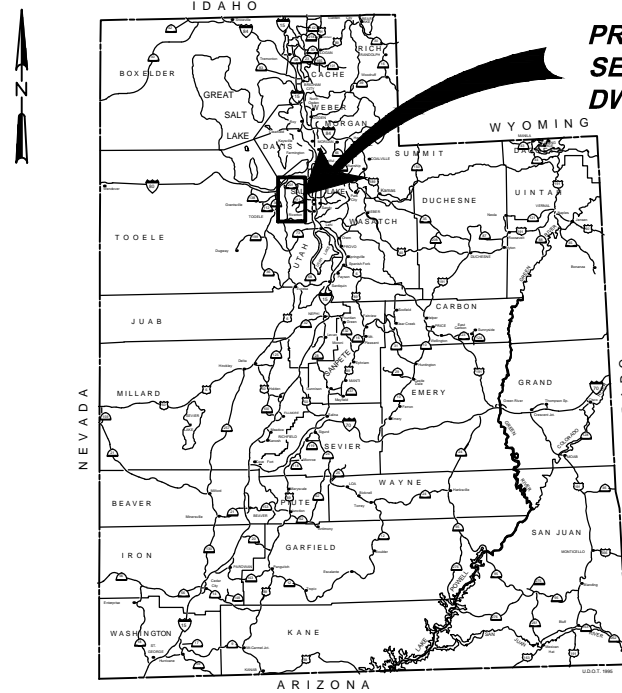


# 11800 SOUTH U-111 PIPELINE

VOLUME 2 OF 2  
 BID DOCUMENTS  
 JANUARY 2017



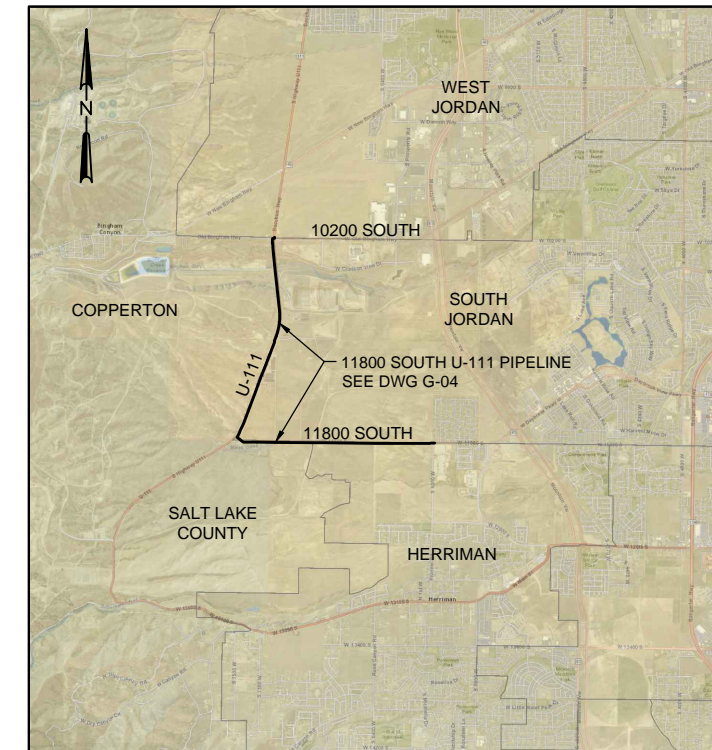
VICINITY MAP

PROJECT LOCATION  
 SEE INDEX MAP  
 DWG G-04



## JORDAN VALLEY WATER CONSERVANCY DISTRICT

PROJECT # 3978



LOCATION MAP  
 NTS

### BOARD OF TRUSTEES

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W.M. BRENT JOHNSON	COREY L. RUSHTON
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	KENT L. WINDER



NO.	DATE	DR	REVISION	CHK	BY

JORDAN VALLEY WATER  
 CONSERVANCY DISTRICT  
 11800 SOUTH U-111 PROJECT

**ch2m**  
 GENERAL  
 COVER SHEET, LOCATION,  
 AND VICINITY MAPS

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	JANUARY 2017
PROJ	680064
DWG	G-01
SHEET	of

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## GENERAL NOTES

1. EXISTING UTILITIES SHOWN ARE BASED ON BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, SIZE, TYPE, AND ELEVATION OF ALL UTILITIES PRIOR TO CROSSING UTILITY. THE CONTRACTOR SHALL CONTACT BLUE STAKES AT 1 (800) 662-4111 FOR MARK OUT OF EXISTING UTILITIES.
2. FOR THE REPLACEMENT AND RECONSTRUCTION OF SOUTH JORDAN CITY AND CITY OF HERRIMAN FACILITIES DAMAGED DURING CONSTRUCTION, REFER TO SPECIFICATION SECTION 01 31 13, PROJECT COORDINATION.
3. EXCAVATION LIMITS SHOWN IN THE DETAILS ARE GRAPHICAL REPRESENTATIONS ONLY AND DO NOT REPRESENT ACTUAL EXCAVATION LIMITS OR SAFE TRENCH CONDITIONS NECESSARY TO COMPLETE THE WORK. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING THE TRENCH LIMITS NEEDED FOR THE WORK AND CONFORMANCE WITH THE LOCAL, STATE, AND FEDERAL CODES GOVERNING SHORING, SHEETING, AND BRACING OF EXCAVATIONS AND TRENCHES, AND FOR PROTECTION AND SAFETY OF WORKERS AND OTHER CONSTRUCTION RELATED PERSONNEL. PROVIDE SHORING, SHEETING, AND BRACING AS REQUIRED TO PROTECT EXISTING FACILITIES AND WHERE SPECIFICALLY INDICATED ON THE DRAWINGS.
4. UNLESS OTHERWISE NOTED, ALL ELEVATIONS FOR NEW CONSTRUCTED PIPELINES ARE PIPE CENTERLINE ELEVATIONS. ELEVATIONS OF EXISTING UTILITIES ARE CALLED OUT TO INVERT ELEVATION FOR GRAVITY UTILITIES (I.E. STORM DRAIN, SEWER, ETC.) AND TOP OF PIPE FOR EXISTING PIPELINES OR CONDUITS FOR ALL OTHER BURIED UTILITIES.
5. ALL STATIONING AND DISTANCES SHOWN ON THE DRAWINGS ARE BASED ON HORIZONTAL MEASUREMENTS.
6. CONTRACTOR SHALL EXCAVATE AHEAD AND UNCOVER ALL UNDERGROUND UTILITY CROSSINGS A MINIMUM OF 2 WEEKS IN ADVANCE OF OPERATIONS IN ORDER TO VERIFY CLEARANCE OF EXISTING UTILITIES FROM THE PROPOSED PIPELINE. REPORT ANY CONFLICTS TO THE ENGINEER IMMEDIATELY.
7. CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITIES TO STAY WITHIN THE WORK LIMITS SHOWN AND COMPLY WITH TRAFFIC CONTROL REQUIREMENTS. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, VEHICLES AND EQUIPMENT, LIMITS OF EXCAVATION, EXCAVATED MATERIAL, AND BACKFILL MATERIAL STORAGE. WHERE EASEMENTS ARE NOT SHOWN, LIMIT CONSTRUCTION ACTIVITIES TO STAY WITHIN ROAD RIGHTS-OF-WAY AND PERMANENT EASEMENTS UNLESS OTHERWISE SHOWN.
8. CONTRACTOR SHALL ENSURE THAT OPERATION OF EXISTING IRRIGATION, SEWER, DRAINAGE, DOMESTIC WATER, AND OTHER UTILITY SYSTEMS ARE CONTINUOUS DURING CONSTRUCTION. THE CONTRACTOR SHALL NOT ASSUME THERE ARE FEWER SERVICE LATERALS (FOR WATER, AND ALSO ALL OTHER UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT), THAN THERE ARE HOMES OR OTHER STRUCTURES, WHERE PROJECT TRENCHES ARE LOCATED BETWEEN A HOME OR STRUCTURE AND THE UTILITY MAIN. WHERE IT IS NECESSARY TO REMOVE AND REPLACE OR TO RELOCATE SUCH UTILITIES OR SERVICE LATERALS IN ORDER TO PROSECUTE THE WORK, THEY SHALL BE REMOVED, MAINTAINED, AND PERMANENTLY REPLACED BY THE CONTRACTOR, AT HIS EXPENSE, AND TO THE SATISFACTION AND STANDARDS OF THE UTILITY OWNER.
9. SURFACE RESTORATION SHALL BE AS SPECIFIED OR SHOWN ON THE DRAWINGS. RESTORE SURFACES TO EXISTING CONDITIONS MAINTAINING EXISTING DRAINAGE PATHS UNLESS NOTED OTHERWISE.
10. RIPARIAN VEGETATION DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED AND MAINTAINED UNTIL ESTABLISHED. THE CONTRACTOR SHALL APPLY VEGETATIVE EROSION CONTROL PER SPECIFICATIONS AND DRAWINGS, TO AREAS DISTURBED BY CONSTRUCTION ACTIVITIES AND NOT LANDSCAPED.
11. PIPE CONSTRUCTION IN SEVERAL PROJECT AREAS IS NEAR EXISTING WATER MAINS WHICH, WITHOUT APPROPRIATE CONTRACTOR-PROVIDED SHEETING, SHORING, AND PROTECTION, COULD COLLAPSE INTO THE EXCAVATIONS REQUIRED FOR THE PROJECT WORK. THE CONTRACTOR IS REQUIRED TO PROVIDE ALL NECESSARY DESIGNS (SIGNED AND STAMPED BY A PROFESSIONAL ENGINEER IN THE STATE OF UTAH), FOR SHEETING, SHORING, AND OTHER PROTECTION TO PREVENT EXISTING WATER SYSTEMS FROM SHIFTING, LEAKING, COLLAPSING, OR OTHERWISE FAILING AS A RESULT OF THIS WORK.
12. IF EXISTING WATER PIPES MUST BE TAKEN OUT OF SERVICE DURING CONSTRUCTION FOR SAFETY REASONS, PROVIDE ABOVE GROUND PIPES (HIGHLINING) TO MAINTAIN CONTINUOUS WATER SERVICES EQUIVALENT TO EXISTING SYSTEM SERVICE. COORDINATE WITH THE UTILITY OWNER OF THE UTILITY TO BE TAKEN OUT OF SERVICE TO ESTABLISH AN ACCEPTABLE TIME AND TO DEFINE WHAT IS AN ACCEPTABLE EQUIVALENT TO EXISTING SYSTEM SERVICE.
13. ANY DAMAGE WHICH OCCURS TO EXISTING WATER SYSTEMS AS A RESULT OF THE CONTRACTOR'S WORK SHALL BE PROMPTLY REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE PER PROJECT REQUIREMENTS, AND TO THE SATISFACTION OF THE OWNER OF THE DAMAGED WATER MAINS.
14. RELOCATIONS AND/OR REPLACEMENTS OF EXISTING UTILITIES SHALL BE COORDINATED BY THE CONTRACTOR WITH THE UTILITY OWNER. CONTRACTOR SHALL CONTACT, SCHEDULE, AND ESTABLISH UTILITY SHUT DOWN TIMES AND DETERMINE THE RELOCATION AND/OR REPLACEMENT REQUIREMENTS OF EXISTING UTILITIES PRIOR TO THE START OF ANY WORK. THE CONTRACTOR SHALL RELOCATE OR REPLACE EACH UTILITY TO THE SATISFACTION OF THE UTILITY OWNER AND AT NO COST TO THE UTILITY OR OWNER.
15. IMPROVEMENTS DESIGNATED FOR DEMOLITION SHALL BE DEMOLISHED AND DISPOSED OFF SITE BY THE CONTRACTOR. ALL PAVEMENT SHALL BE SAWCUT PRIOR TO REMOVAL. ROUGH EDGES SHALL AGAIN BE SAWCUT PRIOR TO INSTALLATION OF PAVEMENT REPAIR. THE RIGHT-OF-WAY SHALL BE RESTORED TO ORIGINAL GRADE AND EXISTING DRAINAGE PATTERNS SHALL BE MAINTAINED UNLESS NOTED OTHERWISE.
16. CONTRACTOR SHALL REPLACE TO ORIGINAL OR BETTER CONDITION ALL FENCES REMOVED OR DAMAGED BY ANY PROJECT RELATED WORK WITH NEW FENCING AT THE ORIGINAL HORIZONTAL LOCATION UNLESS OTHERWISE SHOWN ON THE DRAWINGS. NEW FENCING SHALL BE EQUAL TO OR BETTER THAN THE ORIGINAL FENCING.
17. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL POSTAL FACILITIES, INCLUDING MAIL BOXES, AT ALL TIMES DEEMED NECESSARY BY THE U.S. POSTAL DEPARTMENT.
18. CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH LOCAL EMERGENCY SERVICES TO ENSURE ACCESS TO ALL RESIDENTIAL, COMMERCIAL, AND OCCUPIED FACILITIES AT ALL TIMES.
19. ACCORDING TO UTAH CODE R309-550-7, WATER LINES ARE REQUIRED TO HAVE A MINIMUM 10 FT HORIZONTAL, AND 18" VERTICAL SEPARATION FROM SEWER LINES.

## DRAWING LIST

SHEET NO.	DWG NO.	SHEET TITLE/DESCRIPTION	SHEET NO.	DWG NO.	SHEET TITLE/DESCRIPTION
<b>GENERAL</b> G-01 COVER SHEET, LOCATION, AND VICINITY MAPS G-02 GENERAL NOTES AND DRAWING LIST G-03 ABBREVIATIONS G-04 DRAWING INDEX MAP G-05 HYDRAULIC PROFILE G-06 SURVEY CONTROL PLAN G-07 SURVEY CONTROL COORDINATES G-08 HORIZONTAL PIPELINE CONTROL AND POTHOLE TABLE G-09 STANDARD SYMBOLS AND CIVIL LEGEND G-10 GENERAL STRUCTURAL NOTES G-11 MECHANICAL NOTES AND AND PIPING LEGEND G-12 INSTRUMENTATION AND CONTROLS LEGEND SHEET - 1 G-13 INSTRUMENTATION AND CONTROLS LEGEND SHEET - 2 G-14 ELECTRICAL LEGEND AND ABBREVIATIONS  PP-01 PLAN AND PROFILE STA 1+98± TO STA 10+00 PP-02 PLAN AND PROFILE STA 10+00 TO STA 20+00 PP-03 PLAN AND PROFILE STA 20+00 TO STA 30+00 PP-04 PLAN AND PROFILE STA 30+00 TO STA 40+00 PP-05 PLAN AND PROFILE STA 40+00 TO STA 50+00 PP-06 PLAN AND PROFILE STA 50+00 TO STA 60+00 PP-07 PLAN AND PROFILE STA 60+00 TO STA 70+00 PP-08 PLAN AND PROFILE STA 70+00 TO STA 80+00 PP-09 PLAN AND PROFILE STA 80+00 TO STA 90+00 PP-10 PLAN AND PROFILE STA 90+00 TO STA 107+50 PP-11 PLAN AND PROFILE STA 107+50 TO STA 118+00 PP-12 PLAN AND PROFILE STA 118+00 TO STA 128+00 PP-13 PLAN AND PROFILE STA 128+00 TO STA 138+00 PP-14 PLAN AND PROFILE STA 138+00 TO STA 148+00 PP-15 PLAN AND PROFILE STA 148+00 TO STA 158+00 PP-16 PLAN AND PROFILE STA 158+00 TO STA 168+00 PP-17 PLAN AND PROFILE STA 168+00 TO STA 178+00 PP-18 PLAN AND PROFILE STA 178+00 TO STA 188+00 PP-19 PLAN AND PROFILE STA 188+00 TO STA 198+00 PP-20 PLAN AND PROFILE STA 198+00 TO STA 208+00 PP-21 PLAN AND PROFILE STA 208+00 TO STA 218+00 PP-22 PLAN AND PROFILE STA 218+00 TO STA 226+17±  XS-01 CROSS SECTIONS XS-02 CROSS SECTIONS XS-03 CROSS SECTIONS XS-04 CROSS SECTIONS  C-01 OVERALL SITE PLAN - FUTURE TANKS AND SUPPORTING INFRASTRUCTURE C-02 ENLARGED SITE PLAN - FUTURE TANKS AND SUPPORTING INFRASTRUCTURE C-03 SITE PLANS - MINOR BLOW OFF C-04 SITE PLAN - U-111 / 10200 SOUTH CONNECTION C-05 VAULT CONNECTION PROFILES C-06 PRV GRADING PLAN			<b>PIPELINE APPURTENANCES</b> PA-01 AIR VALVE VAULT PLANS AND SECTION PA-02 MINOR BLOW OFF AND DETAILS PA-03 MANWAY ACCESS VAULT PLAN AND SECTIONS PA-04 HERRIMAN CITY TURNOUT PLANS AND SECTION PA-05 SOUTH JORDAN CITY TURNOUT PLAN AND SECTIONS  <b>STRUCTURAL / MECHANICAL</b> SM-01 U-111/10200 SOUTH CONNECTION VAULT PIPING AND ROOF PLANS SM-02 U-111/10200 SOUTH CONNECTION VAULT SECTIONS SM-03 PRV VAULT PLANS AND SECTION  <b>ELECTRICAL</b> E-01 SITE PLAN - U-111 / 10200 SOUTH CONNECTION E-02 ELECTRICAL PLAN - U-111 / 10200 SOUTH CONNECTION VAULT E-03 ONE-LINE DIAGRAMS E-04 ELECTRICAL PLAN - PRV VAULT  <b>STANDARD DETAILS</b> SD-01 STANDARD DETAILS SD-02 STANDARD DETAILS SD-03 STANDARD DETAILS SD-04 STANDARD DETAILS SD-05 STANDARD DETAILS SD-06 STANDARD DETAILS SD-07 STANDARD DETAILS SD-08 STANDARD DETAILS SD-09 STANDARD DETAILS SD-10 STANDARD DETAILS SD-11 STANDARD DETAILS SD-12 STANDARD DETAILS SD-13 STANDARD DETAILS SD-14 STANDARD DETAILS SD-15 STANDARD DETAILS SD-16 STANDARD DETAILS SD-17 STANDARD DETAILS		

## GENERAL UTILITY RELOCATION NOTES

1. EXISTING STORM DRAINS AND SANITARY SEWERS MUST REMAIN IN SERVICE AT ALL TIMES. PROVIDE BYPASS PUMPING AS NEEDED TO FACILITATE CONSTRUCTION.
2. THOROUGHLY CLEAN EXISTING PIPE TO BE INSERTED OR EMBEDDED IN MANHOLE BASE. OUTSIDE OF PIPE SHALL BE CONDITIONED SO A TIGHT, LEAK FREE SEAL BETWEEN THE PIPE AND THE MANHOLE BASE RESULTS.
3. IF MANHOLE BASE IS POURED IN PLACE, THOROUGHLY CLEAN AND APPLY ANTI BONDING AGENT TO EXISTING PIPE TO BE REMOVED.
4. GRIND CORNERS OF EXISTING SD AS NEEDED TO ALLOW SMOOTH FLOW INTO NEW SD CHANNEL.
5. LOCATION AND VERTICAL ELEVATION OF EXISTING STORM DRAINS AND SANITARY SEWERS ARE ESTIMATES FROM UPSTREAM AND DOWNSTREAM MH'S. ACTUAL LOCATION AND ELEVATION MAY VARY. CONTRACTOR TO VERIFY LOCATION AND ELEVATION PRIOR TO ORDERING MATERIALS. PROVIDE AND SUBMIT GRADES OF NEW PIPES AND ELEVATION OF NEW MANHOLES.
6. EXPOSE EXISTING PIPE PRIOR TO CONSTRUCTION TO VERIFY EXISTING PIPE MATERIALS, OD'S, ELEVATION, LOCATION, AND PROXIMITY OF JOINTS AND/OR COUPLINGS TO CONNECTION LOCATIONS. WORK WITH PROJECT REPRESENTATIVE IN FIELD TO ADJUST PIPE LAYOUT IF NECESSARY.
7. ALL DAMAGED WATER SERVICES SHALL BE REMOVED AND REPLACED BETWEEN THE WATER MAIN AND THE METER PER CITY STANDARD DETAILS.



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										DSGN		DSGN		DSGN		DSGN		DSGN		DSGN		DSGN			

JORDAN VALLEY WATER  
 CONSERVANCY DISTRICT  
 11800 SOUTH U-111 PROJECT

GENERAL  
 GENERAL NOTES  
 AND DRAWINGS LIST

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	G-02
SHEET	of




1	2	3	4	5	6
<p>@ AT A AREA AB ANCHOR BOLT ABS ACRYLONITRILE-BUTADIENE-STYRENE AC ACTIVATED CARBON OR ASPHALT CONCRETE A/C AIR CONDITIONING ACFM ACTUAL CUBIC FEET PER MINUTE ACI AMERICAN CONCRETE INSTITUTE ACP ASPHALT CONCRETE PAVEMENT ACT ACOUSTIC TILE ADDL ADDITIONAL ADH ADHESIVE ADJ ADJACENT OR ADJUSTABLE AER AERATION AFF ABOVE FINISH FLOOR AFG ABOVE FINISH GRADE AG AGGREGATE AH AHEAD AHP AIR: HIGH PRESSURE AHR ANCHOR AISC AMERICAN INSTITUTE OF STEEL CONSTRUCTION AL ALUMINUM ALG ALIGN, ALIGNMENT ALP AIR: LOW PRESSURE ALT ALTERNATIVE, ALTERNATE AMB AMBIENT ANSI AMERICAN NATIONAL STANDARDS INSTITUTE APPD APPROVED APPROX APPROXIMATE APVD APPROVED BY ARCH ARCHITECTURAL ARV AIR RELEASE VALVE AS ADJUSTABLE SPEED ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS ASTM AMERICAN SOCIETY FOR TESTING AND MATERIAL ASSY ASSEMBLY AUTO AUTOMATIC AUX AUXILIARY AVAR AIR VACUUM AND AIR RELEASE VALVE AWWA AMERICAN WATER WORKS ASSOCIATION AWG AMERICAN WIRE GAGE AV AIR VALVE AVE AVENUE B BOTTOM BA BACKWASH AIR BC BEGIN CURVE OR BOLT CIRCLE BD BOARD BF BLIND FLANGE BFV BUTTERFLY VALVE BFP BACK FLOW PREVENTER BH BOREHOLE BLD BLIND BLK BLACK, BLOCK BLKG BLOCKING BLDG BUILDING BK BACK BM BENCH MARK OR BEAM BMP BEST MANAGEMENT PRACTICE BO BLOW OFF ASSEMBLY BOC BACK OF CURB BOD BIOCHEMICAL OXYGEN DEMAND BOP BOTTOM OF PIPE BOT BOTTOM BPV BACK PRESSURE VALVE BRG BEARING B&amp;S BELL AND SPIGOT BSMT BASEMENT BTU BRITISH THERMAL UNIT BTUH BRITISH THERMAL UNIT PER HOUR BTWN BETWEEN BV BALL VALVE BVC BEGINNING OF VERTICAL CURVE BWF BACKWASH FILL BWR BACKWASH RETURN BWS BACKWASH SUPPLY WATER BWW BACKWASH WASTEWATER BWV BACK WATER VALVE BYP BYPASS C CHANNEL OR CELSIUS CAB CABINET CAP CAPACITY CARV COMBINATION AIR RELEASE VALVE CB CATCH BASIN CC CENTER TO CENTER CCB CHLORINE CONTACT BASIN CCP CONCRETE CYLINDER PIPE CCS CENTRAL CONTROL SYSTEM CD CEILING DIFFUSER CFH CUBIC FEET PER HOUR CFM CUBIC FEET PER MINUTE CFS CUBIC FEET PER SECOND C&amp;G CURB AND GUTTER CHEM CHEMICAL CHK CHECKED BY CHKD PL CHECKERED PLATE CI CAST IRON CIGC CAST IRON GROOVED COUPLING CIMJ CAST IRON MECHANICAL JOINT CIP CAST IRON PIPE CIR CIRCLE CIRJ CAST IRON RESTRAINED JOINT CISP CAST IRON SOIL PIPE CJ CONSTRUCTION OR CONTROL JOINT CJP COMPLETE JOINT PENETRATION C, CL CENTERLINE CL CLASS, CHLORINE GAS, CHAIN LINK OR CREST LENGTH CL2 CHLORINE-LIQUID CLCS CEMENT-LINED AND COATED STEEL PIPE CLDIP CEMENT-LINED DUCTILE IRON PIPE CLG CEILING CLO CLOSET CLR CLEAR, CLEARANCE CLSM CONTROLLED LOW STRENGTH MATERIAL CLST CEMENT-LINED STEEL PIPE</p>	<p>CM CENTIMETER CML&amp;C CEMENT MORTAR LINED &amp; COATED CMP CORRUGATED METAL PIPE CMU CONCRETE MASONRY UNIT CO CLEAN-OUT COL COLUMN COMB COMBINED COMP COMPRESSOR CONC CONCRETE CONN CONNECTION CONST CONSTRUCTION CONT CONTINUOUS OR CONTINUATION COORD COORDINATE COP COPPER CP CATHODIC PROTECTION, CONTROL POINT CPLG COUPLING CPVC CHLORINATED POLYVINYL CHLORIDE CR CURB RETURN CRS COLD ROLLED STEEL CS CAUSTIC SODA CT CERAMIC TILE, COURT CTD, CTRD CENTERED CTF CUT TO FIT CTR CENTER CTSK COUNTERSINK CTV CABLE TELEVISION C TO C CENTER TO CENTER CU CUBIC CU FT CUBIC FOOT CU IN. CUBIC INCH CU YD CUBIC YARD CULV CULVERT CV CHECK VALVE CW COLD WATER CWR COLD WATER RETURN CWS COLD WATER SUPPLY CYL CYLINDER CWO CHAIN WHEEL OPERATOR D DEPTH DBA DEFORMED BAR ANCHOR d PENNEY (NAIL SIZE) DB DISTRIBUTION BOX DBL DOUBLE DEC DECANT DEG DEGREE DET DETAIL DF DRINKING FOUNTAIN OR DOUGLAS FIR DG DOOR GRILLE DI DROP INLET, DUCTILE IRON DIA DIAMETER DIAG DIAGONAL DIAPH DIAPHRAGM DIF DIFFUSER DIL DILUTE DIMJ DUCTILE IRON MECHANICAL JOINT DIP DUCTILE IRON PIPE DISCH DUCTILE IRON PIPE, GLASS LINED DISP DISCHARGE DIR DIRECTION DMJ DISMANTLING JOINT DN DOWN, DECANT DO DISSOLVED OXYGEN DR DOOR, DRAIN, DRIVE, DRAWN BY DS DRENCH SHOWER AND EYE WASH DSGN DESIGNED BY DWG DRAWING E EAST, ELECTRIC UTILITY, EASTING EA EACH EC END CURVE ECB EROSION CONTROL BLANKET ECC ECCENTRIC EF EACH FACE OR EXHAUST FAN EFF EFFLUENT EG EXISTING GRADE EL ELEVATION ELB ELBOW ELC ELECTRIC LOAD CENTER ELEC ELECTRIC OR ELECTRICAL ENG ENGINE ENGR ENGINEER EO EMERGENCY OVERFLOW EQU EQUAL EQL SP EQUALLY SPACED EQN EQUATION EQUIP EQUIPMENT ERB EMERGENCY RETENTION BASIN EVAP EVAPORATOR EVC END OF VERTICAL CURVE EW EACH WAY EWH EYE WASH EXC EXCAVATE EXH EXHAUST EXHF EXHAUST FAN EX-HY EXTRA HEAVY EXST, EXIST EXISTING EXP EXPOSED, EXPANSION EXP JT EXPANSION JOINT EXT EXTERIOR OR EXTENSION EMER EMERGENCY F FAHRENHEIT FAB FABRICATION OR FABRICATE FACT FACTORY FAI FRESH AIR INTAKE FB FLAT BAR FC FLEXIBLE COUPLING FCA FLANGE COUPLING ADAPTER FCO FLOOR CLEAN OUT FD FLOOR DRAIN FD BK FIELD BOOK FDN FOUNDATION FDR FEEDER FE FINAL EFFLUENT FES FLARED END SECTION</p>	<p>FEXT FIRE EXTINGUISHER FF FLAT FACE OR FAR FACE F TO F FACE TO FACE FG FINISH GRADE FH FIRE HYDRANT FI FILTER INFLUENT FIG. FIGURE FIN FINISH OR FINISHED FLEX FLEXIBLE FLOCC FLOCCULATOR OR FLOCCULATION FLG FLANGE FLH FLAT HEAD FLL FLOW LINE FLR FLOOR FLTR FILTER FMH FLEXIBLE METAL HOSE FNH FINISH FO FUEL OIL, FIBER OPTIC FOC FACE OF CONCRETE, FACE OF CURB FOCS FIBER OPTIC CABLE SYSTEM FOM FACE OF MASONRY FOS FACE OF STUDS FOW FACE OF WALL FPC FLEXIBLE PIPE COUPLING FPM FEET PER MINUTE FPS FEET PER SECOND FRP FIBERGLASS REINFORCED PLASTIC FS FAR SIDE, FLOOR SINK, FINISHED SURFACE OR FORGED STL FEET OR FOOT FT FOOTING FTW FILTER TO WASTE FW FINISHED WATER FWD FORWARD °F DEGREE FAHRENHEIT G GAS GA GAGE OR GAUGE GAL GALLON GALV GALVANIZED GALVI GALVANIZED IRON GC GROOVED COUPLING GCO GRADE CLEAN OUT GCF GROOVED COUPLING FITTING GE GROOVED END GEN GENERATOR GESC GRADING, EROSION AND SEDIMENT CONROL GL GLASS GLDIP GLASS LINED DUCTILE IRON PIPE GLST GLASS LINED STEEL PIPE GLV GLOBE VALVE GMMU GLASS MESH MASONRY UNIT GPD GALLONS PER DAY GPH GALLONS PER HOUR GPM GALLONS PER MINUTE GRD GRADE OR GROUND GR BRK GRADE BREAK GRTG GRATING GSP GALVANIZED STEEL PIPE GV GATE VALVE GVL GRAVEL GWB GYPSUM WALL BOARD GYP GYPSUM H HEIGHT HAS HEADED ANCHOR STUD HB HOSE BIB HD HUB DRAIN OR HOLE DIAMETER HDPE HIGH DENSITY POLYETHYLENE HDR HEADER HDW HARDWARE HEX HEXAGONAL Hg MERCURY HGL HYDRAULIC GRADE LINE HGT HEIGHT HM HOLLOW METAL HMWPE HIGH MOLECULAR WEIGHT POLYETHYLENE HORZ HORIZONTAL HP HORSEPOWER HPG HIGH PRESSURE GAS HPR HIGH PRESSURE HPT HIGH POINT HR HOSE RACK OR HANDRAIL HTR HEATER HV HOSE VALVE H&amp;V HEATING AND VENTILATION HVAC HEATING, VENTILATING AND AIR CONDITIONING HWO HANDWHEEL OPERATED HWR HOT WATER RETURN HWS HOT WATER SUPPLY HWSE HIGH WATER SURFACE ELEVATION HWY HIGHWAY HYD HYDRANT I&amp;C INSTRUMENTATION AND CONTROL ID INSIDE DIAMETER IE INVERT ELEVATION I.F. INSIDE FACE IN INCH INFL INFLUENT IP IRON PIPE IPS IRON PIPE SIZE IRR IRRIGATION INSTM INSTRUMENTATION INSUL INSULATE INV INVERT INVT INVERT JA JORDAN AQUEDUCT JA-2 JORDAN AQUEDUCT REACH 2 JAN JANITOR JT JOINT JVWCD JORDAN VALLEY WATER CONSERVANCY DISTRICT KG KILOGRAM K THOUSAND POUNDS KM KILOMETER KV KILOVOLT</p>	<p>KW KILOWATT KWH KILOWATT HOUR L LITER, LENGTH OR ANGLE LA LIQUID ALUM LAB LABORATORY LAT, LAT'L LATERAL LAV LAVATORY LB, LBS POUND(S) LB/CU FT POUNDS PER CUBIC FOOT LC LENGTH OF CURVE LF LINEAR FEET LG LONG LH LEFT HAND LN LANE LNTEL LINTEL LO LEVER OPERATED LONG LONGITUDINAL LP LIGHT POLE LPG LIQUEFIED PETROLEUM GAS LPT LOW POINT LR LONG RADIUS LT LEFT LWR LOWER LWSE LOW WATER SURFACE ELEVATION LGTH LENGTH M METER MAG MAGNETIC MAN MANUAL MACH MACHINE MAX MAXIMUM MB MACHINE BOLT MCC MOTOR CONTROL CENTER MECH MECHANICAL MFR MANUFACTURER MGD MILLION GALLONS PER DAY MG/L MILLIGRAMS PER LITER MH MANHOLE MI MALLEABLE IRON MILS 1/1,000 INCH MIN MINIMUM OR MINUTE MISC MISCELLANEOUS MJ MECHANICAL JOINT MK MARK MO MASONRY OPENING OR MOTOR OPERATED MOD MODEL OR MODIFY MOUNTED MS MOP SINK MSC MANUFACTURER SUPPLIED CABLE MSNRY MASONRY MTL METAL OR MATERIAL MTR MOTOR MW MANWAY MWS MAXIMUM WATER SURFACE N NORTH, NORTHING NAD NORTH AMERICAN DATUM NAVD NORTH AMERICAN VERTICAL DATUM NBS NATIONAL BUREAU OF STANDARDS NC NORMALLY CLOSED NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOC. NEPA NATIONAL FIRE PROTECTION ASSOCIATION NF NEAR FACE NIC NOT IN CONTRACT NO NORMALLY OPEN OR NUMBER NPS NOMINAL PIPE SIZE NPT NATIONAL PIPE THREAD NRS NON RISING STEM NS NEAR SIDE NTS NOT TO SCALE NW NORTHWEST OC ON CENTER OD OUTSIDE DIAMETER OR OVERFLOW DRAIN O.F. OUTSIDE FACE OR OVERFLOW OFR OVERFLOW RETURN OG ORIGINAL GROUND OH OVERHEAD OHE OVERHEAD ELECTRIC UTILITY OSD OPEN SITE DRAIN O TO O OUT TO OUT OPER OPERATOR OPNG OPENING OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION OZ OUNCE P PILASTER OR POLE PC POINT OF CURVE, PORTLAND CEMENT, PIECE PCC POINT OF COMPOUND CURVE, PORTLAND CEMENT PIECES PCS CONCRETE PD PROCESS DRAIN PDR PUMPED DRAIN PE PLAIN END PENT PENETRATION PG PRESSURE GAGE PH POTHOLE PI POINT OF INTERSECTION P&amp;ID PROCESS AND INSTRUMENTATION DIAGRAM P/JF PREMODLED JOINT FILLER PL PLATE OR PROPERTY LINE PLYWD PLYWOOD PNEU PNEUMATIC PO POLYMER SOLUTION POC CATIONIC POLYMER POA ANIONIC POLYMER POB POINT OF BEGINNING POE POINT OF END PON NONIONIC POLYMER PP POWER POLE PPD POUNDS PER DAY PPH POUNDS PER HOUR PPM PARTS PER MILLION PR PAIR PRC POINT OF REVERSE CURVE PRCST PRECAST PREFAB PREFABRICATED</p>	<p>PRESS. PRESSURE PRI PRIMARY PROJ PROJECT PROP. PROPERTY PRV PRESSURE REGULATING VALVE PS PUMP STATION OR PRESSURE SWITCH PSF POUNDS PER SQUARE FOOT PSI POUNDS PER SQUARE INCH PSIG POUNDS PER SQUARE INCH, GAUGE PSL PRIMARY SLUDGE PT POINT OF TANGENT, POINT PTDF PRESSURE TREATED DOUGLAS FIR PTD/WR PAPER TOWEL DISPENSER / WASTE RECEPTACLE PV PLUG VALVE PVC POLYVINYL CHLORIDE PVMT PAVEMENT PW POTABLE WATER R RISER R, RAD RADIUS RC RETURN AIR RC REINFORCED CONCRETE RCB REINFORCED CONCRETE BOX RCP REINFORCED CONCRETE PIPE RD ROAD, ROOF DRAIN OR ROUND RDRCR REDUCER RECIRC RECIRCULATION REF REFER OR REFERENCE REFR REFRIGERATOR REG REGULATING REINF REINFORCE OR REINFORCING REQD REQUIRED RES RESERVOIR REV REVISION RJ RESTRAINED JOINT RL RAIN LEADER RLS RUBBER LINED STEEL RM ROOM RO ROUGH OPENING ROW RIGHT-OF-WAY RPM REVOLUTIONS PER MINUTE RR RAILROAD RST REINFORCING STEEL RT RIGHT RTN RETURN RV ROOF VENT RW RAW WATER RWBS RAW WATER BASIN SOLIDS R/W RIGHT-OF-WAY S SOUTH, SLOPE SA SAMPLE SC SECONDARY CLARIFIER SCFM STANDARD CUBIC FEET PER MINUTE SCH SCHEDULE SD STORM DRAIN, SOAP DISPENSER SE SOUTHEAST SEC SECONDARY SECT SECTION SERWTP SOUTHEAST REGIONAL WATER TREATMENT PLANT SK SINK SH SHOWER SHT SHEET SIM SIMILAR SJC SOUTH JORDAN CITY SL SLUDGE SLP SLOPE SOLN SOLUTION SP SPACING, SPACE, SPACES OR STATIC PRESSURE SPD SUMP PUMP DRAIN SPEC SPECIFICATION SPLY SUPPLY SQ SQUARE SQ FT SQUARE FOOT SQ IN SQUARE INCH SS SANITARY SEWER SST STAINLESS OR STAINLESS STEEL STA STATION STD STANDARD STIF STIFFENER STL STEEL STLS STEEL PIPE, (SPECIAL) STR STAIR STR TRD STAIR TREAD STRL STRUCTURAL STRUCT STRUCTURE SUBFL SUB-FLOOR SUCTION SUCTION SUSP SUSPEND SV SOLENOID VALVE SVC SERVICE SYM SYMMETRICAL SYS SYSTEM SWA SOUTHWEST AQUEDUCT T THERMOSTAT, TOP t THICKNESS TAN TANGENT TB TACK BOARD TUBG TUBING TBD TAYLORSVILLE-BENNION IMPROVEMENT DISTRICT T&amp;B TOP AND BOTTOM TBC TOP BACK OF CURB TBE THREADED BOTH ENDS TBM TEMPORARY BENCH MARK TBOX TELECOMMUNICATIONS BOX TC TOP OF CURB TDH TOTAL DYNAMIC HEAD T&amp;G TONGUE AND GROOVE TECH TECHNICAL TEL, T TELEPHONE TEMP TEMPERATURE TF TOP FACE OR TRICKLING FILTER</p>	<p>TH TOILET PAPER HOLDER THK THICK OR THICKNESS THRD THREAD THRHLD THRESHOLD TK TANK TOE THREAD ONE END TOG TOP OF GRATING TOS TOP OF STEEL T.O.W. TOP OF WALL TP TELEPHONE POLE TPCB TEMPORARY PRECAST CONCRETE BARRIER TRANS TRANSITION OR TRANSMITTER TRANSV TRANSVERSE TS TUBE STEEL TSS TOTAL SUSPENDED SOLIDS TT THRUST TIE TTD TOILET TISSUE DISPENSER TW THERMOMETER WELL TV TELEVISION OR THERMOSTATIC VALVE TYP TYPICAL UBC UNIFORM BUILDING CODE UC UNDER CROSSING UD UNDERDRAIN UDOT UTAH DEPARTMENT OF TRANSPORTATION UG UNDERGROUND UGC UNDERGROUND CONDUIT UGE UNDERGROUND ELECTRIC UTILITY UH UNIT HEATER UL UNDERWRITERS LABORATORIES UNC UNIFIED COARSE THREAD UNK UNKNOWN UNO UNLESS NOTED OTHERWISE UP UTILITY POLE UR URINAL UT ULTRASONIC TESTING UTA UTAH TRANSIT AUTHORITY VC VERTICAL CURVE VERT VERTICAL VIF VERIFY IN FIELD VPI VERTICAL POINT OF INTERSECTION W WATER, WEST OR WIDTH W/ WITH WC WATER CLOSET, WATER COLUMN WCO WALL CLEANOUT WD WOOD WF WIDE FLANGE WH WATER HEATER WJC WEST JORDAN CITY WM WATER METER W/O WITHOUT WR WATER RESISTANT WS WATER SURFACE, WATER STOP WSCOT WAINSCOT WSE WATER SURFACE ELEVATION WSP WELDED STEEL PIPE WSTP WATER STOP WT WEIGHT WTP WATER TREATMENT PLANT WWW WELDED WIRE MESH XING CROSSING XS EXTRA STRONG XXS DOUBLE EXTRA STRONG YD YARD</p>



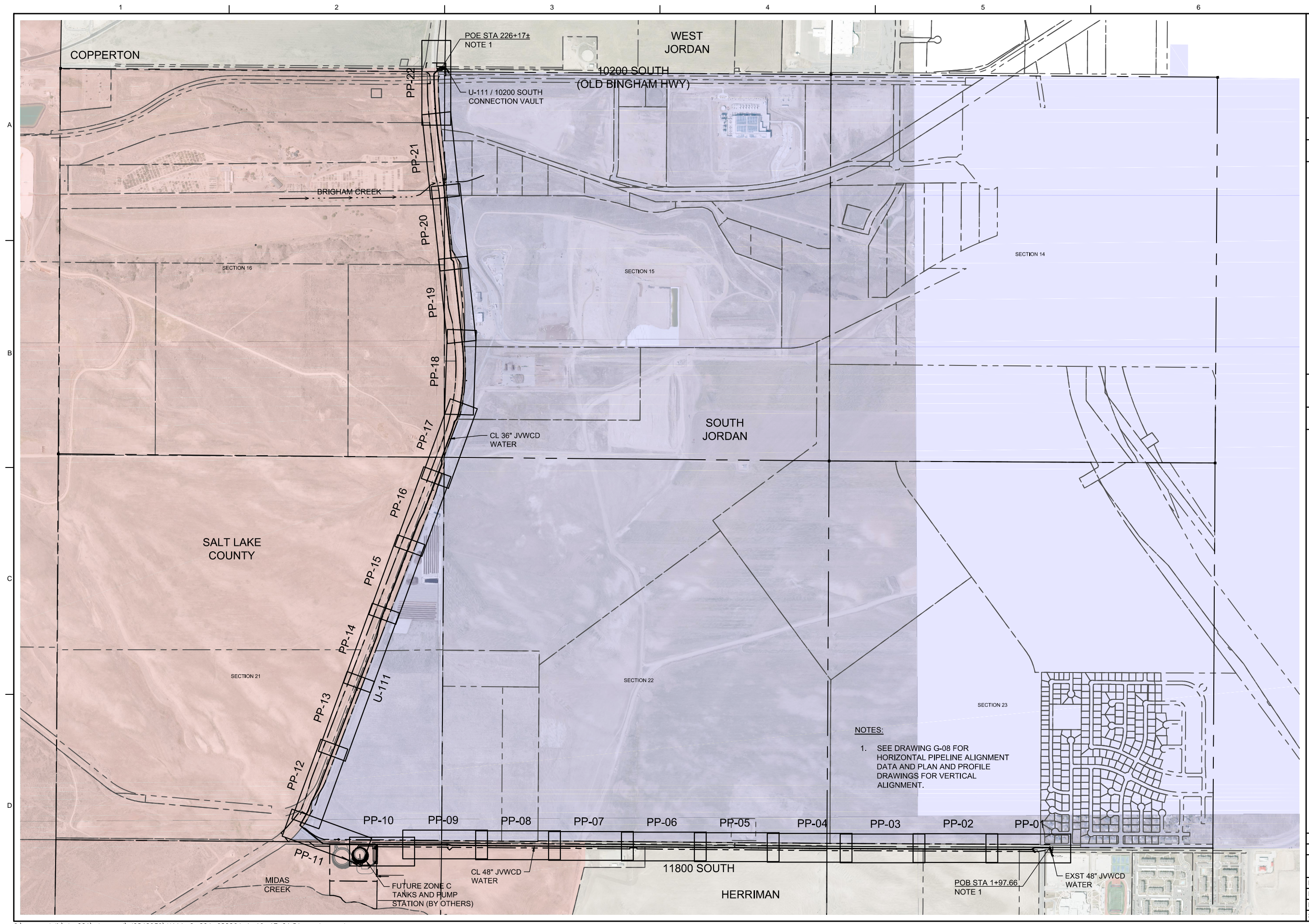
APVD	BY	APVD	CHK	REVISION	DR	NO.	DATE	DSGN

  
**Jordan Valley Water Conservancy District**  
 11800 SOUTH U-11 PROJECT

  
 GENERAL  
**ABBREVIATIONS**

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE JANUARY 2017
PROJ 680064
DWG G-03
SHEET of





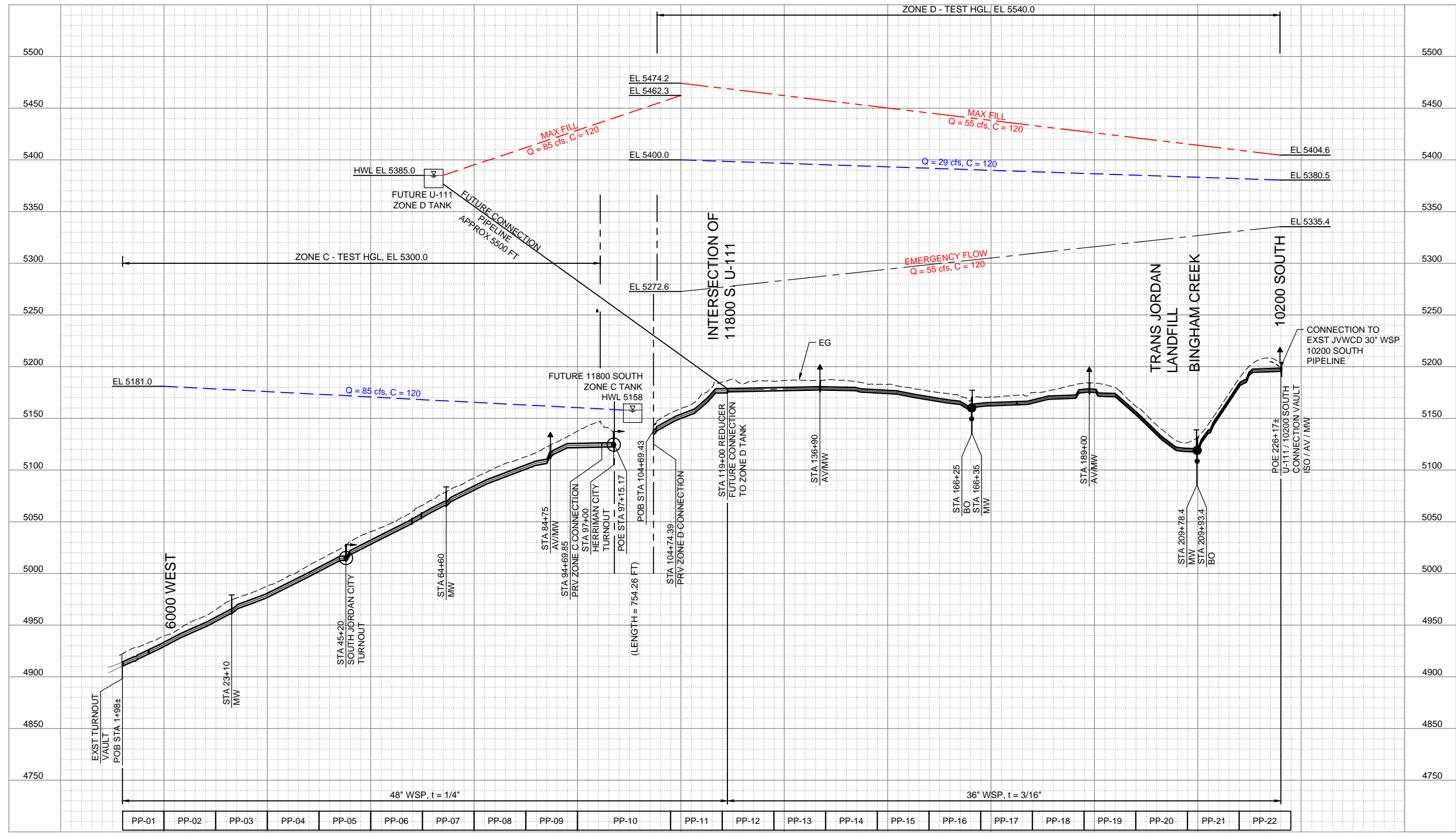
NO.	DATE	DR	CHK	REVISION	BY	APVD
		R WILLEITNER	C HOGGARD		N JONES	A MURDOCK
		DSGN				

**ch2m**  
GENERAL  
DRAWING INDEX MAP

**Jordan Valley Water Conservancy District**  
11800 SOUTH U-111 PROJECT

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	G-04
SHEET	of





PP-01	PP-02	PP-03	PP-04	PP-05	PP-06	PP-07	PP-08	PP-09	PP-10	PP-11	PP-12	PP-13	PP-14	PP-15	PP-16	PP-17	PP-18	PP-19	PP-20	PP-21	PP-22
10+00	30+00	50+00	70+00	90+00	110+00	130+00	150+00	170+00	190+00	210+00	230+00										

SCALE: 1" = 1000' HORZ  
1" = 50' VERT

**LEGEND**

- EXISTING GROUND
- MAXIMUM OPERATING HGL
- TYPICAL OPERATING HGL
- MINIMUM OPERATING HGL
- FINISHED WATER TANK
- PUMP STATION
- TURNOUT
- AIR VALVE
- BLOW OFF
- MANWAY



NO.	DATE	DR	REVISION	BY	APVD
		R WILLEITNER	CHK	N. JONES	A. MURDOCK

**JORDAN VALLEY WATER CONSERVATION DISTRICT**  
**11800 SOUTH U-111 PROJECT**

**ch2m**  
 GENERAL  
**HYDRAULIC PROFILE**

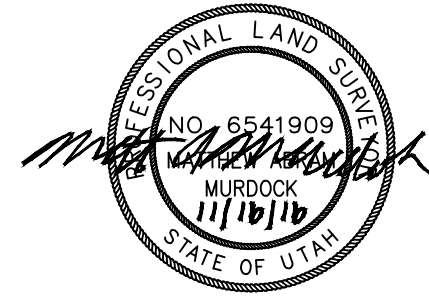
VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	JANUARY 2017
PROJ	680064
DWG	G-05
SHEET	of







## CONTROL SUMMARY



CONTROL TABLE						
CONTROL POINT	PROJECT COORDINATES		GEODETTIC COORDINATES		ELEVATION	DESCRIPTION
	NORTHING	EASTING	LATITUDE	LONGITUDE		
137	7364862.8614	1478747.9774	40.53699	-112.08165	5257.611	SW COR21
138	7364840.4990	1481392.5720	40.53698	-112.07214	5170.216	SQTR COR21
139	7364818.3044	1484037.5764	40.53696	-112.06262	5125.590	SE COR21
140	7364795.4829	1486680.6387	40.53694	-112.05311	5063.225	SQTR COR22
141	7364772.2546	1489324.2948	40.53692	-112.04360	4994.403	SE COR22
142	7364760.2270	1491971.3630	40.53693	-112.03408	4931.496	SQTR COR23
143	7364748.2490	1494617.9290	40.53694	-112.02456	4869.839	SE COR23
144	7367389.7001	1494633.0211	40.54420	-112.02456	4879.259	EQTR COR23
145	7370030.1837	1494648.2015	40.55144	-112.02456	4915.315	SE COR14
146	7370044.2946	1492001.0316	40.55144	-112.03408	-----	SQTR COR14
147	7370058.3267	1489352.9759	40.55143	-112.04361	5050.134	SE COR15
148	7370083.6810	1486710.0448	40.55146	-112.05312	5105.485	SQTR COR15
149	7370108.0580	1484073.6690	40.55148	-112.06261	5170.666	SW COR15
150	7372751.1760	1484077.5470	40.55874	-112.06266	5178.116	WQTR COR15
151	7372708.2131	1489365.9352	40.55871	-112.04362	5003.199	EQTR COR15
152	7375358.3128	1489379.0093	40.56598	-112.04364	5043.779	NE COR15
153	7375376.9939	1486727.4430	40.56599	-112.05318	5116.935	NQTR COR15
154	7375394.4870	1484079.9190	40.56599	-112.06271	5201.886	NE COR16
155	7375443.4143	1478809.8047	40.56603	-112.08168	5344.012	NW COR16
201	7375450.9150	1483443.0730	40.56613	-112.06500	5220.986	TARGET-SET HUB-NAIL
202	7375463.2830	1484655.0840	40.56619	-112.06064	5174.809	TARGET-SET HUB-NAIL
203	7373650.7430	1484112.6490	40.56121	-112.06255	5125.937	TARGET-SET HUB-NAIL
204	7371075.1170	1484605.4900	40.55414	-112.06072	5181.899	TARGET-SET HUB-NAIL
205	7371150.6870	1483781.0380	40.55434	-112.06369	5190.605	TARGET-SET HUB-NAIL
206	7367857.2330	1483199.6850	40.54529	-112.06571	5183.128	TARGET-SET HUB-NAIL
207	7364512.7010	1482257.2580	40.53609	-112.06902	5151.629	TARGET-SET HUB-NAIL
208	7365147.9810	1481670.5140	40.53782	-112.07115	5183.690	TARGET-SET HUB-NAIL
209	7365355.2070	1487661.9530	40.53850	-112.04959	5041.574	TARGET-SET HUB-NAIL
210	7364299.3110	1487655.0250	40.53560	-112.04960	5033.140	TARGET-SET HUB-NAIL
211	7364761.1630	1484956.6020	40.53682	-112.05931	5103.922	TARGET-SET HUB-NAIL
212	7364803.4190	1490372.9470	40.53703	-112.03983	4971.411	TARGET-SET HUB-NAIL
213	7365320.7510	1492940.7230	40.53849	-112.03060	4911.375	MHRIM-N-COLLAR
214	7364285.8220	1492973.3550	40.53565	-112.03046	4902.146	MHRIM-N-JOINT

**CONTROL NOTES**

THE BASIS OF LATITUDE AND LONGITUDES FOR THIS PROJECT ARE BASED ON NAD 83 STATE PLANE UTAH CENTRAL ZONE. FOUND SECTION CORNERS WERE USED AS PUBLISHED BY THE SALT LAKE COUNTY SURVEYORS OFFICE (ELEVATIONS IN METERS WERE THEN CONVERTED TO U.S. SURVEY FEET FOR THE PROJECT. 1 METER = 3.280833333 U.S. SURVEY FEET).

THE DATUM ELEVATION FOR THIS PROJECT WAS DERIVED FROM THE NAVD 88 ELEVATIONS PUBLISHED BY SALT LAKE COUNTY SURVEYORS OFFICE.

THIS PROJECT IS ON A GRID SYSTEM NOT A GROUND SYSTEM TO MATCH THE DATUM USED BY JORDAN VALLEY WATER CONSERVANCY DISTRICT. THE PROPERTY AND RIGHT OF WAY LINE WORK WAS SCALED FROM GROUND TO GRID USING A COMBINED SCALE FACTOR OF 0.99973393250

NO.	DATE	DSGN	DR	LGV	CHK	REVISION	BY	APVD	MM

JORDAN VALLEY WATER  
 CONSERVANCY DISTRICT  
 11800 SOUTH U-111 PROJECT

ch2m

GENERAL

SURVEY CONTROL COORDINATES

DRAWINGS SCALE	
VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	G-07
SHEET	of

REUSE OF DOCUMENTS: THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF CH2M HILL AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CH2M HILL. ©CH2M HILL 2016. ALL RIGHTS RESERVED.

HORIZONTAL 48" & 36" PIPE ALIGNMENT

ELEMENT	STATION	NORTHING	EASTING	RADIUS	LENGTH	DELTA
POB	1+97.66	7364753.89	1492382.02			
PI	4+04.84	7364754.85	1492174.84			
PI	4+55.93	7364729.52	1492130.48			
PI	32+62.27	7364742.26	1489324.17			
PI	59+06.01	7364765.49	1486680.53			
PI	84+11.32	7364787.11	1484175.31			
PI	84+59.95	7364799.02	1484128.16			
PI	88+01.01	7364795.40	1483787.13			
PI	94+40.12	7364800.77	1483148.04			
PI	96+77.09	7364563.80	1483146.05			
POE	97+15.17	7364537.10	1483118.90			
POB	104+69.43	7364732.14	1483137.47			
PI	105+38.14	7364800.85	1483138.04			
PI	112+62.22	7364806.92	1482413.98			
PI	116+70.25	7365060.76	1482094.52			
PI	118+90.42	7365252.13	1482203.40			
PI	120+36.25	7365388.27	1482255.66			
PI	122+44.36	7365571.89	1482353.59			
PI	144+68.19	7367648.74	1483148.64			
PI	146+84.79	7367859.81	1483197.32			
PI	161+44.46	7369223.00	1483719.17			
PI	162+86.78	7369347.45	1483788.23			
PI	170+03.09	7370016.42	1484044.32			
PI	170+66.53	7370079.07	1484034.35			
PI	174+99.41	7370485.77	1484182.60			
PI	176+18.54	7370599.97	1484216.49			
PI	176+59.19	7370627.95	1484245.99			
PC	177+04.64	7370670.40	1484262.20			
PI	182+09.27	7371161.33	1484379.01	2909.15	999.32	19°40'54"
CC		7371343.78	1481432.06			
PT	187+03.96	7371662.91	1484323.65			
PI	198+44.01	7372796.29	1484200.51			
PI	198+85.07	7372823.39	1484169.66			
PI	207+39.11	7373673.36	1484086.47			
PI	210+22.03	7373954.48	1484054.57			
PI	212+86.72	7374217.63	1484025.98			
PC	215+23.95	7374453.05	1483996.73			
PI	219+63.03	7374888.78	1483942.61	8500.00	877.38	5°54'51"
CC		7375500.85	1492431.90			
PT	224+01.34	7375327.77	1483933.67			
PI	224+38.22	7375364.64	1483932.92			
PI	225+08.28	7375415.18	1483981.44			
PI	225+72.85	7375415.23	1484046.01			
POE	226+16.69	7375459.07	1484045.98			

- NOTES:  
 1. SEE DWGS PP-01 TO PP-22 FOR PIPE ALIGNMENT.  
 2. PIPELINE MARKERS SHALL BE INSTALLED PER (3305-959).

HORIZONTAL 16" PRV PIPE ALIGNMENT

ELEMENT	STATION	NORTHING	EASTING	RADIUS	LENGTH	DELTA
POB	300+00.000	7364771.03	1483147.79			
PI	300+24.000	7364771.23	1483123.79			
PI	300+58.003	7364737.23	1483123.51			
POE	300+72.003	7364737.11	1483137.51			

- NOTE:  
 1. SEE DWG C-02 FOR PIPE ALIGNMENT

HORIZONTAL 30" PIPE ALIGNMENT

ELEMENT	STATION	NORTHING	EASTING	RADIUS	LENGTH	DELTA
POB	310+00.00	7375449.04	1483998.66			
PI	310+12.50	7375449.05	1484011.16			
PI	310+32.50	7375459.06	1484028.48			
PI	310+62.50	7375459.08	1484058.48			
PI	310+82.50	7375449.09	1484075.80			
POE	311+00.00	7375449.10	1484093.30			

- NOTE:  
 1. SEE DWG C-04 FOR PIPE ALIGNMENT

POTHOLE TABLE

Pothole List for 11800 south U-111 Pipeline

Test Number	Station	Type of Utility	Size	Utility Owner	Survey ID	Northing	Easting	Elevation	Utility Measure Down	Utility Elevation	Ground Water depth
PH-1	1+98	Water	48"	JVWCD	1690	7364753.89	1492382.02	4922.30	8'-0"	4914.3	NO
PH-2	3+86	Gas	6"	Questar	1654	7364742.38	1492193.60	4926.84	3'-9"	4923.09	NO
PH-2A	3+86	Water	16"	Herriman	1654	7364737.04	1492193.60	4926.91	6'-8"	4920.24	NO
PH-4	163+42	Gas	4"	Questar	1655	7369405.77	1483790.73	5173.00	3'-4"	5169.67	NO
PH-6	170+97	Gas	4"	Questar	1656	7370103.71	1484056.93	5170.93	2'-4"	5168.60	NO
PH-7	175+50	Gas	4"	Questar	1657	7370530.88	1484209.66	5171.96	3'-3"	5168.71	NO
PH-9	186+36	Water	20"	RTKC	1698	7371593.73	1484309.44	5183.16	6'-9"	5176.41	NO
PH-10	190+63	Gas	4"	Questar	1700	7372019.04	1484272.95	5183.50	6"-6"	5177.00	NO
PH-10A	190+85	Cable	2"	Unknown	1701	7372039.77	1484262.71	5184.40	3'-0"	5181.40	NO
PH-11	200+52	Gas	4"	Questar	1658	7372990.69	1484164.68	5148.90	3'-5"	5145.48	NO
PH-12	202+30	Water	10"	S. Jordan	1659	7373167.83	1484152.05	5140.58	4'-9"	5135.83	NO
PH-14	219+07	Water	16"	RTKC	1660	7374834.46	1483965.25	5195.34	1'-9"	5193.59	NO
PH-15	219+23	Water	26"	RTKC	1661	7374850.85	1483964.46	5196.22	5'-3"	5190.97	NO
PH-16	219+32	Water	12"	RTKC	1662	7374860.07	1483964.18	5196.91	5'-2"	5191.74	NO
PH-18	na	HP Gas	6"	Questar	1664	Alignment Change, no longer needed			3'-0"	na	NO
PH-19	na	Water	10"	S. Jordan	1663	Alignment Change, no longer needed			5'-0"	na	NO
PH-20	226+06	Water	30"	JVWCD	1704	7375448.72	1484059.43	5202.04	5'-4"	5196.70	NO



BY	APVD
R. WILLEITNER	R. WILLEITNER
CHK	APVD
REVISION	N. JONES
DR	C. HOGGARD
NO.	DATE
DSGN	R. WILLEITNER



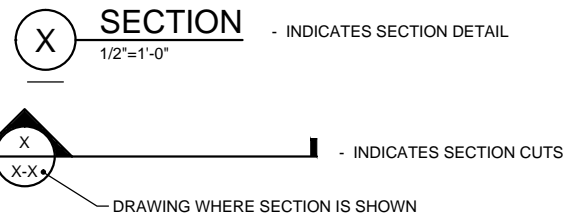
11800 SOUTH U-111 PROJECT  
 HORIZONTAL PIPELINE CONTROL AND POTHOLE TABLE



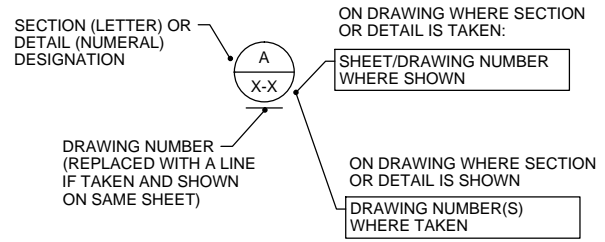
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DATE	JANUARY 2017
PROJ	680064
DWG	G-08
SHEET	of



# STANDARD SYMBOLS



## DESIGN DETAIL DESIGNATION



## DETAIL AND SECTION DESIGNATION

# CIVIL LEGEND

EXISTING	THIS CONTRACT	
		EXISTING STRUCTURE OR FACILITY
		SILT FENCE
		DIRT ROAD OR PATH
		RAILROAD
		SLOPE WITH FLOW DIRECTION
		ROUND OR DIAMETER
		SQUARE
		AT
		ANGLE
		CL OR C
		STRUCTURE, BUILDING OR FACILITY LOCATION POINT - COORDINATES
		GRANULAR BACKFILL
		ASPHALT
		EARTH
		BEDROCK
		POTHOLE LOCATION
		BORE HOLE LOCATION
		POINT OF CURVATURE OR TANGENCY (CURVES)
		POINT OF INTERSECTION (CURVES)
		NEW PIPELINE
		SPOT ELEVATION
		CONTOUR LINE
		EMBANKMENT AND SLOPE
		DRAINAGEWAY OR DITCH
		CATCH BASIN OR INLET
		TRENCH DRAIN
		SIGN
		MANHOLE
		ELECTRICAL MANHOLE
		ELECTRIC HANDHOLE
		POST OR GUARD POST
		GUY ANCHOR
		FIRE HYDRANT
		UTILITY POLE
		LIGHT POLE
		RR SIGNAL
		BRUSH/TREE LINE
		TREE
		PROPERTY LINE
		CENTER LINE
		EASEMENT, STAGING, OR WORK AREA LIMITS
		DEMOLITION STRUCTURE, BUILDING OR FACILITY
		SINGLE SWING GATE
		DOUBLE SWING GATE
		SLIDING GATE
		GUARD RAIL
		CHAIN LINK OR WIRE FENCE
		ARCHITECTURAL FENCE
		CULVERT
		CULVERT

NOTES:  
 1. IN GENERAL ELEMENTS SHOWN WITH GREY TONE OR DASHED LINES, REPRESENT EXISTING FACILITIES OR FEATURES.  
 2. SCREENED BACKGROUNDS ON DRAWINGS CAN REPRESENT FACILITIES TO BE CONSTRUCTED UNDER THIS CONTRACT WHICH, IF DRAWN IN SOLID LINES WOULD OBSCURE THE PARTICULAR DETAILS BEING SHOWN. CONSULT THE ENGINEER THE SCREENING ON ANY ELEMENTS IS NOT SELF EXPLANATORY.

# PIPING LEGEND AND SYMBOLS

EXISTING	THIS CONTRACT	
		NOMINAL PIPE DIAMETER
		PIPE USE IDENTIFICATION
		PIPING < 30" DIAMETER
		PIPING ≥ 30" DIAMETER
		PIPE TO BE ABANDONED
		PIPE TO BE REMOVED
		EXISTING WATER
		EXISTING SANITARY SEWER
		EXISTING STORM DRAIN
		EXISTING IRRIGATION PIPE
		EXISTING GAS
		EXISTING HIGH PRESSURE GAS
		EXISTING FIBER OPTIC
		EXISTING ELECTRIC UNDERGROUND
		EXISTING ELECTRIC OVERHEAD
		EXISTING TELEPHONE UNDERGROUND
		EXISTING TELEPHONE OVERHEAD
		EXISTING ELECTRICAL, TELEPHONE, AND TELEVISION OVERHEAD
		EXISTING TELEVISION
		AIR VALVE
		MANWAY
		BLOWOFF
		HORIZONTAL BEND
		WATER VALVE
		CATHODIC PROTECTION TEST STATION

NOTE:  
 IN GENERAL ELEMENTS SHOWN WITH GREY TONE OR DASHED LINES, REPRESENT EXISTING FACILITIES OR FEATURES.



