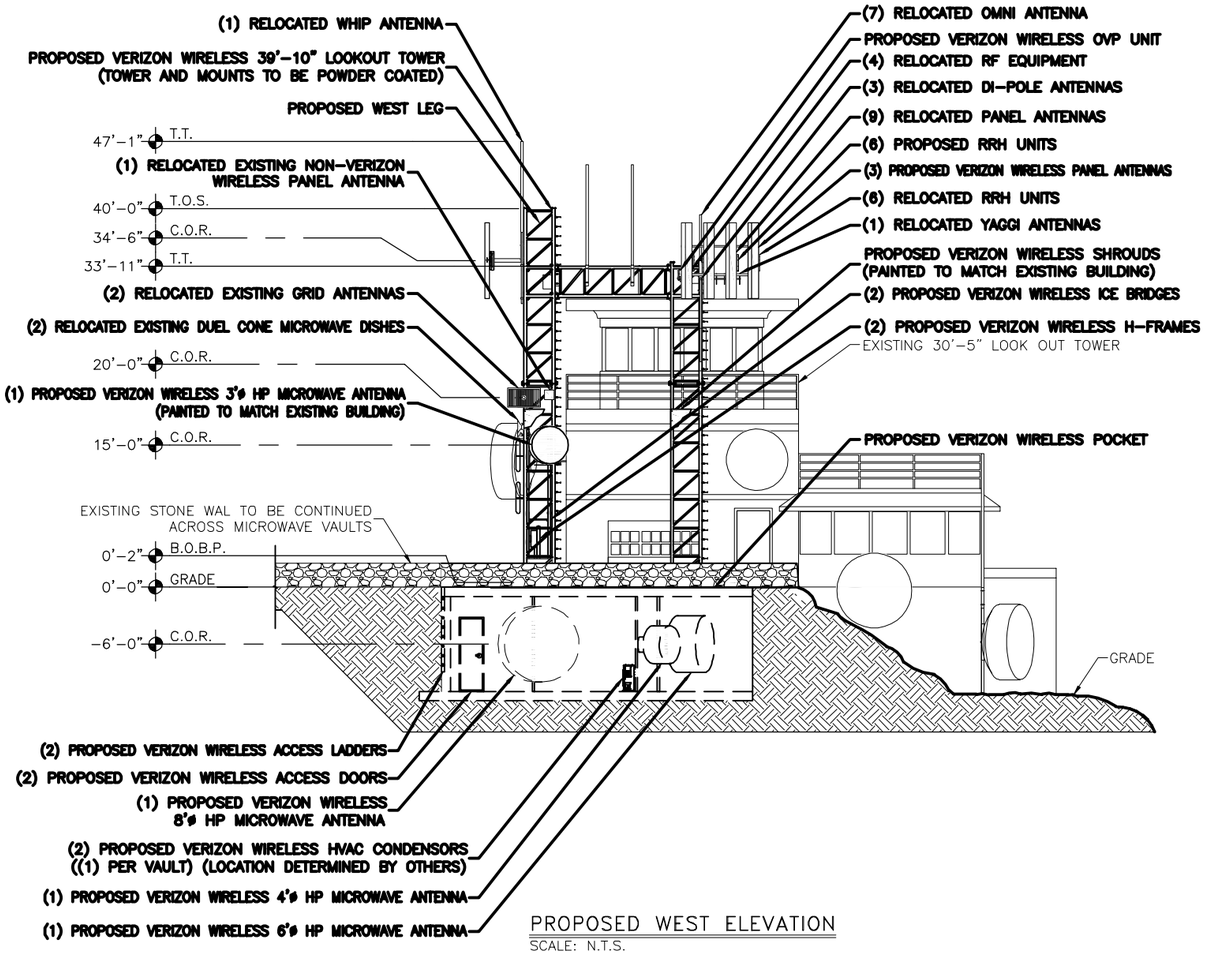
SHEET NUMBER:

C6



EXISTING WEST ELEVATION
SCALE: N.T.S.

KEY:	
C.O.R. =	CENTER OF RADIATION
A.L. =	ATTACHMENT LEVEL
B.T. =	BOTTOM TIP LEVEL
T.T. =	TOP TIP LEVEL
A.G.L. =	ABOVE GRADE LEVEL
B.O.B.P. =	BOTTOM OF BASE PLATE
T.O.S. =	TOP OF STRUCTURE



PROPOSED WEST ELEVATION
SCALE: N.T.S.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 1/12/23

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

ELEVATIONS

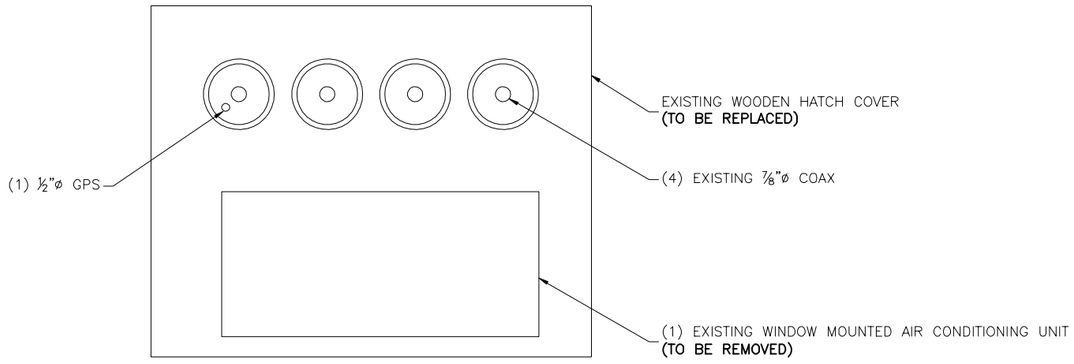
SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

C7

VIEW OF EXISTING COAX PORT
INTERIOR



VIEW OF COAX PORT
SCALE: NTS

GROUNDING NOTE:
1. ALL NEW EQUIPMENT & COAX TO BE GROUNDED PER NEC.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:
verizon
2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED "NEWLY" RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/27/23
WYOMING

PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:
COAX ENTRY PORT

SAVE DATE:
1/11/2023 2:13 PM

SHEET NUMBER:
C8

NOTE:

1. GRID LINES ARE SHOWN @ 12" O.C.
2. CAUTION EXISTING EQUIPMENT ROOM IS 6'-10"
3. "RF CAUTION, NO TRESPASSING" SIGNAGE TO BE LOCATED AT ALL ENTRY POINTS TO RF EQUIPMENT.

BREAKERS IN THE PDF BY AMPS AND QUANTITY:

	3 AMP	5 AMP	10 AMP	50 AMP	60 AMP	100 AMP
POWERED				2		4
NOT POWERED	2	4	1		1	7

NOTES:

BATTERY RACK:

BATTERIES: (18) NORTHSTAR
TYPE: NSB 170 FT

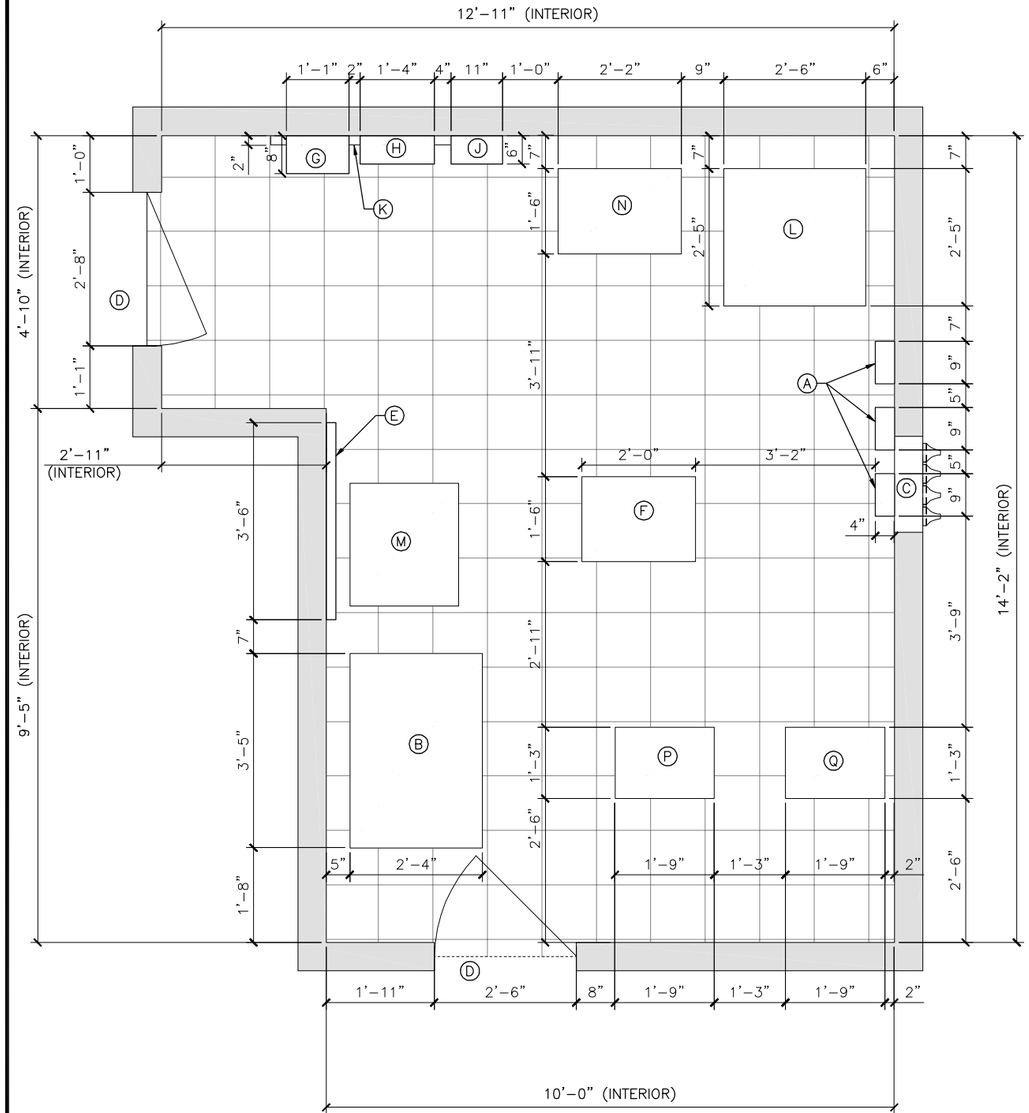
RECTIFIERS:

TYPE: EMERSON VORTEX
MODEL#: V130B25

(3) RECTIFIERS
(4) OPEN

KEYED NOTES:

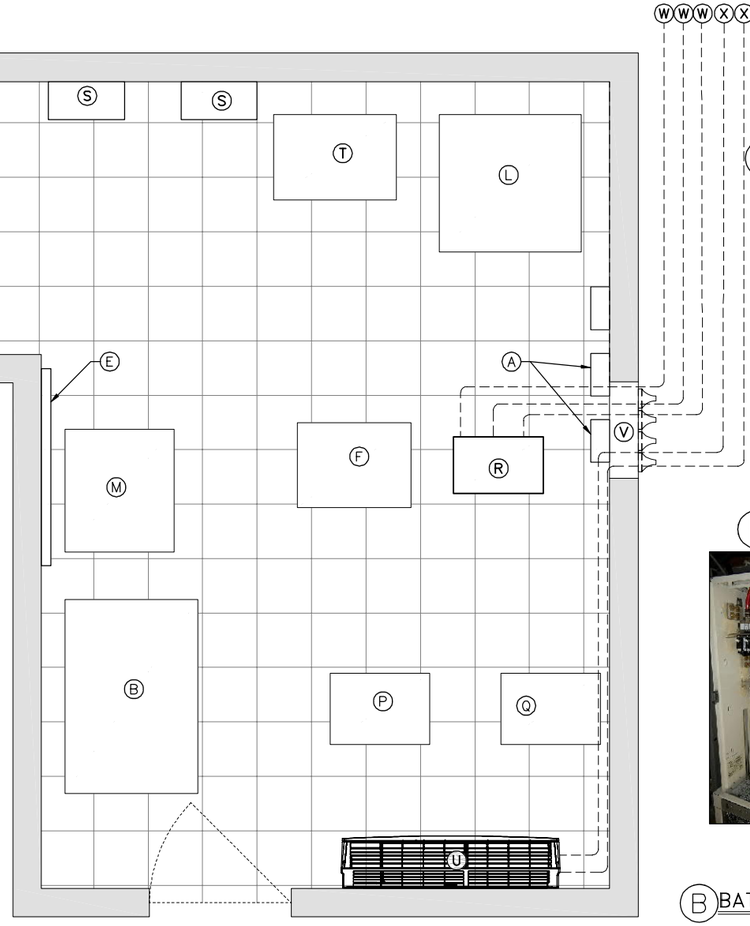
Ⓐ	FILTERS
Ⓑ	BATTERY RACK
Ⓒ	COAX PORT **(TO BE REPLACED)**
Ⓓ	ACCESS DOOR
Ⓔ	TELCO BOARD
Ⓕ	**(LORIAN)** DC POWER DISTRIBUTION CENTER
Ⓖ	SURGE PROTECTION DEVICE **(TO BE LOCATED)**
Ⓗ	AC BREAKER BOX – COMMNET **(TO BE RELOCATED)**
Ⓙ	AC BREAKER BOX – ALLTEL **(TO BE RELOCATED)**
Ⓚ	SAFETY BOARD **(TO BE RELOCATED)**
Ⓛ	CDMA
Ⓜ	AT&T DC POWER DISTRIBUTION CENTER
Ⓝ	700 TRDU **(TO BE REMOVED)**
Ⓟ	AT&T RACK
Ⓠ	TETON RACK
Ⓡ	**(PROPOSED)** MW RACK
Ⓢ	**(PROPOSED)** 200 AMP PANEL
Ⓣ	**(PROPOSED)** MOVP RACK & STACK
Ⓤ	**(PROPOSED)** (2) WALL MOUNTED HVAC UNITS STACKED
Ⓥ	**(PROPOSED)** 12 PORT COAX PORT
Ⓦ	**(PROPOSED)** 4"ø CONDUIT WAVE GUIDE
Ⓧ	**(PROPOSED)** 4"ø CONDUIT HVAC LINES



SHELTER MAPPING
SCALE: N.T.S.

NORTH

APPROVED FOR CONSTRUCTION



PROPOSED SHELTER MAPPING
SCALE: N.T.S.

NORTH

Ⓝ 700 TRDU

DC POWER DISTRIBUTION Ⓕ

Ⓕ BREAKERS

Ⓑ BATTERY RACK

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/12/23
WYOMING

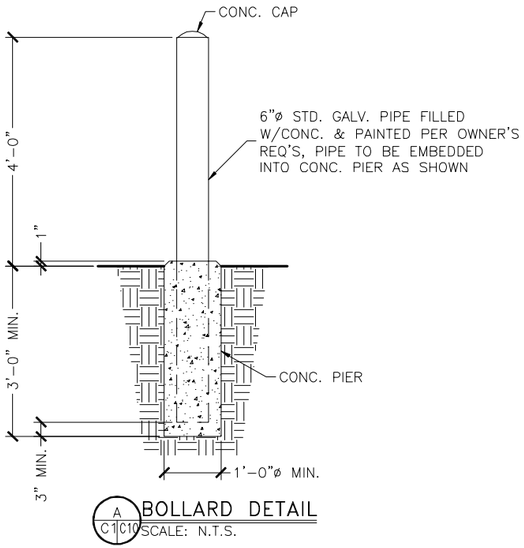
PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

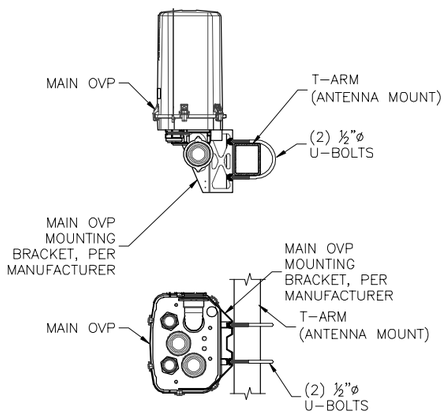
SHEET TITLE:
SHELTER MAPPING

SAVE DATE:
1/11/2023 2:13 PM

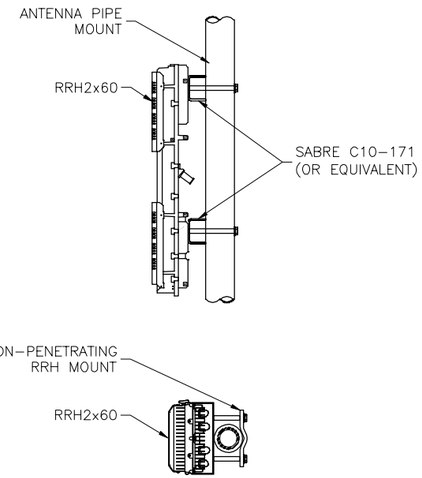
SHEET NUMBER:
C9



A C1 C10 BOLLARD DETAIL
SCALE: N.T.S.



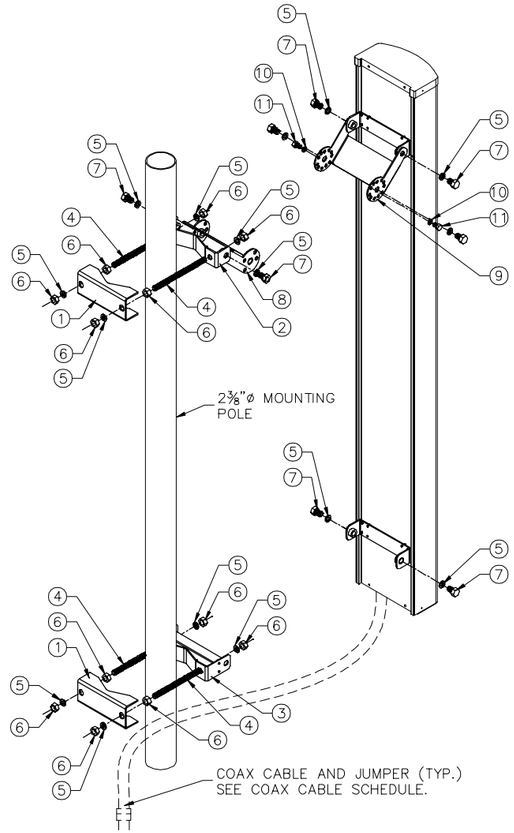
B C2 C1 MAIN OVP BOX STAND-OFF MOUNT CONNECTION DETAIL
SCALE: N.T.S.



C C3 C10 REMOTE RADIO HEAD CONNECTION DETAIL

ANTENNA ATTACHMENT HARDWARE:			
ITEM	PART NO.	QTY.	DESCRIPTION
①	601553-1	2	BRACKET, CLAMP
②	601539-1	1	ADAPTER, POLE
③	802355-4	1	ADAPTER, POLE LOWER
④	ROD190003	4	½" x 7" THREADED ROD
⑤	WSH150003	12	½" SPLIT WASHER
⑥	NUT150001	12	½" HEX HEAD NUT
⑦	BLT140002	6	½" x 1" HEX HEAD BOLT
⑧	601730-1	1	BRACKET, DOWNTILT POLE
⑨	601735-1	1	BRACKET, DOWNTILT, ANTENNA
⑩	WSH150006	2	5/16" SPLIT WASHER
⑪	BLT140004	2	5/16" HEX HEAD BOLT

OVERALL WEIGHT: 10.75 LBS.



ANTENNA ATTACHMENT DETAIL
SCALE: N.T.S.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:
verizon
2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEW'LY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil) JAMES V. CHUNG 14305 WYOMING Date 1/27/23

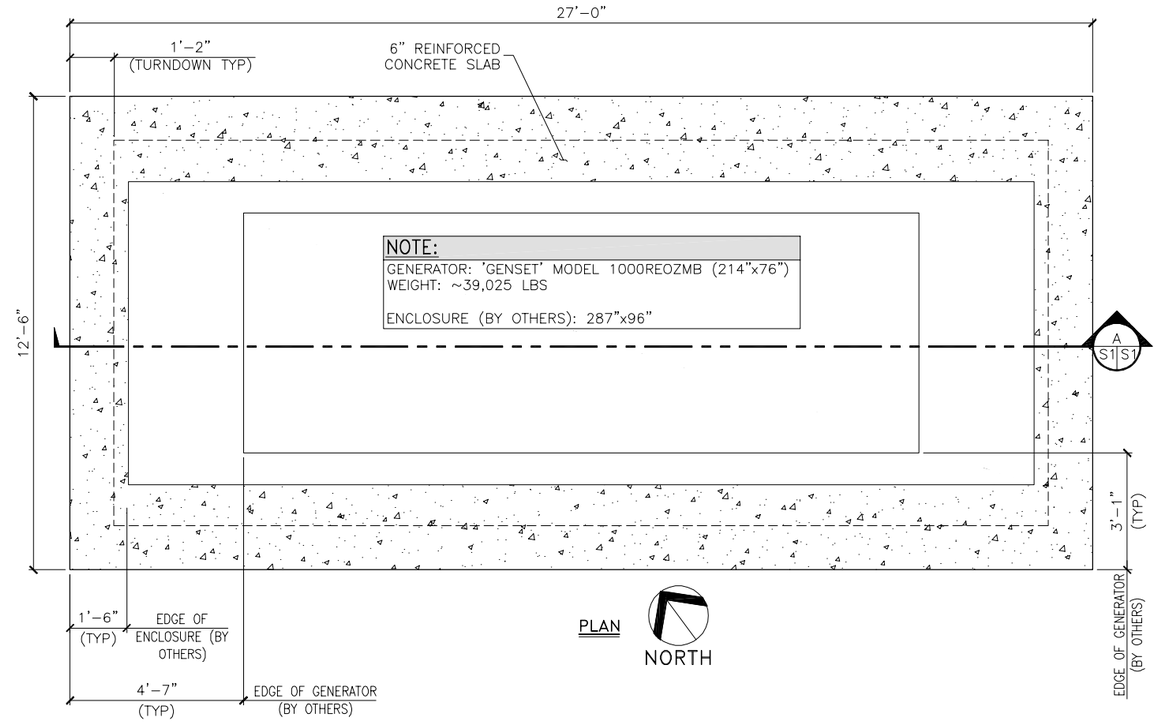
PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

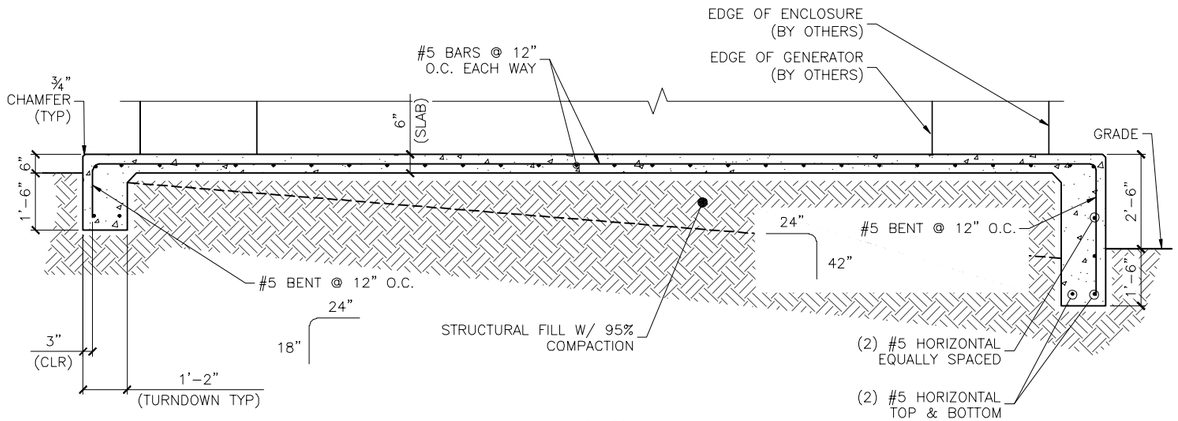
PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:
DETAILS

SAVE DATE:
1/11/2023 2:13 PM

SHEET NUMBER:
C10





ELEVATION

D
C1 C11
NEW TURNDOWN FOOTING DETAIL ADDENDUM
SCALE: NTS (FOR NEW GENERATOR)

APPROVED
FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEW/Y RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/12/23
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

DETAILS

SAVE DATE:

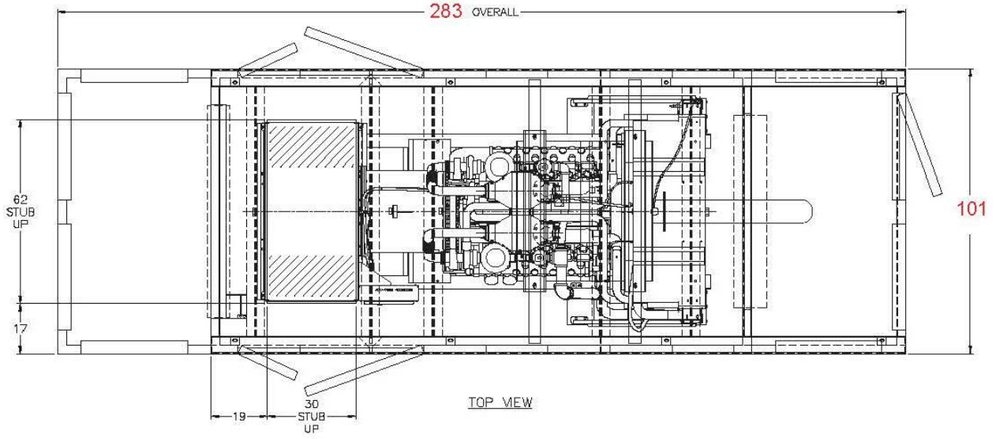
1/11/2023 2:13 PM

SHEET NUMBER:

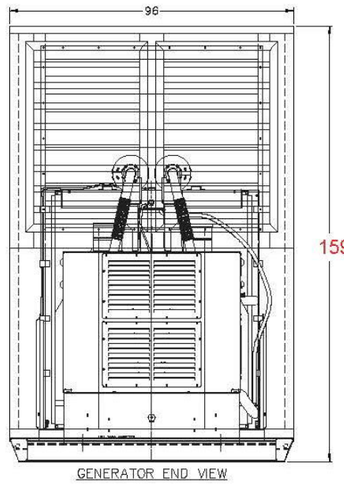
C11

QUOTE #	GENSET MODEL	GENSET FOOTPRINT	ASSY. DRY WEIGHT
804867	400REZXB	153.5" X 77.7"	13,900 lbs

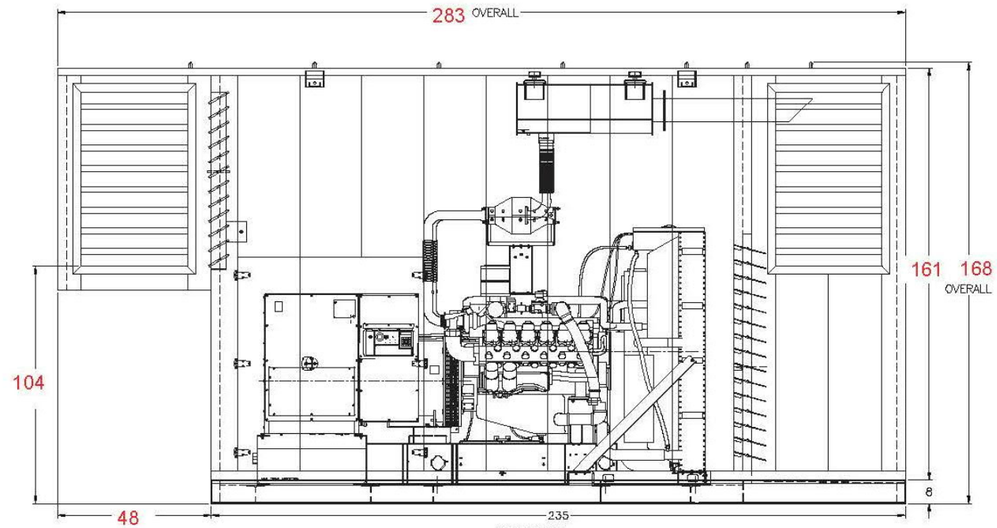
PRELIMINARY DRAWING - NOT FOR CONSTRUCTION



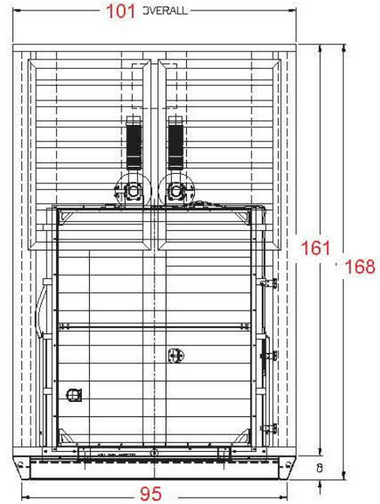
TOP VIEW



GENERATOR END VIEW



SIDE VIEW



RADIATOR END VIEW

BILL OF MATERIAL		
	DESCRIPTION	QTY
GWE-A2	ALUMINUM CONSTRUCTION (.080")	
6505	ACCESS DOOR	5
6502	BLACK ANODIZED DOOR HARDWARE	5
6507	DOOR RESTRAINT	5
6810	EXTERNAL HORIZONTAL INTAKE HOOD	1
6925	MOTORIZED INTAKE LOUVER	1
6815	INTERNAL HORIZONTAL DISCHARGE PLENUM	1
6935	GRAVITY DISCHARGE DAMPER	1
6805	FIXED INTAKE LOUVER	8
6900	2" BLACK FOAM INSULATION	1
6845	CUSTOMER SUPPLIED CATALYST	1
6840	GPC SUPPLIED EXHAUST SYSTEM	1
6855	INTERNALLY MOUNTED SILENCER	1
	SIL: E-C-12-08-XXXX	1
6805	RAIN COLLAR	1
6860	HORIZONTAL SILENCER DISCHARGE	1
	TUBE: XXXX	1
6800	EXHAUST EXTENSION	1
6902	WIRE BLOCK HEATER	1
6904	MOUNT & WIRE BATTERY CHARGER	1
6914	100A DIST PANEL (1ϕ, 120/240V)	1
6935	5 KW SPACE HEATER	2
6938	HEATER THERMOSTAT	2
21695	PAINT COLOR KOHLER BEIGE	

ASSY

REVISIONS				REVISIONS			
REV	DATE:	CHANGE MADE	BY	REV	DATE:	CHANGE MADE	BY

GWE-A2-400-LIFTBASE ASSEMBLY

CUSTOMER/ID: KOHLER COMPANY
JOB REF: 21371074 MT. WASHBURN
DRAWING REF: 804867
DWG #: X
DATE: 8/2/18
DRAWN BY: MTB

GLOBAL POWER COMPONENTS

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 1/27/23

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

CUT SHEETS

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

C12

EXISTING ANTENNA SCHEDULE:

ATTACH LEVEL (COR)	AZIMUTHS (DEG., TN)	ANTENNA TYPE	ANTENNA QUANTITY	MOUNT TYPE	COAX (QUANTITY) SIZE (NOMINAL)	NOTES
~26'-6"	0° 120° 240°	8' PANEL ANTENNA	10	EXISTING	(20) 7/8"	TO BE RELOCATED
~20'-0"	–	OMNIS	7	EXISTING	N/A	TO BE RELOCATED
~12'-7" ~8'-3"	–	DI POLES	3	EXISTING	N/A	TO BE RELOCATED
~17'-0	316°	MICORWAVE	2	EXISTING	N/A	TO BE RELOCATED
~20'-0" ~25'-10"	316°	GRID ANTENNAS	2	EXISTING	N/A	TO BE RELOCATED
~20'-0"	–	WHIP ANTENNA	1	EXISTING	N/A	TO BE RELOCATED
~32'-6"	43°	YAGGI ANTENNA	1	EXISTING	(1) 1/2"	TO BE RELOCATED

NOTES:

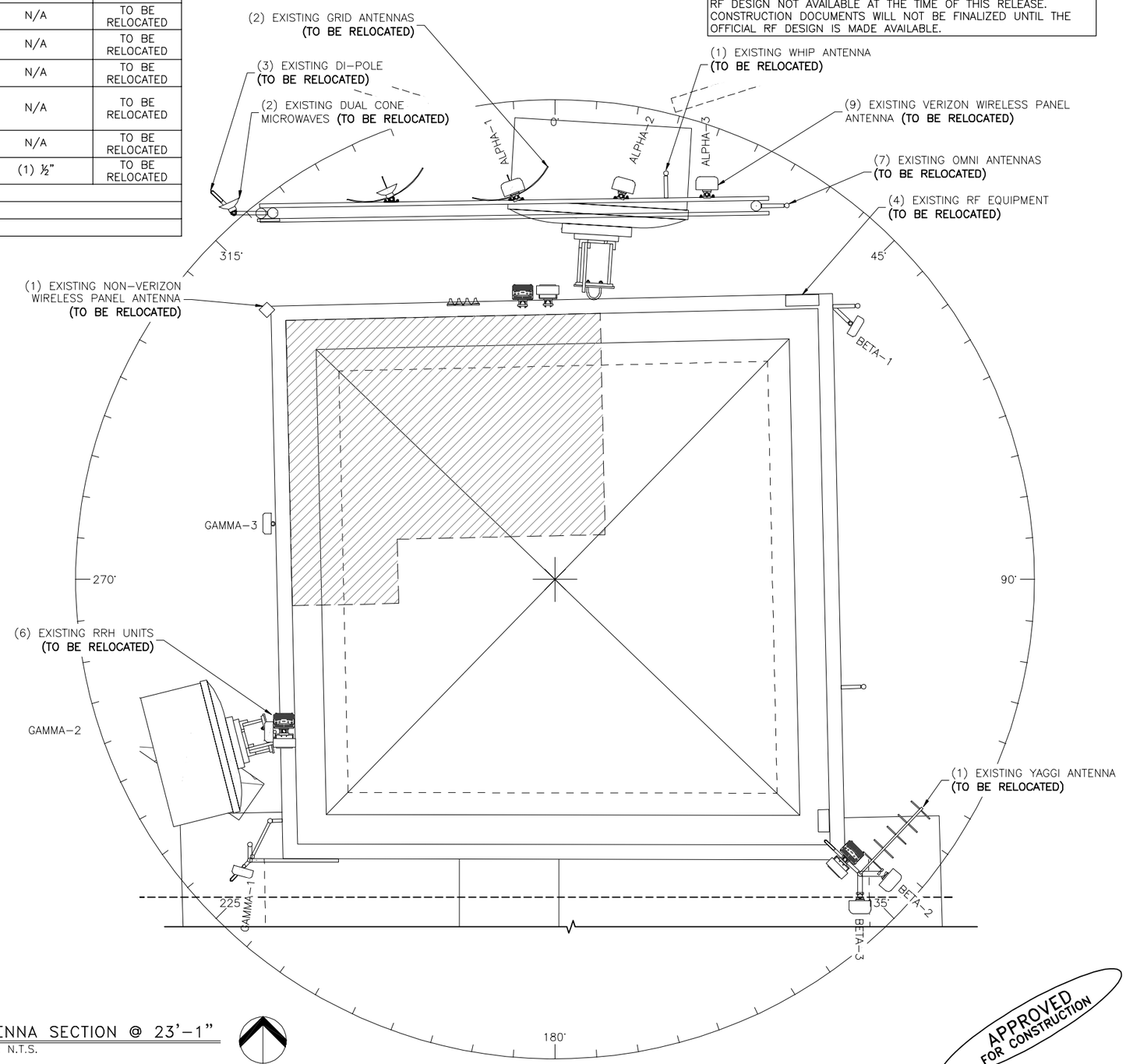
1. ALL EXISTING AZIMUTHS REFERENCE TRUE NORTH.
2. ALL EXISTING AZIMUTHS ARE APPROXIMATE AND BASED PREVIOUS SITE VISIT.

NOTICE:

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

RF DESIGN NOTE:

RF DESIGN NOT AVAILABLE AT THE TIME OF THIS RELEASE. CONSTRUCTION DOCUMENTS WILL NOT BE FINALIZED UNTIL THE OFFICIAL RF DESIGN IS MADE AVAILABLE.



ANTENNA SECTION @ 23'-1"
SCALE: N.T.S.

