



# WY3 FISHING BRIDGE

GRAND LOOP ROAD  
YELLOWSTONE NATIONAL PARK, WY 82190  
TETON COUNTY

ALT #3  
RAW LAND SITE

PROJECT DATA	SHEET INDEX			PROJECT LOCATION	PROJECT DESCRIPTION
SITE NUMBER: ALT #3 SITE NAME: WY3 FISHING BRIDGE SITE ADDRESS: SEC. 18, T53N, R112W, 6th P.M. GRAND LOOP ROAD YELLOWSTONE NATIONAL PARK, WY 82190 TETON COUNTY  PARCEL NUMBER: - GEOCODE: N/A CURRENT ZONING: NATIONAL PARK JURISDICTION: NATIONAL PARK SERVICE DUSTIN SENE / (307) 344-3432  PROPERTY OWNER: - CONTACT: NAME / PHONE APPLICANT: VERIZON WIRELESS 3131 S VAUGHN WAY STE 550 AURORA, CO 80014-3583  REAL ESTATE CONTACT: DIGITAL SKYLINES, INC. KEVIN HOWELL / (480) 425-9353 CONSTRUCTION CONTACT: VERIZON WIRELESS KENT MODERMOTT / (406) 941-2110  POWER: NORTHWESTERN ENERGY (888) 467-2669 TELEPHONE QWEST (800) 244-1111  SITE DATA: LATITUDE: N 44° 33' 55.33" (NAD-1983) LONGITUDE: W 110° 23' 59.63" (NAD-1983) ELEVATION: 7978' (NAVD-1988) USGS MAP: TBD  REFERENCE MAP: PAGE: N/A GRID: N/A	SHT. NO.	SHEET TITLE	REV. NO.	DRIVING DIRECTIONS: IN YELLOWSTONE NATIONAL PARK, GO TO THE INTERSECTION OF GRAND LOOP AND EAST ENTRANCE ROAD NEAR FISHING BRIDGE. GO 0.5 MILES SOUTHWEST ON GRAND LOOP TO ROAD ON WEST SIDE. TURN WEST AND PROCEED THROUGH RESIDENTIAL/INDUSTRIAL AREA ABOUT 1/4 MILE. FOLLOW ROAD UP HILL TO WATER TANK SITE ANOTHER 0.4 MILES. END OF ROAD IS SITE. CONTACT DUSTIN SENE FOR KEY ON GATE.	TOWER TYPE: 100' LATTICE TOWER  EQUIPMENT TYPE: NORTEL  SECTOR(S): (2)  ADDITIONAL INFO: GALVANIZED TOWER TO BE ACID DIPPED PRE-OXIDIZED TO ELIMINATE GLARE
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STONETOP MTN ▲

▲ SULPHUR HILLS

PARK COUNTY  
TETON COUNTY

SITE

FISHING BRIDGE

LAKE VILLAGE

YELLOWSTONE LAKE

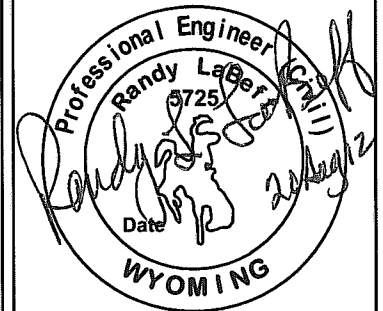
VICINITY MAP  
NOT TO SCALE

APPROVALS	
LANDLORD	
LEASING	
R.F.	
ZONING	
CONSTRUCTION	
A&E	



ADAMS & CLARK INC.  
1720 W. FOURTH AVE.  
SPOKANE, WA 99204  
PH. (509)747-4600 FAX: (509) 747-8913

A&C PROJECT # 2009-01-107



## APPROVALS

FNE ENGINEER \_\_\_\_\_  
RF ENGINEER \_\_\_\_\_  
REAL ESTATE \_\_\_\_\_  
AREA MANAGER \_\_\_\_\_  
PROPERTY OWNER \_\_\_\_\_  
ZONING \_\_\_\_\_  
CONSTRUCTION DIRECTOR \_\_\_\_\_

## REVISIONS

▲	08/16/12	LOWER ANTENNAS
▲	08/13/12	ANTENNA HEIGHT
▲	08/08/12	FIBER OPTIC DELINEATION
▲	08/02/12	FINAL CD
▲	07/26/12	PRELIMINARY CD
▲	04/20/12	PRELIMINARY ZD

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SITE  
ALT #3  
WY3 FISHING BRIDGE  
GRAND LOOP RD  
YELLOWSTONE NATL PK, WY

SHEET TITLE  
TITLE SHEET

T-1

GENERAL NOTES

1. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY AND SECURITY ISSUES FROM DATE OF CONSTRUCTION COMMENCEMENT UNTIL FINAL ACCEPTANCE BY CLIENT.
2. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SANITATION REQUIREMENTS FROM DATE OF CONSTRUCTION COMMENCEMENT UNTIL FINAL ACCEPTANCE BY CLIENT.
3. GENERAL CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS FOR GROUNDING AND UTILITY SPECIFICATIONS AS SET FORTH IN THE INTERNATIONAL BUILDING CODE 2006 AND VERIZON WIRELESS SPECIFICATIONS.
4. COMBUSTIBLE CONSTRUCTION WASTE SHALL BE HAULED OFF PREMISES. NO OPEN BURNING OF ANY TYPE IS ALLOWED.

EARTHWORK NOTES

1. ALL EXCAVATIONS SHALL BE DEWATERED BY SUMP, PUMPING, ETC. IN A MANNER WHICH WILL NOT LOOSEN FOUNDATION SUB GRADE MATERIAL. SURFACE WATER SHALL BE DIVERTED AWAY FROM EXCAVATIONS BY MEANS OF BERMS, DIVERSION DITCHES, OR OTHER SUITABLE METHODS.
2. CONFINED EXCAVATIONS FOR FOUNDATIONS, UTILITIES, ETC. SHALL BE LIMITED TO 4 FT. IN DEPTH UNLESS SHORING AND BRACING ARE USED. TRENCH EXCAVATION GEOMETRY AND/OR BRACING SHALL CONFORM WITH THE LATEST OSHA (OCCUPATIONAL SAFETY AND HEALTH ACT) REQUIREMENTS.
3. BACK FILL PLACED TO ESTABLISH GRADE BENEATH FOUNDATIONS AND PAVEMENTS SHALL BE SELECT, WELL GRADED, GRANULAR MATERIAL. SELECT FILL SHALL BE PLACED IN MAXIMUM LOOSE LIFT THICKNESSES OF 6 INCHES AND COMPACTED WITH PLATE TAMPERS. ALL FILL SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY PER ASTM D1557. IN CONFINED AREAS WHERE ONLY HAND TAMPING IS FEASIBLE, FILL SHALL BE PLACED IN MAXIMUM 4 INCH LOOSE LIFTS AND COMPACTED TO THE AFOREMENTIONED CRITERIA.
4. COMPACTED BACK FILL SHALL BE CLEAN, WELL-GRADED, FREE DRAINING SOIL CONFORMING TO THE FOLLOWING GRADATIONS:

SIEVE SIZE	PERCENT BY WEIGHT PASSING
4"	100
1 1/4"	30-80
No 40	5-50
No 200	0-10

COMPACTION SHALL ACHIEVE A MINIMUM DENSITY OF 95% OF THE SOIL'S MAXIMUM DENSITY WHEN TESTED IN THE LABORATORY IN ACCORDANCE WITH ASTM D1557.

5. NEW ACCESS ROADS SHALL BE SURFACED WITH CRUSHED BASE AGGREGATE GRADING CONFORMING TO WYOMING STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, WITH THE FOLLOWING GRADATIONS:

SIEVE SIZE	PERCENT BY WEIGHT PASSING
1-1/2"	100
1"	90-100
1/2"	60-85
No. 4	45-65
No. 8	33-53
No. 200	3-12

6. TREES AND VEGETATION SHALL BE REMOVED ON A SITE BY SITE BASIS AS DETERMINED BY JURISDICTION AND CONSTRUCTION MANAGER REQUIREMENTS. NO STOCKPILES OR BURNING SHALL BE PERMITTED ON THE SITE.
7. FILTER FABRIC SHALL BE MIRAFI-FILTER 500X AS MANUFACTURED BY CARTHAGE MILLS, CINCINNATI, OHIO OR APPROVED EQUAL.

CONCRETE NOTES

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNLESS NOTED OTHERWISE.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
- |  |           |
|--|-----------|
| CONCRETE CAST AGAINST EARTH:   | 3 IN.     |
| CONCRETE EXPOSED TO EARTH OR WEATHER:                                    |           |
| #6 AND LARGER:   | 2 IN.     |
| #5 AND SMALLER & WWF:  | 1 1/2 IN. |
| CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND: |           |
| SLAB AND WALL:   | 3/4 IN.   |
| BEAMS AND COLUMNS:   | 1 1/2 IN. |
5. A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURERS WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE.
7. WELDING OF REINFORCING STEEL IS PROHIBITED.
8. AIR ENTRAINMENT SHALL BE A MINIMUM OF 4.5-PERCENT AND A MAXIMUM OF 7.5-PERCENT FOR ALL CONCRETE.

STRUCTURAL STEEL NOTES

1. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", LATEST EDITION.
2. STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 "STRUCTURAL STEEL" UNLESS OTHERWISE INDICATED.
3. STEEL TUBING SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B.
4. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 "PIPE, STEEL, BLACK AND HOT-DIPPED, ZINC-COATED WELDED AND SEAMLESS", TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
5. FIELD CONNECTIONS SHALL BE BOLTED UNLESS OTHERWISE INDICATED.
6. STRUCTURAL CONNECTION BOLTS SHALL BE SAE J429 GRADE 5 BOLTS UNLESS SPECIFIED OTHERWISE ON EQUIPMENT SUPPLIER DRAWINGS OR ON THESE DRAWINGS.
7. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES".
8. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
10. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
11. SUBMIT SHOP DETAIL DRAWINGS OF ALL STRUCTURAL AND MISCELLANEOUS STEEL TO THE ENGINEER FOR APPROVAL, AND INCORPORATE ALL COMMENTS PRIOR TO FABRICATION.
12. GRATING SHALL BE GALVANIZED SERRATED WELDED STEEL BAR GRATING WITH 1"x3/16" BEARING BARS AT 1-3/16" OC. FASTEN TO SUPPORTING MEMBERS WITH SADDLE-TYPE CLIPS AND BAND ALL EXPOSED EDGES.
13. SLEEVE ANCHORS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 3, CLASS 3, AS MANUFACTURED BY HILTI FASTENING SYSTEMS OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE (3) INCHES.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS 1, HILTI KWIK BOLT 3 OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE AS NOTED ON PLANS.
15. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE ENGINEER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER APPROVAL.
16. ALL WORK SHALL BE INSPECTED BY THE CONSTRUCTION MANAGER DURING AND AT THE COMPLETION OF CONSTRUCTION. SPECIAL INSPECTIONS SHALL BE REQUIRED ONLY WHEN IT IS REQUIRED BY THE JURISDICTION.
17. UNISTRUTS SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP. WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8" x 1 5/8" x 12GA, UNLESS OTHERWISE NOTED AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.

ANTENNA MOUNTING NOTES

1. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO ANSI/TIA/EIA/222-G "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES".
2. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
3. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
4. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
5. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH DOUBLE NUTS AND SHALL BE INSTALLED SNUG TIGHT PER AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", SECTION 4.1, JUNE 23, 2000.