NO.	DATE	DR	CHK	BY	APVD
		R. WILLEITNER	C. HOGGARD	N. JONES	R. WILLEITNER

JORDAN VALLEY WATER CONSERVANCY DISTRICT  
 11800 SOUTH U-111 PROJECT

ch2m GENERAL  
 STANDARD SYMBOLS AND CIVIL LEGEND

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	G-09
SHEET	of

## DESIGN CRITERIA

- APPLICABLE CODE: 2015 INTERNATIONAL BUILDING CODE (IBC), AS AMENDED BY THE STATE OF UTAH AND LOCAL AGENCIES.
- REFER TO THE DRAWINGS FOR ADDITIONAL AND SPECIFIC STRUCTURE LOADINGS AND REQUIREMENTS.
- ROOF LOADS:
 

SNOW LOAD	N/A
ROOF LIVE (TYP)	200 PSF
ROOF LIVE W/IN ROADWAY	HL-93
ACCESS HATCHES / COVERS	100 PSF
- SOIL DESIGN PARAMETERS:
  - NET ALLOWABLE SOIL BEARING PRESSURES: 1,500 PSF
  - EQUIVALENT DRAINED FLUID PRESSURES:
 

ACTIVE:	43 PCF
AT REST:	63 PCF
PASSIVE:	350 PCF
  - EQUIVALENT UNDRAINED FLUID PRESSURES: N/A
  - GROUND WATER ELEVATION: BELOW STRUCTURES (SEE GEOTECH REPORT)

## GENERAL INFORMATION

- FOR ABBREVIATIONS NOT LISTED, SEE ASME Y14.38 "ABBREVIATIONS AND ACRONYMS" PUBLICATION AS DISTRIBUTED BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME).
- DESIGN DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS OCCURRING THROUGHOUT THE PROJECT, WHETHER OR NOT THEY ARE INDIVIDUALLY CALLED OUT.
- DETAILING AND DIMENSIONS OF EXISTING STRUCTURES SHOWN ARE BASED ON AS-BUILT DESIGN DRAWINGS, AND DO NOT NECESSARILY REPRESENT THE AS-CONSTRUCTED CONDITIONS. THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS AND DETAILING OF THE EXISTING STRUCTURES PRIOR TO FABRICATION OF ADJACENT FRAMING OR CONNECTIONS THAT ARE AFFECTED BY THE EXISTING STRUCTURE.
- VERIFY OPENING DIMENSIONS IN WALLS, SLABS, AND DECKS WITH OTHER DISCIPLINE DRAWINGS.
- FOR NUMBER, TYPE, SIZE, ARRANGEMENT, AND/OR LOCATION OF EQUIPMENT PADS SEE OTHER DISCIPLINE DRAWINGS. COORDINATE WITH THE EQUIPMENT SUPPLIER PRIOR TO PLACING SLABS, WALLS AND FOUNDATIONS. COORDINATE PIPING OPENINGS WITH THE OTHER DISCIPLINE DRAWINGS.
- CUT NO STRUCTURAL MEMBERS FOR PIPES, DUCTS, ETC. UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
- VISITS TO THE JOB SITE BY THE ENGINEER TO OBSERVE THE CONSTRUCTION DO NOT IN ANY WAY MEAN THAT ENGINEER IS GUARANTOR OF CONSTRUCTOR'S WORK, NOR RESPONSIBLE FOR THE COMPREHENSIVE OR SPECIAL INSPECTIONS, COORDINATION, SUPERVISION, NOR SAFETY AT THE JOB SITE.

## SPECIAL INSPECTION & STRUCTURAL OBSERVATIONS

- SPECIAL INSPECTION IS REQUIRED IN ACCORDANCE WITH IBC SECTIONS 109 AND 1704 ON THE FOLLOWING PORTIONS OF THE WORK.

CONCRETE PLACEMENT  
 REINFORCING STEEL PLACEMENT  
 STRUCTURAL WELDING  
 ANCHOR, EMBEDS AND BOLTS INSTALLED IN CONCRETE  
 HIGH STRENGTH BOLTS  
 PRECAST CONCRETE MEMBERS

- STRUCTURAL OBSERVATIONS IS REQUIRED IN ACCORDANCE WITH THE IBC AND LOCAL AGENCIES.

## DEFERRED SUBMITTALS

- DEFERRED SUBMITTALS ARE THOSE PORTIONS OF THE DESIGN WHICH ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND WHICH ARE TO BE SUBMITTED TO THE PERMITTING AGENCY FOR ACCEPTANCE PRIOR TO INSTALLATION OF THAT PORTION OF THE WORK.
- THE FOLLOWING IS A LIST OF DEFERRED SUBMITTALS PER IBC SECTION 106.3.4.2 THAT ARE EXPECTED TO CONTAIN STRUCTURAL CALCULATIONS OR SAFETY RELATED SYSTEM INFORMATION FOR REVIEW TO MEET BUILDING PERMITTING REQUIREMENTS FOR DESIGNED SYSTEMS. PRIOR TO INSTALLATION OF THE INDICATED STRUCTURAL ELEMENT, EQUIPMENT, DISTRIBUTION SYSTEM, OR COMPONENT OR ITS ANCHORAGE, THE CONTRACTOR SHALL SUBMIT THE REQUIRED CALCULATIONS AND SUPPORTING DATA AND DRAWINGS FOR REVIEW AND ACCEPTANCE BY THE ENGINEER. ADDITIONALLY, ACCEPTANCE INDICATED ON THE ENGINEER'S COMMENT FORM, ALONG WITH THE COMPLETED, FINAL SUBMITTAL SHALL THEN BE FILED BY THE CONTRACTOR AND ACKNOWLEDGED AS ACCEPTED BY THE PERMITTING AGENCY PRIOR TO INSTALLATION OF THESE ITEMS.

SPECIFICATION SECTION	ITEM
40 05 15	PIPING SUPPORT SYSTEMS
OTHER	ANY EQUIPMENT OR COMPONENT IN WHICH A TECHNICAL SPECIFICATION REQUIRES SUBMITTAL OF EQUIPMENT OR ANCHORAGE SYSTEM CALCULATIONS

## FOUNDATIONS

- REFER TO GEOTECHNICAL REPORT JVWCD PROPOSED WATER LINE - 11800 SOUTH AND U-111 BY INTERMOUNTAIN GEOENVIRONMENTAL SERVICES INC (IGES), DATED NOVEMBER 14, 2016.
- EXCAVATION SHALL BE SHORED TO PREVENT SUBSIDENCE OR DAMAGE TO ADJACENT EXISTING STRUCTURES, STREETS, UTILITIES, ETC.
- FOUNDATION SLABS, SLABS-ON-GRADE AND WALL AND COLUMN FOUNDATIONS SHALL BEAR ON COMPACTED FILL AS SPECIFIED.
- COLUMN AND WALL FOOTING AND FOUNDATION MAT SLABS SHALL BE CAST ON 6 INCHES MINIMUM COMPACTED GRANULAR FILL.
- FOUNDATION BEARING SURFACES SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF REINFORCING STEEL.
- PLACE NO BACKFILL BEHIND THE WALLS UNTIL THE WALLS AND TOP SUPPORTING SLABS CONCRETE HAVE ATTAINED 100 PERCENT OF THEIR SPECIFIED COMPRESSIVE STRENGTH, OR UNTIL TOP-OF-WALL FRAMING SYSTEMS, INCLUDING DIAPHRAGMS, HAVE BEEN COMPLETED.

## FORMWORK, SHORING AND BRACING

- STRUCTURES SHOWN ON THE DRAWINGS HAVE BEEN DESIGNED FOR STABILITY UNDER FINAL CONDITIONS ONLY. DESIGN SHOWN DOES NOT INCLUDE NECESSARY COMPONENTS OR EQUIPMENT FOR STABILITY OF THE STRUCTURES DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR ALL WORK RELATING TO CONSTRUCTION ERECTION METHODS, BRACING, SHORING, RIGGING, GUYS, SCAFFOLDING, FORMWORK, AND OTHER WORK AIDS REQUIRED TO SAFELY PERFORM THE WORK SHOWN.
- TEMPORARY SHORING SHALL REMAIN IN PLACE UNTIL ELEVATED CONCRETE FLOOR OR SLABS HAVE REACHED 28 DAY DESIGN STRENGTH AS DETERMINED BY CYLINDER BREAKS.

## CONCRETE REINFORCING

- CLEARANCE FOR REINFORCEMENT BARS, UNLESS SHOWN OTHERWISE, SHALL BE:
 

WHEN PLACED ON GROUND:	3"
ALL OTHER CONCRETE SURFACES:	2"
- REINFORCE OPENINGS PER (0330-001) U.N.O.
- REINFORCE CORNERS PER (0330-003) U.N.O.
- 90 DEGREE BENDS, UNLESS OTHERWISE SHOWN, SHALL BE ACI 318 STANDARD HOOKS.
- LAP VERTICAL WALL BARS WITH DOWELS FROM BASE SLABS AND EXTEND INTO TOP FACE OF ROOF SLABS AND LAP WITH TOP SLAB REINFORCEMENT. PROVIDE A MINIMUM OF FOUR FULL HEIGHT VERTICAL BARS WITH MATCHING DOWELS AT WALL ENDS, CORNERS AND INTERSECTIONS WITH SIZE TO MATCH TYPICAL VERTICAL REINFORCING STEEL SHOWN OR REQUIRED BY NOTES ABOVE.
- LOCATE SLAB AND BEAM TOP BAR SPLICES AT MIDSPAN AND BOTTOM BAR SPLICES AT SUPPORTS.
- REINFORCEMENT BENDS AND LAPS, UNLESS OTHERWISE NOTED, SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENTS:

CONCRETE DESIGN STRENGTH >= 4,000 PSI		GRADE 60 REINFORCING STEEL									
BAR SIZE		#3	#4	#5	#6	#7	#8	#9	#10	#11	
LAP SPLICE LENGTH											
SPACING < 6"	TOP BAR	✗	1'-4"	2'-0"	3'-0"	4'-0"	5'-10"	6'-8"	7'-7"	8'-6"	9'-5"
	OTHER BAR		1'-4"	1'-7"	2'-4"	3'-1"	4'-6"	5'-2"	5'-10"	6'-7"	7'-3"
SPACING > 6"	TOP BAR	✗	1'-4"	1'-8"	2'-0"	2'-5"	3'-6"	4'-0"	5'-0"	6'-2"	7'-5"
	OTHER BAR		1'-4"	1'-4"	1'-7"	1'-10"	2'-9"	3'-1"	3'-10"	4'-9"	5'-8"
EMBEDMENT LENGTH											
SPACING < 6"	TOP BAR	✗	1'-0"	1'-7"	2'-4"	3'-1"	4'-6"	5'-2"	5'-10"	6'-7"	7'-3"
	OTHER BAR		1'-0"	1'-3"	1'-9"	2'-5"	3'-6"	4'-0"	4'-6"	5'-1"	5'-7"
SPACING > 6"	TOP BAR	✗	1'-0"	1'-3"	1'-7"	1'-10"	2'-9"	3'-1"	3'-10"	4'-9"	5'-8"
	OTHER BAR		1'-0"	1'-0"	1'-3"	1'-5"	2'-1"	2'-5"	3'-0"	3'-8"	4'-5"

TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.

## CONCRETE

- 28-DAY CAST-IN-PLACE CONCRETE STRENGTHS:
 

TYPICAL:	4500 PSI
CONCRETE FILL:	2500 PSI
CURBS AND SIDEWALKS:	4500 PSI
PRECAST:	5000 PSI
- REINFORCING STEEL:
 

TYPICAL:	ASTM A615, GRADE 60 (WELDING NOT PERMITTED)
----------	---
- FABRICATION AND PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH CRSI MSP-1 "MANUAL OF STANDARD PRACTICE" AND ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDING".
- CONTINUOUS WATERSTOP AS SPECIFIED SHALL BE INSTALLED IN ALL CONSTRUCTION JOINTS BELOW GRADE STRUCTURES, EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE.
- CONSTRUCTION JOINTS INDICATED ARE SUGGESTED LOCATIONS. CONTRACTOR MAY REVISE LOCATION OF JOINTS, SUBJECT TO REVIEW BY ENGINEER.
- ROUGHEN AND CLEAN CONSTRUCTION JOINTS IN WALLS AND SLABS AS SPECIFIED PRIOR TO PLACING ADJACENT CONCRETE.
- THE CONTRACTOR SHALL COORDINATE PLACEMENT OF OPENINGS, CURBS, DOWELS, SLEEVES, CONDUITS, BOLTS AND INSERTS PRIOR TO PLACEMENT OF CONCRETE.
- NO ALUMINUM CONDUIT OR PRODUCTS CONTAINING ALUMINUM OR ANY OTHER MATERIAL INJURIOUS TO THE CONCRETE SHALL BE EMBEDDED IN THE CONCRETE.
- CONDUIT SHALL NOT BE PLACED PARALLEL WITH BEAM OR COLUMN REINFORCEMENT UNLESS SPECIFICALLY INDICATED IN DRAWINGS.

## PRECAST CONCRETE

- DESIGN LOADS:
 

ROOF LIVE = HL-93
LATERAL EARTH PRESSURE (EQUIV FLUID): SEE DESIGN CRITERIA, THIS SHEET.
- PRECAST PLANT: PCI CERTIFIED PLANT (CURRENT) WITH MINIMUM OF 3 YEARS EXPERIENCE.
- THE PRECAST CONCRETE SUPPLIER SHALL DESIGN AND PROVIDE ALL MILD STEEL REINFORCING AND CONNECTION DETAILS NECESSARY FOR HANDLING, SHIPPING AND ERECTION LOADS.
- CONCRETE ELEMENTS SHALL BE DESIGNED IN ACCORDANCE WITH ACI 318. DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
- MILD STEEL REINFORCING SHALL CONFORM TO ASTM A615 GRADE 60. WELDED STEEL MESH SHALL CONFORM TO ASTM A185.

## WELDING

- WELDS SHALL CONFORM TO AWS D1.1 LATEST EDITION AS SPECIFIED.
- REPAIR WELDS FOUND DEFECTIVE IN ACCORDANCE WITH AWS D1.1, 5.26
- USE INTERMITTENT WELDS AT FIELD WELDS OF EMBED PLATES AND ANGLES TO AVOID SPALLING OR CRACKING OF THE EXISTING CONCRETE.
- BUTT JOINT WELDS SHALL BE COMPLETE JOINT PENETRATION (CJP) UNLESS INDICATED OTHERWISE.



NO.	DATE	REVISION	CHK	APVD	BY	APVD



**ch2m**  
 GENERAL  
 STRUCTURAL NOTES

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	G-10
SHEET	of

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# INSTRUMENT IDENTIFICATION

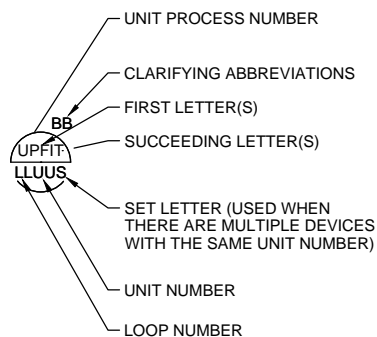
## INSTRUMENT IDENTIFICATION LETTERS TABLE

LETTER	FIRST-LETTER		SUCCEEDING-LETTERS		
	PROCESS OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	READOUT OR PASSIVE FUNCTION	READOUT OR PASSIVE FUNCTION
A	ANALYSIS (+)		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE (*)	USER'S CHOICE (*)	USER'S CHOICE (*)
C	USER'S CHOICE (*)			CONTROL	
D	DENSITY (S.G.)	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT, SENSOR		
	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE (*)		GLASS, GAUGE VIEWING DEVICE	GATE	
H	HAND (MANUAL)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT (PILOT)		LOW
M	MOTION	MOMENTARY			MIDDLE, INTERMEDIATE
N	TORQUE		USER'S CHOICE (*)	USER'S CHOICE (*)	USER'S CHOICE (*)
O	USER'S CHOICE (*)		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD OR PRINT		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTI VARIABLE		MULTI FUNCTION	MULTI FUNCTION	MULTI FUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED (*)	X AXIS	UNCLASSIFIED (*)	UNCLASSIFIED (*)	UNCLASSIFIED (*)
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION	Z AXIS		DRIVE, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

TABLE BASED ON THE INSTRUMENTATION, SYSTEMS, AND AUTOMATION SOCIETY (ISA) STANDARD.

(+) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL. SEE ABBREVIATIONS AND LETTER SYMBOLS.  
 (\*) WHEN USED, DEFINE THE MEANING HERE FOR THE PROJECT.

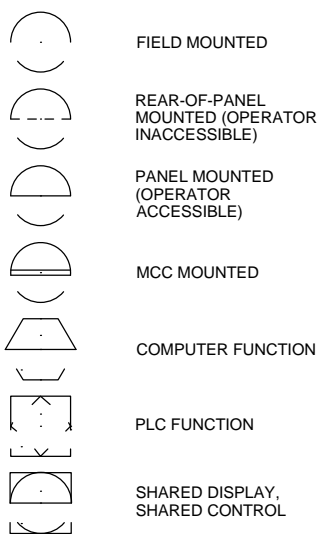
### EXAMPLE SYMBOLS



### DIGITAL SYSTEM INTERFACES

- ▲ ANALOG INPUT
- ▼ ANALOG OUTPUT
- △<sub>x</sub> DISCRETE INPUT
- ▽<sub>x</sub> DISCRETE OUTPUT

### GENERAL INSTRUMENT OR FUNCTIONAL SYMBOLS



### TRANSDUCERS

A	ANALOG	I	CURRENT
D	DIGITAL	P	PNEUMATIC
E	VOLTAGE	PF	PULSE FREQUENCY
F	FREQUENCY	PD	PULSE DURATION
H	HYDRAULIC	R	RESISTANCE

EXAMPLE  

 CURRENT TO PNEUMATIC TRANSDUCER (BACK OF PANEL, IN A FLOW LOOP)

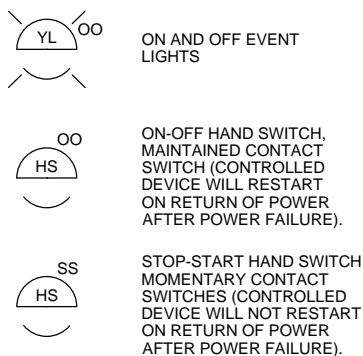
### ACCESSORY DEVICES

A	ALARM
C	CONTROLLER
I	INDICATOR
R	RECORDER
S	SWITCH
T	TRANSMITTER
X	UNCLASSIFIED

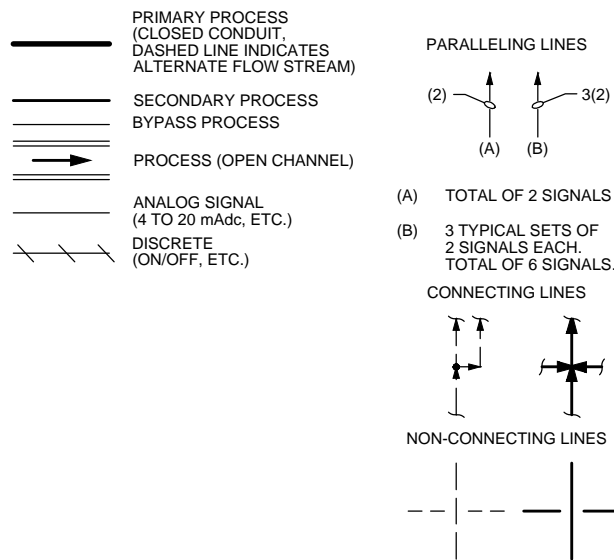
EXAMPLE  

 TRANSMITTER AS AN ACCESSORY TO A FLOW ELEMENT

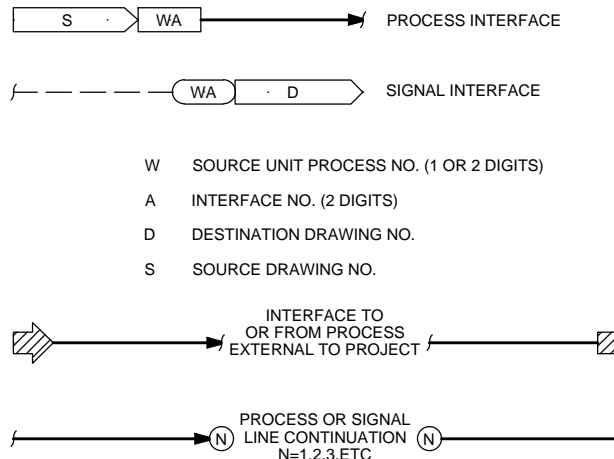
### SPECIAL CASES



# LINE LEGEND



# INTERFACE SYMBOLS



# ABBREVIATIONS & LETTER SYMBOLS

AC	ALTERNATING CURRENT
AM	AUTO-MANUAL
CAM	COMPUTER-AUTO-MANUAL
CCS	CENTRAL CONTROL SYSTEM
2	CHLORINE (TYPICAL: USE STANDARD CHEMICAL ELEMENT ABBREVIATIONS)
CM	COMPUTER-MANUAL
COD	CHEMICAL OXYGEN DEMAND
CP-X	CONTROL PANEL NO. X
DC	DIRECT CURRENT
DCS	DISTRIBUTED CONTROL SYSTEM
DCU	DISTRIBUTED CONTROL UNIT
DO	DISSOLVED OXYGEN
2	
FOS	FAST-OFF-SLOW
FOSA	FAST-OFF-SLOW-AUTO
FOSR	FAST-OFF-SLOW-REMOTE
	FIELD PANEL NO. WX (W=UNIT PROCESS NUMBER, X= PANEL NUMBER)
FR	FORWARD-REVERSE
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
ISR	INTRINSICALLY SAFE RELAY
LEL	LOWER EXPLOSIVE LIMIT
LOS	LOCKOUT STOP
LR	LOCAL-REMOTE
MA	MANUAL-AUTO
MC	MODULATE-CLOSE
MCC-X	MOTOR CONTROL CENTER NO. X
MSC	MANUFACTURER SUPPLIED CABLE
OC	OPEN-CLOSE(D)
OCA	OPEN-CLOSE-AUTO
OCR	OPEN-CLOSE-REMOTE
OO	ON-OFF
OOA	ON-OFF-AUTO
OOR	ON-OFF-REMOTE
ORP	OXIDATION REDUCTION POTENTIAL
OSC	OPEN-STOP-CLOSE
pH	HYDROGEN ION CONCENTRATION
PLC	PROGRAMMABLE LOGIC CONTROLLER
RIO	REMOTE I/O UNIT
RM-X	REMOTE MULTIPLEXING MODULE NO. X
RTU-X	REMOTE TELEMETRY UNIT NO. X
SF	SLOWER-FASTER
SS	START-STOP
SSC	SUPERVISORY SET POINT CONTROL
2	
TOC	TOTAL ORGANIC CARBON
TOD	TOTAL OXYGEN DEMAND
TURB	TURBIDITY
VHC	VOLATILE HYDROCARBONS
	VIBRATION
Δ	DIFFERENCE
Σ	SUM
x	MULTIPLY
÷	DIVIDE
F(X) <sub>n</sub>	CHARACTERIZED RAISED TO THE Nth POWER
√ <sub>n</sub>	SQUARE ROOT
AVG	AVERAGE
1:1	REPEAT OR BOOST
>	SELECT HIGHEST SIGNAL
<	SELECT LOWEST SIGNAL
}	BIAS

# GENERAL NOTES

- COMPONENTS AND PANELS SHOWN WITH A SINGLE ASTERISK (\*) ARE TO BE PROVIDED AS PART OF A PACKAGE SYSTEM.
- COMPONENTS AND PANELS SHOWN WITH A DOUBLE ASTERISK (\*\*\*) ARE TO BE PROVIDED UNDER DIVISION 16, ELECTRICAL.
- THIS IS A STANDARD LEGEND. THEREFORE, NOT ALL OF THIS INFORMATION MAY BE USED ON THE PROJECT.



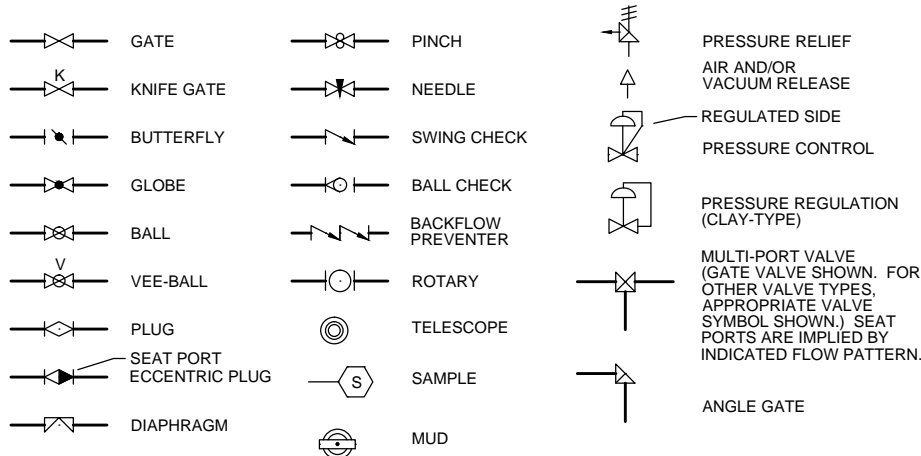
NO.	DATE	DR	REVISION	CHK	APVD

JORDAN VALLEY WATER CONSERVANCY DISTRICT  
 11800 SOUTH U-111 PROJECT

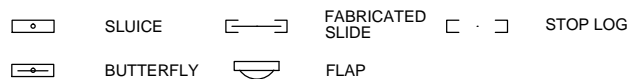
GENERAL  
**INSTRUMENTATION AND CONTROL**  
**LEGEND SHEET - 1**

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	G-12
SHEET	of

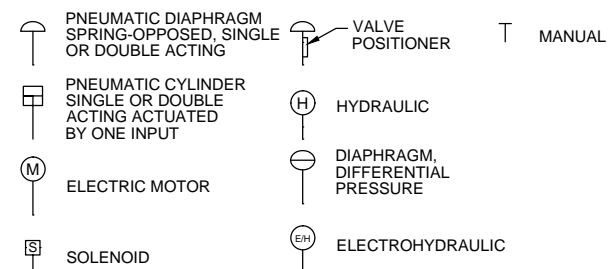
### VALVE SYMBOLS



### GATE SYMBOLS



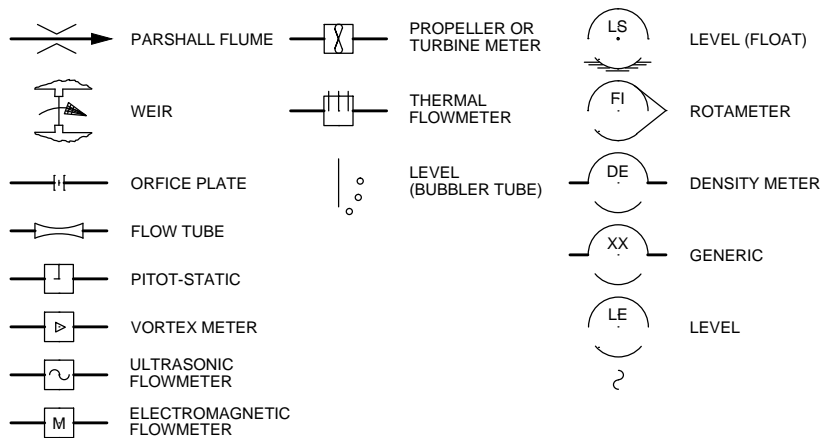
### ACTUATOR SYMBOLS



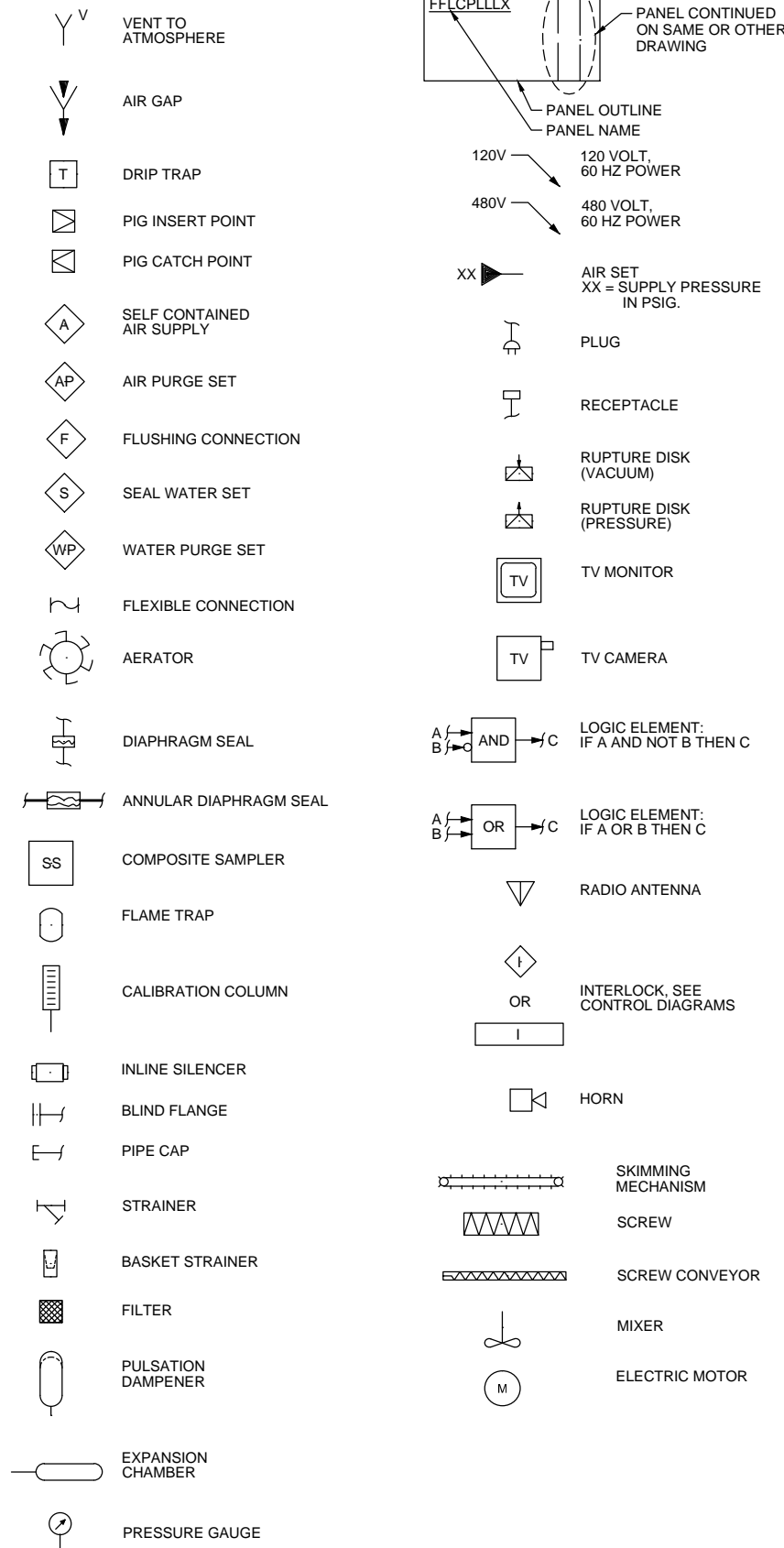
NOTE: ON LOSS OF PRIMARY POWER (PNEUMATIC, ELECTRICAL, OR HYDRAULIC)

XX: FO FAIL OPEN  
FC FAIL CLOSED  
FLP FAIL TO LAST POSITION

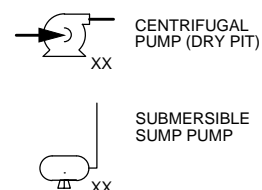
### PRIMARY ELEMENT SYMBOLS



### MISCELLANEOUS SYMBOLS



### PUMP AND COMPRESSOR SYMBOLS



NO.	DATE	DR	REVISION	CHK	APVD	BY	APVD

JAMES J. HOGGARD  
A MURDOCK  
CHOGGARD

JORDAN VALLEY WATER CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

GENERAL  
**INSTRUMENTATION AND CONTROL**  
LEGEND SHEET - 2

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	G-13
SHEET	of



SYMBOL	DESCRIPTION
<b>LEGEND</b>	
	CONNECTION POINT TO EQUIPMENT SPECIFIED. RACEWAY, CONDUCTOR, TERMINATION AND CONNECTION IN THIS DIVISION.
	MAJOR ELECTRICAL COMPONENT OR DEVICE - NAME OR IDENTIFYING SYMBOL AS SHOWN.
	PANELBOARD - SURFACE MOUNTED
	PANELBOARD LETTER OR NUMBER FACILITY NUMBER LP - LOW VOLTAGE PANEL DP - DISTRIBUTION PANEL
	TERMINAL JUNCTION BOX
	MOTOR, SQUIRREL CAGE INDUCTION
	HOME RUN - DESTINATION SHOWN
	EXPOSED CONDUIT AND CONDUCTORS*
	CONCEALED CONDUIT AND CONDUCTORS*
<b>NOTE:</b> ALL UNMARKED CONDUIT RUNS CONSIST OF TWO NO. 12, ONE NO. 12 GROUND CONDUCTORS IN 3/4" CONDUIT. RUNS MARKED WITH CROSSHATCHES INDICATE NUMBER OF NO. 12 CONDUCTORS. CROSSHATCH WITH SUBSCRIPT "G" INDICATES GREEN GROUND WIRE.	
	CONDUIT AND CONDUCTOR CALLOUT, SEE LEGEND.
	CONDUIT DOWN
	CONDUIT UP
	CONDUIT, STUBBED AND CAPPED
	CONCRETE ENCASED CONDUIT
	DIRECT BURIED CONDUIT
	GENERAL CONTROL OR WIRING DEVICE. LETTER SYMBOLS OR ABBREVIATIONS INDICATE TYPE OF DEVICE
	CONTROL STATION, SEE CONTROL DIAGRAMS FOR CONTROL DEVICE(S) REQUIRED.
	NONFUSED DISCONNECT SWITCH, CURRENT RATING INDICATED, 3 POLE
	CONVENIENCE RECEPTACLE - DUPLEX UNLESS NOTED OTHERWISE
	WALL SWITCH: WP- WEATHERPROOF M- MOTOR RATED MS- MANUAL STARTER WITH OVERLOADS
	CIRCUIT BREAKER, THERMAL MAGNETIC TRIP SHOWN, 3 POLE, UNO
	MOTOR, SQUIRREL CAGE INDUCTION - HORSEPOWER INDICATED
	UTILITY REVENUE METER
	GROUND
	GROUND ROD

SYMBOL	DESCRIPTION												
<b>CONTROL DIAGRAMS-1</b>													
	PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY OPEN												
	PUSH-BUTTON SWITCH, MOMENTARY CONTACT, NORMALLY CLOSED												
	SELECTOR SWITCH - MAINTAINED CONTACT - CHART IDENTIFIES OPERATION WHEN NEEDED FOR CLARITY:												
<table border="1" style="margin-left: auto; margin-right: auto;"><thead><tr><th colspan="3">POSITION</th></tr><tr><th>CKT</th><th>HAND</th><th></th></tr></thead><tbody><tr><td>1</td><td>X</td><td></td></tr><tr><td>2</td><td>O</td><td></td></tr></tbody></table>	POSITION			CKT	HAND		1	X		2	O		
POSITION													
CKT	HAND												
1	X												
2	O												
	MUSHROOM HEAD SWITCH												
	INDICATING LIGHT, PUSH-TO-TEST, LETTER INDICATES COLOR												
	INDICATING LIGHT - LETTER INDICATES COLOR A - AMBER      G - GREEN      S - STROBE B - BLUE      R - RED C - CLEAR      W - WHITE												
	ELAPSED TIME METER												
	MOTOR STARTER CONTACTOR COIL												
	CONTROL RELAY, X INDICATES NUMERICAL ORDER IN CIRCUIT												
	TIME DELAY RELAY, X INDICATES NUMERICAL ORDER IN CIRCUIT												
	CONTACT - NORMALLY OPEN												
	CONTACT - NORMALLY CLOSED												
	REMOTE DEVICE												
	TIME DELAY RELAY CONTACT, NORMALLY OPEN, CLOSES WHEN ENERGIZED AND TIMED OUT												
	TIME DELAY RELAY CONTACT, NORMALLY CLOSED, OPENS WHEN ENERGIZED AND TIMED OUT												
	TIME DELAY RELAY CONTACT, CLOSES WHEN ENERGIZED, OPENS WHEN DE-ENERGIZED AND TIMED OUT												
	TIME DELAY RELAY CONTACT, OPENS WHEN ENERGIZED, CLOSES WHEN DE-ENERGIZED AND TIMED OUT												
	TERMINAL BLOCK, REMOTE												
	TERMINAL BLOCK, INTERNAL												
	TRANSFORMER, CONTROL POWER												
	FLOAT SWITCH, NORMALLY OPEN, CLOSES ON DESCENDING LEVEL												
	FLOAT SWITCH, NORMALLY OPEN, CLOSES ON RISING LEVEL												
	PRESSURE SWITCH, NORMALLY CLOSED, OPENS ON RISING PRESSURE												
	PRESSURE SWITCH, NORMALLY OPEN, CLOSES ON RISING PRESSURE												

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
<b>ABBREVIATIONS-2</b>			
A	AMPERE, AUTOMATIC		
AC	ALTERNATING CURRENT		
AFF	ABOVE FINISHED FLOOR		
BKR	BREAKER		
C	CONDUIT, CONTACTOR, CONDUCTOR, CLOSE		
CPT	CONTROL POWER TRANSFORMER		
CR	CONTROL RELAY		
CT	CURRENT TRANSFORMER		
DC	DIRECT CURRENT		
DP	DISTRIBUTION PANEL		
E	EMPTY		
F, FU	FUSE		
FREQ	FREQUENCY		
G	GROUND		
GFCI	GROUND FAULT CIRCUIT INTERRUPTER		
GND	GROUND		
HH	HANDHOLE		
HOA	HAND-OFF-AUTO		
HP	HORSEPOWER		
HS	HAND SWITCH		
HZ	HERTZ		
IC	INTERRUPTING CAPACITY		
J, JB	JUNCTION BOX		
KA	KILOAMPERES		
KV	KILOVOLT		
KVA	KILOVOLT AMPERES		
KW	KILOWATTS		
M	MAGNETIC CONTACTOR COIL, MOTOR, MANUAL		
MSC	MANUFACTURER SUPPLIED CABLE		
NC	NORMALLY CLOSED		
N.O.	NORMALLY OPEN		
NTS	NOT TO SCALE		
OL	OVERLOAD RELAY		
PB	PULL BOX		
RGS	RIGID GALVANIZED STEEL CONDUIT		
SS	START STOP		
SST	STAINLESS STEEL		
SV	SOLENOID VALVE		
TYP	TYPICAL		
UON	UNLESS OTHERWISE NOTED		
V	VOLTAGE, VOLTS		
W	WATTS		
WP	WEATHERPROOF		
XFMR	TRANSFORMER		

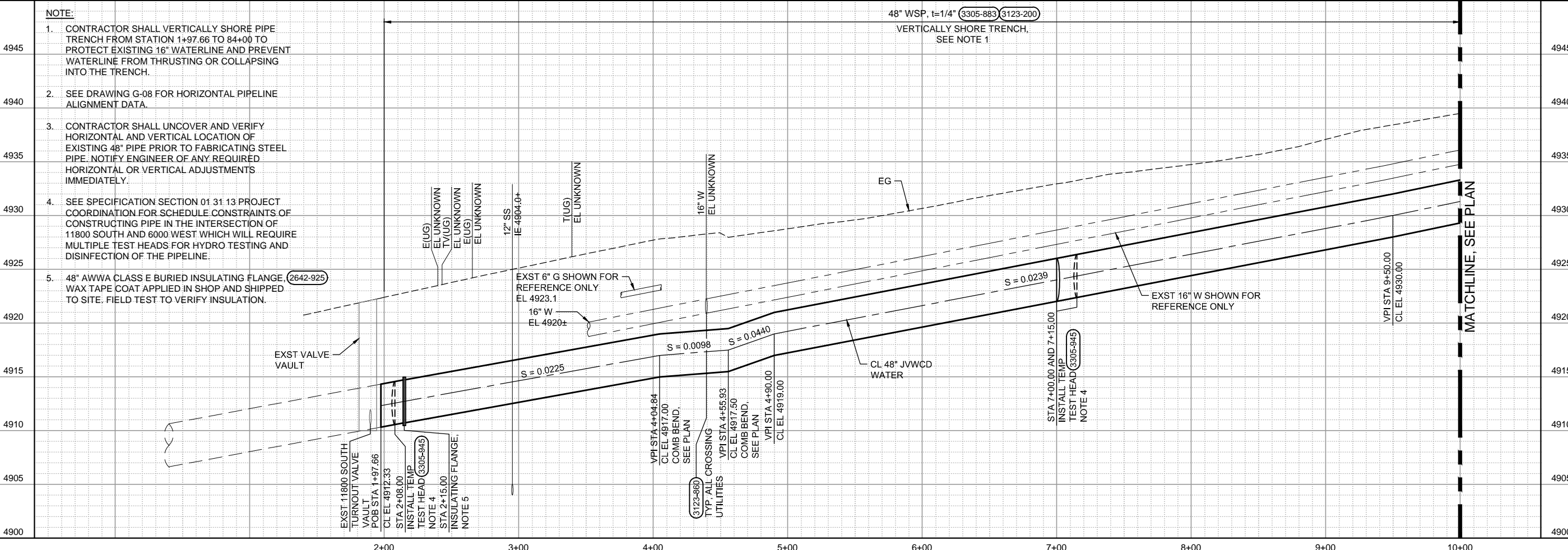
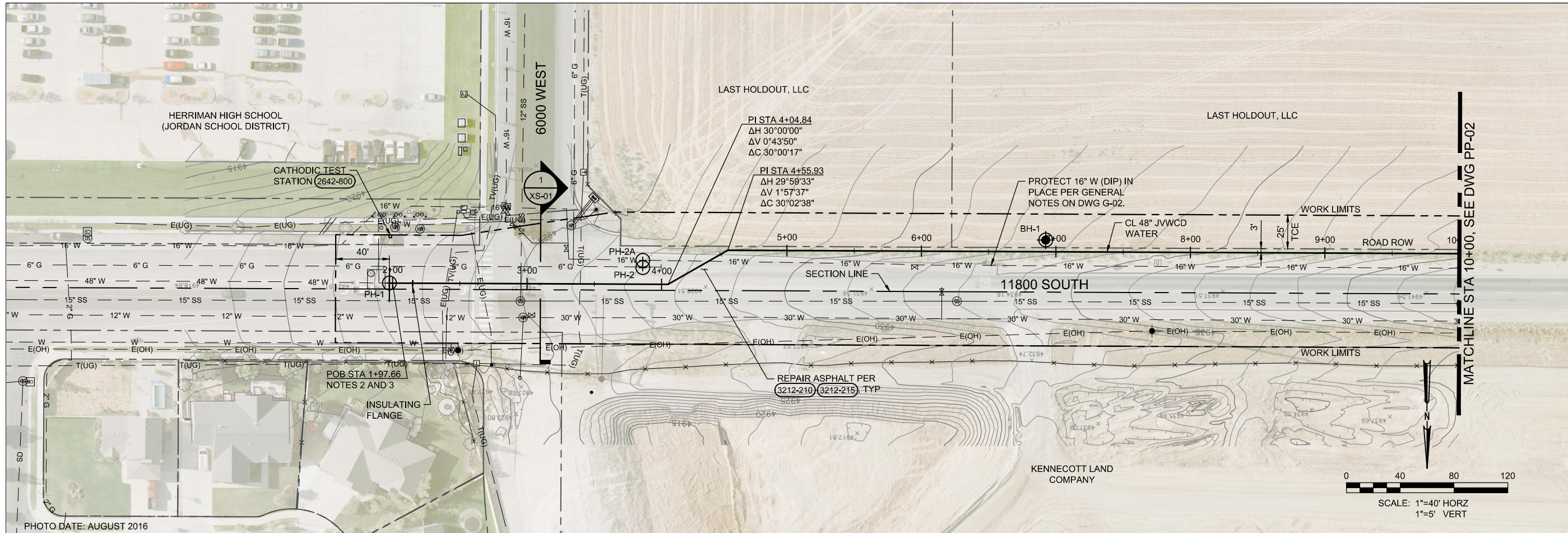
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**JORDAN VALLEY WATER CONSERVANCY DISTRICT**  
11800 SOUTH U-111 PROJECT

**GENERAL ELECTRICAL LEGEND AND ABBREVIATIONS**

VERIFY SCALE	
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DATE	JANUARY 2017
PROJ	680064
DWG	G-14
SHEET	of





- NOTE:**
- CONTRACTOR SHALL VERTICALLY SHORE PIPE TRENCH FROM STATION 1+97.66 TO 84+00 TO PROTECT EXISTING 16" WATERLINE AND PREVENT WATERLINE FROM THRUSTING OR COLLAPSING INTO THE TRENCH.
  - SEE DRAWING G-08 FOR HORIZONTAL PIPELINE ALIGNMENT DATA.
  - CONTRACTOR SHALL UNCOVER AND VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING 48" PIPE PRIOR TO FABRICATING STEEL PIPE. NOTIFY ENGINEER OF ANY REQUIRED HORIZONTAL OR VERTICAL ADJUSTMENTS IMMEDIATELY.
  - SEE SPECIFICATION SECTION 01 31 13 PROJECT COORDINATION FOR SCHEDULE CONSTRAINTS OF CONSTRUCTING PIPE IN THE INTERSECTION OF 11800 SOUTH AND 6000 WEST WHICH WILL REQUIRE MULTIPLE TEST HEADS FOR HYDRO TESTING AND DISINFECTION OF THE PIPELINE.
  - 48" AWWA CLASS E BURIED INSULATING FLANGE (2642-925) WAX TAPE COAT APPLIED IN SHOP AND SHIPPED TO SITE. FIELD TEST TO VERIFY INSULATION.



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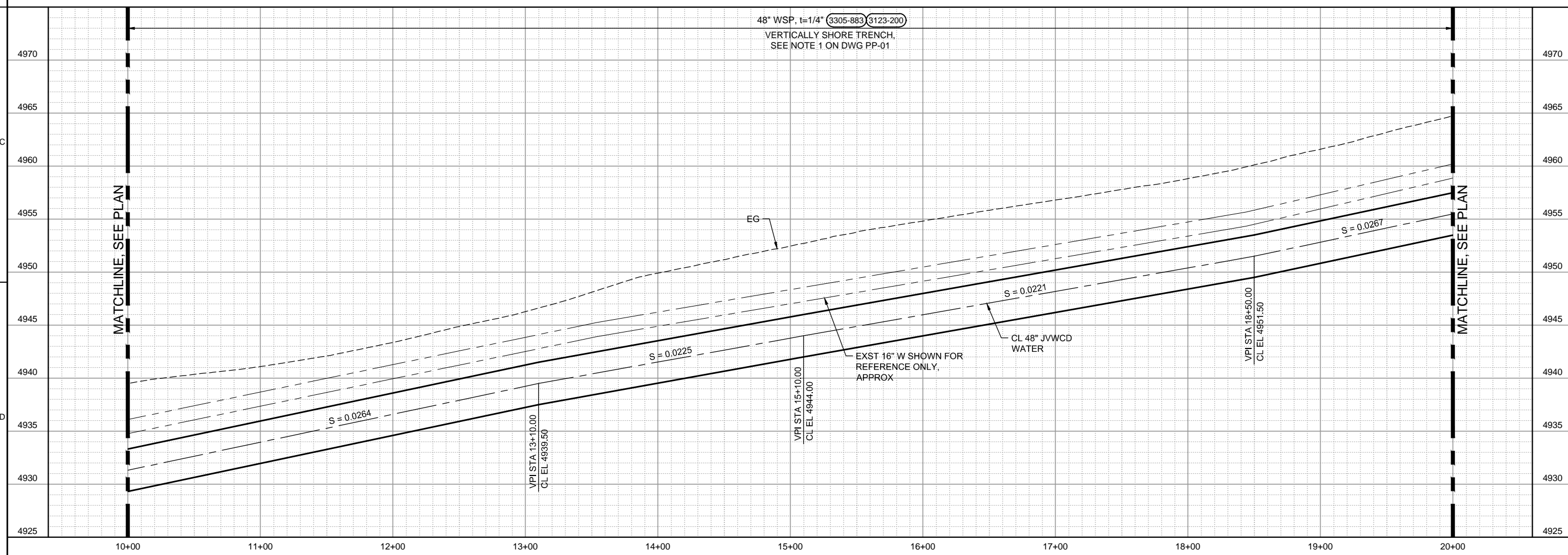
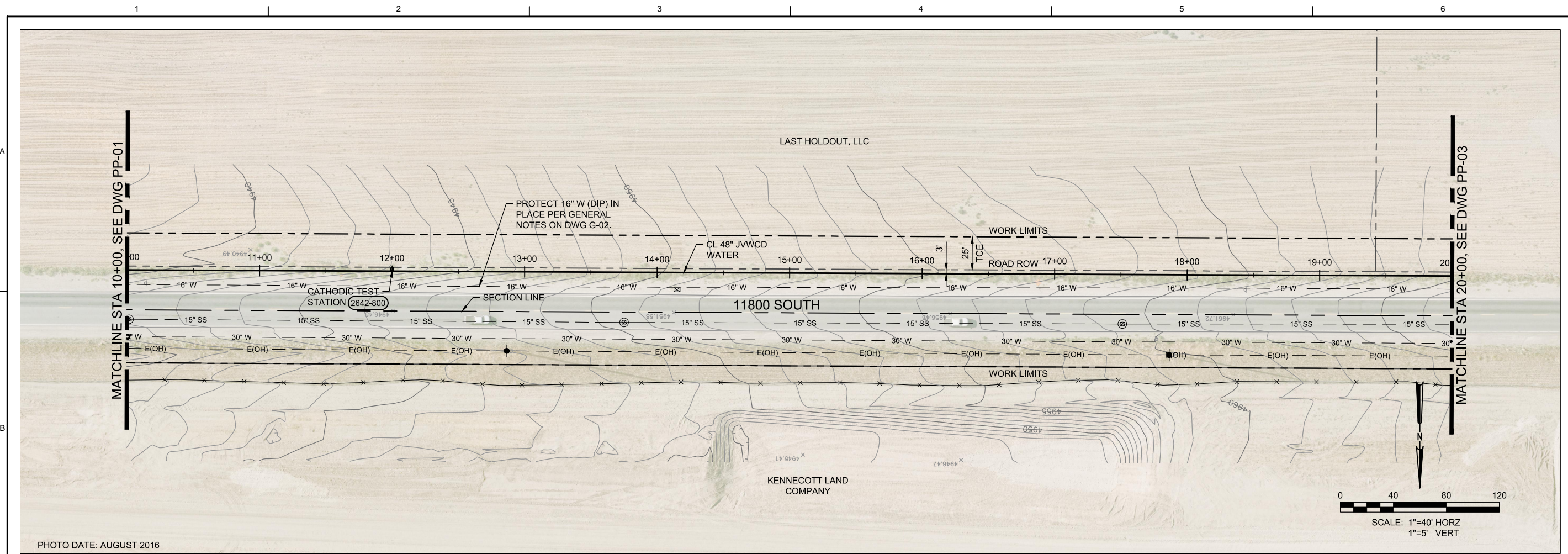
**JORDAN VALLEY WATER CONSERVANCY DISTRICT**  
**11800 SOUTH U-111 PROJECT**

**PLAN AND PROFILE**  
**STA 1+97.66 TO STA 10+00**

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DWG	PP-01
SHEET	of





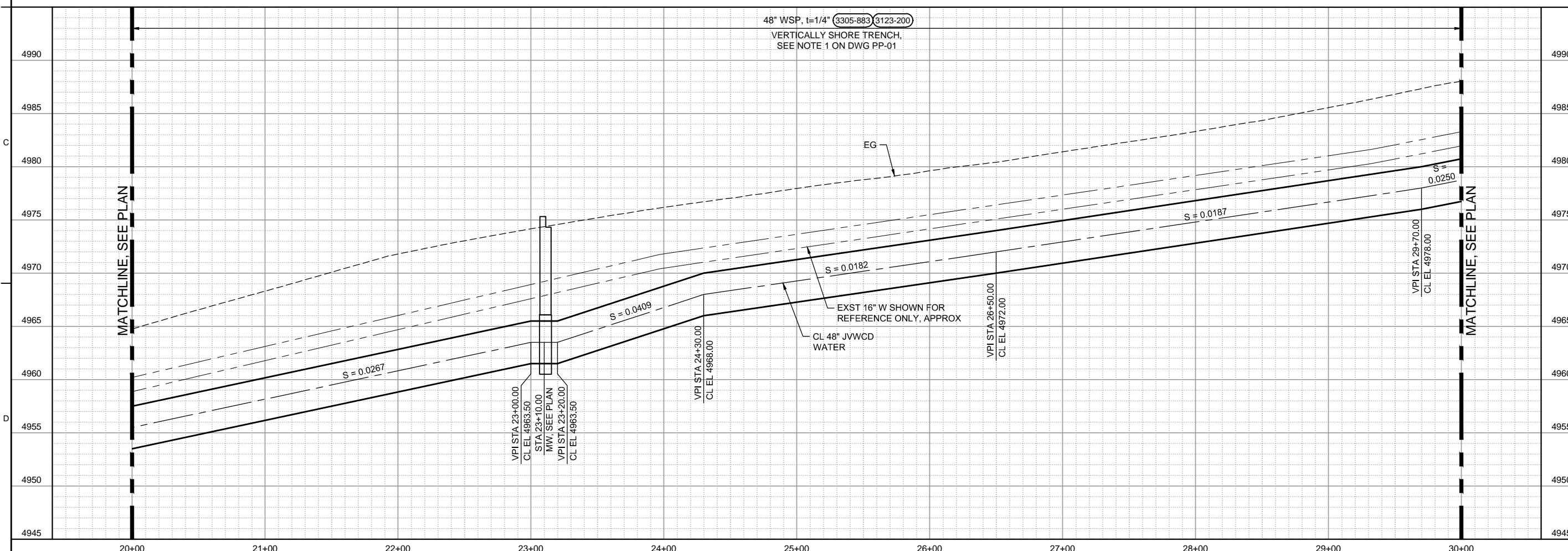
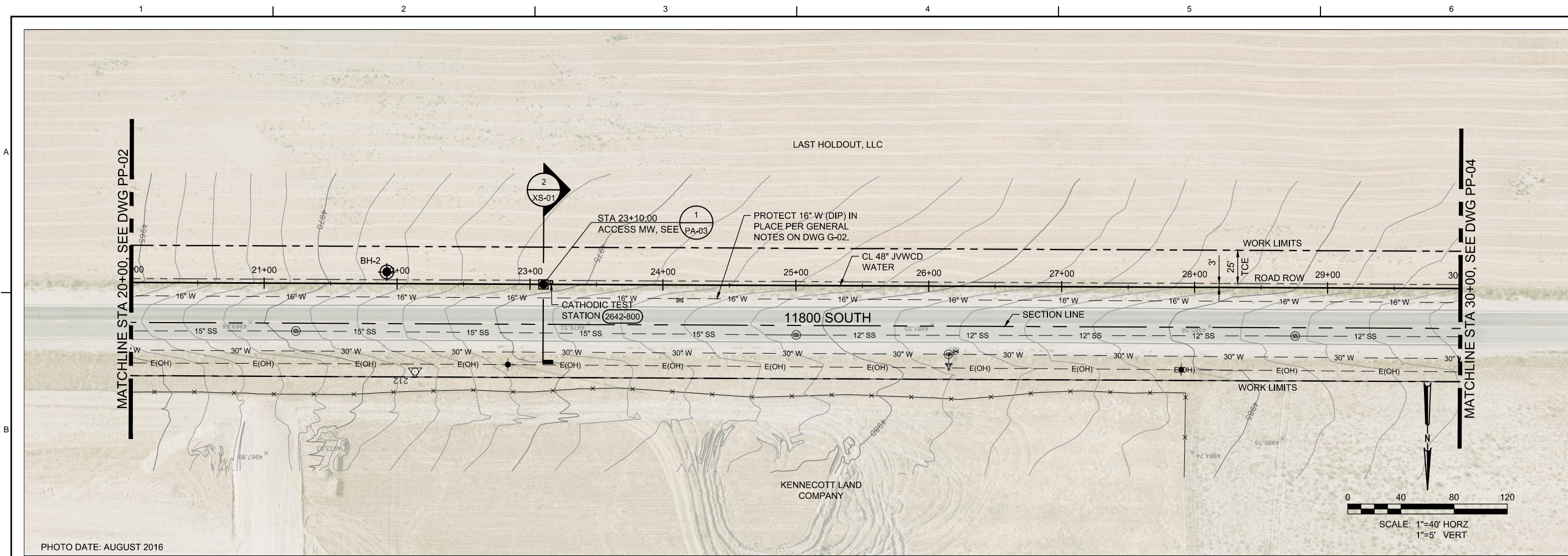
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**Jordan Valley Water Conservancy District**  
 11800 SOUTH U-111 PROJECT

**ch2m**  
 PLAN AND PROFILE  
 STA 10+00 TO STA 20+00

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
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DWG	PP-02
SHEET	of





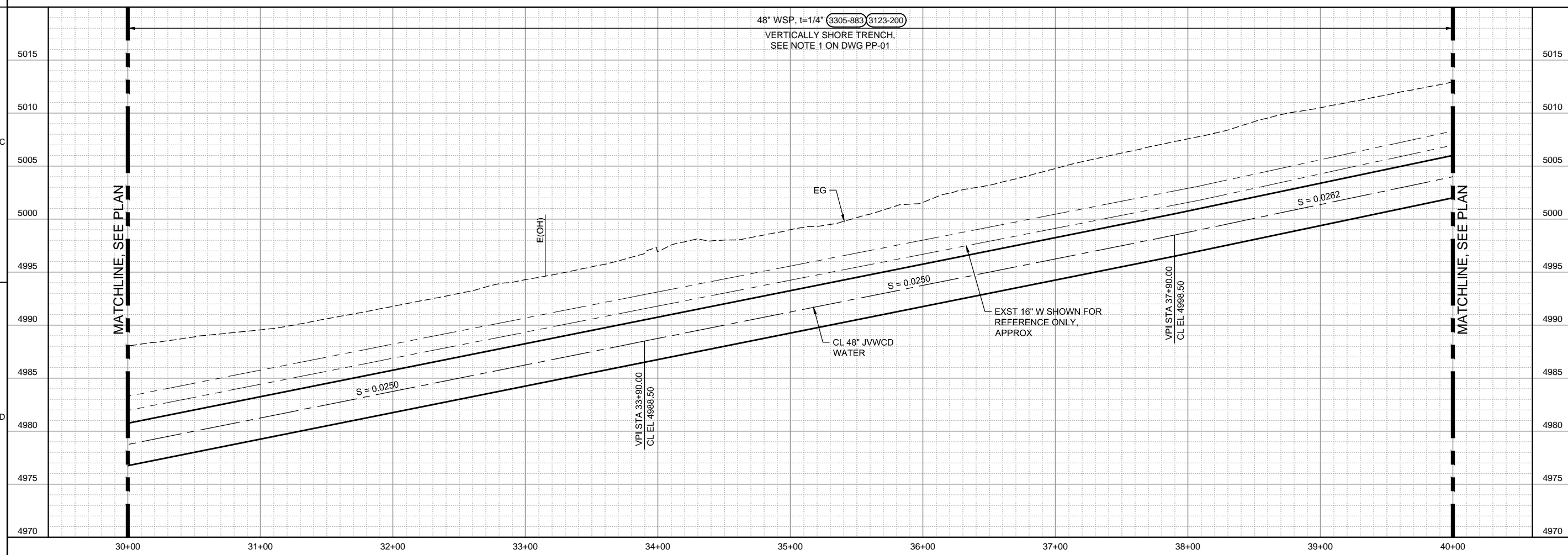
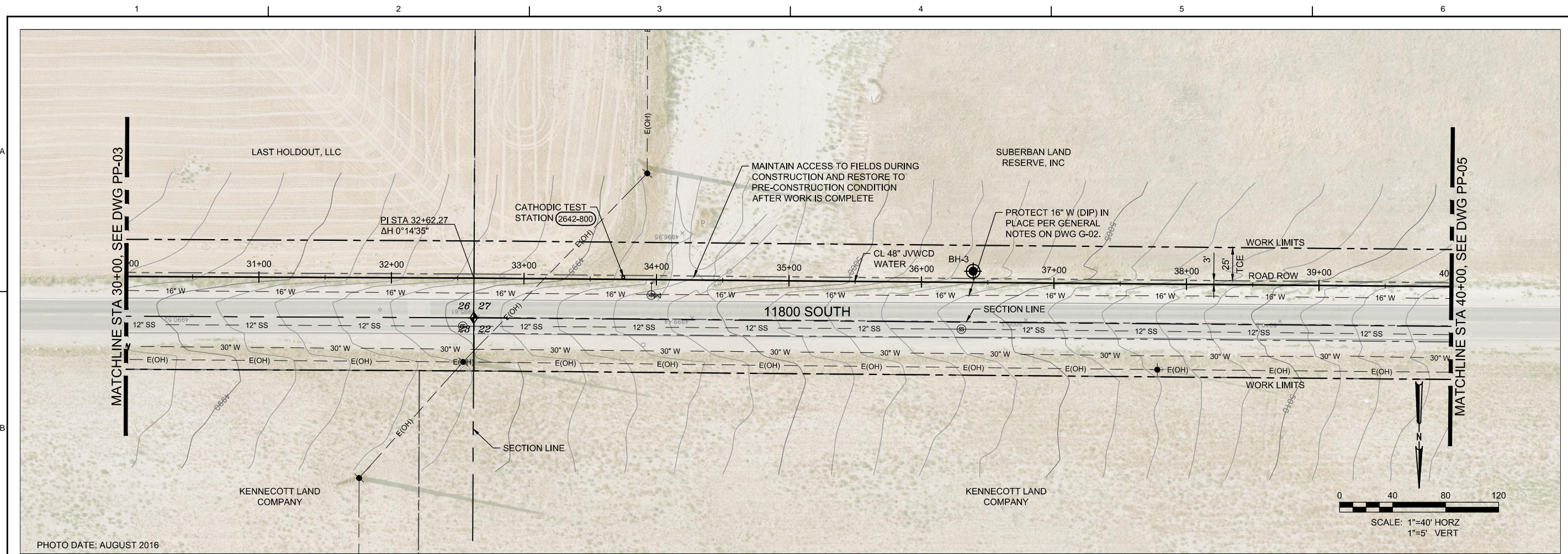
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**11800 SOUTH U-111 PROJECT**

**ch2m**  
 PLAN AND PROFILE  
**STA 28+00 TO STA 38+00**

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DWG	PP-03
SHEET	of





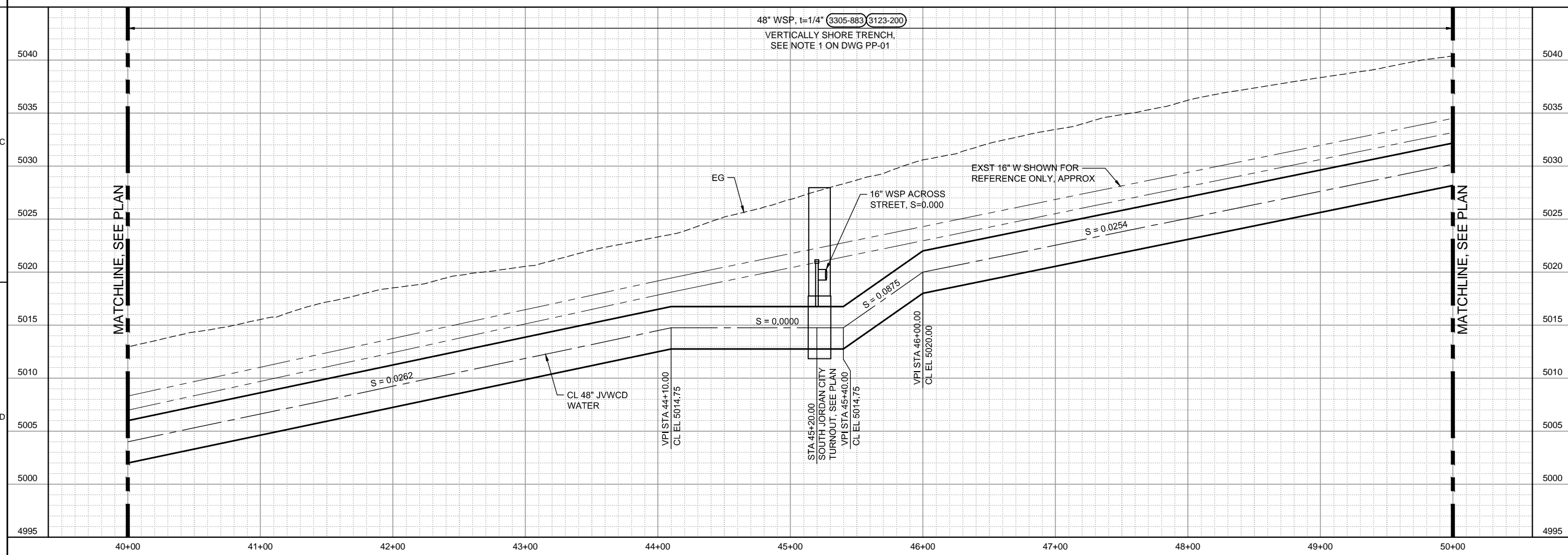
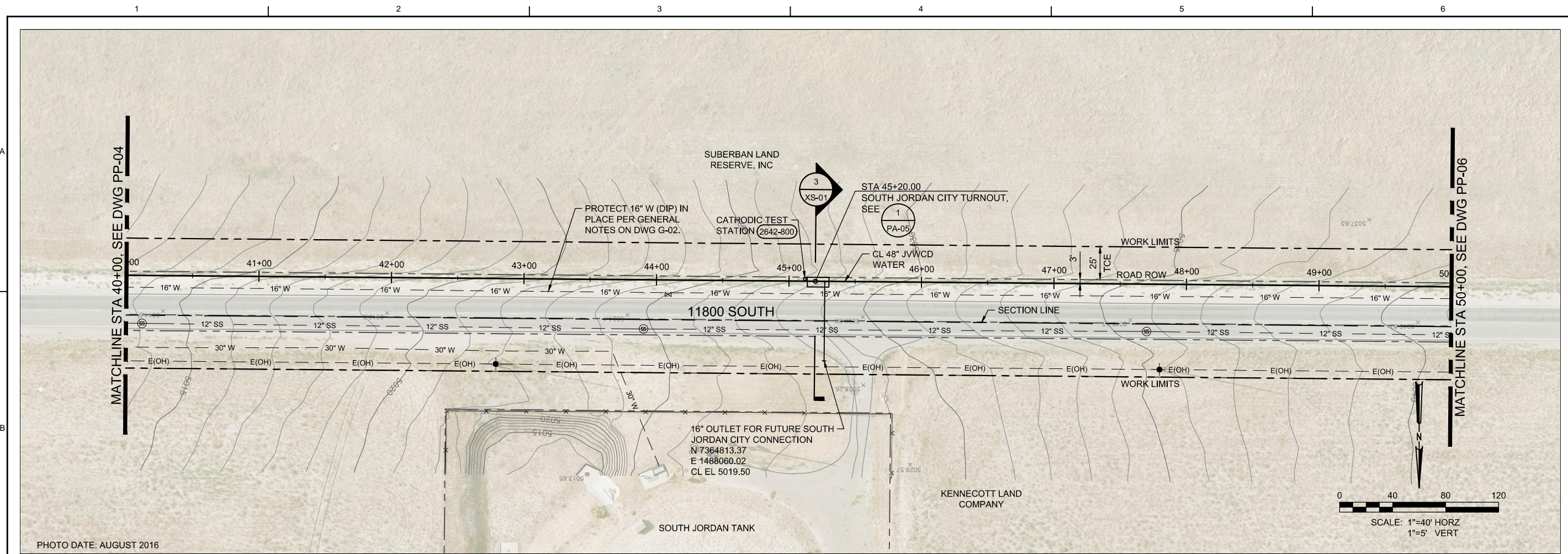
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**JORDAN VALLEY WATER CONSERVANCY DISTRICT**  
**11800 SOUTH U-111 PROJECT**

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 PLAN AND PROFILE  
**STA 30+00 TO STA 40+00**

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DWG	PP-04
SHEET	of





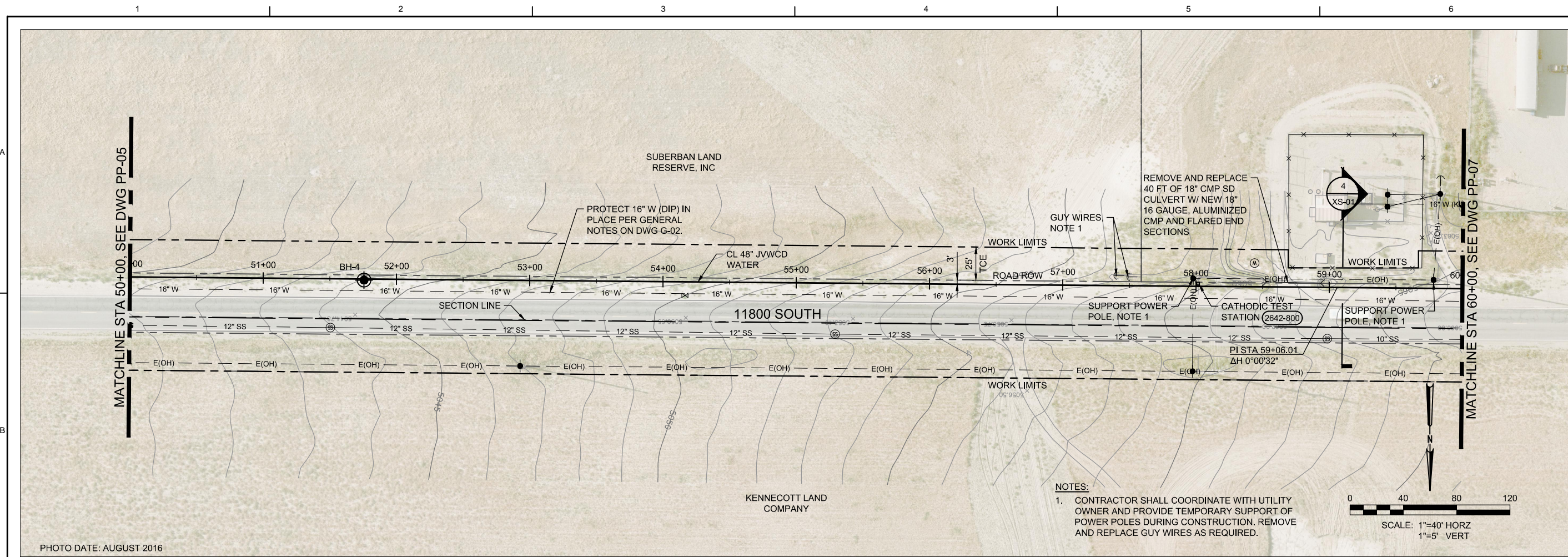
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 PLAN AND PROFILE  
**STA 40+00 TO STA 50+00**

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
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DWG	PP-05
SHEET	of





**NOTES:**  
 1. CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER AND PROVIDE TEMPORARY SUPPORT OF POWER POLES DURING CONSTRUCTION. REMOVE AND REPLACE GUY WIRES AS REQUIRED.