NORTH

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/27/23
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

EXISITING ANTENNA INFORMATION

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

RF1

PROPOSED VERIZON WIRELESS ANTENNA SCHEDULE:

ATTACH LEVEL (COR)	AZIMUTHS (DEG., TN)	ANTENNA TYPE	ANTENNA QUANTITY	MOUNT TYPE	COAX (QUANTITY) SIZE (NOMINAL)	ESTIMATED COAX CABLE LENGTH	MECHANICAL DOWN TILT
34'-6"	0° 120° 240°	8' PANEL ANTENNA	3	SEE ANTENNA MOUNT SCHEDULE	TBD	TBD	REFER TO SMR

NOTES:

1. FOR EXACT ANTENNA INFORMATION REFER TO THE RF DESIGN.
2. ALL PROPOSED COAX SHALL BE INSTALLED ON NEW FEEDLINE LADDER.
3. ALL UNUSED COAX SHALL BE REMOVED.
4. CONTRACTOR TO INSTALL DIPLEXERS IN SHELTER AND ON TOWER AS REQUIRED BY RF DESIGN. (IF APPLICABLE)

RELOCATED ANTENNA SCHEDULE:

ATTACH LEVEL (COR)	AZIMUTHS (DEG., TN)	ANTENNA TYPE	ANTENNA QUANTITY	MOUNT TYPE	COAX (QUANTITY) SIZE (NOMINAL)	ESTIMATED COAX CABLE LENGTH	MECHANICAL DOWN TILT
~32'-6"	43°	YAGGI ANTENNA	1	EXISTING	TBD	TBD	REFER TO SMR
~32'-3"	–	OMNIS	7	EXISTING	TBD	TBD	REFER TO SMR
~32'-3"	–	WHIP ANTENNA	1	EXISTING	TBD	TBD	REFER TO SMR
~34'-6"	0° 120° 240°	8' PANEL ANTENNA	9	EXISTING	TBD	TBD	REFER TO SMR
~26'-6"	240°	NON-VERIZON WIRELESS PANEL ANTENNA	1	EXISTING	TBD	TBD	REFER TO SMR
~25'-10" ~20'-0"	316°	GRID ANTENNAS	2	EXISTING	TBD	TBD	REFER TO SMR
~17'-0	316°	MICORWAVE	2	EXISTING	TBD	TBD	REFER TO SMR
~12'-7" ~8'-3"	–	DI POLES	3	EXISTING	TBD	TBD	REFER TO SMR

NOTES:

1. FOR EXACT ANTENNA INFORMATION REFER TO THE RF DESIGN.
2. ALL PROPOSED COAX SHALL BE INSTALLED ON NEW FEEDLINE LADDER.
3. ALL UNUSED COAX SHALL BE REMOVED.
4. CONTRACTOR TO INSTALL DIPLEXERS IN SHELTER AND ON TOWER AS REQUIRED BY RF DESIGN. (IF APPLICABLE)

GENERAL ANTENNA NOTES:

1. CONTRACTOR TO VERIFY MECHANICAL DOWNTILT WITH FINAL SMR/RF ENGINEER.
2. DUAL POLAR ANTENNAS REQUIRE TWO RUNS OF COAX PER ANTENNA.
3. CONTRACTOR TO VERIFY ALL ACTUAL LENGTHS IN FIELD PRIOR TO INSTALLATION AND NOTIFY THE FIELD ENGINEER FOR VERIFICATION OF SIZES OF CABLES.
4. CONTRACTOR TO PROVIDE AS BUILT FOR THE LENGTH OF CABLES UPON COMPLETION OF INSTALLATION.
5. CONTRACTOR TO PROVIDE FINAL CABLE LENGTHS AND RETURN LOSSES FOR ALL CABLES.
6. ALL AZIMUTHS REFERENCE TRUE NORTH. CONSULT REQUIRED QUADRANGLE MAP FOR NECESSARY MECHANICAL DECLINATION.

ANTENNA MOUNT SCHEDULE:

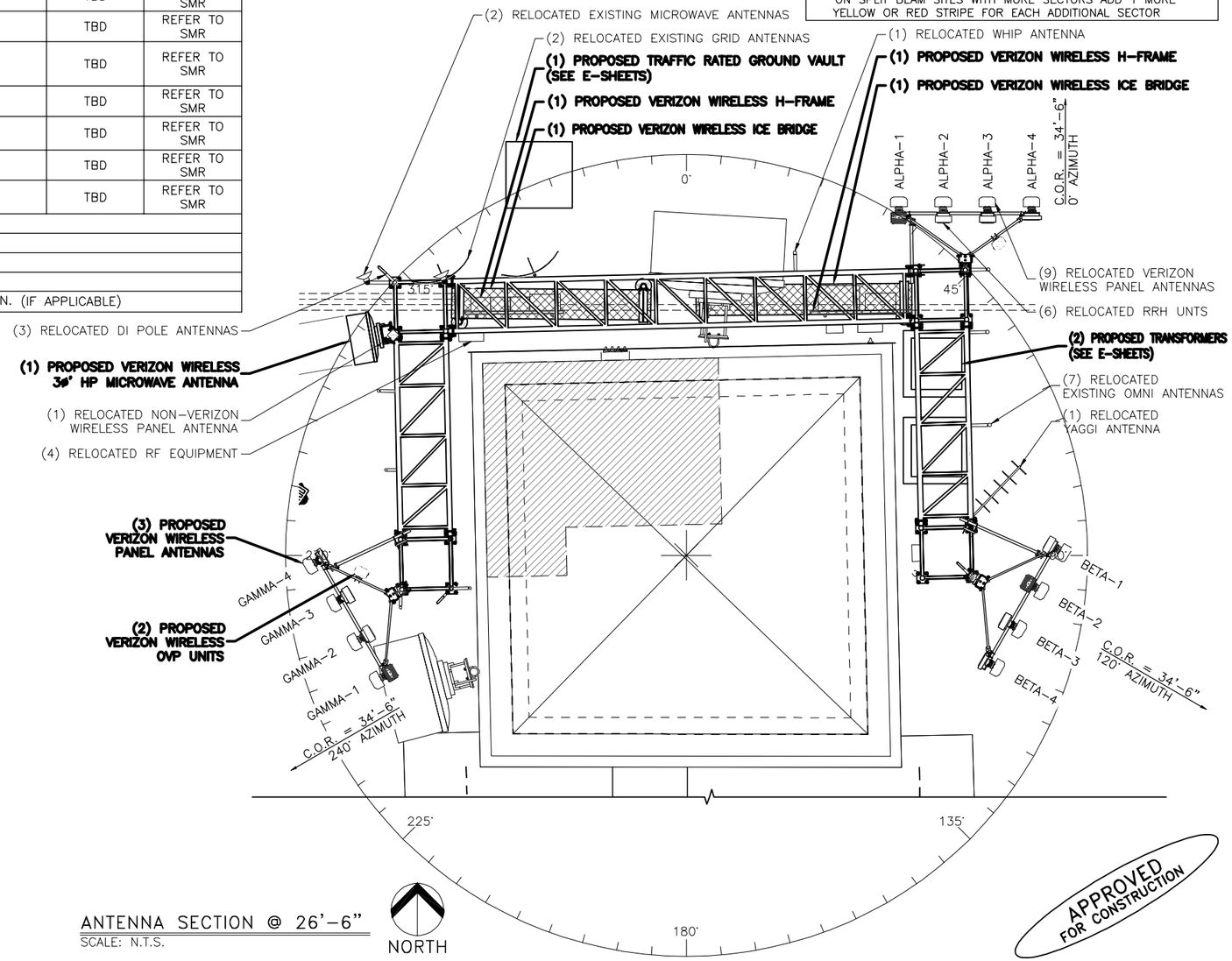
QUANTITY	DESCRIPTION	PART NUMBER(S)
3	8' FACE, ULTRA-BOOM ASSEMBLY (3' STANDOFF)	C10-852

NOTE: ALL PRODUCTS ARE FROM "SABRE SITE SOLUTIONS"
PHONE: (866) 428-6937 / (712) 293-1964
WWW.SABRESITESOLUTIONS.COM

ANTENNA COLOR CODE: MT / N. WY

ANTENNA SECTOR		
ALPHA	WHITE	
BETA	BLUE	
GAMMA	GREEN	
ANTENNA FUNCTION	MONTANA COLOR	N. WYOMING COLOR
800 VOICE	(1) RED STRIPE	(1) YELLOW STRIPE
800 EVDO	(2) RED STRIPE	(2) YELLOW STRIPE
700 LTE	(3) RED STRIPE	(3) YELLOW STRIPE
ANTENNA SECTOR		
ALPHA	PURPLE	
BETA	ORANGE	
GAMMA	BROWN	
ANTENNA FUNCTION	MONTANA COLOR	N. WYOMING COLOR
1900 PCS-EVDO	(1) RED STRIPE	(1) YELLOW STRIPE
1900 PCS-VOICE	(2) RED STRIPE	(2) YELLOW STRIPE
2100 AWS	(3) RED STRIPE	(3) YELLOW STRIPE

NOTE:
ON SPLIT BEAM SITES WITH MORE SECTORS ADD 1 MORE YELLOW OR RED STRIPE FOR EACH ADDITIONAL SECTOR



ANTENNA SECTION @ 26'-6"
SCALE: N.T.S.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

DESIGNED BY:

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 7/27/23
WYOMING

PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:
PROPOSED ANTENNA INFORMATION

SAVE DATE:
1/11/2023 2:13 PM

SHEET NUMBER:
RF2

PROPOSED VERIZON WIRELESS MICROWAVE SCHEDULE:

ATTACH LEVEL (COR)	AZIMUTHS (DEG., TN)	ANTENNA TYPE	ANTENNA QUANTITY	MOUNT TYPE	COAX (QUANTITY) SIZE (NOMINAL)	ESTIMATED COAX CABLE LENGTH	FACING
15'–0"	260°	RFS SUX4–59 8'ø HP MICROWAVE ANTENNA	1	SEE ANTENNA MOUNT SCHEDULE	(2) EW 52	TBD	MT8 DENNY CREEK
–6'–0"	213°	RFS UXA4–59 4'ø HP MICROWAVE ANTENNA	1		(1) EW 52		CANYON
	191°	RFS UXA6–59 6'ø HP MICROWAVE ANTENNA	1		(1) EW 52		WY3 GRANT VILLAGE
	171°	RFS UXA6–59 6'ø HP MICROWAVE ANTENNA	1		(1) EW 52		QWEST LAKE JC
	260°	RFS UXA8–59 3'ø HP MICROWAVE ANTENNA	1		(2) EW 52		MT8 DENNY CREEK

NOTES:

1. FOR EXACT MICROWAVE INFORMATION REFER TO THE MICROWAVE DESIGN.

FUTURE MICROWAVE SCHEDULE:

ATTACH LEVEL (COR)	AZIMUTHS (DEG., TN)	ANTENNA TYPE	ANTENNA QUANTITY	MOUNT TYPE	COAX (QUANTITY) SIZE (NOMINAL)	ESTIMATED COAX CABLE LENGTH	FACING
TBD	TBD	6'ø HP MICROWAVE ANTENNA	2	SEE ANTENNA MOUNT SCHEDULE	TBD	TBD	TBD

NOTES:

1. FOR EXACT MICROWAVE INFORMATION REFER TO THE MICROWAVE DESIGN.

ANTENNA MOUNT SCHEDULE:

QUANTITY	DESCRIPTION	PART NUMBER(S)
6	UNIVERSAL MICROWAVE MOUNTING KIT	C10–153 OR C10–172

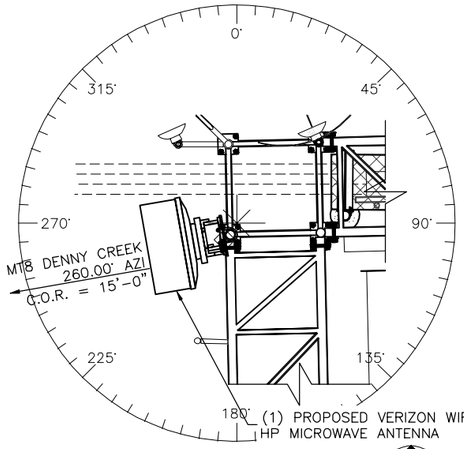
NOTE: ALL PRODUCTS ARE FROM "SABRE SITE SOLUTIONS"
PHONE: (866) 428–6937 / (712) 293–1964 WWW.SABRESITESOLUTIONS.COM

GROUNDING NOTE:

1. ALL NEW EQUIPMENT & COAX TO BE GROUNDED PER VERIZON WIRELESS GROUNDING SPECS

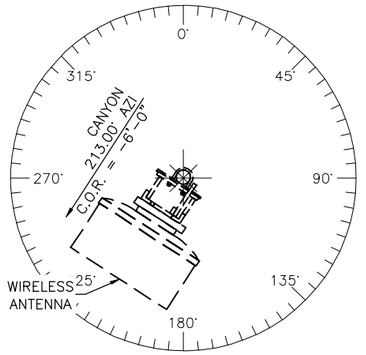
NOTICE:

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



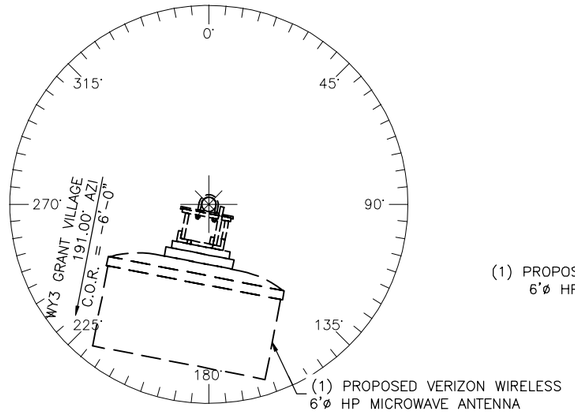
MICROWAVE SECTION @ 15'–0"
SCALE: NTS

NORTH



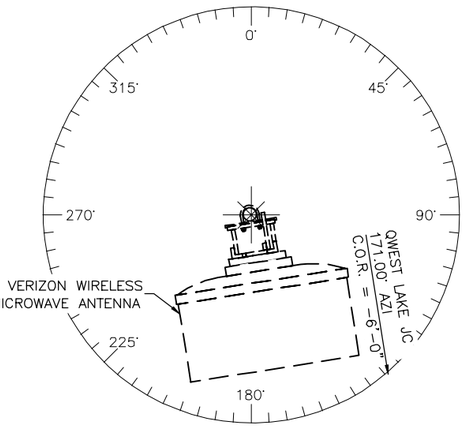
MICROWAVE SECTION @ –6'–0"
SCALE: NTS

NORTH



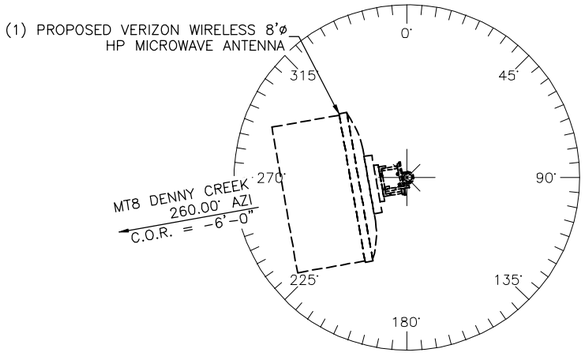
MICROWAVE SECTION @ –6'–0"
SCALE: NTS

NORTH



MICROWAVE SECTION @ –6'–0"
SCALE: NTS

NORTH



MICROWAVE SECTION @ –6'–0"
SCALE: NTS

NORTH

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

J5 INFRASTRUCTURE PARTNERS

DESIGNED BY:

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/12/23
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

MICROWAVE INFORMATION

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

RF3

PRODUCT DATASHEET

UXA4-59AD2H

RADIO FREQUENCY SYSTEMS
The Clear Choice®

HarshAreasLine Antenna, Ultra High Performance, High Cross Polar Discrimination, Dual Polarized, 4 ft

Designed for: Marine environments, off-shore locations, industrial and highly corrosive locations, volcanic areas, tropical climates mountaintops with severe wind, ice and snow conditions.
Available in frequencies ranging from 3.6 to 26.5 GHz and sizes 0.6m (2ft) to 3.7m (12ft) as single or dual polarizde models.


Antenna

FEATURES / BENEFITS

- Reflectors and shrouds painted in- and outside with 2-component epoxy paint
- Feeds painted with a 2-component epoxy paint
- Mounting hardware and attachment hardware in corrosion-resistant ISO 3506 A4 (SAE 316L) steel stabilized with molybdenum
- Steel mounting with a extended galvanic layer
- Screws, connectors apply additional silicon sealant during installation
- Factory-installed wind kit supports winds up to 252 km/h (155 mph)
- A single-piece reflector ensures best protection to antenna surfaces
- A flexible radome that is designed to avoid snow accumulation for antennnas 1.2 m (4 ft) and larger

Technical Features

GENERAL SPECIFICATIONS		
Product Type		Point to point antennas
Profile		HarshAreasLine
Performance		Ultra High
Polarization		Dual
Antenna Input		PDR 70
Reflector		1-part
Radome		flexible
Antenna color		White RAL 9010
Swaybar		1: (1.5 m x Ø33 mm)
ELECTRICAL SPECIFICATIONS		
Frequency	GHz	5.925 - 6.425
3dB beamwidth	degrees	2.6
Low Band Gain	dBi	34.1
Mid Band Gain	dBi	34.5
High Band Gain	dBi	34.8
F/B Ratio	dB	60
XPD	dB	38
IPI	dB	42
Max VSWR / R L	VSWR / dB	1.1 (26.4)
Regulatory Compliance		ETSI EN 302217 Range 1, Class 3
MECHANICAL SPECIFICATIONS		
Diameter	ft (m)	4 (1.2)
Elevation Adjustment	degrees	± 5
Azimuth Adjustment	degrees	± 5
Polarization Adjustment	degrees	± 5
Mounting Pipe Diameter minimum	mm (in)	114 (4.5)
Mounting Pipe Diameter maximum	mm (in)	114 (4.5)
Approximate Weight	kg (lb)	45 (99)
Survival Windspeed	km/h (mph)	252 (155)
Operational Windspeed	km/h (mph)	190 (118)
STRUCTURE		
Radome Material		PVC coated fabric
FURTHER ACCESSORIES		
optional Swaybar		0: (not applicable)
Further Accessories		SMA SKO UNIVERSAL: Universal sway bar fixation kit

PRODUCT DATASHEET

UXA6-59BC

RADIO FREQUENCY SYSTEMS
The Clear Choice®

PrimeLine Antenna, Ultra High Performance, High Cross Polar Discrimination, Dual Polarized, 6 ft

RFS PrimeLine Antennas are designed for all microwave applications that require best RF performance, especially where interference could be an issue.
A choice between tested and validated ultra-high (ETSI EN 302 217 Class 3 and FCC Class A) electrical performance.
Sizes ranging from 0.6 m (2 ft) to 4.6 m (15 ft)
Dual-polarized models with the ability to change frequencies in the field in most cases


Antenna

FEATURES / BENEFITS

- Extremly high XPD performance for complete isolation between the radions in each polarization
- Excellent radiation patern envelope (RPE), particularly in cross-polar area
- Support for winds up to 200 km/h (125 mph) with high-wind versions that support winds up to 252 km/h (155 mph) and an optional sway bar for added assurance in case mistakes are made during installation
- A single-piece configuration and compact packaging to reduce transportation costs
- Frequencies ranging from 4 GHz to 23 GHz with support for one ultra wideband frequency range (5.725-7.125 GHz) to reduce antenna requirements and simplify logistics

Technical Features

GENERAL SPECIFICATIONS		
Product Type		Point to point antennas
Profile		Prime, inc
Performance		Ultra High, High Cross Polar Discrimination
Polarization		Dual
Antenna Input		CPR137G
Reflector		1-part
Radome		flexible
Antenna color		White RAL 9010
Swaybar		1: (2.0 m x Ø60 mm)
ELECTRICAL SPECIFICATIONS		
Frequency	GHz	5.925 - 6.425
3dB beamwidth	degrees	1.9
Low Band Gain	dBi	38.3
Mid Band Gain	dBi	38.7
High Band Gain	dBi	39
F/B Ratio	dB	69
XPD	dB	40
IPI	dB	45
Max VSWR / R L	VSWR / dB	1.06 (30.7)
Regulatory Compliance		ETSI EN 302217 Range 1, Class 3 FCC Category A
MECHANICAL SPECIFICATIONS		
Diameter	ft (m)	6 (1.8)
Elevation Adjustment	degrees	± 5
Azimuth Adjustment	degrees	± 5
Polarization Adjustment	degrees	± 5
Mounting Pipe Diameter minimum	mm (in)	114 (4.5)
Mounting Pipe Diameter maximum	mm (in)	114 (4.5)
Approximate Weight	kg (lb)	110 (242)
Survival Windspeed	km/h (mph)	200 (125)
Operational Windspeed	km/h (mph)	190 (118)
STRUCTURE		
Radome Material		PVC coated fabric
FURTHER ACCESSORIES		
optional Swaybar		1: SMA-SK-60-2000A (2.0 m x Ø60mm)
Further Accessories		SMA WK 6A : Wind Kit SMA-SKO-UNIVERSAL : Universal sway bar fixation kit

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

APPROVED FOR CONSTRUCTION

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

ANTENNA CUT SHEETS

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

RF4

PRODUCT DATASHEET

UXA8-59AC

RADIO FREQUENCY SYSTEMS
The Clear Choice®

PrimeLine Antenna, Ultra High Performance, High Cross Polar Discrimination, Dual Polarized, 8 ft

RFS PrimeLine Antennas are designed for all microwave applications that require best RF performance, especially where interference could be an issue.
A choice between tested and validated ultra-high (ETSI EN 302 217 Class 3 and FCC Class A) electrical performance.
Sizes ranging from 0.6 m (2 ft) to 4.6 m (15 ft)
Dual-polarized models with the ability to change frequencies in the field in most cases


Antenna

FEATURES / BENEFITS

- Extremly high XPD performance for complete isolation between the radions in each polarization
- Excellent radiation patern envelope (RPE), particularly in cross-polar area
- Support for winds up to 200 km/h (125 mph) with high-wind versions that support winds up to 252 km/h (155 mph) and an optional sway bar for added assurance in case mistakes are made during installation
- A single-piece or a split-reflector configuration and compact packaging to reduce transportation costs
- 8 ft (2.4m) to 12 ft (3.7m) diameters can be ordered in split reflector configuration too. The split design provides a reduced packaging volume which minimises shipping cost.
- The expected degradation of the XPD for split design reflectors is less than 2 dB due to the special method of reassembling the reflector on site.
- Frequencies ranging from 4 GHz to 15 GHz with support for one ultra wideband frequency range (5.725-7.125 GHz) to reduce antenna requirements and simplify logistic

Technical Features

GENERAL SPECIFICATIONS		
Product Type		Point to point antennas
Profile		Prime_ine
Performance		Ultra High, High Cross Polar Discrimination
Polarization		Dual
Antenna Input		CPR137G
Reflector		1-part
Radome		flexible
Antenna color		White RAL 9010
Swaybar		1: (3.0 m x Ø60 mm)
ELECTRICAL SPECIFICATIONS		
Frequency	GHz	5.925 6.425
3dB beamwidth	degrees	1.5
Low Band Gain	dBi	40.9
Mid Band Gain	dBi	41.3
High Band Gain	dBi	41.7
F/B Ratio	dB	71
XPD	dB	40
IPI	dB	45
Max VSWR / R L	VSWR / dB	1.06 (30.7)
Regulatory Compliance		ETSI EN 302217 Range 1, c ass 3 FCC Category A
MECHANICAL SPECIFICATIONS		
Diameter	ft (m)	8 (2.4)
Elevation Adjustment	degrees	± 5
Azimuth Adjustment	degrees	± 5
Polarization Adjustment	degrees	± 5
Mounting Pipe Diameter minimum	mm (in)	114 (4.5)
Mounting Pipe Diameter maximum	mm (in)	114 (4.5)
Approximate Weight	kg (lb)	180 (396)
Survival Windspeed	km/h (mph)	200 (125)
Operational Windspeed	km/h (mph)	190 (118)
STRUCTURE		
Radome Material		PVC coated fabric

PRODUCT DATASHEET

SUX4-59AC

RADIO FREQUENCY SYSTEMS
The Clear Choice®

SlimLine Antenna, Ultra High Performance, Dual Polarized, 4 ft

RFS SlimLine® Antennas are designed for microwave systems in all common frequency ranges from 6 GHz to 25 GHz. The antennas are cost-effective products for microwave point-to-point transmission links. The antennas utilise a conventional feed system and are available in Standard, High and Ultra High performance radiation characteristic. The High performance antennas are available in single polarised (SD) as well as in dual polarised versions (SDX). Antennas with High Performance radiation characteristics are required for use in networks where there is a high interference potential. Antennas are available in 4 ft (1.2m) to 6 ft (1.8m) diameters. All antennas include a flexible radome to minimise its impact on the antenna?s electrical characteristics. The antennas are easy to install. A side strut is required for 6 ft-antennas.


Antenna

Technical Features

GENERAL SPECIFICATIONS		
Product Type		Point to point antennas
Profile		SlimLine
Performance		Ultra High
Polarization		Dual
Antenna Input		CPR137G
Reflector		1-part
Radome		flexible
Antenna color		White RAL 9010
Swaybar		0: (not applicable)
ELECTRICAL SPECIFICATIONS		
Frequency	GHz	5.925 - 6.425
3dB beamwidth	degrees	2.6
Low Band Gain	dBi	34.1
Mid Band Gain	dBi	34.5
High Band Gain	dBi	34.8
F/B Ratio	dB	60
XPD	dB	30
IPI	dB	35
Max VSWR / R L	VSWR / dB	1.15 (23.1)
Regulatory Compliance		ETSI EN 302217 Range 1, c ass 3
MECHANICAL SPECIFICATIONS		
Diameter	ft (m)	4 (1.2)
Elevation Adjustment	degrees	± 5
Azimuth Adjustment	degrees	± 5
Polarization Adjustment	degrees	± 5
Mounting Pipe Diameter minimum	mm (in)	114 (4.5)
Mounting Pipe Diameter maximum	mm (in)	114 (4.5)
Approximate Weight	kg (lb)	45 (99)
Survival Windspeed	km/h (mph)	200 (125)
Operational Windspeed	km/h (mph)	190 (118)
STRUCTURE		
Radome Material		PVC coated fabric
FURTHER ACCESSORIES		
Further Accessories		SMA-WK 4 : Wind Kit SMA-SKO-UNIVERSAL : Universal sway bar fixation kit

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

APPROVED FOR CONSTRUCTION

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

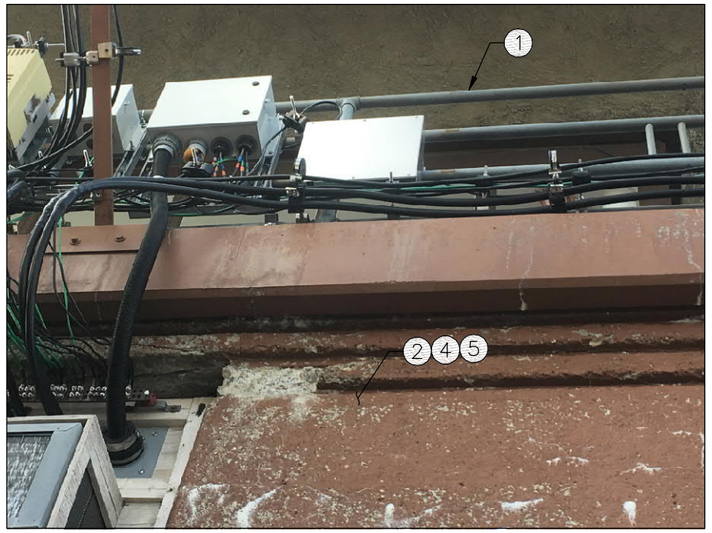
ANTENNA CUT SHEETS

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

RF5



MAIN LEVEL EXTERIOR PHOTO #1

MAIN LEVEL EXTERIOR PHOTO #2

MAIN LEVEL EXTERIOR PHOTO #3

MAIN LEVEL EXTERIOR PHOTO #4

KEY NOTES

1	ALL HANDRAIL AT UPPER PORTION OF OBSERVATION STRUCTURE IS GALVANIZED METAL AND WILL REMAIN GALVANIZED METAL, DO NOT PAINT, SAND OR GRIND. ANY WELDING REPAIRS ON GALVANIZED RAILING TO BE FINISHED WITH COLD GALVANIZATION. OTHER HANDRAILS THAT HAVE BEEN PREVIOUSLY PAINTED ARE TO BE STRIPPED AND PREPPED FOR EXTERIOR GRADE PAINT OR POWDER COATING, WHICHEVER METHOD IS DETERMINED AFTER ON SITE OBSERVATION AND FEEDBACK FROM THE NPS. IF RAILING HAS EXISTING EQUIPMENT ATTACHED TO IT AND REMOVAL IS NOT POSSIBLE, RAILING TO HAVE WELDS INSPECTED AND REPLACED WHERE REQUIRED.
2	ALL CONCRETE RESTORATION TO BE PERFORMED BY A PROFESSIONAL CONCRETE RESTORATION CONTRACTOR. THE CONTRACT FOR THIS WORK IS TO BE AWARDED BY VIKOR, WITH APPROVAL FROM THE NPS. ALL CONCRETE RESTORATION PROCEDURES TO BE PROCEEDED WITH DEMONSTRATION TESTS AND TO BE APPROVED BY THE NPS, PRIOR TO COMMENCING WORK.
3	**LEAD BASED PAINT MAY BE PRESENT ON EXISTING STRUCTURE.** ANY AREAS WHERE THE EXISTING PAINT IS BEING DISTURBED, A QUALIFIED AND LICENSED MITIGATION CONTRACTOR IS TO BE USED FOR REMOVAL. ALL REMOVED PAINT IS TO BE DISPOSED OF IN A SAFE AND LEGAL MANNER OR AS REQUIRED BY THE GOVERNING JURISDICTION.
4	ALL DAMAGED CONCRETE AREAS TO BE RESTORED TO ORIGINAL APPEARANCE. REFER TO CONCRETE RESTORATION NOTES FOR PROPER METHOD AND PROCEDURE. SAND BLASTING TO OCCUR ONLY WHERE DEEMED NECESSARY AND IS COMPATIBLE WITH THE INTENDED CONCRETE RESTORATION METHOD BEING UTILIZED IN THE SAME LOCATION, BUT ONLY AFTER FIELD INVESTIGATIONS OF THE EXISTING SURFACE HAVE BEEN PERFORMED BY THE GC AND THE NPS HAS BEEN CONSULTED.
5	DAMAGED CONCRETE WITH EXPOSED REBAR NEEDS TO BE PREPPED FOR REPAIR, REFER TO CONCRETE RESTORATION NOTES. STAINLESS STEEL CONCRETE PINS MAY NEED TO BE UTILIZED, IN HEAVY DAMAGED AREAS. REFER TO MANUFACTURERS SPECIFICATIONS FOR PROPER INSTALLATION., SEE CONCRETE RESTORATION NOTES.
6	ALL EXISTING/ORIGINAL WINDOW FRAMES AND GLAZING TO BE RESTORED. ALL METAL FRAMES TO BE STRIPPED OF EXISTING FINISHES AND PREPPED FOR APPLICATION OF NEW FINISH (PAINT COLOR AND TYPE TO BE SELECTED BY NPS). ANY DAMAGED GLAZING TO BE REPLACED WITH SIMILAR GLAZING. UNDAMAGED GLAZING TO BE CLEANED AND REINSERTED INTO EXISTING FRAME. ANY EXISTING WOOD TRIM AT WINDOWS TO BE REMOVED AND SALVAGED WHERE POSSIBLE FOR REAPPLICATION. IF WOOD TRIM IS DAMAGED BEYOND SALVAGE, THE TRIM IS TO BE REPLACED AND FINISHED WITH A SIMILAR PROFILE/COLOR. REMOVE METAL VENT AND INSTALL SOLID PIECE OF METAL BEHIND VENT AND REINSTALL VENTS TO RESTORE THE ORIGINAL LOOK, WITHOUT DISRUPTING THE BUILDING PRESSURE/SEPTIC ISSUES. EXISTING WINDOW GLAZING PUTTY TO BE TESTED FOR ASBESTOS, PRIOR TO START OF RESTORATION. ANY REPLACED GLASS IS TO MATCH EXISTING GLASS AS CLOSELY AS POSSIBLE, INCLUDING SAFETY WIRE ORIENTATION, TEXTURE AND TEMPURE. SHOULD EXISTING WOOD TRIM BE PRESENT, IT SHALL BE REMOVED AND SALVAGED, DEPENDING ON CONDITION. BADLY WEATHERED, DAMAGED OR PARTIALLY MISSING WOOD TRIM SHALL BE DUPLICATED WITH IDENTICAL DIMENSION, PROFILE AND WOOD SPECIE. PAINT AND PRIMER SHOULD BE APPLIED WITH BACK PRIMING OCCURRING PRIOR TO INSTALLATION.
7	NOT USED
8	EXTERIOR SCAFFOLDING MAY BE REQUIRED FOR PROPER TENTING OF BUILDING DURING CONSTRUCTION. SCAFFOLDING TO BE WELL SECURED TO SUPPORTING SURFACES, DUE TO EXTREME WINDS AND WEATHER. EXTREME CAUTION TO BE EXERCISED AROUND EXISTING COMMUNICATIONS EQUIPMENT THAT IS TO REMAIN IN OPERATION DURING CONSTRUCTION ACTIVITIES. RF RADIATION METERS TO BE WORN WHEN WORKING DIRECT PATH RF EMITTING EQUIPMENT.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/27/23
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

RESTORATION SHEET

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

RS1

EXTERIOR VESTIBULE PHOTO #5

MAIN LEVEL EXTERIOR PHOTO #6

MAIN LEVEL EXTERIOR PHOTO #7

MAIN LEVEL EXTERIOR PHOTO #8

KEY NOTES

1	ALL HANDRAIL AT UPPER PORTION OF OBSERVATION STRUCTURE IS GALVANIZED METAL AND WILL REMAIN GALVANIZED METAL, DO NOT PAINT, SAND OR GRIND. ANY WELDING REPAIRS ON GALVANIZED RAILING TO BE FINISHED WITH COLD GALVANIZATION. OTHER HANDRAILS THAT HAVE BEEN PREVIOUSLY PAINTED ARE TO BE STRIPPED AND PREPPED FOR EXTERIOR GRADE PAINT OR POWDER COATING, WHICHEVER METHOD IS DETERMINED AFTER ON SITE OBSERVATION AND FEEDBACK FROM THE NPS. IF RAILING HAS EXISTING EQUIPMENT ATTACHED TO IT AND REMOVAL IS NOT POSSIBLE, RAILING TO HAVE WELDS INSPECTED AND REPLACED WHERE REQUIRED.
2	ALL CONCRETE RESTORATION TO BE PERFORMED BY A PROFESSIONAL CONCRETE RESTORATION CONTRACTOR. THE CONTRACT FOR THIS WORK IS TO BE AWARDED BY VIKOR, WITH APPROVAL FROM THE NPS. ALL CONCRETE RESTORATION PROCEDURES TO BE PROCEEDED WITH DEMONSTRATION TESTS AND TO BE APPROVED BY THE NPS, PRIOR TO COMMENCING WORK.
3	**LEAD BASED PAINT MAY BE PRESENT ON EXISTING STRUCTURE.** ANY AREAS WHERE THE EXISTING PAINT IS BEING DISTURBED, A QUALIFIED AND LICENSED MITIGATION CONTRACTOR IS TO BE USED FOR REMOVAL. ALL REMOVED PAINT IS TO BE DISPOSED OF IN A SAFE AND LEGAL MANNER OR AS REQUIRED BY THE GOVERNING JURISDICTION.
4	ALL DAMAGED CONCRETE AREAS TO BE RESTORED TO ORIGINAL APPEARANCE. REFER TO CONCRETE RESTORATION NOTES FOR PROPER METHOD AND PROCEDURE. SAND BLASTING TO OCCUR ONLY WHERE DEEMED NECESSARY AND IS COMPATIBLE WITH THE INTENDED CONCRETE RESTORATION METHOD BEING UTILIZED IN THE SAME LOCATION, BUT ONLY AFTER FIELD INVESTIGATIONS OF THE EXISTING SURFACE HAVE BEEN PERFORMED BY THE GC AND THE NPS HAS BEEN CONSULTED.
5	DAMAGED CONCRETE WITH EXPOSED REBAR NEEDS TO BE PREPPED FOR REPAIR, REFER TO CONCRETE RESTORATION NOTES. STAINLESS STEEL CONCRETE PINS MAY NEED TO BE UTILIZED, IN HEAVY DAMAGED AREAS. REFER TO MANUFACTURERS SPECIFICATIONS FOR PROPER INSTALLATION., SEE CONCRETE RESTORATION NOTES.
6	ALL EXISTING/ORIGINAL WINDOW FRAMES AND GLAZING TO BE RESTORED. ALL METAL FRAMES TO BE STRIPPED OF EXISTING FINISHES AND PREPPED FOR APPLICATION OF NEW FINISH (PAINT COLOR AND TYPE TO BE SELECTED BY NPS). ANY DAMAGED GLAZING TO BE REPLACED WITH SIMILAR GLAZING. UNDAMAGED GLAZING TO BE CLEANED AND REINSERTED INTO EXISTING FRAME. ANY EXISTING WOOD TRIM AT WINDOWS TO BE REMOVED AND SALVAGED WHERE POSSIBLE FOR REAPPLICATION. IF WOOD TRIM IS DAMAGED BEYOND SALVAGE, THE TRIM IS TO BE REPLACED AND FINISHED WITH A SIMILAR PROFILE/COLOR. REMOVE METAL VENT AND INSTALL SOLID PIECE OF METAL BEHIND VENT AND REINSTALL VENTS TO RESTORE THE ORIGINAL LOOK, WITHOUT DISRUPTING THE BUILDING PRESSURE/SEPTIC ISSUES. EXISTING WINDOW GLAZING PUTTY TO BE TESTED FOR ASBESTOS, PRIOR TO START OF RESTORATION. ANY REPLACED GLASS IS TO MATCH EXISTING GLASS AS CLOSELY AS POSSIBLE, INCLUDING SAFETY WIRE ORIENTATION, TEXTURE AND TEMPURE. SHOULD EXISTING WOOD TRIM BE PRESENT, IT SHALL BE REMOVED AND SALVAGED, DEPENDING ON CONDITION. BADLY WEATHERED, DAMAGED OR PARTIALLY MISSING WOOD TRIM SHALL BE DUPLICATED WITH IDENTICAL DIMENSION, PROFILE AND WOOD SPECIE. PAINT AND PRIMER SHOULD BE APPLIED WITH BACK PRIMING OCCURRING PRIOR TO INSTALLATION.
7	EXISTING CONCRETE BASE HAS BEEN PREVIOUSLY REMOVED.
8	EXISTING WOOD BACKING TO BE REMOVED. HOLES IN FINISH TO BE REPAIRED, REFER TO CONCRETE RESTORATION NOTES.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 1/27/23