GENERAL UTILITY NOTES

1. CONTRACTOR SHALL PERFORM ALL VERIFICATION OBSERVATION TESTS, AND EXAMINATION WORK PRIOR TO THE ORDERING OF THE ELECTRICAL EQUIPMENT AND THE ACTUAL CONSTRUCTION. CONTRACTOR SHALL ISSUE A WRITTEN NOTICE OF ALL FINDINGS TO THE ENGINEER LISTING ALL MALFUNCTIONS, FAULTY EQUIPMENT AND DISCREPANCIES.
2. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, INSURANCE, EQUIPMENT, INSTALLATION, CONSTRUCTION TOOLS, TRANSPORTATION, ETC., FOR A COMPLETE AND PROPERLY OPERATIVE SYSTEM ENERGIZED THROUGHOUT AND AS INDICATED ON DRAWINGS, AS SPECIFIED HEREIN AND/OR AS OTHERWISE REQUIRED.
3. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION WHEN INSTALLED AND SHALL BE OF THE BEST GRADE AND OF THE SAME MANUFACTURER THROUGHOUT FOR EACH CLASS OR GROUP OF EQUIPMENT. MATERIALS SHALL BE LISTED AND APPROVED BY UNDERWRITERS LABORATORIES (U.L.) AND SHALL BEAR THE INSPECTION LABEL "J" WHERE SUBJECT TO SUCH APPROVAL. MATERIALS SHALL MEET WITH APPROVAL OF ALL GOVERNING BODIES HAVING JURISDICTION. AND SHALL BE MANUFACTURED IN ACCORDANCE WITH APPLICABLE STANDARDS ESTABLISHED BY ANSI, NEMA AND NBFU.
4. CONTRACTOR TO COORDINATE WITH BUILDING OWNER FOR CONNECTION OF TEMPORARY AND PERMANENT POWER TO THE SITE. THE TEMPORARY POWER AND ALL HOOKUP COSTS TO BE PAID BY CONTRACTOR.
5. ALL ELECTRICAL EQUIPMENT SHALL BE LABELED WITH PERMANENT ENGRAVED PLASTIC LABELS.
6. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED, AS INDICATED BY UTILITY COMPANY.
7. METER SOCKET AMPERES, VOLTAGE, AND NUMBER OF PHASES SHALL BE AS NOTED AND SHALL BE MANUFACTURED BY SQUARE "D" COMPANY, SANGAMO, OR APPROVED EQUAL. METER SOCKET SHALL BE APPROVED BY UTILITY COMPANY PRIOR TO INSTALLATION.
8. WIRE AND CABLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM WITH TYPE THWN INSULATION UNLESS SPECIFICALLY NOTED OTHERWISE.
9. EACH CONDUCTOR OF EVERY SYSTEM SHALL BE PERMANENTLY TAGGED IN EACH PANELBOARD, PULLBOX, J-BOX, SWITCH BOX, ETC., IN COMPLIANCE WITH OSHA REQUIREMENTS.
10. CONDUIT:
- A. RIGID CONDUIT SHALL BE U.L. LABEL GALVANIZED ZINC COATED WITH ZINC INTERIOR AND SHALL BE USED WHEN INSTALLED IN OR UNDER CONCRETE SLABS, IN CONTACT WITH THE EARTH, UNDER PUBLIC ROADWAYS, IN MASONRY WALLS OR EXPOSED ON BUILDING EXTERIOR.
  - B. ELECTRICAL METALLIC TUBING (EMT) SHALL HAVE U.L. LABEL. FITTINGS SHALL BE GLAND RING COMPRESSION TYPE. EMT SHALL BE USED ONLY FOR INTERIOR RUNS. NO SET SCREW OR CRIMP TYPE FITTINGS SHALL BE USED.
  - C. FLEXIBLE METALLIC CONDUIT SHALL HAVE U.L. LABEL AND MAY BE USED WHERE PERMITTED BY CODE. FITTINGS SHALL BE "JAKE" OR "SQUEEZE" TYPE, SEAL TIGHT FLEXIBLE CONDUIT. ALL CONDUIT IN EXCESS OF SIX FEET IN LENGTH SHALL HAVE FULL SIZE GROUND WIRE.
  - D. PVC CONDUIT AND FITTINGS SHALL HAVE U.L. LABEL AND SHALL BE PVC SCHEDULE 40.
  - E. CONDUIT SHALL BE SIZED PER THE NEC, AND AS SHOWN.
  - F. CONDUIT RUNS MAY BE SURFACE MOUNTED IN CEILINGS OR WALLS UNLESS INDICATED OTHERWISE. CONDUIT INDICATED SHALL RUN PARALLEL OR AT RIGHT ANGLES TO CEILING, FLOOR OR BEAMS. VERIFY EXACT ROUTING OF ALL EXPOSED CONDUIT WITH OWNER PRIOR TO INSTALLING.
  - G. ALL CONDUIT ONLY (C.O.) RUNS SHALL HAVE A PULL WIRE OR ROPE.
11. REFER TO MANUFACTURER'S MANUAL FOR RECOMMENDED FUSE AND WIRE SIZES.
12. ALL FINAL CONNECTIONS TO THE EQUIPMENT ARE TO BE OF FLEXIBLE WEATHERPROOF CONDUIT TO MEET APPLICABLE CODES.
13. PROVIDE OWNER WITH ONE SET OF COMPLETE ELECTRICAL "AS INSTALLED" DRAWINGS AT THE COMPLETION OF THE JOB, SHOWING ACTUAL DIMENSIONS, ROUTINGS, AND CIRCUITS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH, GAINING APPROVALS AND PAYING ALL FEES ASSESSED BY UTILITY COMPANY FOR ELECTRICAL SERVICE.
15. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH U.L. LISTED AND CODE APPROVED MATERIALS.
16. CONTRACTOR SHALL COORDINATE TELCO SERVICE WITH LOCAL TELEPHONE COMPANY. TERMINATE TELCO CONDUIT FOR INTERFACE WITH LOCAL SYSTEM. TELCO CONDUIT TO BE INSTALLED TO ACCOMMODATE THE FUTURE USE OF FIBER OPTIC CABLE. CONDUITS RUN UNDERGROUND FROM TELCO DEMARC TO TELCO BACKBOARDS OR DIRECT TO H-FRAME SHALL BE 4" DIA. SCHEDULE 40 PVC WITH MINIMUM 2' RADIUS SWEEPS AND ELBOWS AT BENDS. PULL ROPES SHALL BE INSTALLED IN ALL TELCO CONDUIT, PER LOCAL TELEPHONE COMPANY REQUIREMENT.

GROUNDING NOTES

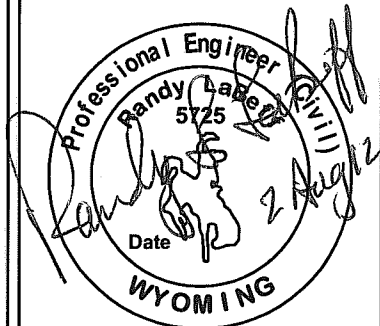
1. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES.
2. ALL BUS CONNECTORS SHALL BE TWO-HOLE, LONG-BARREL TYPE COMPRESSION LUGS, T&B OR EQUAL, UNLESS OTHERWISE NOTED ON DRAWINGS. ALL LUGS SHALL BE ATTACHED TO BUSSES USING STAINLESS STEEL BOLTS, NUTS, AND LOCK WASHERS. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED.
3. ALL CONNECTORS SHALL BE CRIMPED USING HYDRAULIC CRIMPING TOOLS, T&B #TBM 8 OR EQUIVALENT.
4. ALL CONNECTIONS SHALL BE MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE FILED TO ENSURE PROPER CONTACT. NO WASHERS ARE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS ARE TO HAVE A NON-OXIDIZING AGENT APPLIED PRIOR TO INSTALLATION.
5. ALL BENDS SHALL BE AS SHALLOW AS POSSIBLE, WITH NO TURN SHORTER THAN AN 8-INCH RADIUS.
6. GROUNDING CONDUCTORS SHALL BE SOLID TINNED COPPER AND ANNEALED #2. ALL GROUNDING CONDUCTORS SHALL RUN THROUGH PVC SLEEVES WHEREVER CONDUCTORS RUN THROUGH WALLS, FLOORS, OR CEILINGS. IF CONDUCTORS MUST RUN THROUGH EMT, BOTH ENDS OF CONDUIT SHALL BE GROUNDED. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.
7. GROUNDING SYSTEM RESISTANCE SHALL NOT EXCEED 2 OHMS. IF THE RESISTANCE VALUE IS EXCEEDED, NOTIFY THE PROJECT MANAGER FOR FURTHER INSTRUCTION ON METHODS FOR REDUCING THE RESISTANCE VALUE.
8. ALL ROOF TOP ANTENNA MOUNTS SHALL BE GROUNDED WITH A #2 GROUND WIRE CONNECTED TO THE NEAREST GROUND BUS. ALL CONNECTIONS ARE TO BE CAD-WELDED IF POSSIBLE.
9. UPON COMPLETION OF WORK, CONDUCT CONTINUITY, SHORT CIRCUIT, AND FALL OF POTENTIAL GROUNDING TESTS FOR APPROVAL. SUBMIT TEST REPORTS TO THE PROJECT MANAGER.
10. GROUNDING CONNECTION TO TRAVEL IN A DOWNWARD DIRECTION.
11. ALL ABOVE GRADE CAD-WELDS SHALL BE COLD GALVANIZED.



ADAMS & CLARK INC.

1720 W. FOURTH AVE.  
SPOKANE, WA 99204  
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A&C PROJECT # 2009-01-107



APPROVALS

FNE	_____
ENGINEER	_____
RF	_____
ENGINEER	_____
REAL	_____
ESTATE	_____
AREA	_____
MANAGER	_____
PROPERTY	_____
OWNER	_____
ZONING	_____
CONSTRUCTION	_____
DIRECTOR	_____

REVISIONS

△		
△		
△	08/02/12	FINAL CD
△	07/26/12	PRELIMINARY CD

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GRAND LOOP RD  
YELLOWSTONE NATL PK, WY

SHEET TITLE  
NOTES

N-1



ENGINEERING ASSOCIATES  
CONSULTING ENGINEERS & SURVEYORS  
P. O. BOX 1900 • 902 13TH STREET  
CODY, WYOMING 82414  
(307) 587-4911 • 587-2266 FAX

JOB NO. 06104.00

## APPROVALS

DESIGNER \_\_\_\_\_  
BY ENGINEER \_\_\_\_\_  
REAL ESTATE \_\_\_\_\_  
AREA MANAGER \_\_\_\_\_  
PROPERTY OWNER \_\_\_\_\_  
ZONING \_\_\_\_\_  
CONSTRUCTION DIRECTOR \_\_\_\_\_

## REVISIONS

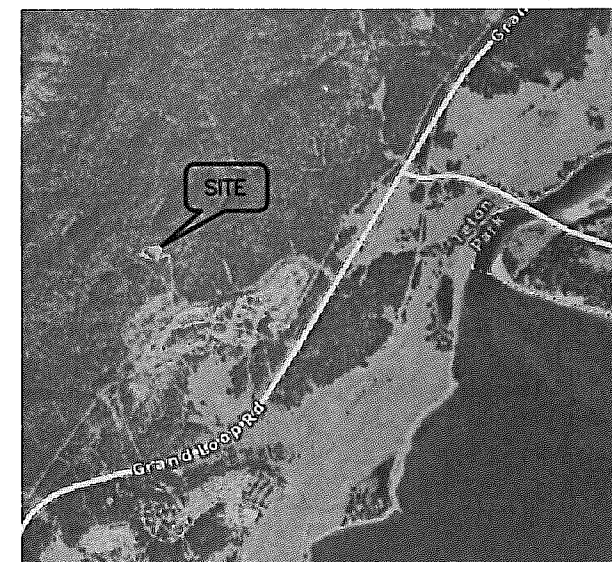
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△	06/24/09	PRELIMINARY DWG

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ONE  
**WY3 FISHING BRIDGE**  
WATER TANK SITE NEAR FISHING BRIDGE  
YELLOWSTONE, WYOMING

SHEET TITLE  
SITE SURVEY

C-1



VICINITY MAP  
NOT TO SCALE

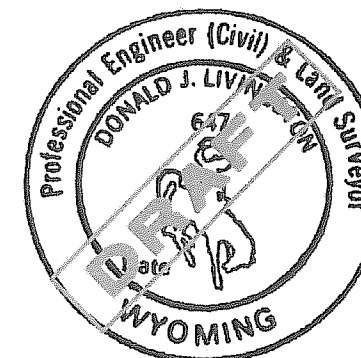
## LEGEND

- GRAVEL
- TEMPORARY BENCHMARK
- TELEPHONE PEDESTAL
- UTILITY POLE
- FOUND ALUMINUM CAP
- SET 2" ALUMINUM CAP
- EASEMENT
- BURIED POWER
- BURIED TELEPHONE

## SURVEYOR'S CERTIFICATE

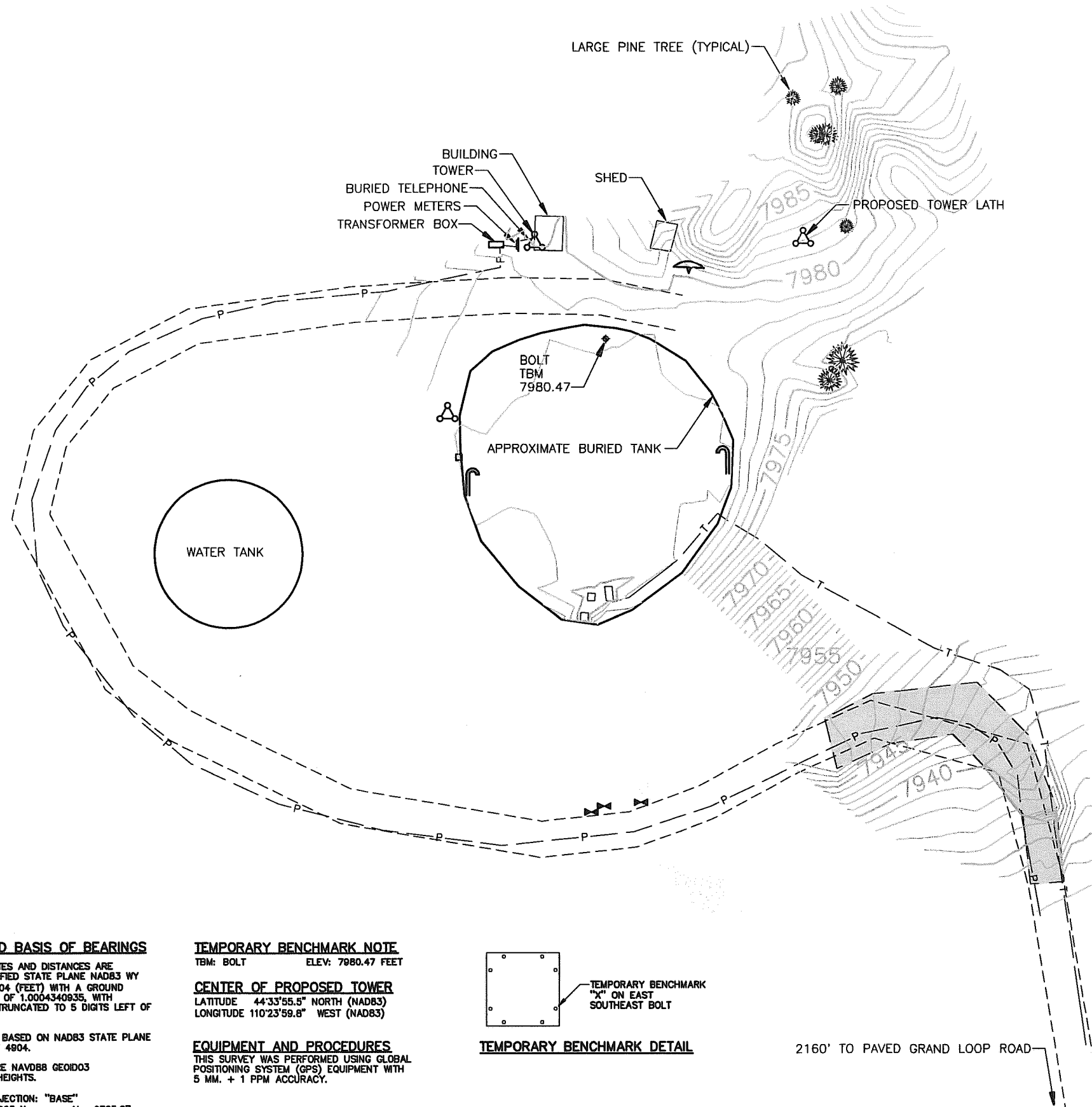
STATE OF WYOMING } ss.  
COUNTY OF PARK }

I, DONALD J. LIVINGSTON, OF ENGINEERING ASSOCIATES  
IN CODY, WYOMING, HEREBY CERTIFY THAT THIS MAP WAS  
PREPARED FROM NOTES TAKEN DURING ACTUAL SURVEYS  
PERFORMED UNDER MY DIRECTION ON OCTOBER 24,  
2007 AND JUNE 6, 2008, AND THAT TO MY KNOWLEDGE,  
THIS MAP SHOWS THE SITUATION ON THE GROUND AT  
THE TIME OF ITS PREPARATION.