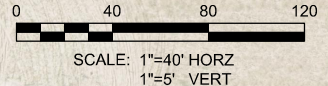
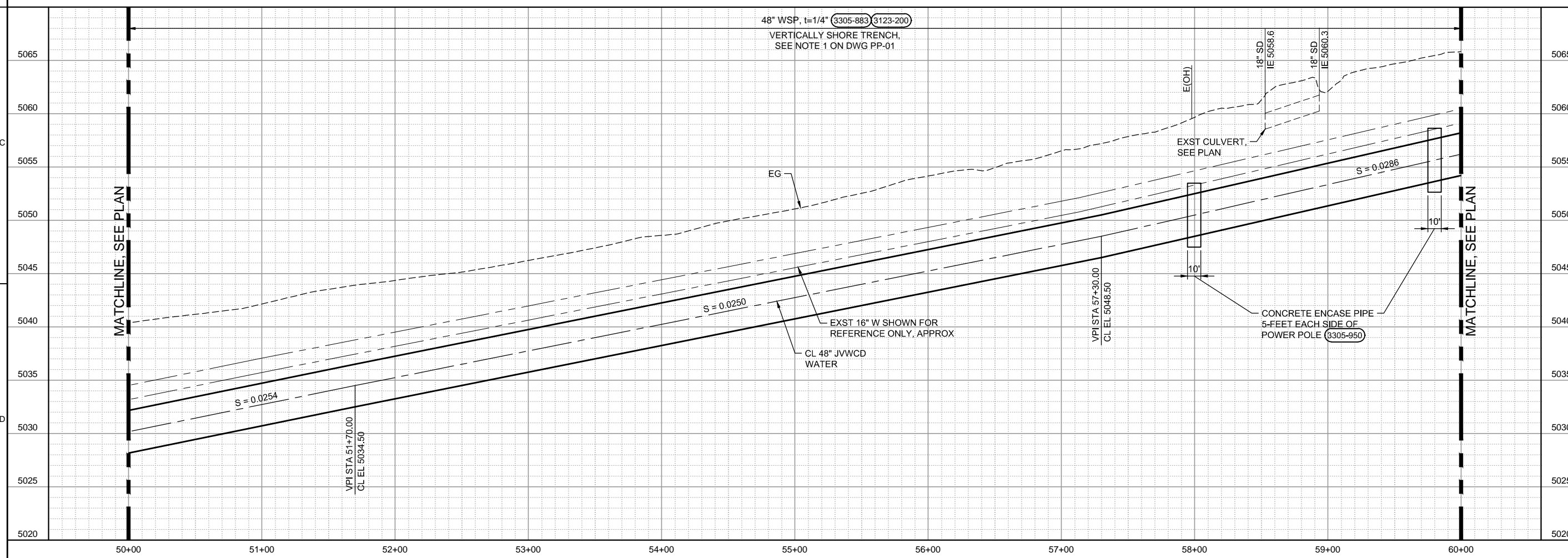


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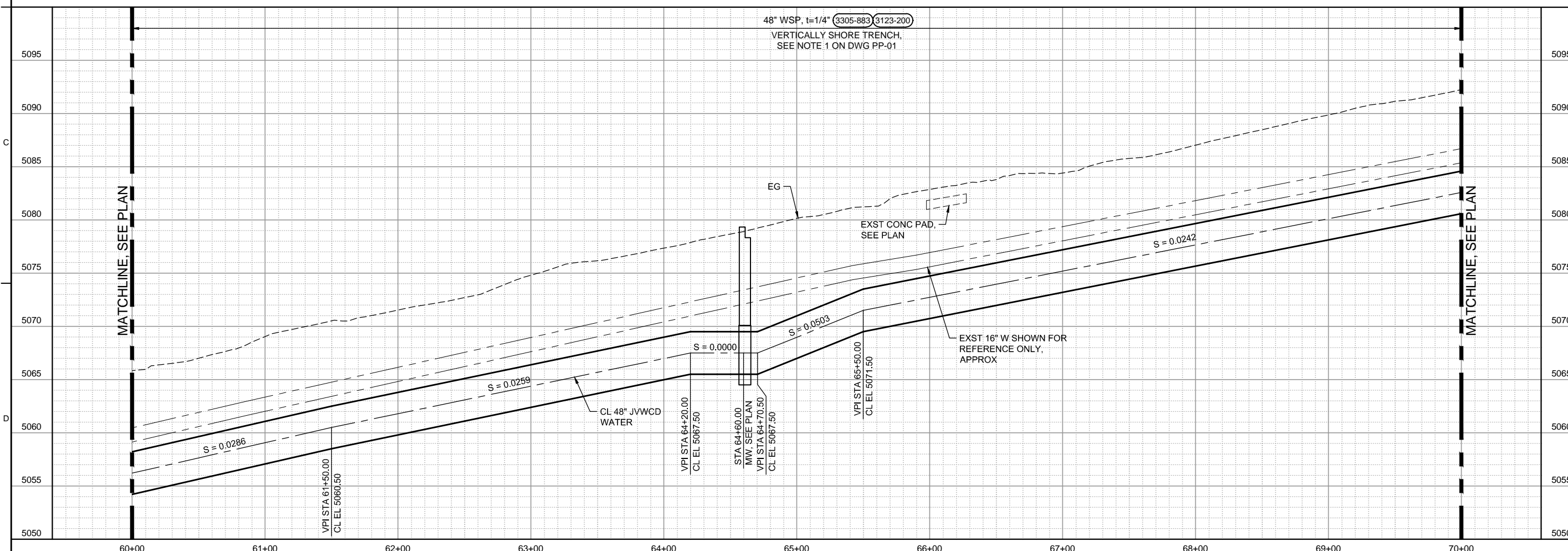
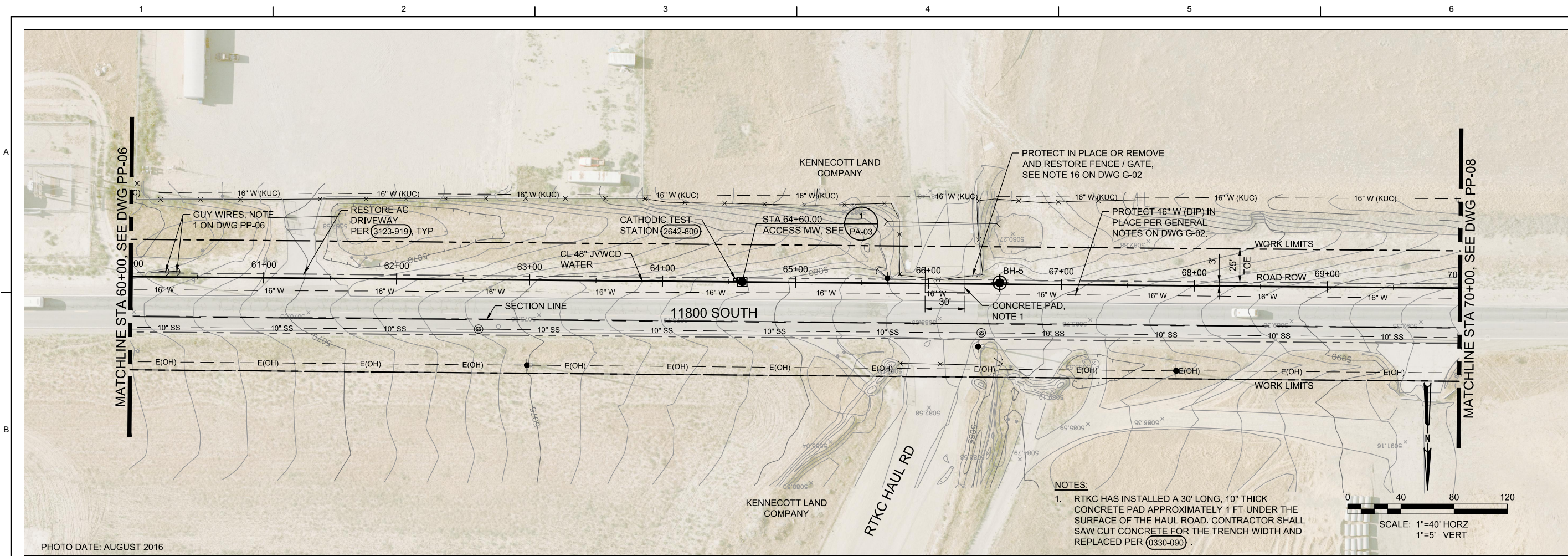
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 11800 SOUTH U-111 PROJECT

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 PLAN AND PROFILE  
 STA 50+00 TO STA 60+00

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**JORDAN VALLEY WATER CONSERVANCY DISTRICT**

**11800 SOUTH U-111 PROJECT**

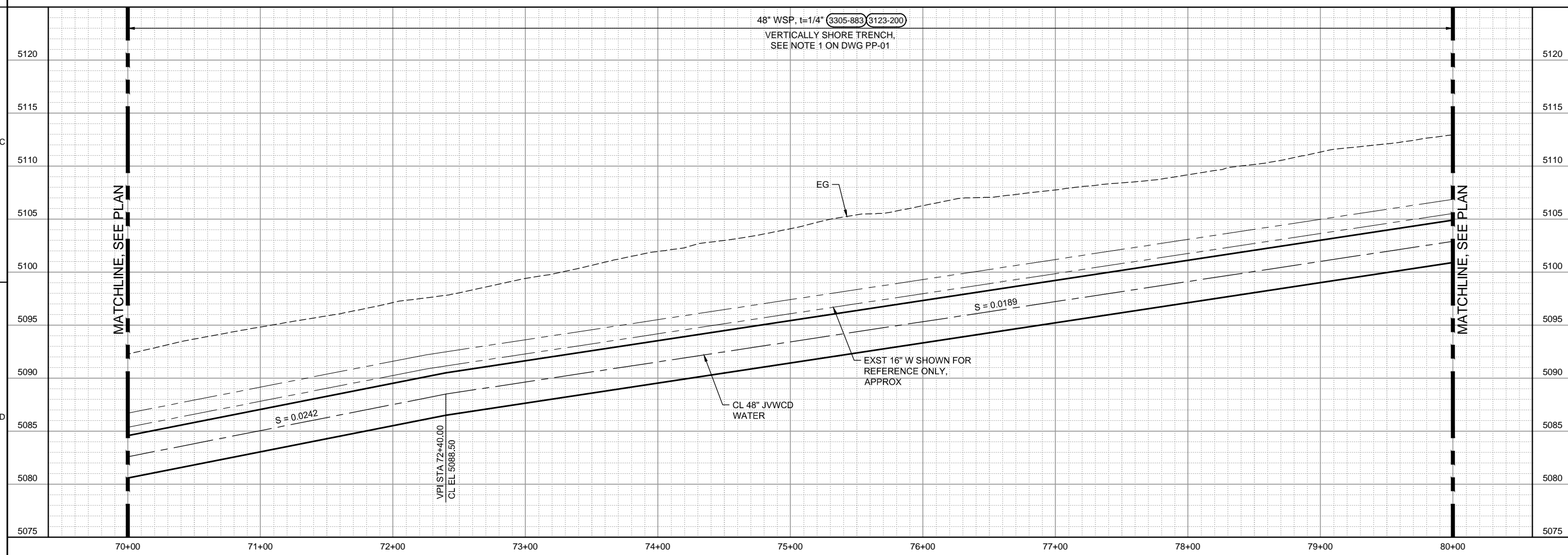
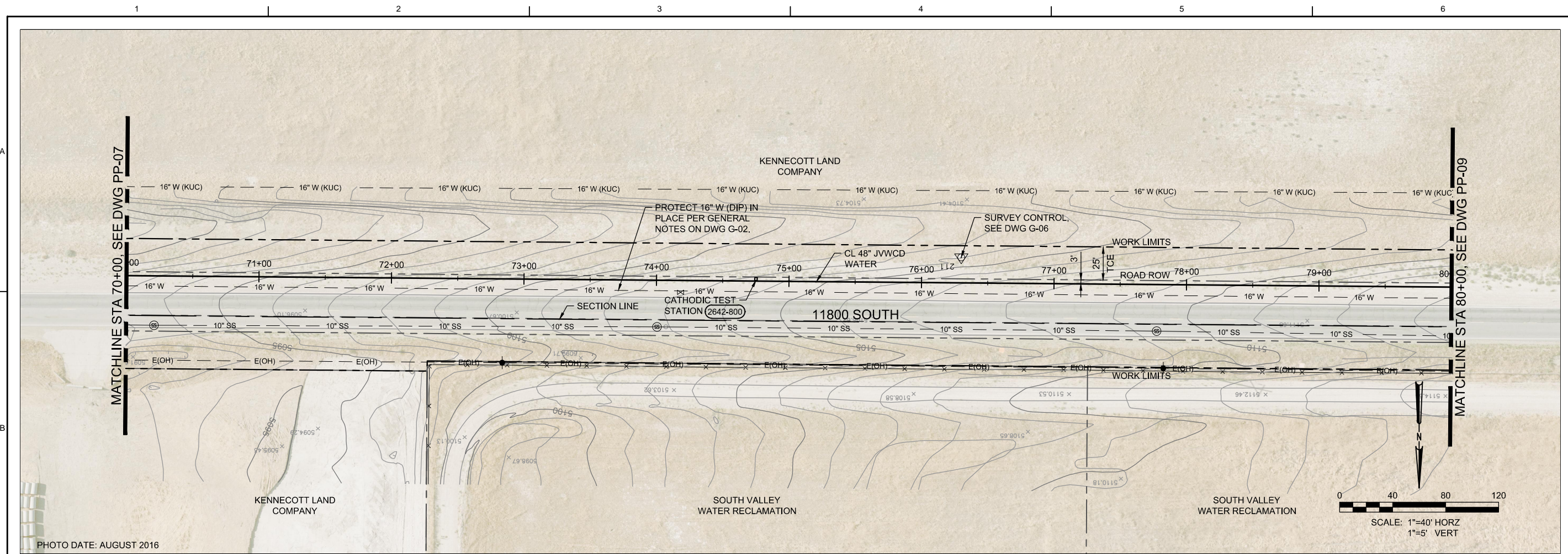
**ch2m**

PLAN AND PROFILE

**STA 60+00 TO STA 70+00**

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DWG	PP-07
SHEET	of





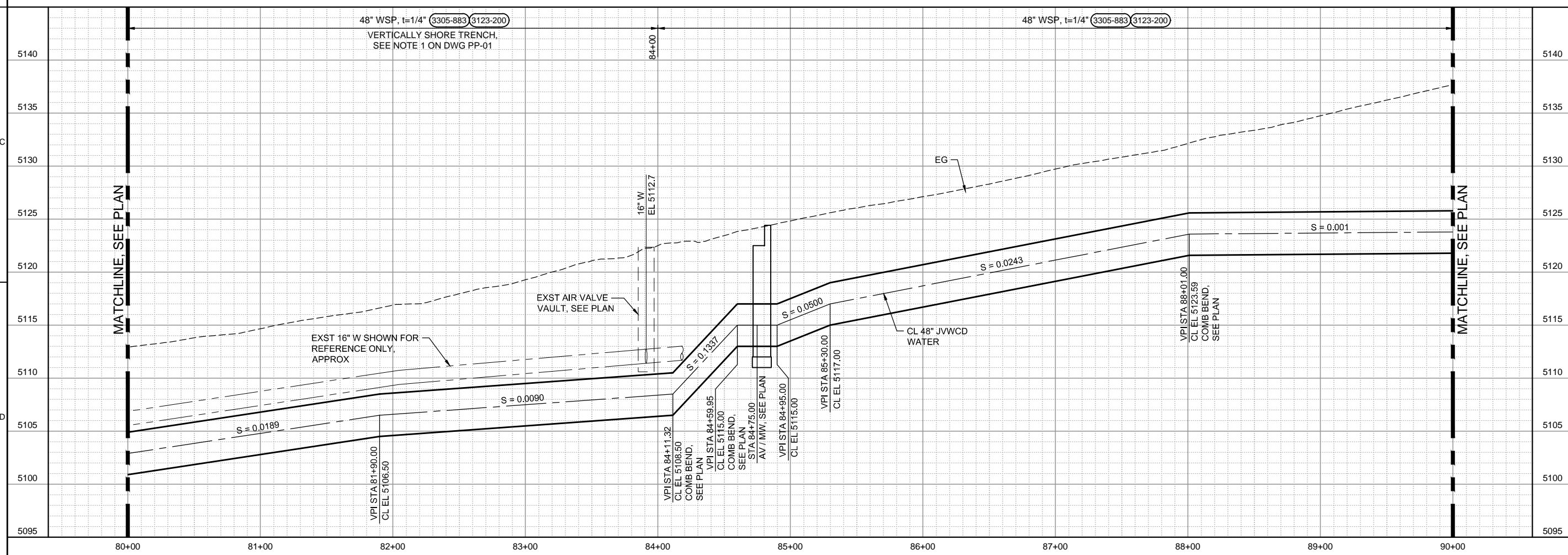
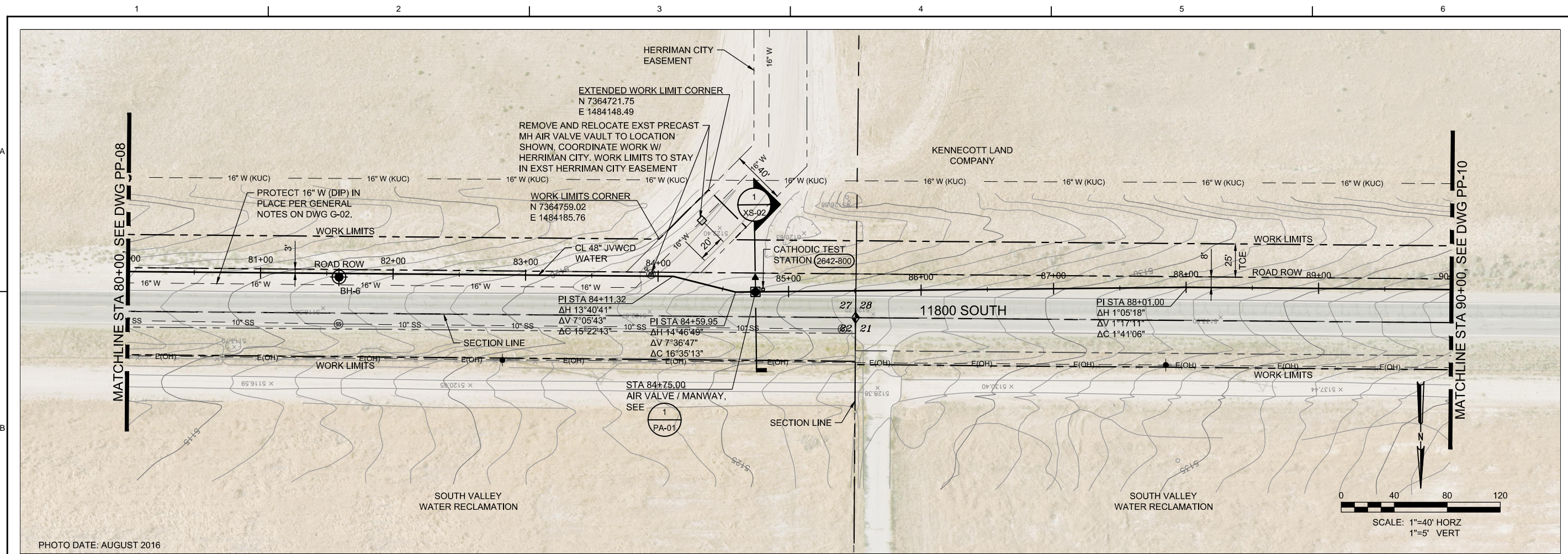
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 PLAN AND PROFILE  
**STA 70+00 TO STA 80+00**

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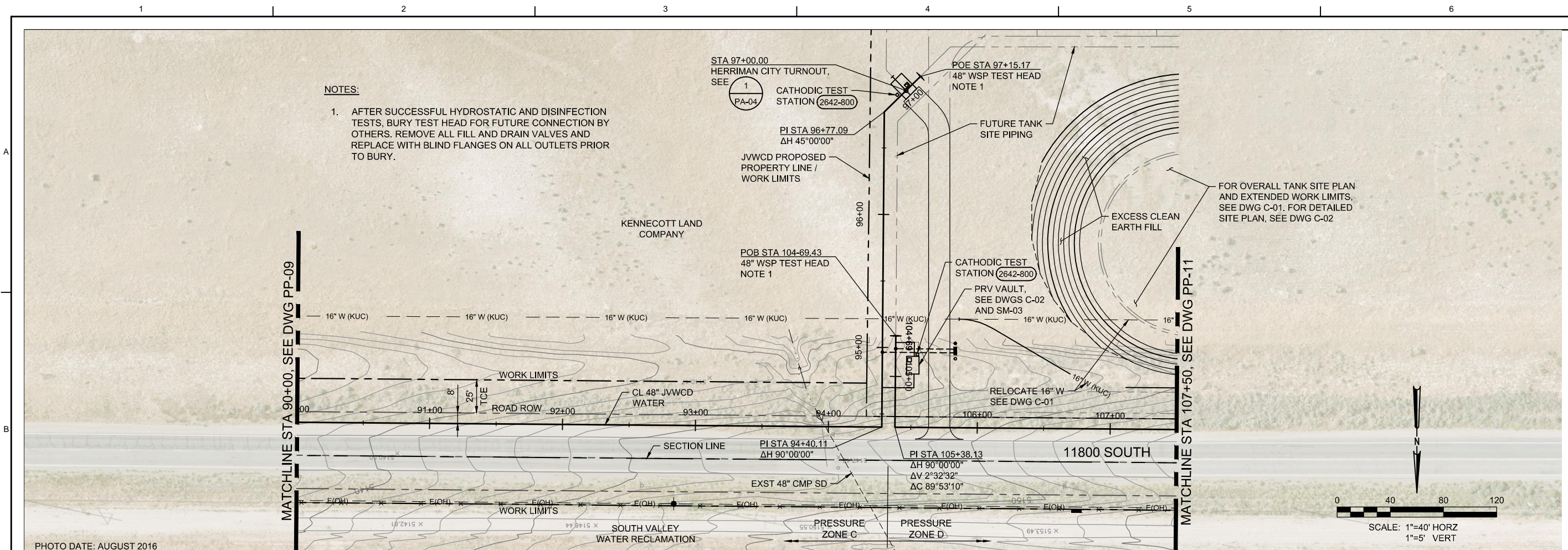
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					R. WILLEITNER

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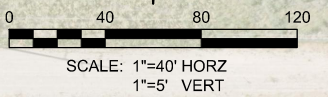
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 PLAN AND PROFILE  
**STA 80+00 TO STA 90+00**

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SHEET	of



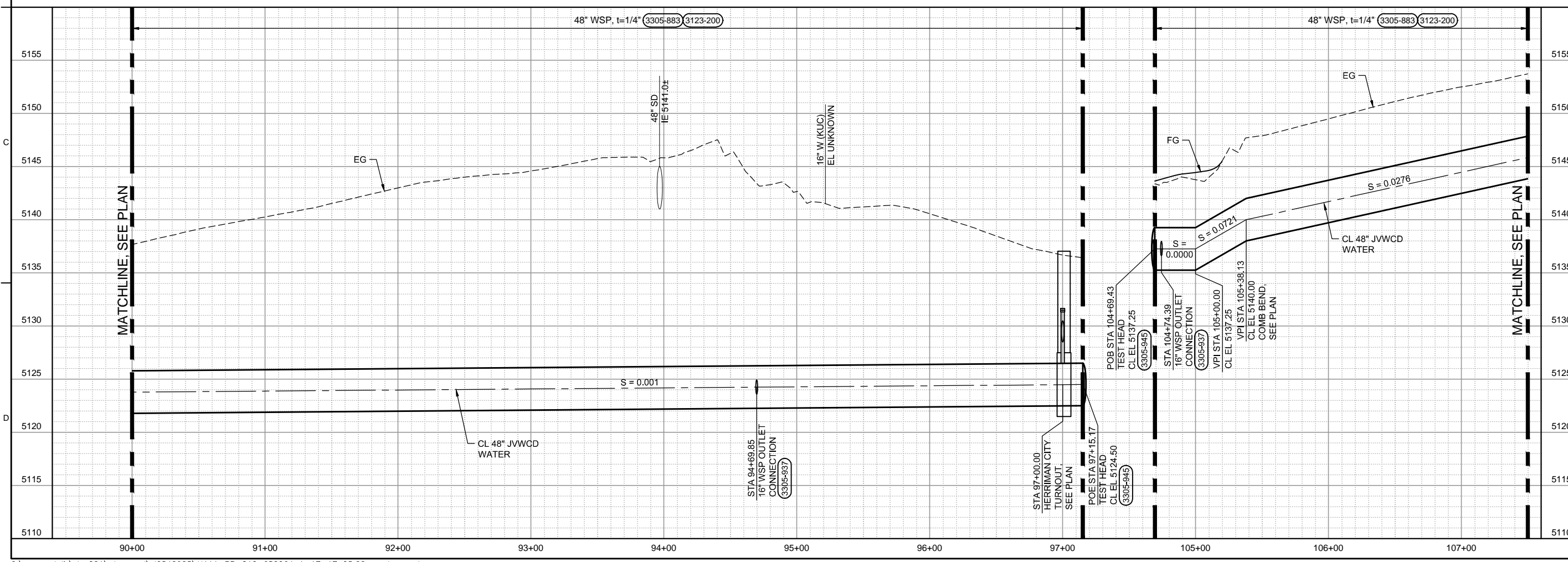


**NOTES:**  
 1. AFTER SUCCESSFUL HYDROSTATIC AND DISINFECTION TESTS, BURY TEST HEAD FOR FUTURE CONNECTION BY OTHERS. REMOVE ALL FILL AND DRAIN VALVES AND REPLACE WITH BLIND FLANGES ON ALL OUTLETS PRIOR TO BURY.



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 PLAN AND PROFILE

**STA 90+00 TO STA 107+50**

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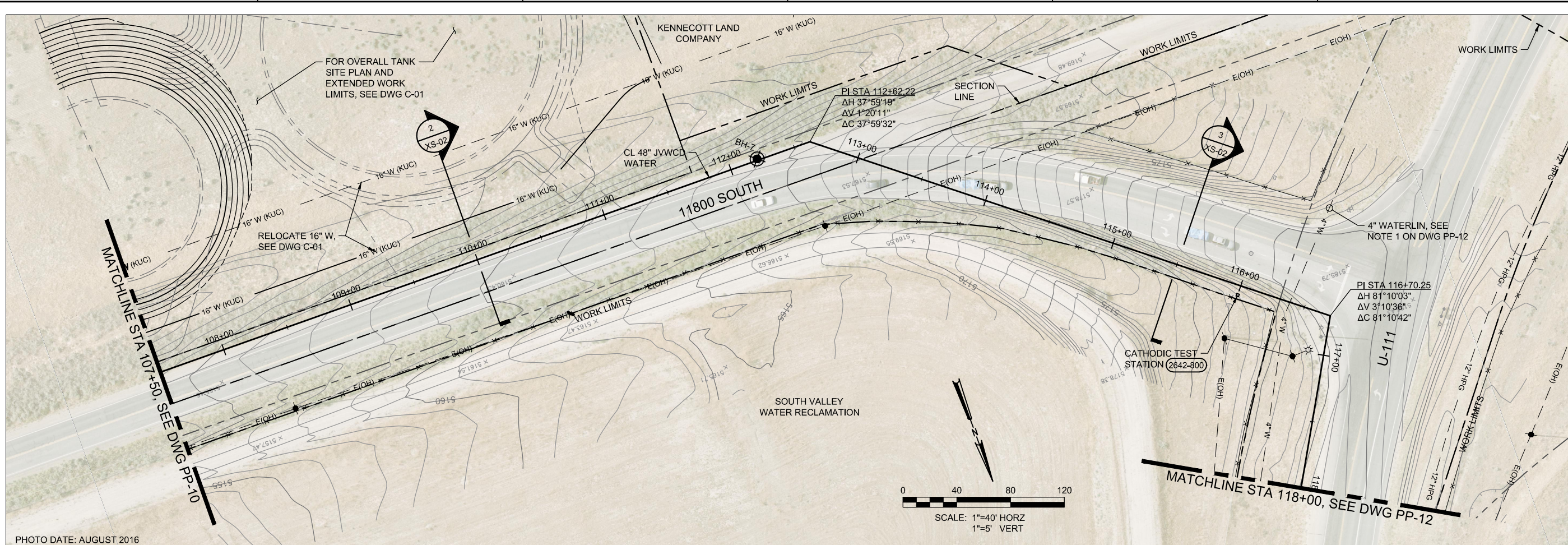
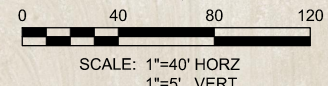


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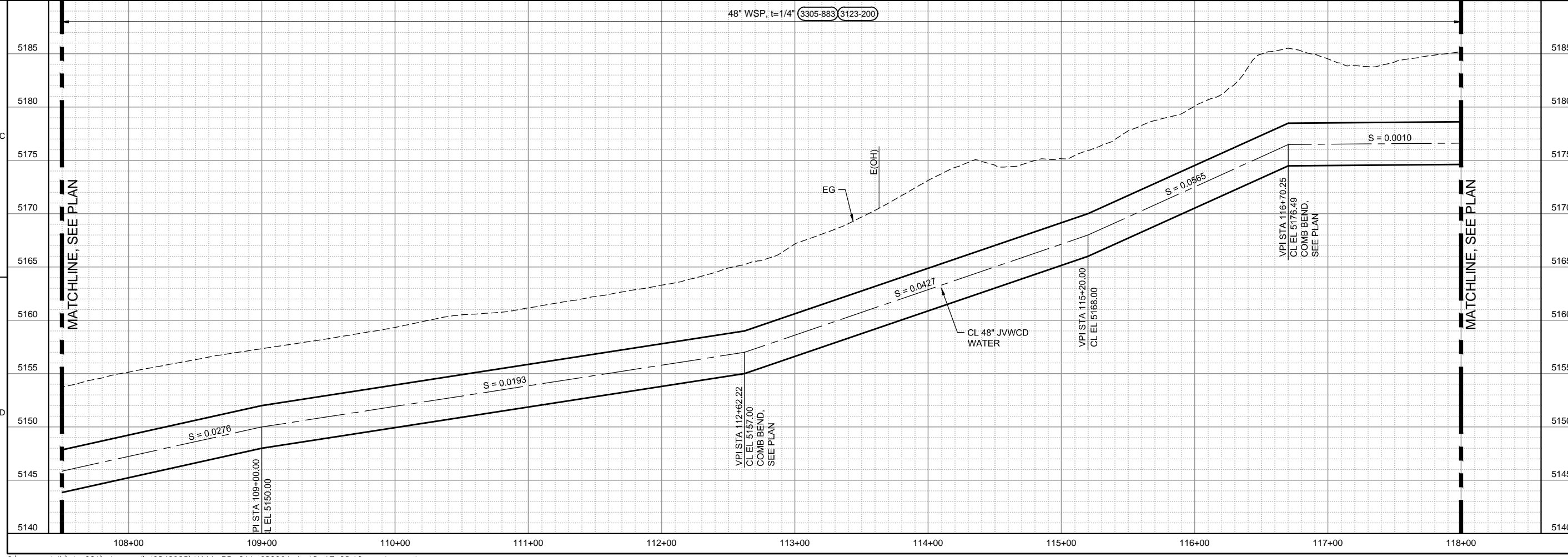
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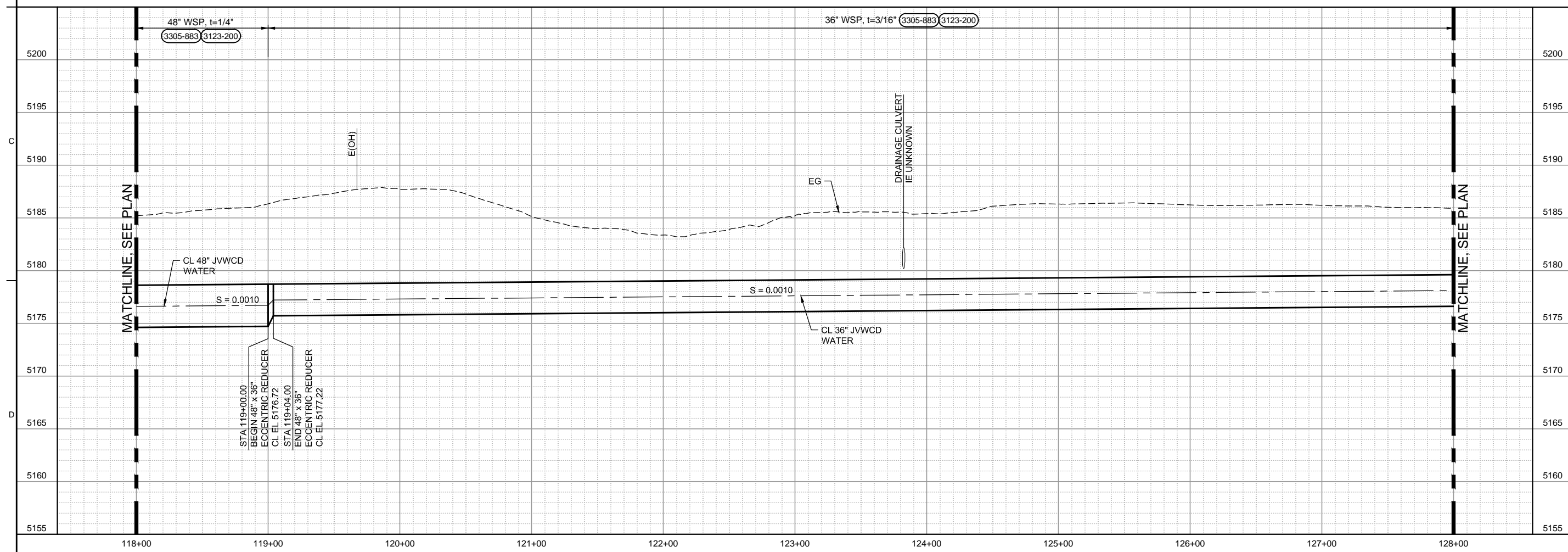
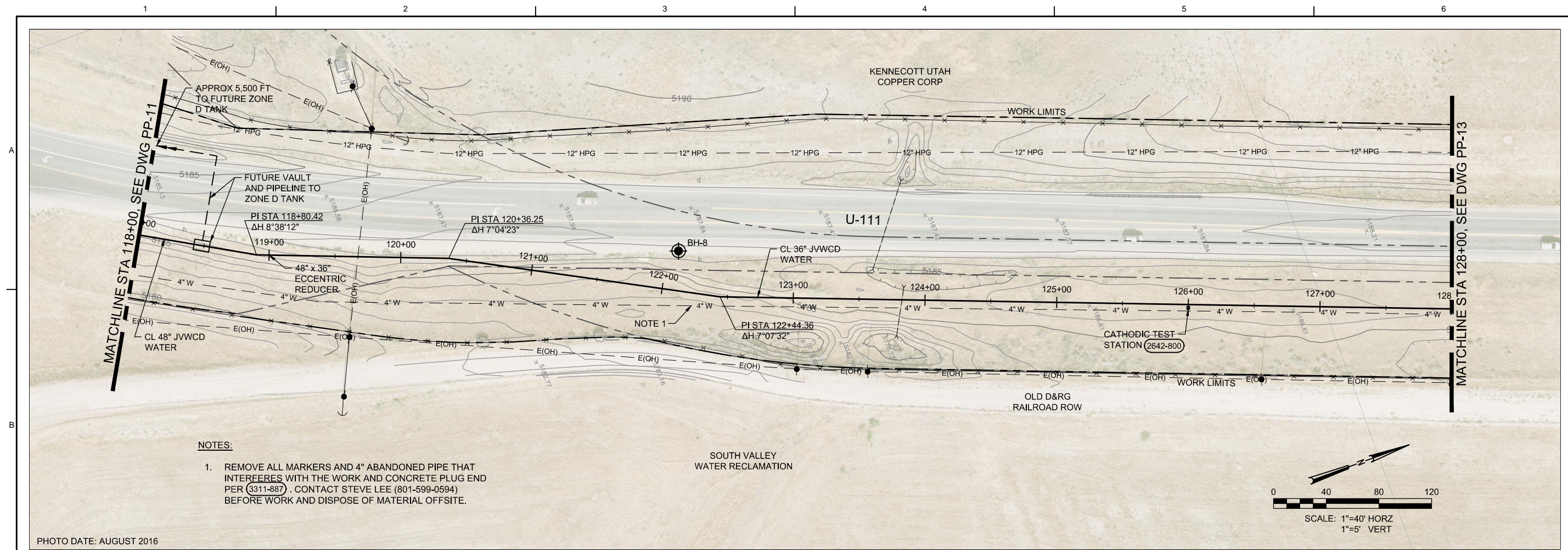


PLAN AND PROFILE  
**STA 107+50 TO STA 118+00**

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DWG	PP-11
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					APVD

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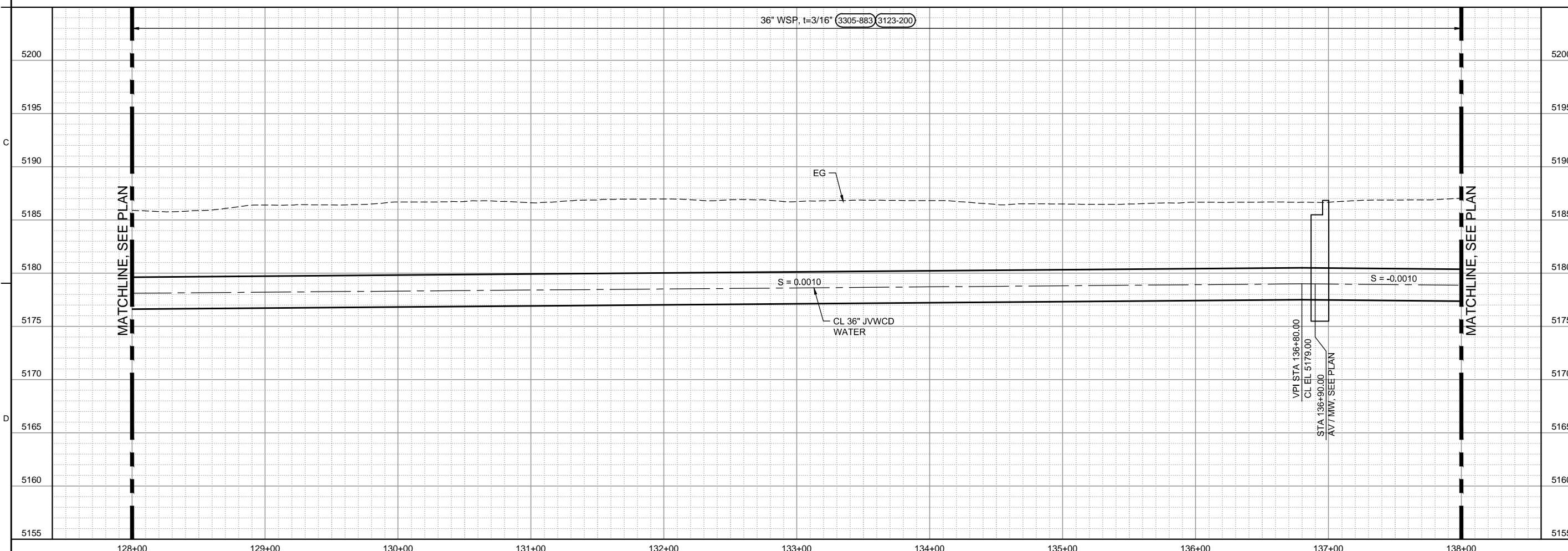
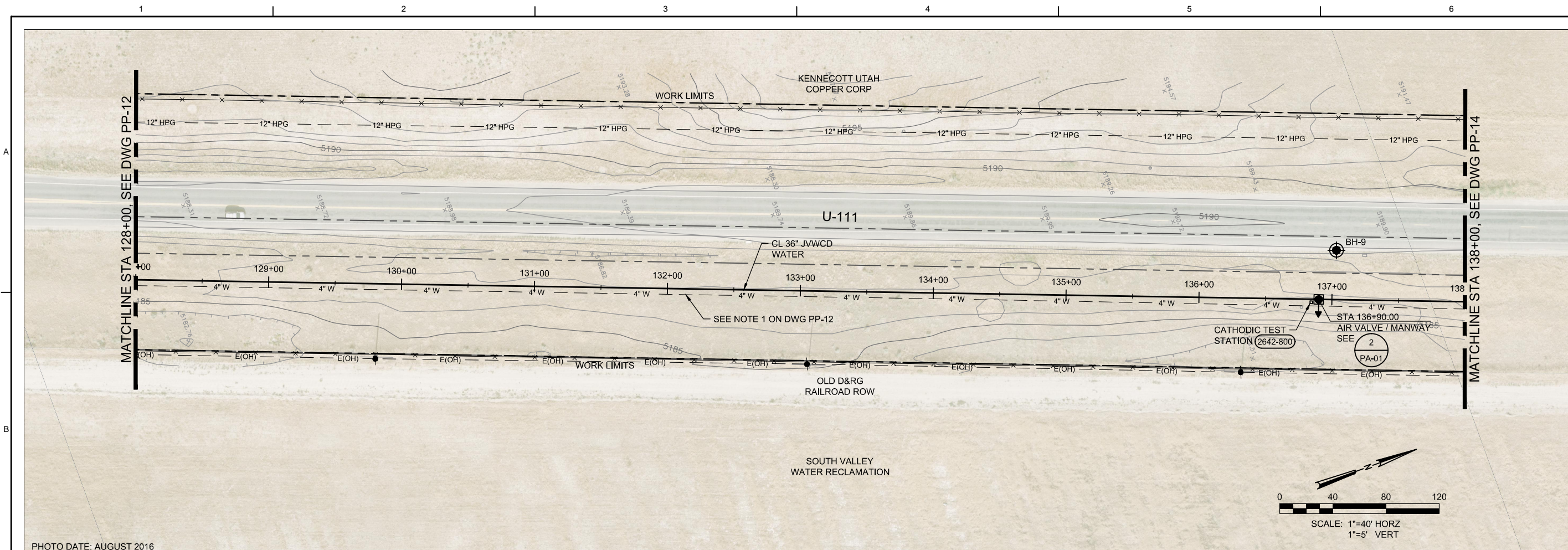
**ch2m**

PLAN AND PROFILE

**STA 118+00 TO STA 128+00**

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DWG	PP-12
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							N. JONES

**JORDAN VALLEY WATER CONSERVANCY DISTRICT**

**11800 SOUTH U-111 PROJECT**

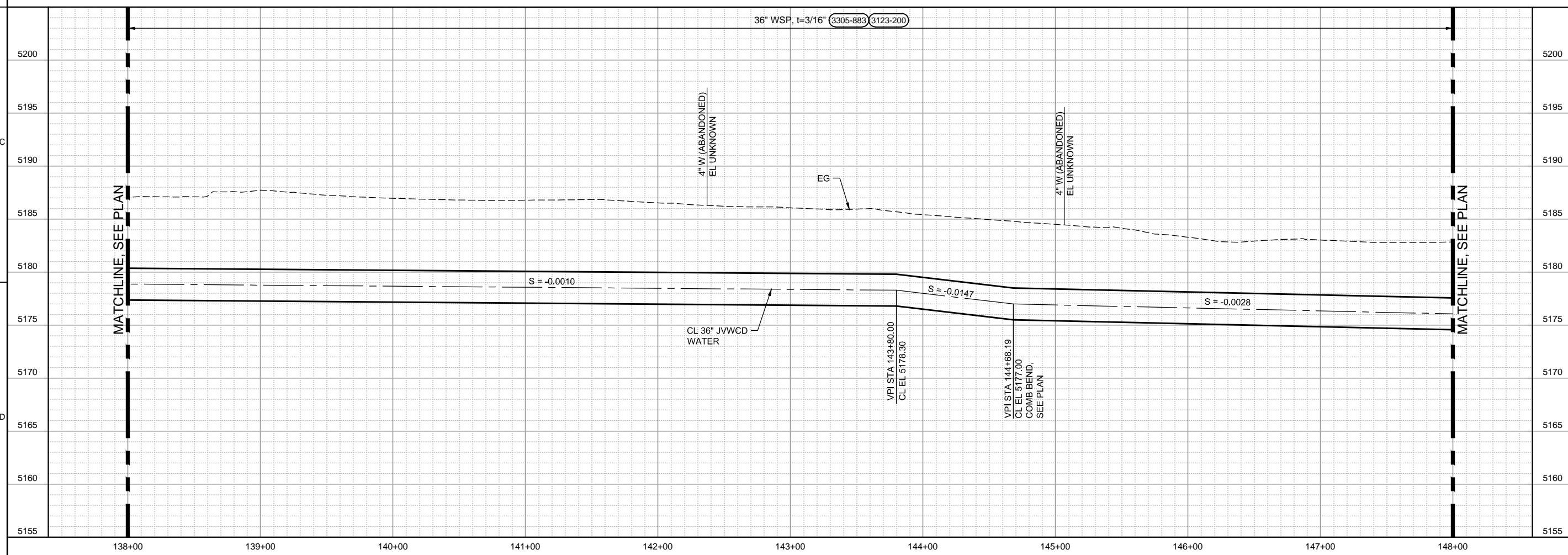
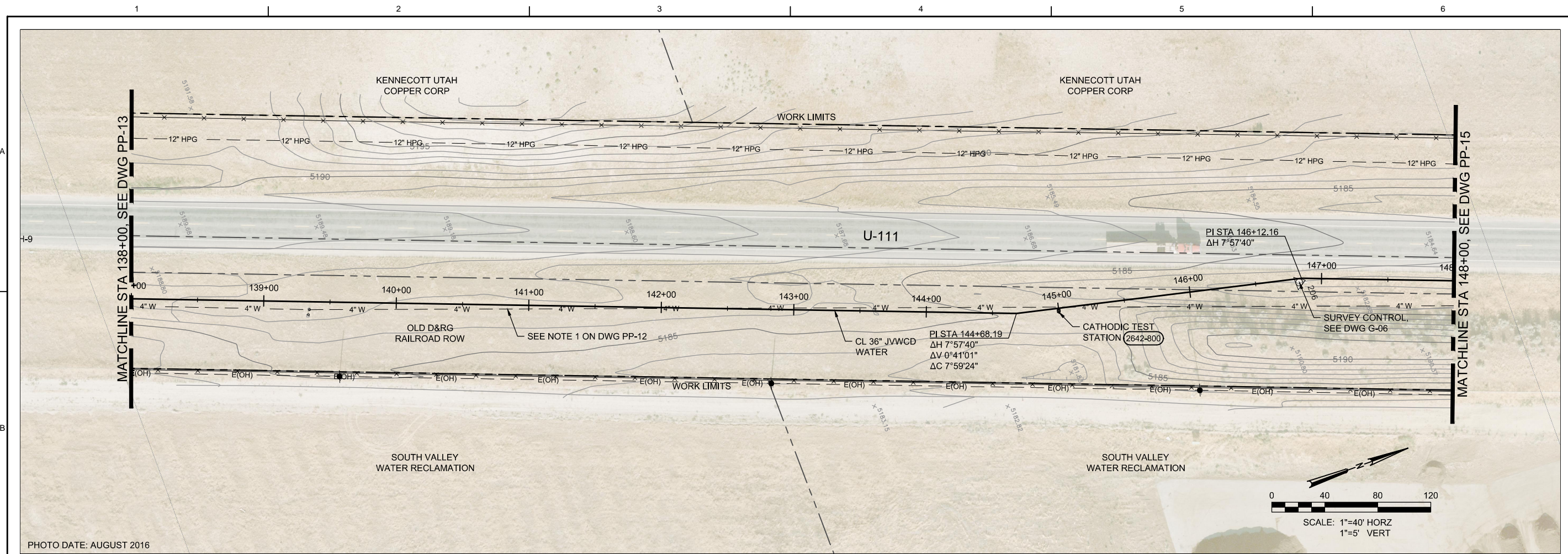
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PLAN AND PROFILE

**STA 128+00 TO STA 138+00**

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SHEET	of





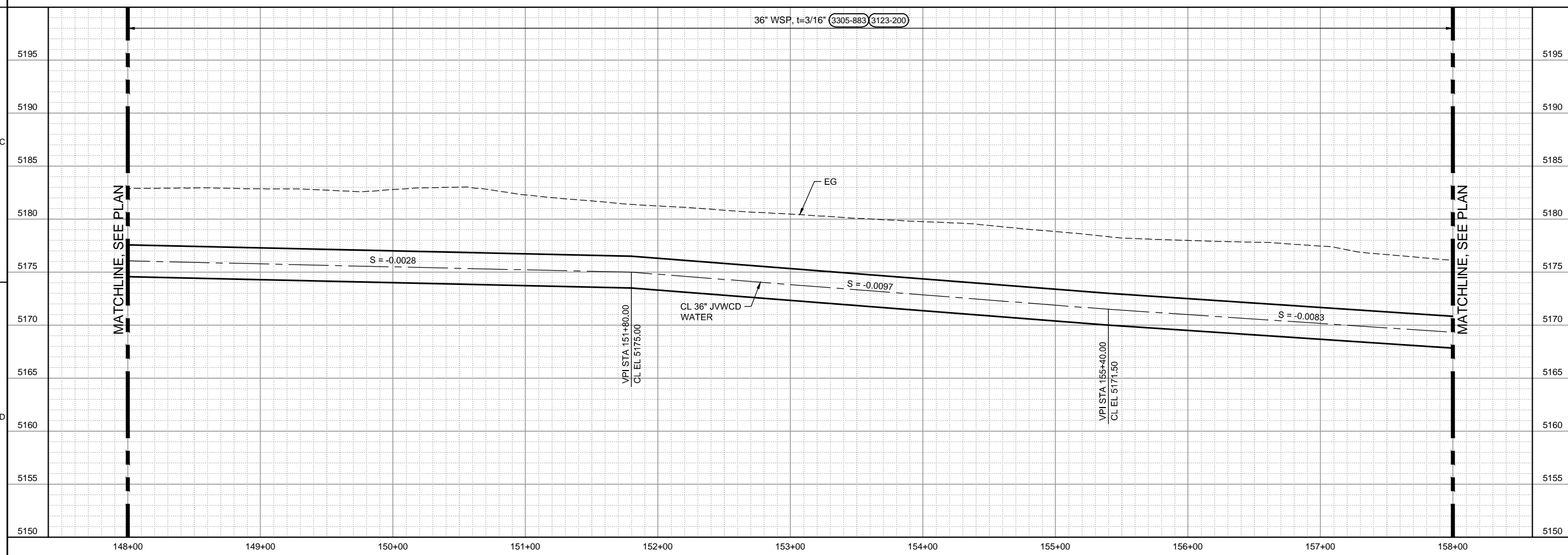
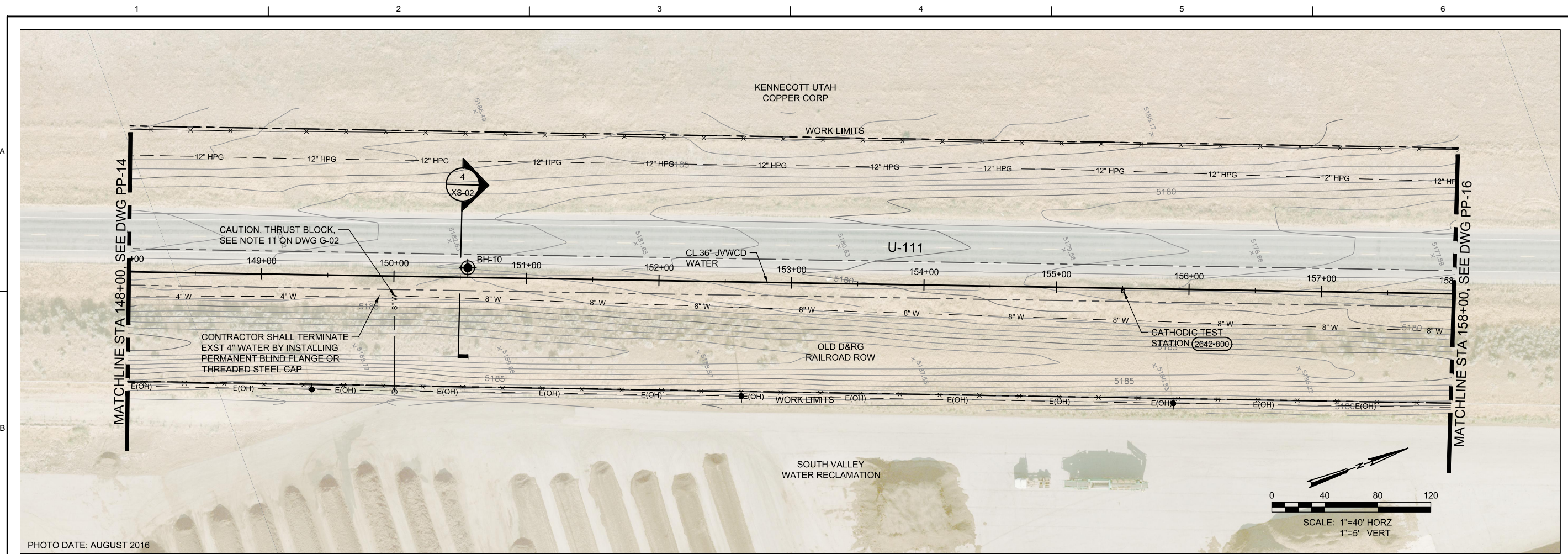
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**PLAN AND PROFILE**  
**STA 138+00 TO STA 148+00**

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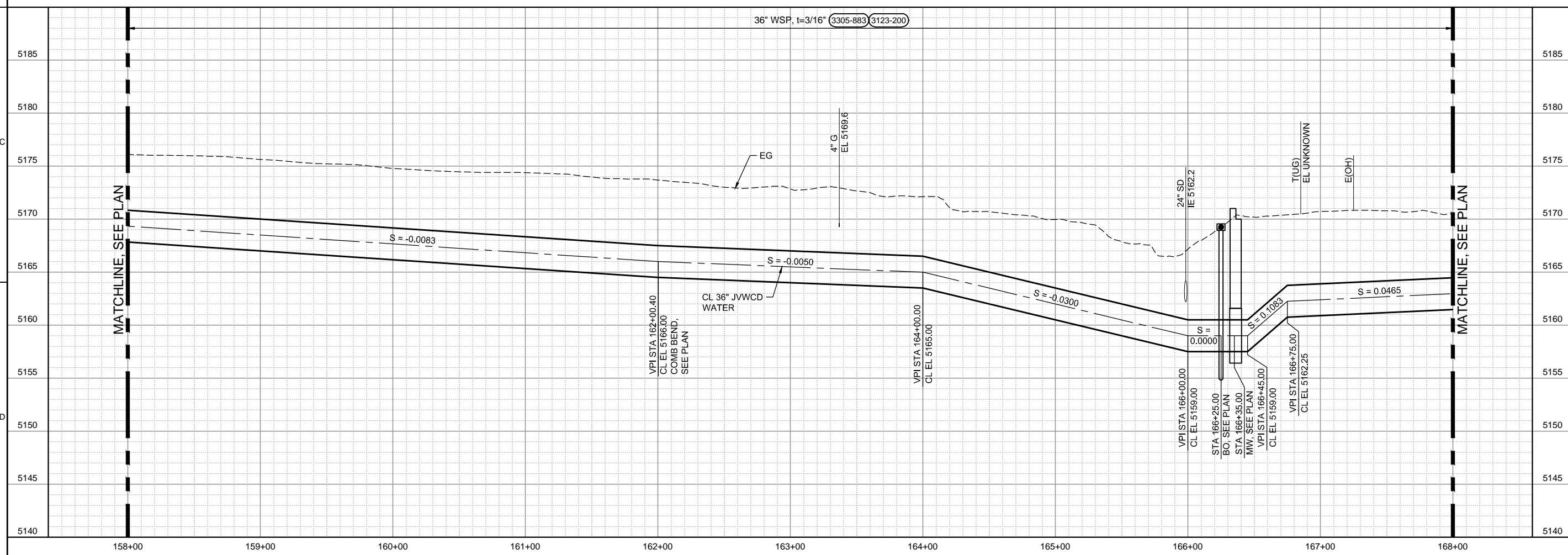
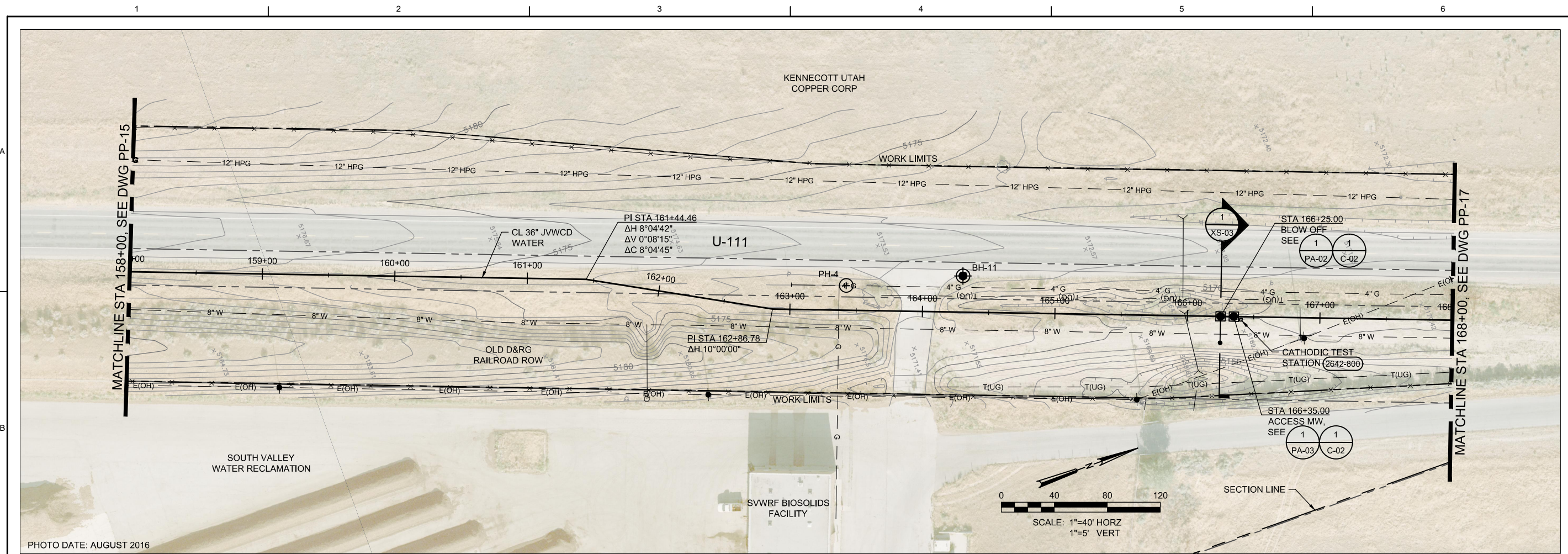
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**11800 SOUTH U-111 PROJECT**

**PLAN AND PROFILE**  
**STA 148+00 TO STA 158+00**

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DWG	PP-15
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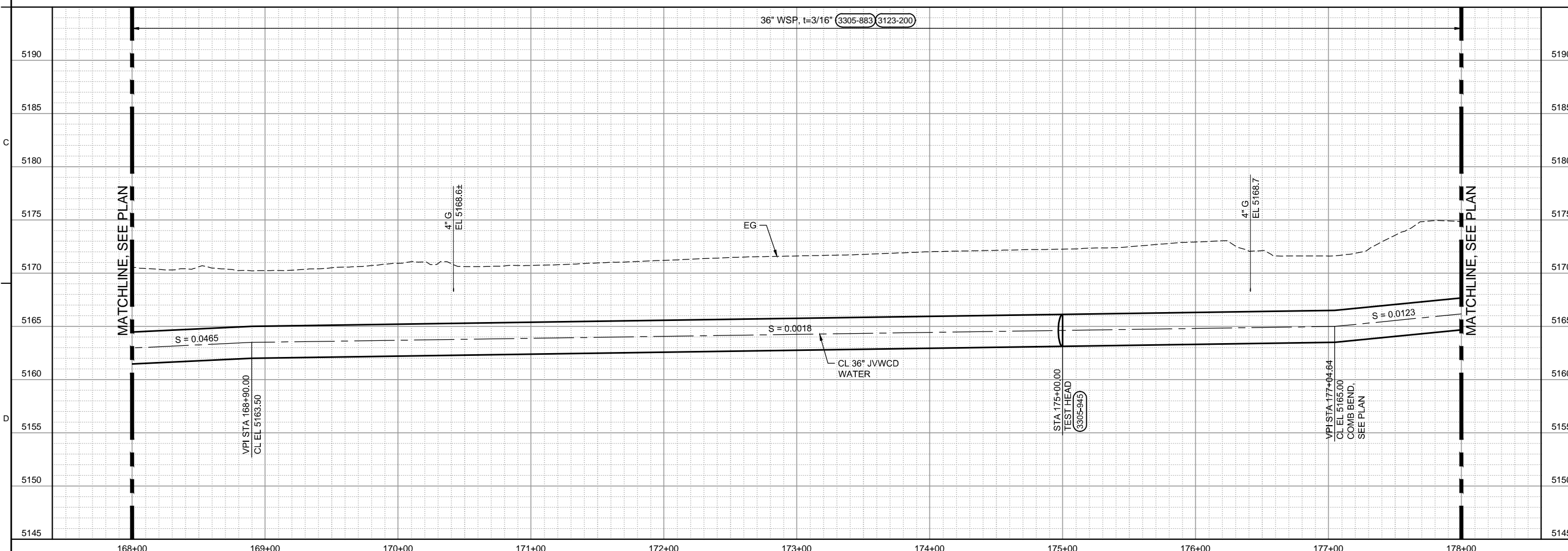
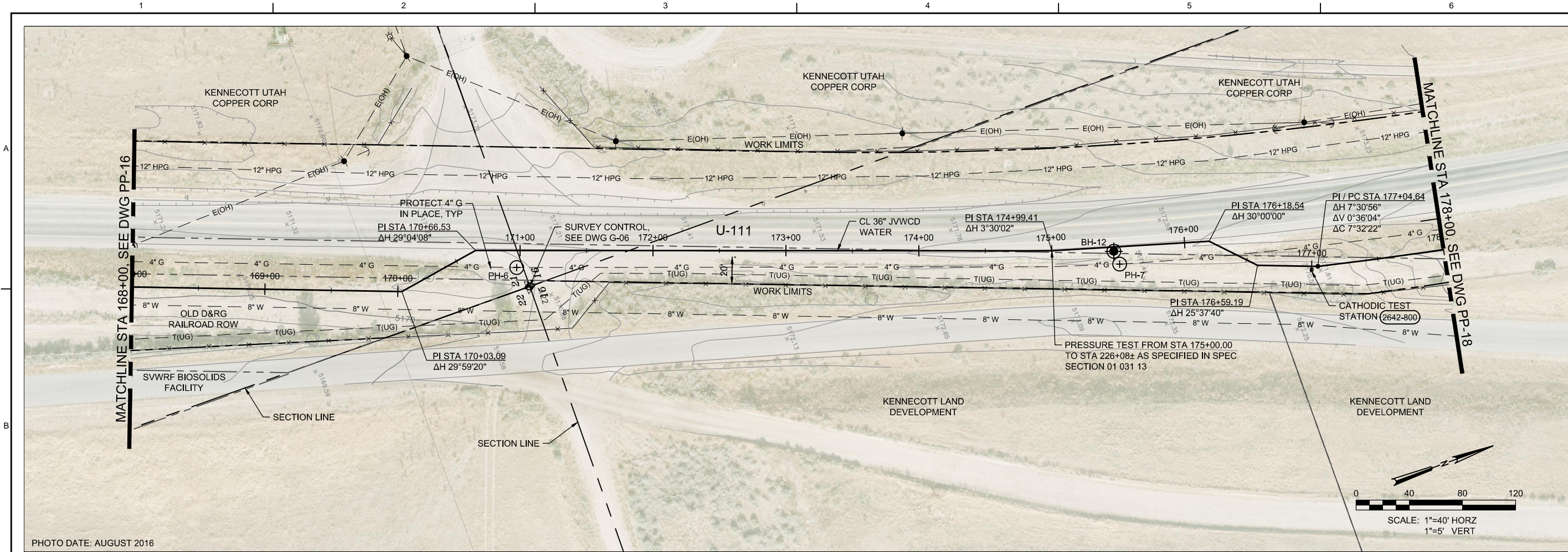
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 PLAN AND PROFILE  
**STA 158+00 TO STA 168+00**

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DWG	PP-16
SHEET	of





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			N. JONES		

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PLAN AND PROFILE  
STA 168+00 TO STA 178+00

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11800 SOUTH U-111 PROJECT

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING.