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

RESTORATION
SHEET

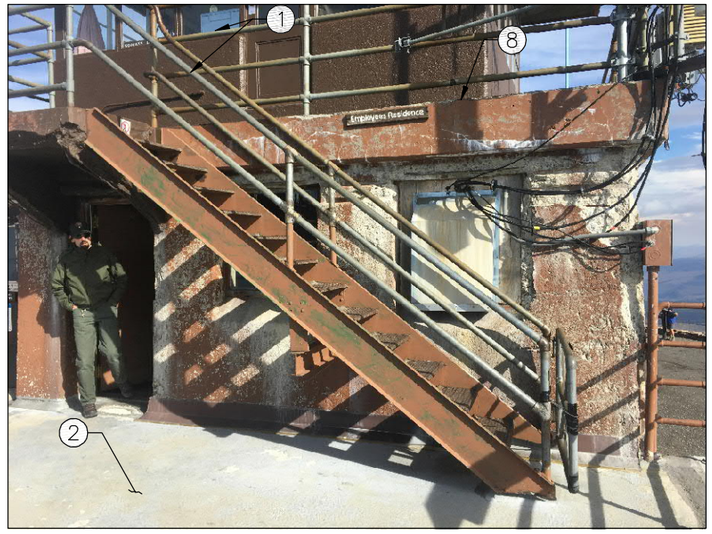
SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

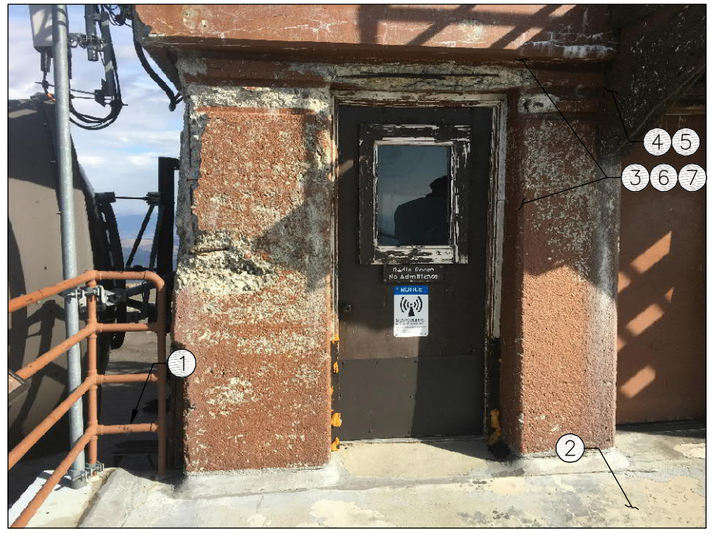
RS2

MAIN LEVEL EXTERIOR PHOTO #9



EXTERIOR OBSERVATION DECK PHOTO #10

EXTERIOR OBSERVATION DECK PHOTO #11



EXTERIOR OBSERVATION DECK PHOTO #12

KEY NOTES

1. EXISTING STAIR HANDRAIL IS GALVANIZED, DO NOT NOT PAINT, SAND OR GRIND. GC AND NPS TO MEET ON SITE AND DETERMINE THE SALVAGABILITY OF THE EXISTING STAIRS AND CONCRETE PLATFORM. REPLACEMENT MAY BE NEEDED, BUT WILL NEED TO BE DETERMINED AFTER ON SITE INSPECTION BY ALL PARTIES. IF STAIRS ARE DETERMINED TO BE SALVAGEABLE, HANDRAILS ARE TO REMAIN GALVANIZED AND THE STAIRS ARE TO BE PREPPED AND PAINTED OR POWDER COATED, WHICHEVER IS DETERMINED TO BE THE BEST VIABLE OPTION AND APPROVED BY THE NPS. IF REMOVAL OF STAIRWAY IS WARRANTED, STAIRS TO BE POWDER COATED, PRIOR TO REINSTALLATION
2. EXISTING, EXTERIOR CONCRETE OBSERVATION DECK TO BE RESURFACED WITH WATER TIGHT, ALL–WEATHER EPOXY W/NON–SLIP/SURFACE. ALL EXISTING FLASHING & CAULKING TO BE REMOVED AND REPLACED. ANY DAMAGED AREAS OF DECKING BELOW TO BE REPLACED WHERE NEEDED, PRIOR TO APPLICATION OF NEW EPOXY FINISH.
3. ALL CONCRETE RESTORATION TO BE PERFORMED BY A PROFESSIONAL CONCRETE RESTORATION CONTRACTOR. THE CONTRACT FOR THIS WORK IS TO BE AWARDED BY VIKOR, WITH APPROVAL FROM THE NPS. ALL CONCRETE RESTORATION PROCEDURES TO BE PROCEEDED WITH DEMONSTRATION TESTS AND TO BE APPROVED BY THE NPS, PRIOR TO COMMENCING WORK.
4. **LEAD BASED PAINT MAY BE PRESENT ON EXISTING STRUCTURE.** ANY AREAS WHERE THE EXISTING PAINT IS BEING DISTURBED, A QUALIFIED AND LICENSED MITIGATION CONTRACTOR IS TO BE USED FOR REMOVAL. ALL REMOVED PAINT IS TO BE DISPOSED OF IN A SAFE AND LEGAL MANNER OR AS REQUIRED BY THE GOVERNING JURISDICTION.
5. AREAS WHERE BLISTERING OR PEELING PAINT IS OCCURRING ARE TO BE PROPERLY CLEANED, EXISTING PAINT REMOVED AND PREPPED FOR NEW PAINT. ANY CONCRETE REPAIR TO BE COMPLETED, PRIOR TO ANY NEW SURFACE TREATMENT BEING APPLIED.
6. ALL DAMAGED CONCRETE AREAS TO BE RESTORED TO ORIGINAL APPEARANCE. REFER TO CONCRETE RESTORATION NOTES FOR PROPER METHOD AND PROCEDURE. SAND BLASTING TO OCCUR ONLY WHERE DEEMED NECESSARY AND IS COMPATIBLE WITH THE INTENDED CONCRETE RESTORATION METHOD BEING UTILIZED IN THE SAME LOCATION, BUT ONLY AFTER FIELD INVESTIGATIONS OF THE EXISTING SURFACE HAVE BEEN PERFORMED BY THE GC AND THE NPS HAS BEEN CONSULTED.
7. DAMAGED CONCRETE WITH EXPOSED REBAR NEEDS TO BE PREPPED FOR REPAIR, REFER TO CONCRETE RESTORATION NOTES. STAINLESS STEEL CONCRETE PINS MAY NEED TO BE UTILIZED, IN HEAVY DAMAGED AREAS. REFER TO MANUFACTURERS SPECIFICATIONS FOR PROPER INSTALLATION., SEE CONCRETE RESTORATION NOTES. SHOULD EXISTING STAIR PLATFORM BE DEEMED UNSALVAGABLE, AFTER ON SITE INSPECTION WITH NPS, GC AND LICENSED STRUCTURAL ENGINEER. ADDITIONAL ENGINEERING AND DETAILING WILL BE REQUIRED.
8. TILE WORK TO BE REMOVED AND REPLACED WITH SIMILAR TILE. EXISTING GROUTING TO BE REMOVED AND REPLACED WITH NEW GROUTING. EXISTING CONCRETE DECKING TO BE INSPECTED FOR CRACKS, REPAIRED WHERE NEEDED AND COATED WITH AN ALL–WEATHER SEALANT. AREAS WHERE EXTENSIVE WATER DAMAGE HAS OCCURRED, ONCE MATERIALS HAVE BEEN REMOVED, ARE TO BE INSPECTED BY THE ENGINEER OF RECORD TO VERIFY STRUCTURAL INTEGRITY, PRIOR TO NEW MATERIALS BEING INSTALLED.
9. ALL EXISTING/ORIGINAL WINDOW FRAMES AND GLAZING TO BE RESTORED. ALL METAL FRAMES TO BE STRIPPED OF EXISTING FINISHES AND PREPPED FOR APPLICATION OF NEW FINISH (PAINT COLOR AND TYPE TO BE SELECTED BY NPS). ANY DAMAGED GLAZING TO BE REPLACED WITH SIMILAR GLAZING. UNDAMAGED GLAZING TO BE CLEANED AND REINSERTED INTO EXISTING FRAME. ANY EXISTING WOOD TRIM AT WINDOWS TO BE REMOVED AND SALVAGED WHERE POSSIBLE FOR REAPPLICATION. IF WOOD TRIM IS DAMAGED BEYOND SALVAGE, THE TRIM IS TO BE REPLACED AND FINISHED WITH A SIMILAR PROFILE/COLOR. REMOVE METAL VENT AND INSTALL SOLID PIECE OF METAL BEHIND VENT AND REINSTALL VENTS TO RESTORE THE ORIGINAL LOOK, WITHOUT DISRUPTING THE BUILDING PRESSURE/SEPTIC ISSUES. EXISTING WINDOW GLAZING PUTTY TO BE TESTED FOR ASBESTOS, PRIOR TO START OF RESTORATION. ANY REPLACED GLASS IS TO MATCH EXISTING GLASS AS CLOSELY AS POSSIBLE, INCLUDING SAFETY WIRE ORIENTATION, TEXTURE AND TEMPURE. SHOULD EXISTING WOOD TRIM BE PRESENT, IT SHALL BE REMOVED AND SALVAGED, DEPENDING ON CONDITION. BADLY WEATHERED, DAMAGED OR PARTIALLY MISSING WOOD TRIM SHALL BE DUPLICATED WITH IDENTICAL DIMENSION, PROFILE AND WOOD SPECIE. PAINT AND PRIMER SHOULD BE APPLIED WITH BACK PRIMING OCCURRING PRIOR TO INSTALLATION.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/27/23
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

RESTORATION SHEET

SAVE DATE:

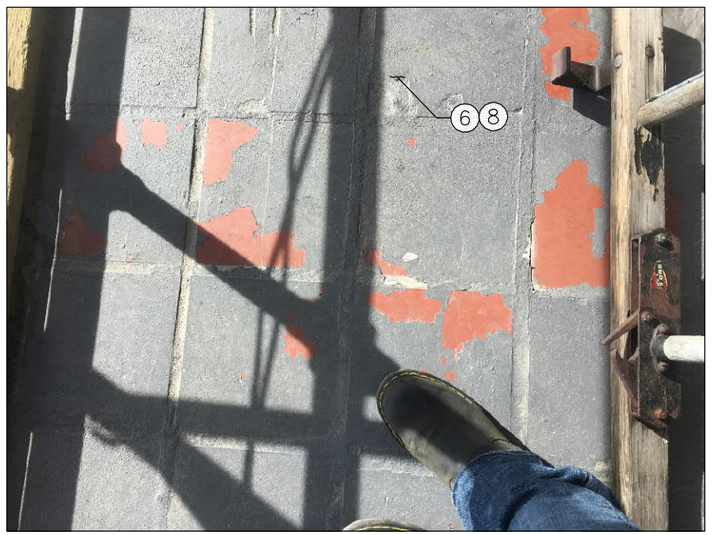
1/11/2023 2:13 PM

SHEET NUMBER:

RS3

EXTERIOR OBSERVATION DECK PHOTO #13

EXTERIOR OBSERVATION DECK PHOTO #14



EXTERIOR OBSERVATION DECK PHOTO #15

EXTERIOR OBSERVATION DECK PHOTO #16

KEY NOTES

1	ALL HANDRAIL AT UPPER PORTION OF OBSERVATION STRUCTURE IS GALVANIZED METAL AND WILL REMAIN GALVANIZED METAL, DO NOT PAINT, SAND OR GRIND. ANY WELDING REPAIRS ON GALVANIZED RAILING TO BE FINISHED WITH COLD GALVANIZATION. OTHER HANDRAILS THAT HAVE BEEN PREVIOUSLY PAINTED ARE TO BE STRIPPED AND PREPPED FOR EXTERIOR GRADE PAINT OR POWDER COATING, WHICHEVER METHOD IS DETERMINED AFTER ON SITE OBSERVATION AND FEEDBACK FROM THE NPS. IF RAILING HAS EXISTING EQUIPMENT ATTACHED TO IT AND REMOVAL IS NOT POSSIBLE, RAILING TO HAVE WELDS INSPECTED AND REPLACED WHERE REQUIRED.
2	EXISTING, EXTERIOR CONCRETE OBSERVATION DECK TO BE RESURFACED WITH WATER TIGHT, ALL–WEATHER EPOXY W/NON–SLIP/SURFACE. ALL EXISTING FLASHING & CAULKING TO BE REMOVED AND REPLACED. ANY DAMAGED AREAS OF DECKING BELOW TO BE REPLACED WHERE NEEDED, PRIOR TO APPLICATION OF NEW EPOXY FINISH.
3	ALL CONCRETE RESTORATION TO BE PERFORMED BY A PROFESSIONAL CONCRETE RESTORATION CONTRACTOR. THE CONTRACT FOR THIS WORK IS TO BE AWARDED BY VIKOR, WITH APPROVAL FROM THE NPS. ALL CONCRETE RESTORATION PROCEDURES TO BE PROCEEDED WITH DEMONSTRATION TESTS AND TO BE APPROVED BY THE NPS, PRIOR TO COMMENCING WORK.
4	**LEAD BASED PAINT MAY BE PRESENT ON EXISTING STRUCTURE.** ANY AREAS WHERE THE EXISTING PAINT IS BEING DISTURBED, A QUALIFIED AND LICENSED MITIGATION CONTRACTOR IS TO BE USED FOR REMOVAL. ALL REMOVED PAINT IS TO BE DISPOSED OF IN A SAFE AND LEGAL MANNER OR AS REQUIRED BY THE GOVERNING JURISDICTION. REFER TO PROJECT MANUAL FOR TESTING RESULTS AND PROPER METHODS AND PROCEDURES. KNEE WALL AT FIRE WATCH STATION TO HAVE ANY DAMAGED AREAS REPAIRED TO MATCH EXISTING CONDITIONS. ALL FOUR EXTERIOR SIDES TO BE VERIFIED FOR ANY NEEDED REPAIRS.
5	AREAS WHERE BLISTERING OR PEELING PAINT IS OCCURRING ARE TO BE PROPERLY CLEANED, EXISTING PAINT REMOVED AND PREPPED FOR NEW PAINT. ANY CONCRETE REPAIR TO BE COMPLETED, PRIOR TO ANY NEW SURFACE TREATMENT BEING APPLIED. ALL DAMAGED CONCRETE AREAS TO BE RESTORED TO ORIGINAL APPEARANCE. REFER TO CONCRETE RESTORATION NOTES FOR PROPER METHOD AND PROCEDURE. SAND BLASTING TO OCCUR ONLY WHERE DEEMED NECESSARY AND IS COMPATIBLE WITH THE INTENDED CONCRETE RESTORATION METHOD BEING UTILIZED IN THE SAME LOCATION, BUT ONLY AFTER FIELD INVESTIGATIONS OF THE EXISTING SURFACE HAVE BEEN PERFORMED BY THE GC AND THE NPS HAS BEEN CONSULTED.
6	ALL CRACKS IN CONCRETE TO BE CLEANED, PREPPED & REPAIRED. REFER TO CONCRETE RESTORATION NOTES FOR FURTHER DETAIL AND MATERIAL SPECIFICATIONS.
7	DAMAGED CONCRETE WITH EXPOSED REBAR NEEDS TO BE PREPPED FOR REPAIR, REFER TO CONCRETE RESTORATION NOTES. STAINLESS STEEL CONCRETE PINS MAY NEED TO BE UTILIZED, IN HEAVY DAMAGED AREAS. REFER TO MANUFACTURERS SPECIFICATIONS FOR PROPER INSTALLATION., SEE CONCRETE RESTORATION NOTES.
8	EXISTING TILE TO BE PROPERLY CLEANED AND REPAINTED IF DEEMED NECESSARY. A QUICK DRYING EPOXY GROUT, OF SIMILAR COLOR, IS TO BE USED. PRIOR TO ANY TILE WORK COMMENCING, FURTHER INVESTIGATION BY THE GC WILL BE NECESSARY TO DETERMINE IF ANY WATER DAMAGE HAS OCCURRED BELOW THE EXISTING TILE SURFACE. IF WATER DAMAGE HAS OCCURRED, REPLACEMENT OF THE TILE MAY BE NECESSARY. INVESTIGATION RESULTS ARE TO BE REVIEWED BY THE NPS TO DETERMINE IF FURTHER ACTION IS REQUIRED. ANY NEW TILE SELECTED, SHALL BE APPROVED BY THE NPS, PRIOR TO INSTALLATION. TILE WORK TO BE REMOVED AND REPLACED WITH SIMILAR TILE. EXISTING GROUTING TO BE REMOVED AND REPLACED WITH NEW GROUTING. EXISTING CONCRETE DECKING TO BE INSPECTED FOR CRACKS, REPAIRED WHERE NEEDED AND COATED WITH AN ALL–WEATHER SEALANT. AREAS WHERE EXTENSIVE WATER DAMAGE HAS OCCURRED, ONCE MATERIALS HAVE BEEN REMOVED, ARE TO BE INSPECTED BY THE ENGINEER OF RECORD TO VERIFY STRUCTURAL INTEGRITY, PRIOR TO NEW MATERIALS BEING INSTALLED.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 1/12/23

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

RESTORATION
SHEET

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

RS4

EXTERIOR OBSERVATION DECK PHOTO #17

EXTERIOR OBSERVATION DECK PHOTO #18

VESTIBULE PHOTO #19

EXTERIOR OBSERVATION DECK PHOTO #20

KEY NOTES

1	ALL HANDRAIL AT UPPER PORTION OF OBSERVATION STRUCTURE IS GALVANIZED METAL AND WILL REMAIN GALVANIZED METAL, DO NOT PAINT, SAND OR GRIND. ANY WELDING REPAIRS ON GALVANIZED RAILING TO BE FINISHED WITH COLD GALVANIZATION. OTHER HANDRAILS THAT HAVE BEEN PREVIOUSLY PAINTED ARE TO BE STRIPPED AND PREPPED FOR EXTERIOR GRADE PAINT OR POWDER COATING, WHICHEVER METHOD IS DETERMINED AFTER ON SITE OBSERVATION AND FEEDBACK FROM THE NPS. IF RAILING HAS EXISTING EQUIPMENT ATTACHED TO IT AND REMOVAL IS NOT POSSIBLE, RAILING TO HAVE WELDS INSPECTED AND REPLACED WHERE REQUIRED.
2	EXISTING, EXTERIOR CONCRETE OBSERVATION DECK TO BE RESURFACED WITH WATER TIGHT, ALL–WEATHER EPOXY W/NON–SLIP/SURFACE. ALL EXISTING FLASHING & CAULKING TO BE REMOVED AND REPLACED. ANY DAMAGED AREAS OF DECKING BELOW TO BE REPLACED WHERE NEEDED, PRIOR TO APPLICATION OF NEW EPOXY FINISH. NEW METAL TERMINATION BARS MAY BE NEEDED UPON INSPECTION OF EXISTING TERMINATION BARS AFTER REMOVAL. EPOXY APPLICATION WILL BE TEMPERATURE SENSITIVE AND A RECOMMENDED 50–90 DEGREE CURE OVER A 24 HOUR SPAN IS RECOMMENDED. NPS APPROVAL WILL BE REQUIRED. TENTING AND SUPPLEMENTAL HEAT WILL BE REQUIRED TO MAINTAIN TEMPERATURES REQUIRED FOR PROPER CURING. ALL SUPPLEMENTAL HEAT SOURCES TO BE APPROVED BY THE NPS, PRIOR TO USE.
3	ALL CONCRETE RESTORATION TO BE PERFORMED BY A PROFESSIONAL CONCRETE RESTORATION CONTRACTOR. THE CONTRACT FOR THIS WORK IS TO BE AWARDED BY VIKOR, WITH APPROVAL FROM THE NPS. ALL CONCRETE RESTORATION PROCEDURES TO BE PROCEEDED WITH DEMONSTRATION TESTS AND TO BE APPROVED BY THE NPS, PRIOR TO COMMENCING WORK.
4	**LEAD BASED PAINT MAY BE PRESENT ON EXISTING STRUCTURE.** ANY AREAS WHERE THE EXISTING PAINT IS BEING DISTURBED, A QUALIFIED AND LICENSED MITIGATION CONTRACTOR IS TO BE USED FOR REMOVAL. ALL REMOVED PAINT IS TO BE DISPOSED OF IN A SAFE AND LEGAL MANNER OR AS REQUIRED BY THE GOVERNING JURISDICTION. REFER TO PROJECT MANUAL FOR TESTING RESULTS AND PROPER METHODS AND PROCEDURES. KNEE WALL AT FIRE WATCH STATION TO HAVE ANY DAMAGED AREAS REPAIRED TO MATCH EXISTING CONDITIONS. ALL FOUR EXTERIOR SIDES TO BE VERIFIED FOR ANY NEEDED REPAIRS.
5	AREAS WHERE BLISTERING OR PEELING PAINT IS OCCURRING ARE TO BE PROPERLY CLEANED, EXISTING PAINT REMOVED AND PREPPED FOR NEW PAINT. ANY CONCRETE REPAIR TO BE COMPLETED, PRIOR TO ANY NEW SURFACE TREATMENT BEING APPLIED. ALL DAMAGED CONCRETE AREAS TO BE RESTORED TO ORIGINAL APPEARANCE. REFER TO CONCRETE RESTORATION NOTES FOR PROPER METHOD AND PROCEDURE. SAND BLASTING TO OCCUR ONLY WHERE DEEMED NECESSARY AND IS COMPATIBLE WITH THE INTENDED CONCRETE RESTORATION METHOD BEING UTILIZED IN THE SAME LOCATION, BUT ONLY AFTER FIELD INVESTIGATIONS OF THE EXISTING SURFACE HAVE BEEN PERFORMED BY THE GC AND THE NPS HAS BEEN CONSULTED.
6	ALL CRACKS IN CONCRETE TO BE CLEANED, PREPPED & REPAIRED. REFER TO CONCRETE RESTORATION NOTES FOR FURTHER DETAIL AND MATERIAL SPECIFICATIONS.
7	NOT USED
8	EXISTING TILE TO BE PROPERLY CLEANED AND REPAINTED IF DEEMED NECESSARY. A QUICK DRYING EPOXY GROUT, OF SIMILAR COLOR, IS TO BE USED. PRIOR TO ANY TILE WORK COMMENCING, FURTHER INVESTIGATION BY THE GC WILL BE NECESSARY TO DETERMINE IF ANY WATER DAMAGE HAS OCCURRED BELOW THE EXISTING TILE SURFACE. IF WATER DAMAGE HAS OCCURRED, REPLACEMENT OF THE TILE MAY BE NECESSARY. INVESTIGATION RESULTS ARE TO BE REVIEWED BY THE NPS TO DETERMINE IF FURTHER ACTION IS REQUIRED. ANY NEW TILE SELECTED, SHALL BE APPROVED BY THE NPS, PRIOR TO INSTALLATION. TILE WORK TO BE REMOVED AND REPLACED WITH SIMILAR TILE. EXISTING GROUTING TO BE REMOVED AND REPLACED WITH NEW GROUTING. EXISTING CONCRETE DECKING TO BE INSPECTED FOR CRACKS, REPAIRED WHERE NEEDED AND COATED WITH AN ALL–WEATHER SEALANT. AREAS WHERE EXTENSIVE WATER DAMAGE HAS OCCURRED, ONCE MATERIALS HAVE BEEN REMOVED, ARE TO BE INSPECTED BY THE ENGINEER OF RECORD TO VERIFY STRUCTURAL INTEGRITY, PRIOR TO NEW MATERIALS BEING INSTALLED.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/12/23
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

RESTORATION SHEET

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

RS5

EXTERIOR OBSERVATION DECK PHOTO #21

EXTERIOR OBSERVATION DECK PHOTO #22

EXTERIOR OBSERVATION DECK PHOTO #23

EXTERIOR OBSERVATION DECK PHOTO #24

KEY NOTES

1. ALL HANDRAIL AT UPPER PORTION OF OBSERVATION STRUCTURE IS GALVANIZED METAL AND WILL REMAIN GALVANIZED METAL, DO NOT PAINT, SAND OR GRIND. ANY WELDING REPAIRS ON GALVANIZED RAILING TO BE FINISHED WITH COLD GALVANIZATION. OTHER HANDRAILS THAT HAVE BEEN PREVIOUSLY PAINTED ARE TO BE STRIPPED AND PREPPED FOR EXTERIOR GRADE PAINT OR POWDER COATING, WHICHEVER METHOD IS DETERMINED AFTER ON SITE OBSERVATION AND FEEDBACK FROM THE NPS. IF RAILING HAS EXISTING EQUIPMENT ATTACHED TO IT AND REMOVAL IS NOT POSSIBLE, RAILING TO HAVE WELDS INSPECTED AND REPLACED WHERE REQUIRED. IF REMOVAL OF STAIRWAY IS WARRANTED, STAIRS TO BE POWDER COATED, PRIOR TO REINSTALLATION
2. EXISTING, EXTERIOR CONCRETE OBSERVATION DECK TO BE RESURFACED WITH WATER TIGHT, ALL-WEATHER EPOXY W/NON-SLIP/SURFACE. ALL EXISTING FLASHING & CAULKING TO BE REMOVED AND REPLACED. ANY DAMAGED AREAS OF DECKING BELOW TO BE REPLACED WHERE NEEDED, PRIOR TO APPLICATION OF NEW EPOXY FINISH. NEW METAL TERMINATION BARS MAY BE NEEDED UPON INSPECTION OF EXISTING TERMINATION BARS AFTER REMOVAL. EPOXY APPLICATION WILL BE TEMPERATURE SENSITIVE AND A RECOMMENDED 50-90 DEGREE CURE OVER A 24 HOUR SPAN IS RECOMMENDED. NPS APPROVAL WILL BE REQUIRED. TENTING AND SUPPLEMENTAL HEAT WILL BE REQUIRED TO MAINTAIN TEMPERATURES REQUIRED FOR PROPER CURING. ALL SUPPLEMENTAL HEAT SOURCES TO BE APPROVED BY THE NPS, PRIOR TO USE.
3. ALL CONCRETE RESTORATION TO BE PERFORMED BY A PROFESSIONAL CONCRETE RESTORATION CONTRACTOR. THE CONTRACT FOR THIS WORK IS TO BE AWARDED BY VIKOR, WITH APPROVAL FROM THE NPS. ALL CONCRETE RESTORATION PROCEDURES TO BE PROCEEDED WITH DEMONSTRATION TESTS AND TO BE APPROVED BY THE NPS, PRIOR TO COMMENCING WORK.
4. **LEAD BASED PAINT MAY BE PRESENT ON EXISTING STRUCTURE.** ANY AREAS WHERE THE EXISTING PAINT IS BEING DISTURBED, A QUALIFIED AND LICENSED MITIGATION CONTRACTOR IS TO BE USED FOR REMOVAL. ALL REMOVED PAINT IS TO BE DISPOSED OF IN A SAFE AND LEGAL MANNER OR AS REQUIRED BY THE GOVERNING JURISDICTION. REFER TO PROJECT MANUAL FOR TESTING RESULTS AND PROPER METHODS AND PROCEDURES.
5. AREAS WHERE BLISTERING OR PEELING PAINT IS OCCURRING ARE TO BE PROPERLY CLEANED, EXISTING PAINT REMOVED AND PREPPED FOR NEW PAINT. ANY CONCRETE REPAIR TO BE COMPLETED, PRIOR TO ANY NEW SURFACE TREATMENT BEING APPLIED. ALL DAMAGED CONCRETE AREAS TO BE RESTORED TO ORIGINAL APPEARANCE. REFER TO CONCRETE RESTORATION NOTES FOR PROPER METHOD AND PROCEDURE. SAND BLASTING TO OCCUR ONLY WHERE DEEMED NECESSARY AND IS COMPATIBLE WITH THE INTENDED CONCRETE RESTORATION METHOD BEING UTILIZED IN THE SAME LOCATION, BUT ONLY AFTER FIELD INVESTIGATIONS OF THE EXISTING SURFACE HAVE BEEN PERFORMED BY THE GC AND THE NPS HAS BEEN CONSULTED.
6. ALL CRACKS IN CONCRETE TO BE CLEANED, PREPPED & REPAIRED. REFER TO CONCRETE RESTORATION NOTES FOR FURTHER DETAIL AND MATERIAL SPECIFICATIONS.
7. EXISTING DOOR AND FRAME TO BE REPLACED. ADJACENT METAL FLASHING TO REMAIN AND SHALL NOT BE REMOVED

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 1/12/23

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

RESTORATION
SHEET

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

RS6

EXTERIOR OBSERVATION DECK PHOTO #25

EXTERIOR OBSERVATION DECK PHOTO #26

STORAGE ROOM PHOTO #27

INTERIOR OBSERVATION AREA PHOTO #28

KEY NOTES

1. ALL HANDRAIL AT UPPER PORTION OF OBSERVATION STRUCTURE IS GALVANIZED METAL AND WILL REMAIN GALVANIZED METAL, DO NOT PAINT, SAND OR GRIND. ANY WELDING REPAIRS ON GALVANIZED RAILING TO BE FINISHED WITH COLD GALVANIZATION. OTHER HANDRAILS THAT HAVE BEEN PREVIOUSLY PAINTED ARE TO BE STRIPPED AND PREPPED FOR EXTERIOR GRADE PAINT OR POWDER COATING, WHICHEVER METHOD IS DETERMINED AFTER ON SITE OBSERVATION AND FEEDBACK FROM THE NPS. IF RAILING HAS EXISTING EQUIPMENT ATTACHED TO IT AND REMOVAL IS NOT POSSIBLE, RAILING TO HAVE WELDS INSPECTED AND REPLACED WHERE REQUIRED.
2. EXISTING, EXTERIOR CONCRETE OBSERVATION DECK TO BE RESURFACED WITH WATER TIGHT, ALL–WEATHER EPOXY W/NON–SLIP/SURFACE. ALL EXISTING FLASHING & CAULKING TO BE REMOVED AND REPLACED. ANY DAMAGED AREAS OF DECKING BELOW TO BE REPLACED WHERE NEEDED, PRIOR TO APPLICATION OF NEW EPOXY FINISH. NEW METAL TERMINATION BARS MAY BE NEEDED UPON INSPECTION OF EXISTING TERMINATION BARS AFTER REMOVAL. EPOXY APPLICATION WILL BE TEMPERATURE SENSITIVE AND A RECOMMENDED 50–90 DEGREE CURE OVER A 24 HOUR SPAN IS RECOMMENDED. NPS APPROVAL WILL BE REQUIRED. TENTING AND SUPPLEMENTAL HEAT WILL BE REQUIRED TO MAINTAIN TEMPERATURES REQUIRED FOR PROPER CURING. ALL SUPPLEMENTAL HEAT SOURCES TO BE APPROVED BY THE NPS, PRIOR TO USE.
3. ALL CONCRETE RESTORATION TO BE PERFORMED BY A PROFESSIONAL CONCRETE RESTORATION CONTRACTOR. THE CONTRACT FOR THIS WORK IS TO BE AWARDED BY VIKOR, WITH APPROVAL FROM THE NPS. ALL CONCRETE RESTORATION PROCEDURES TO BE PROCEEDED WITH DEMONSTRATION TESTS AND TO BE APPROVED BY THE NPS, PRIOR TO COMMENCING WORK.
4. **LEAD BASED PAINT MAY BE PRESENT ON EXISTING STRUCTURE.** ANY AREAS WHERE THE EXISTING PAINT IS BEING DISTURBED, A QUALIFIED AND LICENSED MITIGATION CONTRACTOR IS TO BE USED FOR REMOVAL. ALL REMOVED PAINT IS TO BE DISPOSED OF IN A SAFE AND LEGAL MANNER OR AS REQUIRED BY THE GOVERNING JURISDICTION. REFER TO PROJECT MANUAL FOR TESTING RESULTS AND PROPER METHODS AND PROCEDURES.
5. AREAS WHERE BLISTERING OR PEELING PAINT IS OCCURRING ARE TO BE PROPERLY CLEANED, EXISTING PAINT REMOVED AND PREPPED FOR NEW PAINT. ANY CONCRETE REPAIR TO BE COMPLETED, PRIOR TO ANY NEW SURFACE TREATMENT BEING APPLIED. ALL DAMAGED CONCRETE AREAS TO BE RESTORED TO ORIGINAL APPEARANCE. REFER TO CONCRETE RESTORATION NOTES FOR PROPER METHOD AND PROCEDURE. SAND BLASTING TO OCCUR ONLY WHERE DEEMED NECESSARY AND IS COMPATIBLE WITH THE INTENDED CONCRETE RESTORATION METHOD BEING UTILIZED IN THE SAME LOCATION, BUT ONLY AFTER FIELD INVESTIGATIONS OF THE EXISTING SURFACE HAVE BEEN PERFORMED BY THE GC AND THE NPS HAS BEEN CONSULTED.
6. ALL CRACKS IN CONCRETE TO BE CLEANED, PREPPED & REPAIRED. REFER TO CONCRETE RESTORATION NOTES FOR FURTHER DETAIL AND MATERIAL SPECIFICATIONS.
7. SLOPED PLYWOOD OVERHANG, FIELD VERIFY MATERIAL. SEAM BETWEEN PLYWOOD AND OBSERVATION DECK TO BE INSPECTED AND REPLACED WHERE NEEDED. AREAS WHERE ROTTING HAS OCCURRED ARE TO BE REPLACED TO MATCH EXISTING AND ALL SLOPED PLYWOOD TO BE RESEALED WITH THE PROPER ALL WEATHER SEALANT AND TO COLOR BLEND WITH OBSERVATION DECK.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 1/12/23

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE PROPOSED TOWER INSTALLATION, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

RESTORATION SHEET

SAVE DATE:

1/11/2023 2:13 PM

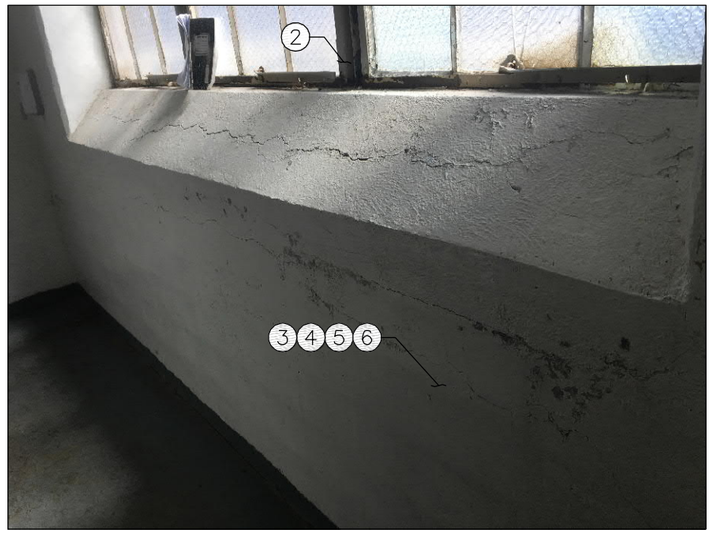
SHEET NUMBER:

RS7

VISITOR CENTER ENTRY PHOTO #29

RESTROOM PHOTO #30

RESTROOM PHOTO #31



RESTROOM PHOTO #32

KEY NOTES

1. DAMAGED THRESHOLDS NEEDS TO HAVE CRACKED GROUT REMOVED AND PREP FOR NEW NON-SHRINK GROUT APPLICATION. THIS APPLIES TO ALL DOORWAYS WITH SIMILAR ISSUES. ALL NEWLY FORMED THRESHOLDS SHALL BE A.B.A. COMPLIANT AND IF DEEMED NECESSARY, THE EXISTING THRESHOLD WILL NEED TO BE REPLACED TO MEET A.B.A. REQUIREMENTS.
2. ALL EXISTING/ORIGINAL WINDOW FRAMES AND GLAZING TO BE RESTORED. ALL METAL FRAMES TO BE STRIPPED OF EXISTING FINISHES AND PREPPED FOR APPLICATION OF NEW FINISH (PAINT COLOR AND TYPE TO BE SELECTED BY NPS). ANY DAMAGED GLAZING TO BE REPLACED WITH SIMILAR GLAZING. UNDAMAGED GLAZING TO BE CLEANED AND REINSERTED INTO EXISTING FRAME. ANY EXISTING WOOD TRIM AT WINDOWS TO BE REMOVED AND SALVAGED WHERE POSSIBLE FOR REAPPLICATION. IF WOOD TRIM IS DAMAGED BEYOND SALVAGE, THE TRIM IS TO BE REPLACED AND FINISHED WITH A MATCHING PROFILE/COLOR. REMOVE METAL VENT AND INSTALL SOLID PIECE OF METAL BEHIND VENT AND REINSTALL VENTS TO RESTORE THE ORIGINAL LOOK, WITHOUT DISRUPTING THE BUILDING PRESSURE/SEPTIC ISSUES. EXISTING WINDOW PUTTY TO BE TESTED FOR ASBESTOS, REFER TO PROJECT MANUAL FOR TESTING CERTIFICATION. IF A TESTING CERTIFICATION DOESN'T EXIST, ADDITIONAL TESTING IS REQUIRED.
3. ALL CONCRETE RESTORATION TO BE PERFORMED BY A PROFESSIONAL CONCRETE RESTORATION CONTRACTOR. THE CONTRACT FOR THIS WORK IS TO BE AWARDED BY VIKOR, WITH APPROVAL FROM THE NPS. ALL CONCRETE RESTORATION PROCEDURES TO BE PROCEEDED WITH DEMONSTRATION TESTS AND TO BE APPROVED BY THE NPS, PRIOR TO COMMENCING WORK.
4. **LEAD BASED PAINT MAY BE PRESENT ON EXISTING STRUCTURE.** ANY AREAS WHERE THE EXISTING PAINT IS BEING DISTURBED, A QUALIFIED AND LICENSED MITIGATION CONTRACTOR IS TO BE USED FOR REMOVAL. ALL REMOVED PAINT IS TO BE DISPOSED OF IN A SAFE AND LEGAL MANNER OR AS REQUIRED BY THE GOVERNING JURISDICTION. REFER TO PROJECT MANUAL FOR TESTING RESULTS AND PROPER METHODS AND PROCEDURES.
5. AREAS WHERE BLISTERING OR PEELING PAINT IS OCCURRING ARE TO BE PROPERLY CLEANED, EXISTING PAINT REMOVED AND PREPPED FOR NEW PAINT. ANY CONCRETE REPAIR TO BE COMPLETED, PRIOR TO ANY NEW SURFACE TREATMENT BEING APPLIED. ALL DAMAGED CONCRETE AREAS TO BE RESTORED TO ORIGINAL APPEARANCE. REFER TO CONCRETE RESTORATION NOTES FOR PROPER METHOD AND PROCEDURE. SAND BLASTING TO OCCUR ONLY WHERE DEEMED NECESSARY AND IS COMPATIBLE WITH THE INTENDED CONCRETE RESTORATION METHOD BEING UTILIZED IN THE SAME LOCATION, BUT ONLY AFTER FIELD INVESTIGATIONS OF THE EXISTING SURFACE HAVE BEEN PERFORMED BY THE GC AND THE NPS HAS BEEN CONSULTED.
6. ALL CRACKS IN CONCRETE TO BE CLEANED, PREPPED & REPAIRED. REFER TO CONCRETE RESTORATION NOTES FOR FURTHER DETAIL AND MATERIAL SPECIFICATIONS.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 1/27/23
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

RESTORATION
SHEET

SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

RS8

CONCRETE RESTORATION NOTES:

PART 1 – FIELD CONDITIONS

1.1 PROTECT PERSONS, VEHICLES, THE BUILDING AND THE SURROUNDING SITE FROM INJURY OR DAMAGE DUE TO THE CONCRETE RESTORATION AND REPAIR PROCESS.