0 20 40 80  
SCALE (FT)  
ORIGINAL SCALE: 1" = 40'

UNDERGROUND UTILITY INFORMATION SHOWN WAS PROVIDED BY PROPERTY  
OWNER. OTHER UTILITIES MAY EXIST ON SITE. CALL 1-800-849-2476  
FOR UNDERGROUND UTILITY LOCATIONS.



## DATUM AND BASIS OF BEARINGS

ALL COORDINATES AND DISTANCES ARE  
SURFACE, MODIFIED STATE PLANE NAD83 WY  
WEST ZONE 4904 (FEET) WITH A GROUND  
SCALE FACTOR OF 1.0004340835, WITH  
COORDINATES TRUNCATED TO 5 DIGITS LEFT OF  
THE DECIMAL.

BEARINGS ARE BASED ON NAD83 STATE PLANE  
WY WEST ZONE 4904.

ELEVATIONS ARE NAVD88 GEOID03  
ORTHOMETRIC HEIGHTS.

ORIGIN OF PROJECTION: "BASE"  
LAT: 44°33'54.963 N N: 9725.67  
LONG: 110°24'00.681 W E: 42090.52  
ELLIPSOID HEIGHT: 7951.40 FT.  
ORTHO. HEIGHT: 7979.44 FT.

POSITIONS DERIVED USING NGS OPUS UTILITY.

## TEMPORARY BENCHMARK NOTE

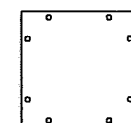
TBM: BOLT ELEV: 7980.47 FEET

## CENTER OF PROPOSED TOWER

LATITUDE 44°33'55.5" NORTH (NAD83)  
LONGITUDE 110°23'59.8" WEST (NAD83)

## EQUIPMENT AND PROCEDURES

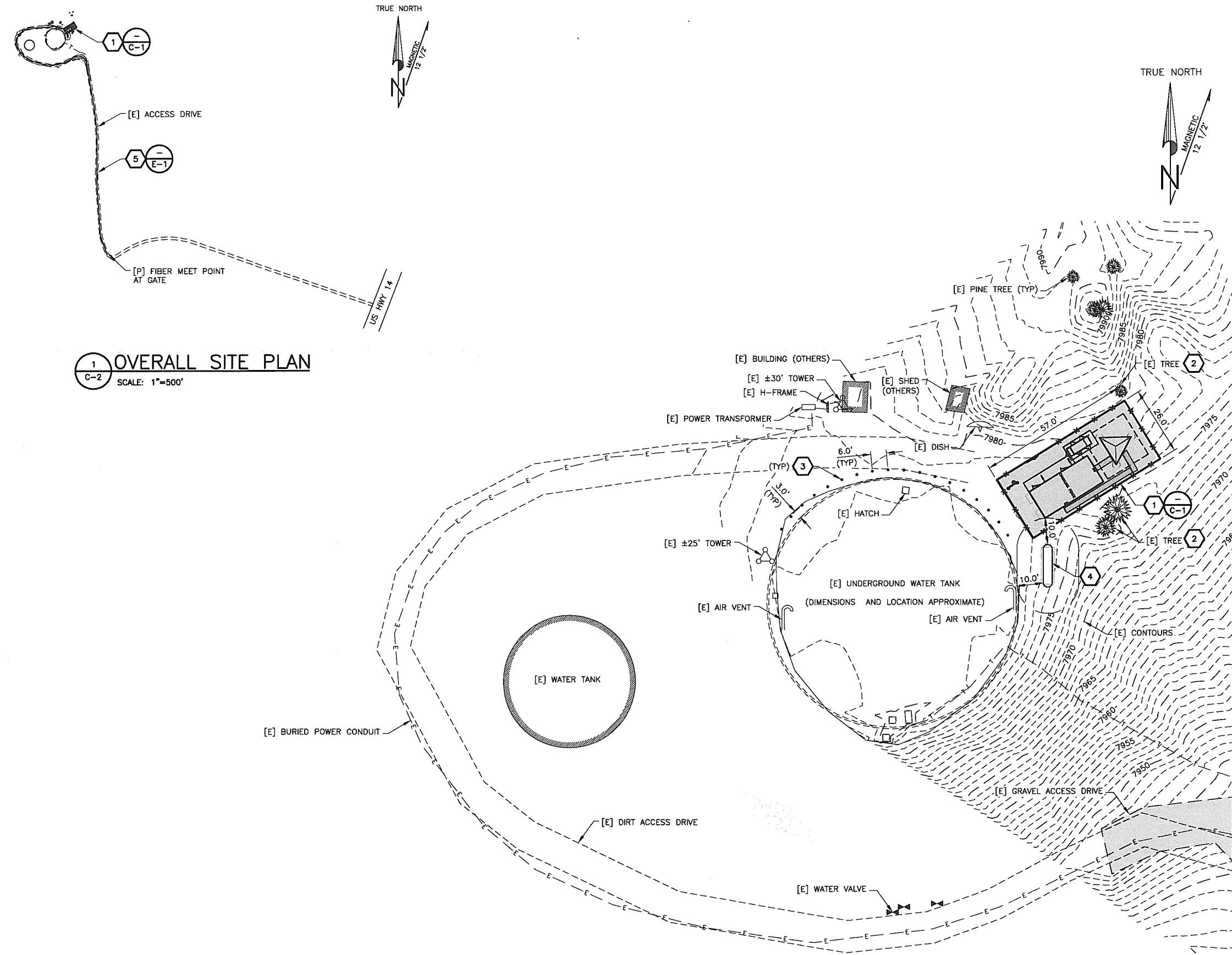
THIS SURVEY WAS PERFORMED USING GLOBAL  
POSITIONING SYSTEM (GPS) EQUIPMENT WITH  
5 MM. + 1 PPM ACCURACY.



TEMPORARY BENCHMARK DETAIL

TEMPORARY BENCHMARK  
"X" ON EAST  
SOUTHEAST BOLT

2160' TO PAVED GRAND LOOP ROAD



1 OVERALL SITE PLAN  
SCALE: 1"=500'

2 SITE PLAN  
SCALE: 1"=40'

EARTHWORK QUANTITIES	
CUT	74 CY
FILL	69 CY
NET CUT	5 CY (EXPORT)

#### PROPOSED CONSTRUCTION KEYED NOTES

- 1 VERIZON WIRELESS PROJECT AREA, 57' x 26'  
FINISHED ELEV = 7978.0'
- 2 REMOVE [E] TREE
- 3 (18) PIPE BOLLARDS. DIG DOWN TO LOCATE [E] EDGE OF BURIED TANK AND SET BOLLARDS 3' OFF EDGE. APPROX 1' EARTHEN COVER OVER [E] TANK PER TANK PLANS.
- 4 1000 GALLON PROPANE TANK ON 4'x14' CONCRETE PAD
- 5 FIBER OPTIC ROUTE IN EXISTING ACCESS ROAD, ±1,650' LONG

#### SYMBOLS AND ABBREVIATIONS

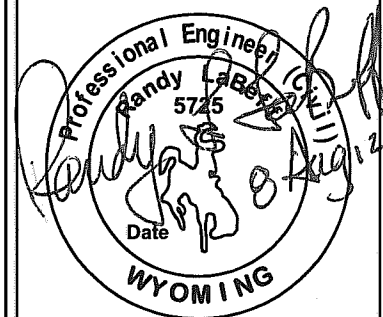
—E—	POWER LINE
—T—	TELEPHONE LINE
—OU—	OVERHEAD UTILITY LINE
—GAS—	UNDERGROUND GAS LINE
—W—	UNDERGROUND WATER LINE
—X—X—X—	FENCE LINE
[E]	EXISTING
[P]	PROPOSED
⊕	WATER VALVE
○	UTILITY POLE
←	GUY ANCHOR
⊕	LUMINAIRE
■	ASPHALT
▨	CONCRETE
▨	BUILDING
⊗	DETAIL NUMBER
⊗	SHEET NUMBER

#### SITE NOTES



ADAMS & CLARK INC.  
1720 W. FOURTH AVE.  
SPOKANE, WA 99204  
PH. (509)747-4600 FAX: (509) 747-8913

A&C PROJECT # 2009-01-107



#### APPROVALS

FNE  
ENGINEER \_\_\_\_\_  
RF  
ENGINEER \_\_\_\_\_  
REAL  
ESTATE \_\_\_\_\_  
AREA  
MANAGER \_\_\_\_\_  
PROPERTY  
OWNER \_\_\_\_\_  
ZONING \_\_\_\_\_  
CONSTRUCTION  
DIRECTOR \_\_\_\_\_

#### REVISIONS

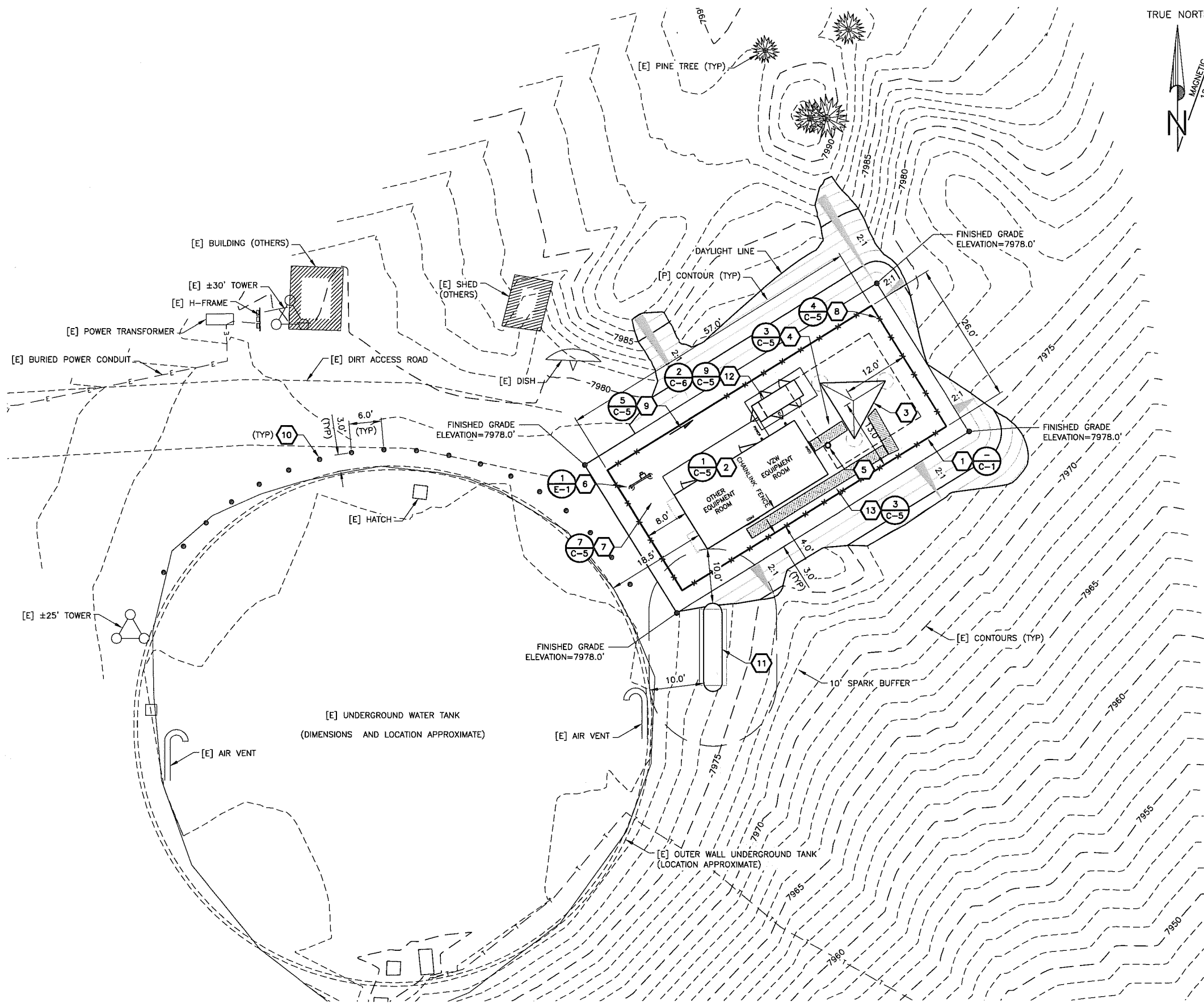
NO.	DATE	DESCRIPTION
1	08/08/12	FIBER OPTIC SERVICE DELINEATION
2	08/02/12	FINAL CD
3	07/26/12	PRELIMINARY CD
4	04/20/12	PRELIMINARY ZD

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS **PROPRIETARY AND CONFIDENTIAL** BY NATURE. USE OR DISCLOSURE BY PARTIES NOT DIRECTLY ASSOCIATED WITH Verizon Wireless IS STRICTLY PROHIBITED.