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DWG: PP-17  
SHEET: of



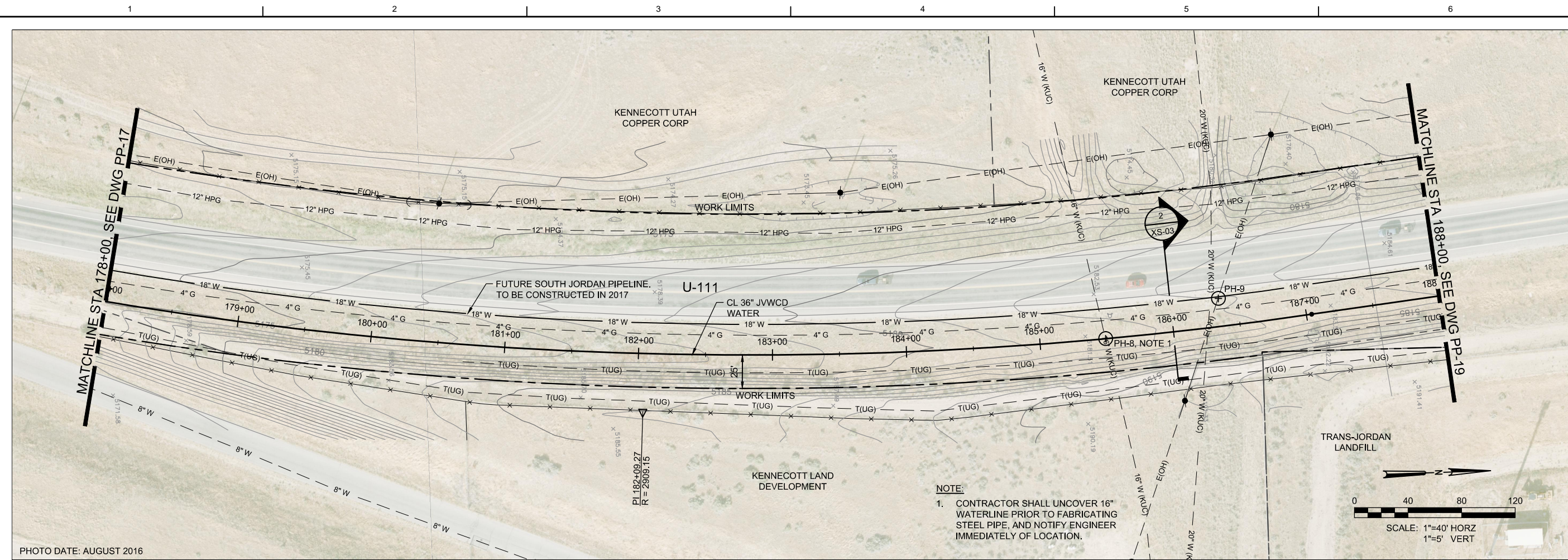
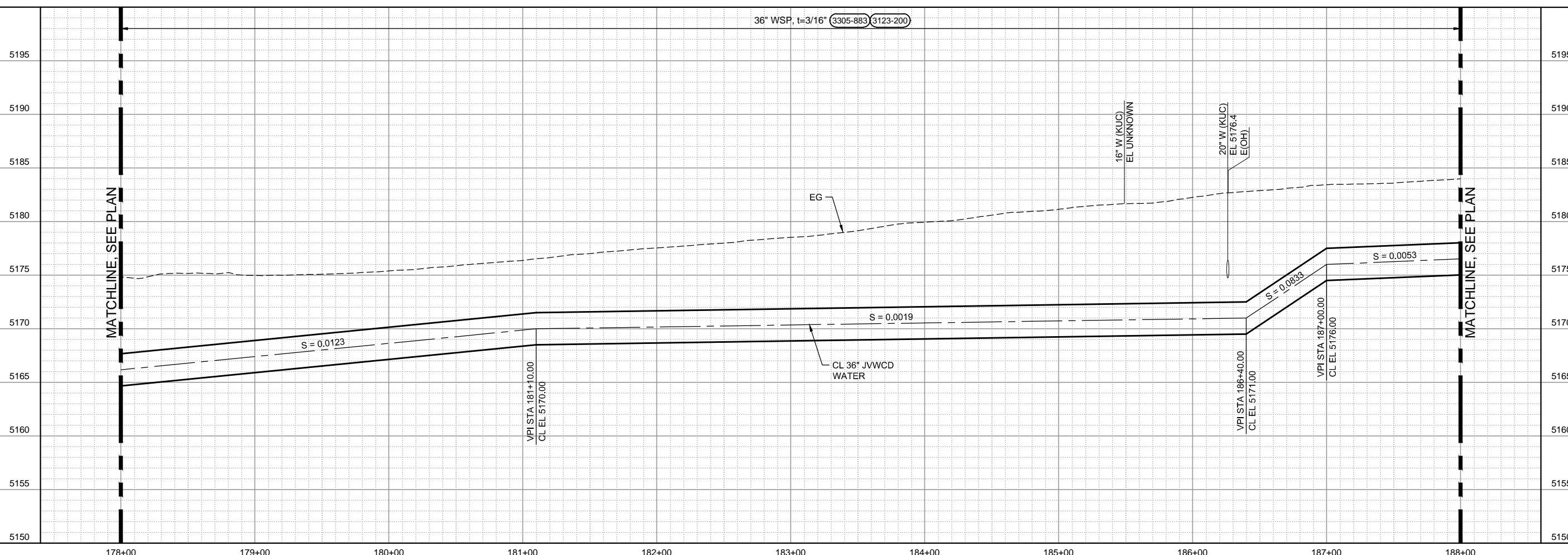
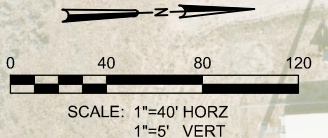


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**NOTE:**  
 1. CONTRACTOR SHALL UNCOVER 16" WATERLINE PRIOR TO FABRICATING STEEL PIPE, AND NOTIFY ENGINEER IMMEDIATELY OF LOCATION.



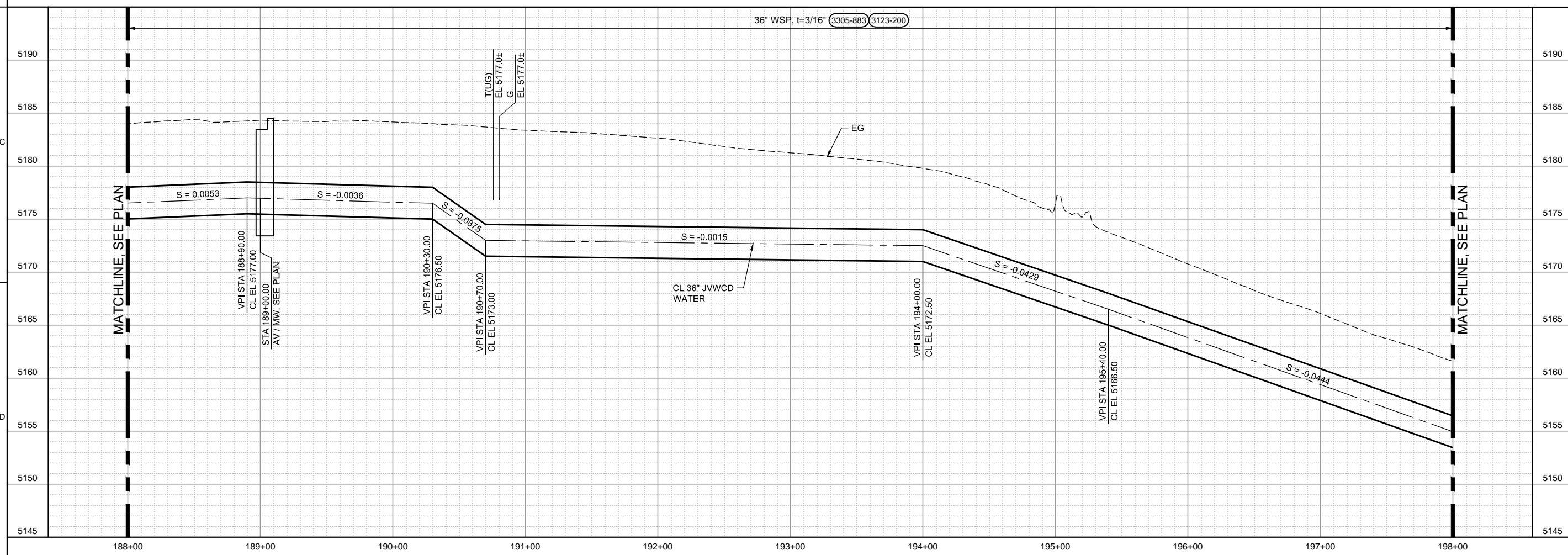
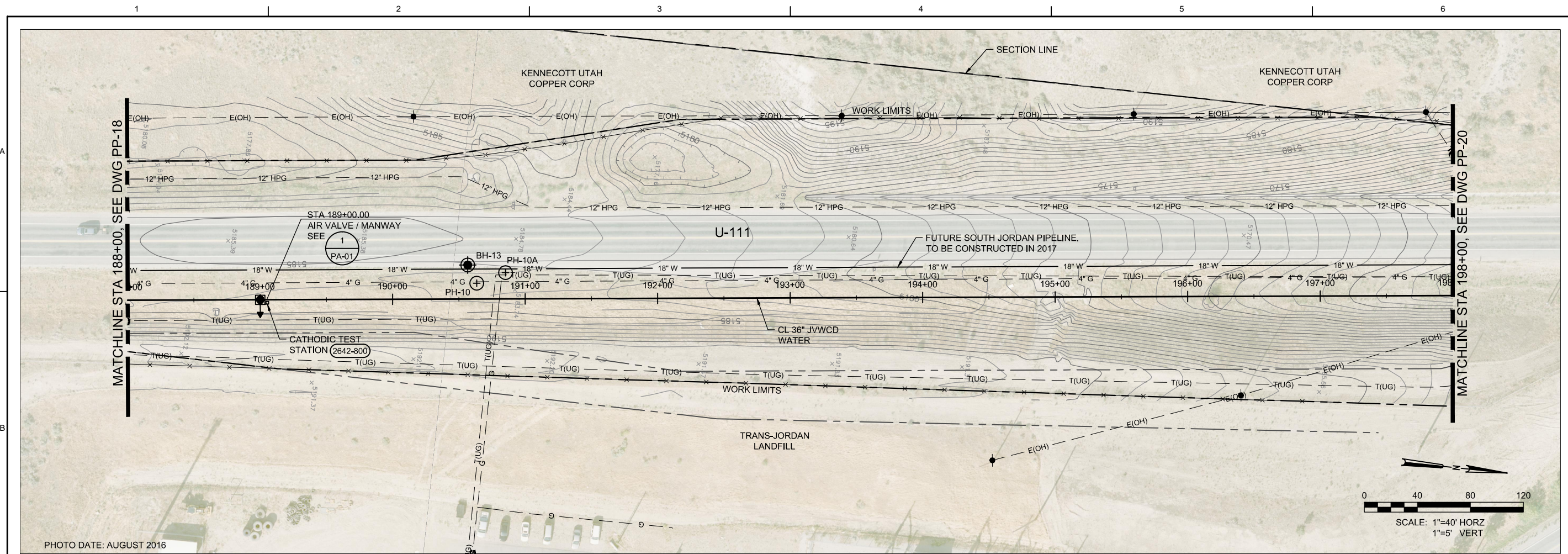
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**ch2m**  
 PLAN AND PROFILE  
 STA 178+00 TO STA 188+00

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DWG	PP-18
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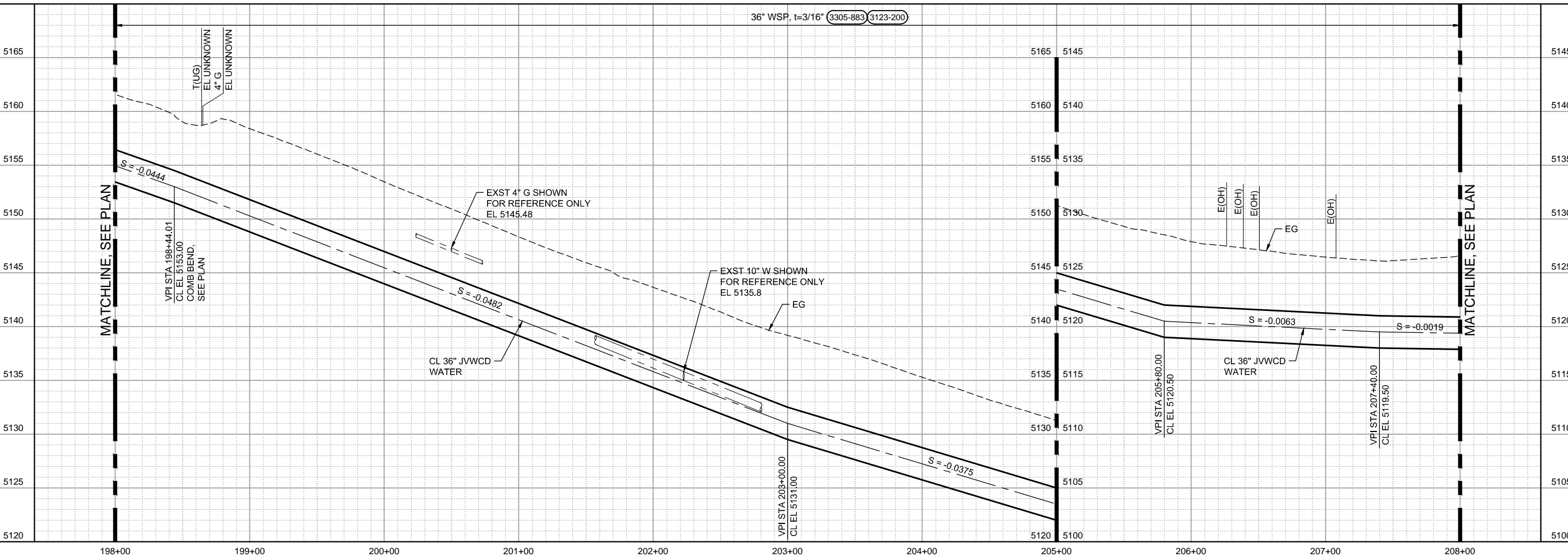
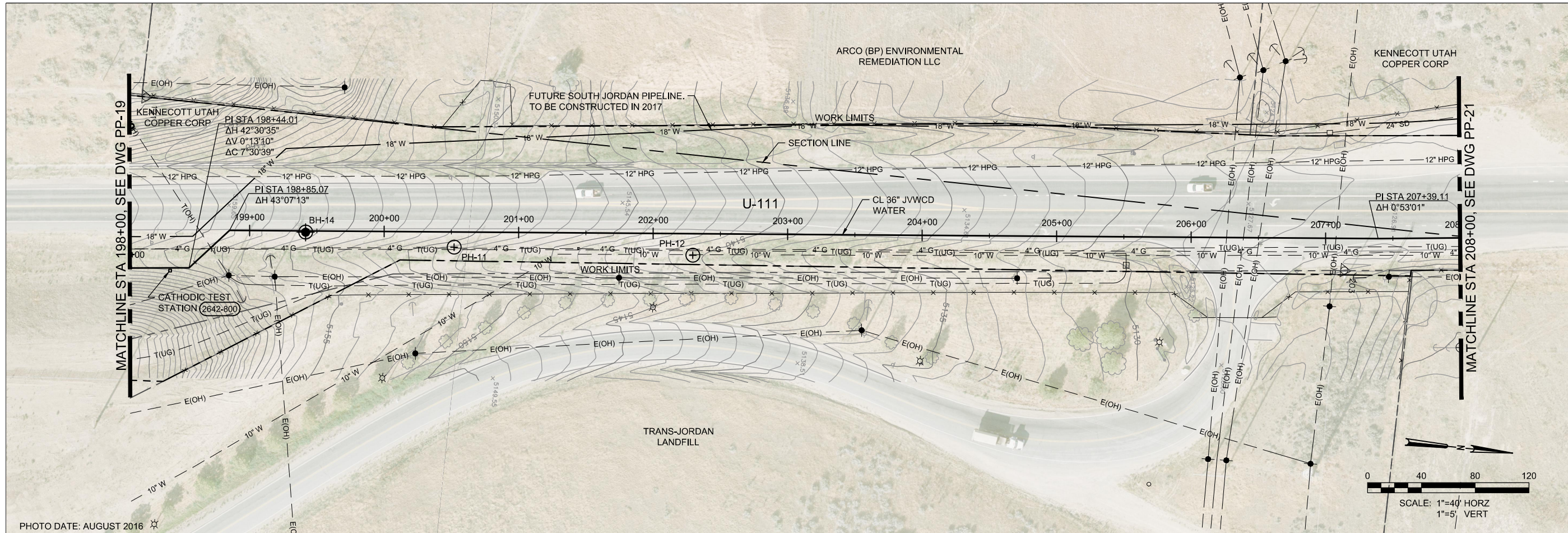
NO.	DATE	DR	REVISION	BY	APVD
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		C. HOGGARD			
		N. JONES			
		R. WILLEITNER			

**Jordan Valley Water Conservancy District**  
**11800 SOUTH U-111 PROJECT**

**PLAN AND PROFILE**  
**STA 188+00 TO STA 198+00**

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	PP-19
SHEET	of





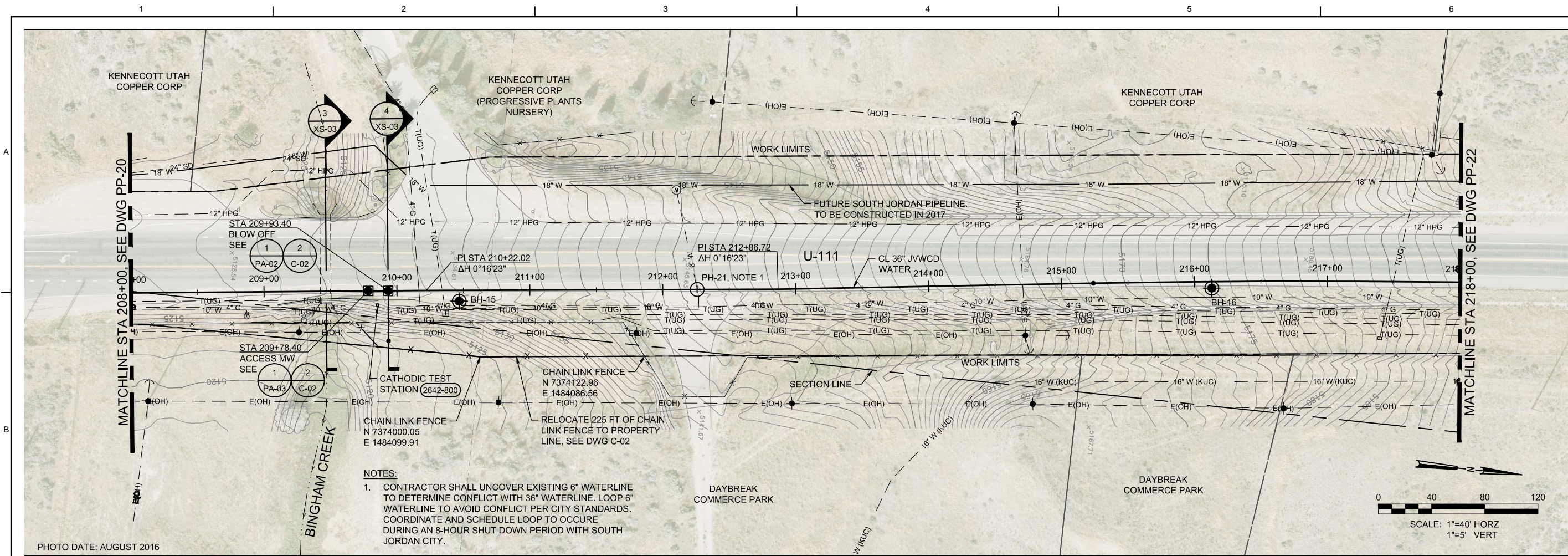
NO.	DATE	DR	CHK	APVD	BY	APVD
		R. WILLEITNER	C. HOGGARD		N. JONES	R. WILLEITNER

**JORDAN VALLEY WATER CONSERVANCY DISTRICT**  
**11800 SOUTH U-111 PROJECT**

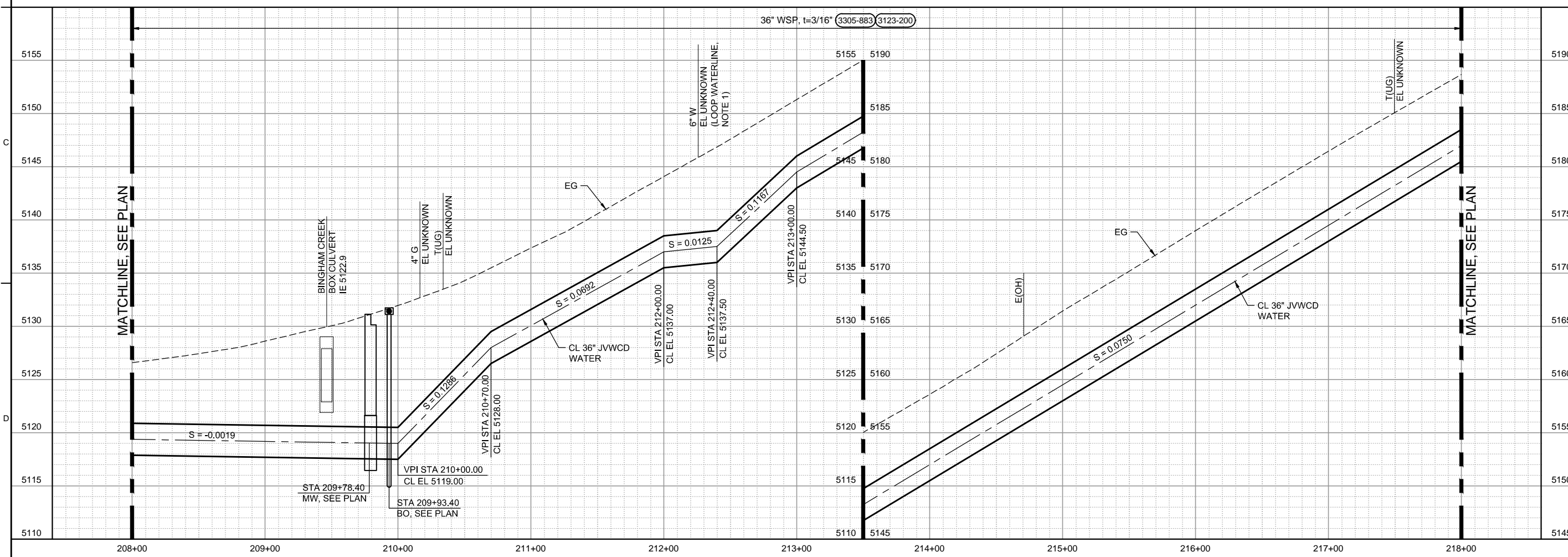
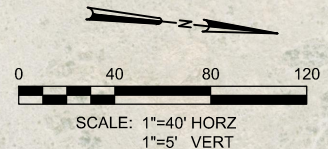
**ch2m**  
 PLAN AND PROFILE  
**STA 198+00 TO STA 208+00**

VERIFY SCALE	
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- NOTES:**
- CONTRACTOR SHALL UNCOVER EXISTING 6\"/>



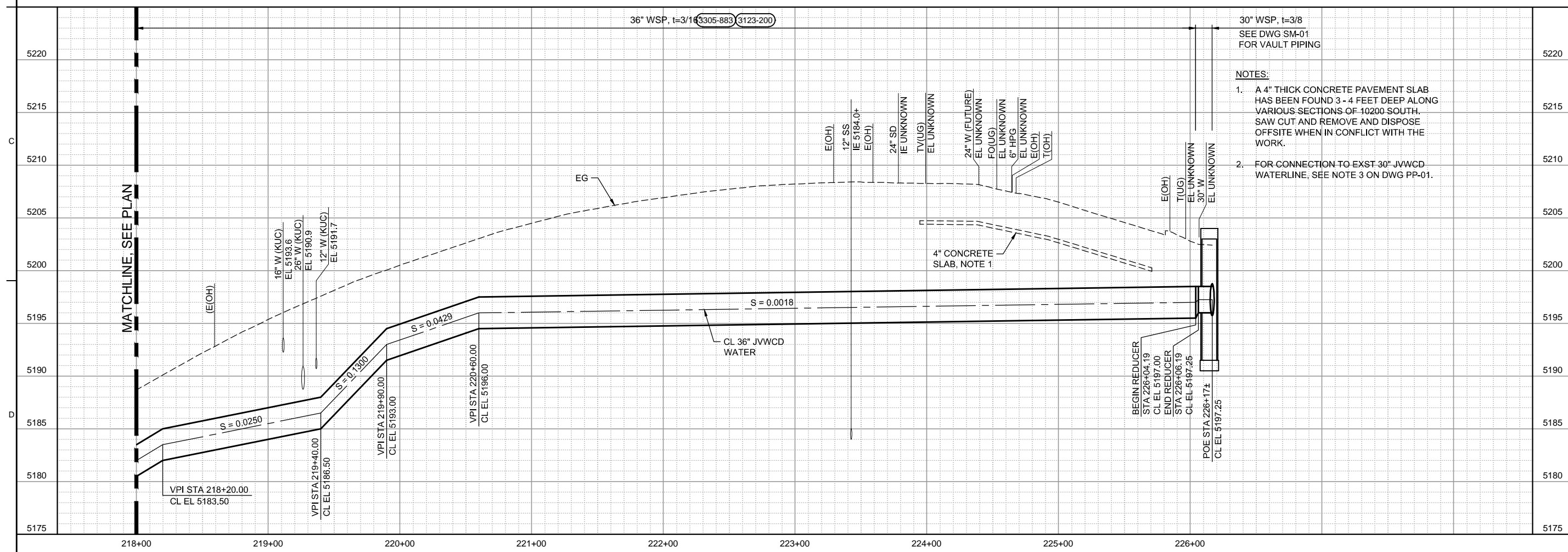
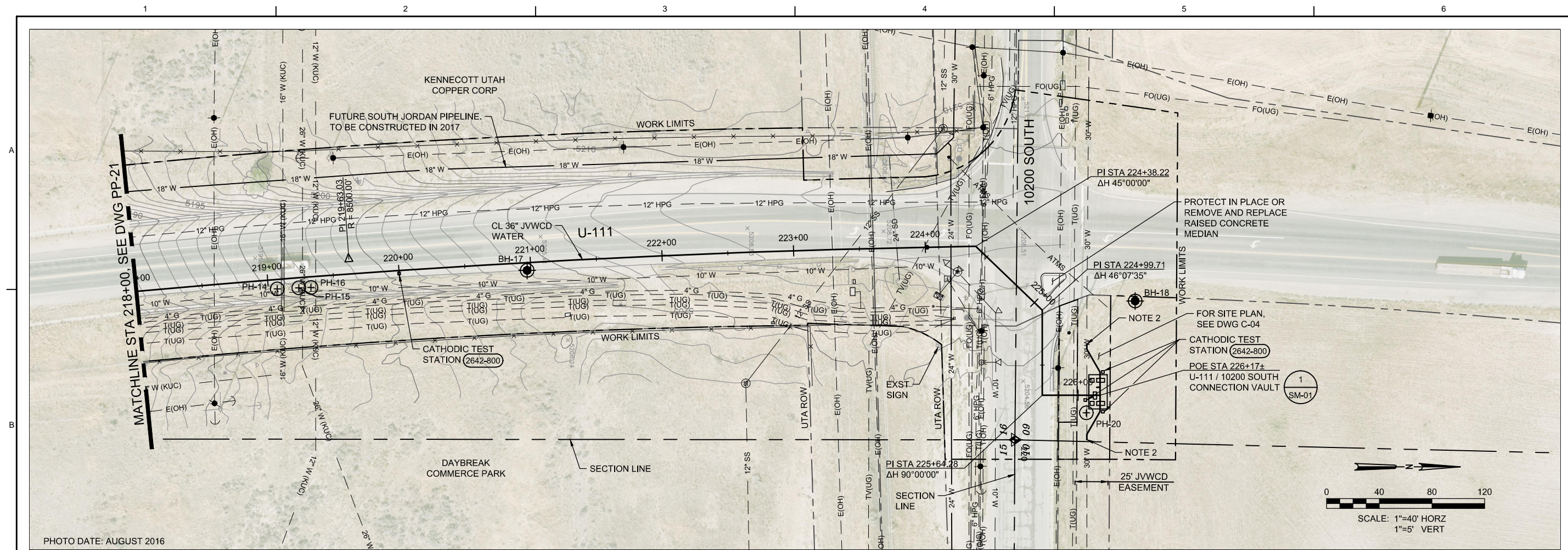
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**ch2m**  
 PLAN AND PROFILE  
**STA 208+00 TO STA 218+00**

DATE	JANUARY 2017
PROJ	680064
DWG	PP-21
SHEET	of





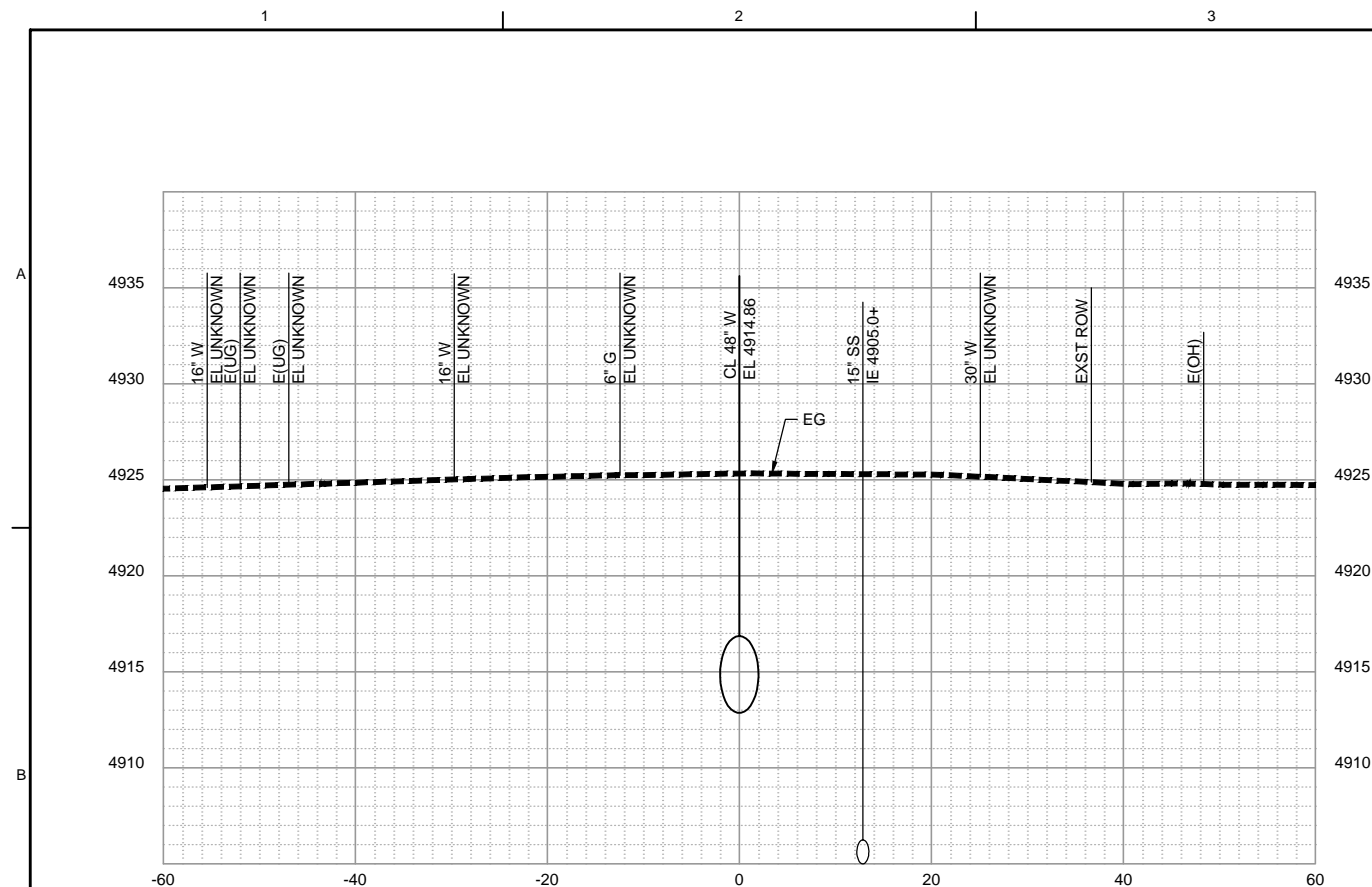
NO.	DATE	DR	CHK	APVD	BY
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**Jordan Valley Water Conservancy District**  
**11800 SOUTH U-111 PROJECT**

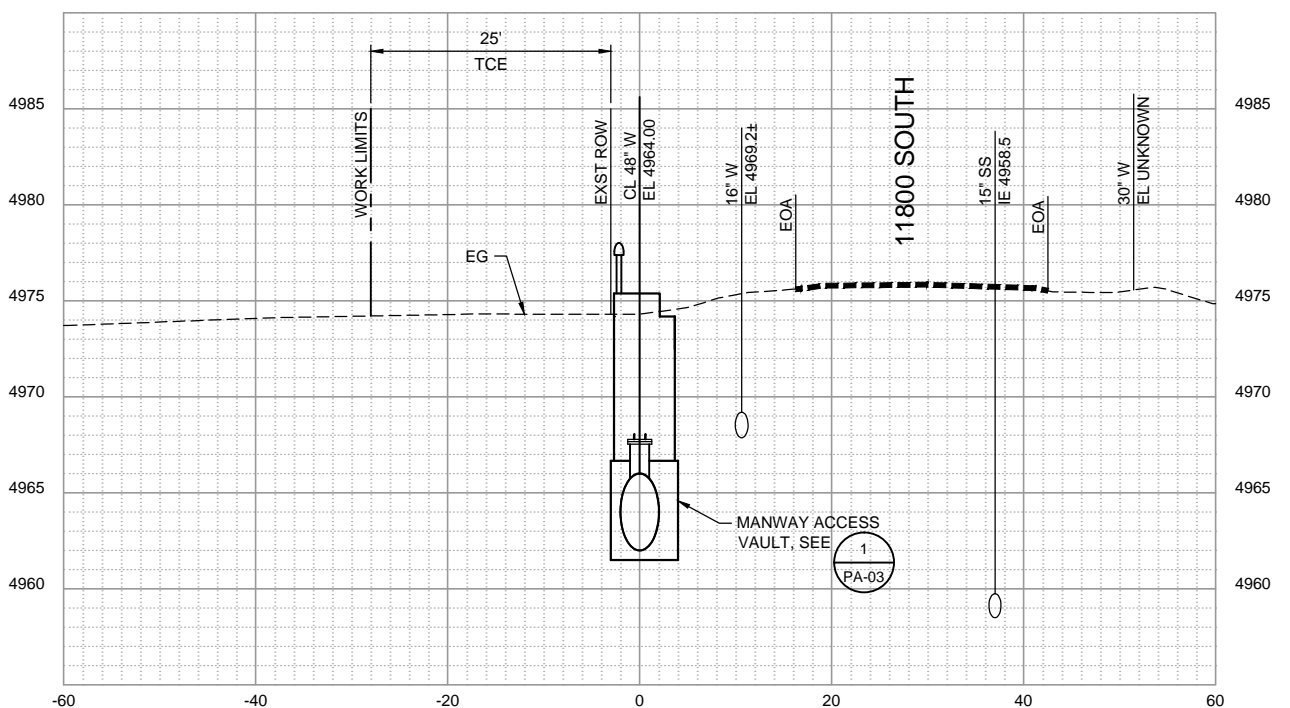
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PLAN AND PROFILE	
<b>STA 218+00 TO STA 226+17±</b>	
DATE	JANUARY 2017
PROJ	680064
DWG	PP-22
SHEET	of

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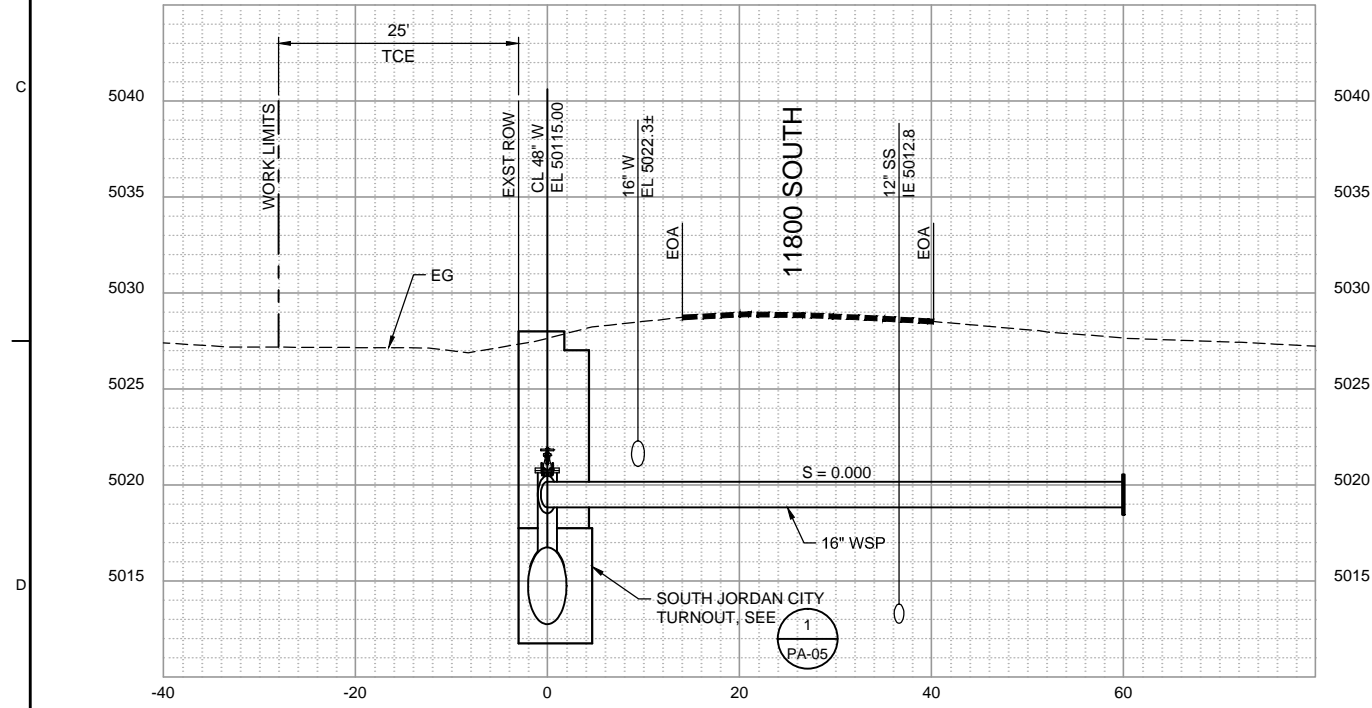




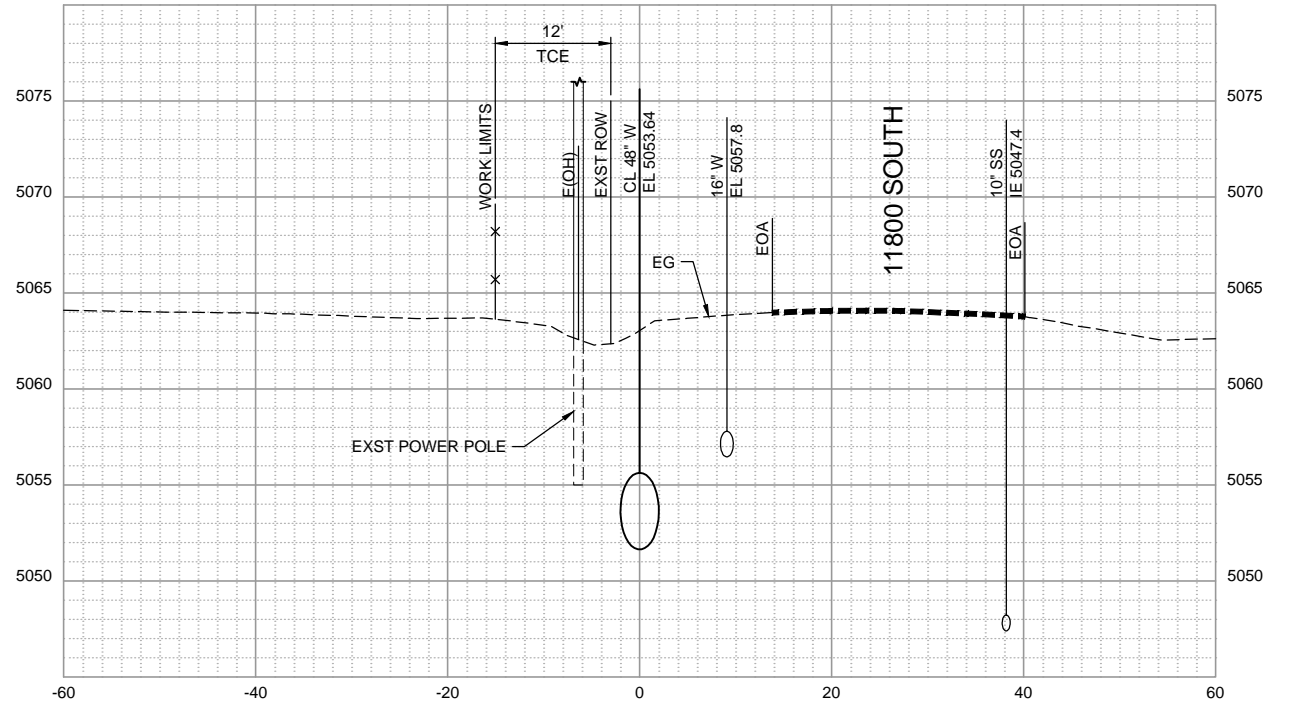
**1** 11800 SOUTH (STA 3+10)  
 1"=10' HORIZ  
 1"=5' VERT  
 PP-01



**2** 11800 SOUTH (STA 23+10)  
 1"=10' HORIZ  
 1"=5' VERT  
 PP-03



**3** 11800 SOUTH (STA 45+20)  
 1"=10' HORIZ  
 1"=5' VERT  
 PP-05



**4** 11800 SOUTH (STA 59+10)  
 1"=10' HORIZ  
 1"=5' VERT  
 PP-06



NO.	DATE	DR	REVISION	BY	APVD
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				C. HOGGARD	

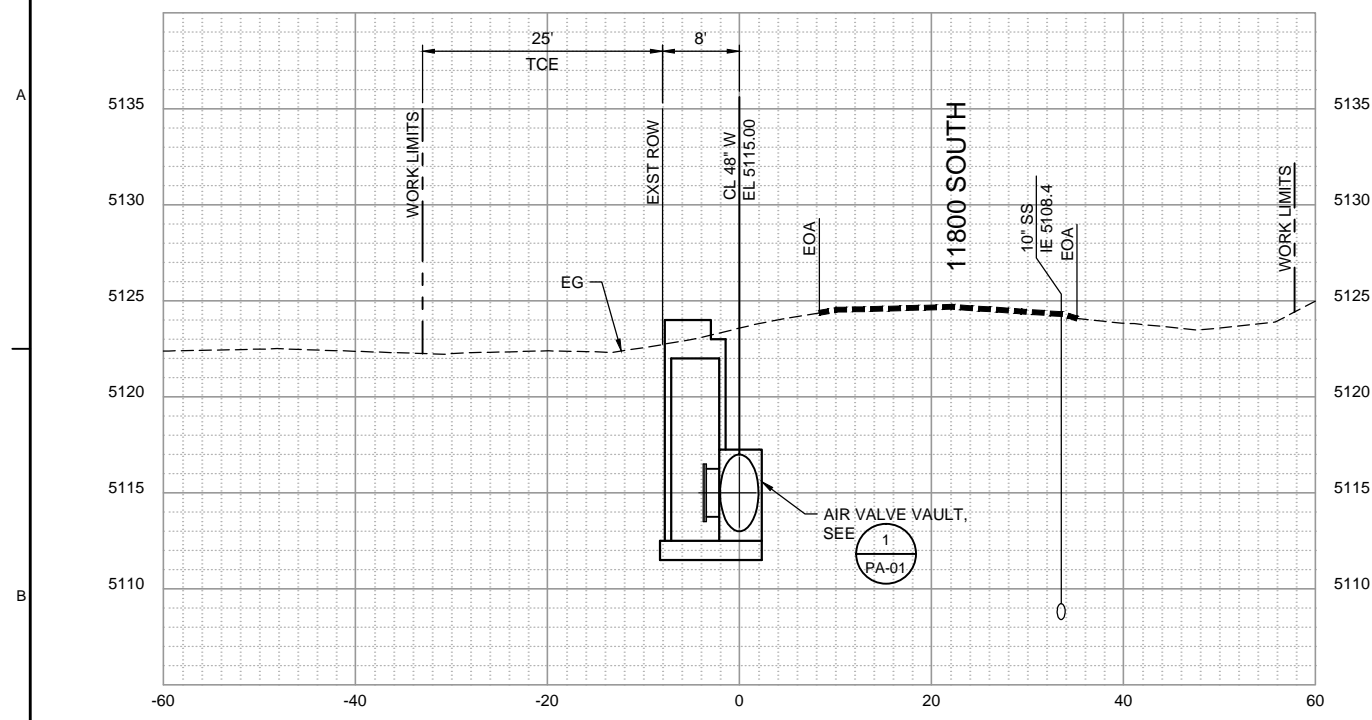
JORDAN VALLEY WATER  
 CONSERVANCY DISTRICT  
 11800 SOUTH U-111 PROJECT



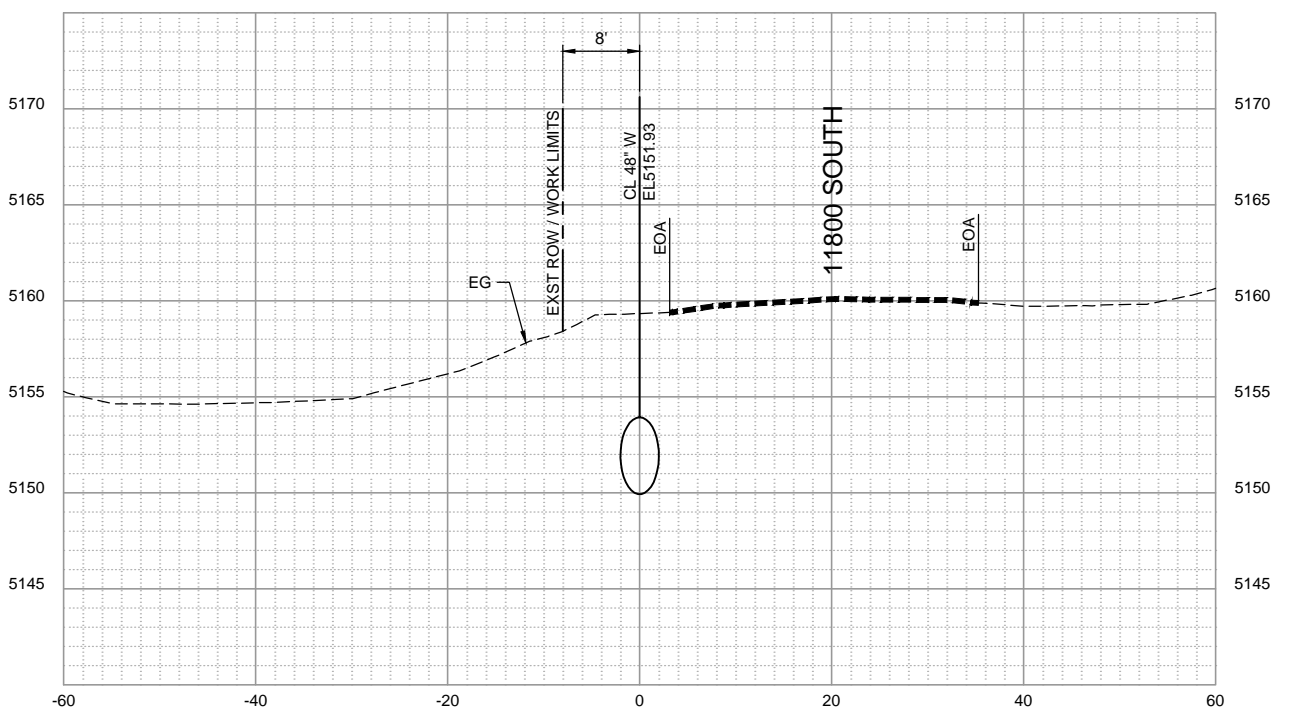
CIVIL  
 CROSS SECTIONS

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	XS-01
SHEET	of

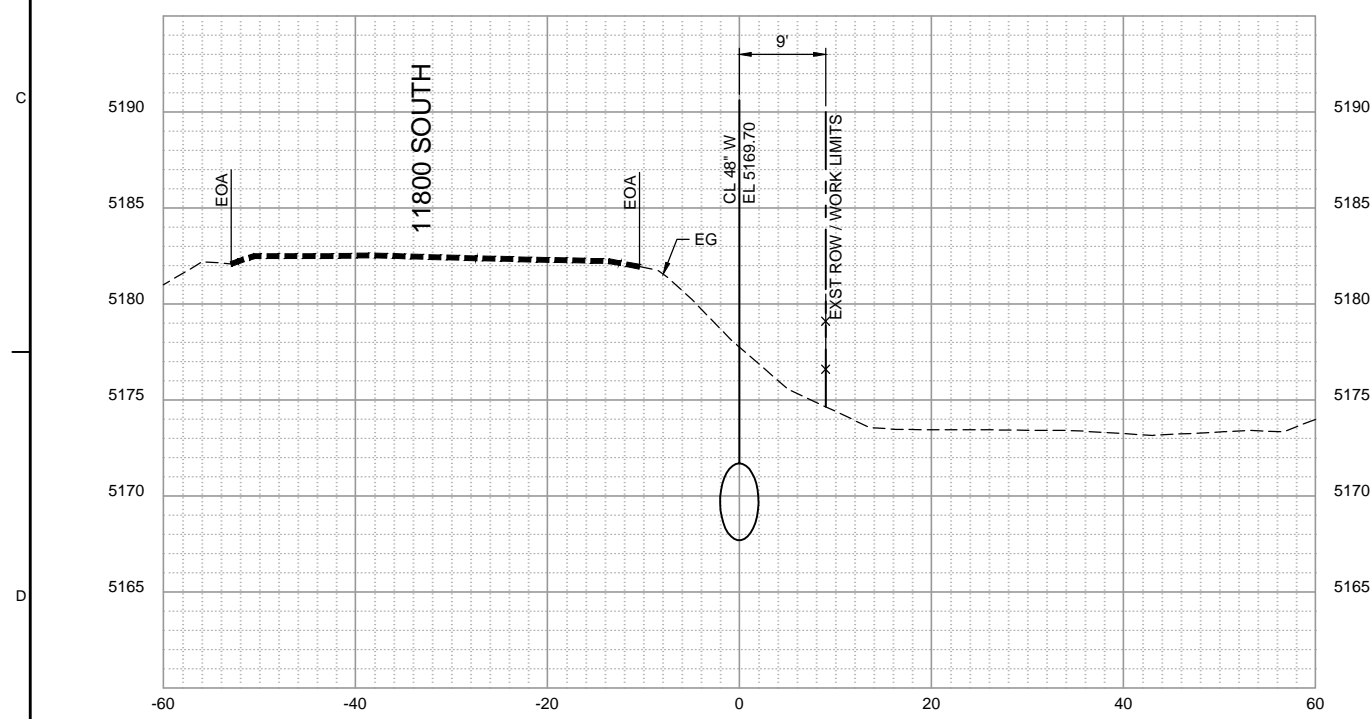




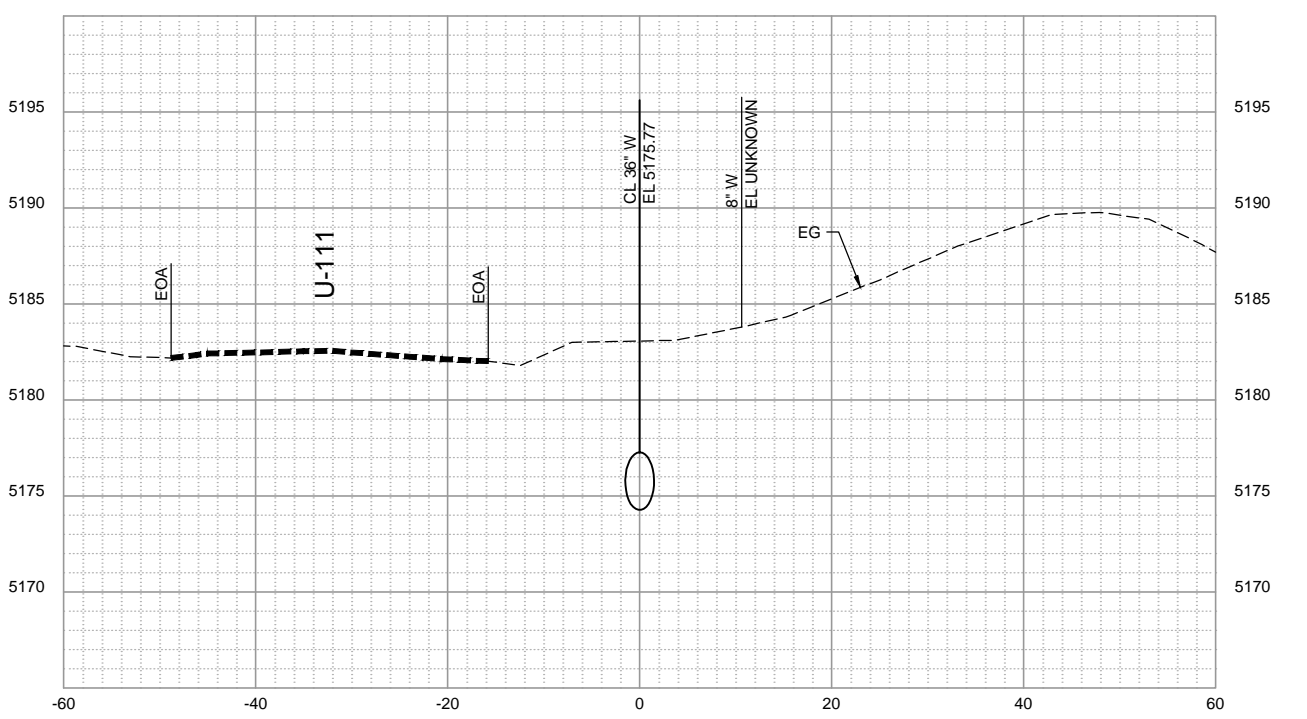
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 1"=10' HORIZ  
 1"=5' VERT  
 PP-09



**2** 11800 SOUTH (STA 110+00)  
 1"=10' HORIZ  
 1"=5' VERT  
 PP-11



**3** U-111 (STA 115+50)  
 1"=10' HORIZ  
 1"=5' VERT  
 PP-11



**4** U-111 (STA 150+50)  
 1"=10' HORIZ  
 1"=5' VERT  
 PP-15



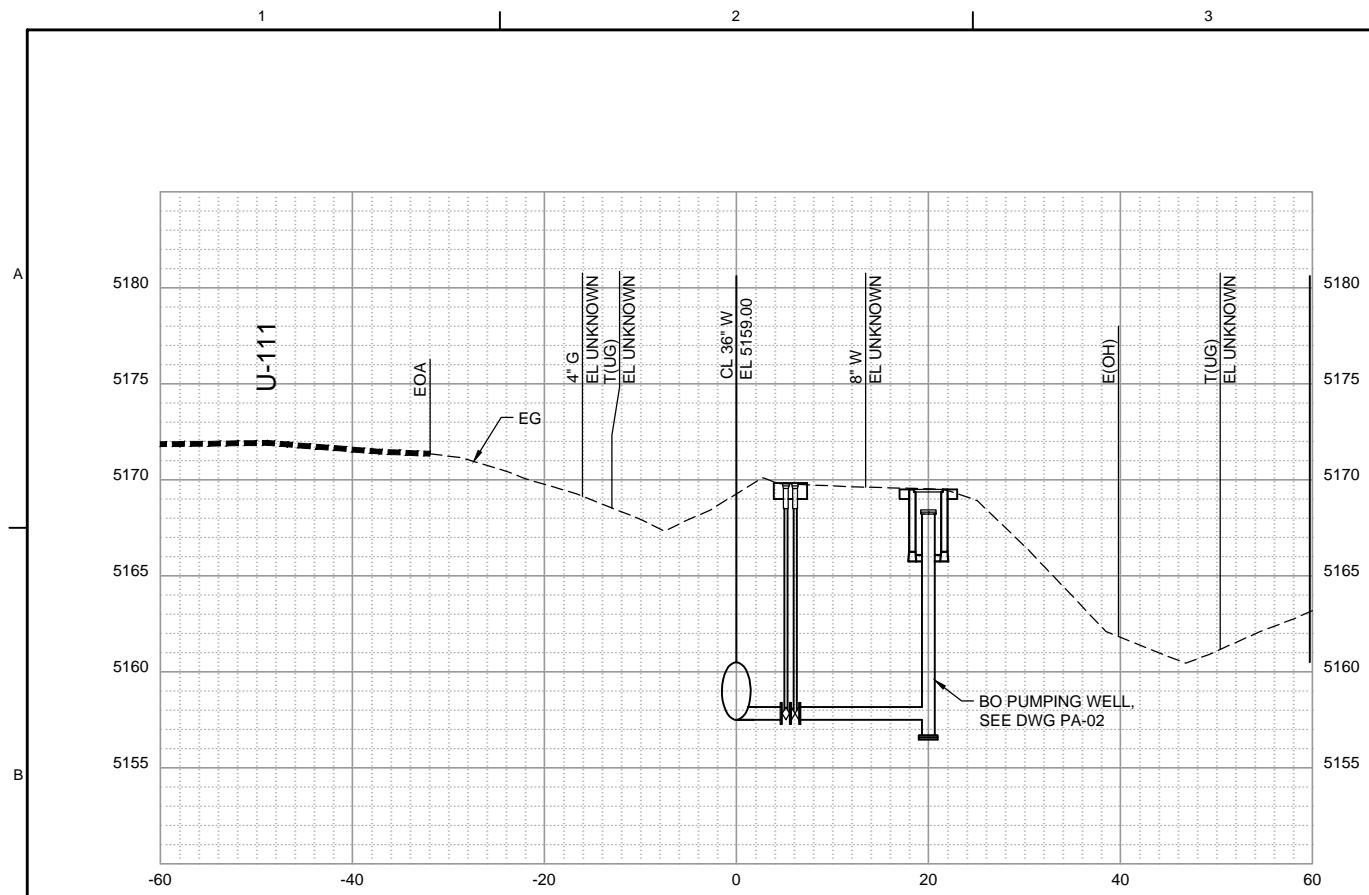
NO.	DATE	DR	REVISION	BY	APVD
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		C. HOGGARD			

**JORDAN VALLEY WATER CONSERVANCY DISTRICT**  
**11800 SOUTH U-111 PROJECT**

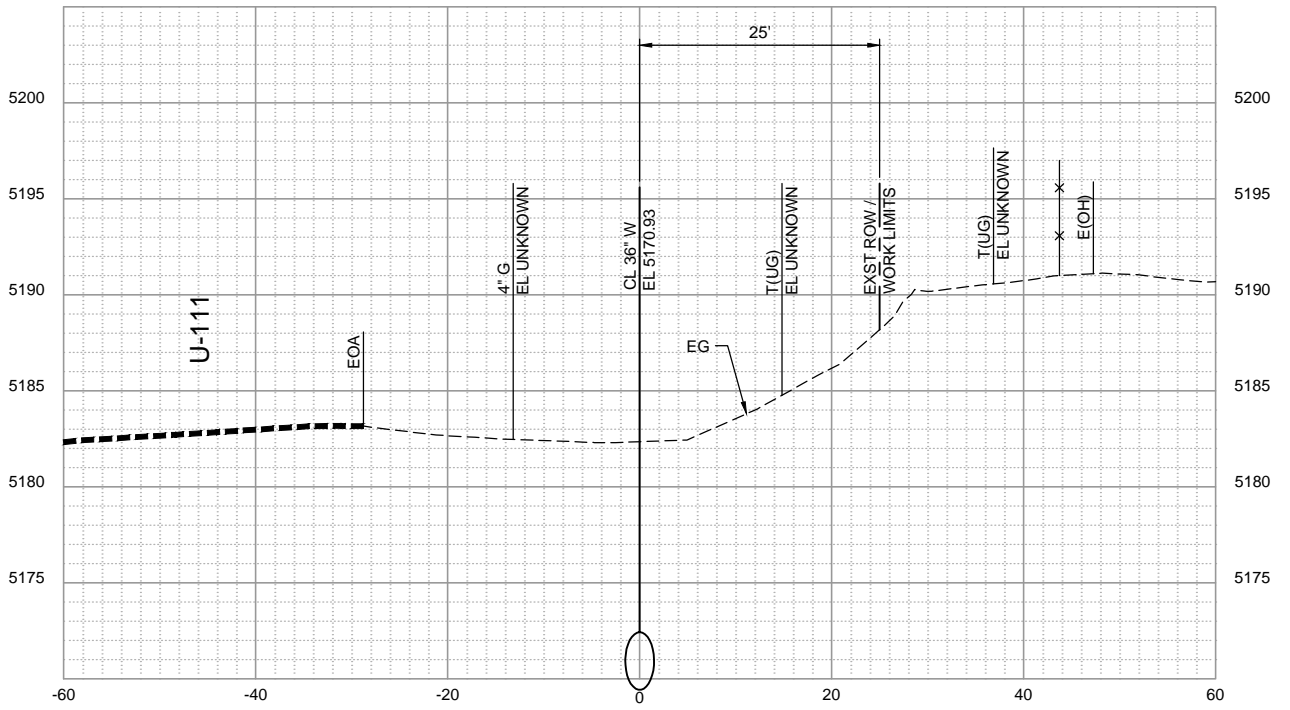
**ch2m**  
 CIVIL  
**CROSS SECTIONS**

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	XS-02
SHEET	of

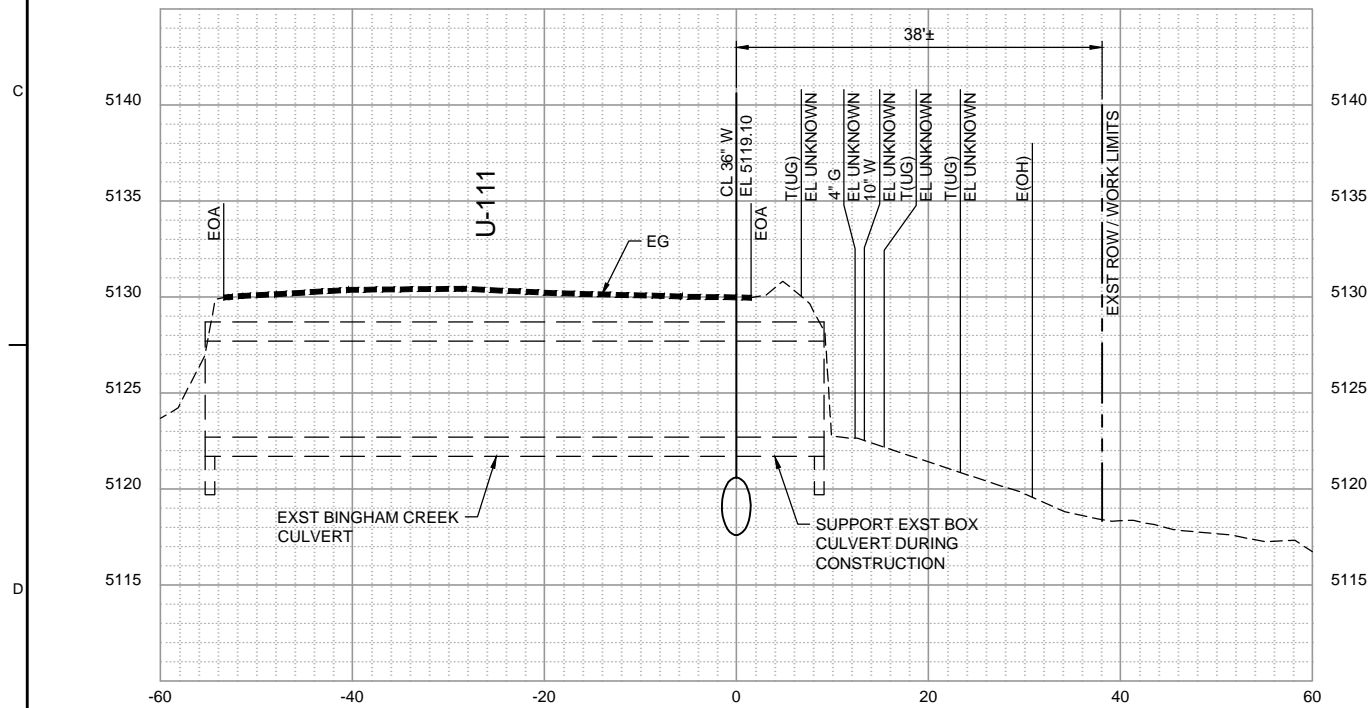




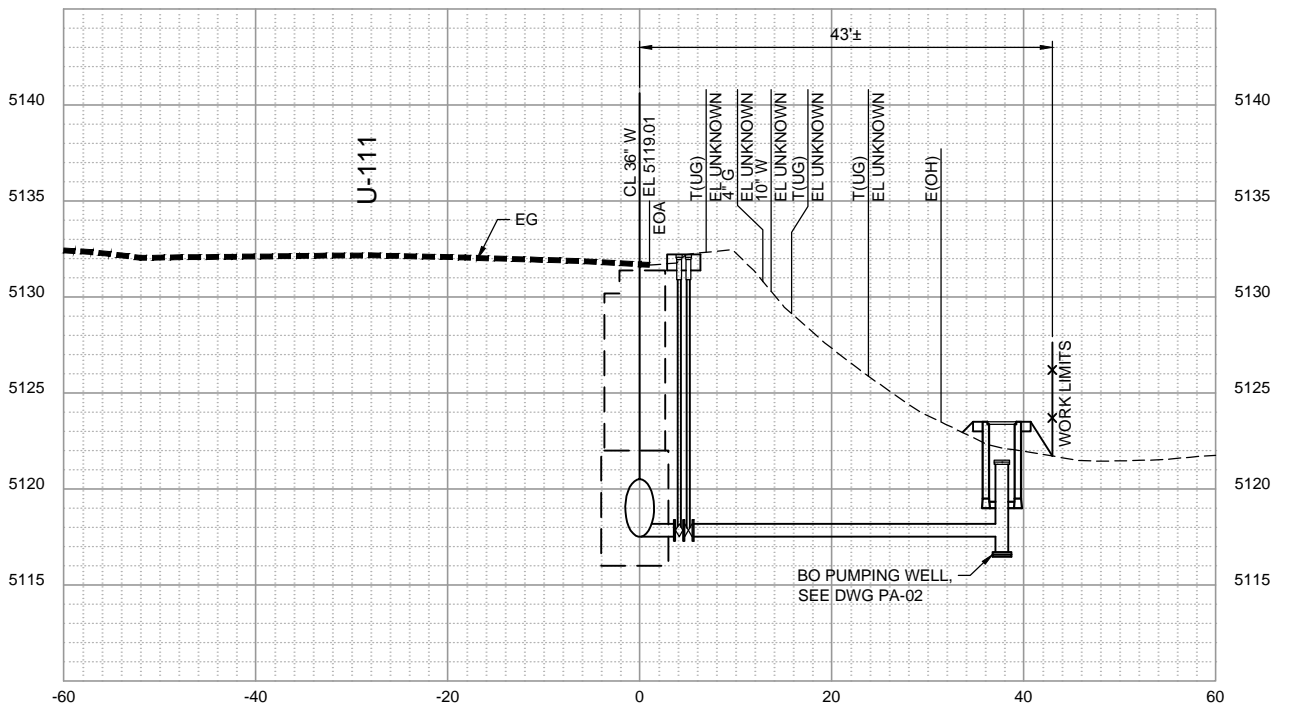
**1** U-111 (STA 166+25)  
 1"=10' HORIZ  
 1"=5' VERT  
 PP-16