1. MAINTAIN ENVIRONMENTAL CONDITIONS (TEMPERATURE, HUMIDITY AND VENTILATION) WITHIN LIMITS RECOMMENDED BY THE MANUFACTURER FOR OPTIMUM RESULTS. DO NOT INSTALL PRODUCTS UNDER ENVIRONMENTAL CONDITIONS OUTSIDE MANUFACTURER'S ABSOLUTE LIMITS.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. ACCEPTABLE MANUFACTURER: THE EUCLID CHEMICAL COMPANY: http://www.euclidchemical.com
B. SUBSTITUTIONS: REQUESTS FOR SUBSTITUTIONS WILL BE CONSIDERED AND MUST BE SUBMITTED TO J5 FOR REVIEW.

2.2 CONCRETE RESTORATION PRODUCTS

A. MEDIUM TO DEEP REPAIR AREAS: EUCOCRETE AS MANUFACTURED BY THE EUCLID CHEMICAL COMPANY.
B. THIN PARGE COAT AREAS: EUCOPATCH AS MANUFACTURED BY THE EUCLID CHEMICAL COMPANY.
C. FINISH COAT: SUPER WALL–PRO AS MANUFACTURED BY THE EUCLID CHEMICAL COMPANY.
D. BONDING AGENT AND ANTI CORROSION COATING: DURAL PREP AC AS MANUFACTURED BY THE EUCLID CHEMICAL COMPANY.
E. CRACK REPAIR: DURALCRETE EPOXY SYSTEM AS MANUFACTURED BY THE EUCLID CHEMICAL COMPANY.

PART 3 – EXECUTION

3.1 EXAMINATION
A. VERIFY ALL EXISTING CONDITIONS PRIOR TO PREPARATION OF WRITTEN RESTORATION PROGRAM.
B. SURVEY EXISTING CONDITIONS AND REPORT TO ENGINEER ANY CONDITIONS WHICH WOULD ADVERSELY AFFECT CONCRETE RESTORATION WORK PROCESS.

3.2 SURFACE PREPARATION / CLEANING

A. PRIOR TO PATCHING, ALL SURFACES MUST BE PREPARED IN ACCORDANCE WITH BELOW SPECIFICATIONS AND PRODUCT MANUFACTURERS SPECIFICATIONS.
B. REMOVE ALL UNSOUND CONCRETE, USING LIGHTWEIGHT DEMOLITION HAMMERS, NOT TO EXCEED 18 POUND WEIGHT. ALL REMOVALS TO BE PERFORMED IN ACCORDANCE WITH ICRI GUIDELINE #03730, WHICH SHALL BE OF THESE SPECIFICATIONS, WITH REGARD TO REMOVAL GEOMETRY, EXPOSING, UNDERCUTTING AND CLEARING OF EMBEDDED REINFORCEMENT, AND CONDITIONING OF EDGES AND SURFACES. FOLLOWING DEMOLITION, TEST SURFACES FOR ALKALINITY/CARBONATION WITH A 1–2% SOLUTION OF PHENOLPHTHANLEIN. SURFACES WHICH DO NOT INDICATE ALKALINITY (SOLUTION TURNS PINK) SHALL REQUIRE FURTHER DEMOLITION.
C. PRESSURE WASH ALL INDICATED SURFACES USING 3000–4000 PSI WATER BLAST, AS REQUIRED TO REMOVE ALL DUST AND DIRT. ABRASIVE SHALL BE USED IN COMBINATION WITH WATER WHEN CLEANING REPAIR CAVITIES, AS REQUIRED TO ELIMINATE MICRO–CRACKED SURFACE MATERIALS RESULTING FROM DEMOLITION. NO WATER WITH CONCRETE DUST SHALL BE ALLOWED TO REMAIN ON ANY SURFACE FOLLOWING WASHING, AND MUST BE IMMEDIATELY REMOVED, PRIOR TO DRYING AND RE–HARDENING.
D. THE RESULT OF THIS PREPARATION SHALL RENDER A SURFACE CLEAN, MEANING HAVING COMPLETE EXPOSURE OF SOUND ORIGINAL MATERIAL WITHOUT ANY DEPOSITS OF CONTAMINANTS, FOREIGN MATTER OR LOOSE MATERIAL, WHICH COULD AFFECT THE BOND OR LONG–TERM DURABILITY OF THE SURFACE AND PATCHING COMPOUND.

3.3 CRACK REPAIR

A. PATCHING COMPOUNDS ARE NOT TO BE USED TO BRIDGE WORKING CRACKS OR JOINTS. PRIOR TO CRACK REPAIR, CONTRACTOR SHALL ENGAGE THE SERVICES OF THE CRACK SEALANT MANUFACTURER'S TECHNICAL REPRESENTATIVE TO ASSIST IN THE SELECTION OF THE APPROPRIATE GRADES OF CRACK SEALANTS FOR EACH AREA.
B. CRACK REPAIR FOR SMALL CRACKS LESS THAN 1/16 (62 MILS, 1.5MM) SHALL BE PERFORMED FOLLOWING PRESSURE WASHING AND DURING BY GRAVITY FILLING WITH ELECTROMETRIC CRACK SEALANT. CRACKS WIDER THAN 1/16" SHALL BE GROOVED OUT TO A NOMINAL ½"x½" (3MMx3MM). FOLLOW CRACK INJECTION PROCESS AND PROCEDURE AS DESIGNATED ON THE DRAWINGS AND PER MANUFACTURER'S SPECIFICATIONS.
C. EXPANSION JOINTS ARE NOT INCLUDED UNDER THIS SECTION OF THE SPECIFICATION.

3.4 PRIMING OF REINFORCING STEEL

A. ANY STEEL REINFORCEMENT EXPOSED IN THE COURSE OF REMOVING UNSOUND MATERIALS SHALL BE CLEANED AND PREPARED IN ACCORDANCE WITH THE ABOVE SPECIFICATIONS.
B. FOLLOWING CLEANING AND PRIOR TO PATCHING, APPLY CEMENTATIONS CORROSION INHIBITIVE PRIMER AND BONDING AGENT TO ALL STEEL SURFACES IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. CARE MUST BE TAKEN TO CREATE A CONTINUOUS COATING ON THE FULL SURFACE, INCLUDING THE UNDERSIDE OF THE UNDERCUT REINFORCEMENT. OBSERVE MANUFACTURER'S GUIDELINES WITH REGARD TO MINIMUM AND MAXIMUM TIMING "WINDOWS" FOR PATCHING AFTER APPLICATION OF PRIMER.

3.5 CONCRETE PATCHING

A. FOLLOWING PREPARATION, AS SPECIFIED ABOVE, CONTRACTOR SHALL MAINTAIN WORK AREA IN A CLEAN CONDITION, INCLUDING MATERIALS, EQUIPMENT AND WORKERS' FOOTWEAR, TO AVOID TRACKING IN OF CONTAMINANTS, DIRT, DUST, MUD, OR OTHER MATERIALS WHICH MAY INTERFERE WITH ADHESION AND DURABILITY OF REPAIRS.
B. PRIOR TO PATCHING, ALL REPAIR AREAS TO BE PATCHED SHALL BE KEPT CONTINUOUSLY WET FOR AT LEAST 20 MINUTES PRIOR TO APPLICATION OF PATCHING COMPOUND. BEFORE PLACING PATCH, EXCESS WATER SHALL BE BLOWN, VACUUMED OR OTHERWISE REMOVED FROM THE SURFACE, LEAVING THE SURFACE DAMP OR SATURATED/SURFACE DRY.
C. VIGOROUSLY BRUSH APPLY A THIN PRIMER COAT OF ACRYLIC LATEX BONDING AGENT WITH ADDED 10% NEAT TYPE 1 PORTLAND CEMENT INTO ALL CAVITY SURFACES.
D. WITHIN 4 HOURS OF PRIMER APPLICATION, MIX AND PLACE PATCHING COMPOUND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
E. MIX THE PRECISELY MEASURED QUANTITY OF WATER SPECIFIED BY THE MANUFACTURER WITH BULL BAGS OF PATCHING COMPOUND ONLY. MIX USING SLOW SPEED DRILL (450 ROM MAXIMUM) WITH MUD OR PADDLE MIXER. MOTORIZED MORTAR MIXERS MAY BE USED TO MIX LARGER QUANTITIES. MIX FOR PRECISELY 4 MINUTES, USING A MIX TIMER. MIX TO A UNIFORM CONSISTENCY, FREE OF LUMPS OR DRY MATERIAL. DO NOT WHIP AIR INTO THE MIX. DO NOT OVER MIX.
F. WHEN PLACING THE PATCHING COMPOOUND, CARE SHALL BE TAKEN TO ASSURE THAT ALL CORNERS AND GAPS UNDER REINFORCING STEEL AND ENTIRE CAVITY PROFILE IS COMPLETELY FILLED AND PROPERLY COMPACTED TO PREVENT FORMATION OF VOIDS OR UNBONDED AREAS. "WORK" THE MATERIAL INTO CORNERS AND GAPS, AND ONTO CAVITY SIDEWALLS USING PRESSURE ON THE TROWEL TO ASSURE GOOD CONTACT BETWEEN PATCH AND SUBSTRATES.
G. PATCHES DEEPER THAN 1" (25mm) MAY BE EXTENDED BY COARSE AGGREGATE ADDITION. 20 POUNDS OF CLEAN, WASHED, ⅜" PEA STONE SUITABLE IN COMPOSITION AND SURFACE PROFILE FOR USE AS A CONCRETE AGGREGATE MAY BE ADDED TO EACH 50 POUND BAG OF PATCHING COMPOUND.

RESTORATION NOTES (CONTINUED):

H. DO NOT RE–TEMPER MATERIAL WHICH HAS BEGUN TO SET. DISCARD ANY UNUSED MATERIAL AFTER 20 MINUTES. DO NOT EXCESSIVELY WET PATCH SURFACES AFTER PLACEMENT OR AS AN AID TO TROWLING. LIMIT SURFACE WATER ADDITION TO LIGHT MISTING AND DO NOT WET OR REWORK REPEATEDLY.
I. OBSERVE THE CURING REQUIREMENTS FOR EACH DAY'S WORKING CONDITIONS, AS SPECIFIED HEREIN. DO NOT EXTEND WET CURING BEYOND THE MAXIMUM SPECIFIED. DO NOT OPEN TO TRAFFIC OR EXPOSE TO WEATHER UNTIL ADEQUATE STRENGTH HAS BEEN REACHED, AS AFFECTED BY WORKING AND CURING CONDITIONS.

3.6 CONCRETE FINISHING

A. FOLLOWING PREPARATION, AS SPECIFIED ABOVE, CONTRACTOR SHALL MAINTAIN WORK AREA IN A CLEAN CONDITION, INCLUDING MATERIALS, EQUIPMENT AND WORKER'S FOOTWEAR, TO AVOID TRACKING IN OF CONTAMINANTS, DIRT, DUST, MUD OR OTHER MATERIALS WHICH MAY INTERFERE WITH ADHESION AND DURABILITY OF REPAIRS.
B. INSURE ALL SURFACES HAVE BEEN THOROUGHLY PATCHED AND PARGED PER THE DRAWINGS AND MANUFACTURER'S SPECIFICATIONS.
C. PREP, MIX AND INSTALL FINISH COAT MATERIAL PER MANUFACTURER'S SPECIFICATIONS. DAMPEN WALL SURFACES BEFORE APPLICATION AS SPECIFIED.
D. PROVIDE MOCK–UP SECTION FOR APPROVAL BY OWNER PRIOR TO FULL SURFACE APPLICATION TREATMENT. MOCK–UP SHALL BE A MINIMUM OF 10'x10'.

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 1/27/23

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

RESTORATION
NOTES

SAVE DATE:

1/11/2023 2:13 PM

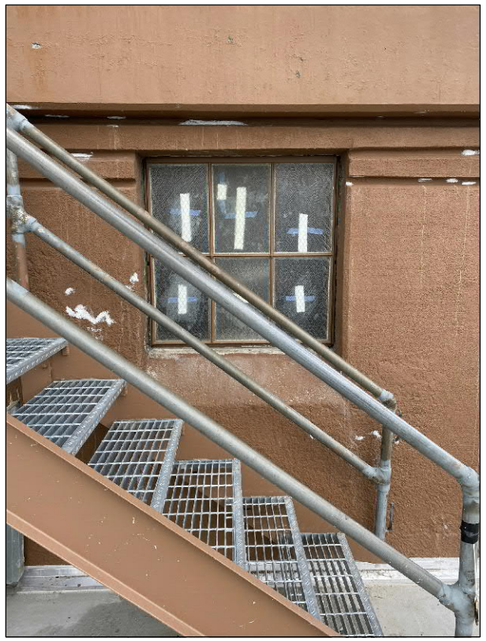
SHEET NUMBER:

RS9

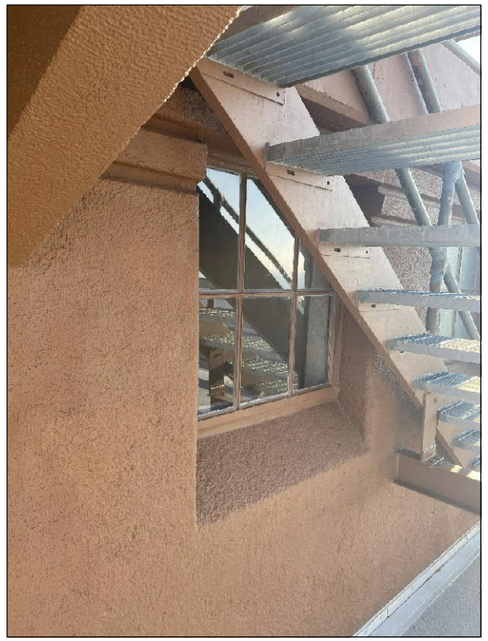
NEWLY RESTORED LOOKOUT TOWER
(LOOKING SOUTHEAST)

NEWLY RESTORED LOOKOUT TOWER
(LOOKING SOUTH)

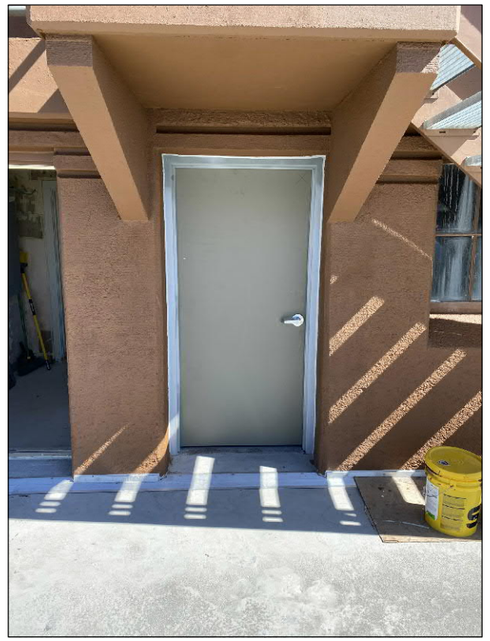
NEWLY RESTORED LOOKOUT TOWER
(LOOKING SOUTHWEST)



NEWLY RESTORED LOWER OBSERVATION DECK
(LOOKING NORTH)



NEWLY RESTORED LOWER OBSERVATION DECK
(LOOKING NORTHEAST)



NEWLY RESTORED LOWER OBSERVATION DECK
(LOOKING NORTH)

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

FOR INFORMATION ONLY

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

NEWLY RESTORED
SHEET

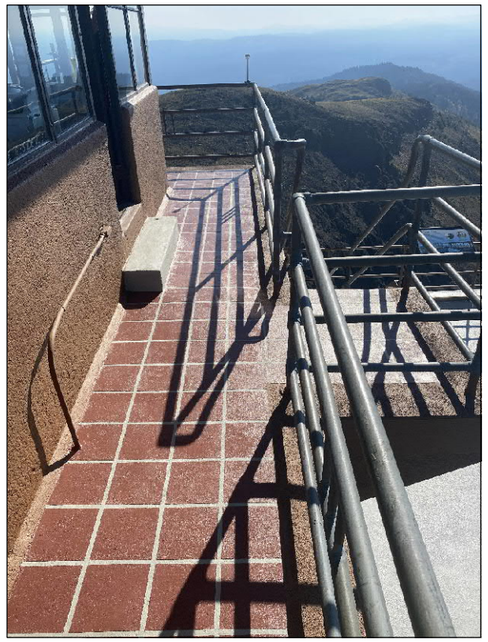
SAVE DATE:

1/11/2023 2:13 PM

SHEET NUMBER:

RS10

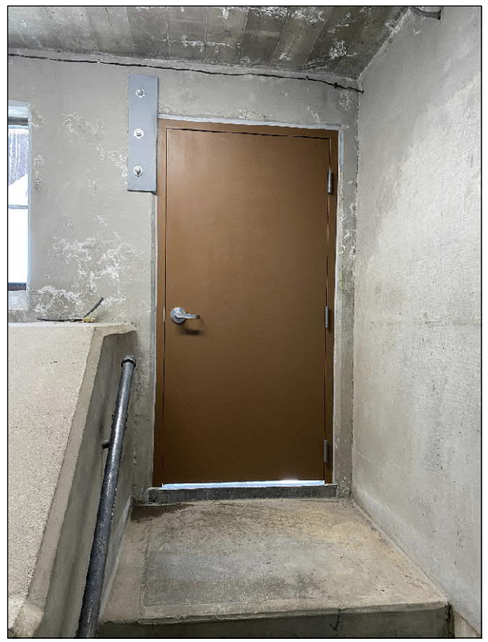
NEWLY RESTORED LOWER OBSERVATION DECK
(LOOKING DOWN FROM UPPER OBSERVATION DECK)



NEWLY RESTORED UPPER OBSERVATION DECK
(LOOKING EAST)

NEWLY RESTORED UPPER OBSERVATION DECK
(LOOKING NORTH)

NEWLY RESTORED INTERIOR



NEWLY RESTORED INTERIOR

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

REV	DESCRIPTION	DATE	BY	CHK
3	REVISED PER COMMENTS	5/29/18	MDA	JVC
4	REVISED PER COMMENTS	8/20/18	MDA	JVC
5	REVISED PER COMMENTS	4/25/19	MDA	JVC
6	REVISED PER COMMENTS	5/23/19	MDA	JVC
7	ADDED NEWLY RESTORED PHOTOS	1/11/23	MDA	JVC

FOR INFORMATION ONLY

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE
PROPOSED TOWER INSTALLATION,
GENERATOR UPGRADE & MICROWAVE
INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

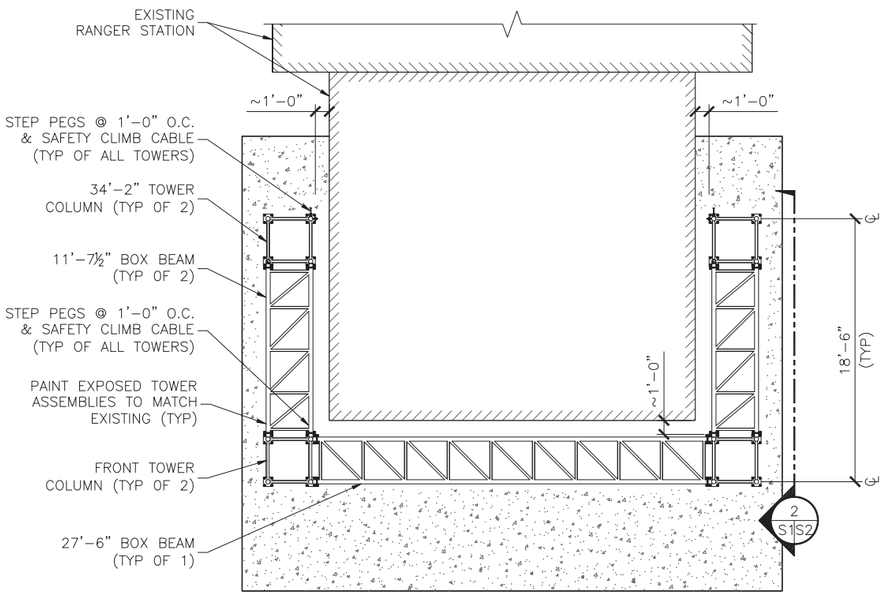
NEWLY RESTORED
SHEET

SAVE DATE:

1/11/2023 2:13 PM

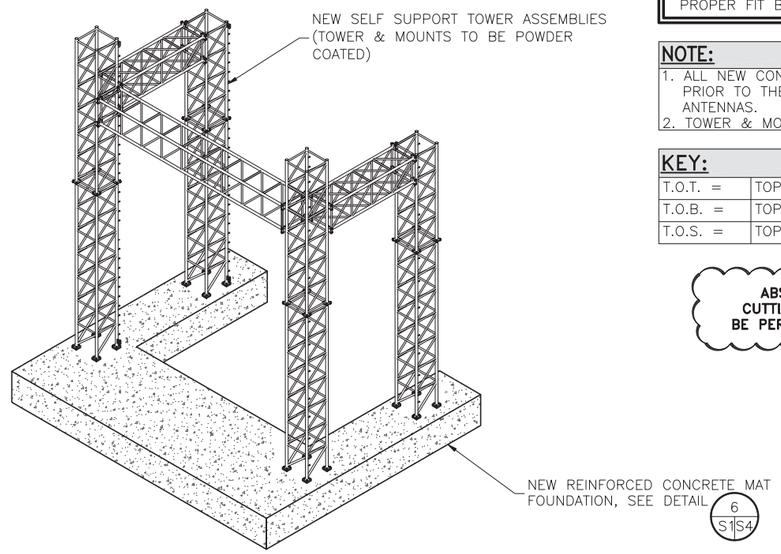
SHEET NUMBER:

RS11

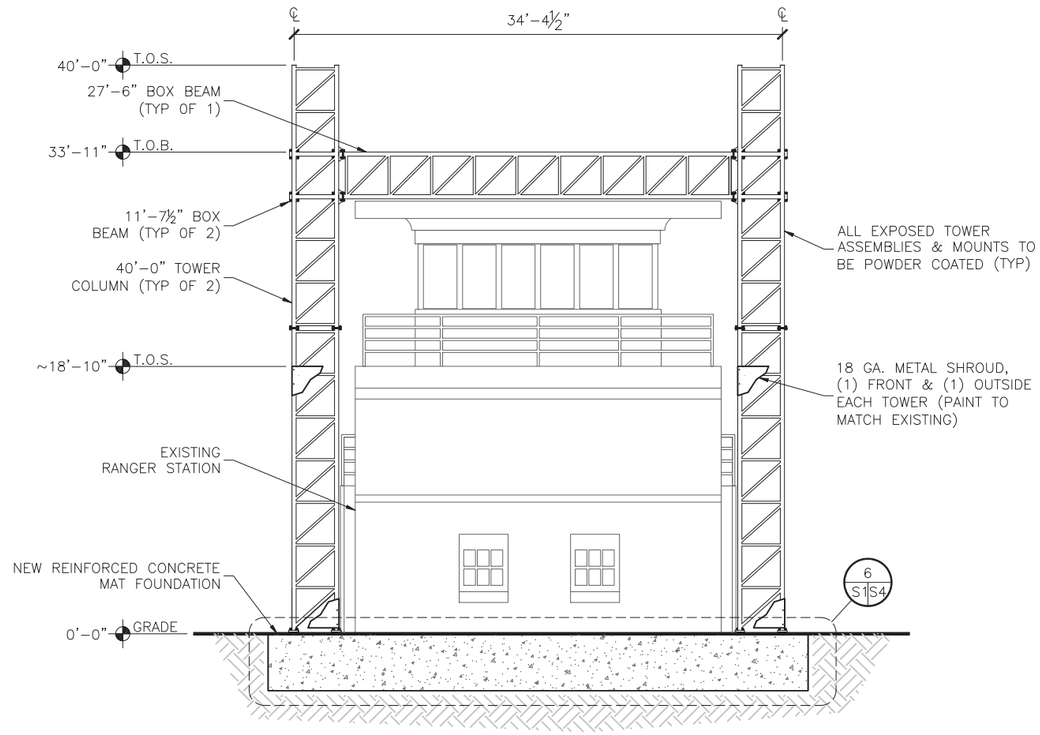


PLAN

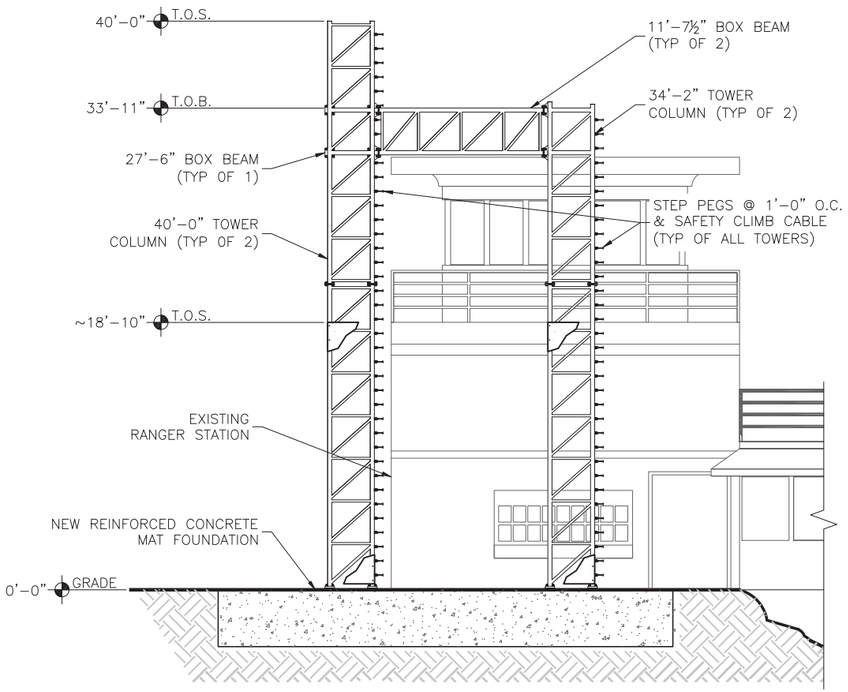
NORTH



ISOMETRIC



ELEVATION



SIDE

1 C2 S1 SELF SUPPORT TOWER ASSEMBLIES

SCALE: 3/32"=1'-0"

FIT-UP NOTE:

CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION IN ORDER TO CONFIRM PROPER FIT BASED ON EXISTING CONDITIONS

NOTE:

1. ALL NEW CONSTRUCTION SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF ANY NEW ANTENNAS.
2. TOWER & MOUNTS TO BE POWDER COATED.

KEY:

T.O.T. =	TOP OF TOWER
T.O.B. =	TOP OF BEAM
T.O.S. =	TOP OF SHROUD

ABSOLUTELY NO TORCH-CUTTING OF ANY KIND SHALL BE PERMITTED FOR ANY REASON

DESIGNED FOR:

verizon

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	08/11/16	RWB	JVC
1	REVISED PER COMMENTS	7/25/17	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 7/25/17

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

SELF SUPPORT TOWER & ISOMETRIC

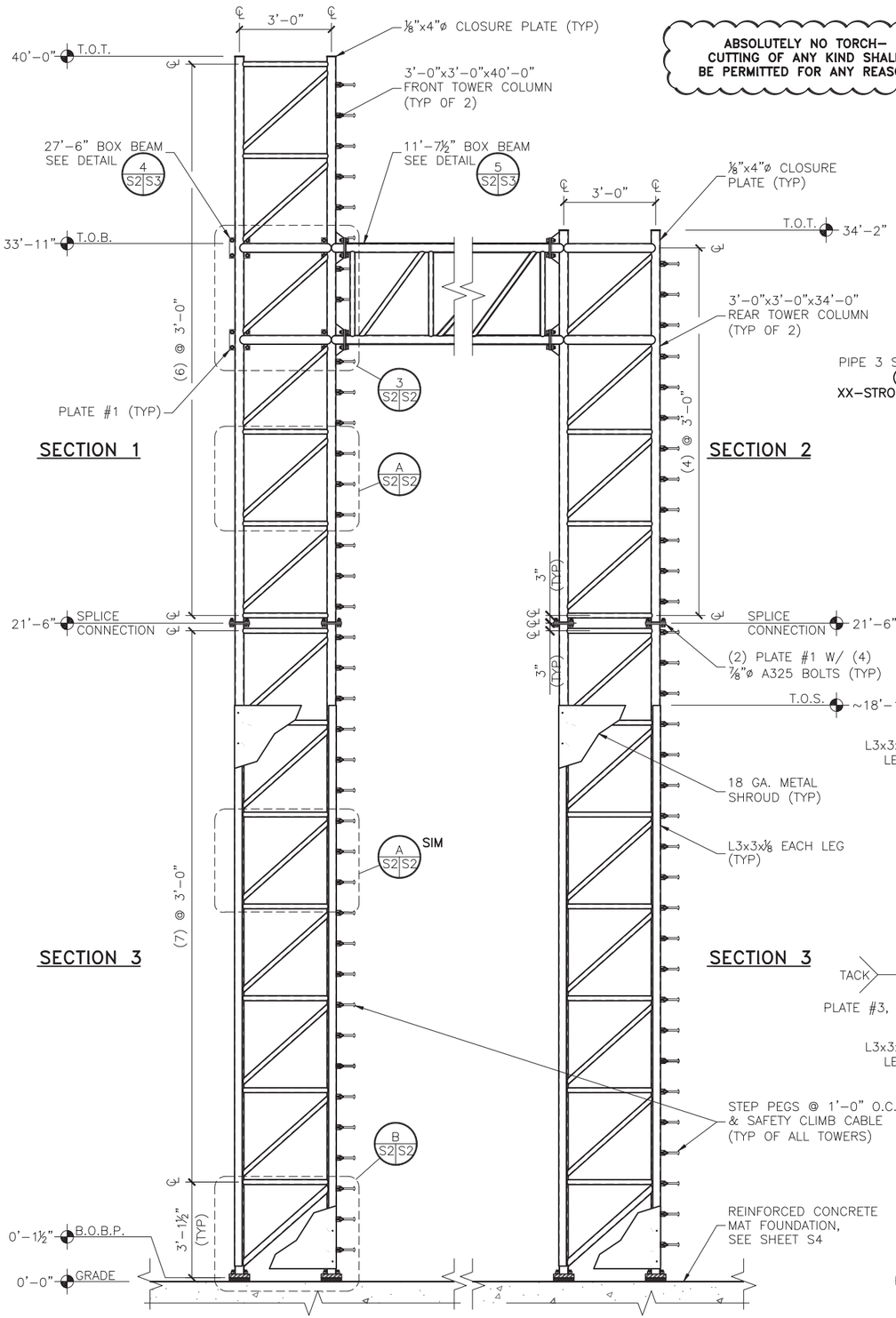
SAVE DATE:

7/25/2017 12:09 PM

SHEET NUMBER:

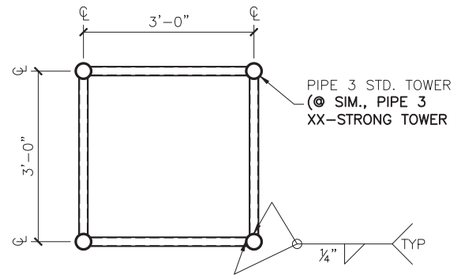
S1

APPROVED FOR CONSTRUCTION

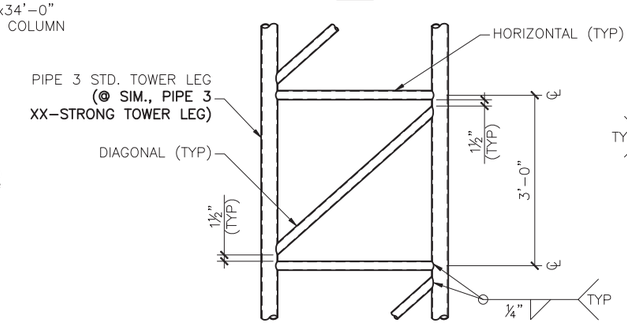


2 S1|S4 ENLARGED TOWER ELEVATION (SIDE)
SCALE: N.T.S.

ABSOLUTELY NO TORCH–CUTTING OF ANY KIND SHALL BE PERMITTED FOR ANY REASON



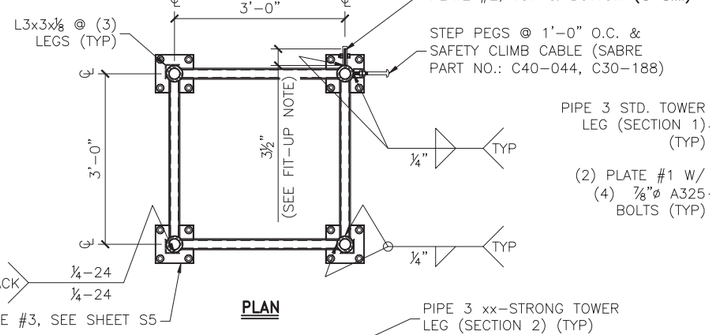
PLAN



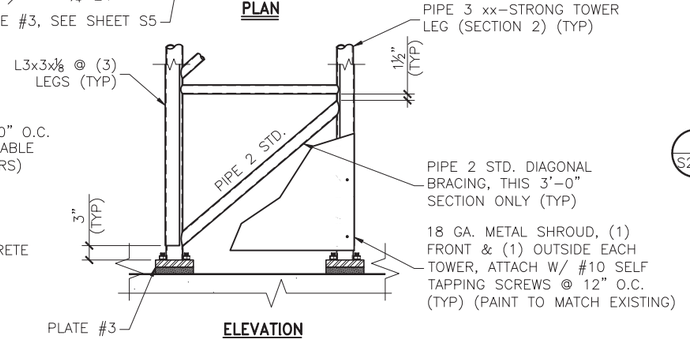
ELEVATION

ENLARGED TOWER SECTION (@ SIM. 2, BOX BEAM SECTION)

A S2|S2 SCALE: 1/4"=1'-0"



PLAN



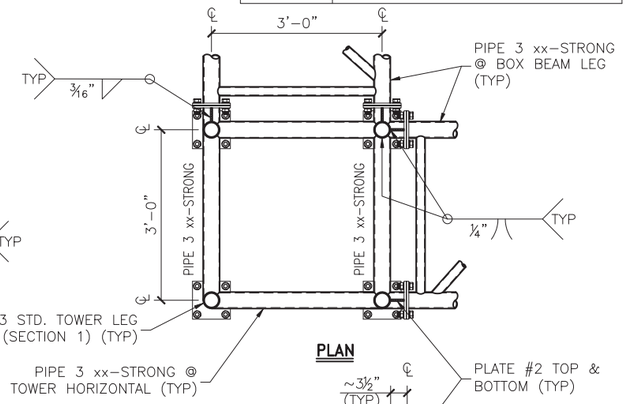
ELEVATION

B S2|S2 ENLARGED TOWER SECTION @ BASE
SCALE: 3/8"=1'-0"

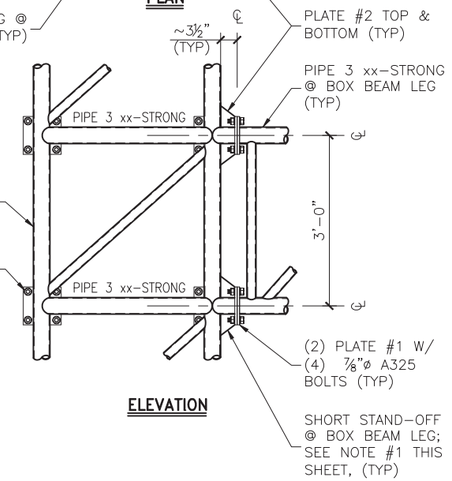
NEW TOWER MEMBER SCHEDULE:			
SECTION	LEGS	DIAGONALS	HORIZONTALS
1	PIPE 3 STD.	PIPE 1½ STD. (U.N.O.)	PIPE 1½ STD. (U.N.O.)
2	PIPE 3 STD.	PIPE 1½ STD. (U.N.O.)	PIPE 1½ STD. (U.N.O.)
3	PIPE 3 xx-STRONG	PIPE 1½ STD. (U.N.O.)	PIPE 1½ STD. (U.N.O.)