SITE  
ALT #3  
**WY3 FISHING BRIDGE**  
GRAND LOOP RD  
YELLOWSTONE NATL PK, WY

SHEET TITLE  
**OVERALL SITE PLAN  
AND SITE PLAN**

**C-2**



1 ENLARGED SITE PLAN  
C-2a SCALE: 1"=20'

EARTHWORK QUANTITIES	
CUT	74 CY
FILL	69 CY
NET CUT	5 CY (EXPORT)

PROPOSED CONSTRUCTION KEYED NOTES

- 1 VERIZON WIRELESS PROJECT AREA, 57' x 26' FINISHED ELEV = 7978.0'
- 2 11'-8" x 26' VERIZON WIRELESS EQUIPMENT BUILDING WITH FOUNDATION, CHAINLINK FENCE PARTITION IN MIDDLE
- 3 100' LATTICE TOWER, WITH FOUNDATION, GALVANIZED TOWER TO BE ACID DIPPED PRE-OXIDIZED TO ELIMINATE GLARE
- 4 ICE BRIDGE, APPROX 7' LONG
- 5 GPS ANTENNA
- 6 POWER METER ON 4' H-FRAME
- 7 GRAVEL SURFACE IN PROJECT AREA
- 8 6' CHAIN LINK FENCE, ON PROJECT AREA BOUNDARY
- 9 14' CANTILEVER GATE WITH MAN GATE
- 10 (18) PIPE BOLLARDS. DIG DOWN TO LOCATE [E] EDGE OF BURIED TANK AND SET BOLLARDS 3' OFF EDGE. APPROX 1' EARTHEN COVER OVER [E] TANK PER TANK PLANS.
- 11 1000 GALLON PROPANE TANK ON 4'x14' CONCRETE PAD
- 12 EMERGENCY GENERATOR ON 6'x12' CONCRETE PAD WITH ICE SHIELD
- 13 ICE BRIDGE, APPROX. 39' LONG

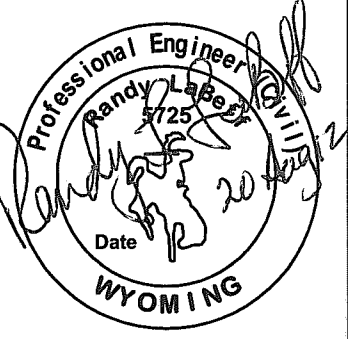
SYMBOLS AND ABBREVIATIONS

—E—	POWER LINE
—T—	TELEPHONE LINE
—OU—	OVERHEAD UTILITY LINE
—GAS—	UNDERGROUND GAS LINE
—W—	UNDERGROUND WATER LINE
—X—X—X—	FENCE LINE
[E]	EXISTING
[P]	PROPOSED
⊕	WATER VALVE
⊙	UTILITY POLE
←	GUY ANCHOR
⊕	LUMINAIRE
▨	ASPHALT
▩	CONCRETE
▨	BUILDING
⊗	DETAIL NUMBER
⊗	SHEET NUMBER

SITE NOTES



**AC**  
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A&C PROJECT # 2009-01-107



APPROVALS	
FNE	ENGINEER
RF	ENGINEER
REAL	ESTATE
AREA	MANAGER
PROPERTY	OWNER
ZONING	
CONSTRUCTION	DIRECTOR

REVISIONS	
8/20/12	REMOVE TOWER PAINT
08/02/12	FINAL CD
07/26/12	PRELIMINARY CD
04/20/12	PRELIMINARY ZD

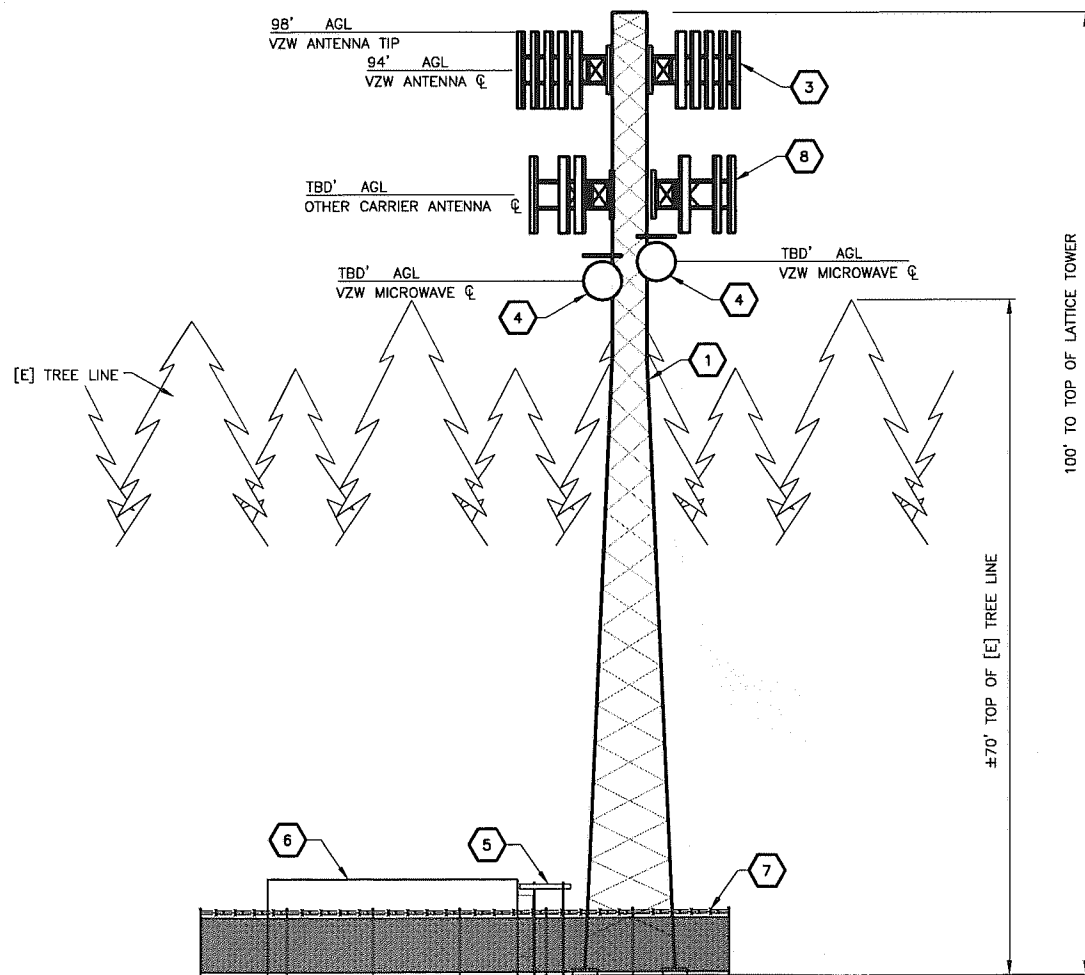
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SITE  
ALT #3  
**WY3 FISHING BRIDGE**  
GRAND LOOP RD  
YELLOWSTONE NATL PK, WY

SHEET TITLE  
ENLARGED SITE PLAN

**C-2a**





1 SOUTH ELEVATION  
C-3 SCALE: NTS

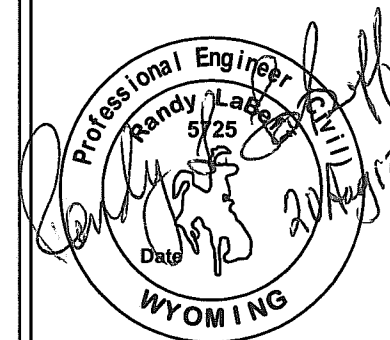
## PROPOSED CONSTRUCTION KEYED NOTES

- 1 100' LATTICE TOWER, GALVANIZED TOWER TO BE ACID DIPPED PRE-OXIDIZED TO ELIMINATE GLARE
- 2 NOT USED
- 3 VERIZON WIRELESS ANTENNAS
- 4 (2) VERIZON WIRELESS 4' Ø MICROWAVE ANTENNAS, HEIGHT AND AZIMUTH TBD
- 5 ICE BRIDGE, APPROX 7' LONG
- 6 11'-8" x 26' VERIZON WIRELESS EQUIPMENT BUILDING WITH FOUNDATION, GENERATOR RIGHT
- 7 6' CHAIN LINK FENCE, 1' INSIDE PROJECT BOUNDARY
- 8 OTHER CARRIER'S ANTENNAS, TYPE AND HEIGHT TBD



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## APPROVALS

FNE  
ENGINEER \_\_\_\_\_  
RF  
ENGINEER \_\_\_\_\_  
REAL  
ESTATE \_\_\_\_\_  
AREA  
MANAGER \_\_\_\_\_  
PROPERTY  
OWNER \_\_\_\_\_  
ZONING \_\_\_\_\_  
CONSTRUCTION  
DIRECTOR \_\_\_\_\_

## REVISIONS

NO.	DATE	DESCRIPTION
1	8/20/12	ANTENNA HEIGHT
2	08/13/12	ANTENNA HEIGHTS
3	08/02/12	FINAL CD
4	07/26/12	PRELIMINARY ZD

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SITE  
ALT #3  
**WY3 FISHING BRIDGE**  
GRAND LOOP RD  
YELLOWSTONE NATL PK, WY

SHEET TITLE  
ELEVATION

**C-3**

## SYMBOLS AND ABBREVIATIONS

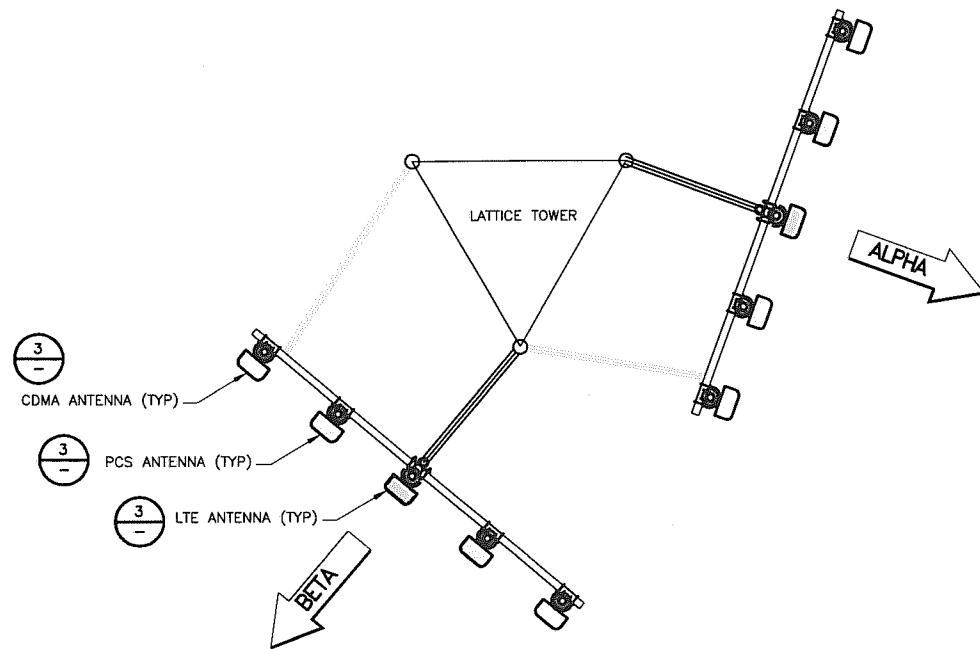
—E—	POWER LINE
—T—	TELEPHONE LINE
—OU—	OVERHEAD UTILITY LINE
—GAS—	UNDERGROUND GAS LINE
—W—	UNDERGROUND WATER LINE
—X—X—X—	FENCE LINE
[E]	EXISTING
[P]	PROPOSED
⊗	WATER VALVE
⊙	UTILITY POLE
←	GUY ANCHOR
⊕	LUMINAIRE
▨	ASPHALT
▩	CONCRETE
▨	BUILDING
⊗ X-X	DETAIL NUMBER SHEET NUMBER

## SITE NOTES

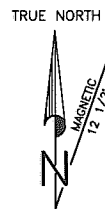
## NOTE:

CDMA/EVDO ANTENNAS ARE TO BE MOUNTED ON THE OUTERMOST PIPE SUPPORTS OF THE T-FRAME.

THE LTE ANTENNAS SHALL BE MOUNTED ON EITHER OF THE INNER PIPE SUPPORTS OF THE T-FRAME.



1 ANTENNA PLAN  
C-4 SCALE: NTS



## NOTE:

CDMA/EVDO ANTENNAS ARE TO BE MOUNTED ON THE OUTERMOST PIPE SUPPORTS OF THE PLATFORM.

THE LTE ANTENNAS SHALL BE MOUNTED ON THE INNER PIPE SUPPORT OF THE PLATFORM.