**2** U-111 (STA 186+00)  
 1"=10' HORIZ  
 1"=5' VERT  
 PP-18



**3** U-111 (STA 209+45)  
 1"=10' HORIZ  
 1"=5' VERT  
 PP-21



**4** U-111 (STA 209+85)  
 1"=10' HORIZ  
 1"=5' VERT  
 PP-21



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		C. HOGGARD			

JORDAN VALLEY WATER CONSERVANCY DISTRICT  
 11800 SOUTH U-111 PROJECT

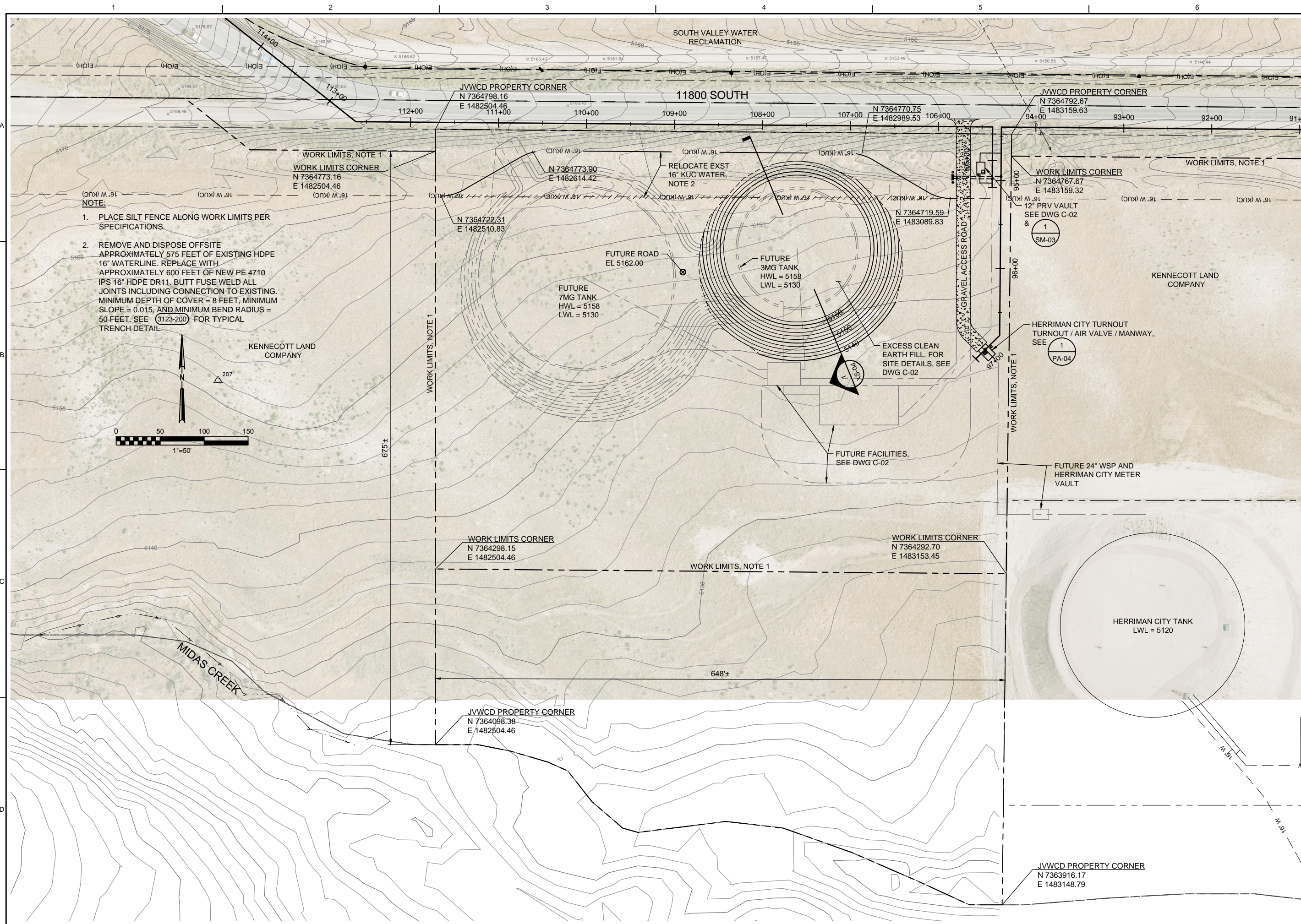
**ch2m**  
 CIVIL  
 CROSS SECTIONS

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	JANUARY 2017
PROJ	680064
DWG	XS-03
SHEET	of









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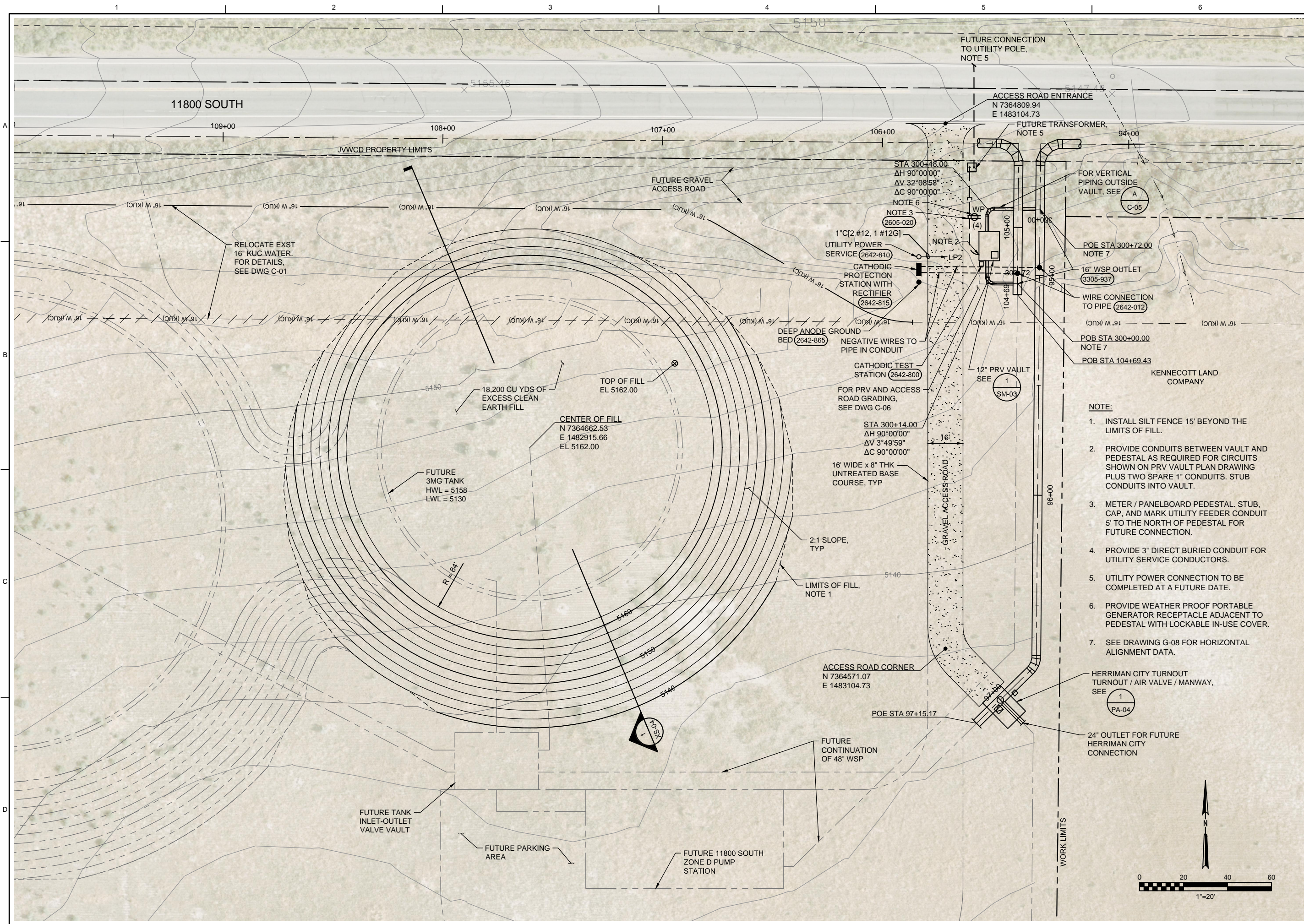
**11800 SOUTH U-111 PROJECT**

**ch2m** CIVIL

**OVERALL SITE PLAN  
FUTURE TANKS AND  
SUPPORTING INFRASTRUCTURE**

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	C-01
SHEET	of





- NOTE:**
- INSTALL SILT FENCE 15' BEYOND THE LIMITS OF FILL.
  - PROVIDE CONDUITS BETWEEN VAULT AND PEDESTAL AS REQUIRED FOR CIRCUITS SHOWN ON PRV VAULT PLAN DRAWING PLUS TWO SPARE 1" CONDUITS. STUB CONDUITS INTO VAULT.
  - METER / PANELBOARD PEDESTAL. STUB, CAP, AND MARK UTILITY FEEDER CONDUIT 5' TO THE NORTH OF PEDESTAL FOR FUTURE CONNECTION.
  - PROVIDE 3" DIRECT BURIED CONDUIT FOR UTILITY SERVICE CONDUCTORS.
  - UTILITY POWER CONNECTION TO BE COMPLETED AT A FUTURE DATE.
  - PROVIDE WEATHER PROOF PORTABLE GENERATOR RECEPTACLE ADJACENT TO PEDESTAL WITH LOCKABLE IN-USE COVER.
  - SEE DRAWING G-08 FOR HORIZONTAL ALIGNMENT DATA.



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					N. JONES

**ch2m** CIVIL

JORDAN VALLEY WATER CONSERVANCY DISTRICT

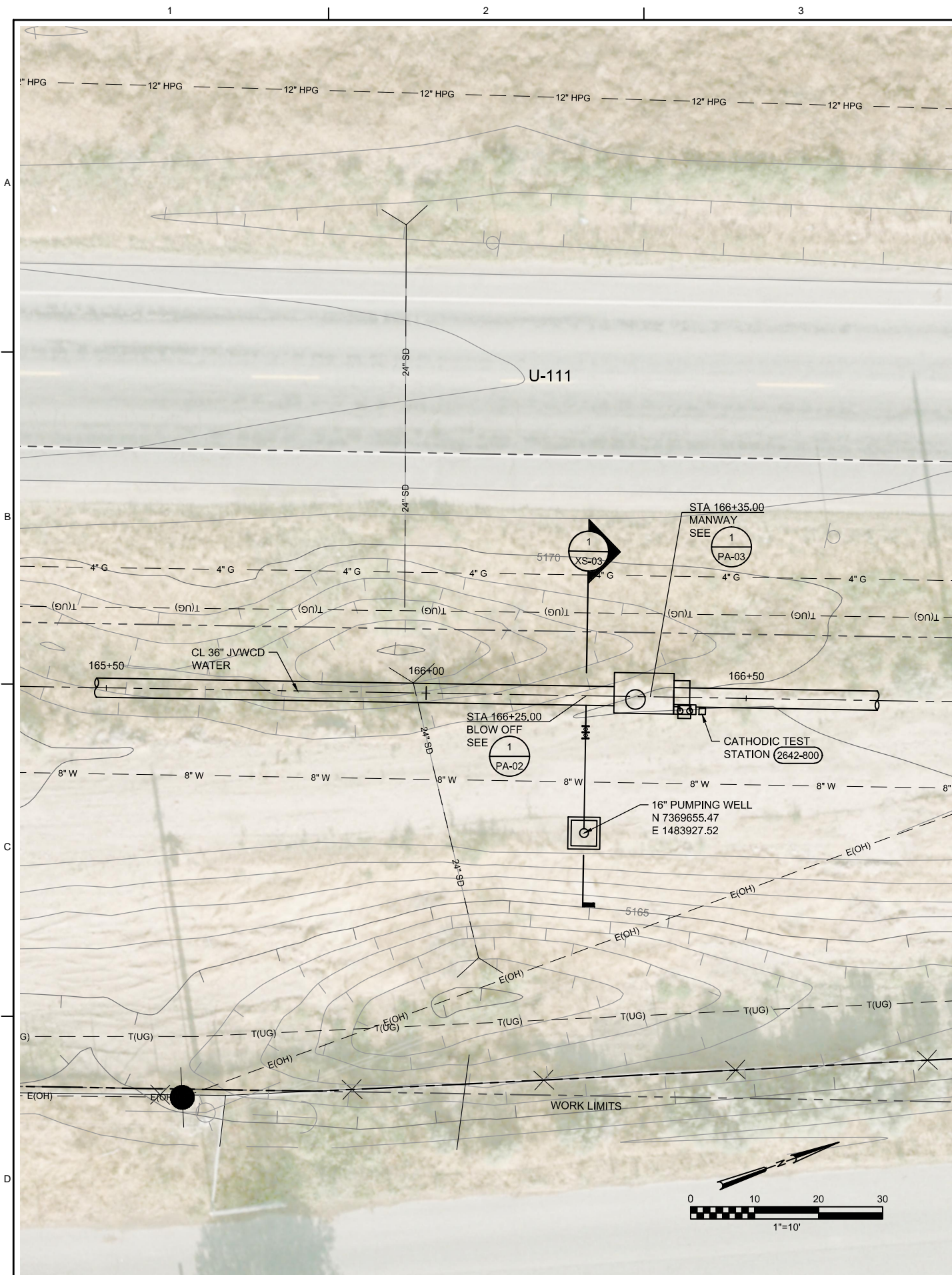
11800 SOUTH U-111 PROJECT

**ENLARGED SITE PLAN  
FUTURE TANKS AND  
SUPPORTING INFRASTRUCTURE**

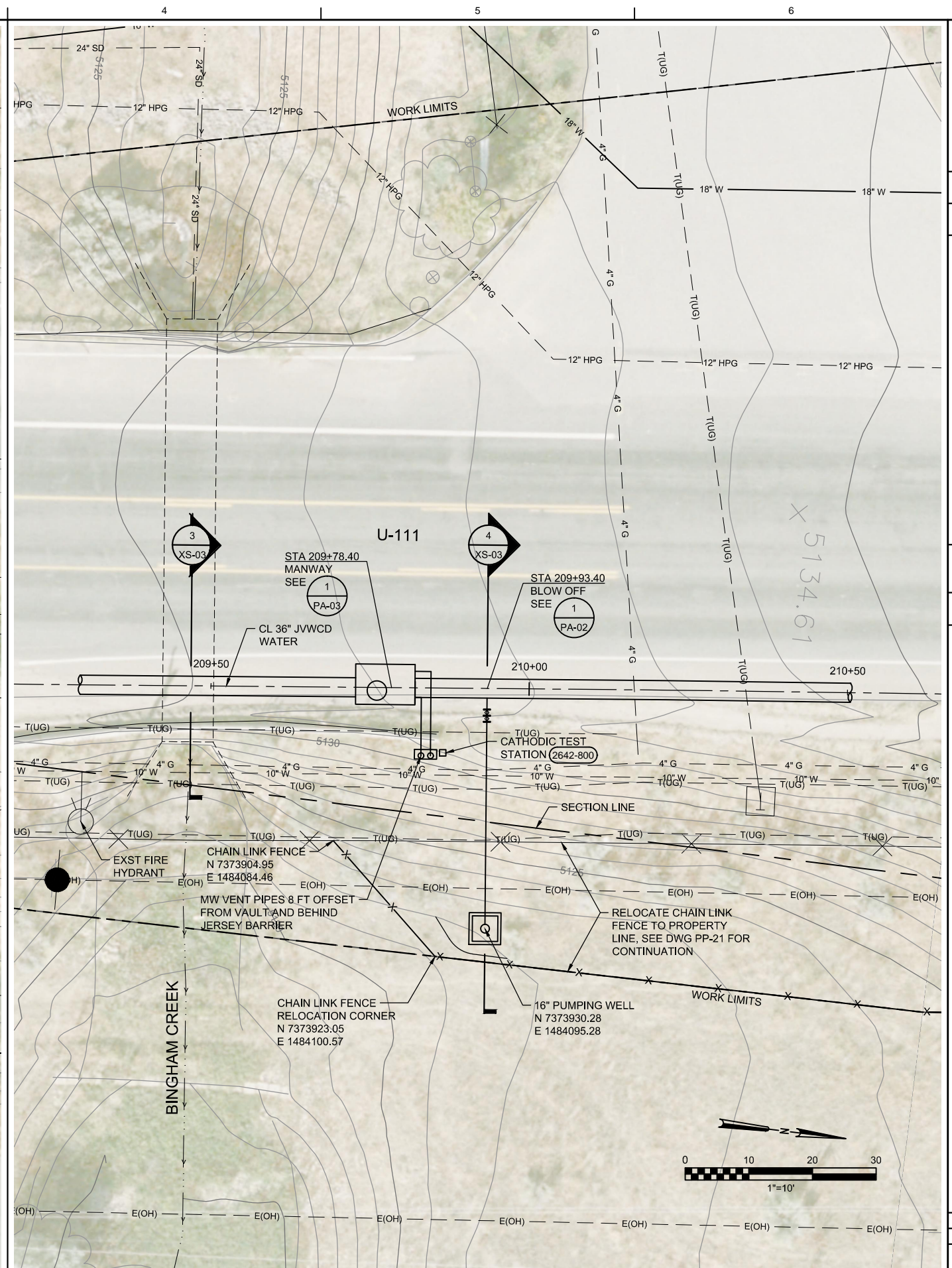
VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING.  
1"=20'

DATE	JANUARY 2017
PROJ	680064
DWG	C-02
SHEET	of





**1 BLOW OFF (STA 166+25) & MANWAY (STA 166+35)**  
1" = 10'



**2 MANWAY (STA 209+78.40) & BLOW OFF (STA 209+93.40)**  
1" = 10'



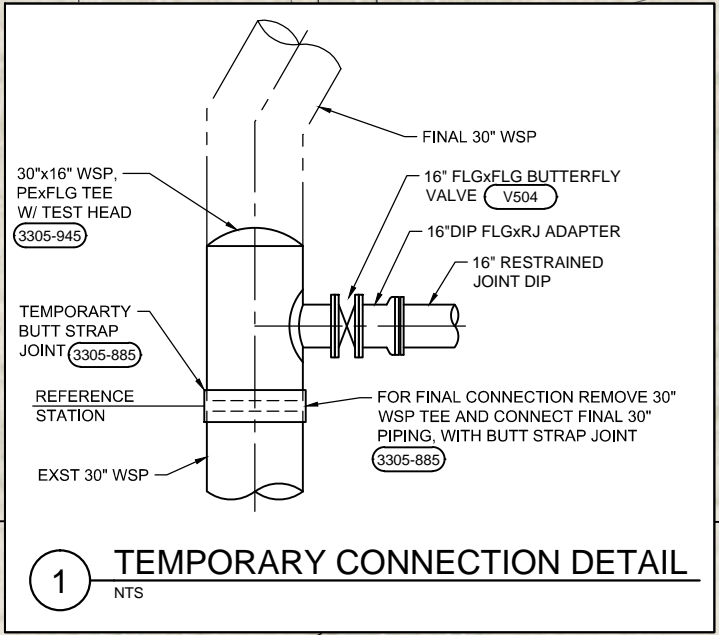
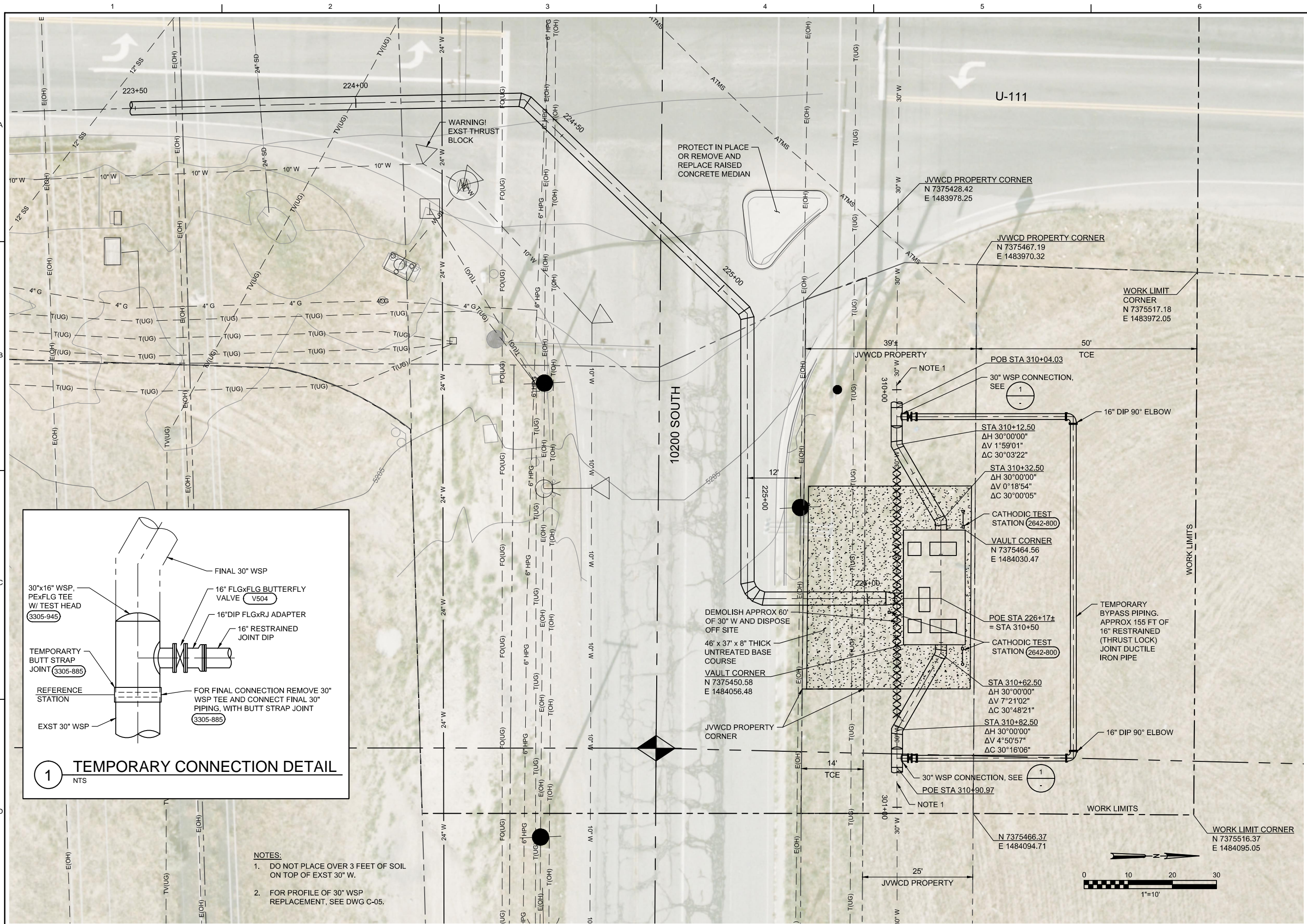
NO.	DATE	DR	REVISION	CHK	BY
		R. WILLEITNER			R. WILLEITNER
					N. JONES

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11800 SOUTH U-111 PROJECT

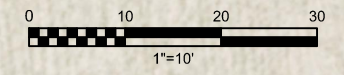
**ch2m** CIVIL  
**SITE PLANS**  
**MINOR BLOW OFF**

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	JANUARY 2017
PROJ	680064
DWG	C-03
SHEET	of





- NOTES:**
- 1. DO NOT PLACE OVER 3 FEET OF SOIL ON TOP OF EXST 30" W.
  - 2. FOR PROFILE OF 30" WSP REPLACEMENT, SEE DWG C-05.



NO.	DATE	DR	CHK	REVISION	BY

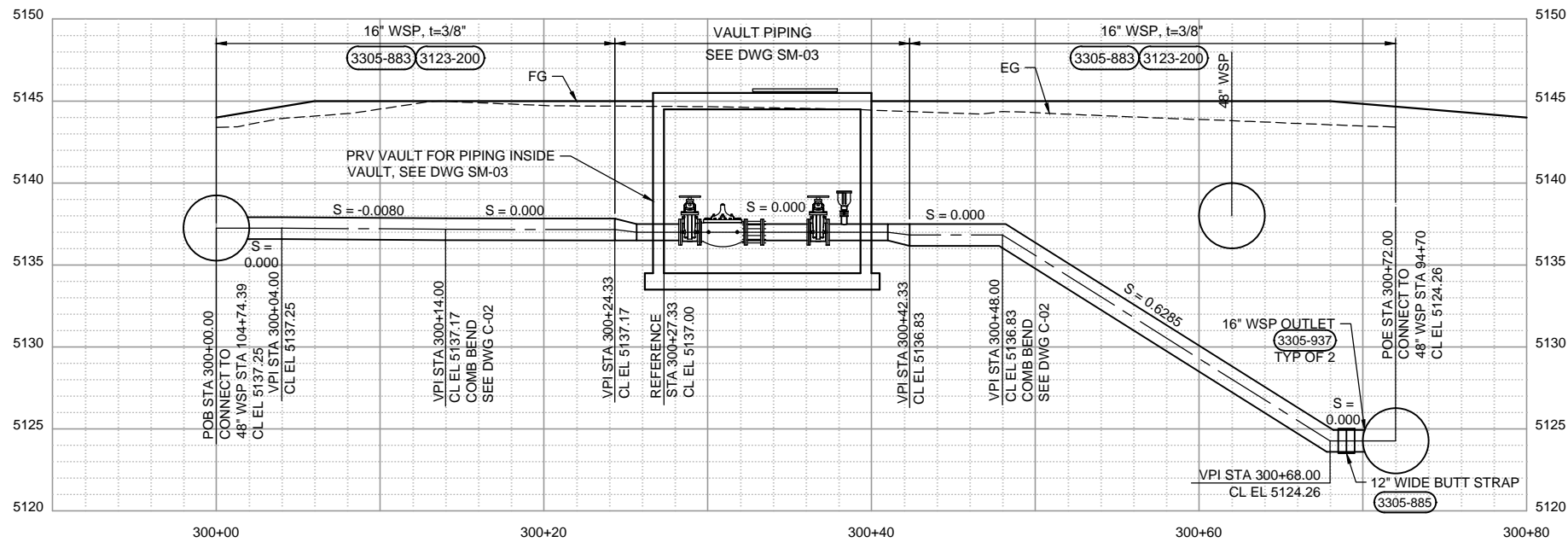
**ch2m** CIVIL  
JORDAN VALLEY WATER CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

**ch2m** CIVIL  
**SITE PLAN**  
**U-111 / 10200 SOUTH CONNECTION**

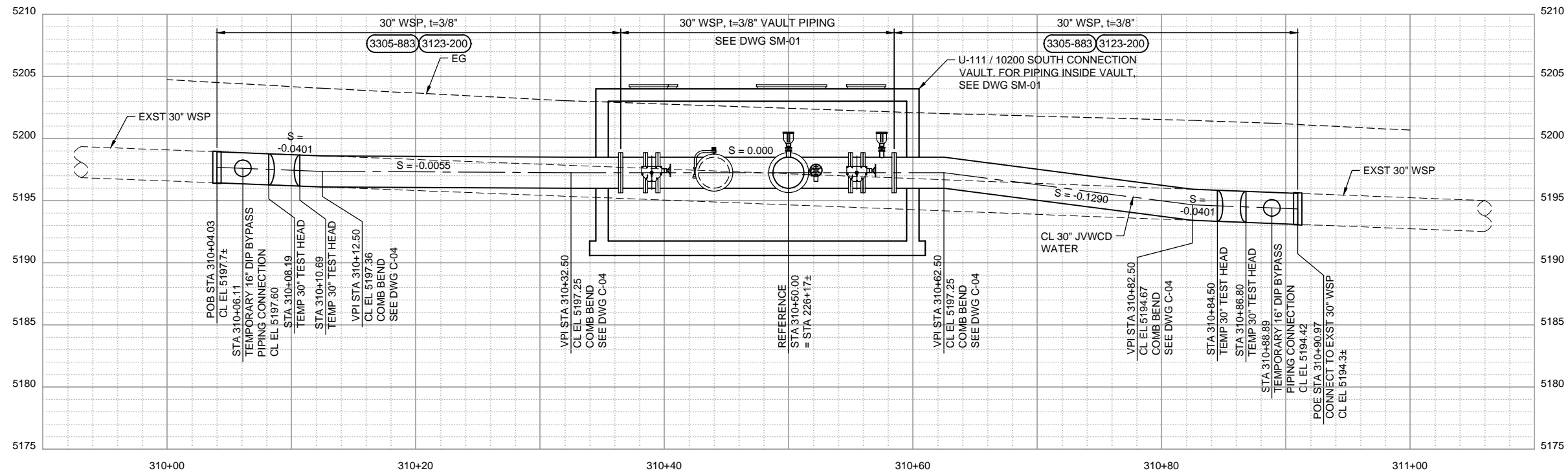
VERIFY SCALE	
DATE	JANUARY 2017
PROJ	680064
DWG	C-04
SHEET	of

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**A** 16" PRV PIPING PROFILE  
 1"=5' HORIZ  
 1"=5' VERT  
 C-02



**B** 30" PIPE REPLACEMENT PROFILE  
 1"=5' HORIZ  
 1"=5' VERT  
 C-04



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 11800 SOUTH U-111 PROJECT

**ch2m** CIVIL  
 VAULT CONNECTION PROFILES

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	C-05
SHEET	of



ACCESS ROAD ENTRANCE  
N 7364809.94  
E 1483104.73

106+00

INV EL 5145.0

3:1 MIN SLOPE

18" SD, NOTE 1

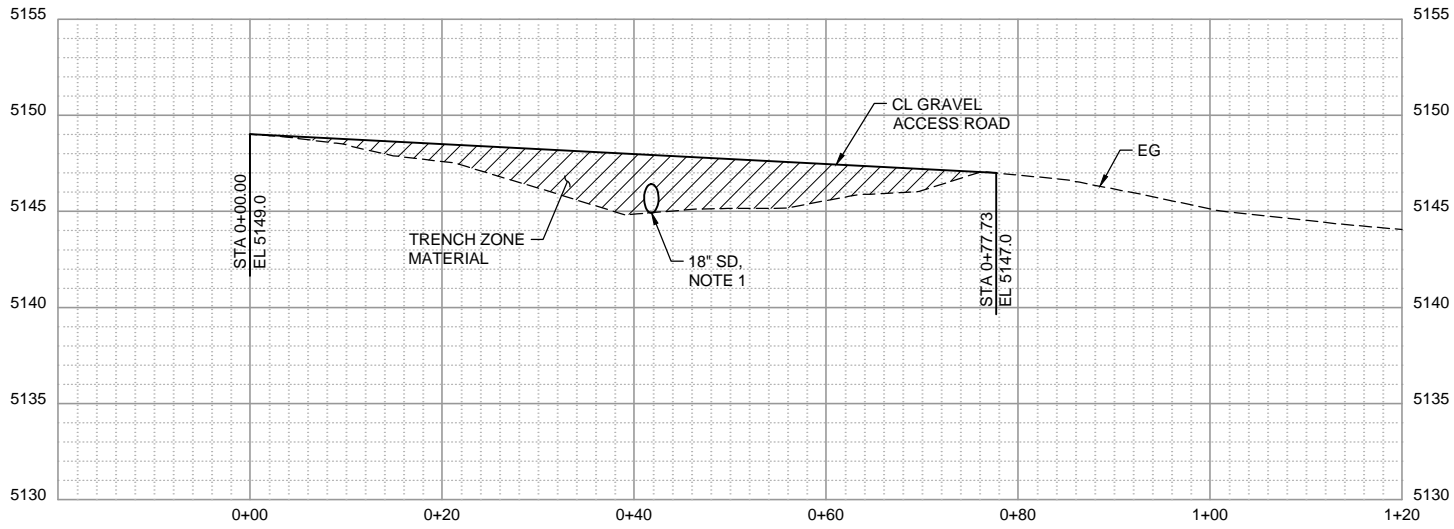
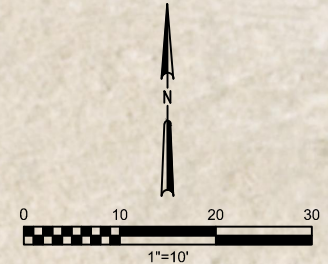
INV EL 5144.0

12" PRV VAULT  
SEE 1  
SM-03

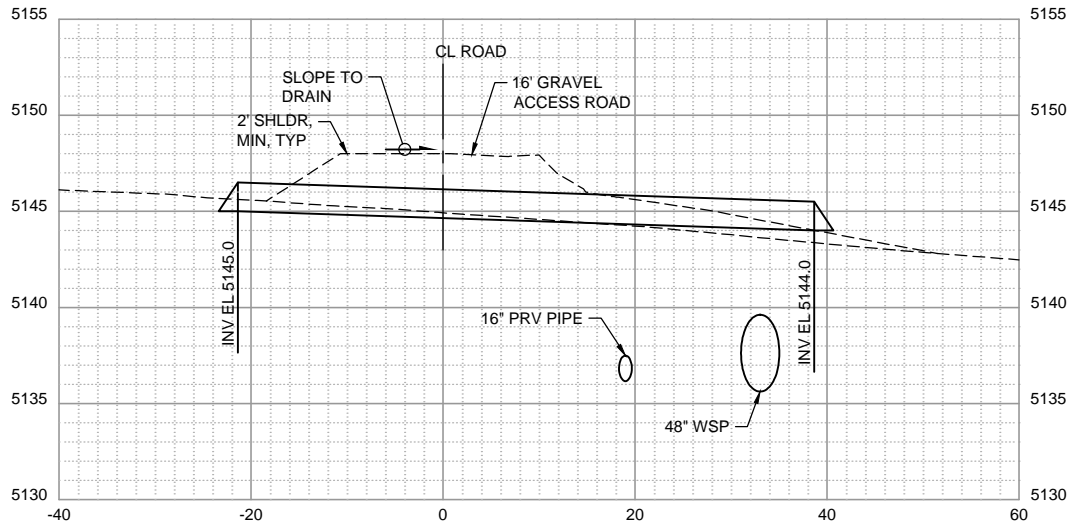
KENNECOTT LAND COMPANY

16' WIDE x 8" THK  
UNTREATED BASE  
COURSE, TYP

- NOTES:
- 18" STORM DRAIN MADE WITH NEW 16 GAUGE, ALUMINUM CMP WITH PREFABRICATED FLARED END SECTIONS, APPROX. 60 FEET.



**A** ROAD SECTION  
1"=10' HORIZ  
1"=5' VERT



**B** CULVERT SECTION  
1"=10' HORIZ  
1"=5' VERT



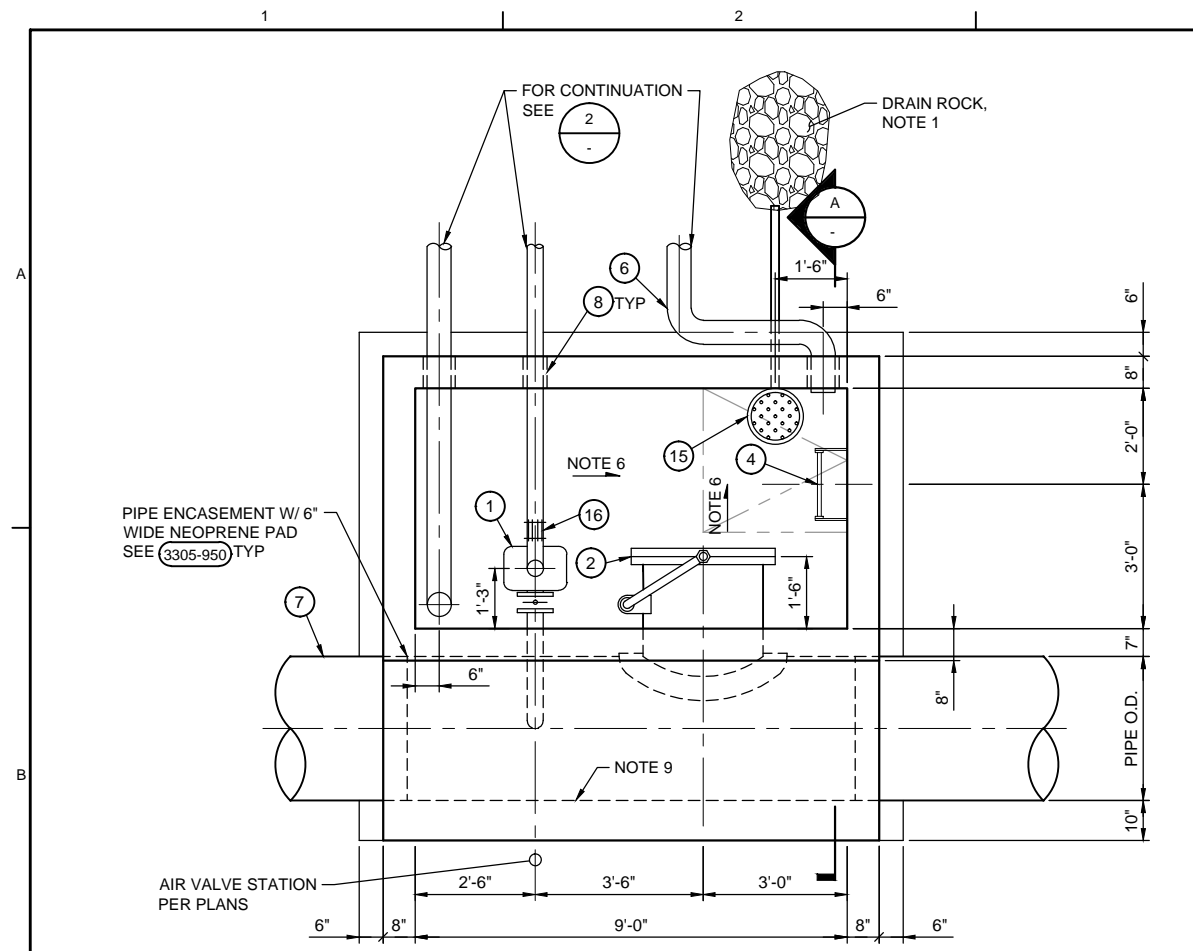
NO.	DATE	DR	CHK	REVISION	BY	APVD
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					N. JONES	

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CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

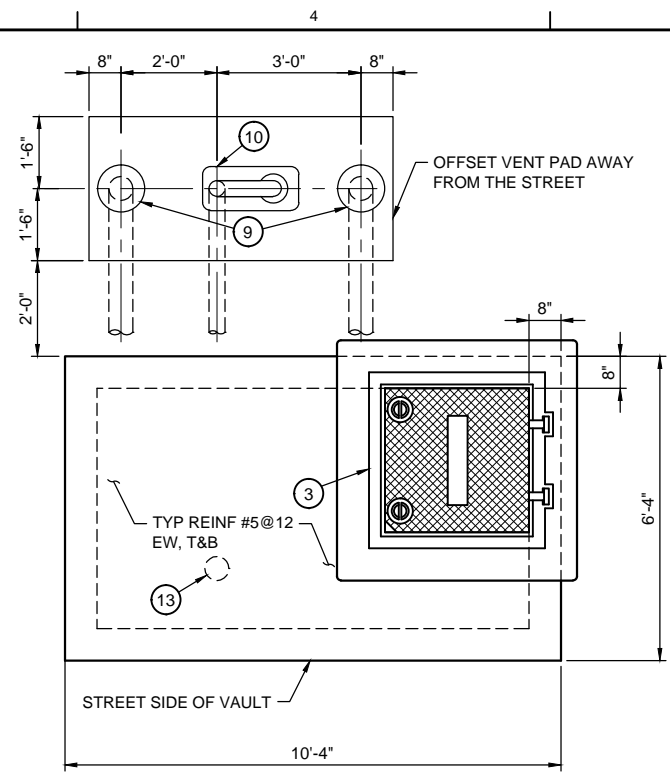
**ch2m**  
CIVIL  
PRV GRADING PLAN

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	JANUARY 2017
PROJ	680064
DWG	C-06
SHEET	of

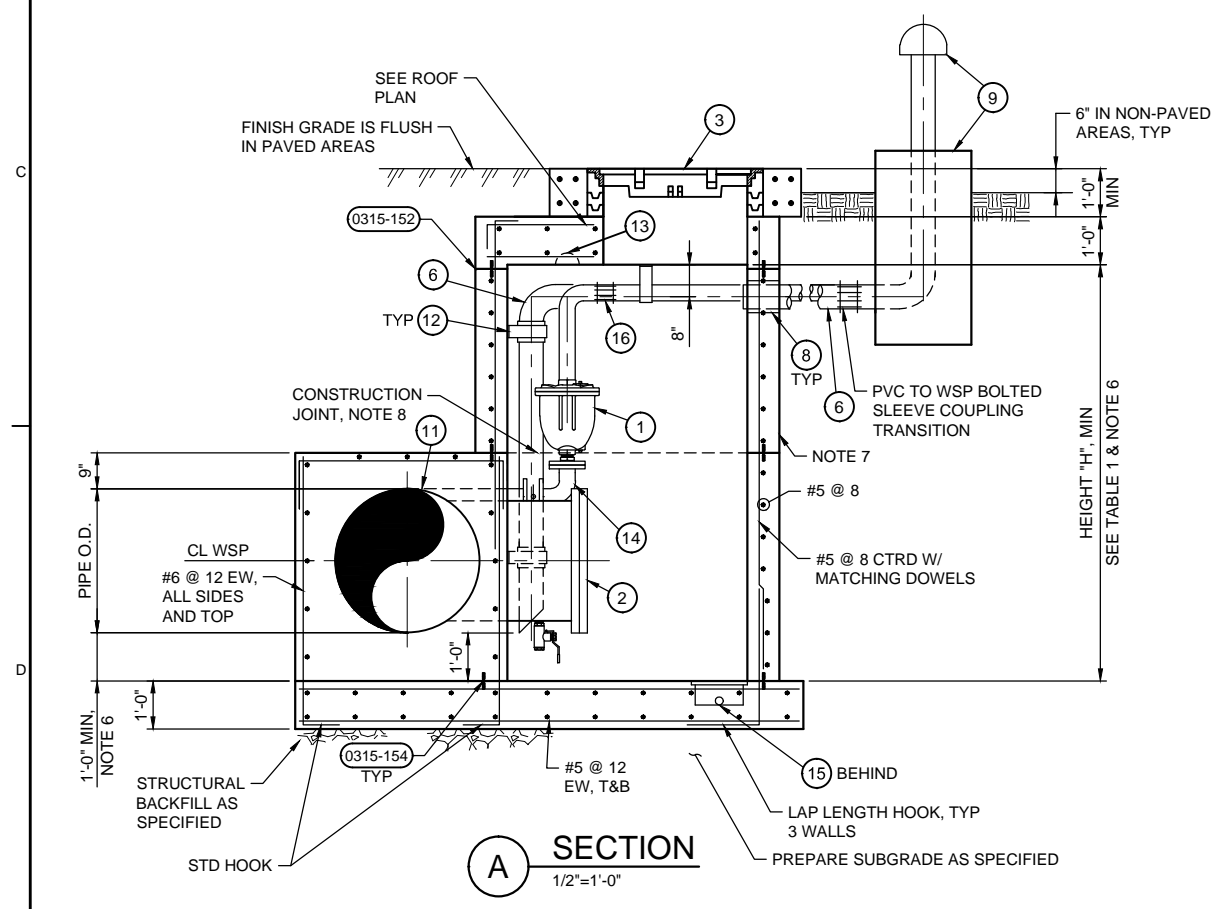




**1 PLAN**  
1/2"=1'-0"



**2 ROOF PLAN**  
1/2"=1'-0"



**A SECTION**  
1/2"=1'-0"

TABLE 1. AIR VALVE / ACCESS MANWAY VAULT SCHEDULE

STATION	DRAWING	VENT OFFSET DIRECTION	HEIGHT "H"
84+75.00	PP-09	SOUTH	9'-6"
136+90.00	PP-13	EAST	8'-6"
189+00.00	PP-19	EAST	8'-6"

**MATERIAL SCHEDULE**

- 1 4" AIR VALVE ASSEMBLY W/ ISOLATION BVF TYPE (V746) SIM (4027-125)
- 2 30" ACCESS MANWAY (3305-935). FOR 36" W/ 30" OUTLET SEE WRAPPER (3305-939)
- 3 36" SQUARE LOCKING FRAME AND COVER (3305-728)
- 4 SST STL LADDER W/ LADDER UP (0551-101)
- 5 NOT USED
- 6 6" SCH 80 PVC VENT PIPE, NOTE 2
- 7 48" OR 36" WSP, SEE PLAN AND PROFILE DRAWINGS FOR SIZE
- 8 WALL PENETRATION (4027-610)
- 9 6" AIR VENT ASSEMBLY AND ENCASUREMENT (2337-804)
- 10 4" GOOSENECK AIR VALVE VENT ASSEMBLY AND COVER (2337-805)
- 11 4" TANGENT OUTLET (3305-938)
- 12 WALL PIPE SUPPORT (4005-505)
- 13 RECESSED LIFTING ANCHOR, MEADOW BURKE MBV 5444 W/ 5-TON HOOK RECESS (3,820 # SAFE WORKING LOAD). CENTER ABOVE ITEM 1
- 14 FLG x FLG SHORT RADIUS 90° ELBOW, MATCH AIR VALVE DIAMETER
- 15 12" SUMP W/ DRAIN TO GRAVEL, SEE (0330-324)
- 16 BOLTED SLEEVE COUPLING

**NOTES:**

1. 2 CU YD DRAIN ROCK WRAPPED IN GEOTEXTILE FABRIC. TOP OF DRAIN ROCK SHALL BE BELOW INVERT OF 2" DRAIN.
2. LENGTH AND CONFIGURATION OF VENT PIPE VARIES, CONTRACTOR SHALL PROVIDE PIPING AND FITTINGS AS REQUIRED TO INSTALL VENT PIPING AS SHOWN ON PLANS.
3. FOR GENERAL STRUCTURAL NOTES SEE DWG G-10.
4. REINFORCE OPENINGS PER (0330-001).
5. REINFORCE CORNERS PER (0330-003).
6. SET BASE SLAB AT MINIMUM DIMENSION SHOWN BELOW PIPE AND SLOPE @ 2% TO SUMP.
7. WALL REINFORCEMENT SHOWN IN SECTION A IS TYPICAL FOR ALL WALLS U.N.O.
8. CONTRACTOR MAY PROPOSE ALTERNATIVE CONSTRUCTION JOINT LAYOUT. ALL CONSTRUCTION JOINTS SHALL INCLUDE 4" PLASTIC WATERSTOP.
9. CONCRETE ENCASED PIPE AND 30" OUTLET SHALL BE EPOXY COATED WITH SYSTEM NO. 1 AS SPECIFIED IN SECTION 09 90 00 AND 09 97 13.



NO.	DATE	DR	REVISION	CHK	BY

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11800 SOUTH U-111 PROJECT

**ch2m**  
PIPELINE APPURTENANCES  
**AIR VALVE VAULT PLANS AND SECTION**

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	JANUARY 2017
PROJ	680064
DWG	PA-01
SHEET	of



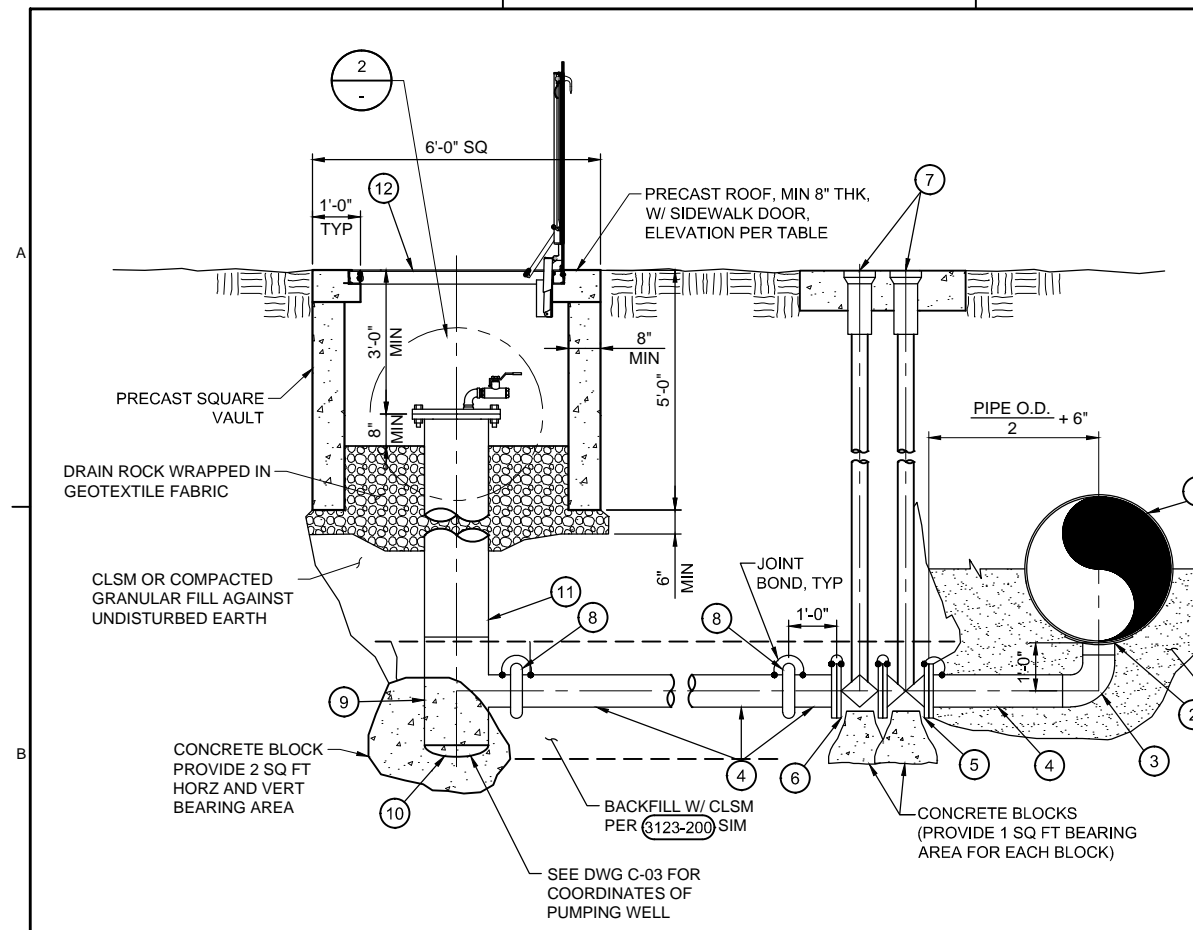


TABLE 1

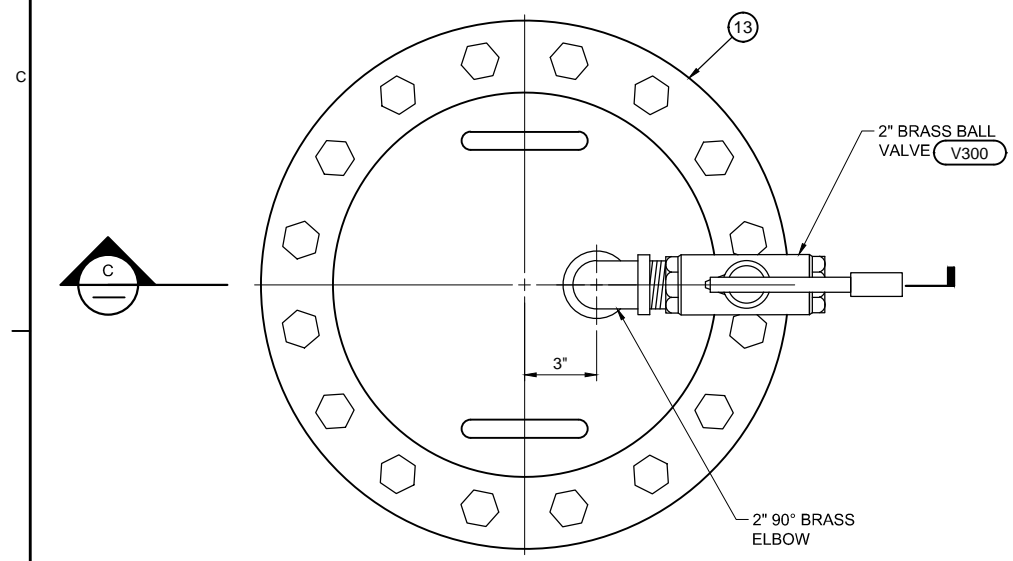
BO STATION	DRAWING NO.	SIDEWALK DOOR ELEVATION
166+25.00	PP-16	5169.50
209+93.40	PP-21	5123.50

- NOTES:
- PIPELINE LENGTH AND CONFIGURATIONS VARY. CONTRACTOR SHALL SUPPLY PIPING AS REQUIRED TO INSTALL BLOW OFFS AS SHOWN ON PLANS.
  - FUSION BOND EPOXY LINE AND COAT ALL STEEL BLOW OFF PIPING AND PUMPING WELL.

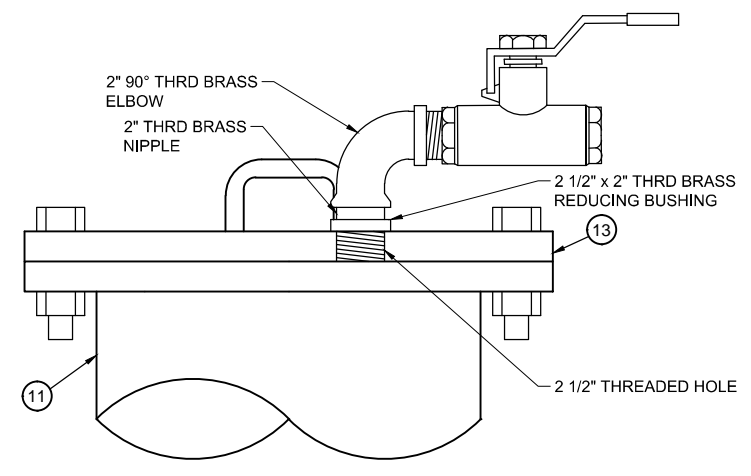
MATERIAL SCHEDULE

- ① 36" WSP PIPE
- ② 8" WSP OUTLET (3305-937)
- ③ 8" 90° SHORT RADIUS WELDED STL ELBOW
- ④ 8" STL PIPE, PROVIDE GE & FLG CONNECTIONS WHERE SHOWN. SEE NOTE 1
- ⑤ 8" FLG ISOLATION GATE VALVE (V130)
- ⑥ 8" THROTTLING PLUG VALVE (V405)
- ⑦ BURIED VALVE BOX, SIM (4027-640)
- ⑧ 8" BURIED GROOVED COUPLING
- ⑨ 16" x 8" STL TEE
- ⑩ 16" DISHED HEAD
- ⑪ 16" STL PUMPING WELL
- ⑫ 48" SIDEWALK DOOR
- ⑬ 16" BLIND FLANGE WITH HANDLE PER (3305-940)

① MINOR BLOW OFF  
1/2"=1'-0"



② DETAIL  
3"=1'-0"



SECTION C  
3"=1'-0"



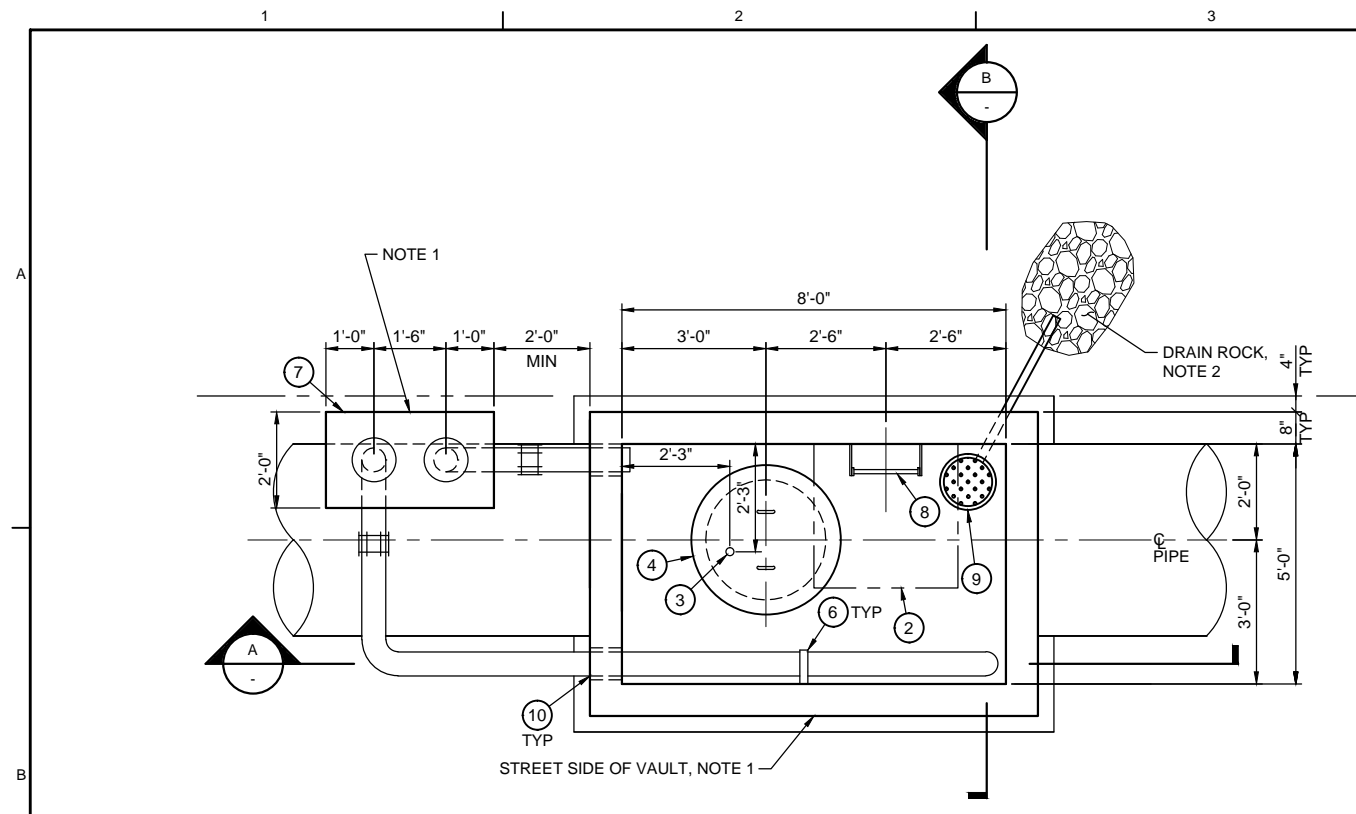
NO.	DATE	DR	REVISION	BY	APVD

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11800 SOUTH U-111 PROJECT

ch2m  
PIPELINE APPURTENANCES  
MINOR BLOW OFF AND DETAILS

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	JANUARY 2017
PROJ	680064
DWG	PA-02
SHEET	of





**1 PLAN**  
1/2"=1'-0"

TABLE 1

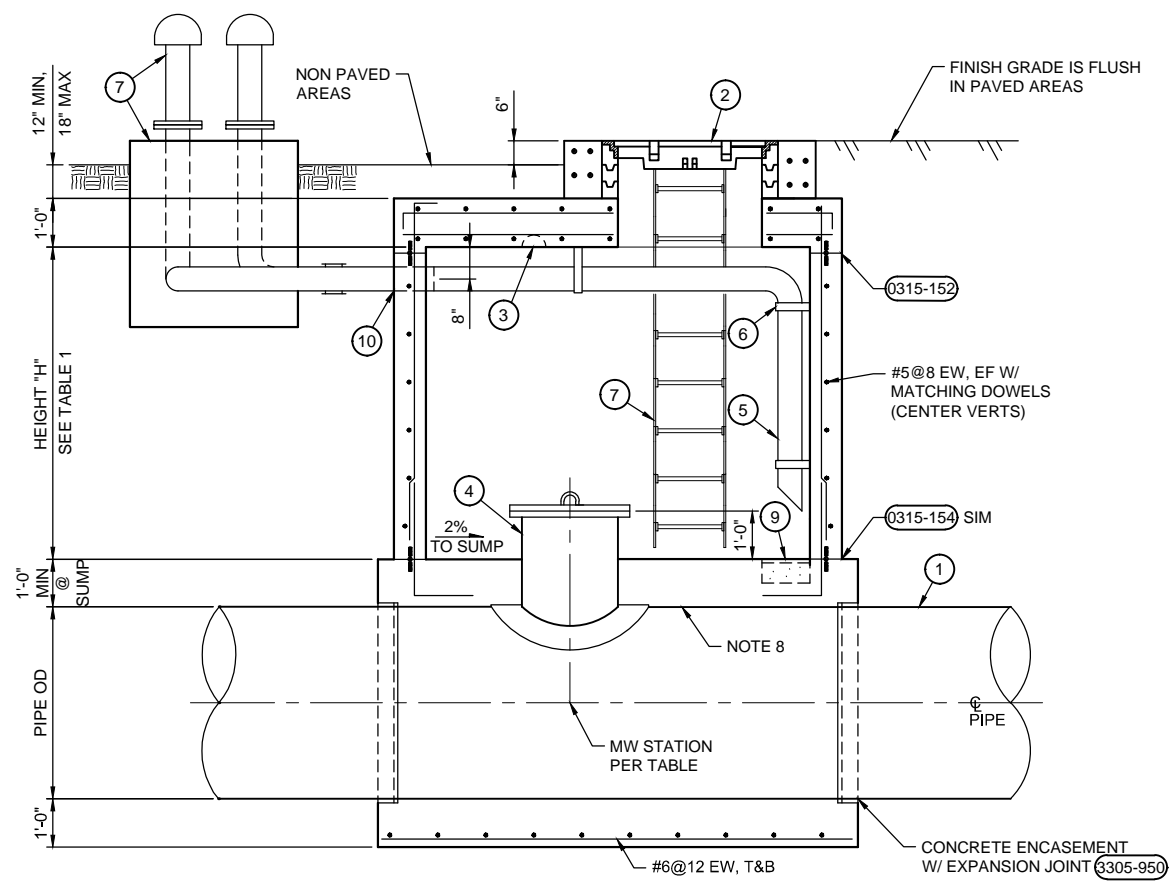
STATION	DRAWING NO.	HEIGHT
23+10.00	PP-03	6'-8"
64+60.00	PP-07	6'-8"
166+35.00	PP-16	7'-3"
209+78.40	PP-21*	6'-8"

\* SEE DWG C-02 FOR VENT PIPE ORIENTATION

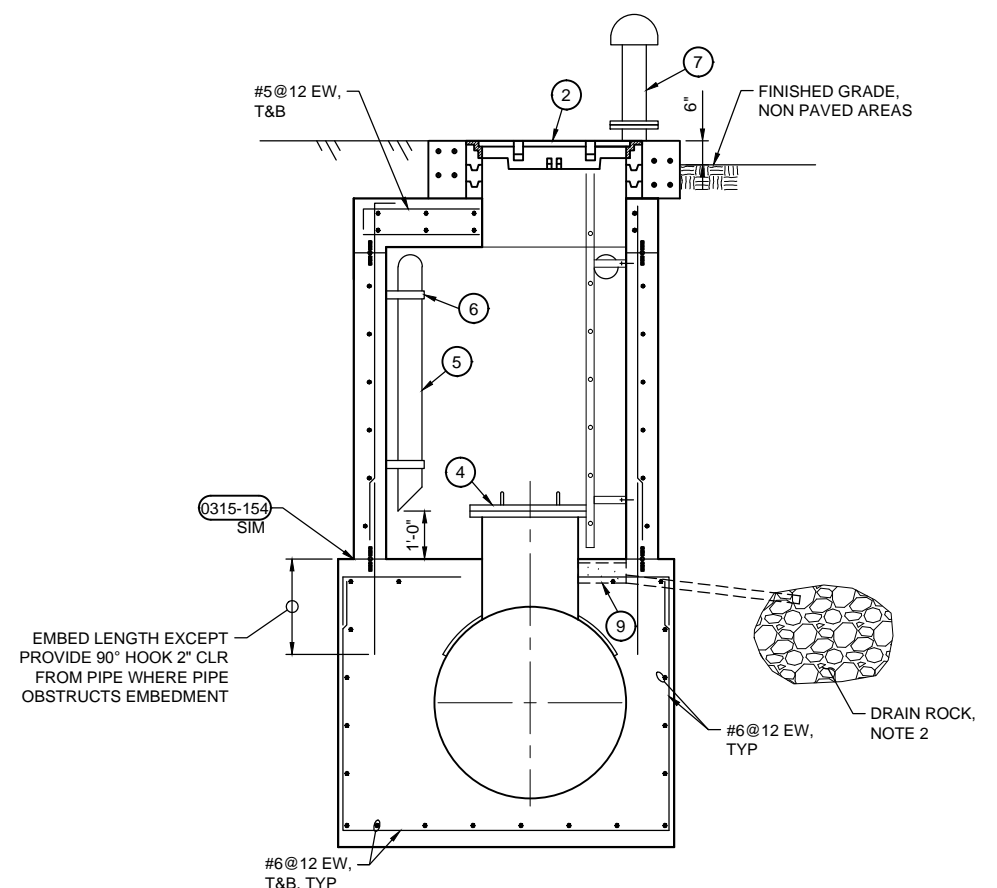
**MATERIAL SCHEDULE**

- ① 48" OR 36" WSP, SEE PP DRAWINGS FOR SIZE
- ② 36" SQUARE LOCKING FRAME AND COVER (3305-728)
- ③ RECESSED LIFTING ANCHOR, MEADOW BURKE MBA6671
- ④ 30" MANWAY OUTLET (3305-940) FOR 36" W/ 30" OUTLET SEE WRAPPER (3305-939)
- ⑤ 6" SCH 80 PVC VENT PIPE
- ⑥ WALL PIPE SUPPORT (4005-505), TYP
- ⑦ 6" AIR VENT ASSEMBLY AND ENCASUREMENT (2337-804)
- ⑧ SST LADDER W/ LADDER UP (0551-101)
- ⑨ 12" SUMP W/ DRAIN TO GRAVEL (0330-324)
- ⑩ WALL PENETRATION (4027-607)

- NOTES:**
- VAULT ORIENTATION IS BASED ON STREET LOCATION INDICATED ON PLAN VIEW. VENT PIPES SHALL BE AWAY FROM THE STREET AS SHOWN.
  - 2 CU YD DRAIN ROCK WRAPPED IN GEOTEXTILE FABRIC. TOP OF DRAIN ROCK SHALL BE BELOW INVERT OF 2" DRAIN.
  - FOR GENERAL STRUCTURAL NOTES SEE DRAWING G-10.
  - REINFORCE OPENINGS PER (0330-001).
  - REINFORCE CORNERS PER (0330-003).
  - SET BASE SLAB AT MINIMUM DIMENSION SHOWN BELOW PIPE AND SLOPE @ 2% TO SUMP.
  - CONTRACTOR MAY PROPOSE ALTERNATIVE CONSTRUCTION JOINT LAYOUT. ALL CONSTRUCTION JOINTS SHALL INCLUDE 4" PLASTIC WATERSTOP.
  - CONCRETE ENCASED PIPE AND 30" OUTLET SHALL BE EPOXY COATED WITH SYSTEM NO. 1 AS SPECIFIED IN SECTION 09 90 00 AND 09 97 13.