FIT-UP NOTE:
CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION IN ORDER TO CONFIRM PROPER FIT BASED ON EXISTING CONDITIONS

KEY:	
T.O.T. =	TOP OF TOWER
T.O.B. =	TOP OF BEAM
T.O.S. =	TOP OF SHROUD



PLAN



ELEVATION

3 S2|S2 ENLARGED TOWER SECTION @ BOX BEAM CONNECTIONS
SCALE: 3/8"=1'-0"

NOTE:	
1.	SHOP WELD SHORT STAND-OFF (PIPE 3 XX-STRONG W/ PLATE #2 TOP & BOTTOM) TO TOWER SECTION BEFORE BOX BEAM FIT-UP, (TYP).
2.	TOWER & MOUNTS TO BE POWDER COATED, (TYP).

APPROVED FOR CONSTRUCTION

DESIGNED FOR:
verizon
2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	08/11/16	RWB	JVC
1	REVISED PER COMMENTS	7/25/17	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 7/25/17
WYOMING

PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:
ENLARGED TOWER ELEVATION, DETAILS & SECTIONS

SAVE DATE:
7/25/2017 12:09 PM

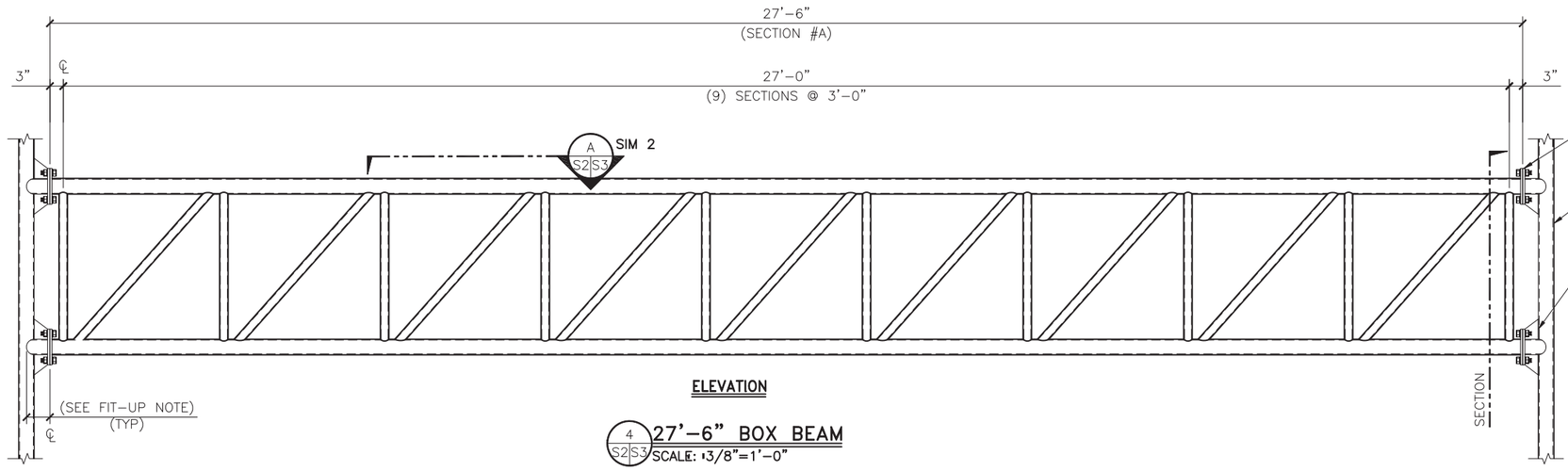
SHEET NUMBER:
S2

KEY:	
T.O.T. =	TOP OF TOWER
T.O.B. =	TOP OF BEAM

NEW BOX BEAM MEMBER SCHEDULE:			
SECTION	LEGS	DIAGONALS	HORIZONTALS
A	PIPE 3 xx-STRONG	PIPE 1½ STD.	PIPE 1½ STD.
B	PIPE 3 xx-STRONG	PIPE 1½ STD.	PIPE 1½ STD.

FIT-UP NOTE:
CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION IN ORDER TO CONFIRM PROPER FIT BASED ON EXISTING CONDITIONS

ABSOLUTELY NO TORCH-CUTTING OF ANY KIND SHALL BE PERMITTED FOR ANY REASON

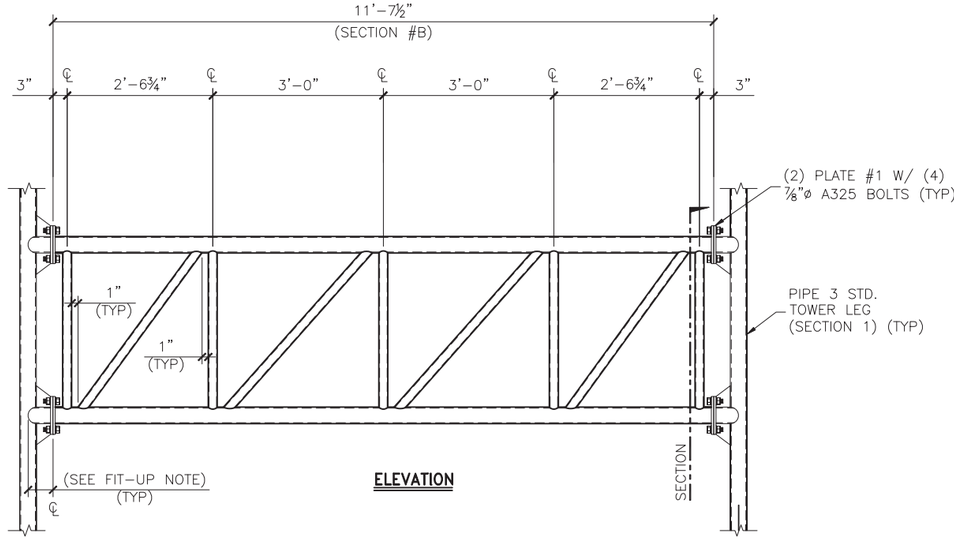


ELEVATION

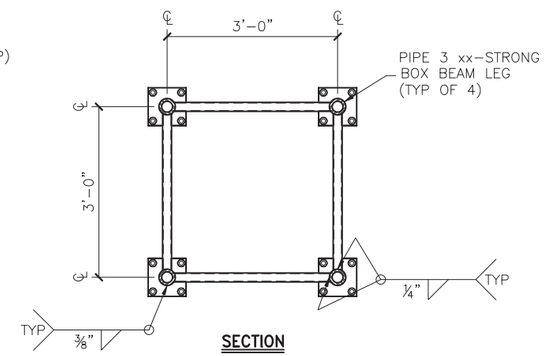
4 S2|S3 27'-6" BOX BEAM
SCALE: 3/8"=1'-0"

NOTE:

1.	SHOP WELD SHORT STAND-OFF (PIPE 3 XX-STRONG W/ PLATE #2 TOP & BOTTOM) TO TOWER SECTION BEFORE BOX BEAM FIT-UP, (TYP).
2.	TOWER & MOUNTS TO BE POWDER COATED, (TYP).



ELEVATION



SECTION

5 S2|S4 11'-7 1/2" BOX BEAM (TYP OF 2)
SCALE: 3/8"=1'-0"

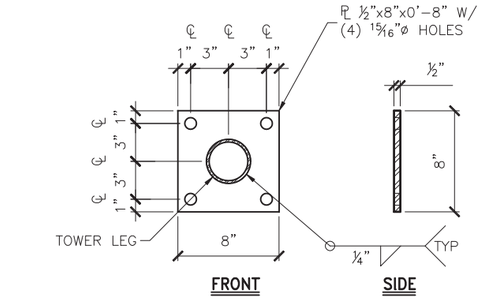


PLATE #1
SCALE: 1"=1'-0"

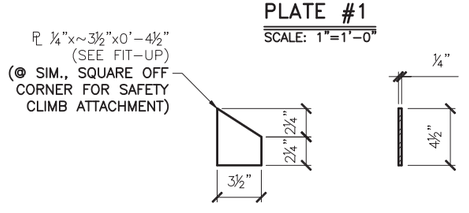


PLATE #2
SCALE: 1"=1'-0"

APPROVED FOR CONSTRUCTION

DESIGNED FOR:
verizon
2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	08/11/16	RWB	JVC
1	REVISED PER COMMENTS	7/25/17	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 7/25/17

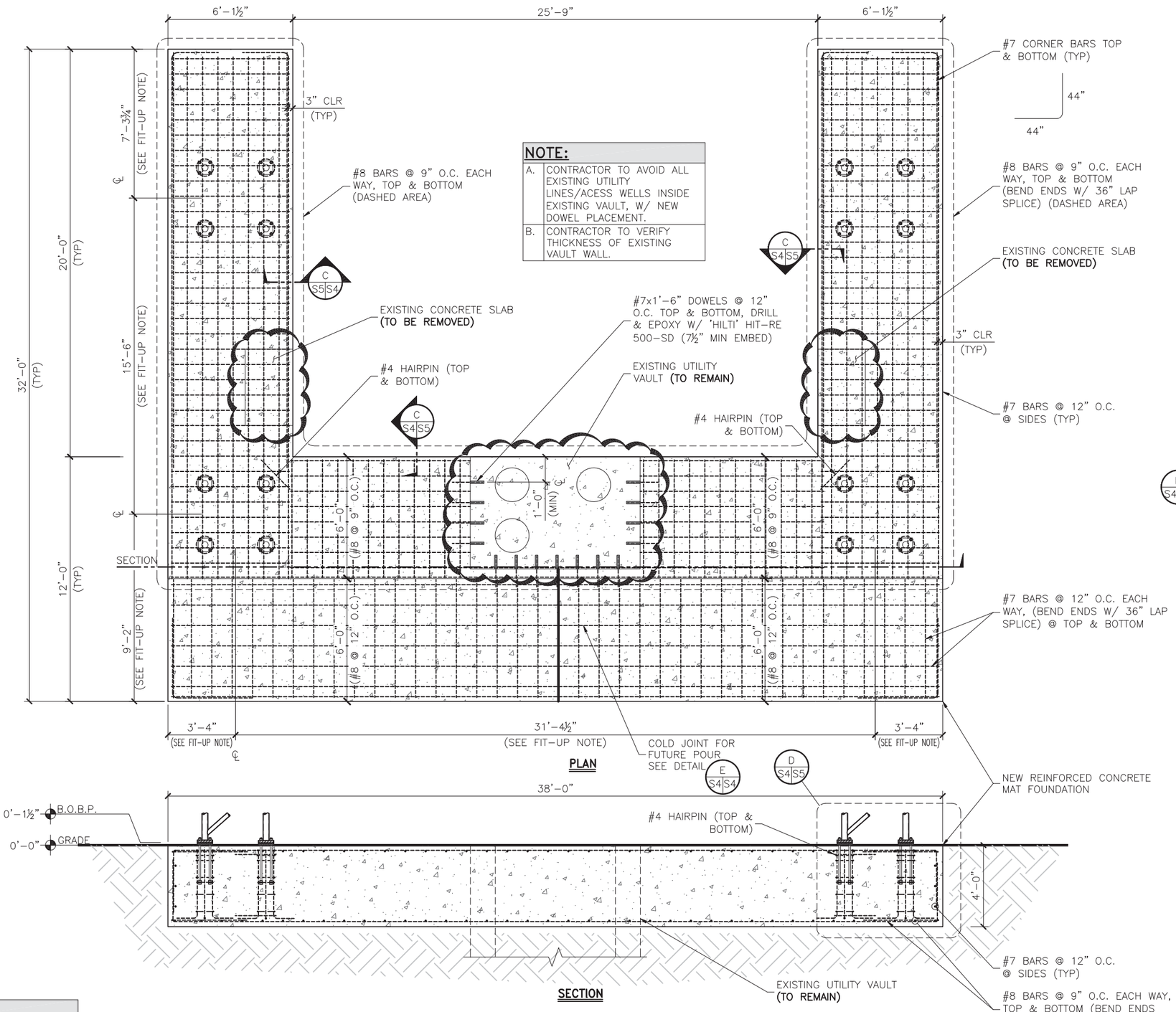
PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:
BOX BEAM DETAILS & SECTIONS

SAVE DATE:
7/25/2017 12:09 PM

SHEET NUMBER:
S3



NOTE:

A.	CONTRACTOR TO AVOID ALL EXISTING UTILITY LINES/ACESS WELLS INSIDE EXISTING VAULT, W/ NEW DOWEL PLACEMENT.
B.	CONTRACTOR TO VERIFY THICKNESS OF EXISTING VAULT WALL.

NOTE:

1.	18 GA. METAL SHROUD @ TOWER NOT SHOWN FOR CLARITY.

6 / S1|S4 REINFORCED CONCRETE MAT SLAB FOUNDATION
SCALE: 3/8"=1'-0"

FIT-UP NOTE:
CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION IN ORDER TO CONFIRM PROPER FIT BASED ON EXISTING CONDITIONS

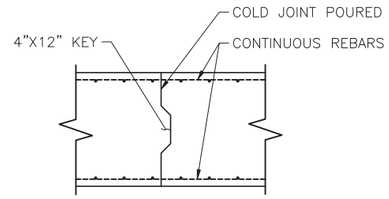
KEY:

T.O.T. =	TOP OF TOWER
T.O.B. =	TOP OF BEAM

NOTE:

	TO BE REMOVED AND DISPOSED OF IN A LEGAL MANNER.

ABSOLUTELY NO TORCH-CUTTING OF ANY KIND SHALL BE PERMITTED FOR ANY REASON



E / S4|S4 TYPICAL COLD JOINT DETAIL
SCALE: 3/8"=1'-0"

APPROVED FOR CONSTRUCTION

DESIGNED FOR:
verizon
2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	08/11/16	RWB	JVC
1	REVISED PER COMMENTS	7/25/17	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
Date 7/25/17
WYOMING

PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:
TOWER FOUNDATION PLAN, DETAILS & SECTIONS

SAVE DATE:
7/25/2017 12:09 PM

SHEET NUMBER:
S4

ABSOLUTELY NO TORCH–CUTTING OF ANY KIND SHALL BE PERMITTED FOR ANY REASON

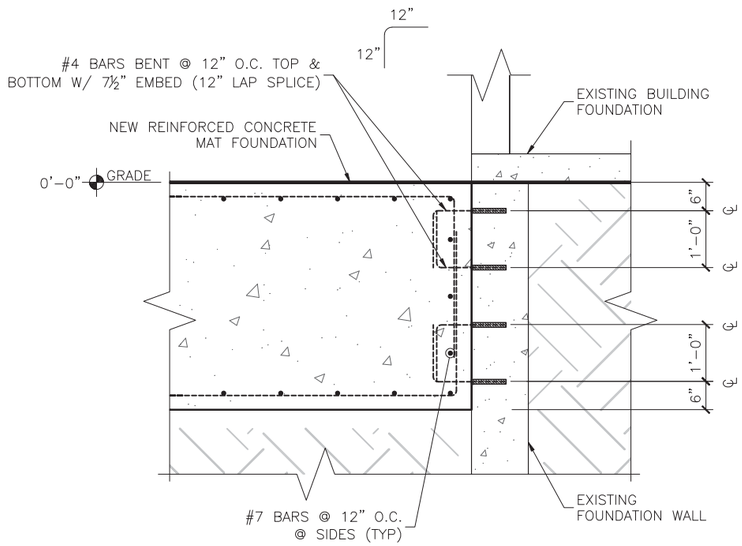
FIT–UP NOTE:
CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION IN ORDER TO CONFIRM PROPER FIT BASED ON EXISTING CONDITIONS

NOTE:

1.	STAGGER TOP SET OF BENT BARS W/ BOTTOM SET TO OFFSET DRILL HOLES.

KEY:

T.O.T. =	TOP OF TOWER
T.O.B. =	TOP OF BEAM



C S4 S5 **NEW DOWELS @ EXITING BUILDING FONDATION**
SCALE: 3/8"=1'–0"

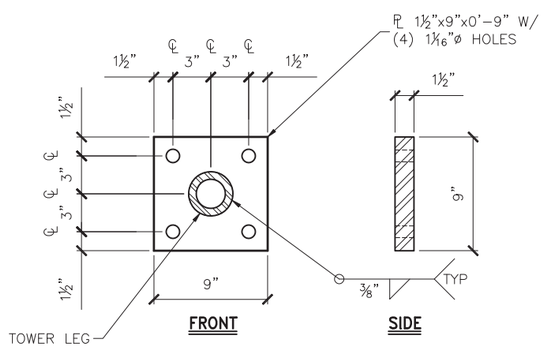
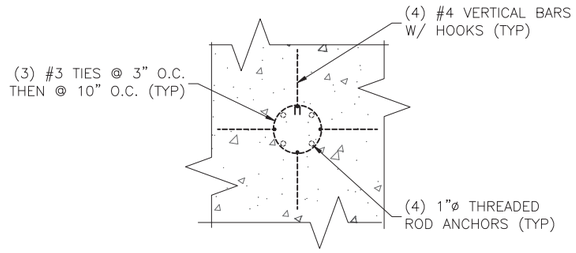
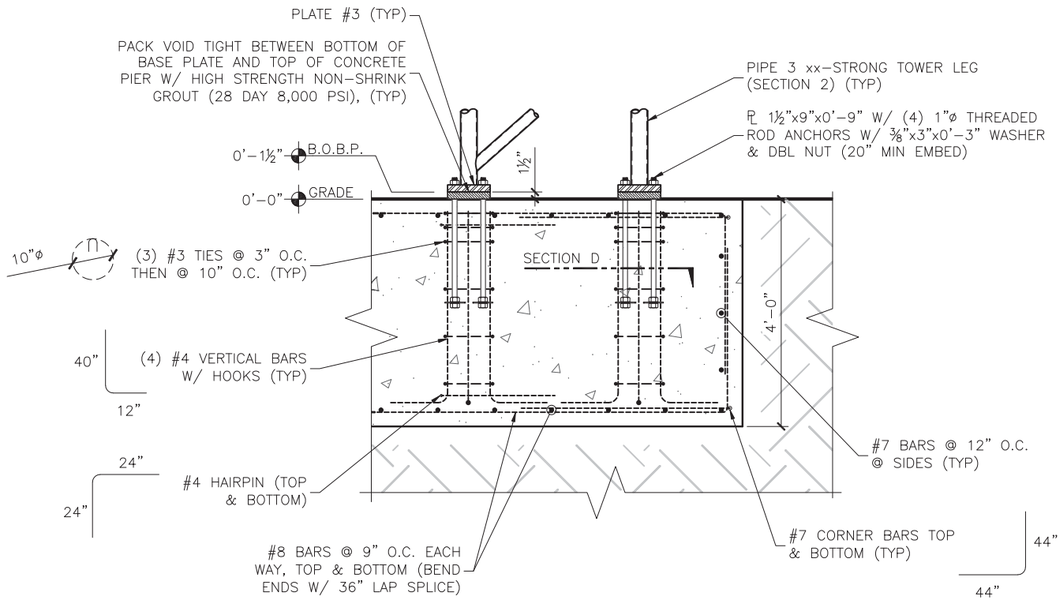


PLATE #3
SCALE: 1"=1'–0"



SECTION D



D S4 S5 **TYIPICAL ANCHOR BOLT & REINFORCEMENT DETAIL**
SCALE: 3/8"=1'–0"

APPROVED FOR CONSTRUCTION

DESIGNED FOR:
verizon
2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	08/11/16	RWB	JVC
1	REVISED PER COMMENTS	7/25/17	MDA	JVC

Professional Engineer (Civil)
JAMES V. CHUNG
14305
WYOMING
Date 7/25/17

PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:
FOUNDATION SHORING SECTION & DETAILS

SAVE DATE:
7/25/2017 12:09 PM

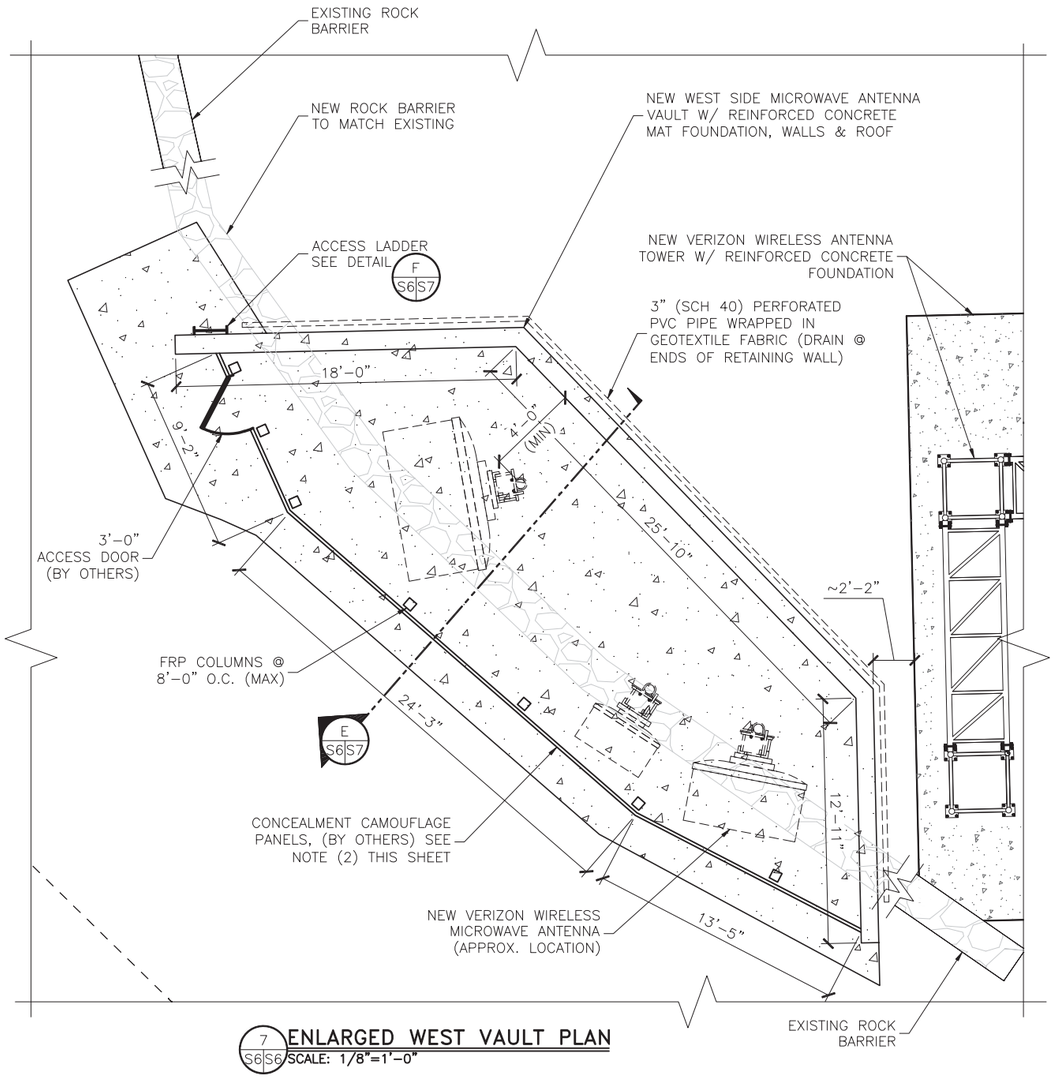
SHEET NUMBER:
S5

FIT–UP NOTE:
CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION IN ORDER TO CONFIRM PROPER FIT BASED ON EXISTING CONDITIONS

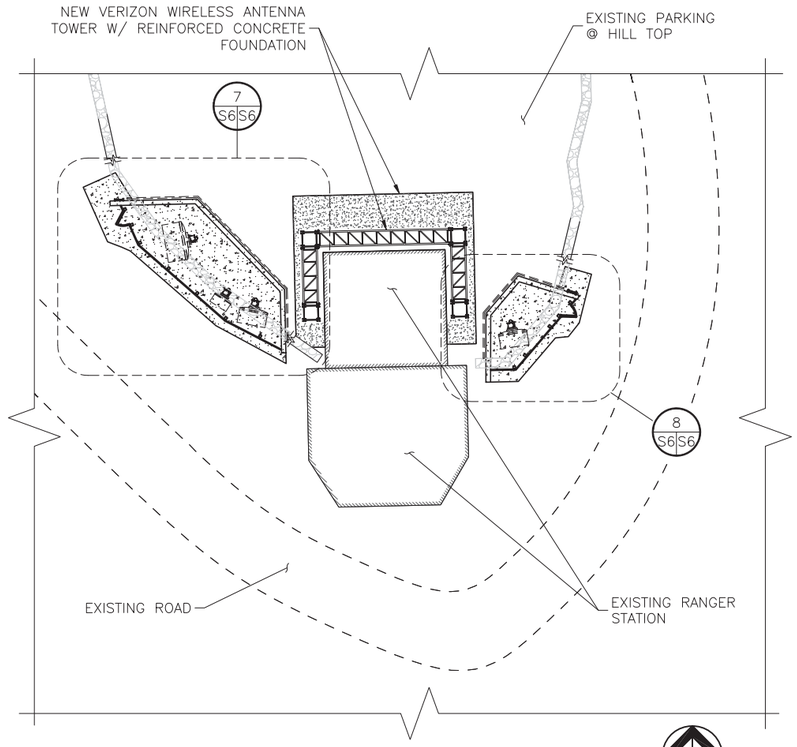
ABSOLUTELY NO TORCH–CUTTING OF ANY KIND SHALL BE PERMITTED FOR ANY REASON

NOTE:

1. ALL NEW CONSTRUCTION SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF ANY NEW ANTENNAS.
2. CONCEALMENT CAMOUFLAGE PANELS SHALL BE DESIGNED FOR A WIND PRESSURE OF 35 PSF. (BY OTHERS).
3. ALL STRUCTURAL COLUMNS SHALL BE STRONGWELL FRP SERIES 625.

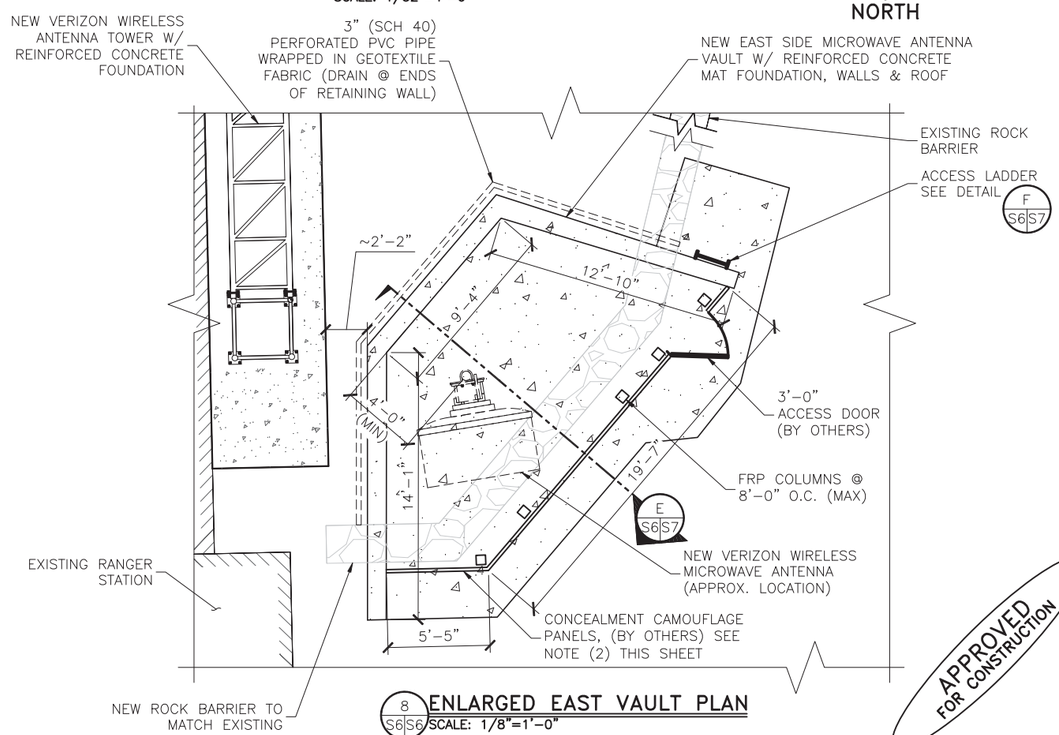


7 S6|S6 **ENLARGED WEST VAULT PLAN**
SCALE: 1/8"=1'-0"



MICROWAVE ANTENNA VAULT LOCATION PLAN
SCALE: 1/32"=1'-0"

NORTH



8 S6|S6 **ENLARGED EAST VAULT PLAN**
SCALE: 1/8"=1'-0"

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizonwireless

2730 BOZEMAN AVE.
HELENA, MONTANA 59601

TowerCom TECHNOLOGIES

AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	06/07/16	RWB	EVR

DESIGNED BY:

Professional Engineer (Civil)
ERIC V. RAWLINS
14149
Date 7/25/17
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

VAULT LOCATION & ENLARGED VAULT PLANS

SAVE DATE:

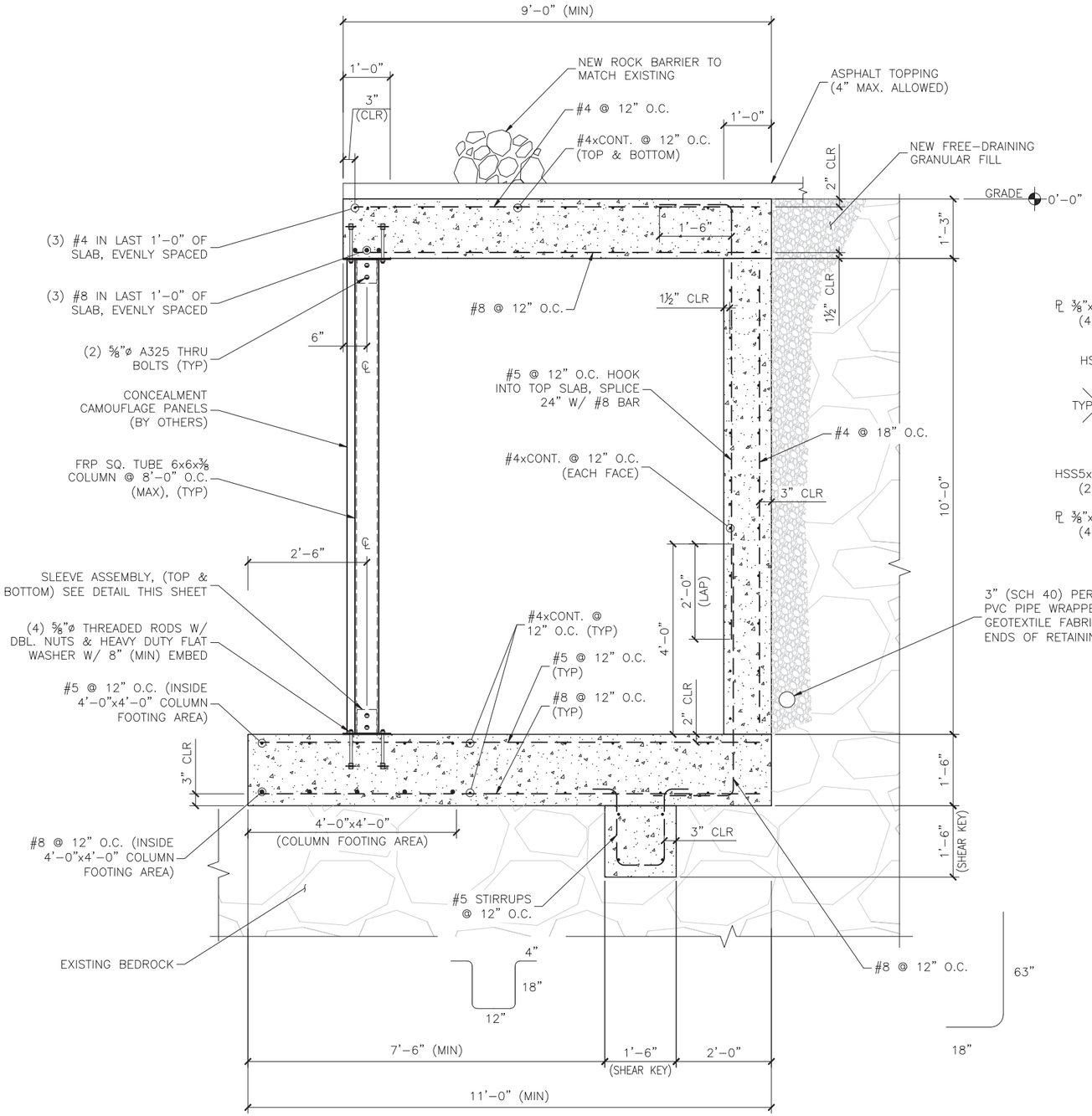
7/25/2017 12:09 PM

SHEET NUMBER:

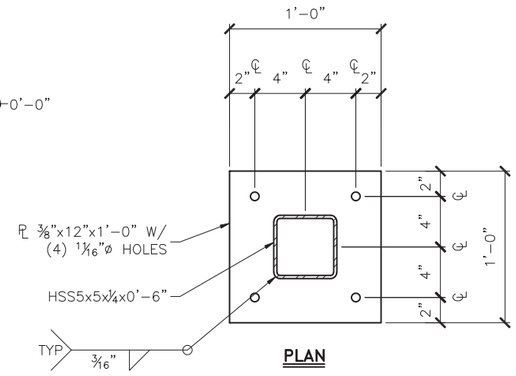
S6

ABSOLUTELY NO TORCH–CUTTING OF ANY KIND SHALL BE PERMITTED FOR ANY REASON

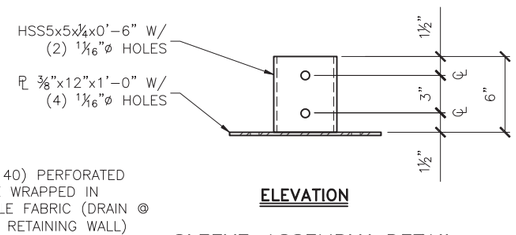
FIT–UP NOTE:
CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO FABRICATION IN ORDER TO CONFIRM PROPER FIT BASED ON EXISTING CONDITIONS



REINFORCED CONCRETE VAULT SECTION
E S6|S7 SCALE: 3/8"=1'–0"

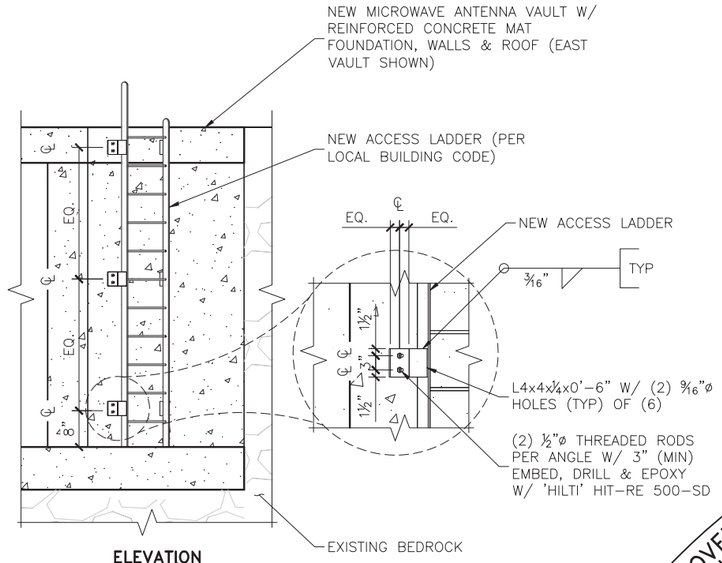


PLAN



ELEVATION

SLEEVE ASSEMBLY DETAIL
SCALE: 1"=1'–0"



ELEVATION

TYPICAL ACCESS LADDER DETAIL
F S6|S7 SCALE: 3/16"=1'–0"

APPROVED FOR CONSTRUCTION

DESIGNED FOR:

verizonwireless
2730 BOZEMAN AVE.
HELENA, MONTANA 59601

DESIGNED BY:

TowerCom TECHNOLOGIES
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	06/07/16	RWB	EVR

Professional Engineer (Civil)
ERIC V. RAWLINS
14149
Date 7/25/17
WYOMING

PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:
VAULT SECTION & DETAILS

SAVE DATE:
7/25/2017 12:09 PM

SHEET NUMBER:
S7

NOTES:

1.	ALL CONDUIT NOT SPECIFIED OTHERWISE SHALL BE SCHD. 40 PVC BELOW GRADE, IMC ABOVE.
2.	INTERCONNECT FOR THIS SITE WILL BE PROVIDED BY MICROWAVE. FIBER SERVICE IS NOT AVAILABLE.
3.	SEE GENERATOR FEEDER MEDIUM VOLTAGE SHIELDED CONDUCTOR GROUNDING SPECIFICATIONS ON SINGLE-LINE DIAGRAM.
4.	CONTRACTOR TO INSTALL PULL BOXES FOR GENERATOR MEDIUM VOLTAGE FEEDER, FUTURE INTERCONNECT FIBER & GENERATOR CONTROL & ALARM FIBER AT SAME GENERAL LOCATIONS AS NEW NWE BOXES BUT WITH MINIMUM SEPARATION AS REQUIRED BY NWE.
5.	ELECTRICAL EQUIPMENT ABOVE GROUND, INCLUDING SERVICE DISCONNECT, TRANSFER SWITCH, MAIN TERMINAL BOX, METER STACK MODULES, CABLE TRAYS, AND TRANSFER SWITCHES TO BE PAINTED BROWN, TO MATCH EXISTING CENTURY LINK CABLE TRAY.
6.	ICE BRIDGES OVER H-FRAMES NOT SHOWN FOR CLARITY

POWER CONTACT:

NORTHWESTERN ENERGY
MATT FETTIG
OFFICE: 406-581-8805
CELL: 406-582-4606

U.S. PARK SERVICE CONTACT:

BRET DE YOUNG
BRANCH CHIEF - TECHNOLOGY SERVICES
YELLOWSTONE NATION PARK, WY
OFFICE: 307-344-2070
CELL: 406-581-2617
bret deyoung@nps.gov

ENVIROMENTAL APPROVALS:

DOUG MADSON
307-344-2107

OTHER CARRIERS:

CONTRACTOR TO COORDINATE WITH VERIZON WIRELESS AND PARK SERVICE TO GET CONTACT INFO FOR OTHER CARRIERS TO COORDINATE WITH THEM REGARDING CUTTING THEM OVER TO THE NEW ELECTRICAL DISTRIBUTION SYSTEM.