## ANTENNA AND COAXIAL CABLE SCHEDULE

ANTENNA MARK		QTY	ANTENNA	VENDOR	AZIMUTH TN	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	RAD CENTER	CABLE LENGTH	COAXIAL CABLE	NUMBER OF COAX RUNS
ALPHA	CELLULAR	2	WPA-80063-6CF	ANTEL	110°	2°	0°	94'	110'	7/8"	2
	PCS	2	LPA-185063/12CF	ANTEL	110°	0°	0°	94'	110'	7/8"	2
	LTE	1	BXA-70063-6CF	ANTEL	110°	0°	0°	94'	110'	7/8"	2
BETA	CELLULAR	2	WPA-80080-6CF	ANTEL	220°	0°	0°	94'	110'	7/8"	2
	PCS	2	LPA-185080/12CF	ANTEL	220°	0°	0°	94'	110'	7/8"	2
	LTE	1	BXA-70080-6CF	ANTEL	220°	0°	0°	94'	110'	7/8"	2
GAMMA	CELLULAR	-	-	-	-	-	-	-	-	-	-
	PCS	-	-	-	-	-	-	-	-	-	-
	LTE	-	-	-	-	-	-	-	-	-	-
MW	TBD	1	TBD	TBD	TBD	TBD	TBD	TBD'	TBD'	TBD"	1
	TBD	1	TBD	TBD	TBD	TBD	TBD	TBD'	TBD'	TBD"	1
GPS	RXO	2	GPS-26dB	NORTEL	180°	-	-	N/A	N/A	1/2"	2

## NOTES:

- ALL ANTENNAS TO BE FURNISHED WITH DOWNTILT BRACKETS.
- REFER TO VERIZON WIRELESS DESIGN BOOK FOR FINAL ANTENNA SPECIFICATIONS, AZIMUTHS, AND MECHANICAL DOWNTILT ANGLES.

## COAXIAL CABLE BEND TABLE

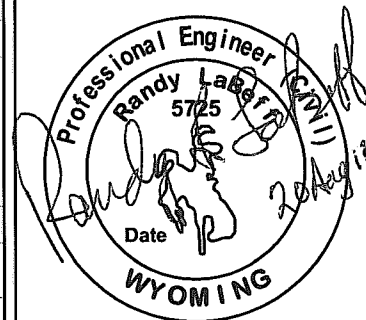
CABLE SIZE	ANDREW CABLE TYPE #	MFR MIN BEND RADIUS	ANDREW STANDARD HANGER PN	ANDREW CLICK-ON HANGER PN	CABLE TO CABLE SPACING	MAX VRT HANGER SPACING	MAX HOR HANGER SPACING
1/2"	LDF4-50A	5"	42311A	L4CLICK	1/2"	3'-0"	3'-0"
7/8"	LDF5-50A	10"	42396A-5	L5CLICK	1/2"	3'-0"	3'-0"
1-1/4"	LDF6-50A	15"	42396A-1	L6CLICK	1/2"	3'-0"	3'-0"
1-5/8"	LDF7-50A	20"	42396A-2	L7CLICK	1/2"	3'-0"	3'-0"
2-1/4"	LDF12-50	22"	42396A-4	N/A	1/2"	3'-0"	3'-0"

\* FOR TYPICAL CLIMATES W/ 125 MPH WINDS - 1/2" ICE CONDITIONS; SEE MANUFACTURER'S SPECIFICATIONS FOR VARIANCES



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A&C PROJECT # 2009-01-107



## APPROVALS

FNE  
ENGINEER \_\_\_\_\_  
RF  
ENGINEER \_\_\_\_\_  
REAL  
ESTATE \_\_\_\_\_  
AREA  
MANAGER \_\_\_\_\_  
PROPERTY  
OWNER \_\_\_\_\_  
ZONING \_\_\_\_\_  
CONSTRUCTION  
DIRECTOR \_\_\_\_\_

## REVISIONS

△	08/20/12	LOWER ANENNAS
△	08/14/12	ANTENNA HEIGHT
△	08/02/12	FINAL CD
△	07/26/12	PRELIMINARY CD

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SITE  
ALT #3

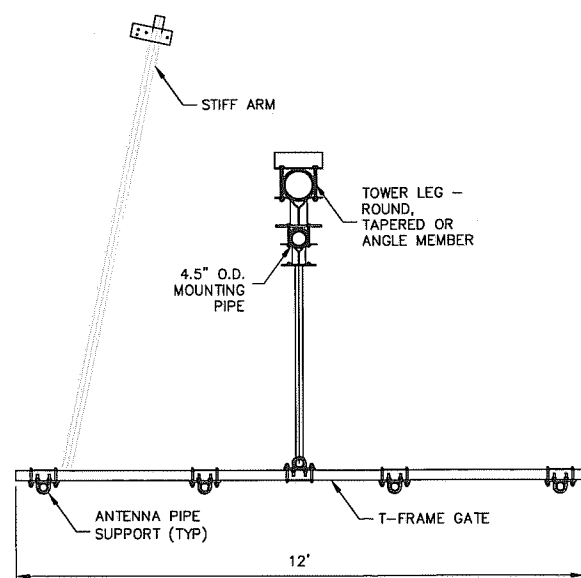
**WY3 FISHING BRIDGE**

GRAND LOOP RD  
YELLOWSTONE NATL PK, WY

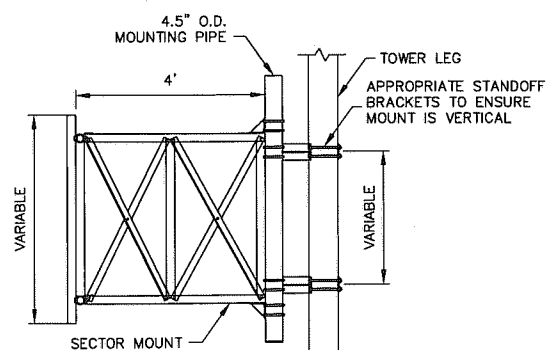
SHEET TITLE

ANTENNA PLAN  
AND DETAILS

**C-4**

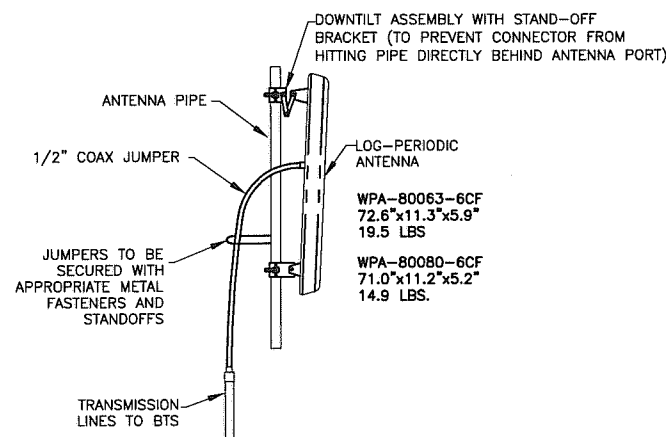


PLAN VIEW

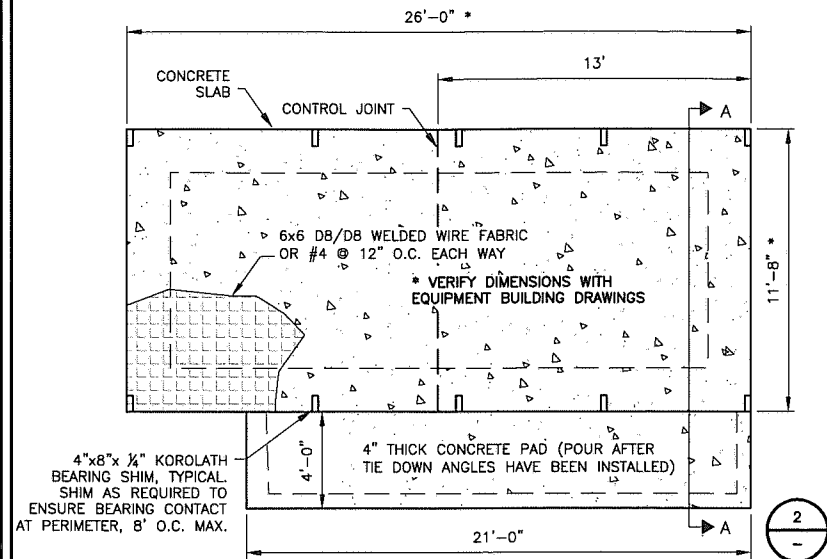


ELEVATION VIEW

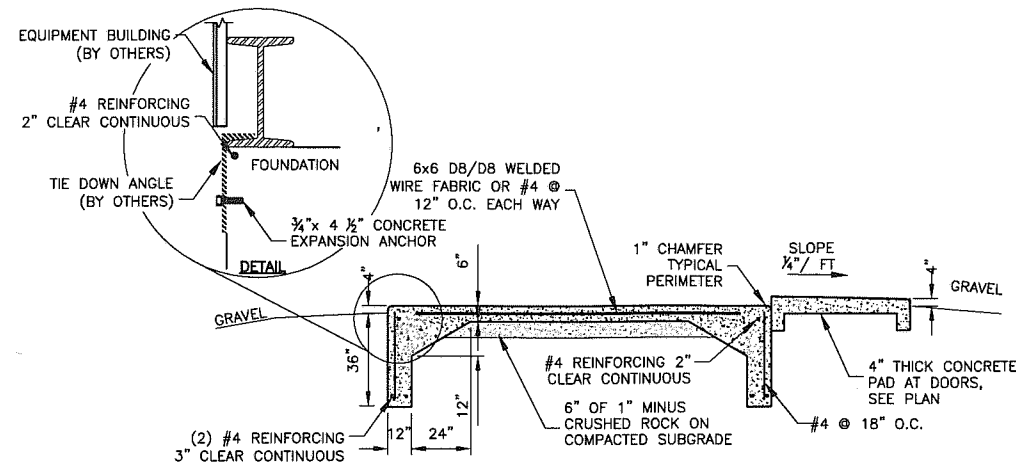
2 16' ANTENNA T-FRAME MOUNT  
C-4 SCALE: NTS



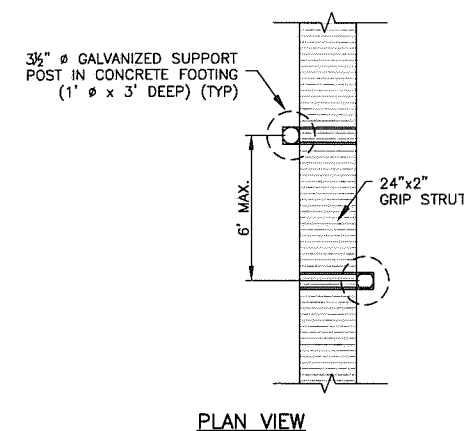
3 PANEL ANTENNA MOUNT  
C-4 SCALE: NTS



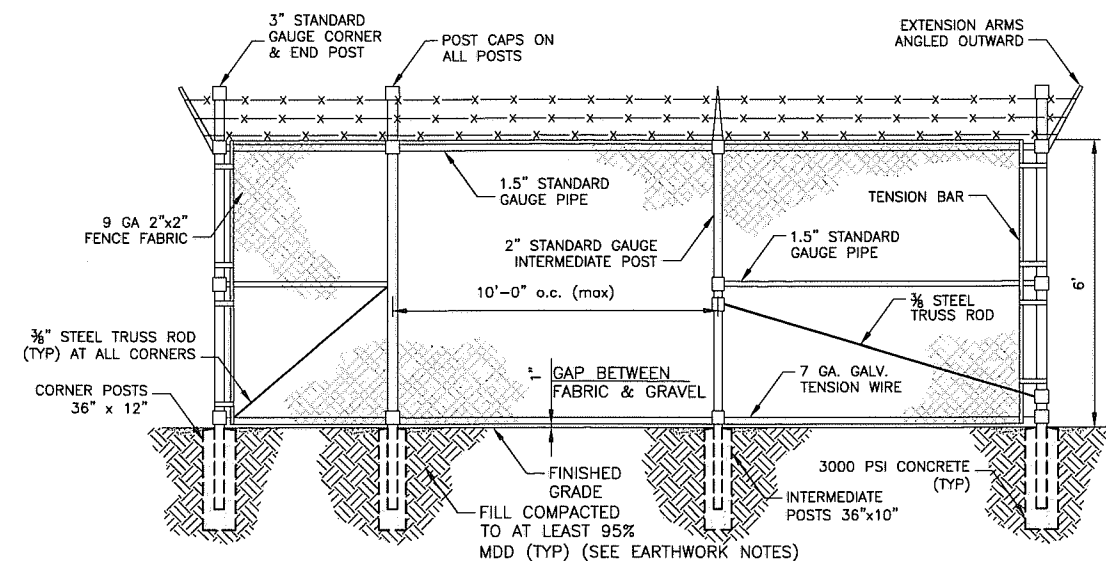
1 BUILDING FOUNDATION PLAN  
C-5 SCALE: NTS



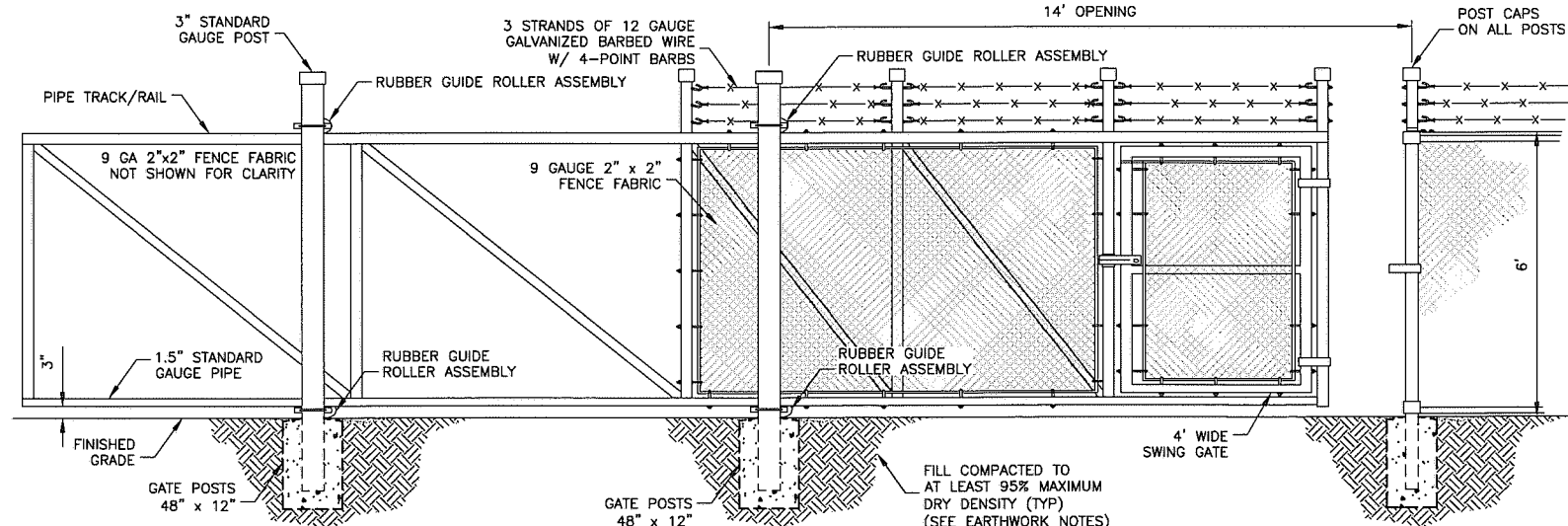
2 SLAB FOUNDATION SECTION  
C-5 SCALE: NTS