**A SECTION**  
1/2"=1'-0"



**B SECTION**  
1/2"=1'-0"



NO.	DATE	DR	REVISION	CHK	BY	APVD

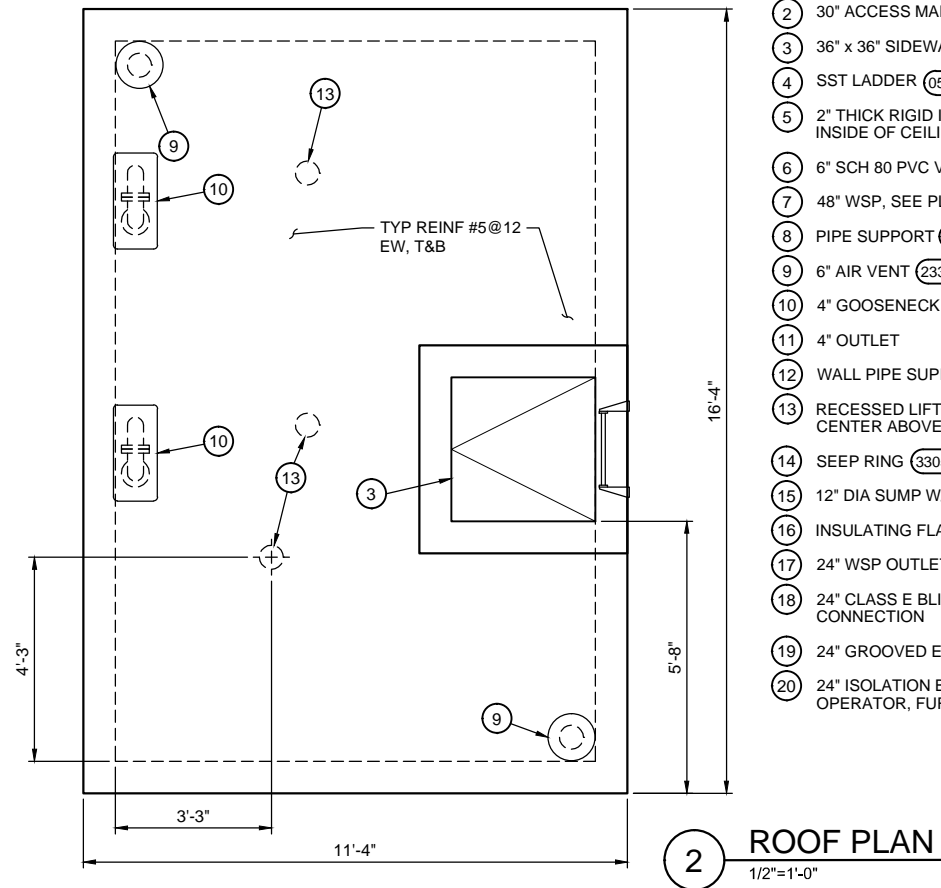
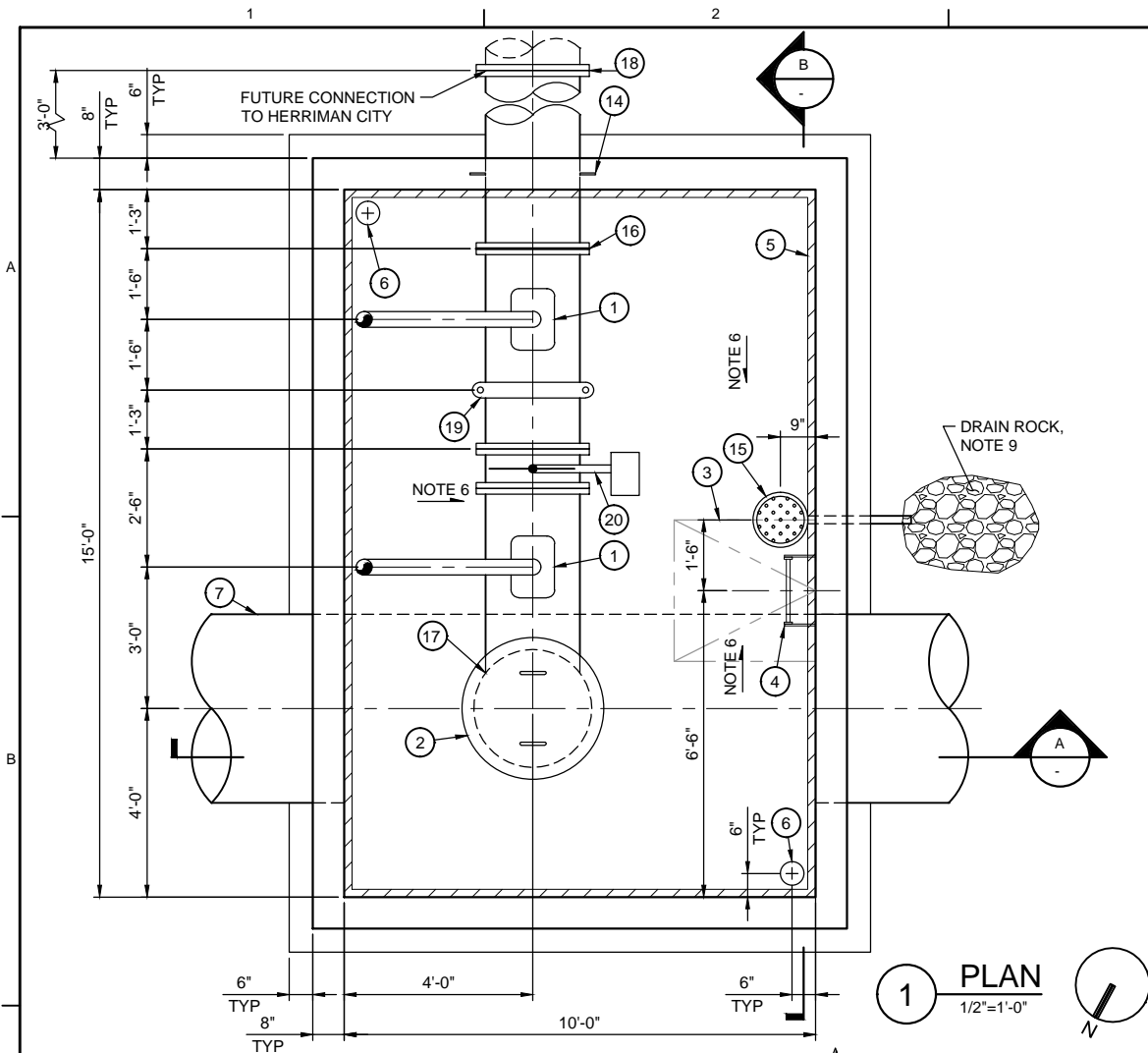
**Jordan Valley Water Conservancy District**  
11800 SOUTH U-111 PROJECT

**ch2m**  
PIPELINE APPURTENANCES  
**MANWAY ACCESS VAULT PLAN AND SECTIONS**

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE	JANUARY 2017
PROJ	680064
DWG	PA-03
SHEET	of



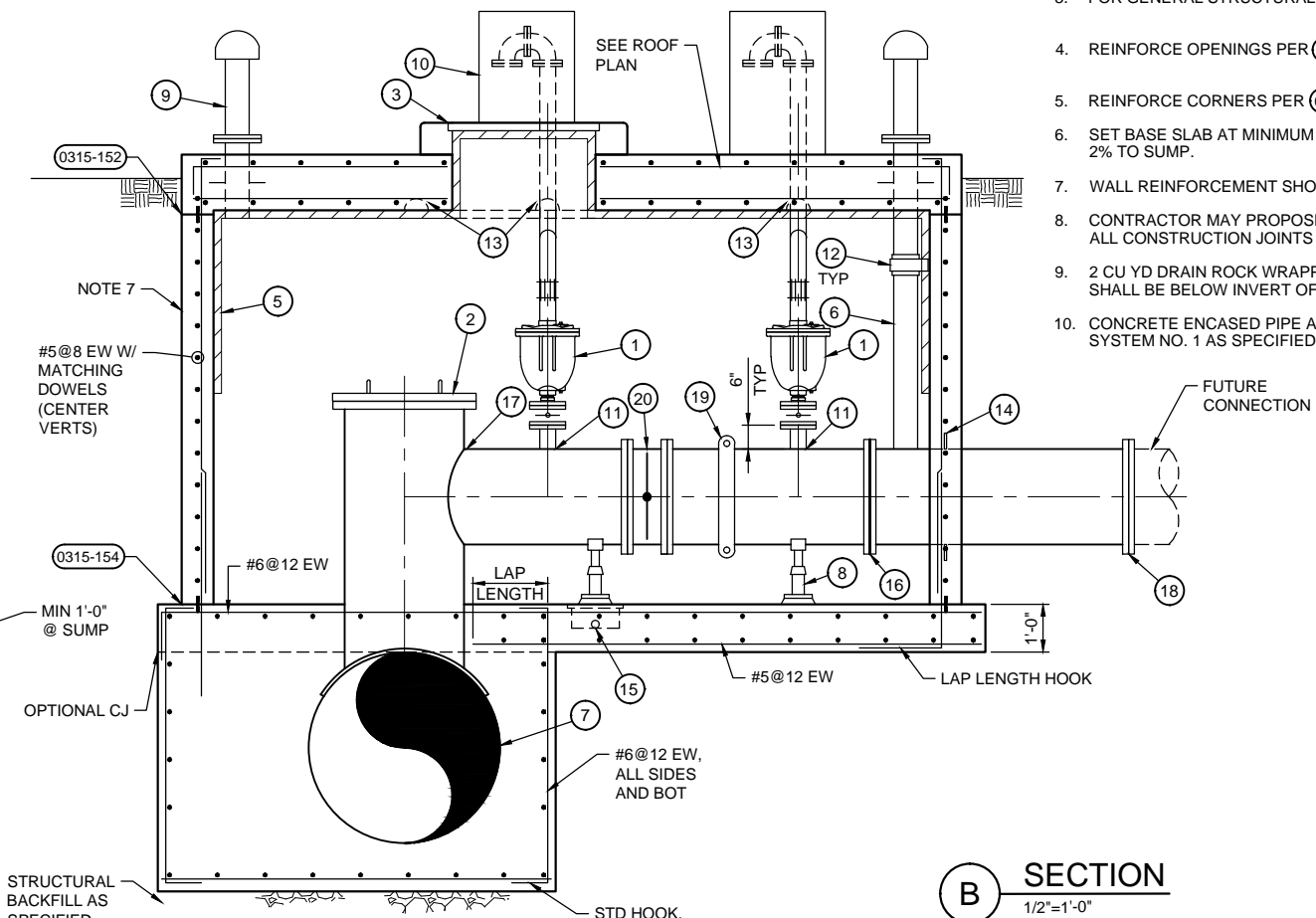
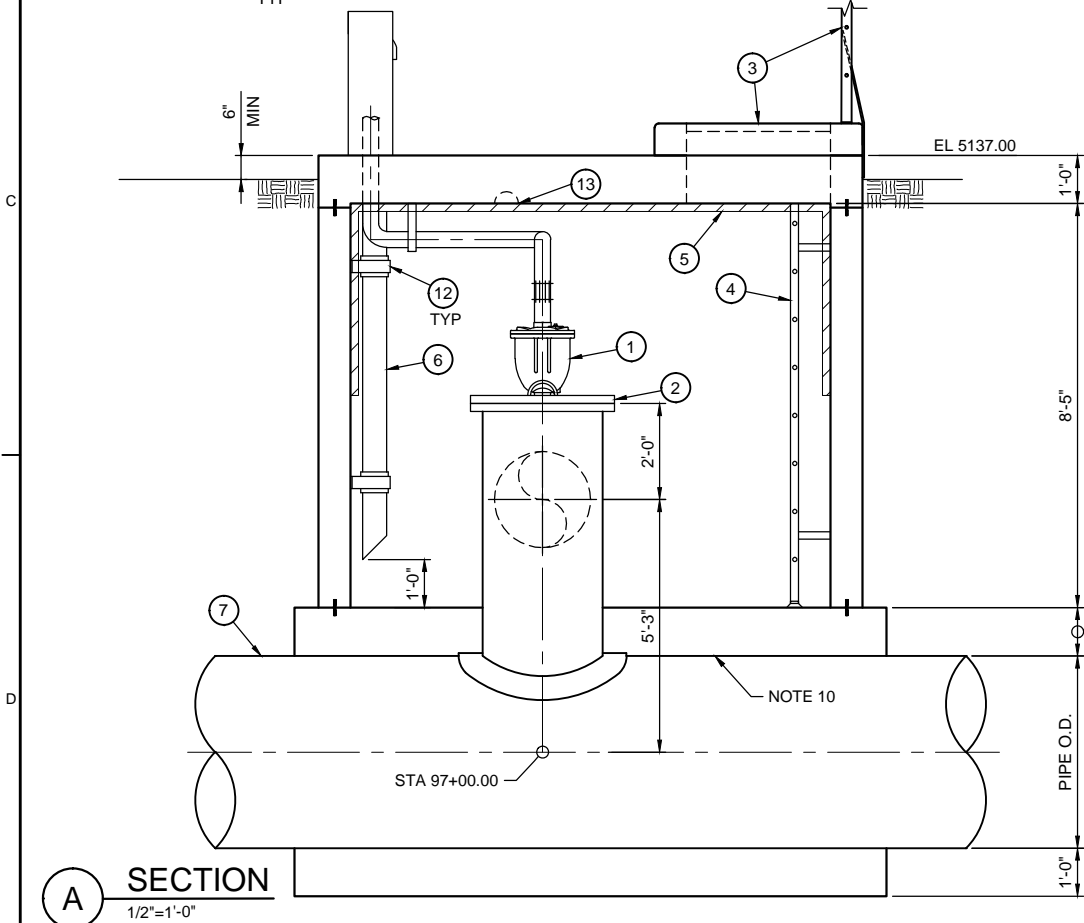


**MATERIAL SCHEDULE**

- 1 4" AIR VALVE ASSEMBLY W/ ISOLATION BFV TYPE V746 4027-120
- 2 30" ACCESS MANWAY FLANGE 3305-940
- 3 36" x 36" SIDEWALK DOOR & EXTERIOR LADDER 0551-143
- 4 SST LADDER 0551-101
- 5 2" THICK RIGID INSULATION ON CEILING AND WALLS, 4" DOWN FROM INSIDE OF CEILING
- 6 6" SCH 80 PVC VENT PIPE, NOTE 2
- 7 48" WSP, SEE PLAN AND PROFILE DRAWINGS FOR ELEVATION
- 8 PIPE SUPPORT 4005-500, TYP OF 2
- 9 6" AIR VENT 2337-806
- 10 4" GOOSENECK AIR VALVE VENT ASSEMBLY AND COVER 2337-805
- 11 4" OUTLET
- 12 WALL PIPE SUPPORT 4005-505
- 13 RECESSED LIFTING ANCHOR, MEADOW BURKE MBA6671, TYP OF 3. CENTER ABOVE BOTH ITEM 1 AND PLACE AT LOCATION SHOWN
- 14 SEEP RING 3305-916
- 15 12" DIA SUMP W/ 2" SCH 80 DRAIN PIPE TO DRAIN ROCK, SEE 0330-324
- 16 INSULATING FLANGE 2642-925
- 17 24" WSP OUTLET
- 18 24" CLASS E BLIND FLANGE W/ WAX TAPE COAT FOR FUTURE CONNECTION
- 19 24" GROOVED END COUPLING
- 20 24" ISOLATION BUTTERFLY VALVE, TYPE V504 W/ MANUAL OPERATOR, FURNISHED BY OWNER

**NOTES:**

- 1. NOT USED.
- 2. LENGTH AND CONFIGURATION OF VENT PIPE VARIES. CONTRACTOR SHALL PROVIDE PIPING AND FITTINGS AS REQUIRED TO INSTALL VENT PIPING AS SHOWN ON PLANS.
- 3. FOR GENERAL STRUCTURAL NOTES SEE DWG G-10.
- 4. REINFORCE OPENINGS PER 0330-001.
- 5. REINFORCE CORNERS PER 0330-003.
- 6. SET BASE SLAB AT MINIMUM DIMENSION SHOWN BELOW PIPE AND SLOPE @ 2% TO SUMP.
- 7. WALL REINFORCEMENT SHOWN IN SECTION A IS TYPICAL FOR ALL WALLS.
- 8. CONTRACTOR MAY PROPOSE ALTERNATIVE CONSTRUCTION JOINT LAYOUT. ALL CONSTRUCTION JOINTS SHALL INCLUDE 4" PLASTIC WATER STOP.
- 9. 2 CU YD DRAIN ROCK WRAPPED IN GEOTEXTILE FABRIC. TOP OF DRAIN ROCK SHALL BE BELOW INVERT OF 2" DRAIN.
- 10. CONCRETE ENCASED PIPE AND 30" OUTLET SHALL BE EPOXY COATED WITH SYSTEM NO. 1 AS SPECIFIED IN SECTION 09 90 00 AND 09 97 13.



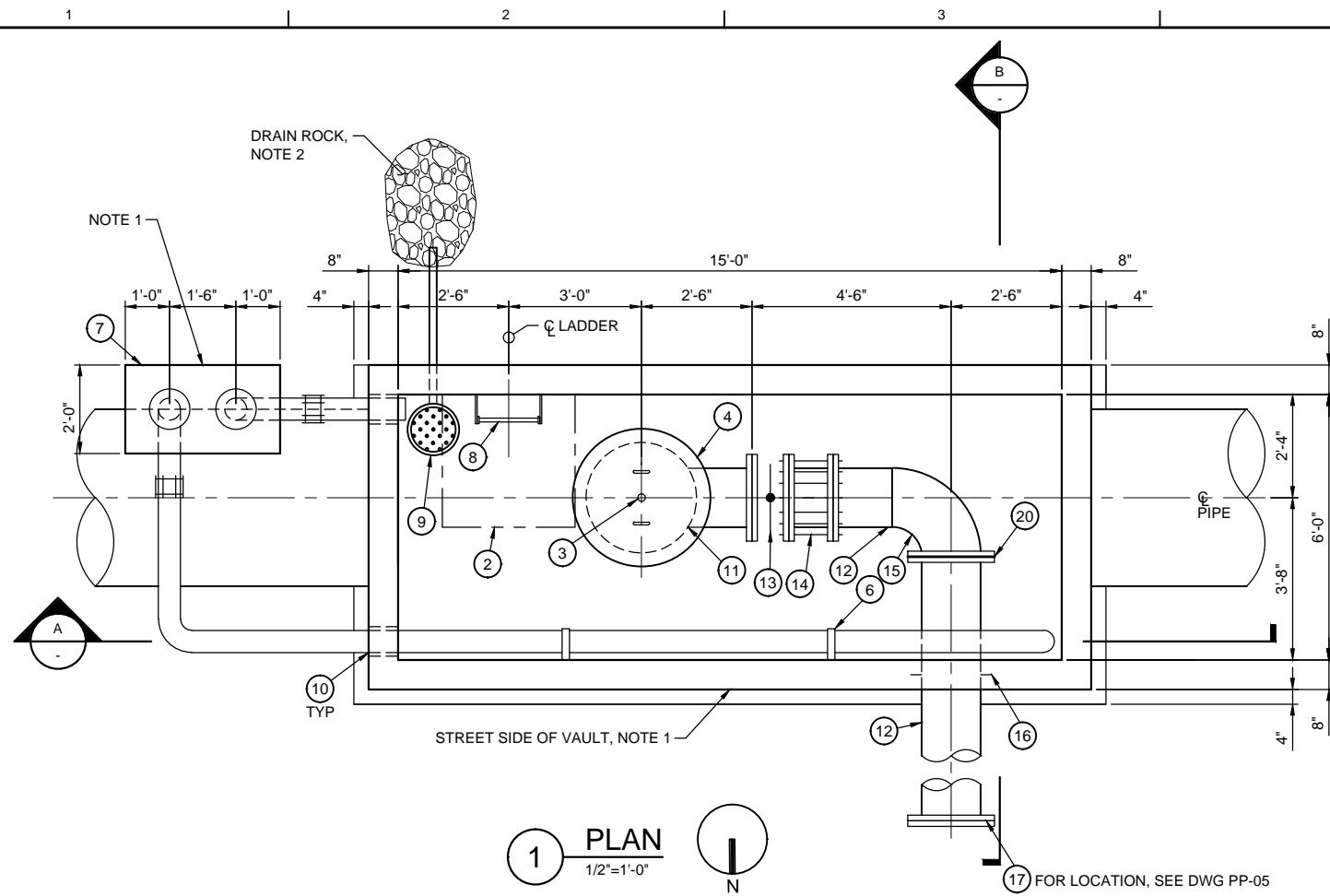
NO.	DATE	DR	CHK	REVISION	BY	APVD

JORDAN VALLEY WATER CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

**ch2m**  
PIPELINE APPURTENANCES  
HERRIMAN CITY TURNOUT  
PLANS AND SECTION

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	JANUARY 2017
PROJ	680064
DWG	PA-04
SHEET	of



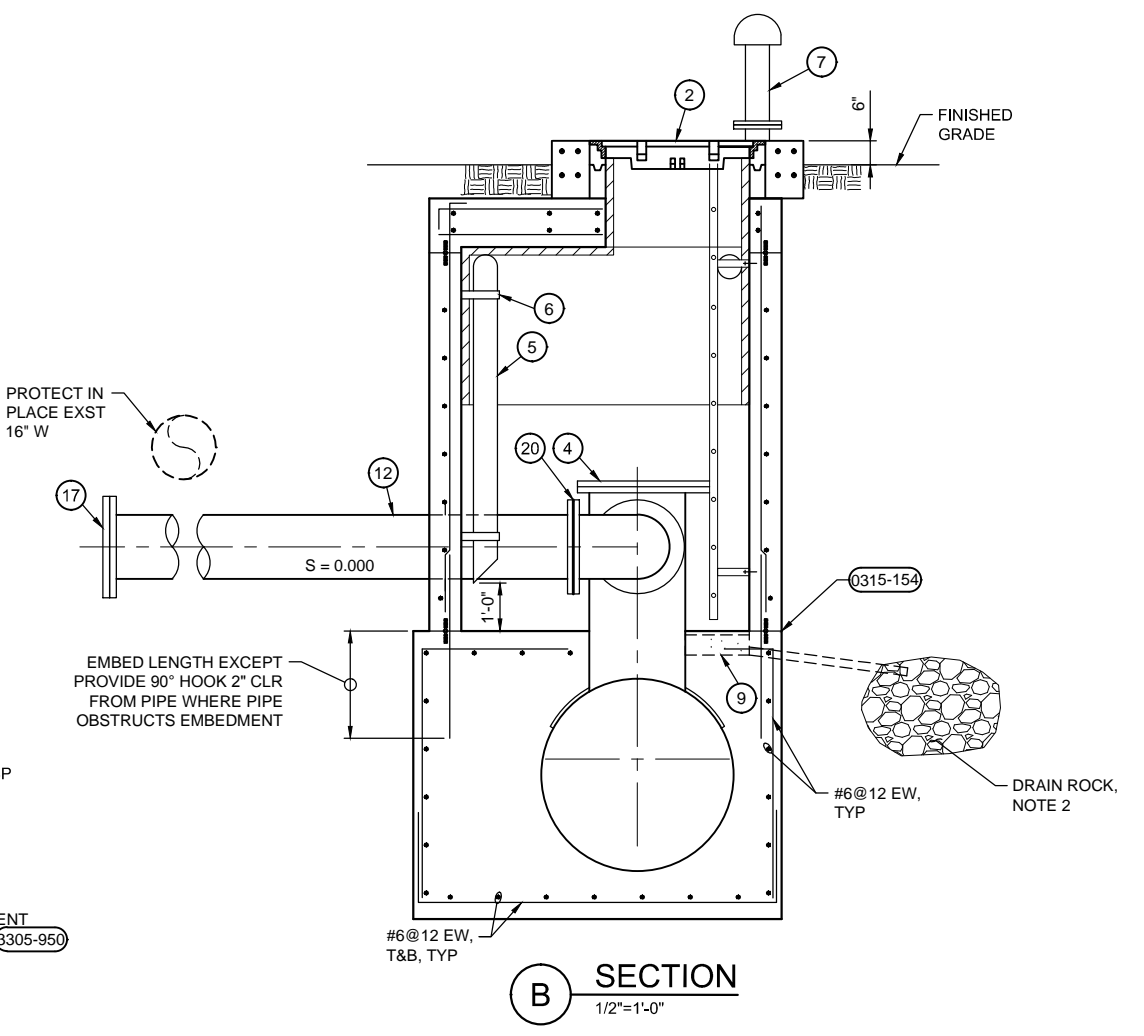
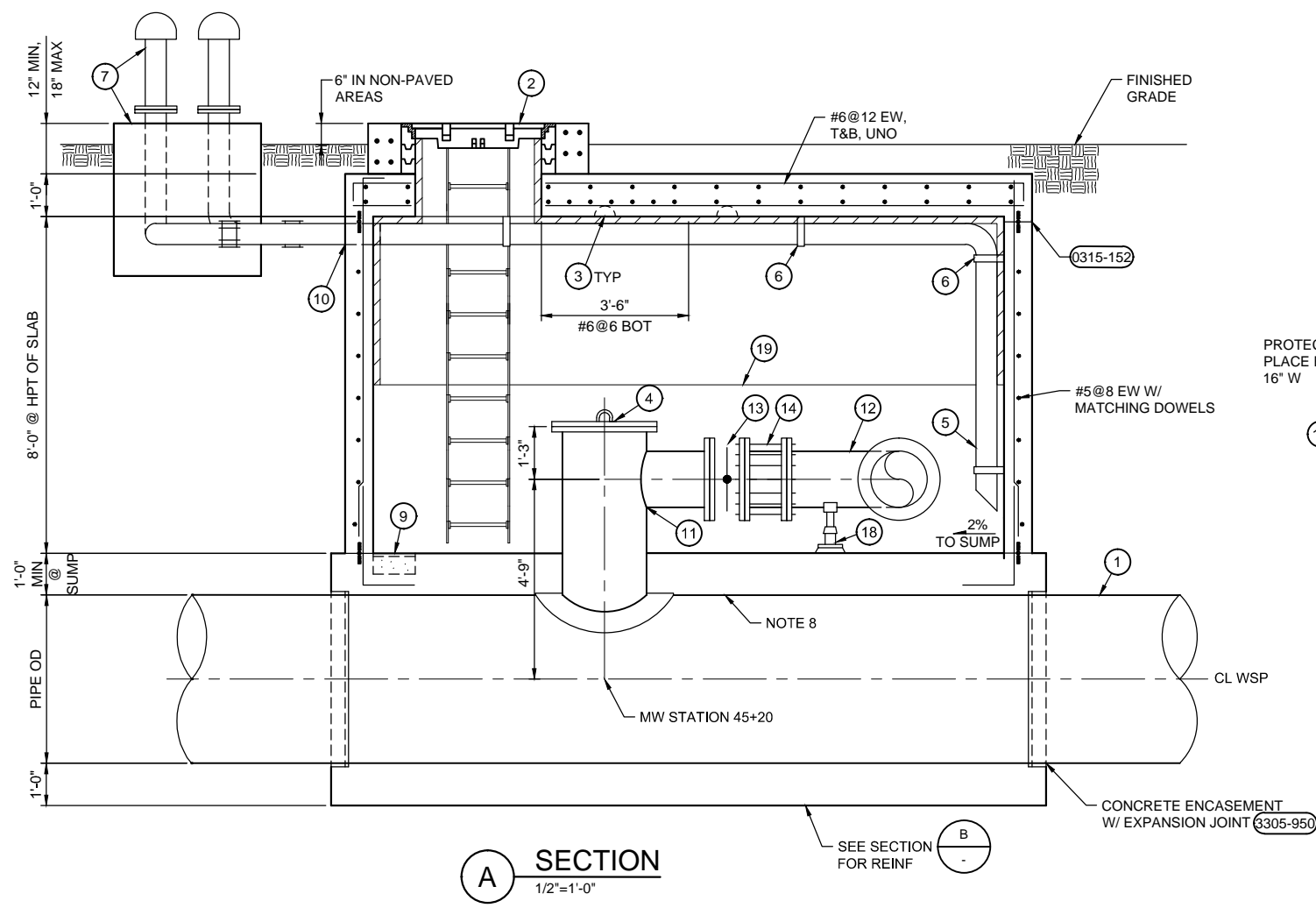


**NOTES:**

1. VAULT ORIENTATION IS BASED ON STREET LOCATION INDICATED ON PLAN VIEW. VENT PIPES SHALL BE AWAY FROM THE STREET AS SHOWN.
2. 2 CU YD DRAIN ROCK WRAPPED IN GEOTEXTILE FABRIC. TOP OF DRAIN ROCK SHALL BE BELOW INVERT OF 2" DRAIN.
3. FOR GENERAL STRUCTURAL NOTES SEE DRAWING G-10.
4. REINFORCE OPENINGS PER (0330-001).
5. REINFORCE CORNERS PER (0330-003).
6. SET BASE SLAB AT MINIMUM DIMENSION SHOWN BELOW PIPE AND SLOPE @ 2% TO SUMP.
7. CONTRACTOR MAY PROPOSE ALTERNATIVE CONSTRUCTION JOINT LAYOUT. ALL CONSTRUCTION JOINTS SHALL INCLUDE 4" PLASTIC WATERSTOP.
8. CONCRETE ENCASED PIPE AND 30" OUTLET SHALL BE EPOXY COATED WITH SYSTEM NO. 1 AS SPECIFIED IN SECTION 09 90 00 AND 09 97 13.

**MATERIAL SCHEDULE**

- 1 48" WSP
- 2 36" SQUARE LOCKING FRAME AND COVER (3305-728)
- 3 RECESSED LIFTING ANCHOR, MEADOW BURKE MBA6671, PLACE DIRECTLY ABOVE MANWAY & BFV
- 4 30" MANWAY OUTLET (3305-940)
- 5 6" SCH 80 PVC VENT PIPE
- 6 WALL PIPE SUPPORT (4005-505)
- 7 6" AIR VENT ASSEMBLY AND ENCASMENT (2337-804)
- 8 SST LADDER W/ LADDER UP (0551-101)
- 9 12" SUMP W/ DRAIN TO DRAIN ROCK (0330-324)
- 10 WALL PENETRATION (4027-607)
- 11 16" WSP OUTLET
- 12 16" WSP, t = 3/8"
- 13 16" FLG BFV VALVE (V504)
- 14 16" RESTRAINED DISMANTLING JOINT
- 15 16" WSP FLG x PE 90° SHORT RADIUS ELBOW
- 16 SEEP RING (3305-916)
- 17 16" BURIED BLIND FLANGE, WAX TAPE COAT
- 18 SADDLE PIPE SUPPORT (4005-500)
- 19 2" THICK RIGID INSULATION ON CEILING AND WALLS 4 FEET DOWN FROM INSIDE OF CEILING
- 20 INSULATING FLANGE (2642-925)



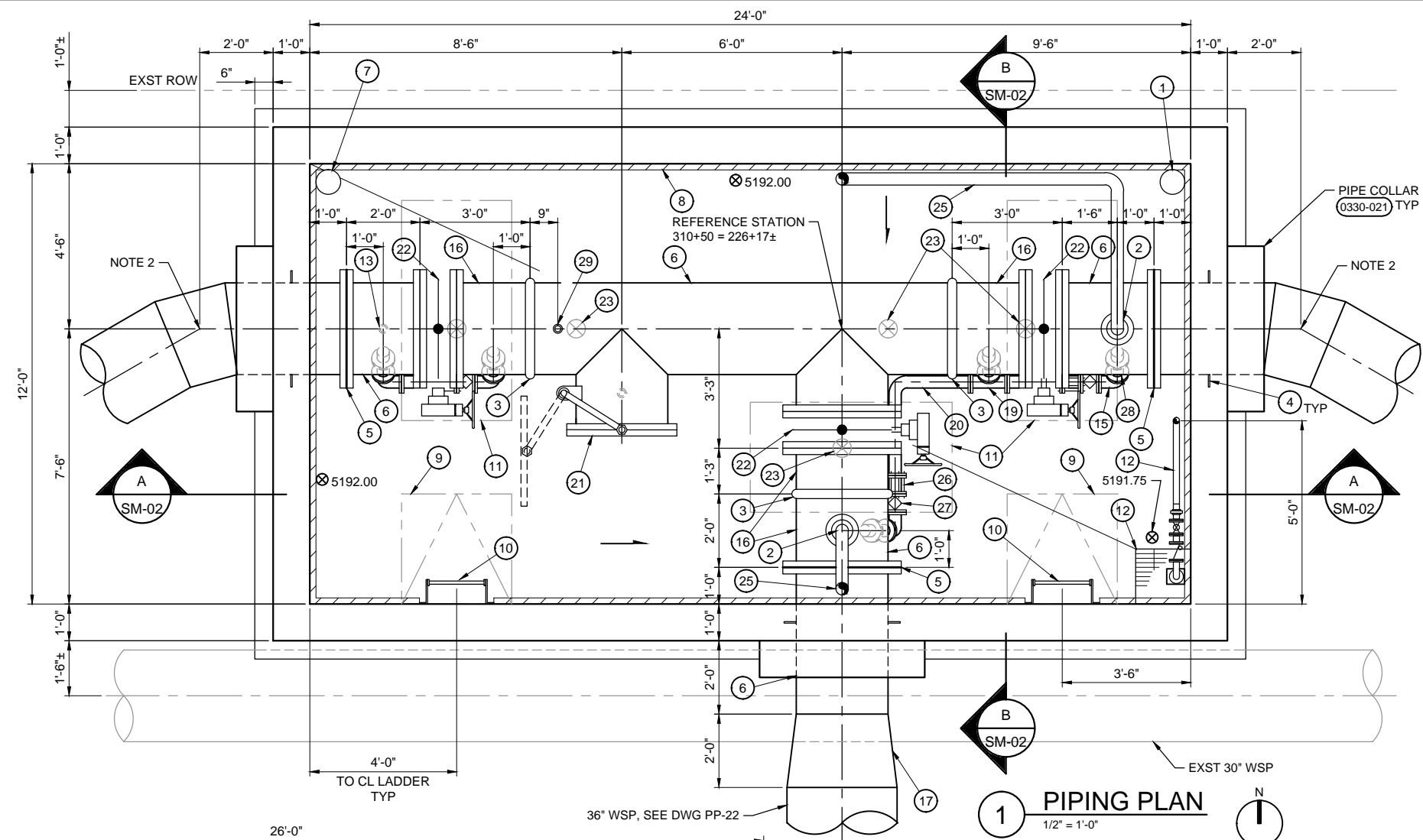
NO.	DATE	DSGN	DR	REVISION	CHK	BY	APVD

**Jordan Valley Water Conservancy District**  
11800 SOUTH U-111 PROJECT

**ch2m**  
PIPELINE APPURTENANCES  
SOUTH JORDAN CITY TURNOUT  
PLAN AND SECTIONS

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	JANUARY 2017
PROJ	680064
DWG	PA-05
SHEET	of





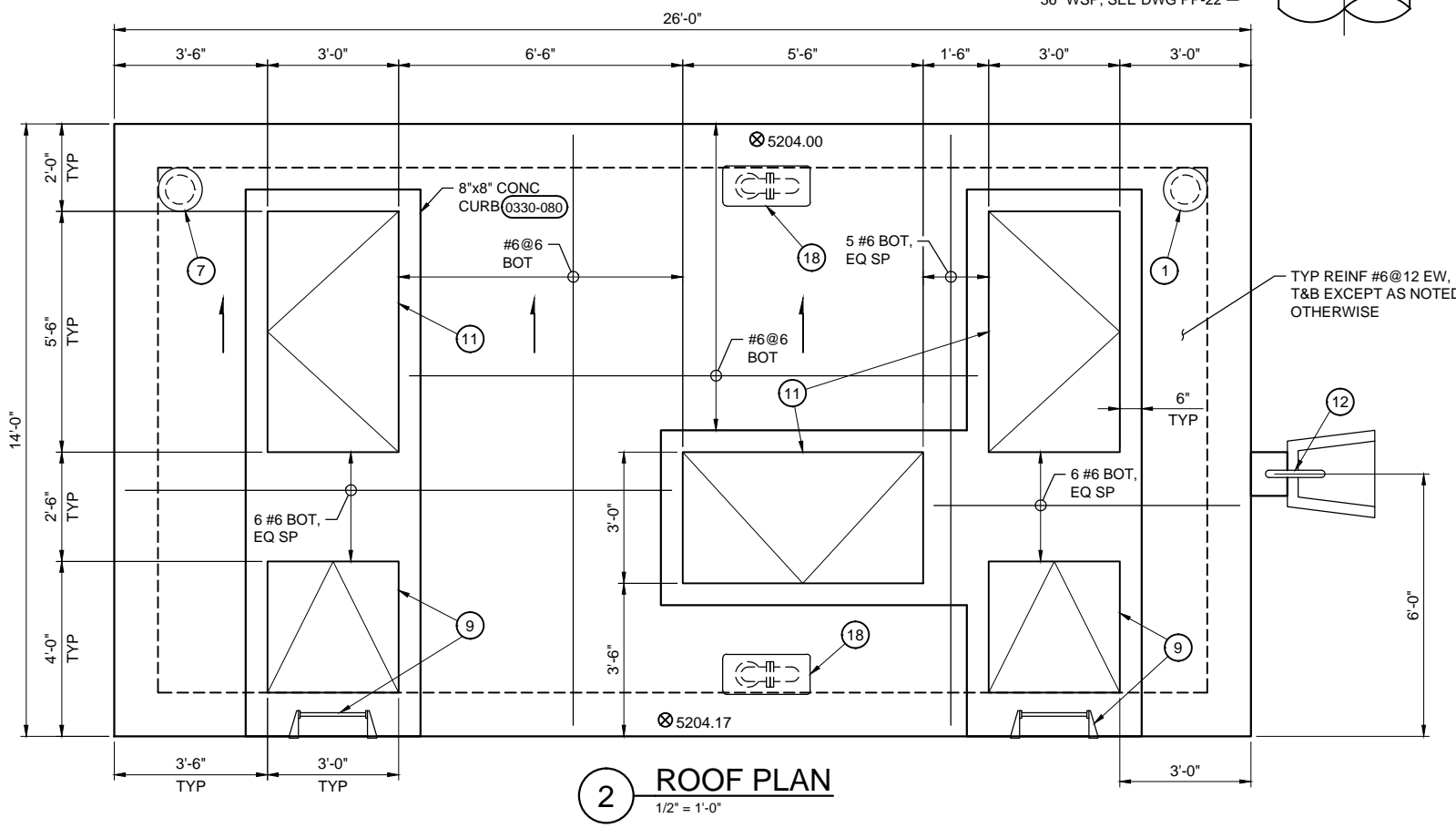
- NOTES:**
- EPOXY LINE ALL 4" WSP BYPASS PIPING INSIDE THE VAULT. AT 4" OUTLETS ON 30" WSP PROVIDE MINIMUM 4" WIDE OVERLAP OF EPOXY LINING UNDERNEATH CEMENT MORTAR LINING.
  - SEE DRAWING C-04 AND C-05 FOR PIPING OUTSIDE THE STRUCTURE.
  - NOT USED.
  - FOR GENERAL STRUCTURAL NOTES SEE DRAWING G-10.
  - REINFORCE OPENINGS PER (0330-001).
  - REINFORCE CORNERS PER (0330-003).



**1 PIPING PLAN**  
1/2" = 1'-0"

**MATERIAL SCHEDULE**

- |   |   |
|---|---|
| 1 8" INTAKE VENT (2337-806). TERMINATE VENT PIPE 3" BELOW VAULT ROOF  | 17 36" x 30" ECCENTRIC REDUCER, 24" LONG, t = 3/8" (FLAT TOP AT SOUTH CONNECTION)   |
| 2 4" COMBINATION AIR VALVE TYPE V746 (4027-120), TYP OF 3, CONNECT OUTLET OF EACH W/ PVC SCH 80 PIPE CONNECTED TO ROOF VENT ASSEMBLY (2337-805) | 18 AIR VALVE VENT PIPE ASSEMBLY & COVER, SIM (2337-805)   |
| 3 GROOVED END COUPLING, MATCH PIPE DIAMETER   | 19 4" WSP FLG x FLG TEE   |
| 4 SEEP RING (3305-916)  | 20 4" WSP, t = 0.337"   |
| 5 INSULATING FLANGE (2642-925)  | 21 30" ACCESS MANWAY (3305-935), NOTE 1   |
| 6 30" WSP SPECIAL W/ 30" OUTLETS, t = 3/8", NOTE 1  | 22 30" BUTTERFLY VALVE, V504 W/ MANUAL OPERATOR (TYP OF 4)  |
| 7 8" EXHAUST VENT W/ VENT FAN (2337-810) (2337-806). COORDINATE OFFSET FROM WALL W/ VENT FAN DIAMETER   | 23 PIPE SUPPORT (4005-500), TYP (5 EA)  |
| 8 2" THICK RIGID INSULATION ON CEILING AND WALLS, 4" DOWN FROM INSIDE OF CEILING  | 24 WALL PIPE SUPPORT (4005-505)   |
| 9 36" x 36" SIDEWALK DOOR & EXTERIOR LADDER (0551-143)  | 25 4" PVC SCH 80 VENT PIPE ROUTED JUST BELOW ROOF TO SINGLE AIR VENT PIPE & COVER. COORDINATE PIPE SUPPORTS W/ RIGID INSULATION |
| 10 SST LADDER (0551-101)  | 26 4" RESTRAINED DISMANTLING JOINT (TYP OF 3)   |
| 11 36" x 66" SIDEWALK DOOR  | 27 4" PLUG VALVE (V405) (TYP OF 3)  |
| 12 18" x 18" x 18" SUMP W/ PUMP (2230-170) (3311-850)   | 28 4" GATE VALVE (V130) (TYP OF 5)  |
| 13 2" DRAIN VALVE (4027-195)  | 29 2" BALL VALVE (V300) ON TOP OF PIPE (4027-195)   |
| 14 4" WSP OUTLET (TYP OF 5 FOR BYPASS PIPING)   |   |
| 15 4" FLG x FLG WSP 90° ELBOW (TYP FOR BYPASS PIPING)   |   |
| 16 30" FLG x GE WSP SPOOL   |   |



**2 ROOF PLAN**  
1/2" = 1'-0"

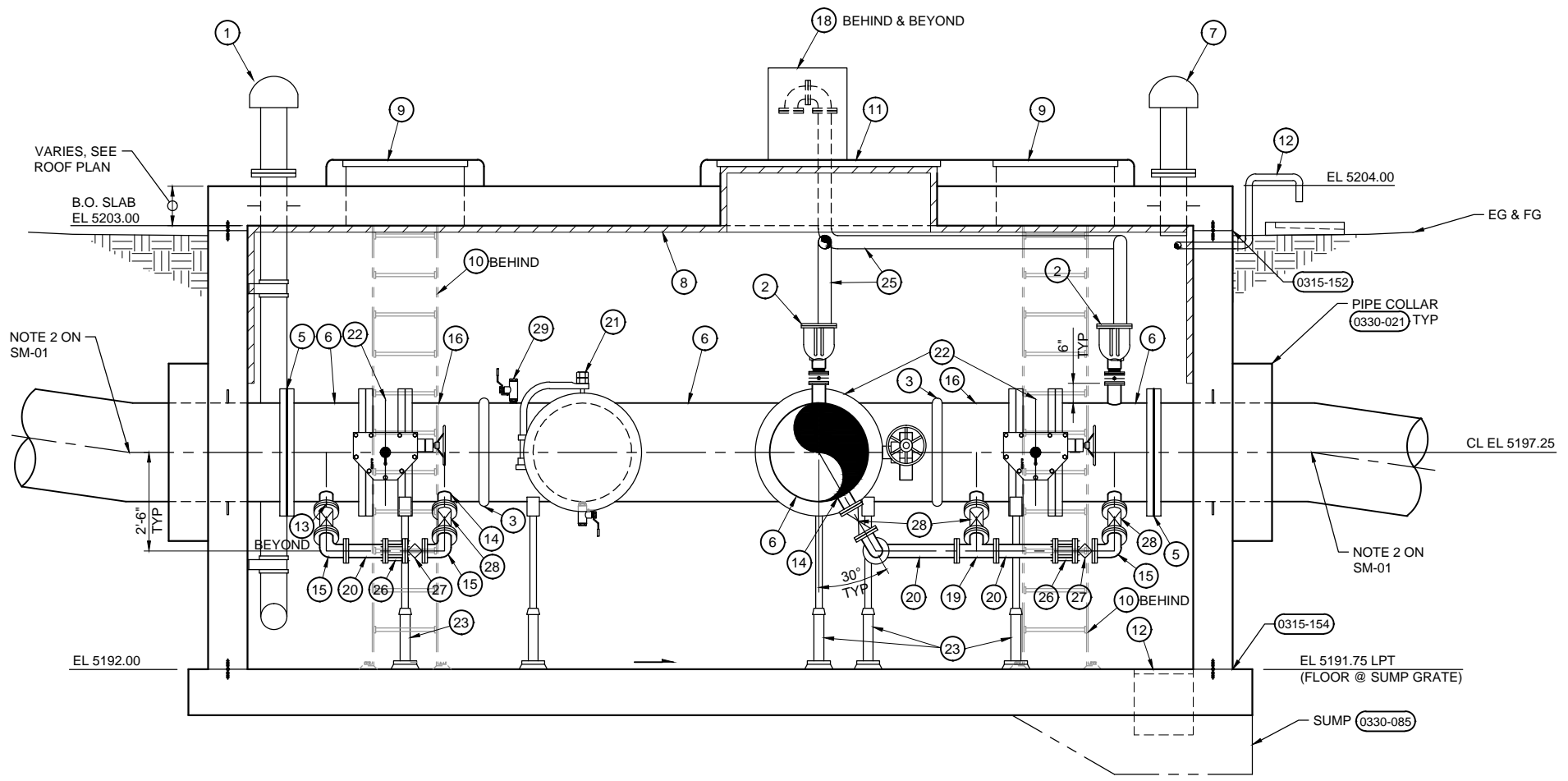
NO.	DATE	DR	REVISION	CHK	BY	APVD

**JORDAN VALLEY WATER CONSERVANCY DISTRICT**  
11800 SOUTH U-111 PROJECT

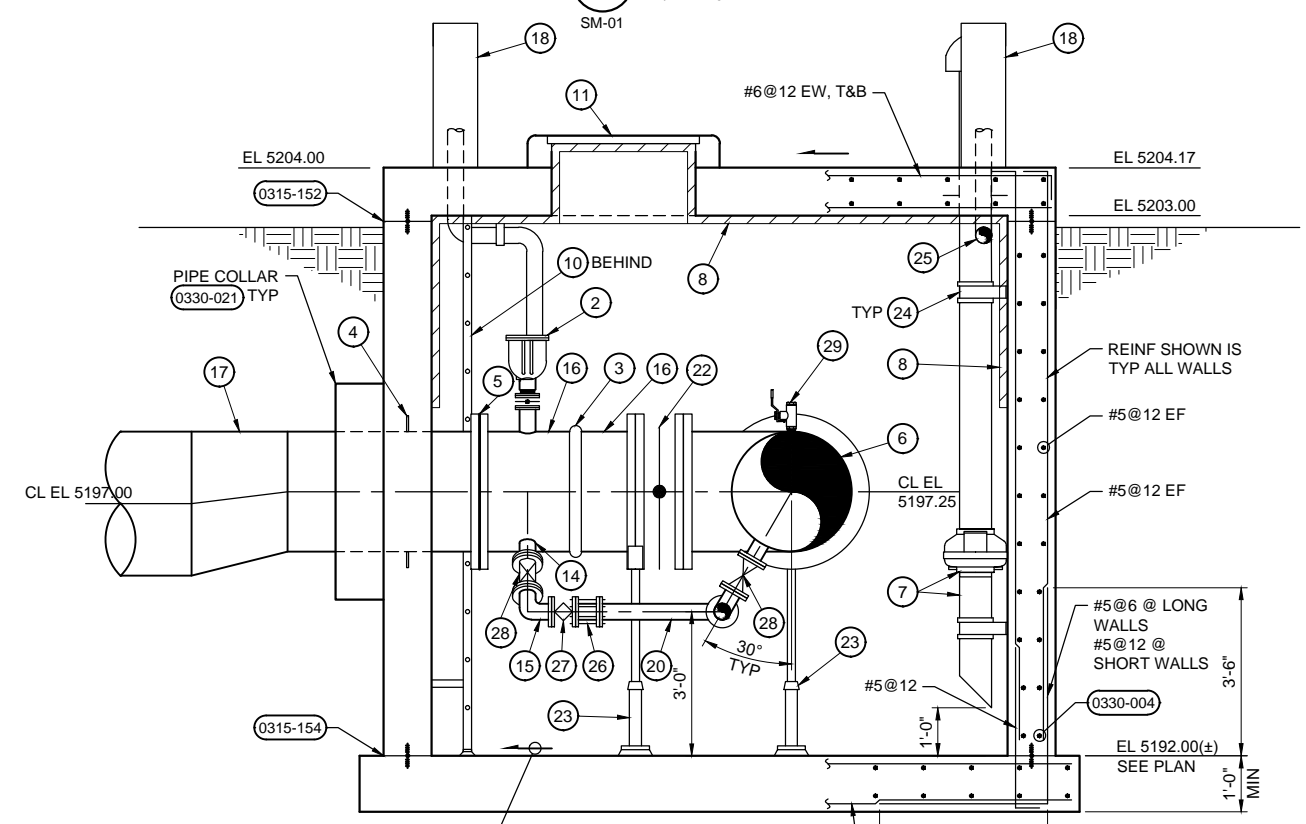
**STRUCTURAL / MECHANICAL**  
**U-111 / 10200 SOUTH CONNECTION VAULT CONNECTION VAULT PIPING AND ROOF PLANS**

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	JANUARY 2017
PROJ	680064
DWG	SM-01
SHEET	of

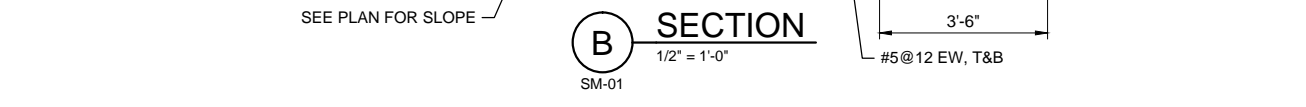




**A SECTION**  
1/2" = 1'-0"



**B SECTION**  
1/2" = 1'-0"



- NOTES:**  
1. FOR MATERIAL SCHEDULE, SEE DWG SM-01.

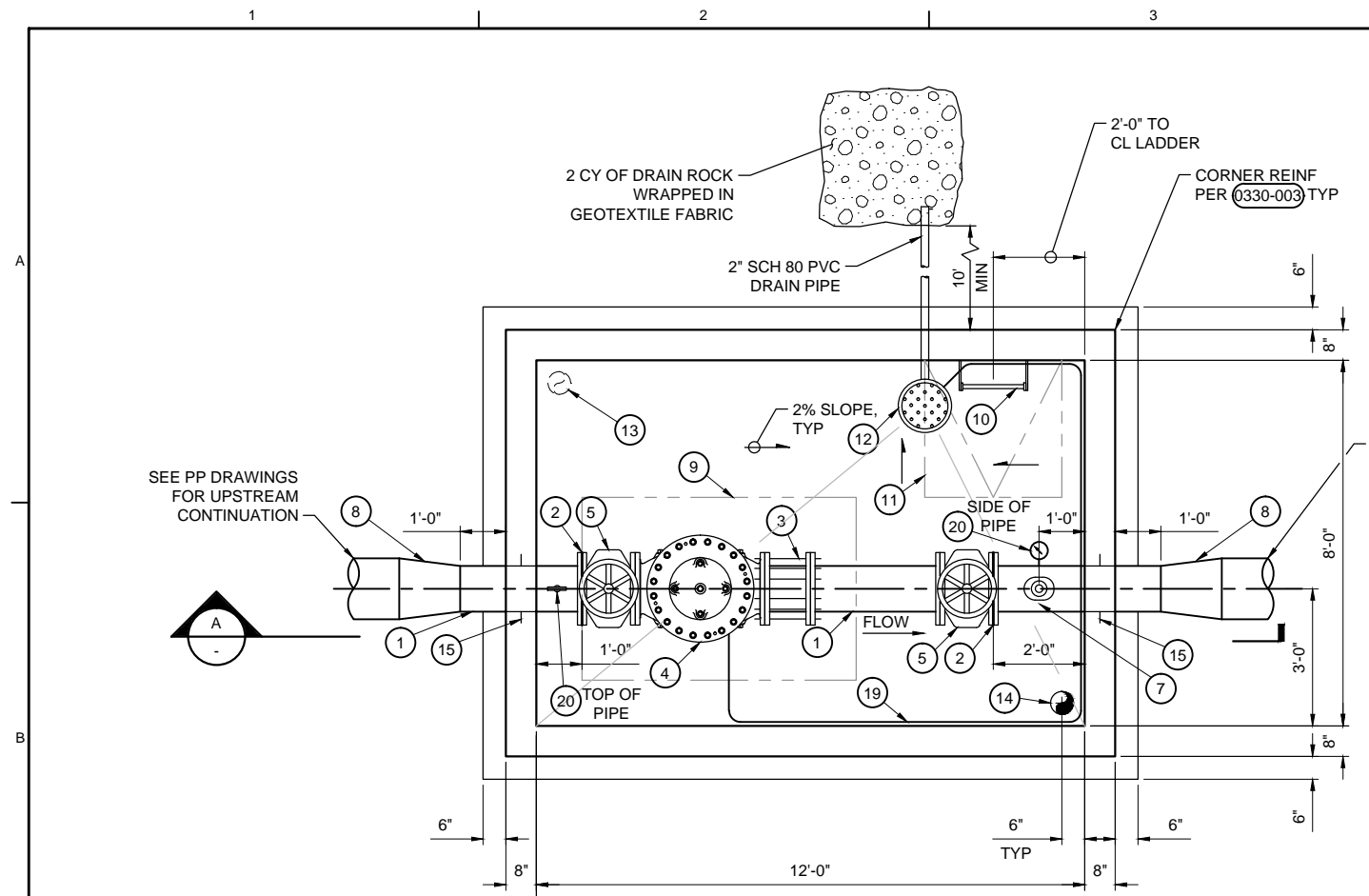


NO.	DATE	DR	REVISION	CHK	BY

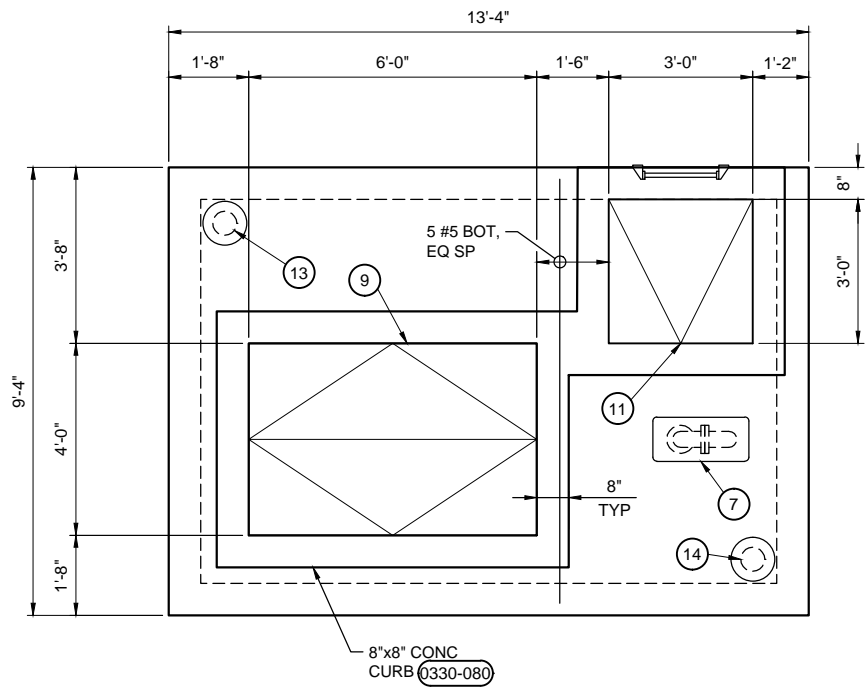
**ch2m**  
STRUCTURAL / MECHANICAL  
U-111 / 10200 SOUTH  
CONNECTION VAULT  
SECTIONS

DATE	JANUARY 2017
PROJ	680064
DWG	SM-02
SHEET	of

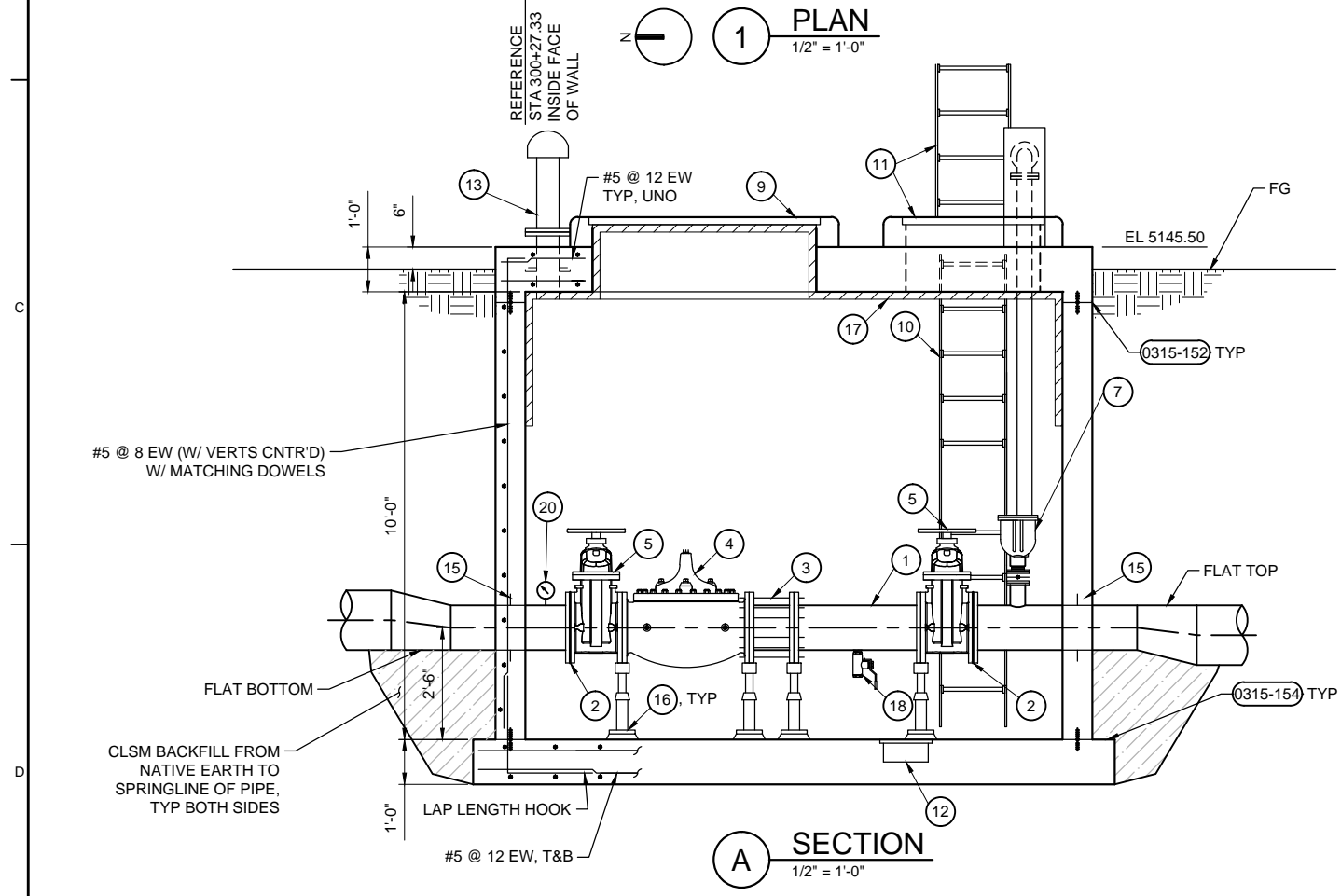




**1 PLAN**  
1/2" = 1'-0"



**2 ROOF PLAN**  
1/2" = 1'-0"



**A SECTION**  
1/2" = 1'-0"

**MATERIAL SCHEDULE**

- 1 12" WSP, t = 3/8"
- 2 INSULATING FLANGE (2642-925)
- 3 12" RESTRAINED DISMANTLING JOINT
- 4 12" FLOW CONTROL GLOBE VALVE W/ ELECTRONIC SOLINOID OPERATION, TYPE (V715)
- 5 12" FLGxFLG GATE VALVE, TYPE (V130) W/ MANUAL OPERATOR
- 6 VENT PIPE SUPPORT (4005-505)
- 7 4" COMBINATION AIR VALVE TYPE V746 (4027-120). PVC SCH 80 PIPE CONNECTED TO ROOF VENT ASSEMBLY (2337-805)
- 8 12"x16" WSP ECCENTRIC REDUCER
- 9 4' x 6' DOUBLE LEAF SIDEWALK DOOR
- 10 SST LADDER (0551-101)
- 11 36" x 36" SIDEWALK DOOR & EXTERIOR LADDER (0551-143)
- 12 12" DIA SUMP W/ 2" SCH 80 DRAIN PIPE TO GRAVEL (0330-324)
- 13 6" VENT PIPE (2337-806)
- 14 6" EXHAUST VENT W/ VENT FAN (2337-810)(2337-805)
- 15 SEEP RING (3305-916)
- 16 PIPE SUPPORT (4005-500) OR (4005-501)
- 17 2" THK INSULATION TO 4' BELOW FG
- 18 2" DRAIN DETAIL (4027-195)
- 19 COPPER DRAIN PIPE FROM GLOBE VALVE FLUSHING STRAINERS TO SUMP BY VALVE MANUFACTURER
- 20 DIGITAL PRESSURE GAGE TRANSMITTER (4090-690)

**NOTES:**

- 1. FOR GENERAL STRUCTURAL NOTES SEE G-10.
- 2. REINFORCE OPENINGS PER (0330-001).
- 3. REINFORCE CORNERS PER (0330-003).