NOTICE:

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

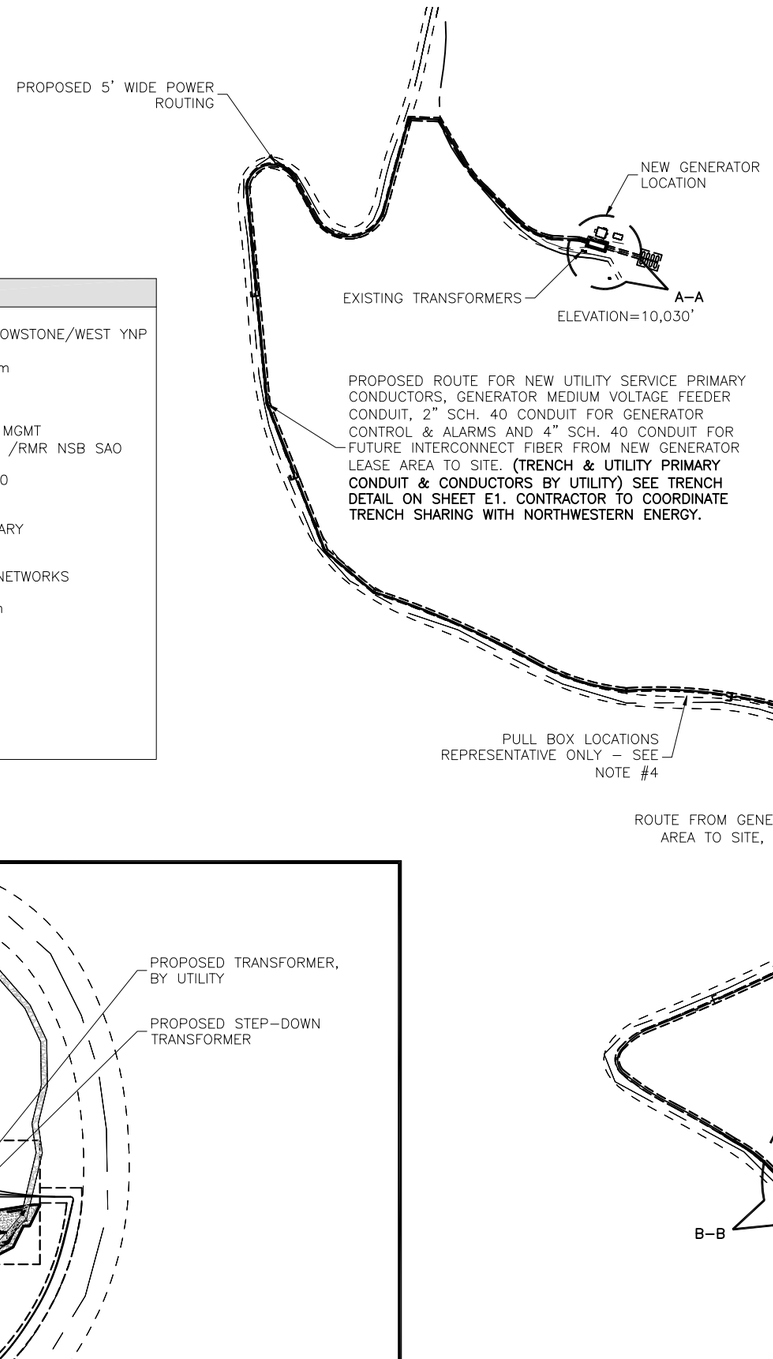
OTHER CONTACTS:

BILL BLACKFORD
CENTURYLINK -APS WEST YELLOWSTONE/WEST YNP
(406)451-9148
william.blackford@centurylink.com

AT&T - JAN ROBINETTE
AT&T MOBILITY SERVICES LLC
SR SPECIALIST-TECH PROJECT MGMT
CONSTRUCTION & ENGINEERING /RMR NSB SAO
jr102n@att.com
4393 RIVERBOAT RD, SUITE 400
TAYLORSVILLE, UT 84123
801.313.8314 DESK
801.201.4173 **MOBILE/ PRIMARY

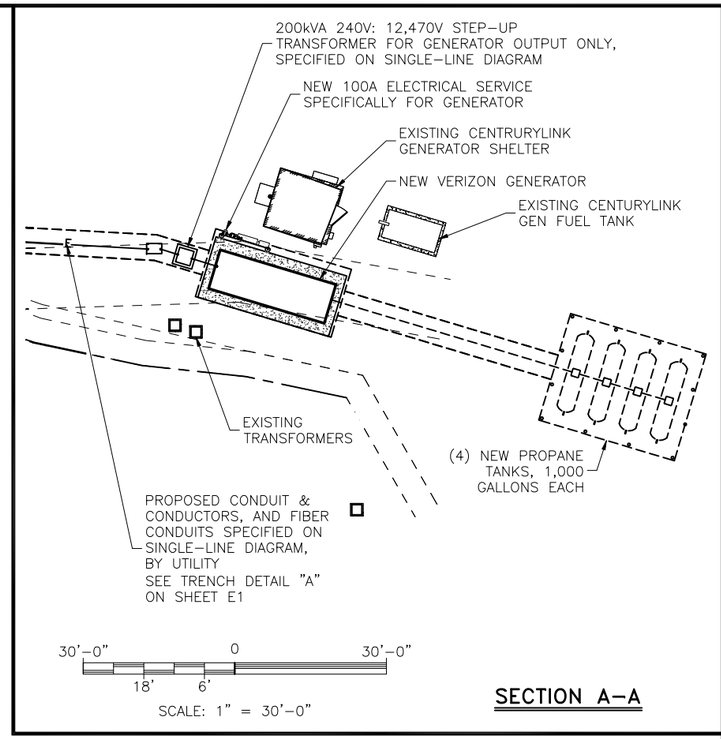
VERNON HOGGE
DIRECTOR OF TELECOMM AND NETWORKS
NORTHWESTERN ENERGY
vernan.hogge@northwestern.com
406 497 3454

JOHN DARR
RADIO TECHNICIAN
NATIONAL PARK SERVICE
YELLOWSTONE NATIONAL PARK
john_darr@nps.gov
Office 307-344-2431
Cell 406-581-9033

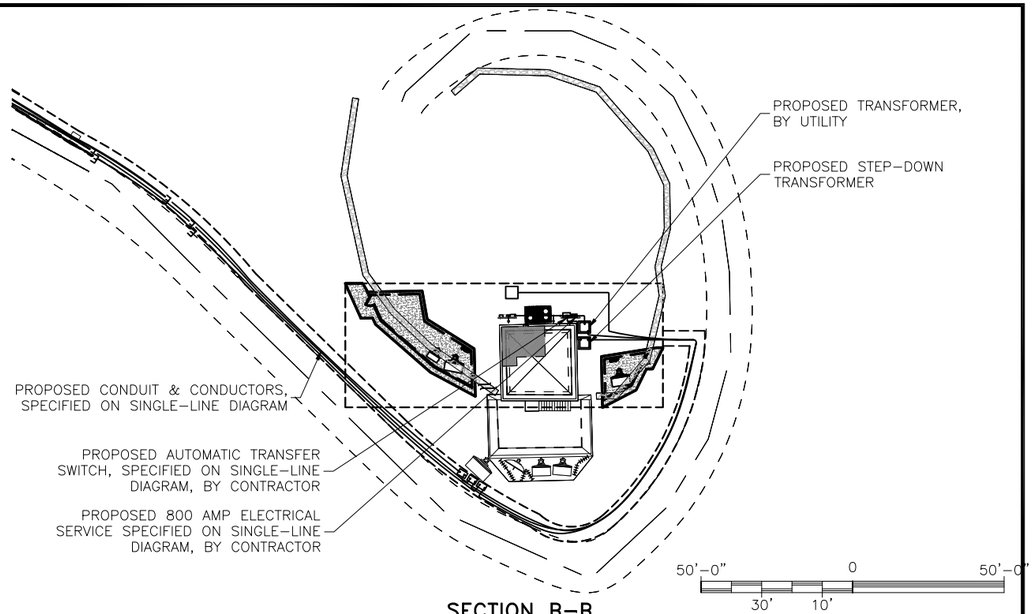


UTILITY COORDINATION SITE PLAN

NORTH



SECTION A-A



SECTION B-B

DESIGNED FOR:

verizon

3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

J5 INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

DESIGNED BY:

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	-

Professional Engineer
DANIEL F. RECKERT
16351
Date 08/16/18
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

UTILITY COORDINATION SITE PLAN

SAVE DATE:

8/15/2018 2:22 PM

SHEET NUMBER:

UC1

GENERAL ELECTRICAL NOTES

1.	CONTRACTOR SHALL COMPLY WITH UTILITY'S ELECTRICAL SERVICE SPECIFICATIONS, OBTAIN A COPY AS NEEDED.
2.	THE ELECTRICAL INSTALLATION WORK SHALL COMPLY WITH ALL LOCAL, STATE AND NATIONAL CODES, LAWS AND ORDINANCES APPLICABLE TO ELECTRICAL WORK.
3.	ARC FLASH HAZARD WARNING SIGNS: PER NEC ARTICLE 110.16 EACH OF THE FOLLOWING DEVICES SHALL HAVE A PERMANENT LABEL OR SIGN AFFIXED WARNING QUALIFIED PERSONS OF POTENTIAL ARC FLASH HAZARDS: SERVICE GUTTER–BOXES, METER ENCLOSURES, DISCONNECTS, TRANSFORMERS DOWN–STREAM OR SERVICE EQUIPMENT, TRANSFER SWITCHES, DISTRIBUTION PANEL BOARDS, ANY OTHER DEVICES THAT ARE INSTALLED AND ARE SPECIFIED IN NEC ARTICLE 110.16. THIS LABEL OR SIGN SHALL MEET THE GUIDELINES FOR SAFETY SIGNS SPECIFIED IN THE CURRENT REVISION OF ANSI Z535.4.
4.	CONTRACTOR SHALL VISIT SITE AND VERIFY EXISTING CONDITIONS BEFORE BEGINNING WORK.
5.	ALL MATERIAL AND EQUIPMENT FURNISHED AND INSTALLED UNDER THIS CONTRACT SHALL BE NEW, FREE FROM DEFECTS, AND SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER OR HIS REPRESENTATIVE. SHOULD ANY TROUBLE DEVELOP DURING THIS PERIOD DUE TO FAULTY WORKMANSHIP, MATERIAL OR EQUIPMENT, THE CONTRACTOR SHALL FURNISH ALL NECESSARY MATERIALS AND LABOR TO CORRECT THE TROUBLE WITHOUT COST TO THE OWNER.
6.	ALL WORK TO BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT MECHANICAL APPEARANCE WHEN COMPLETED.
7.	CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING RELATED TO ELECTRICAL WORK.
8.	ALL BRANCH CIRCUIT CONDUCTORS SHALL BE COPPER TYPE "TH." #12, AND #10 SOLID, #8 AND LARGER STRANDED.
9.	CONTRACTOR SHALL FURNISH AS–BUILT DRAWINGS TO THE VERIZON WIRELESS PROJECT MANAGER UPON COMPLETION OF THE JOB.
10.	ELECTRICAL WORK SHALL INCLUDE ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED, INCLUDING BUT NOT LIMITED TO COMPLETE ELECTRICAL SYSTEMS POWER AND LIGHTING, TELEPHONE CONDUIT SYSTEM, SIGNAL SYSTEMS, PANELBOARD(S), CONTROL WIRING, GROUNDING, CONDUIT ONLY SYSTEMS, ETC., AS INDICATED ON ELECTRICAL DRAWINGS AND/OR REQUIRED BY GOVERNING CODES.
11.	PRIOR TO INSTALLING ANY ELECTRICAL WORK, THE CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND REQUIREMENTS ON THE JOB, AND BY REFERENCE TO ARCHITECTURE, AND EQUIPMENT SUPPLIER'S DRAWINGS. SHOULD THERE BE ANY QUESTIONS OR PROBLEMS CONCERNING THE NECESSARY PROVISIONS TO BE MADE, PROPER DIRECTIONS FROM THE VERIZON WIRELESS PROJECT MANAGER SHALL BE OBTAINED BEFORE PROCEEDING WITH ANY WORK.
12.	THE CONTRACTOR SHALL VERIFY EXISTING SITE CONDITIONS, ELECTRICAL SERVICE REQUIREMENTS AND COORDINATE ALL INTERCONNECTION REQUIREMENTS WITH LOCAL UTILITY AS NECESSARY.
13.	THE NOTE, SPECIFICATION OR CODE WHICH PRESCRIBES AND ESTABLISHES THE HIGHEST STANDARD OF PERFORMANCE SHALL PREVAIL IN THE EVENT OF ANY CONFLICT OR INCONSISTENCY BETWEEN ITEMS SHOWN ON THE PLANS AND/OR SPECIFICATIONS.
14.	THE CONTRACTOR SHALL FURNISH AND PAY FOR ALL PERMITS AND RELATED FEES.
15.	THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE NATIONAL ELECTRICAL CODE, STATE OF WYOMING ELECTRICAL SAFETY ORDERS, ALL CODES AND ORDINANCES AND ALL OTHER ADMINISTRATIVE AUTHORITIES HAVING JURISDICTION OVER THIS WORK.
16.	NETWORK–POWERED BROADBAND COMMUNICATIONS EQUIPMENT AND CABLES SHALL BE LISTED AND MARKED IN ACCORDANCE WITH NEC 830.179 (A) OR (B).
17.	PREMISES – POWERED BROADBAND COMMUNICATIONS SYSTEMS EQUIPMENT & CABLES SHALL BE LISTED AND MARKED IN ACCORDANCE WITH NEC 840.179.
18.	ALL RADIO EQUIPMENT, SITE EQUIPMENT, ANTENNAS, CABLE TRAYS AND CABLES SHALL BE INSTALLED AND GROUNDED ACCORDING TO THE MOTOROLA R56 STANDARDS AND GUIDELINES FOR COMMUNICATION SITES. SEE ADDITIONAL INFORMATION ON E SHEETS AND G SHEETS. THE STANDARD IS AVAILABLE AS A FREE DOWNLOAD ON THE INTERNET.

VZW WY1 MOUNT WASHBURN GROUNDING NOTES:

1.	CONTRACTOR TO COMPLY WITH **MOTOROLA R56** SITE GROUNDING & BONDING SPECIFICATIONS. IN THE EVENT THAT DRAWINGS CONFLICT WITH MOTOROLA R56 SPECIFICATIONS, MOTOROLA R56 SPECIFICATIONS SHALL GOVERN. **MOTOROLA R56 STANDARD IS AVAILABLE FREE ONLINE.**
2.	ALL DETAILS ARE SHOWN IN GENERAL TERMS, ACTUAL GROUNDING INSTALLATION AND MOUNTING MAY VARY DUE TO SITE SPECIFIC CONDITIONS, XIT GROUND MAY BE REQUIRED.
3.	GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8"ø x 8' LONG.
4.	INSTALL GROUND AND BONDING CONDUCTORS WITH SUFFICIENT SLACK TO AVOID BREAKING DUE TO SETTLEMENT AND MOVEMENT OF CONDUCTORS AT ATTACHED POINTS.
5.	RESISTANCE TO GROUND SHALL NOT EXCEED 5 OHMS MEASUREMENT. ADDITIONAL GROUND RODS OR XIT GROUND SHALL BE PROVIDED TO ATTAIN THIS VALUE OR LESS. WHERE MULTIPLE RODS ARE INSTALLED THEY SHALL BE SPACED BETWEEN 8 AND 16 FEET APART.
6.	ALL GROUNDING CONDUCTORS SHALL BE U.L. LISTED FOR THEIR PURPOSE.
7.	ALL GROUND CONNECTIONS TO GROUND BARS SHALL BE U.I. 467 LISTED, IRREVERSIBLE COMPRESSION TYPE.
8.	ALL CONNECTIONS TO GROUND BARS SHALL BE COATED WITH ANTIOXIDANT COMPOUND.
9.	PROVIDE ONE TIME HIT 1 lb. HAMMER TEST ON ALL CADWELDS.
10.	ALL EXTERIOR GROUND BARS SHALL BE GALVANIZED STEEL.

PRESENT VERIZON WIRELESS LOADS:

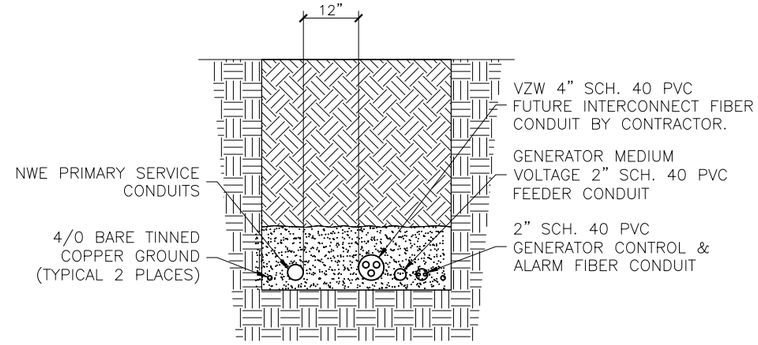
AS OF 08–12–14 VERIZON WIRELESS HAD (3) 24VDC, 130A RECTIFIERS INSTALLED, WITH SLOTS AVAILABLE FOR (4) MORE. THESE THREE CURRENTLY INSTALLED RECTIFIERS PRESENT A MAXIMUM DEMAND LOAD ON THE AC UTILITY POWER SERVICE OF 63A DURING A WORST–CASE SCENARIO AS DESCRIBED IN THE POWER SERVICE DEMAND REPORT OF 09–04–2015.

PRESENT AT&T LOADS:

AS OF 08–12–14 AT&T HAD (2) 3.1KW RECTIFIERS INSTALLED WITH SPACES AVAILABLE FOR (3) MORE. ADDITIONALLY, ACCORDING TO ANCHOR ELECTRIC, AT&T ACTUALLY INSTALLED TWO MORE RECTIFIERS SINCE 08–12–14. THE (3) RECTIFIERS THAT WERE ALREADY INSTALLED AT THE TIME OF THE SITE VISIT PRESENT AN AC UTILITY SERVICE MAXIMUM DEMAND LOAD OF 33A FOR THE WORST–CASE SCENARIO DESCRIBED IN THE POWER SERVICE DEMAND REPORT OF 09–04–2015.

PRESENT CENTURYLINK LOADS:

CENTURYLINK CURRENTLY HAS THE FOLLOWING POWER SYSTEMS AND HVAC INSTALLED:
1.) (10) LUCENT TECHNOLOGIES RECTIFIERS INSTALLED BUT WITH (2) DISCONNECTED AND LEFT IN PLACE AS EMERGENCY SPARES. THE (8) CONNECTED RECTIFIERS PRESENT A MAXIMUM DEMAND LOAD ON THE AC UTILITY POWER SERVICE OF 64A DURING A WORST–CASE SCENARIO AS DESCRIBED IN THE POWER SERVICE DEMAND REPORT OF 09–04–2015.
2.) (5) VALERE RECTIFIERS PRESENTING A MAXIMUM DEMAND LOAD ON THE AC UTILITY POWER SERVICE OF 32.1A
3.) SMALL INTEGRATED POWER SYSTEM THAT PRESENTS MAXIMUM DEMAND LOAD ON THE AC UTILITY POWER SERVICE OF 6.1A.
4.) 5–TON WALL MOUNT HVAC PRESENTS A MAXIMUM DEMAND OF 26.7A.
THEREFORE CENTURYLINK'S TOTAL MAXIMUM DEMAND IS 129A.



A E1E1 TRENCH DETAIL N.T.S.

NOTICE:

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

DESIGNED FOR:

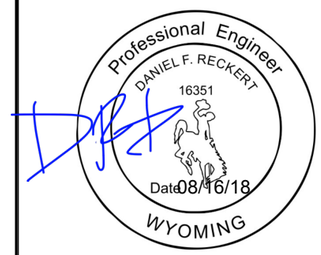
verizon

3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	–



PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

ELECTRICAL & GROUNDING GENERAL NOTES

SAVE DATE:

8/15/2018 2:22 PM

SHEET NUMBER:

E1

KEYED COMPONENT NOTES:

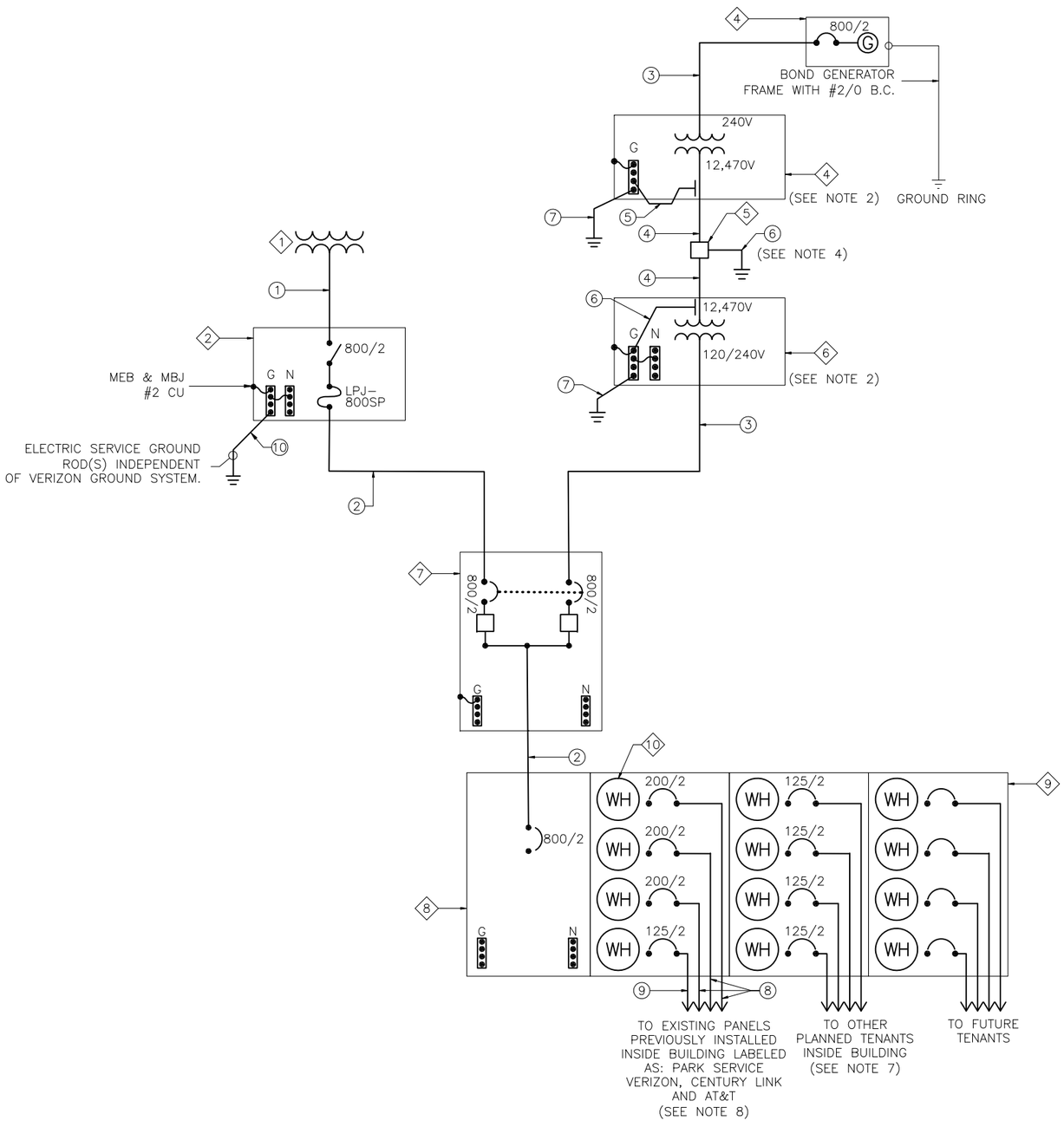
1	PROPOSED UTILITY TRANSFORMER
2	NEW 800A FUSED DISCONNECT 120/240V, 1ø 3W, NEMA 3R.
3	PROPOSED KOHLER MODEL 400EZXB. 120/240V 295KW GENERATOR. RATED AT 202KW AFTER DE-RATING FOR ELEVATION AND TEMPERATURE, PROVIDED BY VERZON.
4	PROPOSED STEP UP TRANSFORMER FOR GENERATOR OUTPUT, 167KVA, 240V:12,470.
5	IN GROUND VAULTS TO SERVE AS SPLICE BOXES OR PULL POINTS.
6	PROPOSED STEP-DOWN TRANSFORMER FOR GENERATOR OUTPUT, 167KVA, 12,470:120V.
7	PROPOSED 800A, AUTOMATIC TRANSFER SWITCH, KOHLER POWER SYSTEMS. MODEL KCS, PROVIDED BY VERIZON.
8	MAIN TERMINAL BOX 120/240, 1ø, 800 AMP BUSS RATING.
9	(3) 4-GANG METER STACK MODULES 120/240V, 1ø, 800 AMP BUSS RATING.
10	METERS TO BE SUPPLIED BY NORTHWEST ENERGY FOR ACTIVE TENANTS. METER BLANKS TO BE PROVIDED BY CONTRACTOR FOR ANY UNUSED SOCKETS.
	ALL RADIO EQUIPMENT, SITE EQUIPMENT, ANTENNAS, CABLE TRAYS AND CABLES SHALL BE INSTALLED AND GROUNDED ACCORDING TO THE MOTOROLA R56 STANDARDS AND GUIDELINES FOR COMMUNICATION SITES. SEE ADDITIONAL INFORMATION ON E-SHEETS & G-SHEETS. THE STANDARDS IS AVAILABLE AS A FREE DOWNLOAD ON THE INTERNET.

KEYED CONDUIT NOTES:

1	(2) NEW 4" CONDUITS FROM UTILITY TRANSFORMER TO MAIN SERVICE DISCONNECT. CONDUCTORS BY NWE.
2	(2) 3" CONDUCTORS MINIMUM, WITH (3) 500 KCMIL THWN COPPER CONDUCTORS & (1) 1/0 COPPER GROUND.
3	(4) 2" CONDUIT MINIMUM WITH (3) 3/0 THWN COPPER AND (1) #2 COPPER GROUND.
4	2" MINIMUM SCHD 40 PVC WITH (2) #2 ALUMINUM MEDIUM VOLTAGE SHIELDED CONDUCTORS, INSURES VOLTAGE DROP LESS THAN 2% PER IECC & VERIZON WIRELESS STANDARDS.
5	MEDIUM VOLTAGE CONDUCTOR SHIELD GROUND. SEE NOTE #4
6	MEDIUM VOLTAGE CONDUCTOR SHEILDS TO BE GROUNDED AT EACH END AND AT EACH SPLICE POINT. SEE NOTE #4
7	TWO NEW 8' COPPER CLAD STEEL GROUND RODS WITH MINIMUM 6' SEPERATION. SEE NOTE #4
8	2" CONDUIT MINIMUM WITH (3) #3/0 THWN COPPER CONDUCTORS & (1) COPPER GROUND.
9	1 1/4 C. MINIMUM, WITH (3) #2 THWN COPPER CONDUCTORS & (1) #2 COPPER GROUND
10	PROPOSED #2/0 B.C. TO (2) ⅝"øx8' LONG GROUND RODS. (BY CONTRACTOR)

NOTES:

1.	ALL CONDUIT NOT SPECIFIED OTHERWISE SHALL BE SCH. 40 PVC BELOW GRADE, IMC ABOVE. EMT ACCEPTABLE IN APPROVED AREAS.
2.	GENERATOR OUTPUT VOLTAGE IS BEING INCREASED TO ALLEVIATE EXCESSIVE VOLTAGE DROP DUE TO THE GENERATOR BEING LOCATED APPROXIMATELY 4100 FEET AWAY FROM THE ELECTRICAL SERVICE.
3.	MEDIUM VOLTAGE CONDUCTOR INSTALLATION, TERMINATION AND SPLICING SHALL BE PERFORMED ONLY BY PERSONEL QUALIFIED FOR MEDIUM VOLTAGE WORK.
4	THE GENERATOR FEEDER FROM STEP UP TRANSFORMER TO STEP DOWN TRANSFORMER SHALL BE AN UNGROUNDED SYSTEM (NEITHER PHASE CONDUCTOR SHALL BE GROUNDED) BUT EQUIPMENT ENCLOSURES AND MEDIUM VOLTAGE CONDUCTOR SHIELDS SHALL STILL BE GROUNDED PER NEC.
5.	SURGE SUPPRESSORS, AC DATA SYSTEMS MODEL AM2080-V-07 OR EQUIVALENT SHALL BE INSTALLED AT EACH DISTRIBUTION PANEL, IN ADDITION TO THE DEVICES INCLUDED IN THE ATS'S, DUE TO THE LONG FEEDERS FROM ATS'S TO PANELS.
6.	CONTRACTOR SHALL VERIFY FAULT CURRENT FROM UTILITY TRANSFORMER INSTALLED. AND INSURE ALL SERVICE EQUIPMENT. AUTOMATIC TRANSFER SWITCH, AND PANEL ARE BRACED FOR THIS FAULT CURRENT.
7.	CONTRACTOR TO SIZE CONDUIT & CONDUCTORS ACCORDING TO REQUIRED LOADS.
8.	FOR EXISTING LOAD INFORMATION SEE PRESENT LOADS ON SHEET E1.



SINGLE LINE DIAGRAM

DESIGNED FOR:

verizon

3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	–

Professional Engineer
DANIEL F. RECKERT
16351
Date 08/16/18
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

LOOKOUT
SINGLE-LINE
DIAGRAM

SAVE DATE:

8/15/2018 2:22 PM

SHEET NUMBER:

E2

KEYED COMPONENT NOTES:

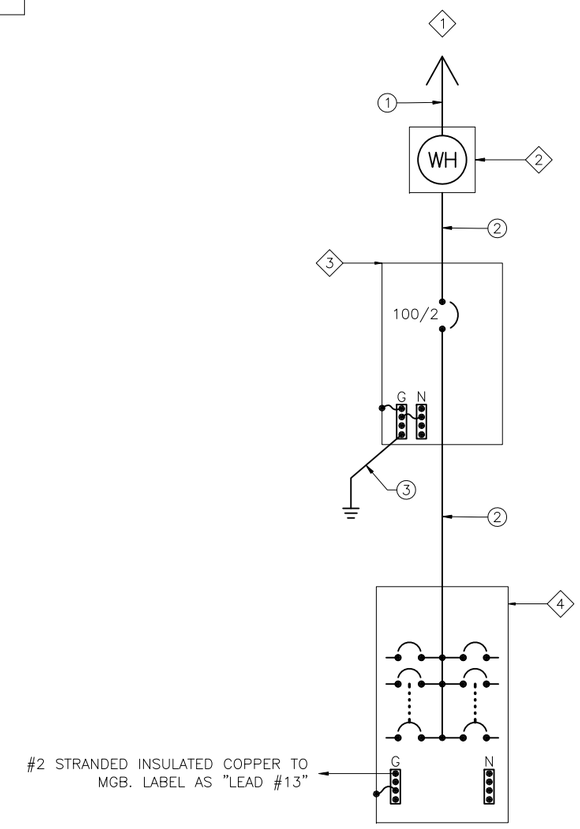
1	PROPOSED UTILITY POWER, 120/240V 1ø.
2	NEW 100A 120/240V, 1ø, 3W METER ACCEPTABLE TO UTILITY, BY CONTRACTOR.
3	PROPOSED 100A, 120/240, 1ø, NEMA 3R CIRCUIT BREAKER AND ENCLOSURE.
4	NEW 100A DISTRIBUTION PANEL 20 CIRCUIT, 120/240V, 1ø, 3W NEMA 3R.