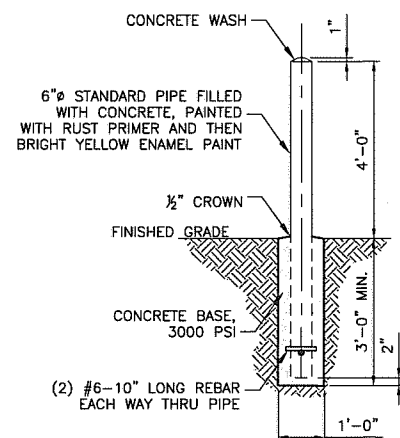
3 ICE BRIDGE SUPPORT  
C-5 SCALE: NTS



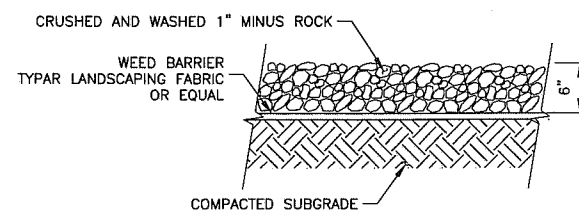
4 FENCE WITH BARBED WIRE  
C-5 SCALE: NTS



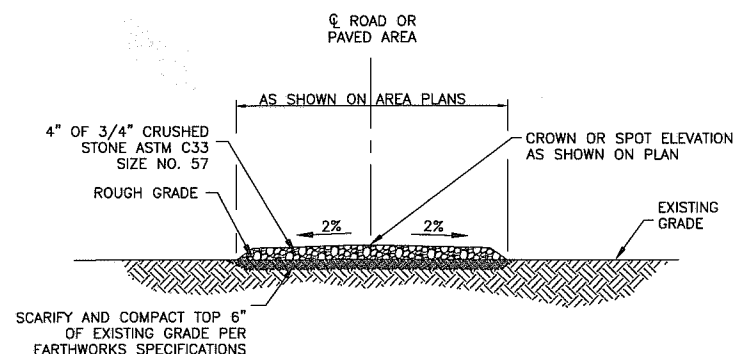
5 CANTILEVER GATE  
C-5 SCALE: NTS



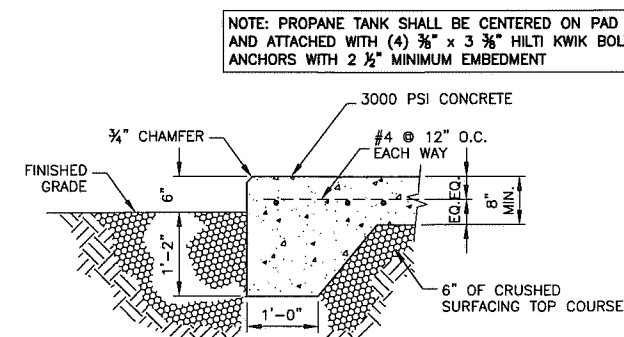
6 BOLLARD  
C-5 SCALE: NTS



7 GRAVEL SURFACE  
C-5 SCALE: NTS



8 ACCESS ROAD SECTION  
C-5 SCALE: NTS



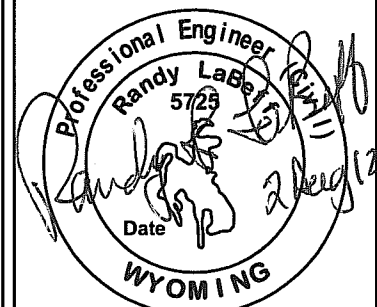
9 DEEP EDGE CONCRETE PAD  
C-5 SCALE: NTS

verizonwireless

AC

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SPOKANE, WA 99204  
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A&C PROJECT # 2009-01-107



## APPROVALS

FNE ENGINEER  
RF ENGINEER  
REAL ESTATE  
AREA MANAGER  
PROPERTY OWNER  
ZONING  
CONSTRUCTION DIRECTOR

## REVISIONS

NO.	DATE	DESCRIPTION
1	08/02/12	FINAL CD
2	07/26/12	PRELIMINARY CD

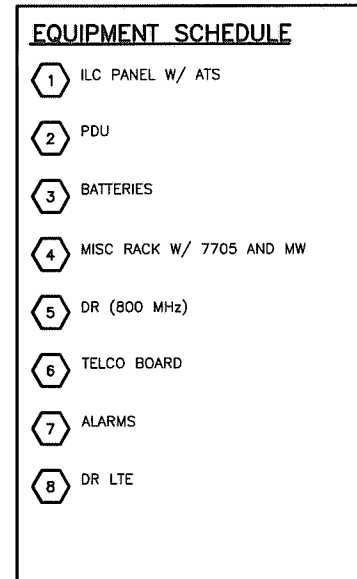
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SITE  
ALT #3  
**WY3 FISHING BRIDGE**  
GRAND LOOP RD  
YELLOWSTONE NATL PK, WY

SHEET TITLE  
SITE AND EQUIPMENT  
DETAILS

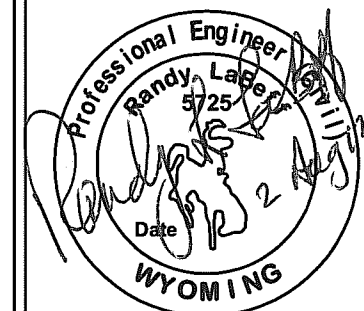
C-5





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A&amp;C PROJECT # 2009-01-107



## APPROVALS

**APPROVALS**

FNE  
ENGINEER \_\_\_\_\_

RF  
ENGINEER \_\_\_\_\_

REAL  
ESTATE \_\_\_\_\_

AREA  
MANAGER \_\_\_\_\_

PROPERTY  
OWNER \_\_\_\_\_

ZONING \_\_\_\_\_

CONSTRUCTION  
DIRECTOR \_\_\_\_\_

## REVISIONS

△		
△		
△	08/02/12	FINAL CD
△	07/26/12	PRELIMINARY CD

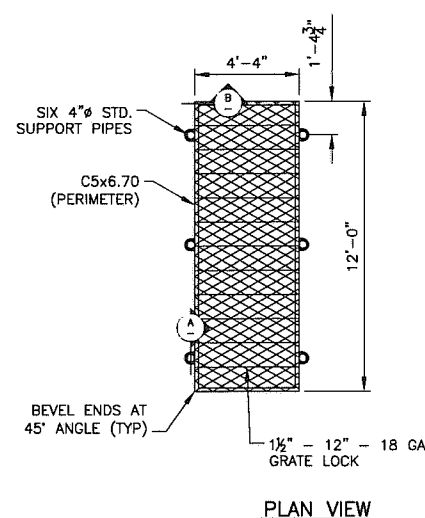
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Verizon Wireless IS STRICTLY PROHIBITED.

SITE  
ALT #3  
**WY3 FISHING BRIDGE**  
GRAND LOOP RD  
YELLOWSTONE NATL PK, WY

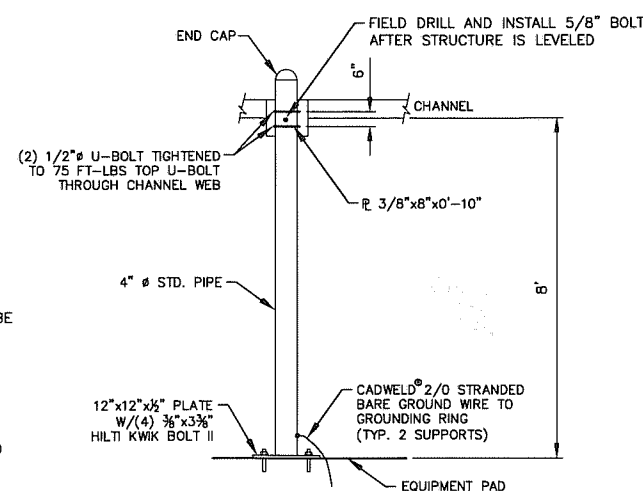
SHEET TITLE

**EQUIPMENT BUILDING PLAN  
AND GENERATOR ICE SHIELD PLAN**

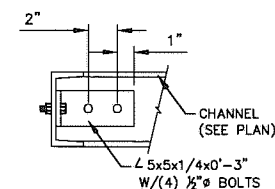
C-6



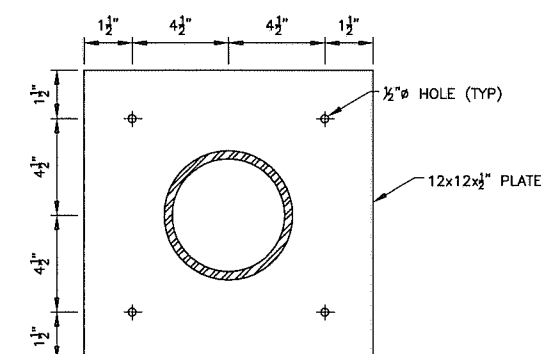
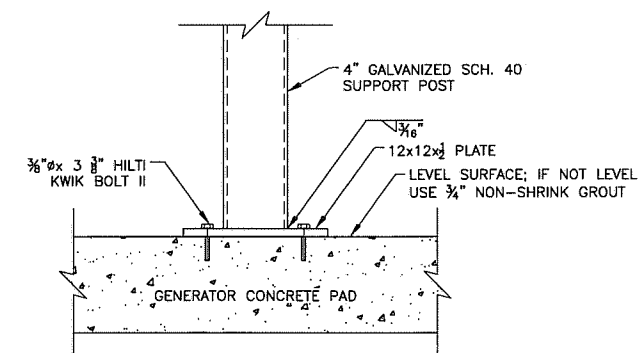
PLAN VIEW



SECTION A



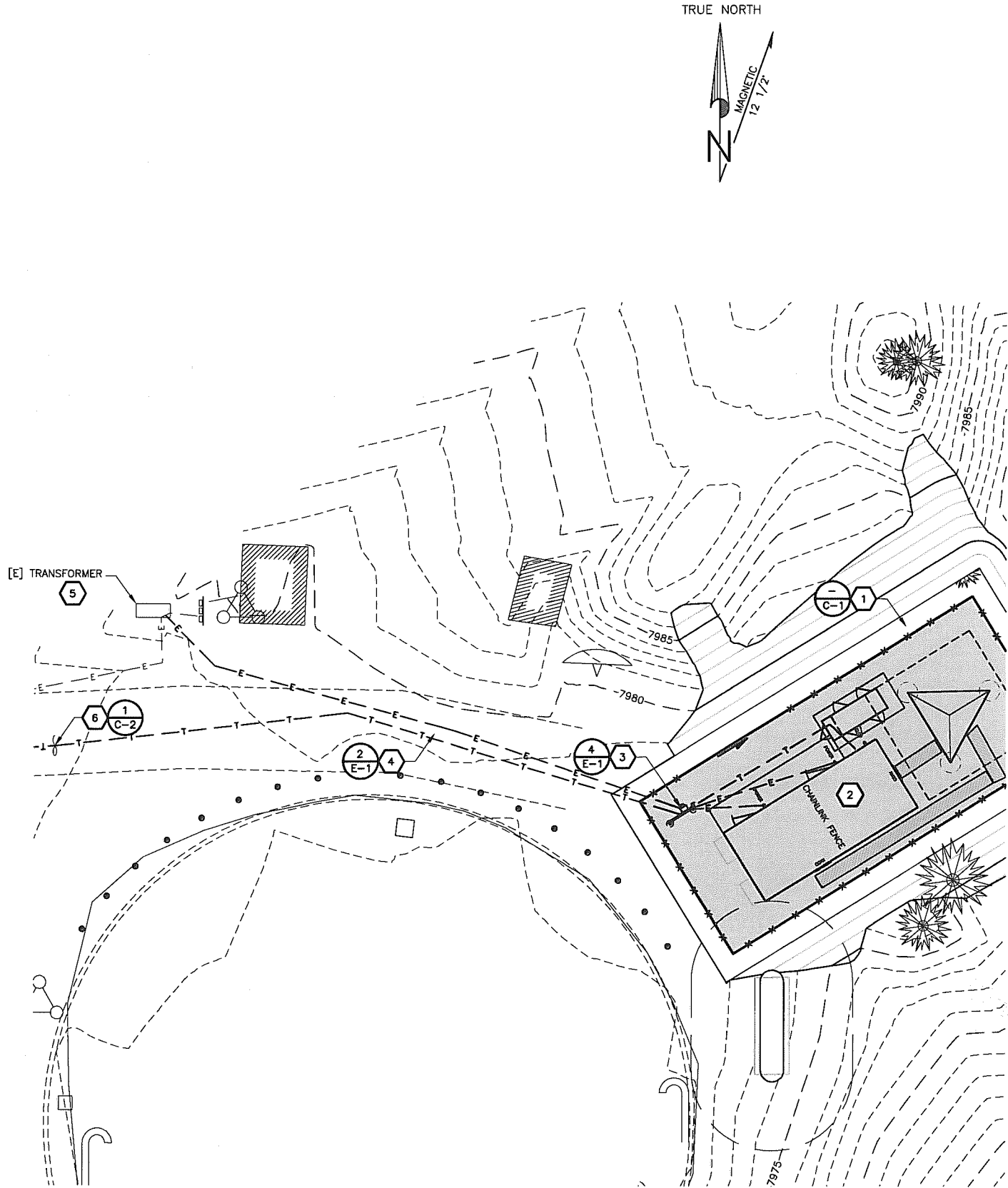
SECTION B



3 POST ATTACHMENT  
C-6 SCALE: NTS

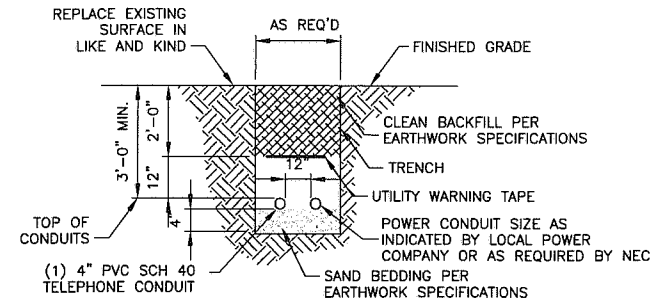
2 GENERATOR PAD MOUNTED ICE SHIELD  
C-6 SCALE: NTS