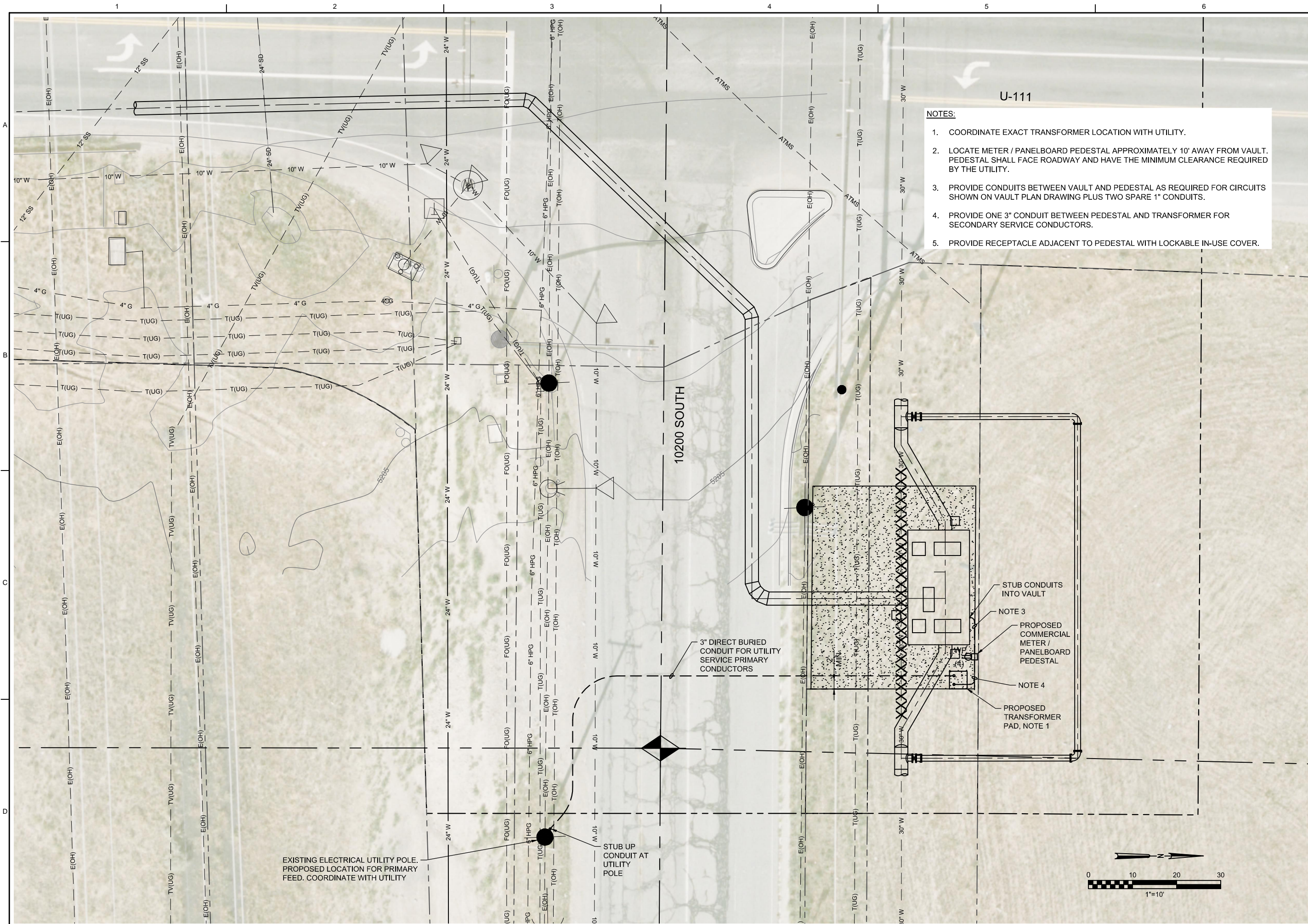
NO.	DATE	DR	REVISION	BY	APVD
		R. PHILLIPS	CHK		N. JONES JR. WILLEITNER/T. PETTY
		R. WILLEITNER	DR		

JORDAN VALLEY WATER CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

**ch2m**  
STRUCTURAL / MECHANICAL  
**PRV VAULT  
PLAN AND SECTIONS**

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	SM-03
SHEET	of





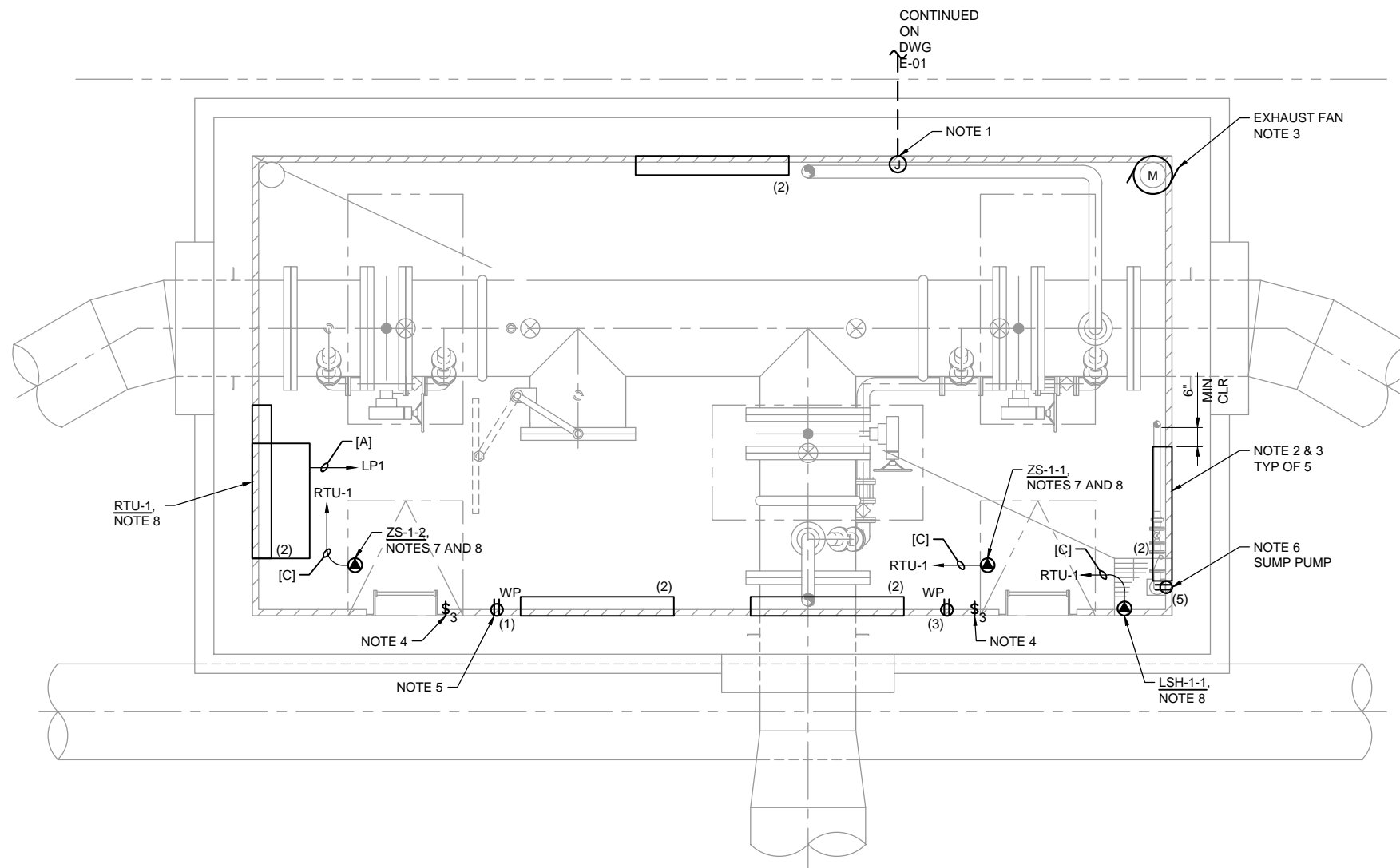
- NOTES:**
- COORDINATE EXACT TRANSFORMER LOCATION WITH UTILITY.
  - LOCATE METER / PANELBOARD PEDESTAL APPROXIMATELY 10' AWAY FROM VAULT. PEDESTAL SHALL FACE ROADWAY AND HAVE THE MINIMUM CLEARANCE REQUIRED BY THE UTILITY.
  - PROVIDE CONDUITS BETWEEN VAULT AND PEDESTAL AS REQUIRED FOR CIRCUITS SHOWN ON VAULT PLAN DRAWING PLUS TWO SPARE 1" CONDUITS.
  - PROVIDE ONE 3" CONDUIT BETWEEN PEDESTAL AND TRANSFORMER FOR SECONDARY SERVICE CONDUCTORS.
  - PROVIDE RECEPTACLE ADJACENT TO PEDESTAL WITH LOCKABLE IN-USE COVER.

<b>ch2m</b>		<b>ELECTRICAL</b>	
<b>SITE PLAN</b>			
<b>U-111 / 10200 SOUTH CONNECTION</b>			
<b>JORDAN VALLEY WATER CONSERVANCY DISTRICT</b>		<b>11800 SOUTH U-111 PROJECT</b>	
DATE	JANUARY 2017	NO. DATE	J. JAMES
PROJ	680064	DR	CHOGGARD
DWG	E-01	REVISION	CHK
SHEET	of	APVD	XXX
		BY	APVD
			XXX

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING.  
0 10 20 30  
1"=10'

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**ELECTRICAL PLAN**  
1/2" = 1'-0"



**GENERAL NOTES:**

- A. NUMBERS IN PARENTHESIS (X) ADJACENT TO LIGHTS AND RECEPTACLES DENOTE CIRCUIT NUMBERS IN PANEL LP-1. PROVIDE #12 CONDUCTORS FOR 15A AND 20A CIRCUITS.
- B. CIRCUIT CONDUCTORS FOR LIGHTS AND RECEPTACLES MAY BE COMBINED INTO COMMON RACEWAYS. COMBINED CONDUCTORS SHALL BE SIZED FOR NEC DERATING AND CONDUIT FILL REQUIREMENTS.

**KEY NOTES:**

- 1. PROVIDE JUNCTION BOX(ES) ON VAULT WALL AT 24" BELOW TOP FOR CONDUIT TERMINATIONS. QUANTITY AS REQUIRED.
- 2. PROVIDE ENCLOSED AND GASKETED LINEAR FLUORESCENT LUMINAIRE, LITHONIA DMW-232-120-GEP10IS OR APPROVED EQUAL. WALL MOUNT AT 7'-6" ABOVE FINISH FLOOR.
- 3. LIGHTS AND EXHAUST FAN SHALL BE WIRED IN PARALLEL AND CONTROLLED BY THE LIGHT SWITCHES ADJACENT TO THE ACCESS HATCHES.
- 4. MOUNT LIGHT SWITCH AT ELEVATION 5203.50 (6" BELOW VAULT HATCH) AND ADJACENT TO LADDER.
- 5. MOUNT CONVENIENCE RECEPTACLE 48" INCHES ABOVE FINISH FLOOR. CIRCUIT RECEPTACLE AS SHOWN. PROVIDE WET LOCATION IN-USE CORNER.
- 6. PROVIDE SINGLE-OUTLET RECEPTACLE FOR SUMP PUMP. MOUNT AT 48" ABOVE FINISH FLOOR.
- 7. ACCESS HATCH INTRUSION SWITCH, WIDE-GAP MAGNETIC CONTACT SWITCH, IZOVAC RATING. MOUNT SWITCH INSIDE HATCH.
- 8. INSTALL CONDUITS EMBEDDED IN CONCRETE FROM HATCH INTRUSION SWITCH AND LEVEL SENSOR TO RTU-1. INTERIOR COMPONENT OF RTU WILL BE INSTALLED BY OWNER.

**CONDUCTOR TYPES:**

- [A] = 3/4"C, 2 #12, 1 #12G
- [B] = 3/4"C, 1 #16TSP
- [C] = 3/4"C, 2 #14, 1 #14G

PANEL: LP1		LOCATION: 10200 SOUTH CONNECTION VAULT		SCCR: 10,000	
SERVICE VOLTAGE: 120/240		PHASE: 1		WIRE: 3	
TOTAL LOAD KVA: 2.1		BUS SIZE: 100A		MAIN SIZE: 100A	
REMARKS:		NEUTRAL: FULL		MOUNTING: PEDISTAL	
TYPE: BRKR					

LOAD IN VA		BKR	CK	CK	BKR	LOAD IN VA	
A	B	A/P	NO	NO	A/P	A	B
180		20/1	1	2	20/1	1150	
	180	20/1	3	4	20/1		180
360		20/1	5	6	20/1		
		20/1	7	8	20/1		
			9	10			
			11	12			
			13	14			
			15	16			
540	180	TOTALS				1150	180

NO.	DATE	DR	REVISION	BY	APVD	XXX
		J. JAMES	CHK		APVD	XXX

**Jordan Valley Water Conservancy District**  
11800 SOUTH U-111 PROJECT

**ch2m**  
ELECTRICAL  
ELECTRICAL PLAN  
U-111 / 10200 SOUTH  
CONNECTION VAULT

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	E-02
SHEET	of

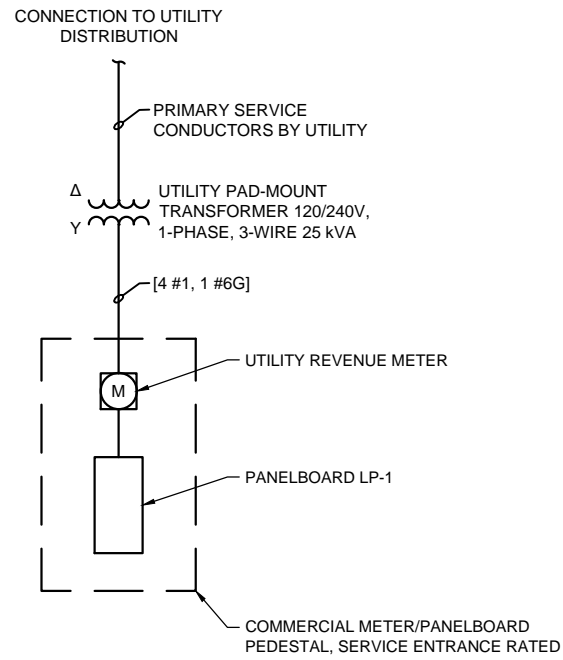


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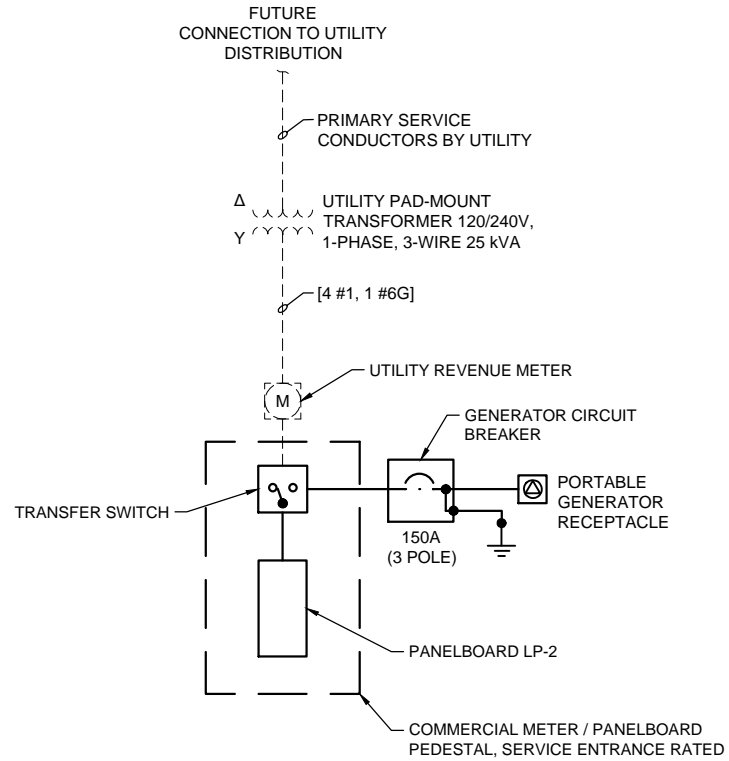
B

C

D



**CONNECTION VAULT ONE-LINE DIAGRAM**  
NTS



**PRV VAULT ONE-LINE DIAGRAM**  
NTS

NO.	DATE	DR	REVISION	BY	XXX
		J. JAMES	CHK	APVD	XXX
				APVD	XXX
				BY	APVD
					XXX

**ch2m**  
ELECTRICAL

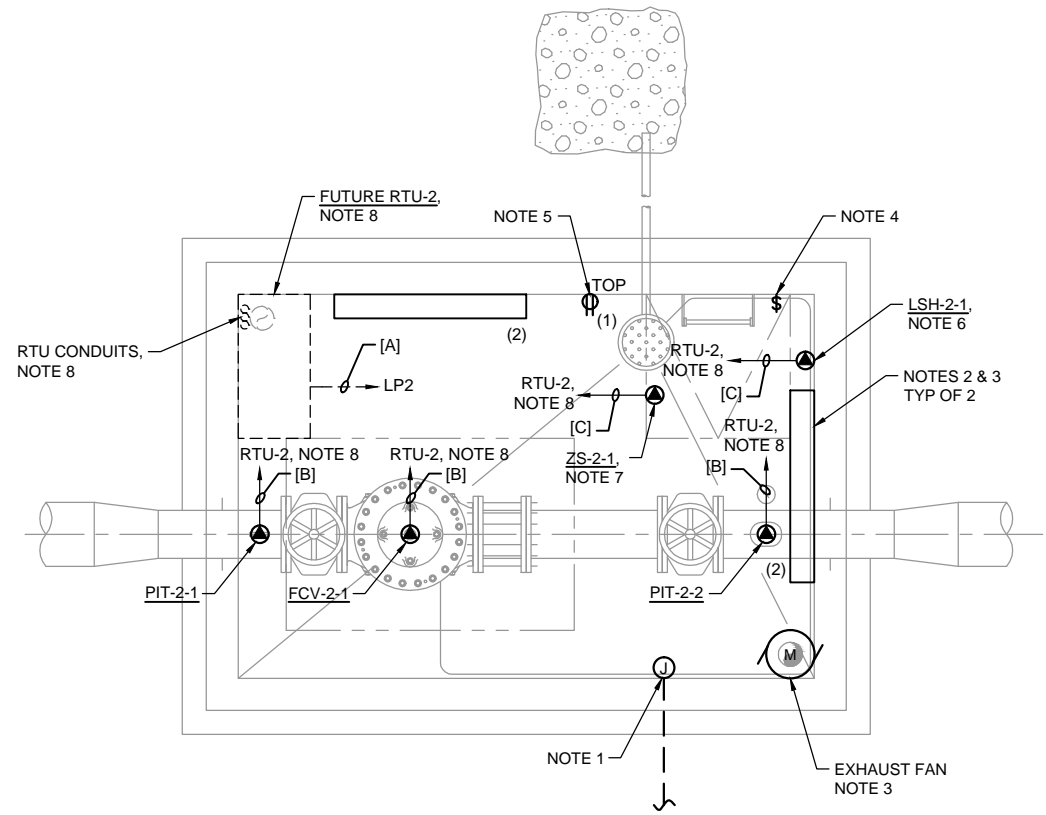
JORDAN VALLEY WATER CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

VERIFY SCALE	
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DATE	JANUARY 2017
PROJ	680064
DWG	E-03
SHEET	of

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**ELECTRICAL PLAN**  
1/2" = 1'-0"

**GENERAL NOTES:**

- A. NUMBERS IN PARENTHESIS (X) ADJACENT TO LIGHTS AND RECEPTACLES DENOTE CIRCUIT NUMBERS IN PANEL LP-2. PROVIDE #12 CONDUCTORS FOR 15A AND 20A CIRCUITS.
- B. CIRCUIT CONDUCTORS FOR LIGHTS AND RECEPTACLES MAY BE COMBINED INTO COMMON RACEWAYS. COMBINED CONDUCTORS SHALL BE SIZED FOR NEC DERATING AND CONDUIT FILL REQUIREMENTS.

**KEY NOTES:**

- 1. PROVIDE JUNCTION BOX(ES) ON VAULT WALL AT 24" BELOW TOP FOR CONDUIT TERMINATIONS. QUANTITY AS REQUIRED.
- 2. PROVIDE ENCLOSED AND GASKETED LINEAR FLUORESCENT LUMINAIRE, LITHONIA DMW-232-120-GEP10IS OR APPROVED EQUAL. WALL MOUNT AT 6" BELOW CEILING.
- 3. LIGHTS AND EXHAUST FAN SHALL BE WIRED IN PARALLEL AND CONTROLLED BY THE LIGHT SWITCHES ADJACENT TO THE ACCESS HATCHES.
- 4. MOUNT LIGHT SWITCH 6" BELOW TOP OF VAULT AND ADJACENT TO LADDER.
- 5. MOUNT CONVENIENCE RECEPTACLE 48" INCHES ABOVE FINISH FLOOR. CIRCUIT RECEPTACLE AS SHOWN. PROVIDE WET LOCATION IN-USE CORNER.
- 6. MOUNT FLOOD ALARM SWITCH AT ELEVATION 4837.5. GEMS LS-3 OR EQUAL.
- 7. ACCESS HATCH INTRUSION SWITCH, WIDE-GAP MAGNETIC CONTACT SWITCH, IZOVAC RATING. MOUNT SWITCH INSIDE HATCH.
- 8. RTU PANEL AND EQUIPMENT WILL BE INSTALLED BY OTHERS AT A FUTURE DATE. INSTALL CONDUIT, EMBEDDED IN CONCRETE, AND SIGNAL WIRES FROM HATCH INTRUSION SWITCH LEVEL SENSOR, PRESSURE INDICATING TRANSMITTERS, AND FLOW CONTROL VALVE TO LOCATION OF FUTURE RTU CABINET. STUB UP CONDUITS IN CORNER OF VAULT AS SHOWN. LABEL AND TERMINATE ALL SIGNAL WIRES FOR FUTURE CONNECTION.

**CONDUCTOR TYPES:**


- [A] = 3/4"C, 2 #12, 1 #12G
- [B] = 3/4"C, 1 #16TSP
- [C] = 3/4"C, 2 #14, 1 #14G

PANEL: LP2	LOCATION: 12" PRV VAULT
SERVICE VOLTAGE: 120/240	PHASE: 1 WIRE: 3
TOTAL LOAD KVA: 2.8	BUS SIZE: 100A MAIN SIZE: 100A
REMARKS:	NEUTRAL: FULL MOUNTING: PEDISTAL
	SCCR: 10,000 TYPE: BRKR

LOAD IN VA		CIRCUIT DESCRIPTION	BKR NO	CK NO	CK NO	BKR A/P	CIRCUIT DESCRIPTION	LOAD IN VA	
A	B							A	B
180		VAULT RECEPTACLE	20/1	1	2	20/1	LIGHTS & EXHAUST FAN	960	
	1000	RTU-1	20/1	3	4	20/1	OUTDOOR RECEPTACLE		180
500		CATHODIC PROTECTION RECTIFIER	20/1	5	6	20/1	SPARE		
		SPARE	20/1	7	8	20/1	SPARE		
		SPACE		9	10		SPACE		
		SPACE		11	12		SPACE		
		SPACE		13	14		SPACE		
		SPACE		15	16		SPACE		
680	1000	TOTALS						960	180

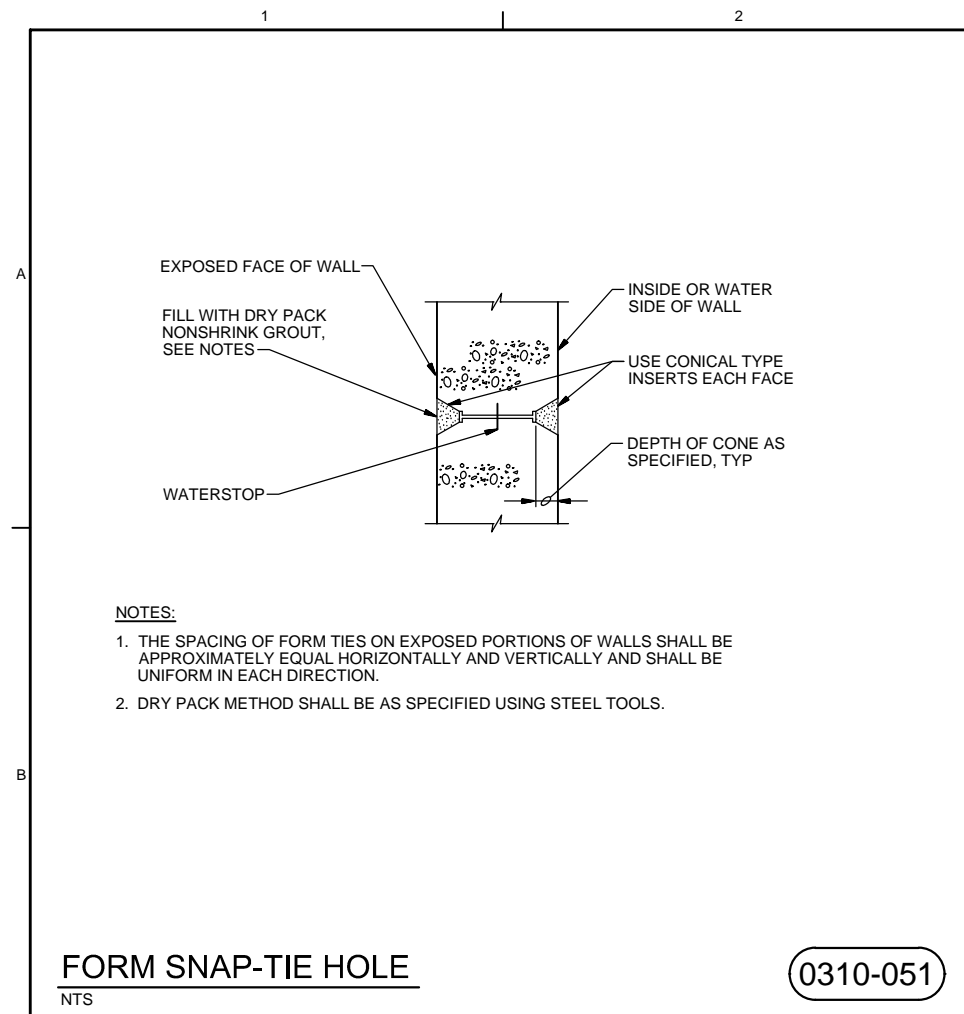
NO.	DATE	DR	REVISION	APVD	XXX
		J. JAMES	CHK	A. MURDOCK	


**JORDAN VALLEY WATER CONSERVANCY DISTRICT**  
 11800 SOUTH U-111 PROJECT


**ELECTRICAL**  
**ELECTRICAL PLAN**  
**PRV VAULT**

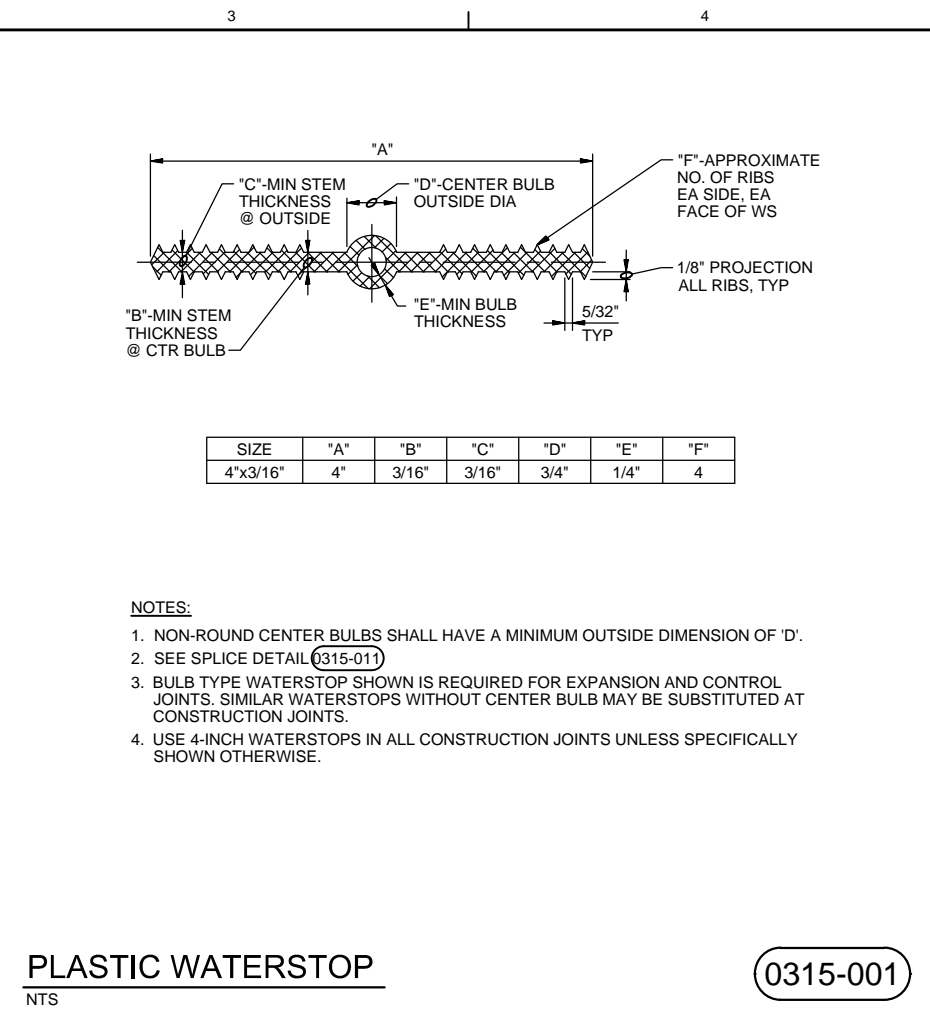
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BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	E-04
SHEET	of





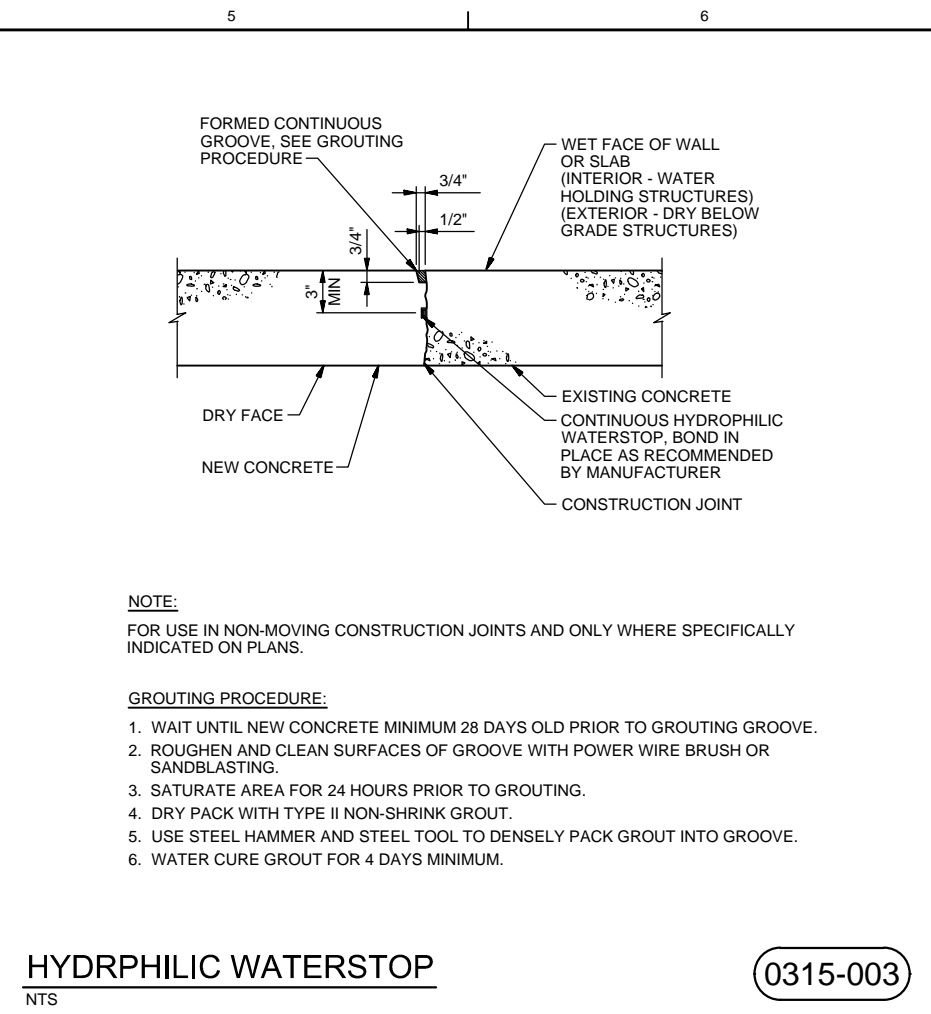
**FORM SNAP-TIE HOLE**

0310-051



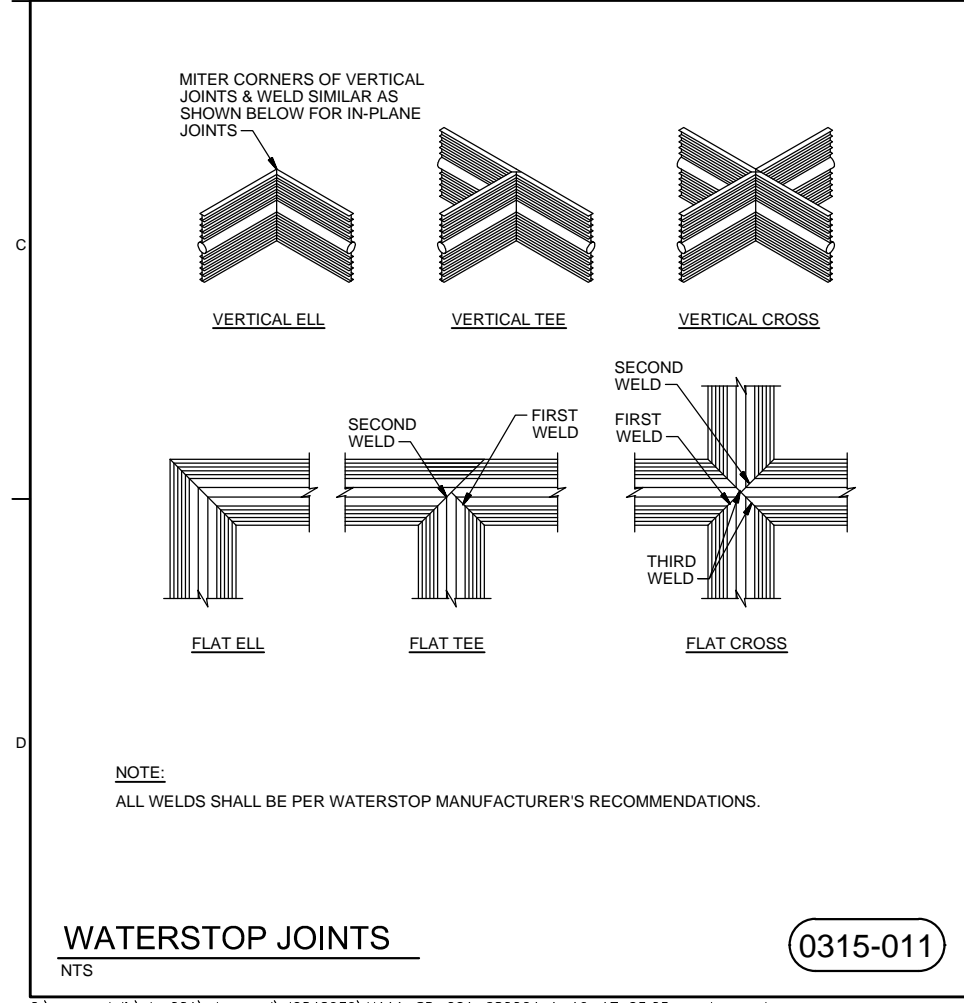
**PLASTIC WATERSTOP**

0315-001



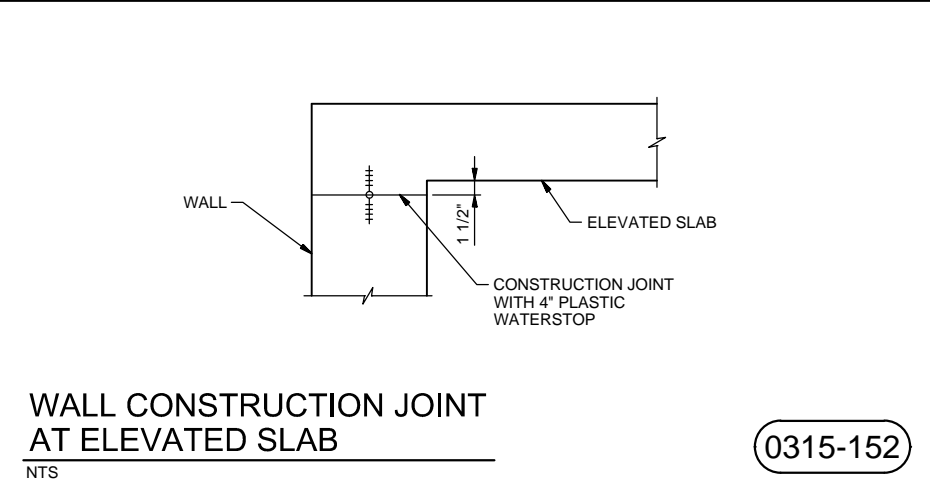
**HYDRPHILIC WATERSTOP**

0315-003



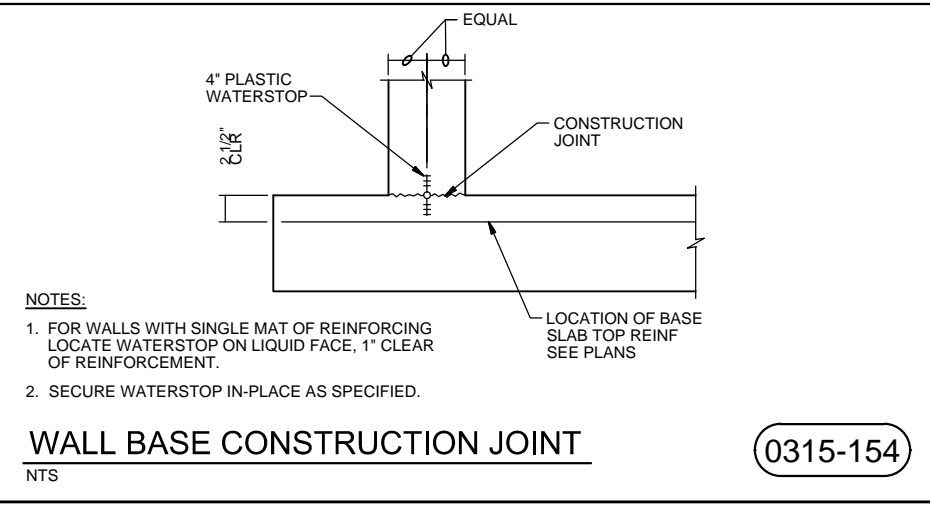
**WATERSTOP JOINTS**

0315-011



**WALL CONSTRUCTION JOINT AT ELEVATED SLAB**

0315-152



**WALL BASE CONSTRUCTION JOINT**

0315-154

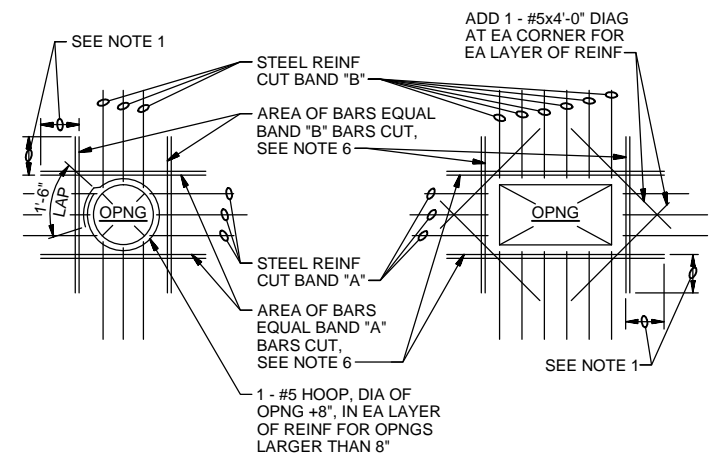
NO.	DATE	DR	REVISION	CHK	APVD	BY	APVD				
			A MURDOCK			T. PETTY			T. PETTY		

**JORDAN VALLEY WATER CONSERVANCY DISTRICT**  
11800 SOUTH U-111 PROJECT

STANDARD DETAILS  
**STANDARD DETAILS**

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	SD-01
SHEET	of



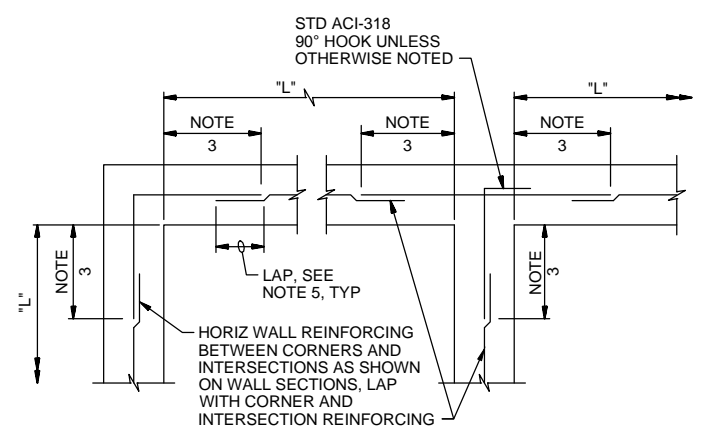


**NOTES:**

1. PROVIDE MINIMUM LAP, SEE GENERAL STRUCTURAL NOTES.
2. TYPICAL FOR ALL OPENINGS IN CONCRETE WALLS OF BELOW GRADE AND HYDRAULIC STRUCTURES AND ALL STRUCTURAL CONCRETE SLABS UNLESS INDICATED OTHERWISE ON PLANS.
3. DO NOT WELD REINFORCEMENT TO PIPE SLEEVES AND INSERTS.
4. PROVIDE A MINIMUM OF 2 "A" BARS AND 2 "B" BARS EACH SIDE OF OPENING (1 EACH FACE).
5. FOR OPENINGS LARGER THAN 8'-0", REINFORCE SAME AS FOR 8'-0" OPENINGS.
6. SPACE AT 3 BAR DIAMETERS (OR 3" MINIMUM) ON CENTER.

**OPENING REINFORCING**  
NTS

0330-001



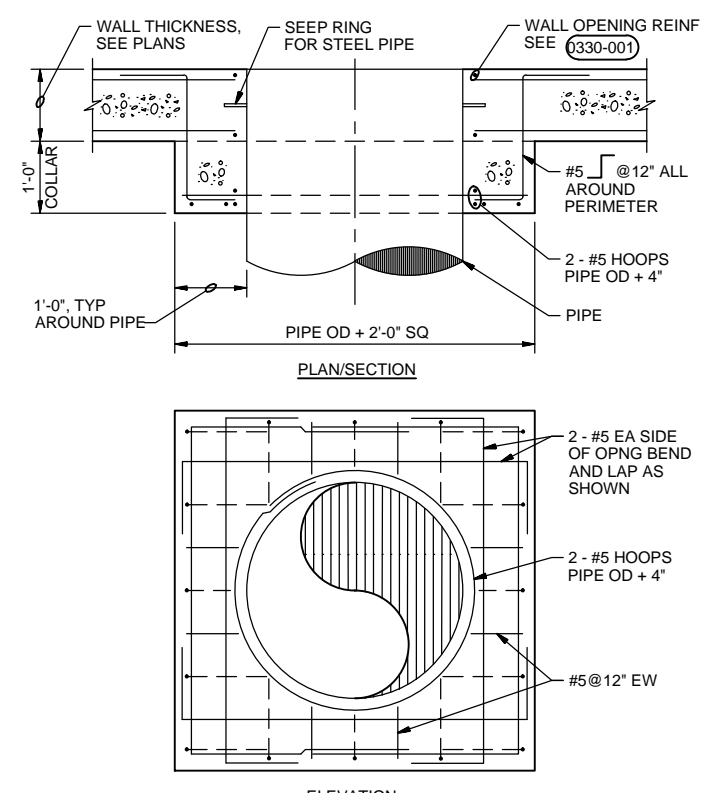
**SINGLE REINFORCING MAT**

**NOTES:**

1. TYPICAL HORIZONTAL WALL CORNER AND INTERSECTION REINFORCING LAYOUT IS SHOWN TO AVOID CONGESTION AND PERMIT PROPER PLACEMENT, FOR SIZE AND SPACING SEE PLANS. ALL HORIZONTAL REINFORCING AT CORNERS AND INTERSECTIONS SHALL BE FABRICATED AND INSTALLED WITH SPLICES LOCATED WHERE SHOWN REGARDLESS OF BAR SIZE AND SPACING.
2. WHERE THE CORNER OR INTERSECTION REINFORCING SIZE AND SPACING IS NOT SHOWN, NOTED OR TABULATED ON THE PLANS, THE SIZE AND SPACING SHALL BE THE SAME AS THE WALL HORIZONTAL REINFORCING SHOWN ON THE WALL SECTIONS OR AS NOTED FOR THE REINFORCING BETWEEN THE CORNERS OR INTERSECTIONS.
3. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 3" SHALL BE THE LESSER OF L/4, 10 FEET, OR 1.0 TIMES THE HEIGHT OF THE WALL, EXCEPT THAT IN NO CASE SHALL IT BE LESS THAN 2 FEET.
4. L = LENGTH OF WALL PARALLEL TO THE BAR LENGTH IN QUESTION.
5. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 5" SHALL BE EQUAL TO ONE "LAP LENGTH" AS REQUIRED BY THE GENERAL STRUCTURAL NOTES. USE THE LAP LENGTH AS REQUIRED FOR THE SMALLER OF THE TWO REINFORCING BARS BEING SPLICED.
6. UNLESS OTHERWISE NOTED, "B" AND "C" BARS ARE THE SAME SIZE AND SPACING AND, "F" AND "G" BARS ARE THE SAME SIZE AND SPACING.

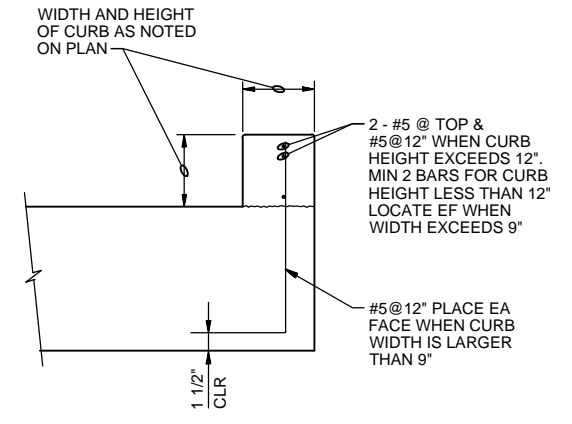
**TYPICAL WALL CORNER AND INTERSECTION REINFORCING**  
NTS

0330-003



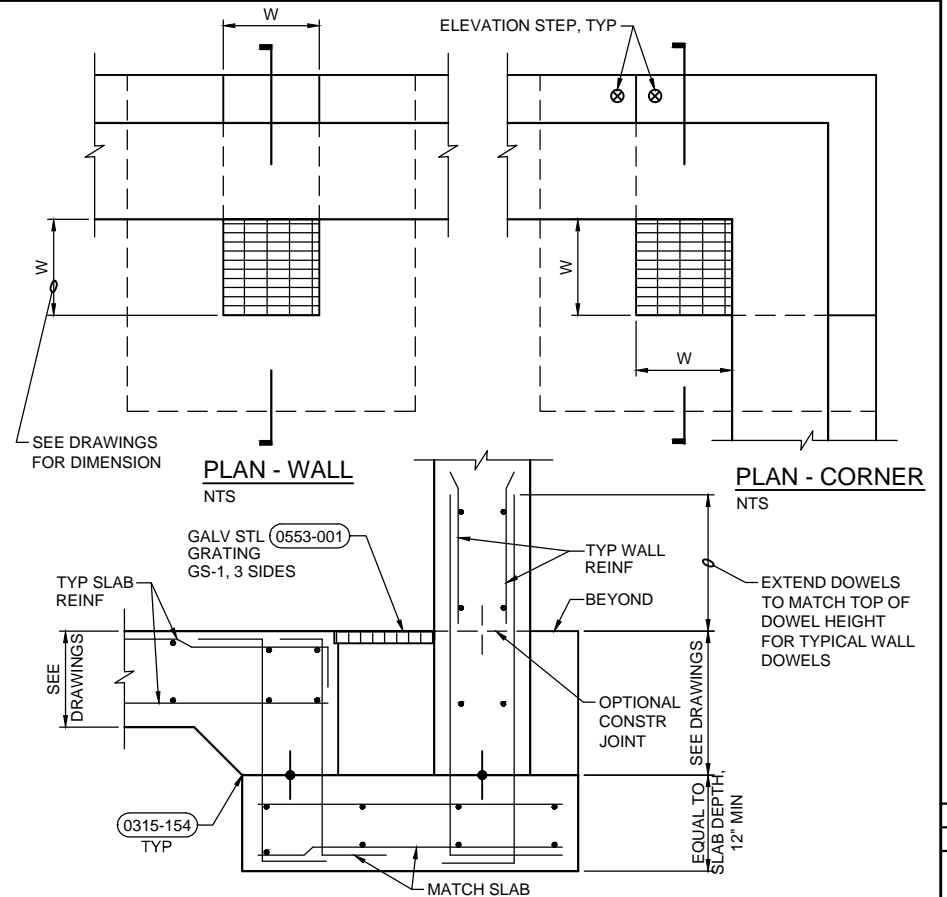
**PIPE COLLAR**  
NTS

0330-021



**CONCRETE CURB**  
NTS

0330-080



**SUMP DETAIL**  
NTS

0330-085



NO.	DATE	DR	REVISION	CHK	BY

**ch2m** STANDARD DETAILS **STA NDARD DETAILS**

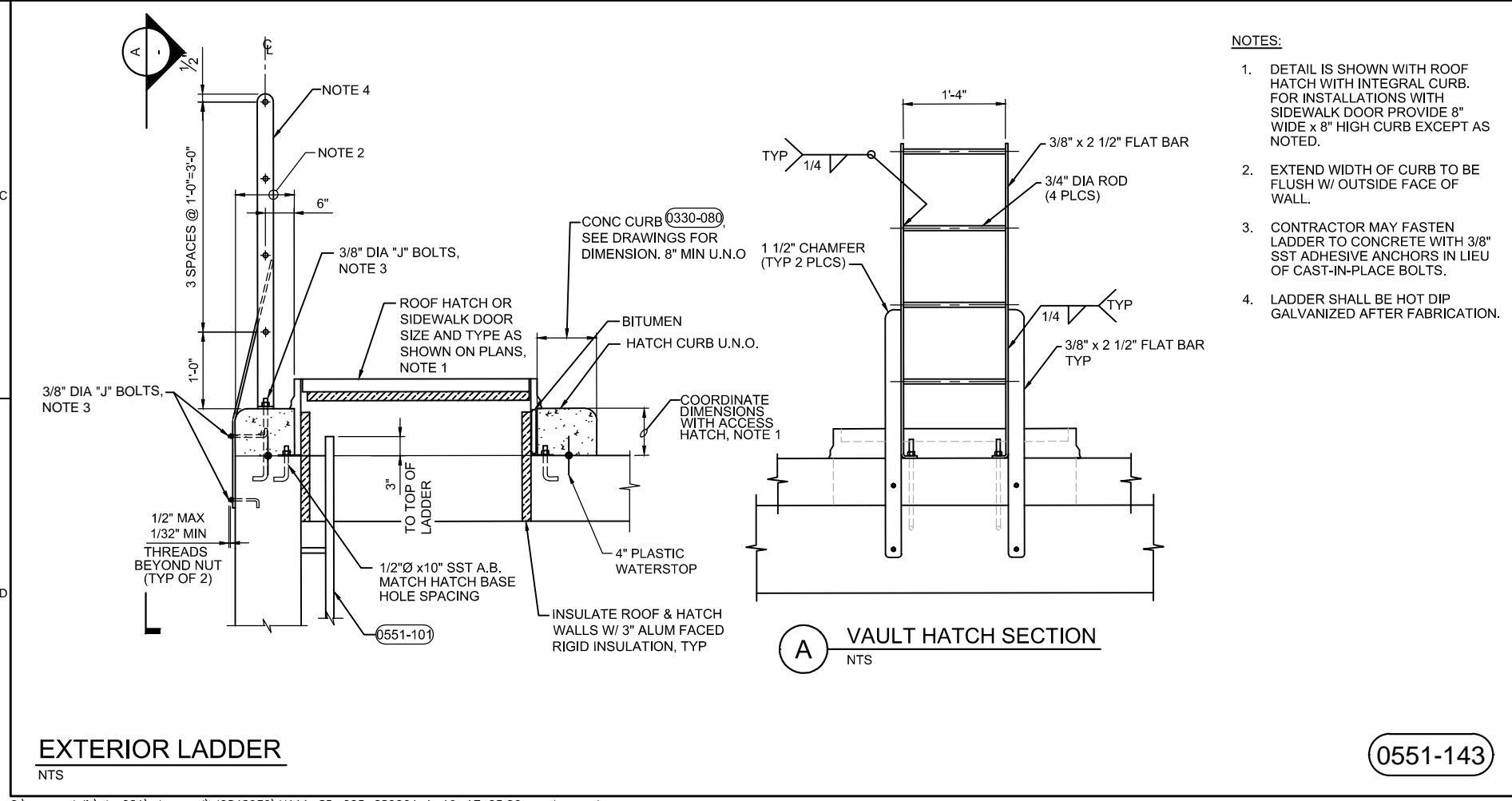
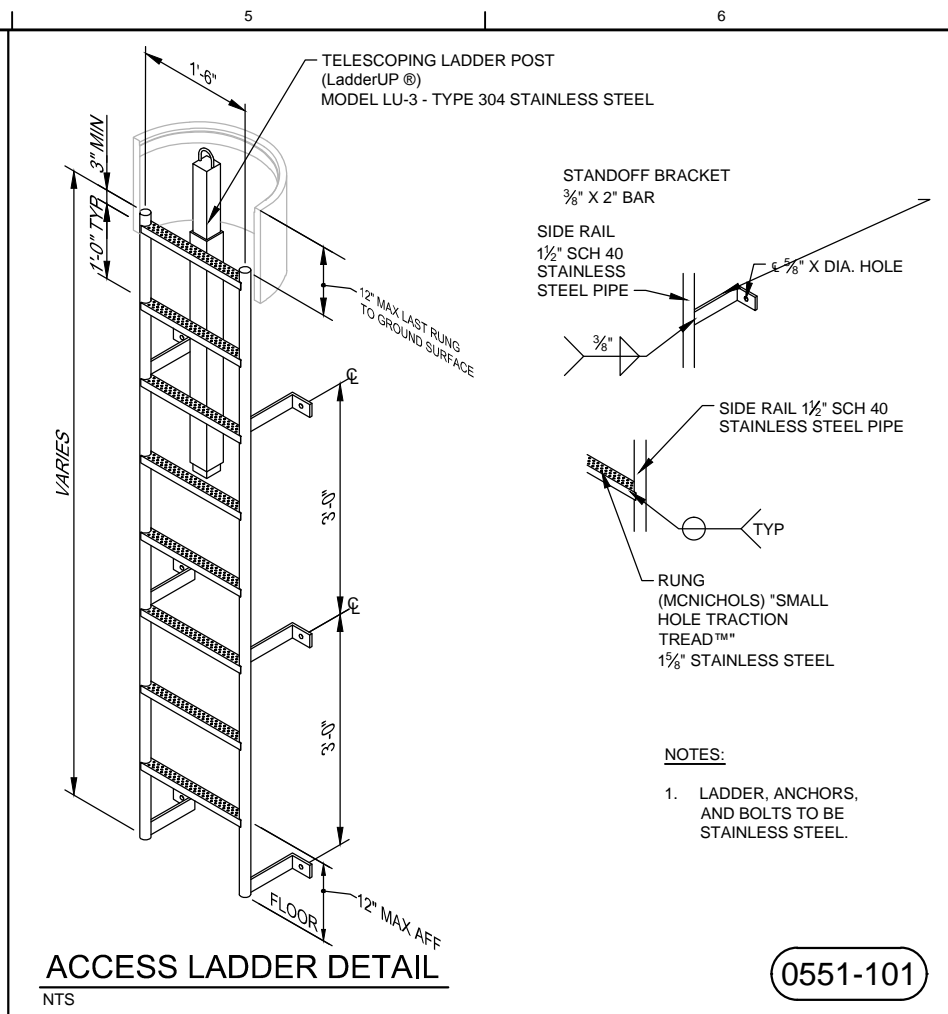
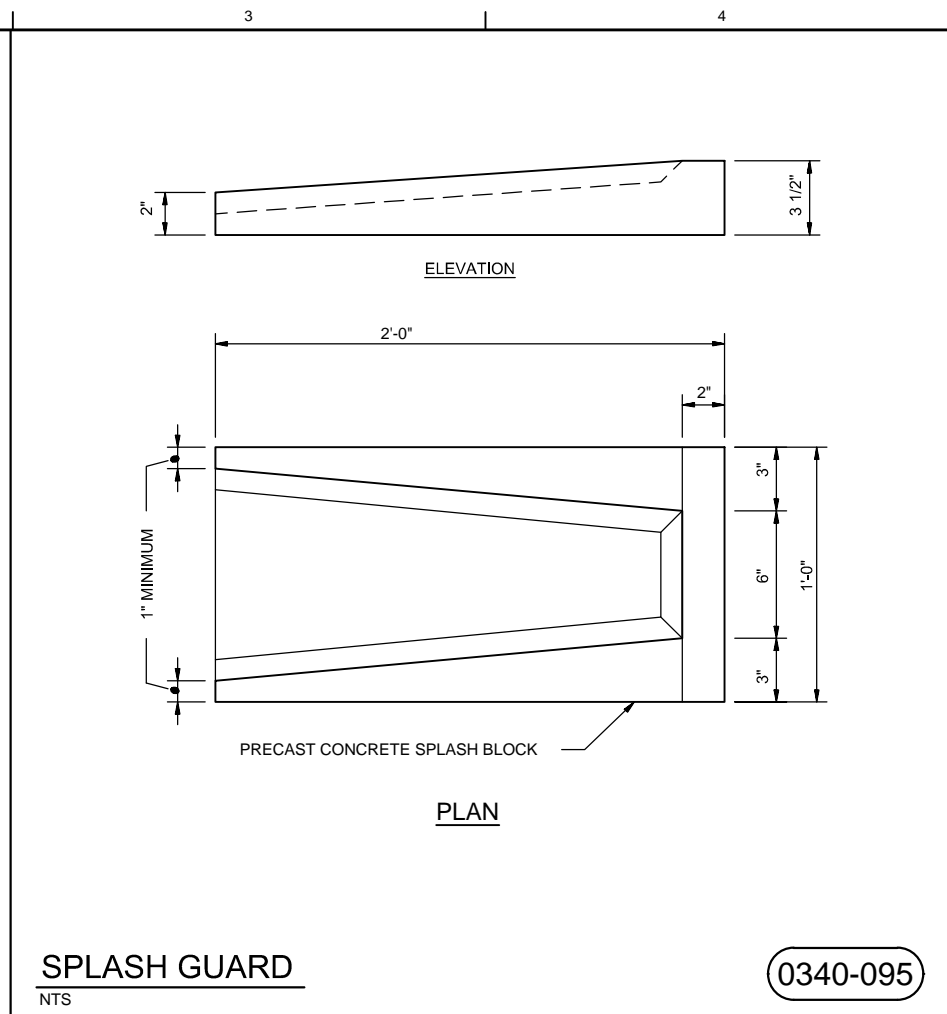
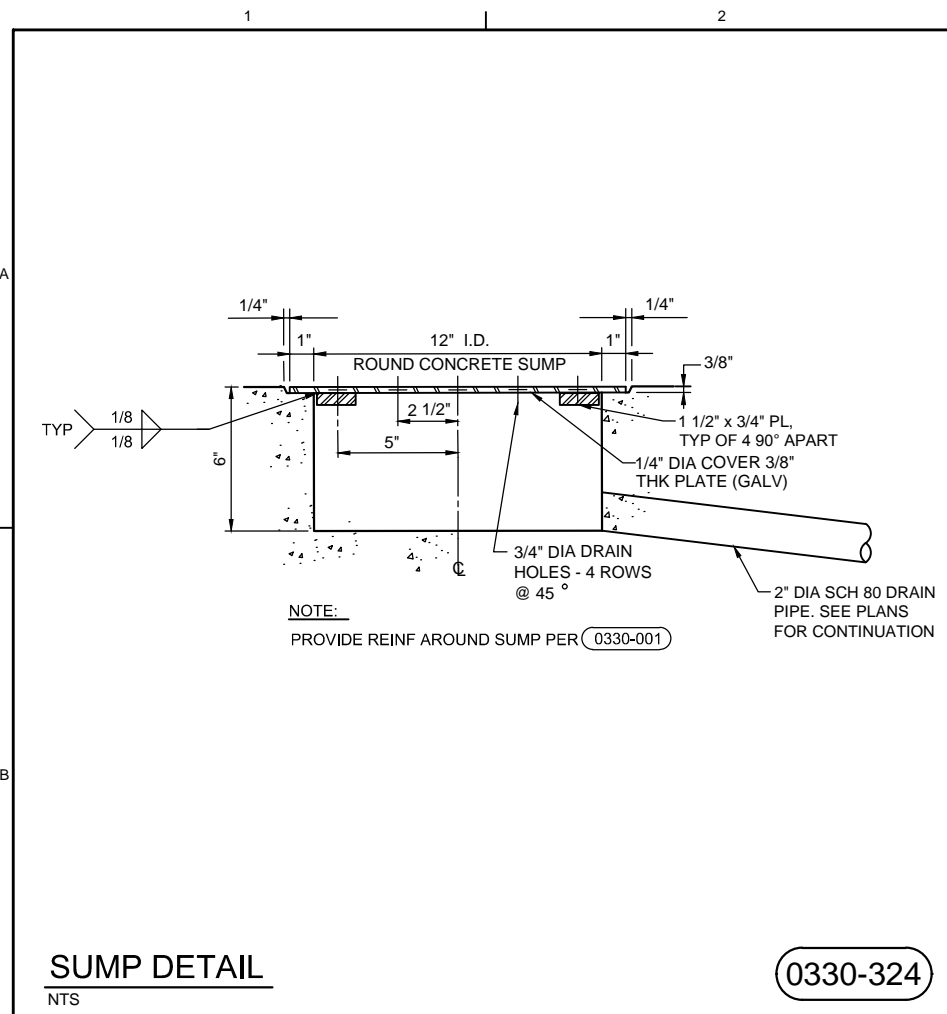
Jordan Valley Water Conservancy District

11800 SOUTH U-111 PROJECT

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE JANUARY 2017  
PROJ 680064  
DWG SD-02  
SHEET of





- NOTES:**
1. DETAIL IS SHOWN WITH ROOF HATCH WITH INTEGRAL CURB. FOR INSTALLATIONS WITH SIDEWALK DOOR PROVIDE 8" WIDE x 8" HIGH CURB EXCEPT AS NOTED.
  2. EXTEND WIDTH OF CURB TO BE FLUSH W/ OUTSIDE FACE OF WALL.
  3. CONTRACTOR MAY FASTEN LADDER TO CONCRETE WITH 3/8" SST ADHESIVE ANCHORS IN LIEU OF CAST-IN-PLACE BOLTS.
  4. LADDER SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.