KEYED CONDUIT NOTES:

1	2" CONDUIT MINIMUM BY CONTRACTOR. CONDUCTORS BY POWER PROVIDER.
2	1 1/4" C, MINIMUM WITH (3) #2 THWN COPPER CONDUCTORS & (1) #2 COPPER GROUND.
3	#2 B.C. TO (2) ⅝"ø x 8' LONG GROUND RODS. (BY CONTRACTOR)

NOTES:

1. ALL CONDUIT NOT SPECIFIED OTHERWISE SHALL BE SCH. 40 PVC BELOW GRADE, IMC ABOVE.



SINGLE LINE DIAGRAM

PANELBOARD SCHEDULE "A" — LOCATION: BUILT INTO CABINET PANEL
PANEL ASSEMBLY RATING: 22KAIC

VOLTAGE: 120/240V, 1ø, 3W | MAINS: 200A, M.C.B. | MOUNTING: SURFACE

USE AND/OR AREA SERVED	C/B	CIR NO.	LOAD øA	LOAD øB	CIR NO.	C/B	USE AND/OR AREA SERVED
GFCI RECEP	–	1	180		2	20	BATTERY CHARGER
			500				
GFCI RECEP	–	3		180	4	20	BLOCK HEATER
				1500			
SPACE	–	5	–		6	–	SPACE
SPACE	–	7		–	8	–	SPACE
SPACE	–	9	–		10	–	SPACE
SPACE	–	11		–	12	–	SPACE
SPACE	–	13	–		14	–	SPACE
SPACE	–	15		–	16	–	SPACE
SPACE	–	17	–		18	–	–
SPACE	–	19		–	20	–	–
TOTAL LOAD PER PHASE			680	1680	2,360VA ÷ 240V = 9.8AMPS		

LOAD AT 125% PER N.E.C.

PANEL SCHEDULE "A"

NOTICE:

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

DESIGNED FOR:

verizon

3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	–

Professional Engineer
DANIEL F. RECKERT
16351
Date 08/16/18
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

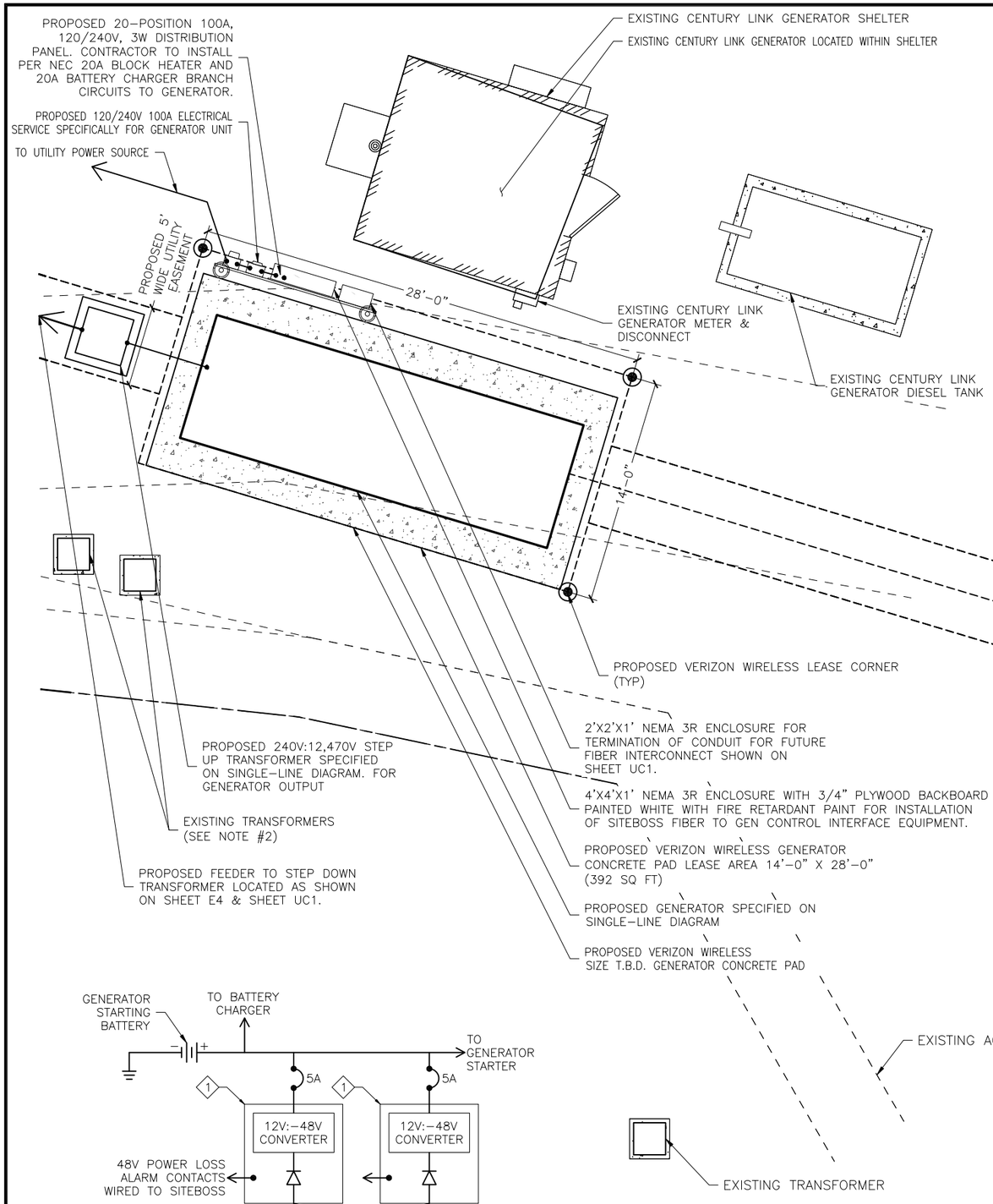
GENERATOR
SINGLE-LINE DIAGRAM

SAVE DATE:

8/15/2018 2:22 PM

SHEET NUMBER:

E3



KEYED COMPONENT NOTE:

1	12V TO -48V, 30W CONVERTER WITH OUTPUT BLOCKING DIODE TO INSURE N+1 REDUNDANCY OF PARALLEL UNITS IF ONE SHORTS. (ABSOPULSE ELECTRONICS, LTD MODEL BAP150-12/48 FTXRCSA-T0461) TWO REQUIRED FOR N+1 REDUNDANCY. SEE D.C. SINGLE-LINE THIS SHEET. SEE PRODUCT DATA SHEET ON SHEET E6.
	ALL RADIO EQUIPMENT, SITE EQUIPMENT, ANTENNAS, CABLE TRAYS AND CABLES SHALL BE INSTALLED AND GROUNDED ACCORDING TO THE MOTOROLA R56 STANDARDS AND GUIDELINES FOR COMMUNICATION SITES. SEE ADDITIONAL INFORMATION ON E-SHEETS & G-SHEETS. THE STANDARDS IS AVAILABLE AS A FREE DOWNLOAD ON THE INTERNET.

GENERAL SITE PLAN NOTES:

1.	INFORMATION SHOWN BELOW FOR DEPICTION PURPOSES ONLY. ALL DATA GATHERED FROM PUBLIC RECORDS AND GENERATED FROM AERIAL IMAGES AND SITE VISITS. INFORMATION DOES NOT CONSTITUTE A LEGAL BOUNDARY SURVEY AND SHOULD NOT BE USED FOR SURVEYING OR OTHER RELATED PURPOSES.
2.	SITE PLAN DATA AS SHOWN IS BASED UPON A LIMITED SITE MAPPING OF THE SURROUNDING AREA AND ARCHIVED SURVEY DOCUMENTS. DATA AS SHOWN IS FOR REFERENCE ONLY. CONFIRMATION AND PROOF OF LEASE AREA AND/OR EASEMENTS IS BEYOND THE SCOPE OF THIS PROJECT.

NOTE:

1.	EXISTING UNDERGROUND UTILITIES ARE BELIEVED TO BE PRESENT THROUGHOUT THE SITE. EXACT LOCATIONS ARE NOT CONFIRMED NOR PROVEN BY THIS DOCUMENT. CONTRACTOR TO CONDUCT LINE LOCATES PRIOR TO CONSTRUCTION.
2.	CONTRACTOR TO VERIFY FUNCTION OF EACH EXISTING UTILITY TRANSFORMER/SWITCHGEAR/BOX AND REMOVE THOSE NO LONGER NEEDED AFTER NEW SERVICE AND GENERATOR INSTALLATION IS COMPLETE, OR COORDINATE WITH UTILITY FOR REMOVAL AS APPROPRIATE BASED ON OWNERSHIP.
3.	**VERIZON TO INSURE THAT PROPANE REFUELING SERVICE TESTS THE SACRIFICIAL ANODES AT EACH REFUELING TIME & NOTIFIES VERIZON WHEN THEY MUST BE REPLACED.**

EXISTING GENERATOR SITE PLAN

NORTH

8'-0" 0 8'-0"
6' 4' 2'
SCALE: 1/8" = 1'-0"

DESIGNED FOR:

verizon

3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	–

Professional Engineer
DANIEL F. RECKERT
16351
Date 08/16/18
WYOMING

PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:
EXISTING GENERATOR SITE PLAN

SAVE DATE:
8/15/2018 2:22 PM

SHEET NUMBER:
E4

KEYED COMPONENT NOTES:

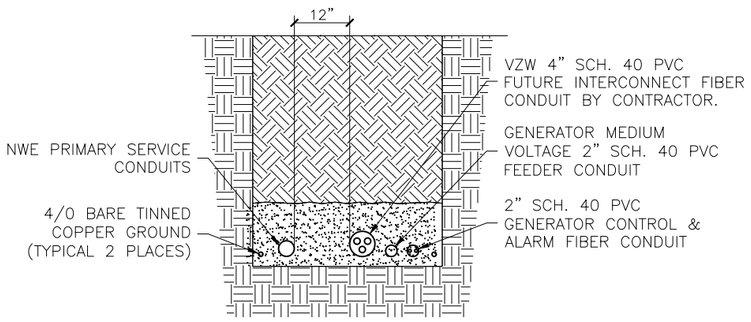
1	GROUND VAULT/TRAFFIC RATED HAND HOLE FOR UTILITY POWER IF REQUIRED.
2	GROUND VAULT/TRAFFIC RATED HAND HOLE FOR GENERATOR CONDUCTORS.
3	PROPOSED UTILITY TRANSFORMER, BY NORTHWEST ENERGY.
4	PROPOSED 167KVA STEP-DOWN TRANSFORMER FOR GENERATOR POWER, BY CONTRACTOR (SEE NOTE 1).
5	NEW 800 AMP FUSED SERVICE DISCONNECT SHOWN ON SINGLE-LINE DIAGRAM, BY CONTRACTOR.
6	NEW 800 AMP AUTOMATIC TRANSFER SWITCH, SPECIFIED ON SINGLE-LINE DIAGRAM, PROVIDED BY VERIZON, INSTALLED BY CONTRACTOR.
7	NEW GROUND VAULT FOR FUTURE FIBER CONNECTION.
8	MAIN TERMINAL BOX. SHOWN ON SINGLE-LINE DIAGRAM, BY CONTRACTOR.
9	(3) 4-GANG METER STACK MODULES. SHOWN ON SINGLE-LINE DIAGRAM, BY CONTRACTOR.
10	MAIN TERMINAL BOX. SHOWN ON SINGLE-LINE DIAGRAM, BY CONTRACTOR.
	ALL RADIO EQUIPMENT, SITE EQUIPMENT, ANTENNAS, CABLE TRAYS AND CABLES SHALL BE INSTALLED AND GROUNDED ACCORDING TO THE MOTOROLA R56 STANDARDS AND GUIDELINES FOR COMMUNICATION SITES. SEE ADDITIONAL INFORMATION ON E-SHEETS & G-SHEETS. THE STANDARDS IS AVAILABLE AS A FREE DOWNLOAD ON THE INTERNET.

KEYED CONDUIT NOTES:

1	NEW CONDUIT & CONDUCTORS FOR UTILITY POWER, BY NORTH WESTERN ENERGY.
2	NEW 2" CONDUIT & CONDUCTORS, SPECIFIED ON SINGLE-LINE DIAGRAM FROM GENERATOR TO STEP DOWN TRANSFORMER, BY CONTRACTOR.
3	NEW CONDUIT SPECIFIED ON SINGLE-LINE DIAGRAM, BY CONTRACTOR. CONDUCTORS BY NORTH WESTERN ENERGY.
4	NEW CONDUIT & CONDUCTORS SHOWN ON SINGLE-LINE DIAGRAM FROM GENERATOR TRANSFORMER TO AUTOMATIC TRANSFORMER SWITCH, BY CONTRACTOR.
5	NEW CONDUIT & CONDUCTORS SHOWN ON SINGLE-LINE DIAGRAM, BY CONTRACTOR.
6	NEW CONDUITS & CONDUCTORS TO FEED EXISTING TENANT LOAD CENTERS PREVIOUSLY INSTALLED INSIDE FACILITY.
7	4" FIBER CONDUIT WITH (3) 1" INNERDUCTS INSTALLED, BY CONTRACTOR.
	ALL CONDUIT NOT SPECIFIED OTHERWISE SHALL BE SCHD. 40 PVC BELOW GRADE, IMC ABOVE. EMT ACCEPTABLE INDOORS IN AREAS THAT ARE ACCESSIBLE ONLY TO VERIZON WIRELESS AUTHORIZED PERSONNEL.

NOTES:

1. GENERATOR OUTPUT VOLTAGE IS BEING INCREASED TO ALLEVIATE EXCESSIVE VOLTAGE DROP DUE TO THE GENERATOR BEING LOCATED APPROXIMATELY 4100 FEET AWAY FROM THE ELECTRICAL SERVICE.
2. ICE BRIDGES OVER H-FRAMES NOT SHOWN FOR CLARITY

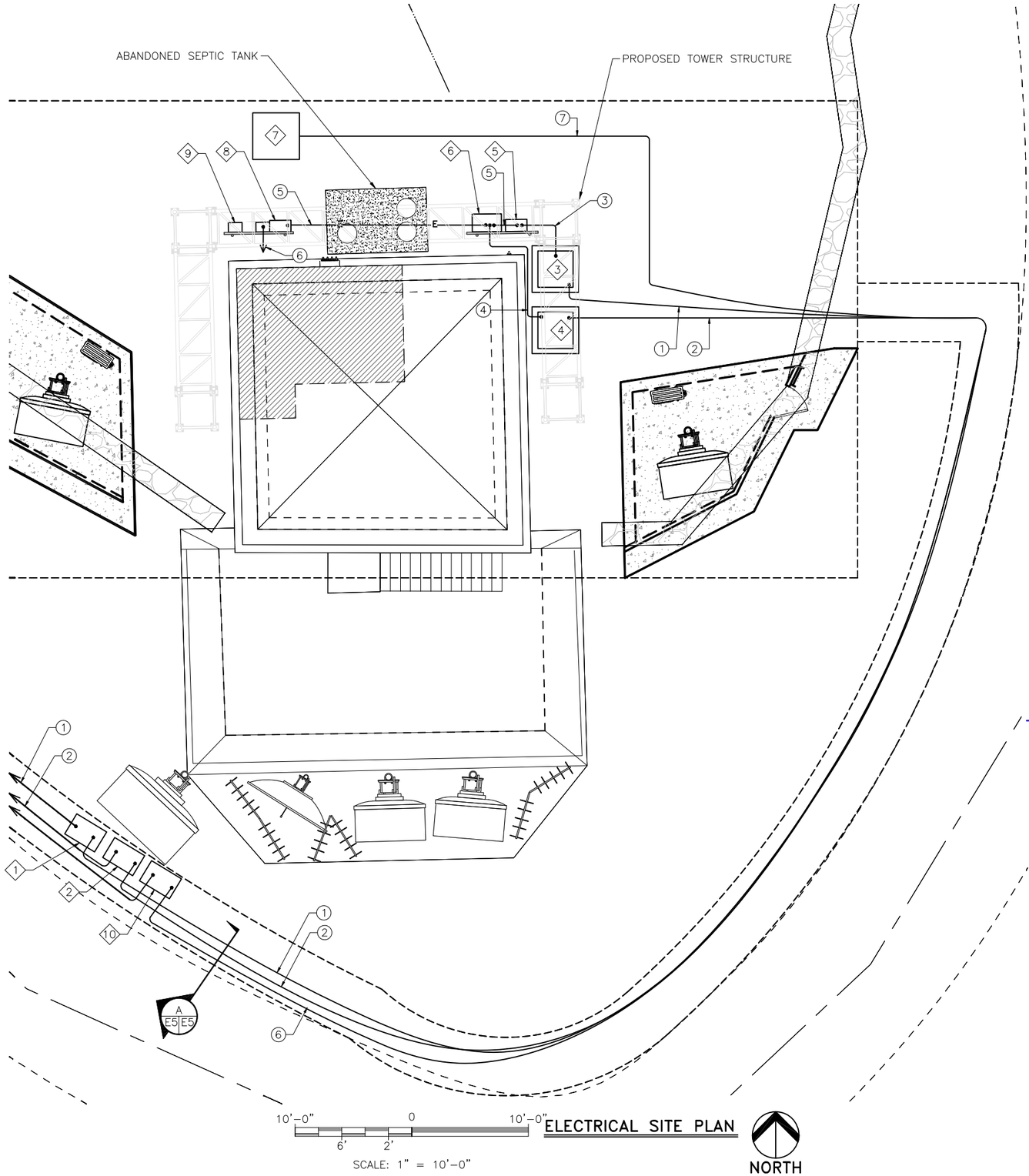


TRENCH & SERVICE CONDUIT BY NWE, OTHER ITEMS BY CONTRACTOR

A / E5 E5 TRENCH DETAIL N.T.S.

NOTICE:

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



ELECTRICAL SITE PLAN

SCALE: 1" = 10'-0"

NORTH

DESIGNED FOR:

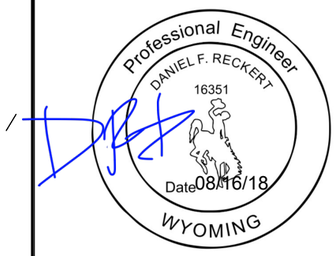
verizon

3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	–



PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

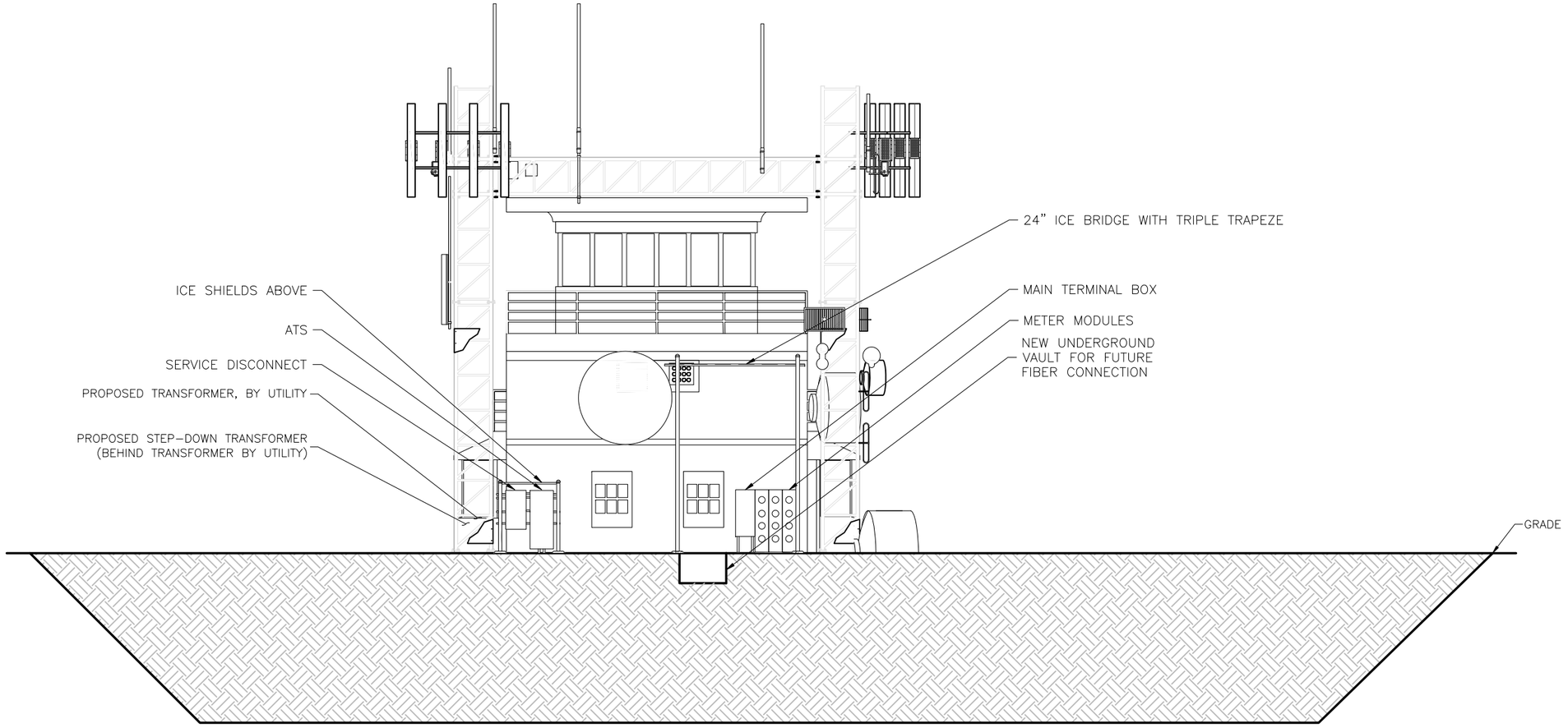
ELECTRICAL SITE PLAN

SAVE DATE:

8/15/2018 2:22 PM

SHEET NUMBER:

E5



NORTH ELEVATION

NORTH

12'-0" 0 12'-0"

10' 6' 2'

SCALE: 3/32" = 1'-0"

DESIGNED FOR:

verizon

3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	–

Professional Engineer
DANIEL F. RECKERT
16351
Date 08/16/18
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

NORTH ELEVATION

SAVE DATE:

8/15/2018 2:22 PM

SHEET NUMBER:

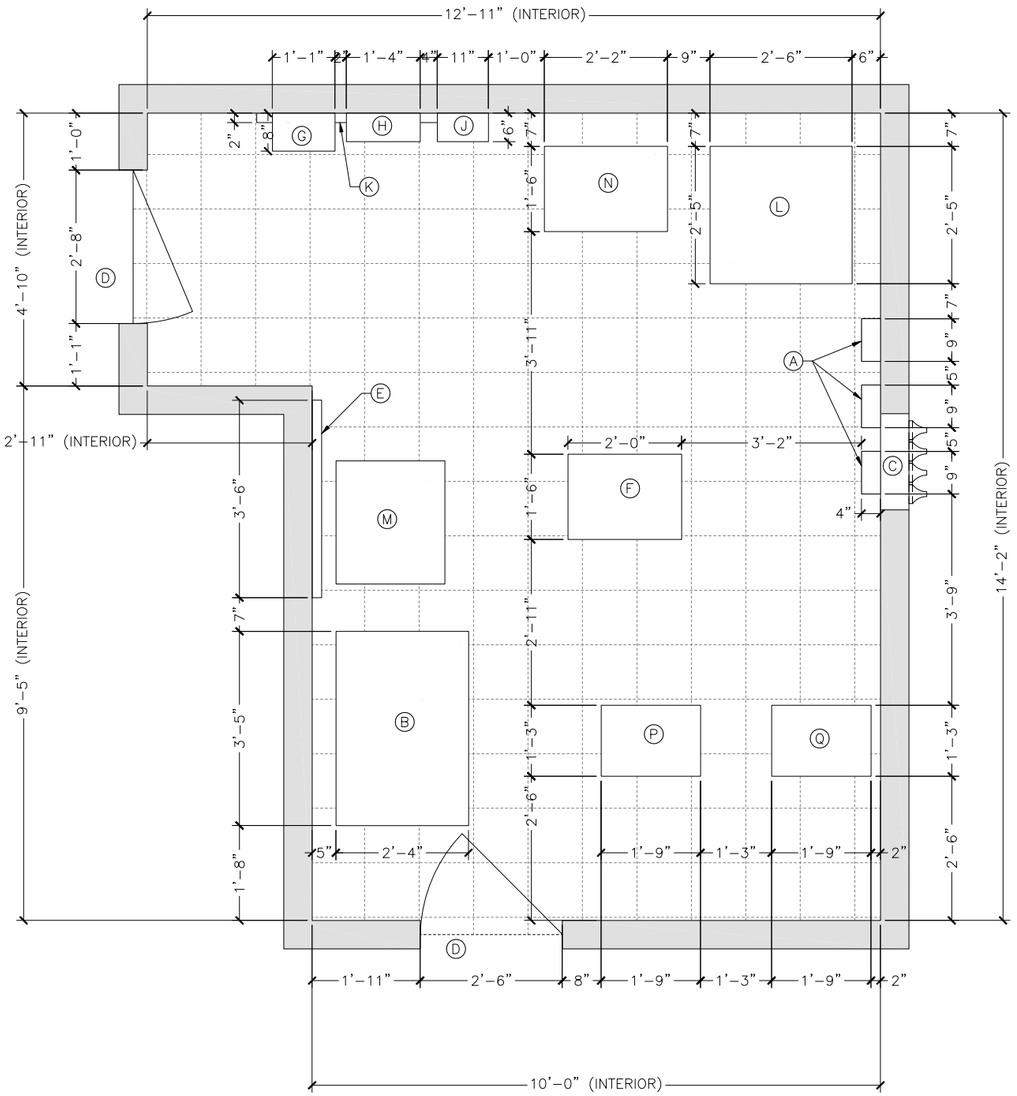
E6

NOTES:

1.	1. CONTRACTOR TO VERIFY THAT PANELS IDENTIFIED HERE AS SUPPLYING VERIZON WIRELESS (PANEL LABELED "COMM NET") AND AT&T (PANEL LABELED "ALLTEL") ARE CORRECTLY IDENTIFIED PRIOR TO BEGINNING REPLACEMENT WORK.
2.	CONTRACTOR TO VERIFY THAT ALL EXISTING BRANCH CIRCUITS ARE SIZED PROPERLY AND OTHERWISE INSTALLED PROPERLY PER NEC AND MAKE UPGRADES OR REPAIRS AS NEEDED.
3.	"RF CAUTION, NO TRESPASSING" SIGNAGE TO BE LOCATED AT ALL ENTRY POINTS TO RF EQUIPMENT.

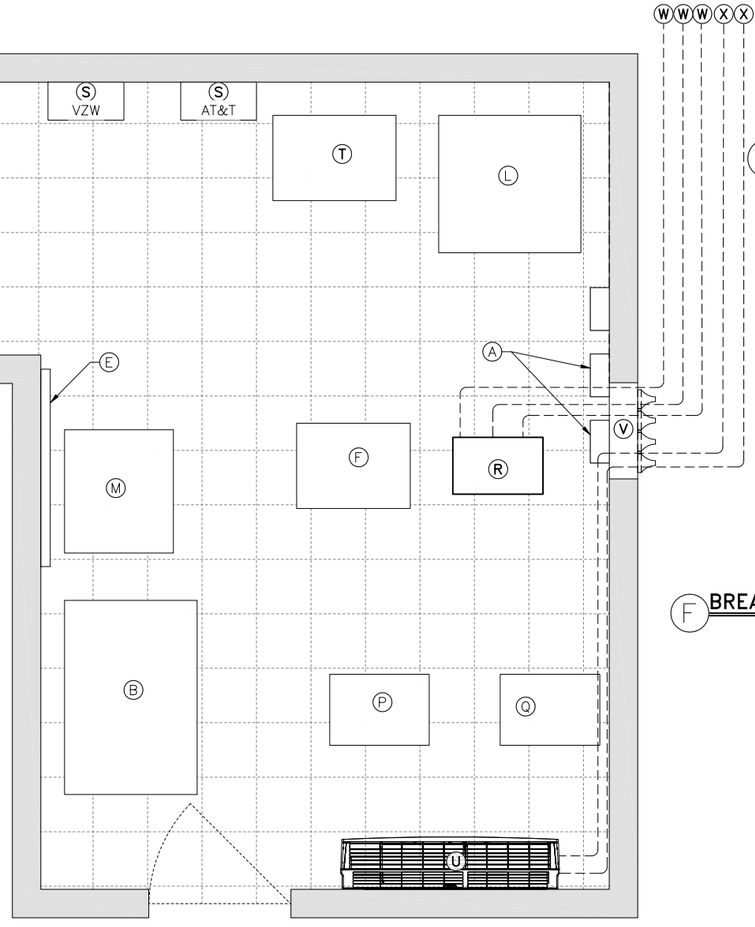
KEYED NOTES:

(A)	FILTERS
(B)	BATTERY RACK
(C)	COAX PORT **(TO BE REPLACED)**
(D)	ACCESS DOOR
(E)	TELCO BOARD
(F)	(**LORIAN**) DC POWER DISTRIBUTION CENTER
(G)	SURGE PROTECTION DEVICE **(TO BE RELOCATED)**
(H)	EXISTING AC DISTRIBUTION PANEL – LABELED "COMM NET" ACTUALLY SUPPLIES VERIZON WIRELESS AND WILL BE REPLACED W/ 1ø, 3W, 200A, 120/240V, 42–POSITION PANEL. (SEE NOTE #1 & #2)
(J)	EXISTING AC DISTRIBUTION PANEL – LABELED "ALLTEL" ACTUALLY SUPPLIES AT&T AND WILL BE REPLACED W/ 1ø, 3W, 200A, 120/240V, 42–POSITION PANEL. (SEE NOTE #1 & #2)
(K)	SAFETY BOARD **(TO BE RELOCATED)**
(L)	CDMA
(M)	AT&T DC POWER DISTRIBUTION CENTER
(N)	700 TRDU **(TO BE REMOVED)**
(P)	AT&T RACK
(Q)	TETON RACK
(R)	**(PROPOSED) MW RACK**
(S)	**(PROPOSED) 200 AMP PANEL**
(T)	**(PROPOSED) MOVP RACK & STACK**
(U)	**(PROPOSED) (2) WALL MOUNTED HVAC UNITS STACKED ONE ABOVE THE OTHER**
(V)	**(PROPOSED) 12 PORT COAX PORT**
(W)	**(PROPOSED) 4"ø CONDUIT WAVE GUIDE**
(X)	**(PROPOSED) 4"ø CONDUIT HVAC LINES**



SHELTER MAPPING
SCALE: N.T.S.

NORTH



PROPOSED SHELTER MAPPING
SCALE: N.T.S.

NORTH

(N) 700 TRDU

(F) DC POWER DISTRIBUTION

(F) BREAKERS

(B) BATTERY RACK

DESIGNED FOR:

verizon

3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	–

Professional Engineer
DANIEL F. RECKERT
16351
Date 08/16/18
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

SHELTER MAPPING

SAVE DATE:

8/15/2018 2:22 PM

SHEET NUMBER:

E7

SITEBOSS INSTALLATION STATEMENT OF WORK OUTLINE

ESTIMATED TIME FOR COMPLETION: 6 TO 8 HOURS
ADDRESS: MT. WASHBURN, WYOMING 82190 (MOUNTAIN TOP SITE IN YELLOWSTONE)
SHELTER IS AT THE PEAK, GENERATOR IS ABOUT 4,300FT DOWN THE ROAD
EQUIPMENT:
GENERATOR:
☐H SITEBOSS 550-6 WITH ACCESSORIES, TEMP/HUMIDITY SENSOR, TWO(2) PROPANE DIAL KITS

SHELTER
☐H SITEBOSS 550-6 WITH ACCESSORIES, TEMP/HUMIDITY SENSOR, THREE(3) AC POWER MONITORS, 64C ALARM BLOCK AND CABLE

INSTALLATION TASKS:
GENERATOR:
☐H RUN FIBER OPTIC CABLE FROM GENERATOR TO SHELTER (LC TO LC SINGLE MODE)
☐H MOUNT SITEBOSS ON GENERATOR CONTROLLER HOUSING
☐H RUN AND CONNECT GROUND WIRE
☐H RUN AND CONNECT POWER WIRING FROM SITEBOSS TO AVAILABLE 24VDC SOURCE (GEN BATTERIES)
☐H INSTALL INLINE FUSE ON POSITIVE POWER WIRE AT BATTERIES
☐H INSERT SFP TRANSCEIVER INTO SFP PORT AND CONNECT FIBER FROM SHELTER SITEBOSS
☐H CONNECT THE TEMP/HUMIDITY SENSOR TO THE SENSOR PORT ON SITEBOSS AND MOUNT
☐H RUN AND CONNECT GEN RUN AND GEN FAIL ALARMS FROM GENERATOR TO SITEBOSS 8C CARD
☐H RUN AND CONNECT SHIELDED 18AWG 2C CONDUCTOR FROM GENERATOR MODBUS CONNECTION TO SITEBOSS
☐H RUN AND CONNECT 18AWG 2C CABLE FROM SITEBOSS TO GENERATOR START TERMINALS
☐H INSTALL PROPANE REPLACEMENT DIAL KITS ON EACH LP TANK (THIS DOES NOT REQUIRE THE TANK TO BE EMPTY)
☐H RUN AND CONNECT TWO(2) 18AWG 3C CABLES FROM EACH PROPANE TANK TO SITEBOSS
☐H SECURE ALL WIRES AND CABLES, TAG AND LABEL

SHELTER:
☐H INSTALL SITEBOSS IN RACK AND GROUND
☐H CONNECT SITEBOSS TO AVAILABLE +24 OR -48 VOLT POWER SOURCE
☐H INSTALL 2AMP GMT FUSE OR 3AMP BREAKER
☐H RUN ETHERNET CONNECTION BETWEEN SITEBOSS ETH1 PORT AND ASSIGNED ROUTER PORT
☐H INSTALL SFP TRANSCEIVER IN SFP PORT AND CONNECT FIBER COMING FROM GENERATOR SITEBOSS
☐H CONNECT THE TEMP/HUMIDITY SENSOR TO THE SENSOR PORT ON SITEBOSS AND MOUNT
☐H INSTALL ENVIRONMENTAL ALARM BLOCK. CABLE ALARM BLOCK TO SITEBOSS.
☐H PUNCH DOWN ALL ENVIRONMENTAL ALARMS ON ASENTRIA ALARM BLOCK
☐H INSTALL WATTNODE AC POWER MONITORS AS FOLLOWS AND CONNECT TO SITEBOSS
O 1 ON LOAD SIDE OF VERIZON ATS
O 1 ON GENERATOR SIDE OF AT&T ATS
O 1 ON GENERATOR SIDE OF CENTURYLINK ATS
☐H RUN 18AWG 2C CABLE FROM VERIZON ATS ENGINE START POSITION TO CC INPUT ON SITEBOSS
☐H RUN TWO(2) 18AWG 2C CABLES FROM SITEBOSS TO ATS TEST SWITCH FOR EXERCISE FUNCTION
☐H RUN CAT5E CABLE FROM SITEBOSS AND CONNECT TO IP PORT ON DC PLANT CONTROLLER
☐H RUN CAT5E CABLE FROM SITEBOSS AND CONNECT TO APPLICABLE POSITION ON HVAC SYSTEM CONTROLLER
☐H SECURE/TIE DOWN WITH WAX STRING ALL WIRES AND CABLES, TAG AND LABEL

CONFIGURATION/INTEGRATION:
☐H ASENTRIA TO PERFORM CONFIGURATION

VZW RESPONSIBILITIES:
☐H PROVIDE AN AVAILABLE POWER SOURCE; FUSE OR BREAKER (TWO(2) 3AMP BREAKERS REQUIRED).
☐H PROVIDE SITEBOSS IP ADDRESS AND ROUTER PORT IP ADDRESS.
☐H PROVIDE AN AVAILABLE PORT ON THE ROUTER.
☐H SECURE THE REQUIRED SITEPORTAL LICENSE(S) FROM C SQUARED SYSTEMS AND ENSURE THEY ARE ACTIVATED AT THE TIME OF THE EQUIPMENT INSTALLATION.
☐H SUBMIT THE NSR TO THE VZW NOC

NOTES:

1. SITEBOSS TO BE USED AS INTERFACE TO ALLOW GENERATOR ALARM & CONTROL SIGNALS TO BE TRANSMITTED BETWEEN ATS & GENERATOR, 4,300 FEET APART, ON FIBER.
2. ALL RADIO EQUIPMENT, SITE EQUIPMENT, ANTENNAS, CABLE TRAYS AND CABLES SHALL BE INSTALLED AND GROUNDED ACCORDING TO THE MOTOROLA R56 STANDARDS AND GUIDELINES FOR COMMUNICATION SITES. SEE ADDITIONAL INFORMATION ON E-SHEETS & G-SHEETS. THE STANDARDS IS AVAILABLE AS A FREE DOWNLOAD ON THE INTERNET.