SCALE: NTS



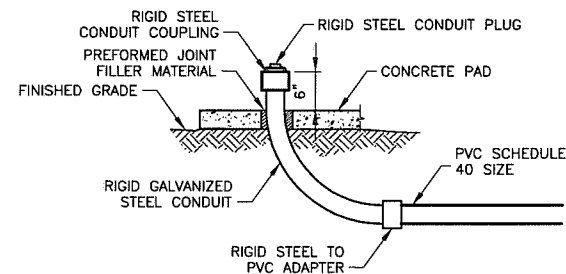
1 SITE UTILITY PLAN  
E-1 SCALE: 1"=20'

CALL BEFORE YOU DIG 800-348-1030

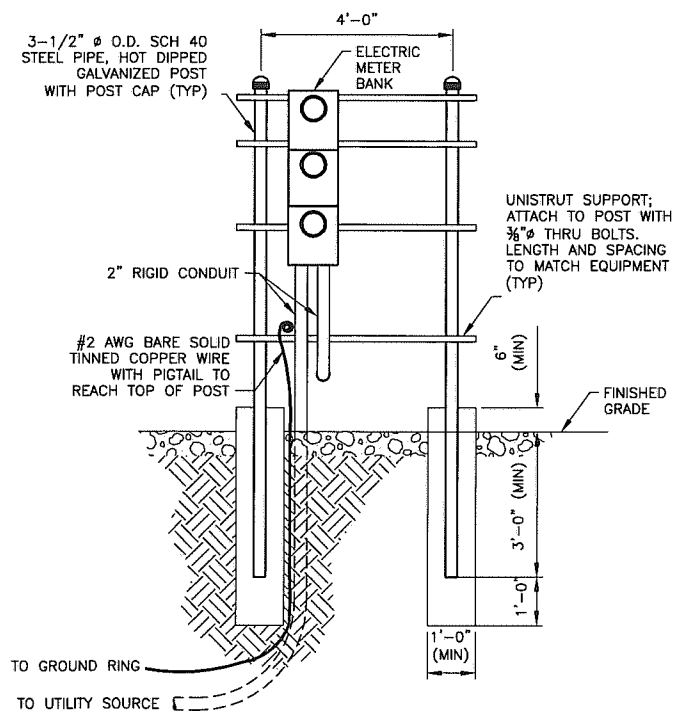


NOTE:  
CONTRACTOR TO USE MECHANICAL MEANS WHEN  
EXCAVATING ROCK (BLASTING WILL NOT BE PERMITTED)

2 ELECTRICAL/TELCO TRENCH  
E-1 SCALE: NTS



3 CONDUIT STUB-UP  
E-1 SCALE: NTS



\* NOTE:  
METER BANK IS TO BE SUPPLIED BY NORTHERN TECHNOLOGIES OR APPROVED EQUAL.

4 H-FRAME  
E-1 SCALE: NTS

## PROPOSED CONSTRUCTION KEYED NOTES

- 1 VERIZON WIRELESS PROJECT AREA
- 2 EQUIPMENT BUILDING
- 3 H-FRAME
- 4 ELECTRICAL/TELCO CONDUITS, POWER CONDUIT LENGTH = 82', FIBER CONDUIT LENGTH ±1,650'
- 5 EXACT CONNECTION TO [E] POWER AND [E] TELCO TO BE DETERMINED IN FIELD
- 6 FIBER OPTIC CONNECTION TO BE AT ACCESS GATE ABOUT 1,650' AWAY

## SYMBOLS AND ABBREVIATIONS

—E—	POWER LINE
—T—	TELEPHONE LINE
—OU—	OVERHEAD UTILITY LINE
—GAS—	UNDERGROUND GAS LINE
—W—	UNDERGROUND WATER LINE
—X—X—X—	FENCE LINE
[E]	EXISTING
[P]	PROPOSED
V.I.F.	VERIFY IN FIELD
⊕	WATER VALVE
○	UTILITY POLE
⊥	GUY ANCHOR
⊕	LUMINAIRE
▨	ASPHALT
▤	CONCRETE
▩	BUILDING
⊗	DETAIL NUMBER
⊗-X	SHEET NUMBER

## POWER/TELCO SPECIFICATIONS

1. 120/240 VAC SINGLE PHASE 200 AMP FEED TO THE POWER DISTRIBUTION PANEL, METERED SERVICE TO THE 120/240 VAC SINGLE PHASE, 60 AMP SUB PANEL TO POWER THE HAZARD LIGHTING (WHEN REQUIRED) CONTROLLER AND ALARM CONTROL PANEL, AND TELCO "POTS" LINE TO THE ALARM CONTROL PANEL.
2. ALL CONDUITS SHALL BE SCHEDULE 40 PVC; OR AS SPECIFIED ON DESIGN DRAWINGS. ALL JOINTS SHALL BE MADE WATERTIGHT USING SOLVENT CEMENT SPECIFICALLY DESIGNED FOR USE WITH PVC CONDUIT.
3. ALL EXPOSED MATERIALS ARE TO BE HOT DIPPED GALVANIZED OR HAVE FINISH APPROVED FOR OUTDOOR USE.
4. POSTS SUPPORTING POWER DISTRIBUTION SYSTEM ARE TO BE CAPPED WITH METAL CAPS.
5. ALL OTHER MATERIALS SHALL BE SPECIFIED ON THE CONSTRUCTION DRAWINGS OR IN THE NATIONAL ELECTRIC CODE (NEC).
6. ALL BURIED ELECTRICAL CONDUITS SHALL BE A MINIMUM OF 3' BELOW FINISHED GRADE. TRENCHES TO CONTAIN WARNING TAPE "BURIED ELECTRIC CABLES" 12" ABOVE TOP OF CONDUIT.
7. ALL BURIED TELCO CONDUITS SHALL BE A MINIMUM OF 2' BELOW FINISHED GRADE.



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A&C PROJECT # 2009-01-107



## APPROVALS

FNE  
ENGINEER \_\_\_\_\_  
RF  
ENGINEER \_\_\_\_\_  
REAL  
ESTATE \_\_\_\_\_  
AREA  
MANAGER \_\_\_\_\_  
PROPERTY  
OWNER \_\_\_\_\_  
ZONING  
CONSTRUCTION  
DIRECTOR \_\_\_\_\_

## REVISIONS

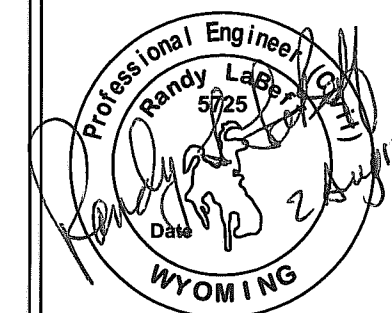
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2	08/02/12	FINAL CD
3	07/26/12	PRELIMINARY CD

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SITE  
ALT #3  
**WY3 FISHING BRIDGE**  
GRAND LOOP RD  
YELLOWSTONE NATL PK, WY

SHEET TITLE  
**SITE UTILITY PLAN  
AND DETAILS**

**E-1**



## APPROVALS

FNE  
ENGINEER \_\_\_\_\_  
RF  
ENGINEER \_\_\_\_\_  
REAL  
ESTATE \_\_\_\_\_  
AREA  
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CONSTRUCTION  
DIRECTOR \_\_\_\_\_

## REVISIONS

△		
△	08/02/12	FINAL CD
△	07/26/12	PRELIMINARY CD

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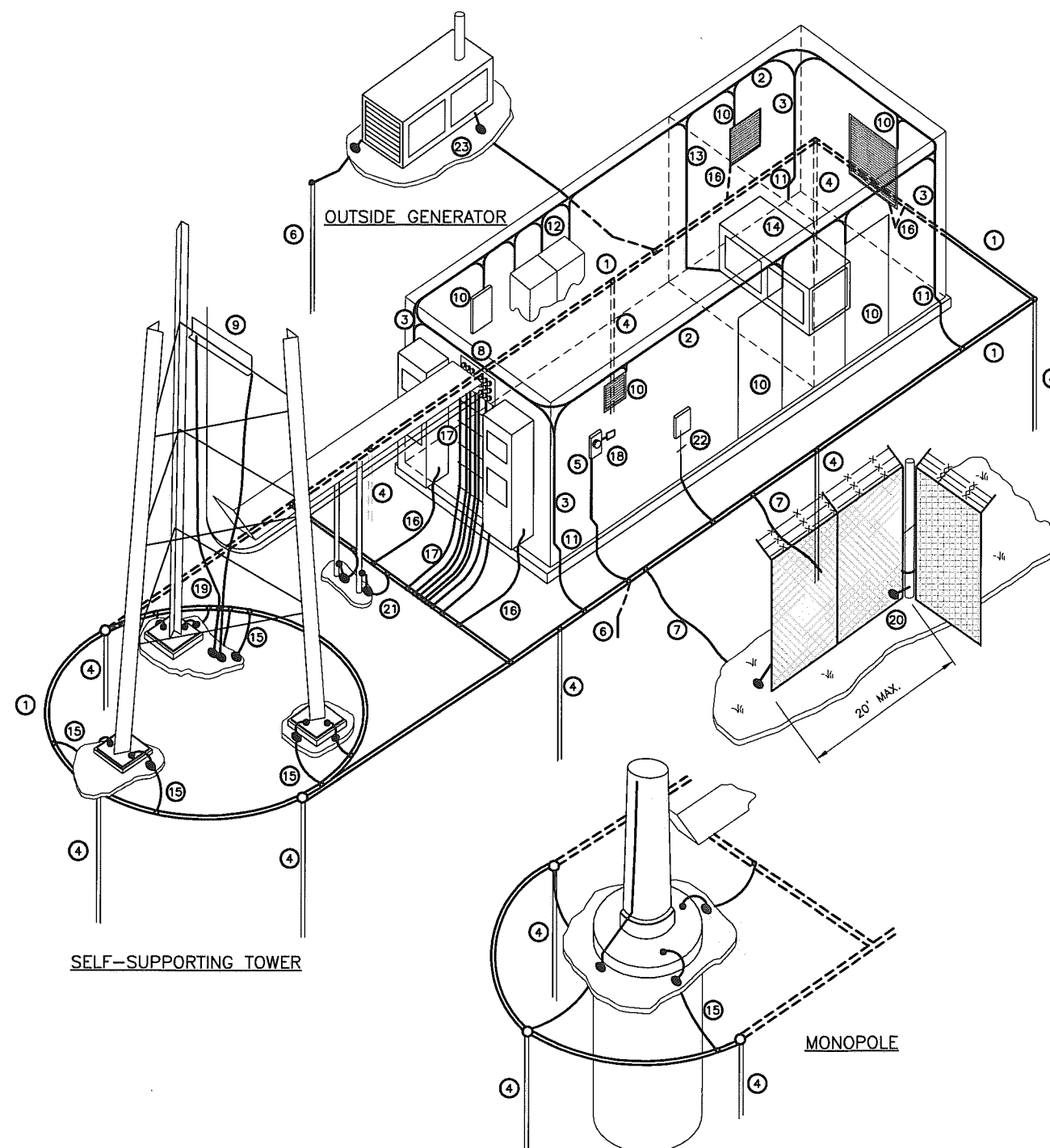
SITE  
ALT #3