SITEBOSS CONTACT:

ASENTRIA
CRAIG HARTZELL
484-354-8960
craig.hartzell@asentria.com

12V:-48V CONVERTERS CONTACT:

ABSOPULSE ELECTRONICS
NANNO HABETS
613-836-3511
nanno@absopulse.com

SITEBOSS POWER SOURCE
- SEE SHEET E4

DESIGNED FOR:

verizon

3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	-

Professional Engineer
DANIEL F. RECKERT
16351
Date 08/16/18
WYOMING

PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:
SITEBOSS DETAILS

SAVE DATE:
8/15/2018 2:22 PM

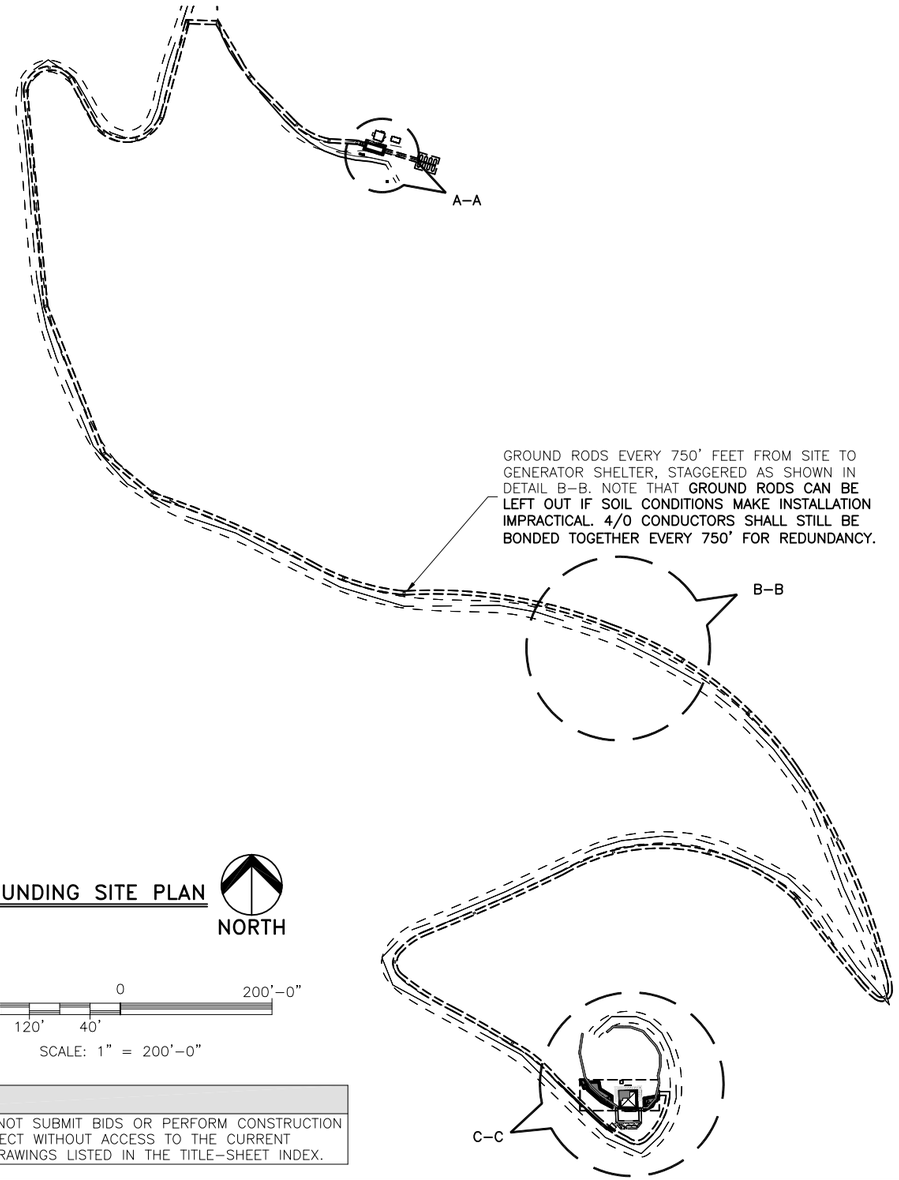
SHEET NUMBER:
E8

NOTES:

1.	CONTRACTOR TO INSTALL (2) 4/0 BARE COPPER CONDUCTORS ON OPPOSITE SIDES OF THE UTILITY TRENCH FROM WIRELESS COMMUNICATION SITE TO THE EMERGENCY GENERATOR BUILDING. EACH CONDUCTOR SHALL HAVE A GROUND ROD EVERY 200' ALTERNATING AT 100' INTERVALS. THE TWO CONDUCTORS SHALL BE BONDED AT EACH GROUND ROD. (SEE SECTION B–B)
2.	ALL EXTERIOR GROUND BARS SHALL BE GALVANIZED STEEL AND SHALL HAVE ALARM CONNECTIONS FOR THEFT PREVENTION PER LESSEE GROUNDING STANDARD NSTD46 REV 2–1–11, SECTION 5.3.
3.	CONTRACTOR TO BOND ANY METALLIC ITEMS WITHIN 6' OF VERIZON WIRELESS EQUIPMENT, SHELTER OR GROUND RING TO VERIZON WIRELESS GROUND RING.

NOTES CONT.:

4.	THE GROUNDING DIAGRAM SHOWN HERE IS SOMEWHAT SCHEMATIC IN NATURE AND MANY OF THE GROUNDING CONDUCTORS ARE SHOWN WITH A CURVE TO THEM. THIS IS SIMPLY TO INSURE THAT THEY STAND OUT FROM LEASE LINES, FENCE LINES AND SHELTER LINES ETC. ALL GROUNDING AND BONDING CONDUCTORS SHOULD BE INSTALLED IN AS STRAIGHT A LINE AS POSSIBLE. ANY BENDS THAT ARE REQUIRED IN GROUNDING OR BONDING CONDUCTORS SHOULD HAVE A RADIUS NO LESS THAN 12".
5.	BONDING JUMPERS FROM REBAR CAGE AND ANCHOR BOLT TO GROUND RING SHOULD ATTACH AT LOCATIONS ALLOWING JUMPERS TO BE CLOSE TO HORIZONTAL AS POSSIBLE.
6.	ALL EQUIPMENT TO BE GROUNDED ACCORDING TO MOTOROLA R56 STANDARD. (SEE SHEET E1, GENERAL GROUNDING NOTE #1)



GROUNDING SITE PLAN

NORTH

200'–0" 0 200'–0"

120' 40'

SCALE: 1" = 200'–0"

NOTICE:

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

SECTION B–B NOTES:

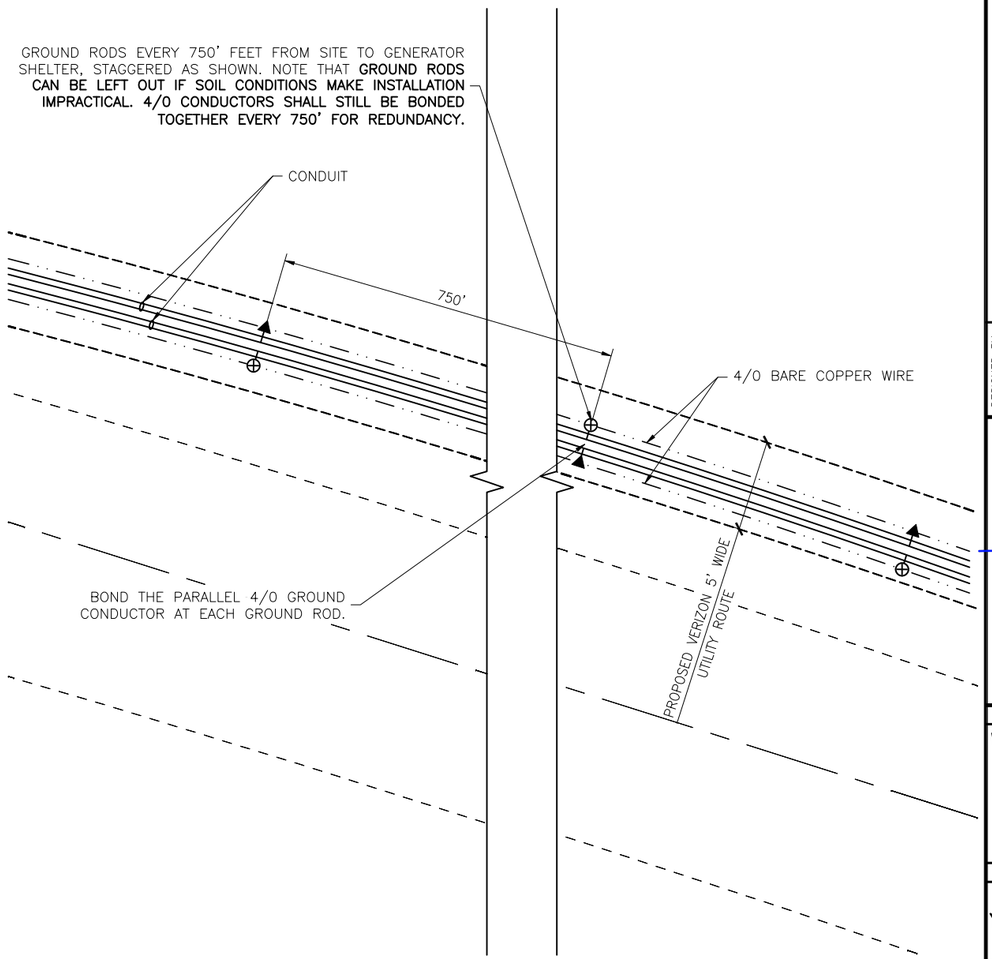
1.	GROUNDING SHOWN HERE CAN BE LEFT UNINSTALLED AT VERIZON WIRELESS'S DISCRETION. IT IS NOT REQUIRED PER NEC BUT WILL PROVIDE A GOOD GROUNDING SYSTEM FOR THE SITE AT A SMALL INCREMENTAL COST SINCE THE TRENCHING IS ABSOLUTELY REQUIRED FOR THE SERVICE UPGRADE.

ATTENTION:

1.	THIS GROUNDING PLAN IS DESIGNED TO ACHIEVE THE LOWEST POSSIBLE RESISTANCE TO GROUND, CONSIDERING THE SOIL CONDITIONS. HOWEVER VERIZON MAY DEEM IT AS TOO COSTLY THEREFORE CONTRACTOR SHALL CONFIRM WITH THE VERIZON CONSTRUCTION MANAGER BEFORE BEGINNING THE INSTALLATION.

GROUNDING LEGEND:

▲	CADWELD CONNECTION
■	MECHANICAL CONNECTION
⊗	5/8"X8' CU CLAD STEEL GROUND ROD
— · · —	4/0 BARE TINNED COPPER



SECTION B–B

NORTH

DESIGNED FOR:

verizon

3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	–

Professional Engineer
DANIEL F. RECKERT
16351
WYOMING
Date 08/16/18

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

GROUNDING SITE PLAN

SAVE DATE:

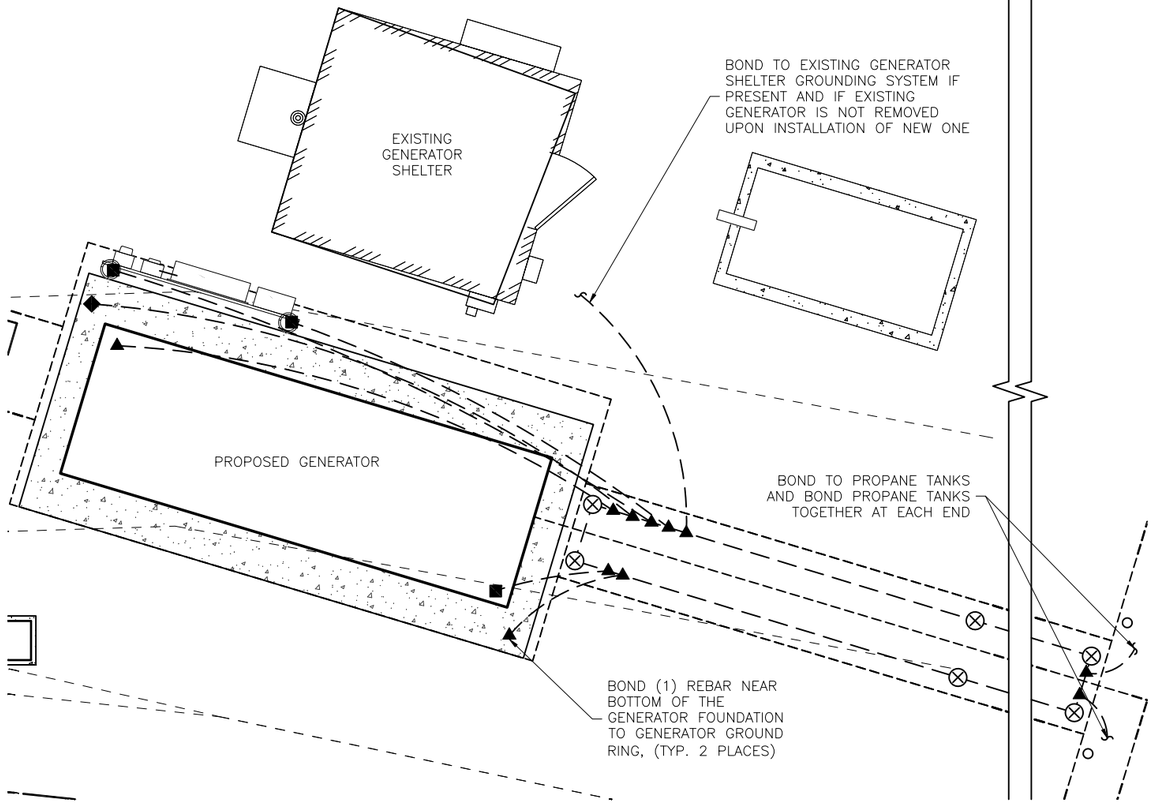
8/15/2018 2:22 PM

SHEET NUMBER:

G1

NOTES:

1.	ALL EXTERIOR GROUND BARS SHALL BE GALVANIZED STEEL AND SHALL HAVE ALARM CONNECTIONS FOR THEFT PREVENTION PER LESSEE GROUNDING STANDARD NSTD46 REV 2–1–11, SECTION 5.3.
2.	CONTRACTOR TO BOND ANY METALLIC ITEMS WITHIN 6' OF VERIZON WIRELESS EQUIPMENT, SHELTER OR GROUND RING TO VERIZON WIRELESS GROUND RING.
3.	THE GROUNDING DIAGRAM SHOWN HERE IS SOMEWHAT SCHEMATIC IN NATURE AND MANY OF THE GROUNDING CONDUCTORS ARE SHOWN WITH A CURVE TO THEM. THIS IS SIMPLY TO INSURE THAT THEY STAND OUT FROM LEASE LINES, FENCE LINES AND SHELTER LINES ETC. ALL GROUNDING AND BONDING CONDUCTORS SHOULD BE INSTALLED IN AS STRAIGHT A LINE AS POSSIBLE. ANY BENDS THAT ARE REQUIRED IN GROUNDING OR BONDING CONDUCTORS SHOULD HAVE A RADIUS NO LESS THAN 12".
4.	BONDING JUMPERS FROM REBAR CAGE AND ANCHOR BOLT TO GROUND RING SHOULD ATTACH AT LOCATIONS ALLOWING JUMPERS TO BE CLOSE TO HORIZONTAL AS POSSIBLE.
5.	ALL RADIO EQUIPMENT, SITE EQUIPMENT, ANTENNAS, CABLE TRAYS AND CABLES SHALL BE INSTALLED AND GROUNDED ACCORDING TO THE "MOTOROLA R56 STANDARDS AND GUIDELINES FOR COMMUNICATION SITES". THIS STANDARD IS AVAILABLE AS A FREE DOWNLOAD ONLINE FROM MOTOROLA.



NEW & EXISTING GENERATOR SHELTER AS SHOWN ON SHEET UC1

SECTION A–A
SCALE: N.T.S.

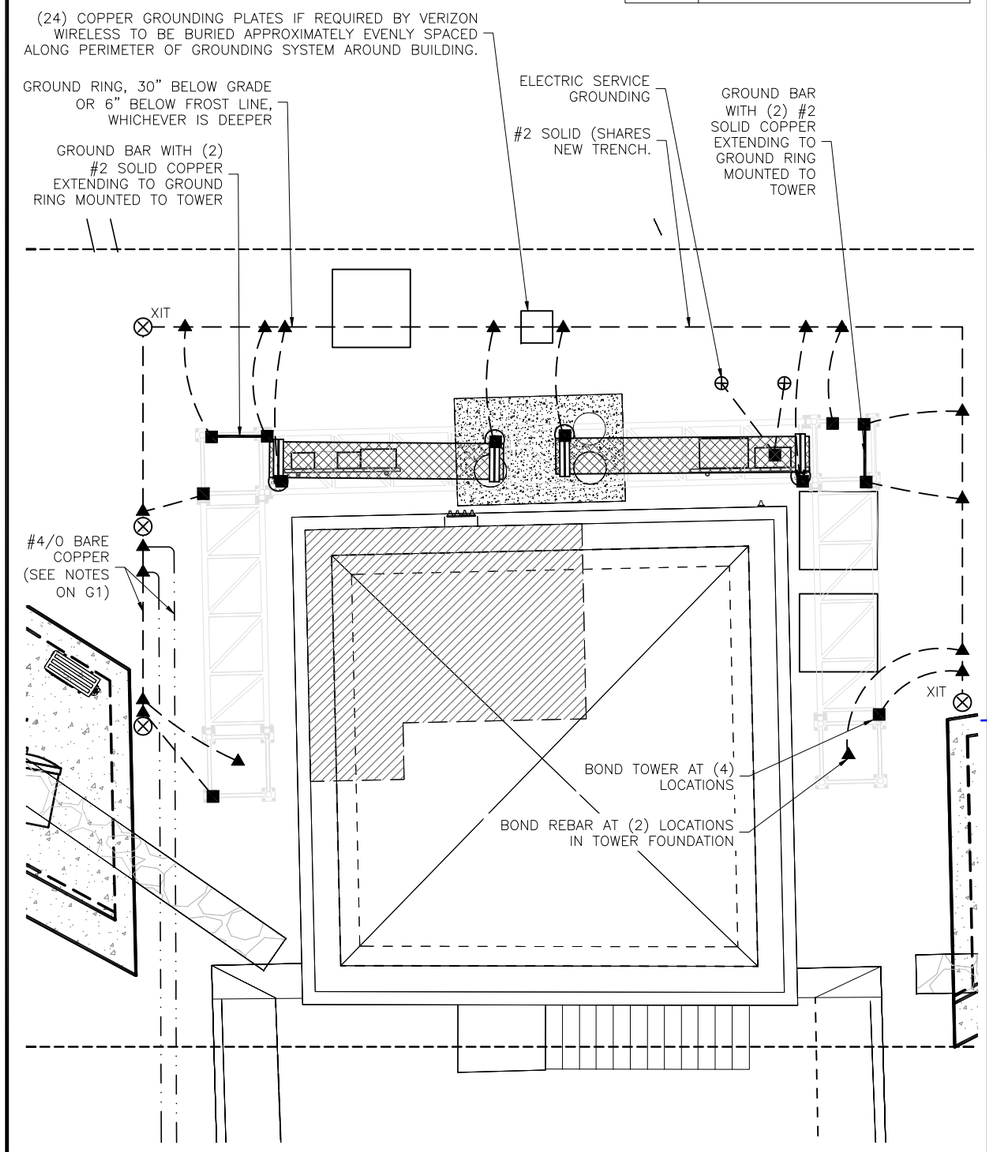
NORTH

NOTICE:

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

GROUNDING LEGEND:

▲	CADWELD CONNECTION
■	MECHANICAL CONNECTION
⊗	5/8"X8' CU CLAD STEEL GROUND ROD
— — —	#2 SOLID, TINNED, BARE COPPER
— · · —	4/0 BARE COPPER
⊗ XIT	20' VERTICAL XIT GROUND ROD INSTALLED ACCORDING TO MFG INSTRUCTIONS



SECTION C–C
SCALE: N.T.S.

NORTH

DESIGNED FOR:

verizon

3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	–

Professional Engineer
DANIEL F. RECKERT
16351
Date 08/16/18
WYOMING

PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

GROUNDING SITE PLAN

SAVE DATE:

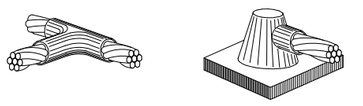
8/15/2018 2:22 PM

SHEET NUMBER:

G2

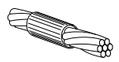
GROUNDING LEGEND:

▲	CADWELD CONNECTION
●	COAX GROUND KIT
■	MECHANICAL CONNECTION
⊗	5/8"X8' CU CLAD STEEL GROUND ROD
— — —	#2 SOLID, TINNED, BARE COPPER
— · · —	#2 STRANDED, INSULATED, COPPER INTERIOR GROUND

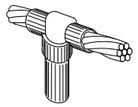


TYPE TA

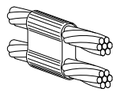
TYPE HS



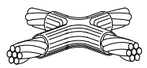
TYPE SS



TYPE GT

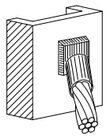


TYPE PT

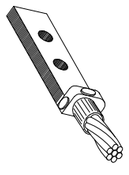


TYPE XA

TYPE GR



TYPE VS

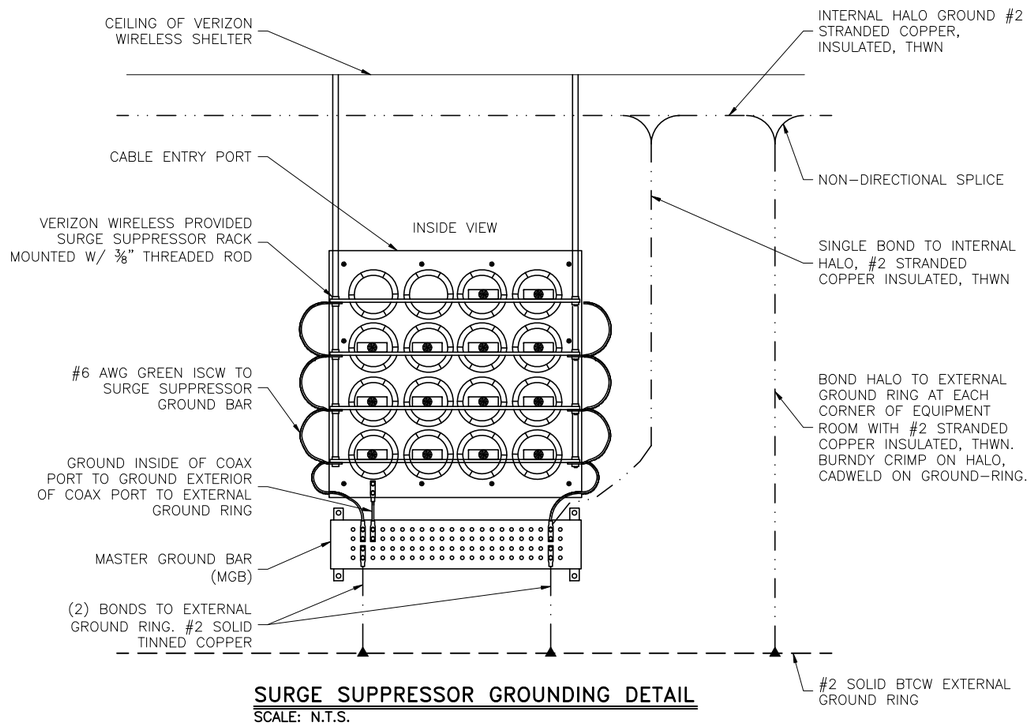


TYPE GL LUG

NOTE:

CADWELD "TYPES" SHOWN ABOVE ARE EXAMPLES – CONSULT WITH PROJECT MANAGER FOR SPECIFIC TYPES OF CADWELDS TO BE USED FOR THIS PROJECT.

TYPICAL CADWELD & COMPRESSION CONNECTION DETAILS



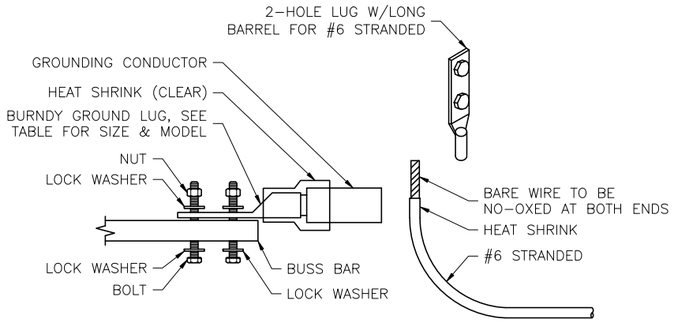
SURGE SUPPRESSOR GROUNDING DETAIL

SCALE: N.T.S.

NOTES:

1. ALL HARDWARE BOLTS, NUTS & LOCK WASHERS SHALL BE STAINLESS STEEL. CONNECTIONS SHALL BE BOLT, LOCK WASHER, BUS BAR, LUG & LOCK WASHER, IN THAT ORDER.
2. CONNECTIONS TO STEEL SHALL HAVE A THOMAS & BETTS IDTW DRAGON TOOTH TRANSITION WASHER BETWEEN THE LUG, & STEEL. THE ORDER OF STEEL CONNECTIONS SHALL BE BOLT, LOCK WASHER, STEEL, DRAGON TOOTH WASHER, LUG, LOCK WASHER, NUT.
3. KOPER SHIELD, ANTIOX, CR NO–OX, OR EQUIVALENT IS TO BE PLACED WHERE ALL DISSIMILAR METALS CONNECT.

WIRE SIZE	BURNDY LUG	BOLT SIZE
#6	YA6C–2TC38	⅜"–16 NC S 2–BOLT
#2 AWG SOLID	YA3C–2TC38	⅜"–16 NC S 2–BOLT
#2 AWG STRANDED	YA2C–2TC38	⅜"–16 NC S 2–BOLT
#2/0 AWG	YA26–2TC38	⅜"–16 NC S 2–BOLT
#4/0 AWG	YA28–2N	½"–16 NC S 2–BOLT



GROUND LUG TO BUS BAR DETAIL

SCALE: N.T.S.

DESIGNED FOR:

verizon

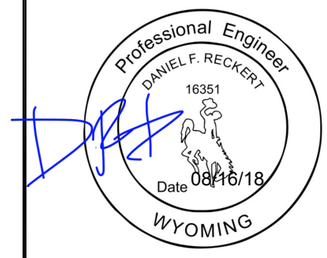
3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS

AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	-



PROJECT NAME:

WY1 MOUNT WASHBURN

EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:

MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:

GROUNDING DETAILS

SAVE DATE:

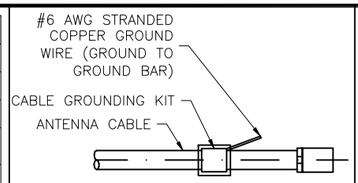
8/15/2018 2:22 PM

SHEET NUMBER:

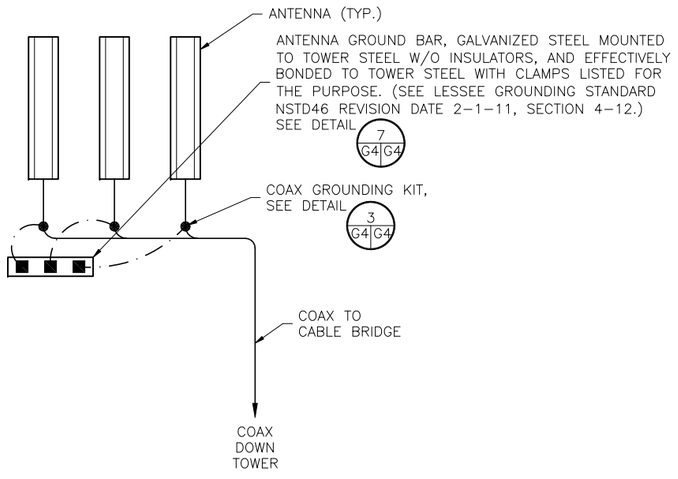
G3

GROUNDING LEGEND:

▲	CADWELD CONNECTION
●	COAX GROUND KIT
■	MECHANICAL CONNECTION
⊗	5/8"X8' CU CLAD STEEL GROUND ROD
— — —	#2 SOLID, TINNED, BARE COPPER
— · · —	#2 STRANDED, INSULATED, COPPER INTERIOR GROUND
———	COAX & JUMPERS
— · —	#6 STRANDED, INSULATED COPPER THWN

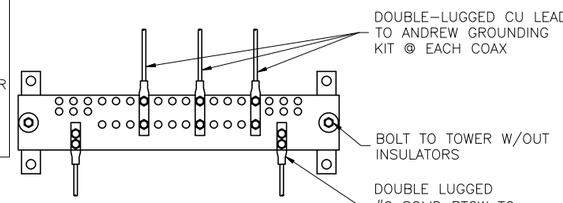


3 G4 G4 **TYPICAL GROUND KIT**
SCALE: N.T.S.

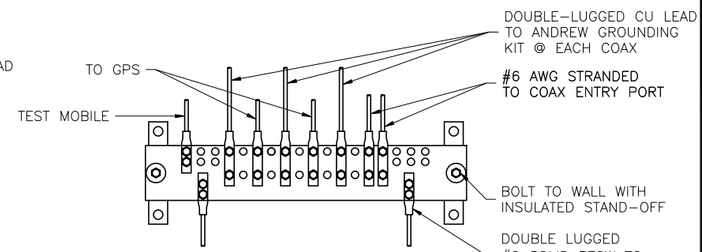


THEFT DETERRENT:

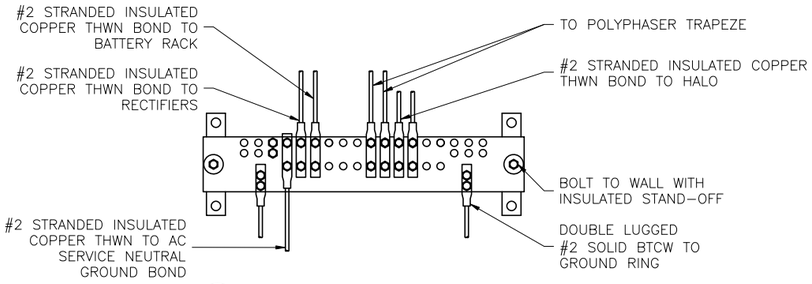
ALL EXTERIOR GROUND BARS TO BE GALVANIZED STEEL ATTACHED WITH TAMPER PROOF HARDWARE AND WITH ALARM CONNECTIONS PER LESSEE GROUNDING STANDARD NSTD46 REVISION DATE 2-1-11. SEE NOTES BELOW.



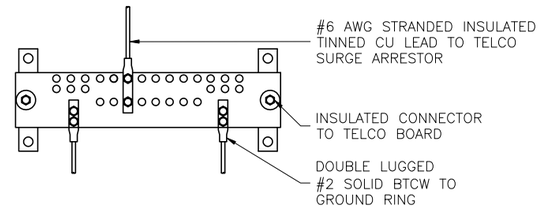
4 G4 G4 **TOWER BASE GROUND BAR**
BOLT TO COAX LADDER @ BASE OF TOWER



5 G4 G4 **EXTERIOR GROUND BAR**
MOUNT ON EXTERIOR WALL OF SHELTER @ COAX ENTRY PORT



6 G3 G3 **MASTER GROUND BAR**
MOUNTS TO WALL UNDER GPS/TEST MOBILE ENTRY PORT

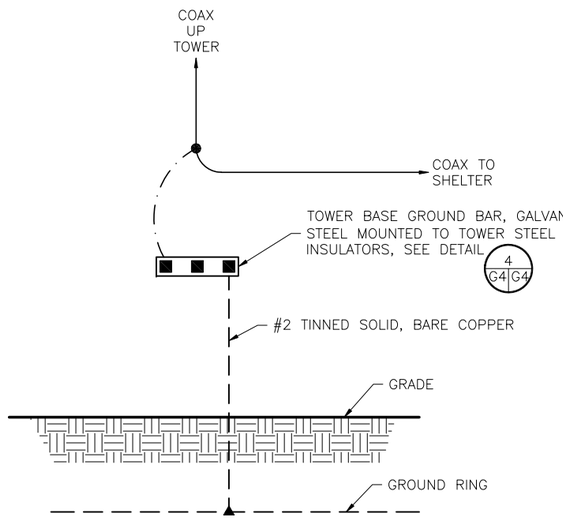


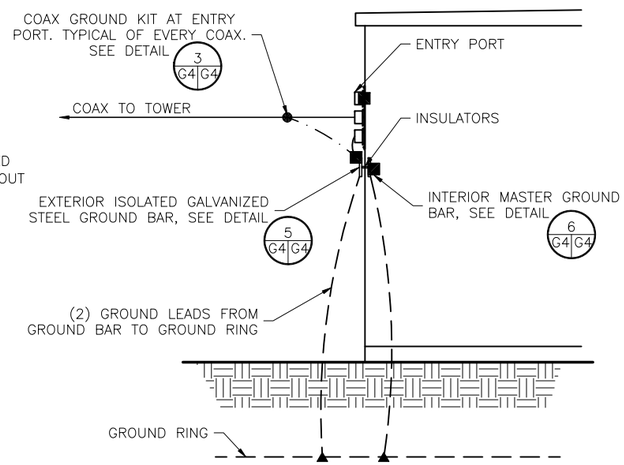
TELCO BOARD GROUND BUS
BOLT TO TELCO BOARD

NOTES:

1	ALL HARDWARE TO BE TAMPER PROOF STAINLESS STEEL PER NSTD46 REVISION DATE 2-1-11.
2	COAT ALL SURFACES WITH KOPR-SHEILD BEFORE MATING.
3	ALL LUGS SHALL BE 2-BOLT CONNECTIONS.
4	EXTERIOR BUS BARS: 4"x20"x¼" GALVANIZED STEEL.
5	INTERIOR BUS BARS: 4"X20"X¼" COPPER.
6	ALL LEADS TO MGB MUST BE LABELED ACCORDING TO NSTD46 REV 2-1-11 SECTION 3.8, FIG. 3.4. WHEN FUTURE REVISIONS ARE ISSUED THE CORRESPONDING INFORMATION FROM THE MOST RECENT REVISION SHALL BE USED.
7	EXTERIOR GROUND BARS SHALL HAVE ALARM CONNECTIONS FOR THEFT PROTECTION AS SPECIFIED IN NSTD46 REV DATE 2-1-11 SECTION 5.3.

GROUNDING SCHEMATIC DETAILS
SCALE: N.T.S.

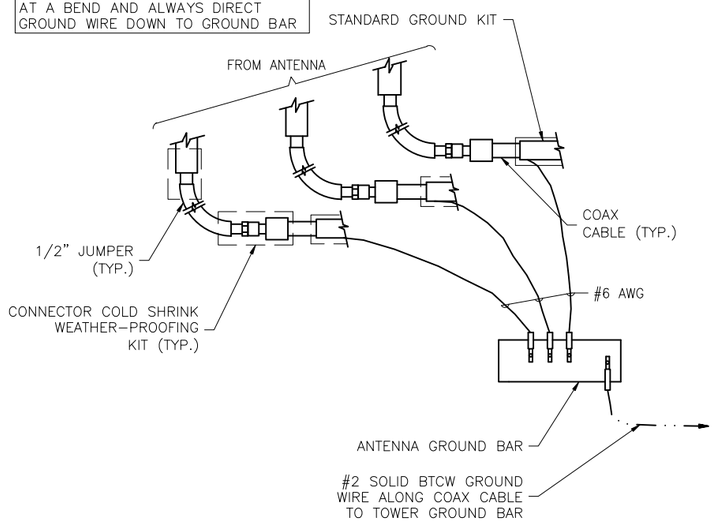




TYPICAL GROUNDING ELEVATION
SCALE: N.T.S.

NOTE:

DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR



7 G4 G4 **ANTENNA GROUND BAR**
SCALE: N.T.S.

NOTICE:

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

DESIGNED FOR:

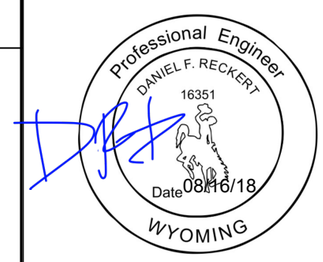
verizon

3131 SOUTH VAUGHN WAY, SUITE 550
AURORA, COLORADO 80018

DESIGNED BY:

J5 INFRASTRUCTURE PARTNERS
AZ - CA - CO - ID - NM - NV - TX - UT

REV	DESCRIPTION	DATE	BY	CHK
0	APPROVED FOR CONSTRUCTION	09/07/16	SR	SBS
1	REVISED PER COMMENTS	11/9/17	MDA	SBS
2	PER DESIGN CHANGE	07/25/18	RC	DFR
3	PER DESIGN CHANGE	08/15/18	RC	–



PROJECT NAME:
WY1 MOUNT WASHBURN
EXISTING COMMUNICATIONS SITE TOWER REPLACEMENT, GENERATOR UPGRADE & MICROWAVE INSTALLATION PROJECT

PROJECT ADDRESS:
MOUNT WASHBURN
YELLOWSTONE NATIONAL PARK
PARK COUNTY, WYOMING

SHEET TITLE:
GROUNDING DETAILS

SAVE DATE:
8/15/2018 2:22 PM

SHEET NUMBER:
G4