## WY3 FISHING BRIDGE

GRAND LOOP RD  
YELLOWSTONE NATL PK, WY

SHEET TITLE  
SITE GROUNDING PLAN  
AND DETAILS

E-2



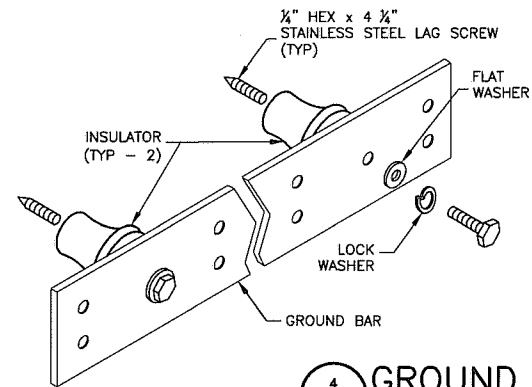
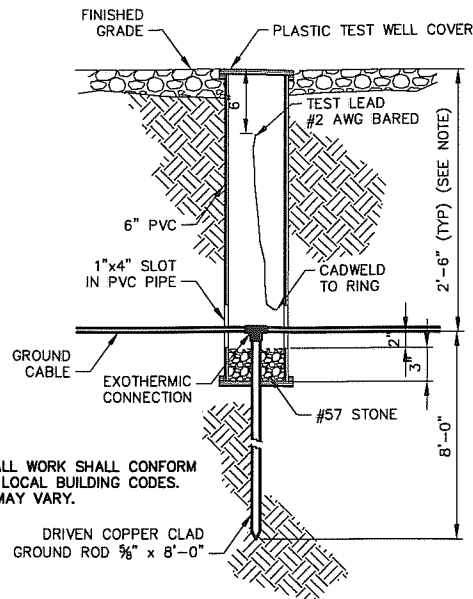
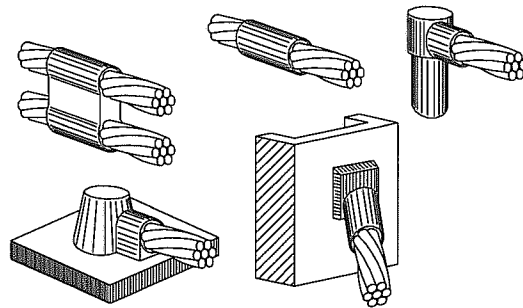
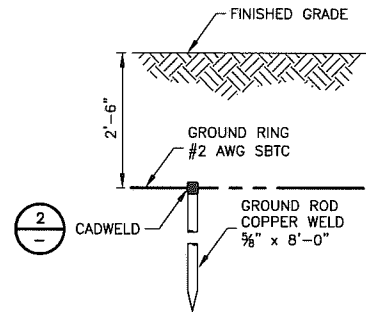
## LEGEND

- ① BURIED EXTERIOR ELECTRODE GROUND RING
- ② INTERIOR RING GROUND (HALO)
- ③ INTERIOR RING GROUND DOWN LEAD
- ④ GROUND ROD ELECTRODE, 8"x 8' LONG
- ⑤ POWER CO. GROUND ELECTRODE (MGN)
- ⑥ OPTIONAL GROUND ROD
- ⑦ BOND TO FENCE WITHIN 6 FT.
- ⑧ WAVEGUIDE
- ⑨ TOWER GROUND BAR
- ⑩ WALL MOUNTED CABINETS, CONDUITS, DOOR FRAME & VENTS
- ⑪ DOWN LEAD #2 STRANDED TO #2 SOLID CONNECT EXOTHERMIC OR COMPRESSION
- ⑫ EQUIPMENT BOND
- ⑬ BUILDING STEEL BOND
- ⑭ GENERATOR FRAME
- ⑮ TOWER BASE SHOE BOND
- ⑯ BOND TO METALLIC OBJECTS OR BUILDING EXTERIOR
- ⑰ WAVEGUIDE HATCH PRIMARY BOND
- ⑱ TRANSIENT VOLTAGE SURGE SUPPRESSOR
- ⑲ TOWER LIGHTING CONTROLLER TVSS
- ⑳ GATE POST TO GATE JUMPER
- ㉑ ICE BRIDGE & SUPPORT GROUND
- ㉒ TELCO ENTRANCE GROUND AND GROUND BAR
- ㉓ GENERATOR FRAME OR GROUND ROD (NOT BOTH)

## NOTES:

SELF SUPPORTING TOWERS AND MONOPOLES SHALL HAVE A  
GROUND RING AROUND THE BASE AS FOLLOWS:  
-COMPOSED OF #2 AWG SBTC WIRE  
-BURIED AT LEAST 30 INCHES BELOW GRADE LEVEL OR BELOW  
FROST LINE (WHICHEVER IS DEEPER).  
-SPACED AT LEAST 24 INCHES FROM BUILDING FOUNDATIONS  
AND TOWER FOOTINGS.  
-WITH A BEND RADIUS OF AT LEAST 24 INCHES  
-WITH A MINIMUM OF NINE (9) GROUND RODS (ONE AT EACH  
CORNER OF THE RING AND ONE IN THE MIDDLE) SPACED A  
MINIMUM OF 10 FEET APART.

1  
E-2  
TYPICAL CELL SITE GROUNDING  
SCALE: NTS

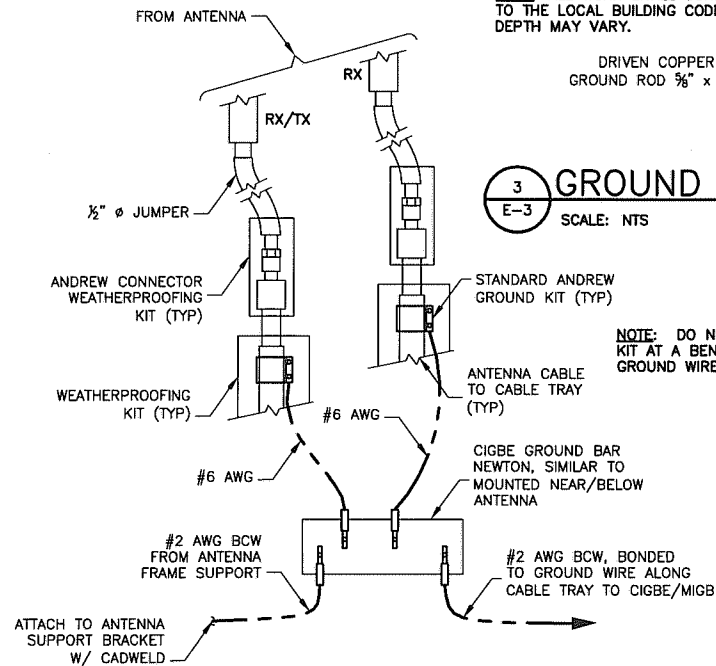
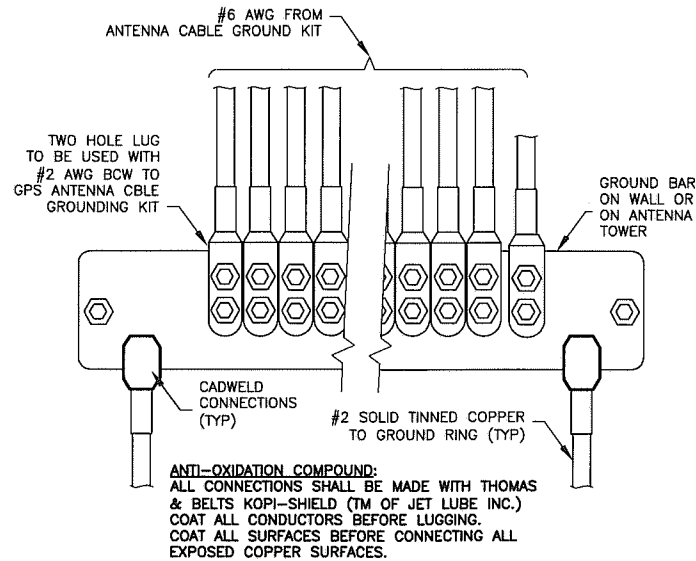


- GROUND BAR NOTES**
1. SECURE TO INTERIOR OR EXTERIOR WALL W/ STAINLESS STEEL LAG SCREWS AS SHOWN.
  2. OMIT INSULATORS WHEN MOUNTING TO TOWER.

**1 STANDARD GROUND ROD**  
SCALE: NTS

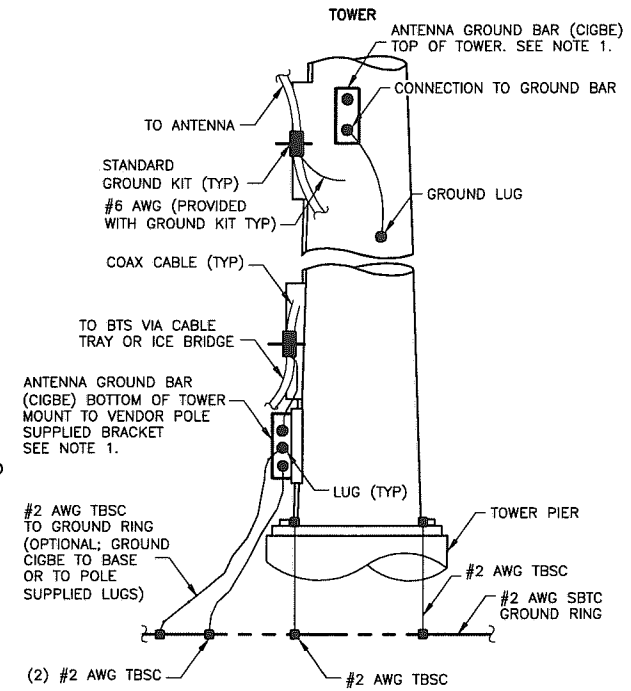
**2 CADWELDS**  
SCALE: NTS

**4 GROUND BAR**  
SCALE: NTS



**3 GROUND ROD INSPECTION WELL**  
SCALE: NTS

- TOWER GROUNDING NOTES:**
1. THE NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
  2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

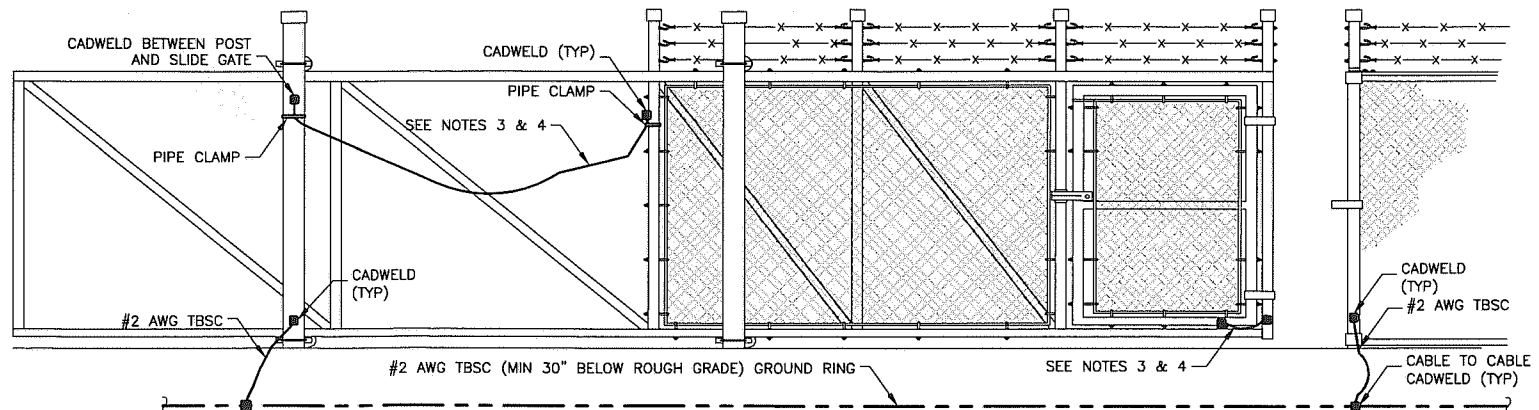
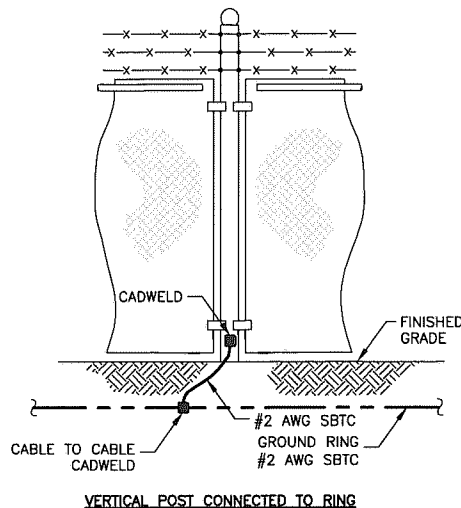
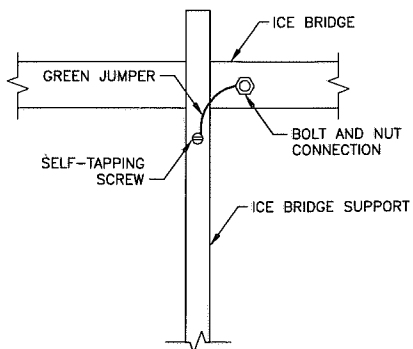


**6 GROUND WIRE TO GROUND BAR (CIGBE)**  
SCALE: NTS

**7 TOWER GROUNDING**  
SCALE: NTS

**GATE GROUNDING NOTES:**

1. THE #2 AWG, TBSC FROM THE GROUND RING SHALL BE CADWELDED TO THE POST ABOVE GRADE.
2. BOND EACH HORIZONTAL POLE/BRACE TO EACH OTHER AND TO EACH VERTICAL POLE BONDED TO THE EXTERIOR GROUND RING
3. GATE JUMPER SHALL BE #4/0 AWG WELDING CABLE WITH SLEEVES ON EACH END DESIGNED FOR EXOTHERMIC WELDING.
4. GATE JUMPER SHALL BE INSTALLED SO THAT IT WILL NOT BE SUBJECTED TO DAMAGING STRAIN WHEN GATE IS FULLY OPEN OR CLOSED.
5. GATE JUMPER SHALL NOT TOUCH GROUND WHEN OPENING OR CLOSING GATE.



**8 ICE BRIDGE GROUNDING**  
SCALE: NTS

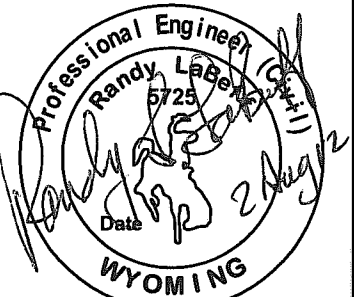
**9 FENCE GROUNDING**  
SCALE: NTS

**10 CANTILEVER GATE GROUNDING**  
SCALE: NTS



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**E-3**