NO.	DATE	DR	CHK	APVD	BY	APVD

T. PETTY  
A. MURDOCK

**JORDAN VALLEY WATER CONSERVANCY DISTRICT**  
11800 SOUTH U-111 PROJECT

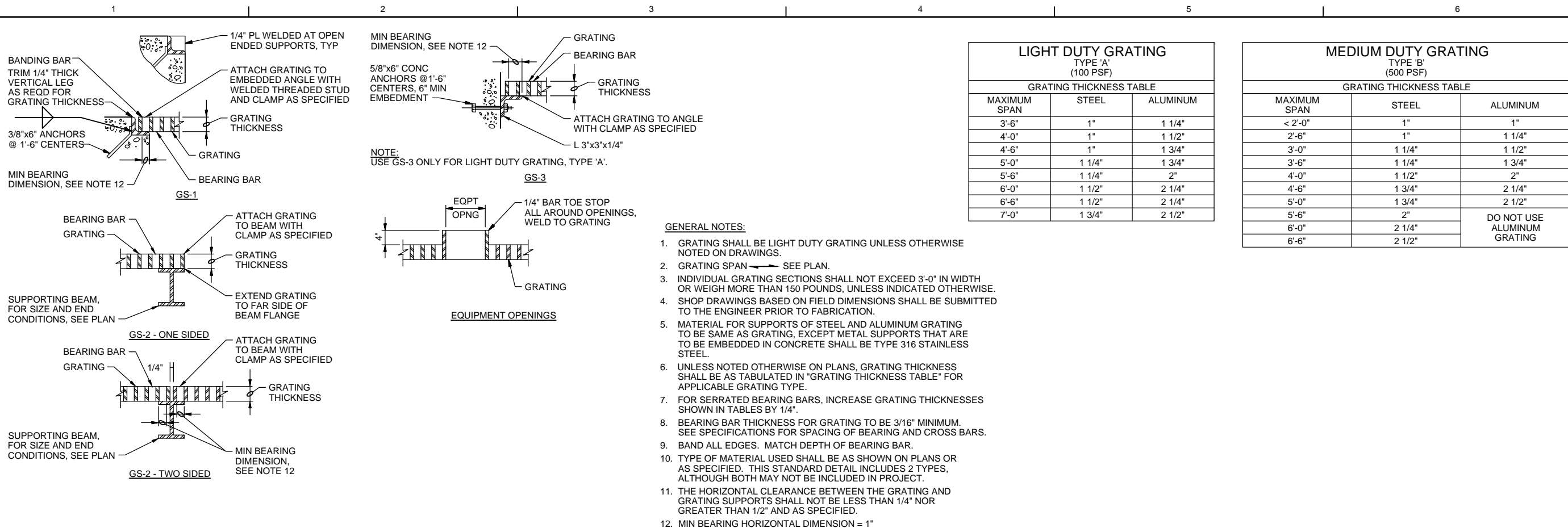
**STANDARD DETAILS**

**ch2m**  
STANDARD DETAILS

VERIFY SCALE  
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DATE	JANUARY 2017
PROJ	680064
DWG	SD-03
SHEET	of

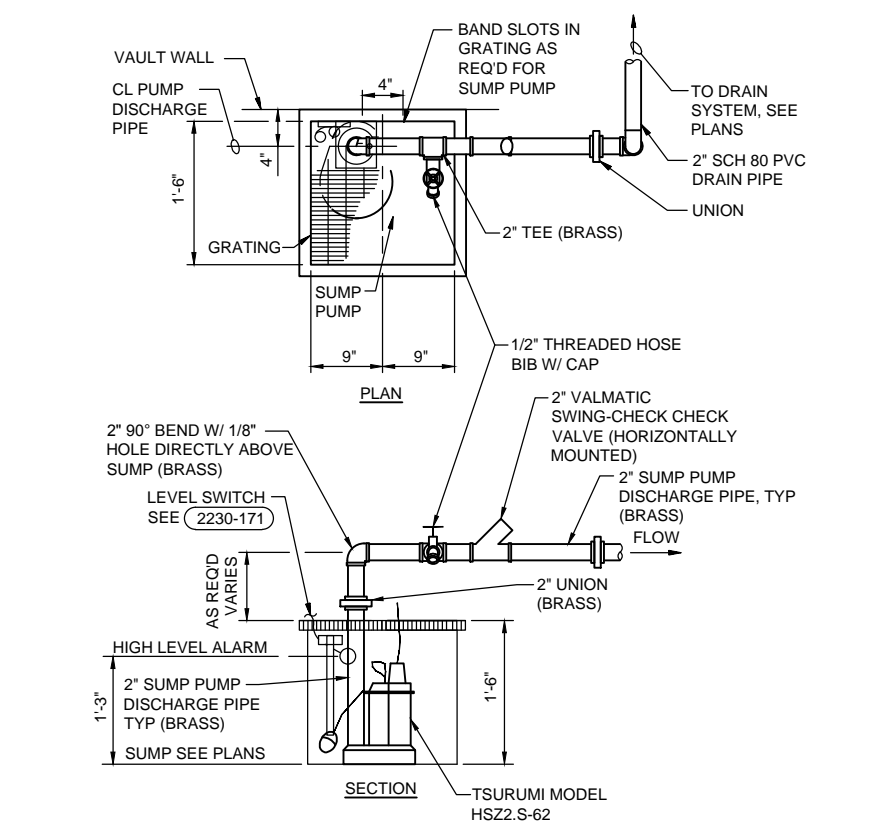




NO.	DATE	DR	CHK	APVD	BY	APVD
		T. PETTY	C. HOGGARD	A. MURDOCK	T. PETTY	

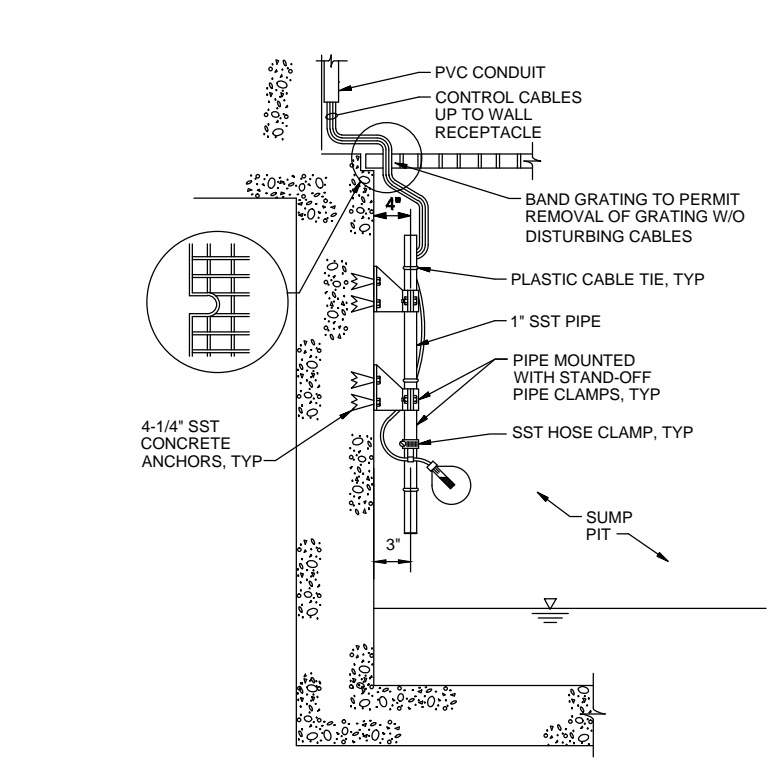
**STANDARD METAL GRATING**  
NTS

0553-001



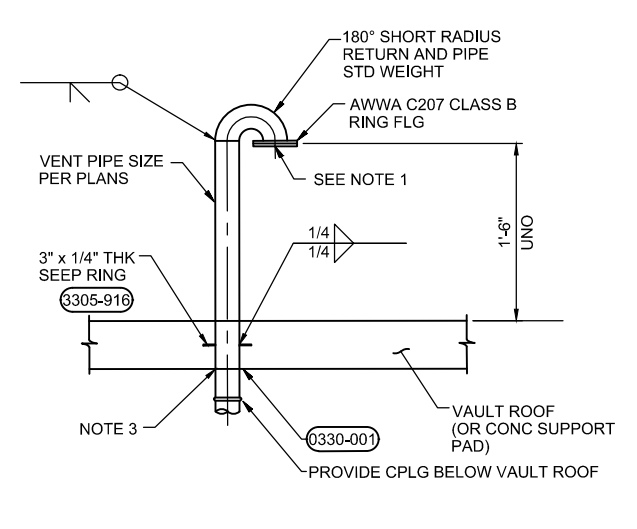
**SUMP PUMP**  
NTS

2230-170



**LEVEL SWITCH SUPPORT BRACKET**  
NTS

2230-171



**NOTES:**

- TYPE 304 SST INSECT SCREEN #14 (MESH), USE AWWA C207 CLASS B RING FLG BOLTED TO FLG ABOVE FOR RETAINER.
- GALV AFTER FABRICATION, EXCEPT SCREEN.
- TERMINATE VENT PIPE AT INSIDE OF STRUCTURE WHERE EXTENSION IS NOT REQUIRED. EXTEND TO EDGE OF ROOF INSULATION WHERE INSULATION IS SHOWN ON DRAWINGS.

**VENT PIPE ASSEMBLY**  
NTS

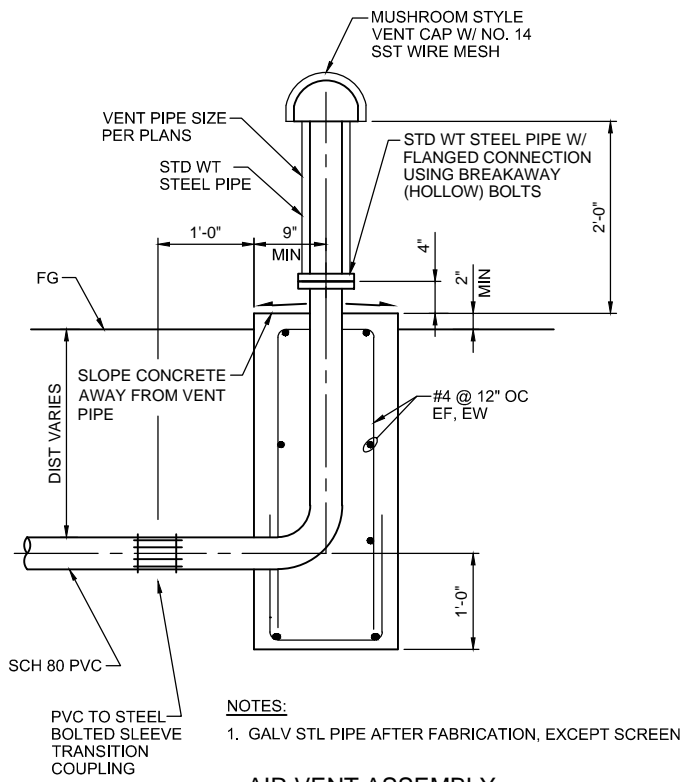
2331-448

JORDAN VALLEY WATER CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

STANDARD DETAILS  
**STANDARD DETAILS**

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JANUARY 2017
PROJ	680064
DWG	SD-04
SHEET	of



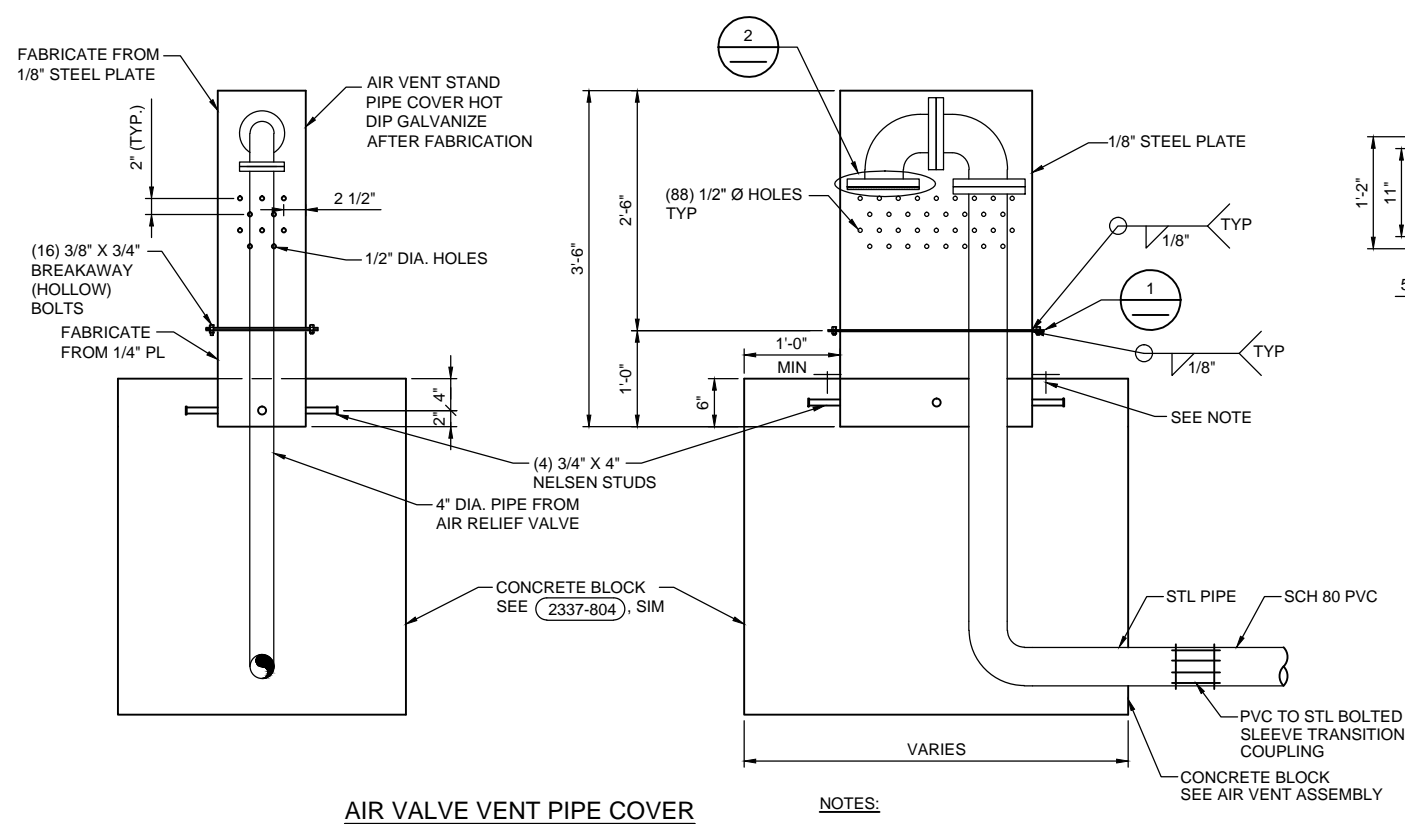


**NOTES:**  
 1. GALV STL PIPE AFTER FABRICATION, EXCEPT SCREEN

**AIR VENT ASSEMBLY**

**AIR VENT ASSEMBLY**  
 NTS

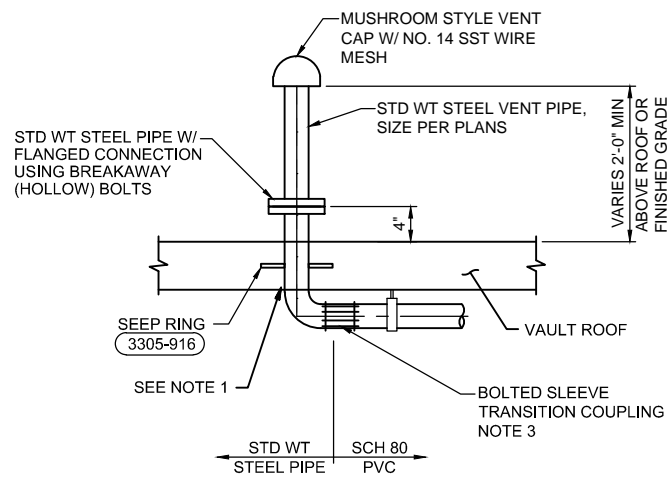
**2337-804**



**NOTES:**  
 1. FOR INSTALLATION ON VAULT ROOF SLAB PROVIDE SINGLE PIECE AND BOLT DIRECTLY TO THE CONCRETE W/ 3/8" DIA CONCRETE SCREW ANCHORS.  
 2. GALVANIZE STEEL PIPE AND COVER AFTER FABRICATION, EXCEPT SCREEN.

**AIR VALVE VENT PIPE ASSEMBLY AND COVER**  
 NTS

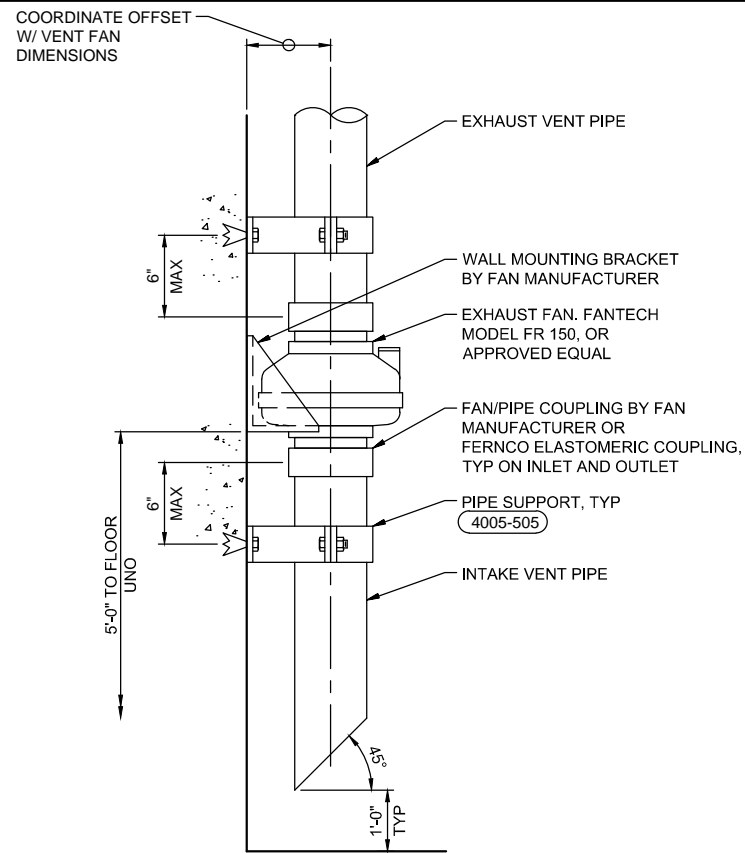
**2337-805**



**NOTES:**  
 1. SEALANT SHALL BE ONE-PART, COLD APPLIED, NON-SAGGING SILICONE SEALANT, DOW CORNING 790, 795, OR EQUAL  
 2. GALV STL PIPE AFTER FABRICATION, EXCEPT SCREEN  
 3. PROVIDE TRANSITION COUPLING AND SCH 80 PVC PIPE WHERE REQD PER PLANS.

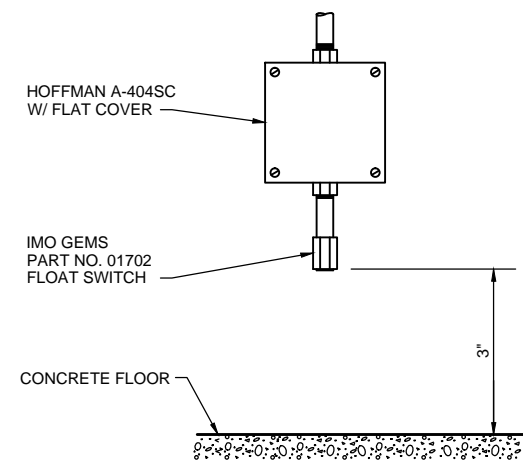
**VENT PIPE ROOF PENETRATION**  
 NTS

**2337-806**



**EXHAUST FAN**  
 NTS

**2337-810**



**TYPICAL LEVEL SWITCH INSTALLATION**  
 NTS

**2605-015**



NO.	DATE	DR	REVISION	CHK	APVD	BY	APVD

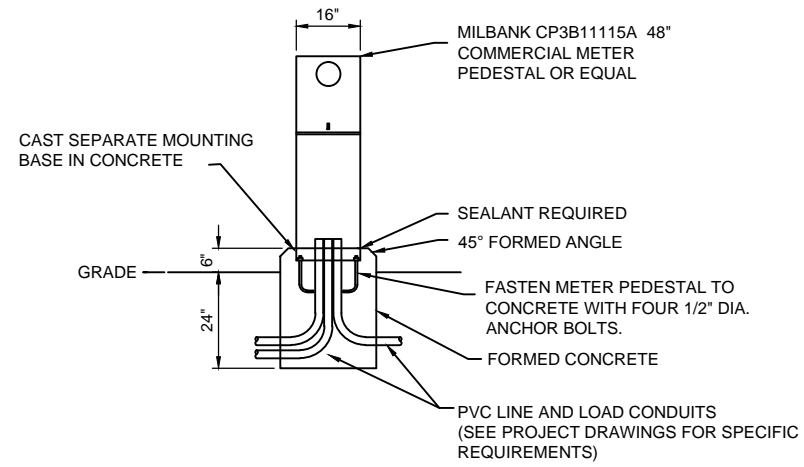
**JORDAN VALLEY WATER CONSERVANCY DISTRICT**  
 11800 SOUTH U-111 PROJECT

**ch2m**  
 STANDARD DETAILS  
**STANDARD DETAILS**

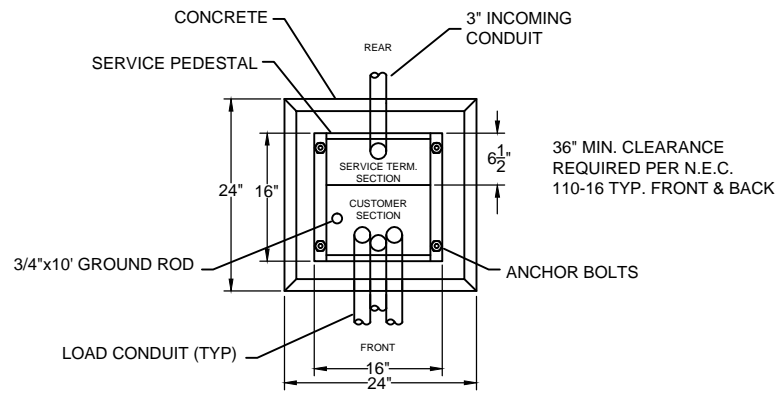
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DATE	JANUARY 2017
PROJ	680064
DWG	SD-05
SHEET	of



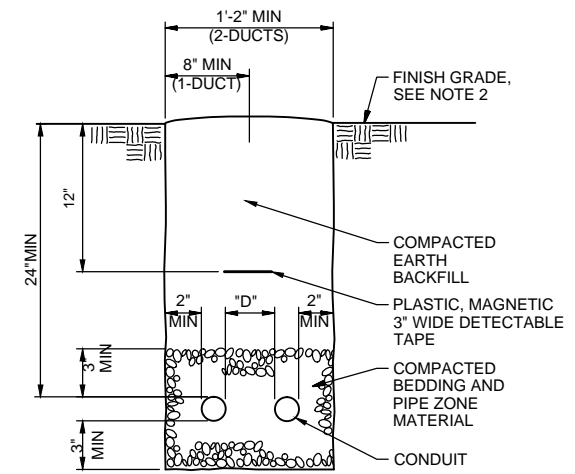
NOTE: PRECAST CONCRETE PEDESTAL WITH HOLLOW CENTER AND EMBEDDED SEPARATE MOUNTING BASE IS ACCEPTABLE.



**ELECTRICAL SERVICE PEDESTAL ELEVATION** (2605-020)  
NTS

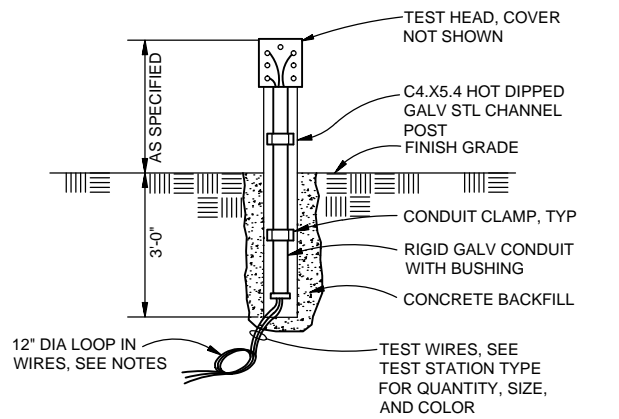


**ELECTRICAL SERVICE PEDESTAL PLAN VIEW** (2605-021)  
NTS



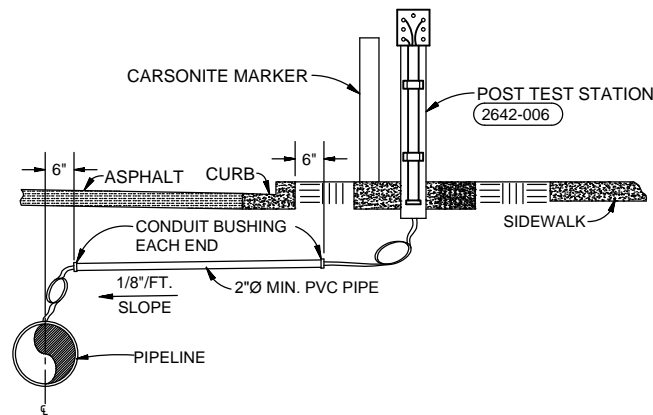
- NOTES:**
1. MINIMUM CLEAR SPACING BETWEEN CONDUITS (D):  
D = 3" MIN FOR 2" AND LARGER CONDUIT  
D = 2" MIN FOR 1 1/2" AND SMALLER CONDUIT
  2. PROVIDE RESTORATION OF EXISTING SURFACE PER DETAIL 811.

**TRENCH AND CONDUIT PLACEMENT** (2605-400)  
NTS



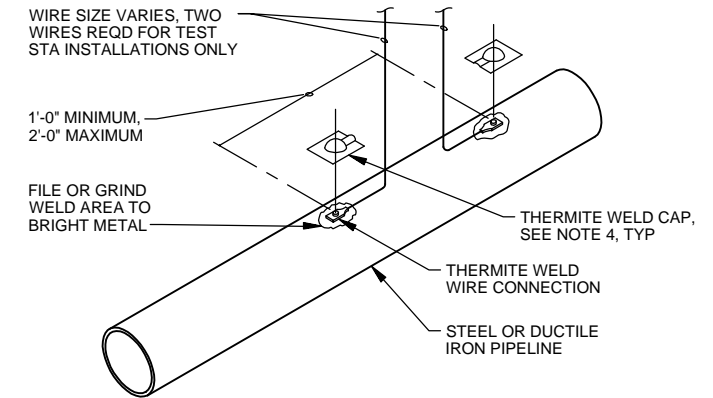
- NOTES:**
1. TEST STATION TO BE ALUMINUM BODY AND LID WITH THREADED CONNECTION FOR CONDUIT.
  2. QUANTITY OF TERMINALS AND WIRING CONNECTIONS VARIES, SEE APPLICABLE TEST STATION DETAILS FOR TYPE OF STATION REQUIRED.
  3. PROVIDE WIRE LOOP AT BASE OF POST MOUNTED TEST STATION TO MINIMIZE SETTLEMENT STRESSES ON WIRE

**POST STYLE, STEEL POST** (2642-006)  
NTS



- NOTES:**
1. FOR POST MOUNT ALTERNATIVE SEE POST MOUNT DETAIL.
  2. ALL PVC PIPE JOINTS TO BE SOLVENT WELDED.
  3. PLACE WIRES IN PVC PIPE.
  4. ALL WIRES USED FOR RELOCATION WILL BE SPLICED USING THE SAME COLOR CODE AS EXISTING WIRES, AND THE SAME TYPE WIRE.

**ROADWAY TEST STATION OFFSET** (2642-009)  
NTS



- NOTES:**
1. COPPER SLEEVE REQUIRED FOR THERMITE WELDING OF #10 AWG AND SMALLER WIRE.
  2. USE COPPER SLEEVE ON #2 AWG JOINT BONDING WIRES.
  3. WELDER AND CARTRIDGE SIZE VARIES ACCORDING TO WIRE SIZE AND PIPE MATERIAL, CONSULT WELDER MANUFACTURER FOR RECOMMENDED WELDER AND CARTRIDGE.
  4. APPLY THERMITE WELD CAP AS SPECIFIED.
  5. AFTER THERMITE WELD COMPLETION, AT ALL POINTS LAP THERMITE WELD CAP 2" MIN OVER UNDAMAGED COATINGS AND HOLIDAY TEST.

**WIRE CONNECTION FOR STEEL OR DUCTILE IRON PIPE** (2642-012)  
NTS



NO.	DATE	DR	REVISION	CHK	BY
DSGN					

JORDAN VALLEY WATER CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

**ch2m**  
STANDARD DETAILS  
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VERIFY SCALE  
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DATE: JANUARY 2017  
PROJ: 680064  
DWG: SD-06  
SHEET: of



CATHODIC PROTECTION CURRENT REQUIREMENT  
11800 SOUTH U-111 PIPELINE  
JORDAN VALLEY WATER CONSERVANCY DISTRICT

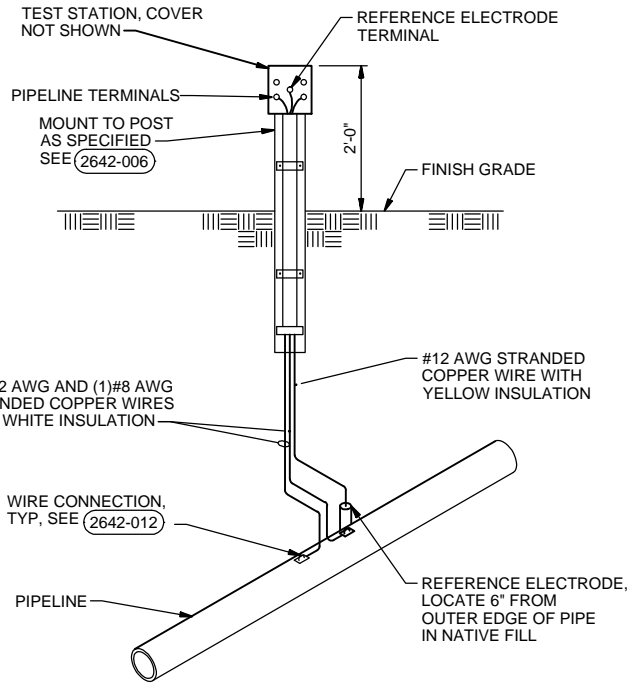
CATHODIC PROTECTION SCHEDULE		
STATION	DETAIL	COMMENTS
2+00	2642-825	OVER WSP, FLUSH MOUNT
12+00	2642-801	2' NORTH OF ROW
23+10	2642-801	NEAR MANWAY VAULT, SOUTH SIDE
33+75	2642-801	2' NORTH OF ROW
45+15	2642-801	NEAR TURNOUT VAULT, SOUTH SIDE
58+00	2642-801	NEXT TO POWER POLE
64+60	2642-801	NEAR MANWAY VAULT, SOUTH SIDE
74+75	2642-801	2' NORTH OF ROW
84+75	2642-801	NEAR AIR VALVE VAULT, SOUTH SIDE
97+00	2642-801	HERRIMAN CITY TURNOUT VAULT, NORTH SIDE
105+00	2642-801	NEAR PRV VAULT
106+00	2642-815	RECTIFIER W/ ANODE BED. SEE DRAWING C-02
116+00	2642-801	2' SOUTH OF FENCE
126+00	2642-801	OVER WSP
136+90	2642-801	EAST OF AIR VALVE VAULT
145+00	2642-801	OVER WSP
155+50	2642-825	OVER WSP, FLUSH MOUNT
166+35	2642-801	NORTH OF MANWAY VAULT NEAR VENT PIPES
177+00	2642-801	OVER WSP
189+00	2642-801	SOUTH OF AIR VALVE VAULT
198+30	2642-801	OVER WSP
209+95	2642-801	8' EAST OF MANWAY VAULT NEAR VENTS
220+00	2642-825	2' WEST (INSIDE) OF EOA, FLUSH MOUNT
226+00	2642-801	2' SOUTH OF VAULT OVER PIPE
310+32	2642-803	2' WEST OF VAULT NEAR NORTH SIDE
310+62	2642-803	2' EAST OF VAULT NEAR NORTH SIDE

NOTES:  
1. TEST STATION LOCATION IS APPROXIMATE. LOCATE TEST STATION TO ACCOMMODATE EXST SITE CONDITIONS AND AS DIRECTED BY THE ENGINEER.

CATHODIC PROTECTION SCHEDULE

NTS

2642-800

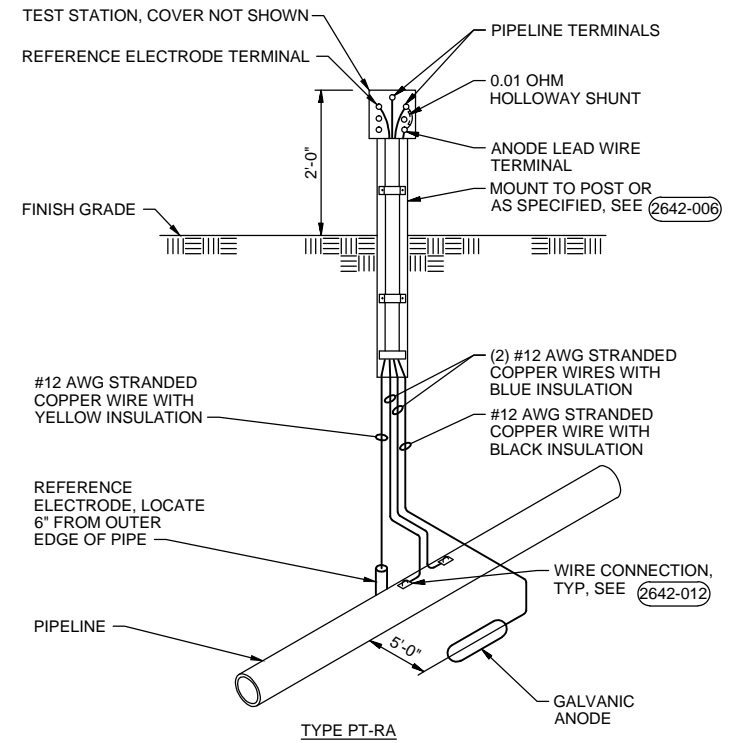


TYPE PT-R

POST MOUNTED TEST STATION

NTS

2642-801



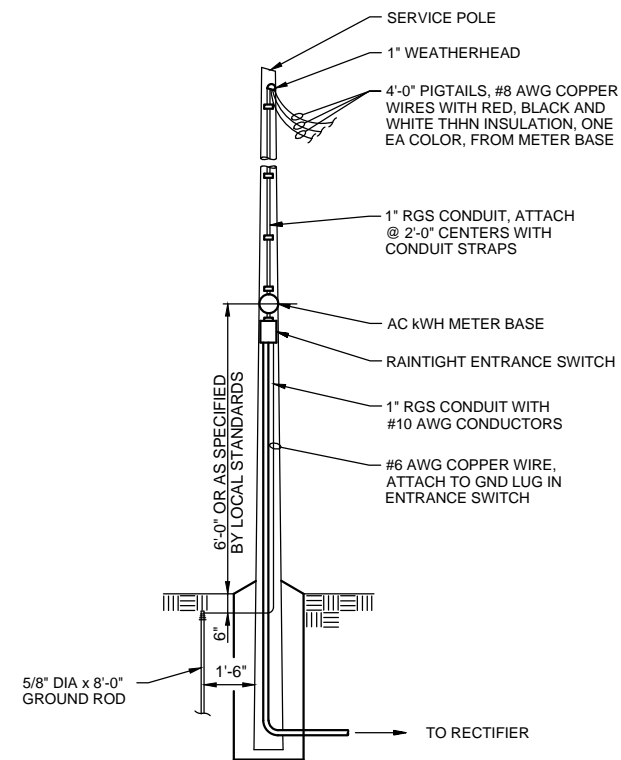
TYPE PT-RA

NOTES:  
1. INSTALL GALVANIC ANODE 1'-0" BELOW PIPE INVERT ELEVATION.

POST MOUNTED TEST STATION

NTS

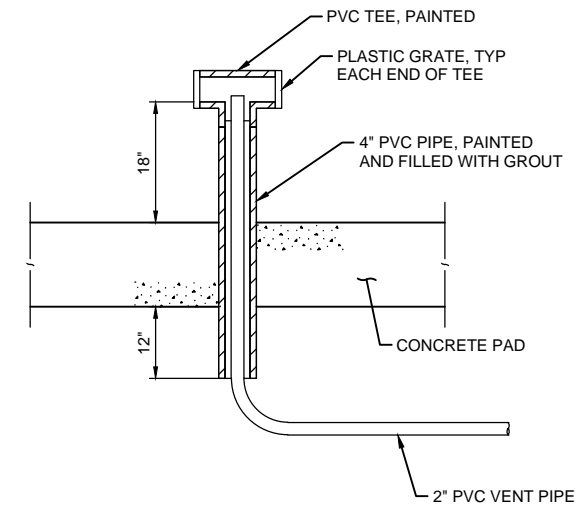
2642-803



UTILITY POWER SERVICE INSTALLATION  
FOR CATHODIC PROTECTION

NTS

2642-810



VENT PIPE HOUSING

NTS

2642-811



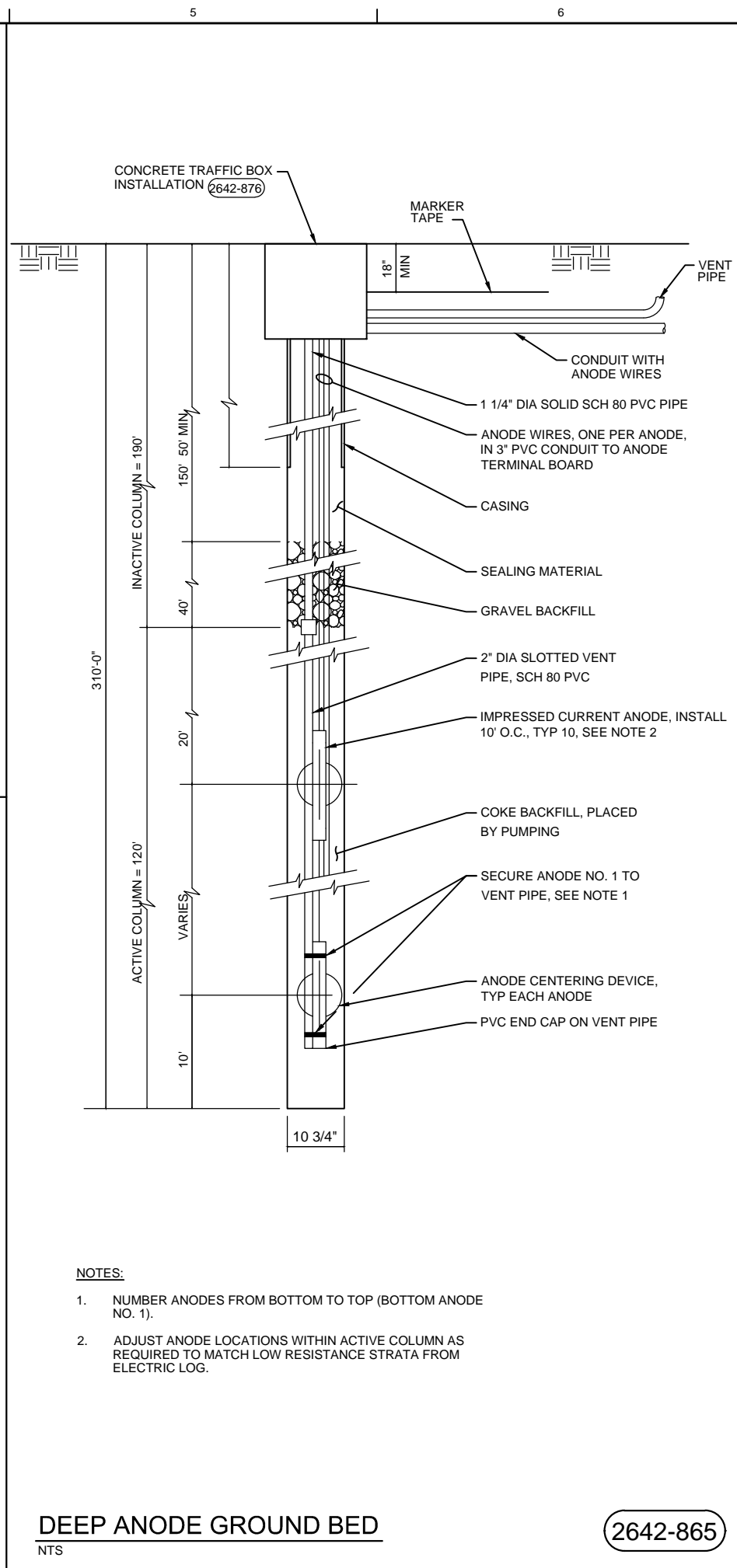
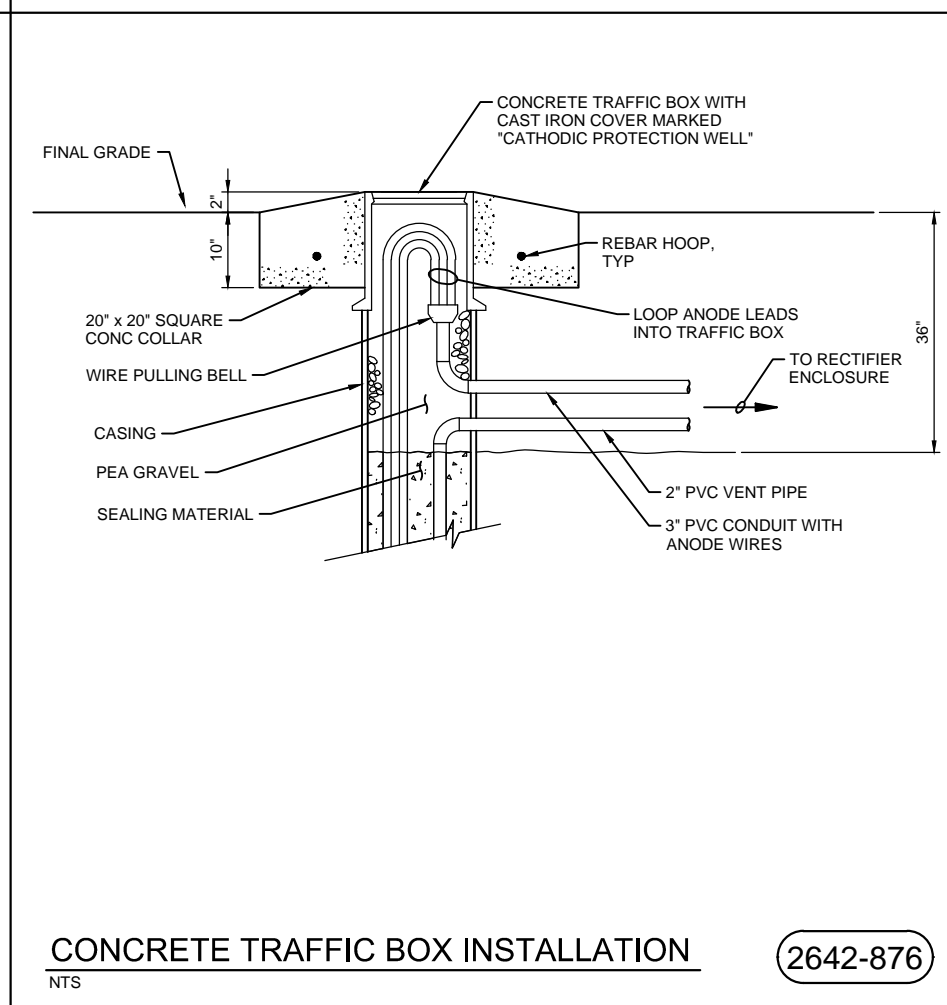
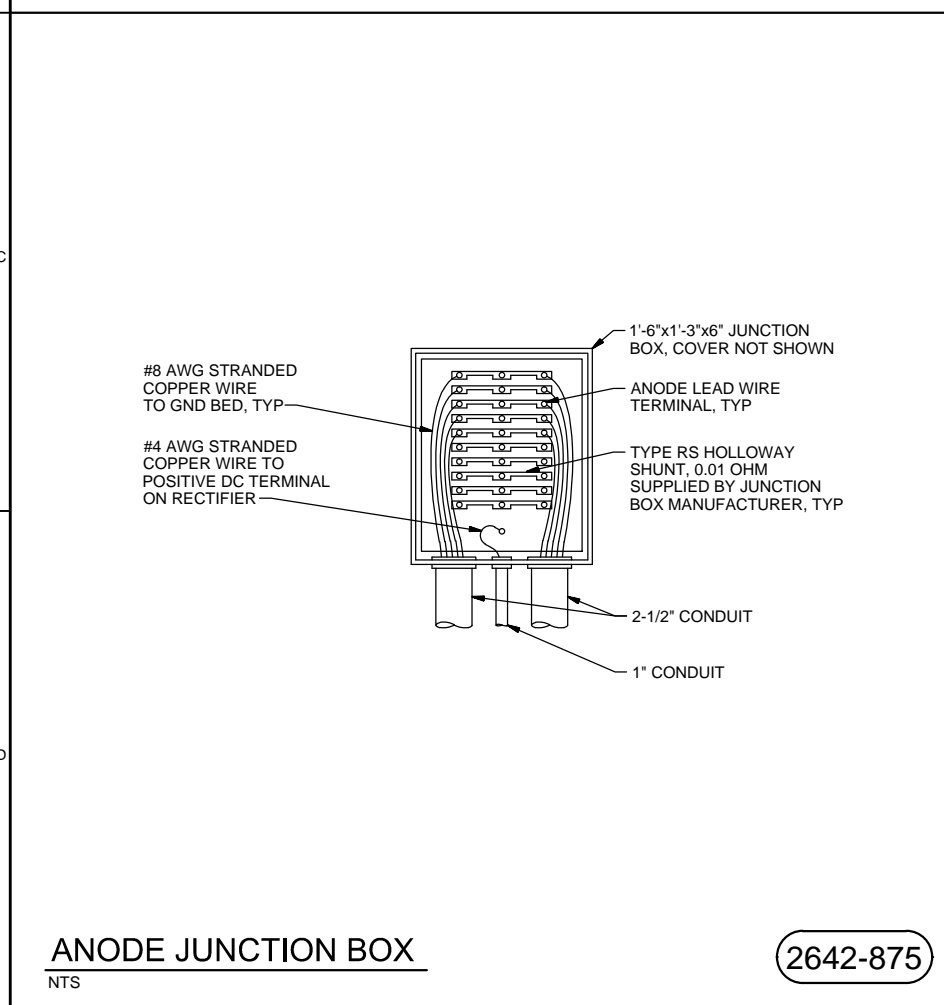
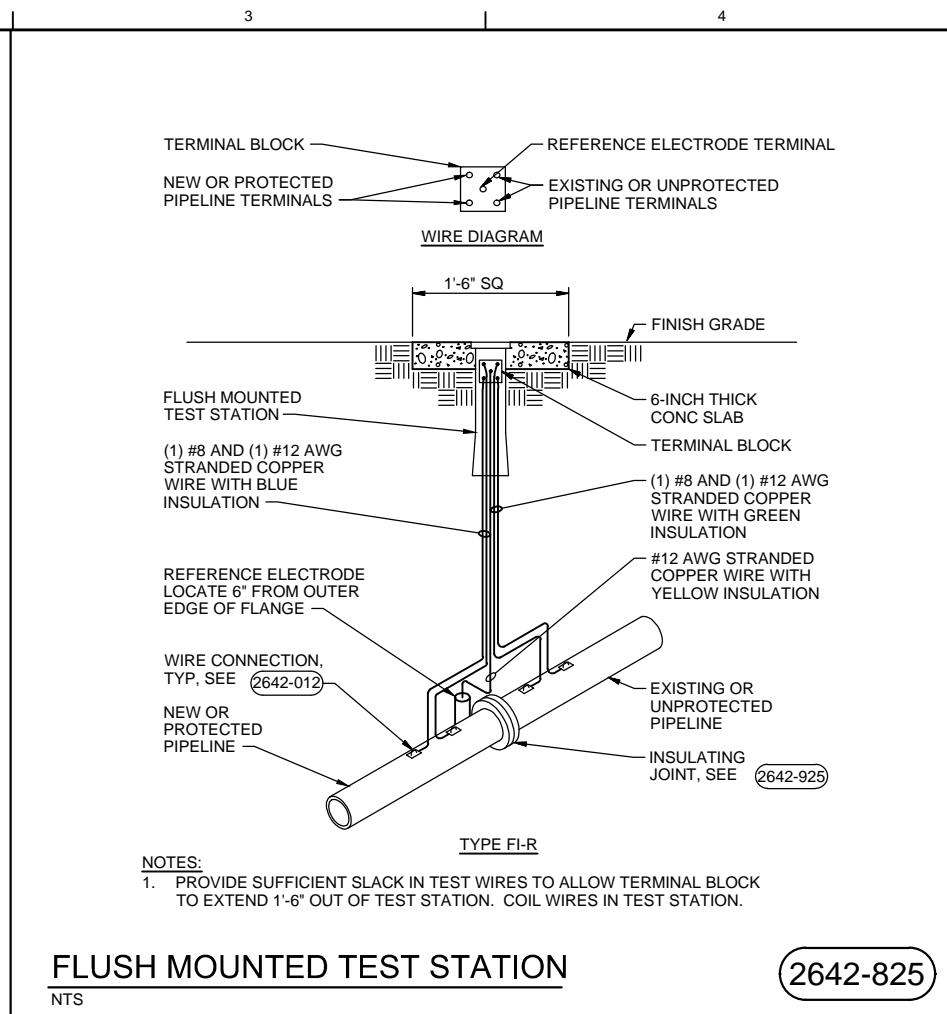
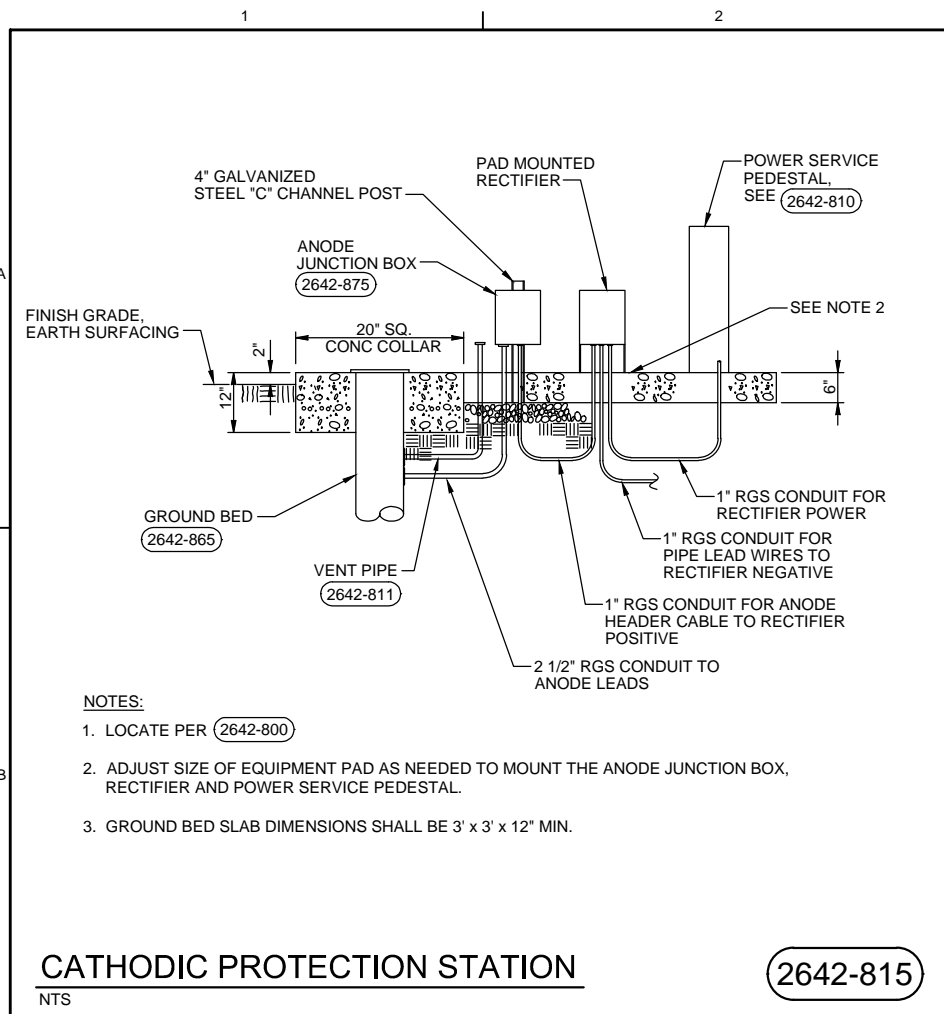
NO.	DATE	DR	CHK	REVISION	BY

JORDAN VALLEY WATER  
CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

**ch2m**  
STANDARD DETAILS  
STANDARD DETAILS

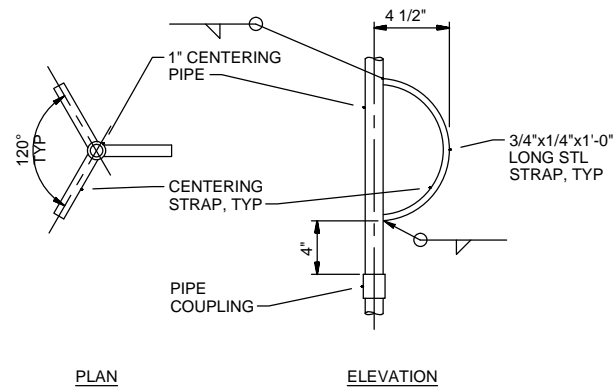
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DATE	JANUARY 2017
PROJ	680064
DWG	SD-07
SHEET	of





NO.	DATE	DR	CHK	APVD	BY	APVD	BY	APVD	BY	APVD	BY
<b>ch2m</b> STANDARD DETAILS <b>STANDARD DETAILS</b>											
JORDAN VALLEY WATER CONSERVANCY DISTRICT 11800 SOUTH U-111 PROJECT											
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DATE: JANUARY 2017 PROJ: 680064 DWG: SD-08 SHEET: of											

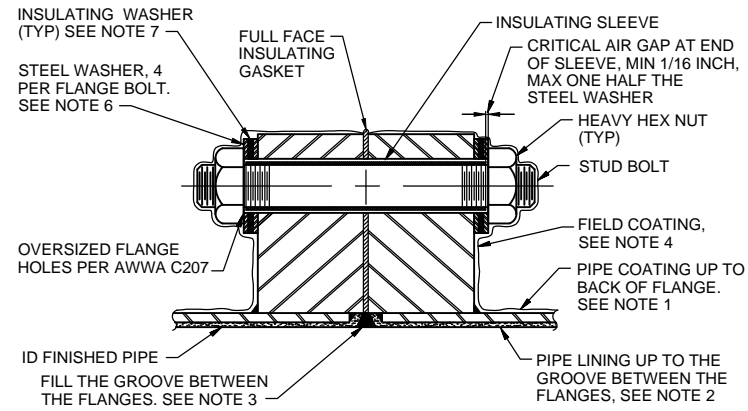




**CENTERING DEVICE**

NTS

2642-877



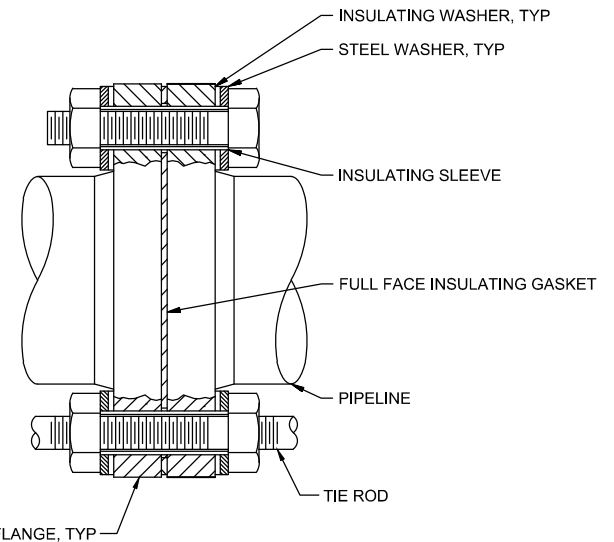
**NOTES:**

1. THE PIPE COATING ON EACH SIDE OF THE INSULATED FLANGE SHALL BE THE SAME IN TYPE, THICKNESS, AND QUALITY UP TO THE BACK SIDE OF THE RESPECTIVE FLANGE.
2. THE LINING ON THE PIPE SHALL BE THE SAME IN TYPE, THICKNESS, AND QUALITY UP TO THE INSULATED FLANGE JOINT.
3. FOR PIPE LARGER THAN 24 INCH DIAMETER, FILL THE INSULATED FLANGE'S INTERNAL GAP WITH A MATERIAL COMPATIBLE WITH THE PIPE LINING.
4. COAT JOINTS AS SPECIFIED AFTER INSTALLATION.
5. SEE 2642-927 FOR INSULATED BOLTS AT TAPPED VALVE FLANGES.
6. FOR PIPE SMALLER THAN 36 INCH DIAMETER DELETE INNER STEEL WASHERS.
7. FOR BURIED OR SUBMERGED INSULATING FLANGE, DO NOT INSTALL INSULATING WASHER ON PROTECTED SIDE OF FLANGE.

**INSULATED FLANGES**

NTS

2642-925



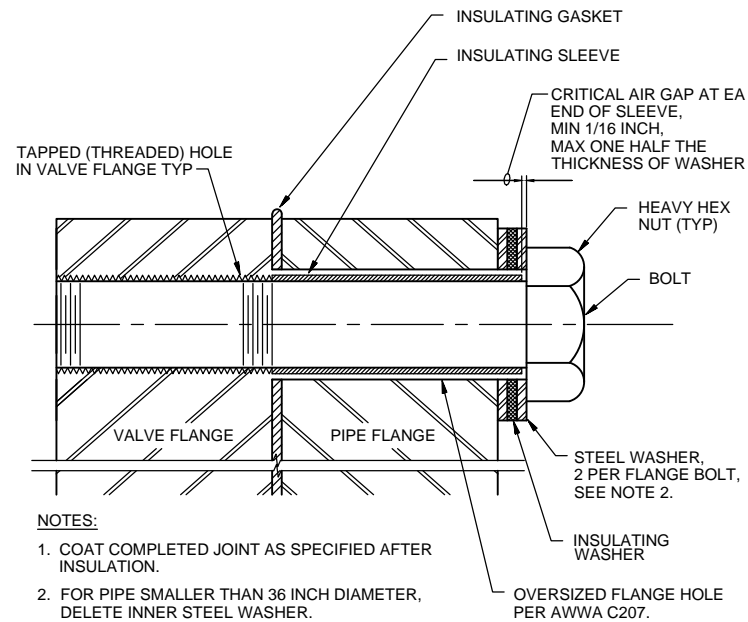
**NOTES:**

1. FOR INSULATING BOLTS AT TAPPED VALVE FLANGES SEE 2642-927.
2. PROVIDE STUDS AND INSULATING COMPONENTS AS SHOWN IN 2642-925.

**INSULATING FLANGE AND TIE ROD FOR DISMANTLING JOINT**

NTS

2642-926



**NOTES:**

1. COAT COMPLETED JOINT AS SPECIFIED AFTER INSULATION.
2. FOR PIPE SMALLER THAN 36 INCH DIAMETER, DELETE INNER STEEL WASHER.

**INSULATING BOLTS AT TAPPED VALVE FLANGES**

NTS

2642-927



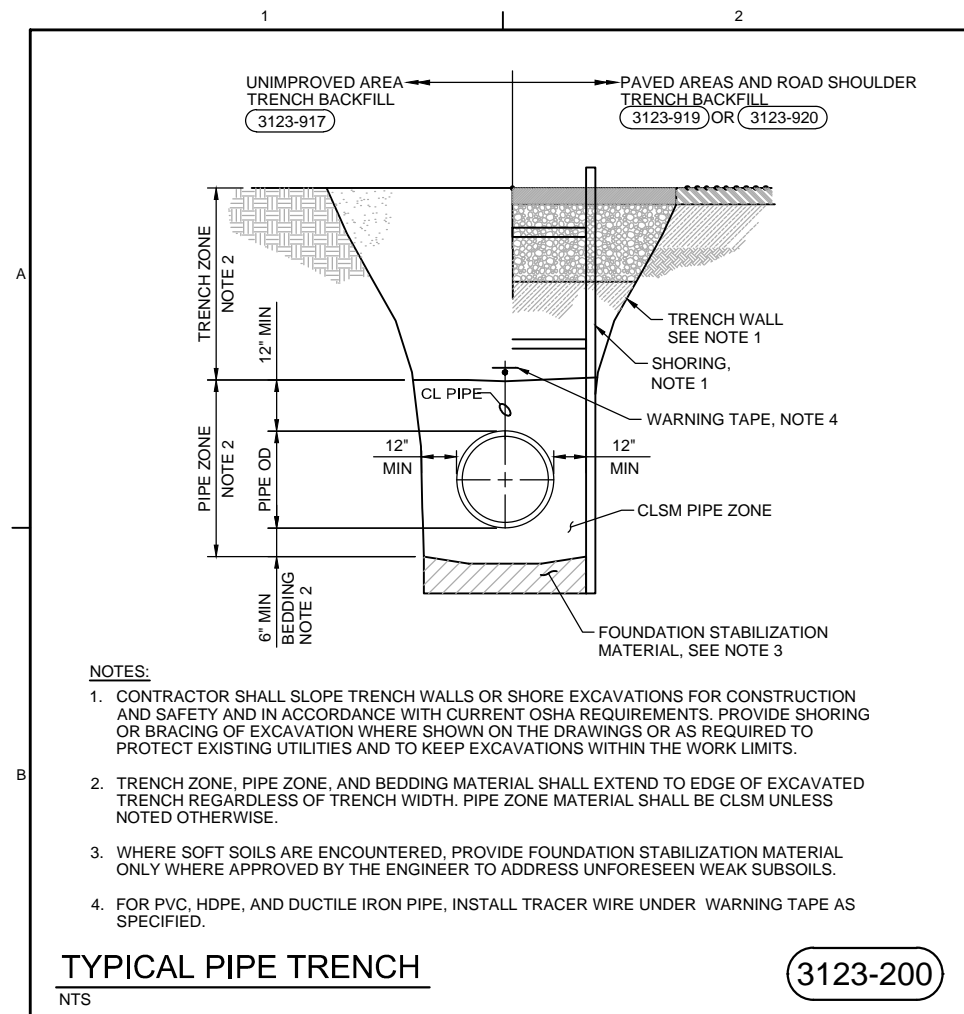
NO.	DATE	DR	CHK	APVD	BY	APVD
		R. WILLEITNER	A. MURDOCK			R. WILLEITNER

JORDAN VALLEY WATER CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

STANDARD DETAILS  
STANDARD DETAILS

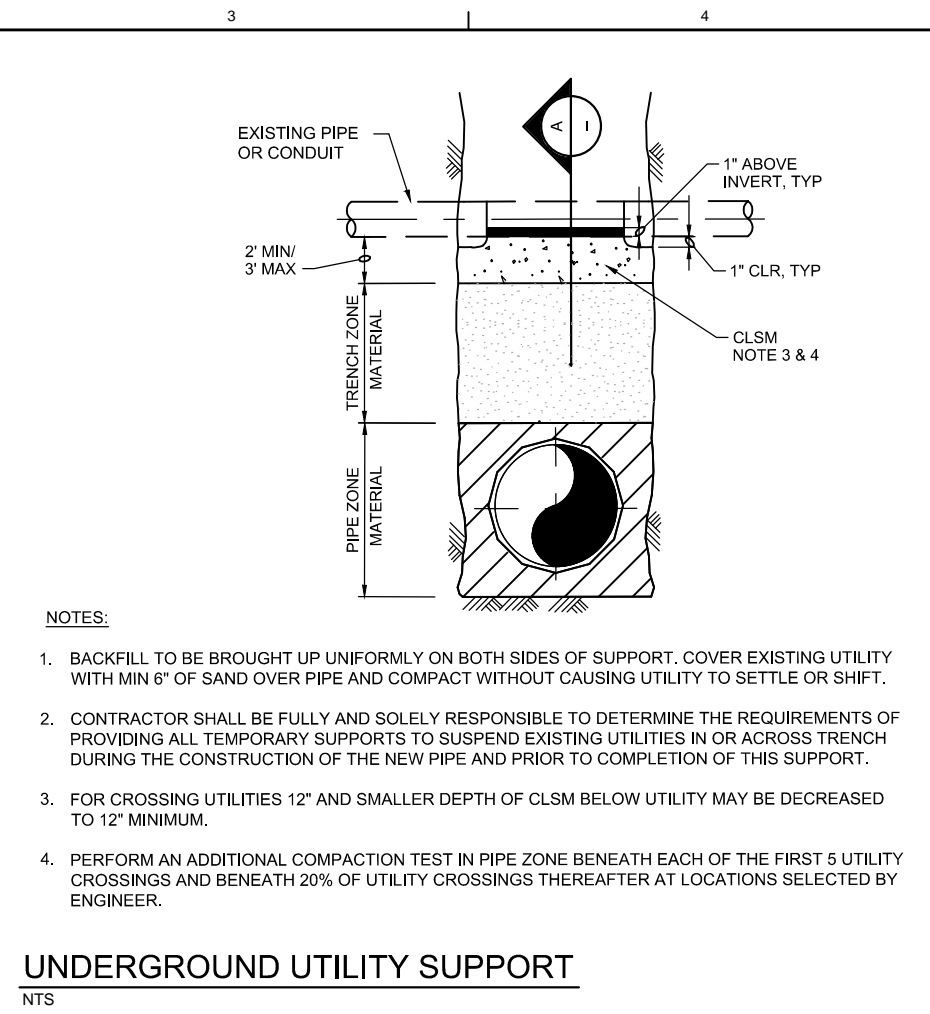
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DATE	JANUARY 2017
PROJ	680064
DWG	SD-09
SHEET	of





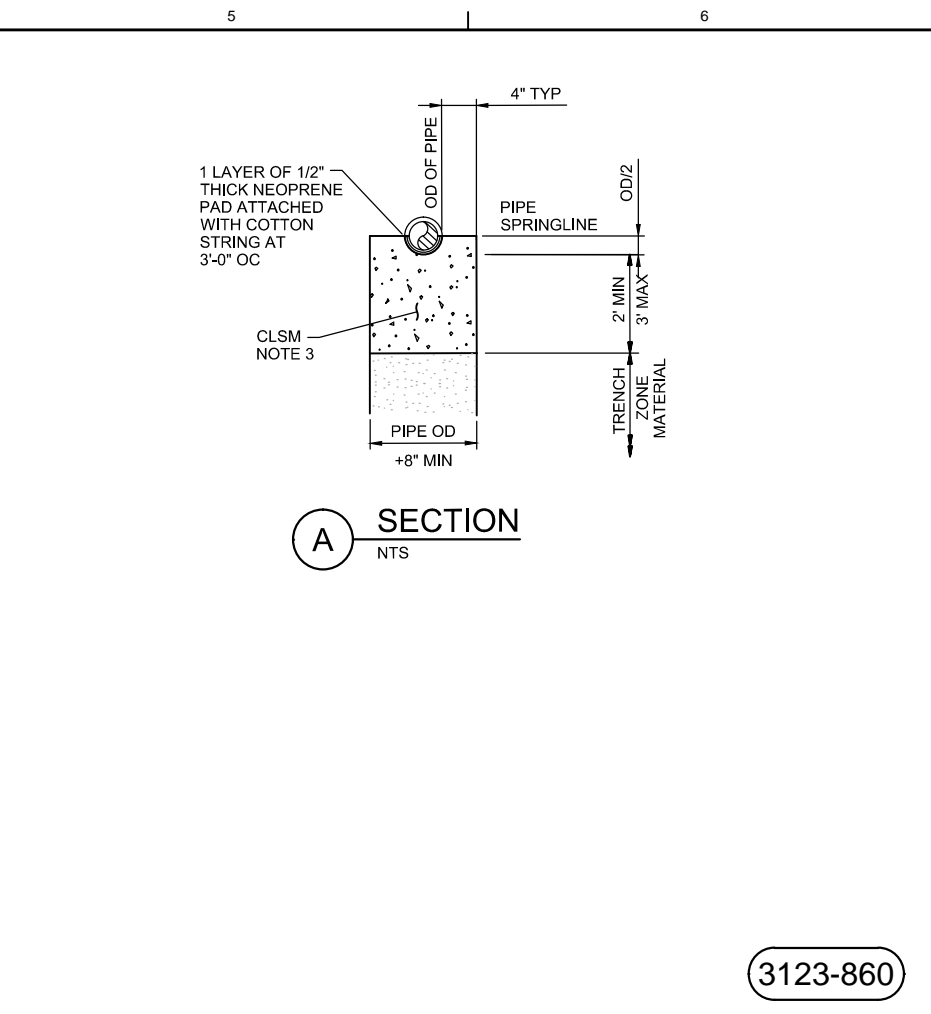
- NOTES:**
- CONTRACTOR SHALL SLOPE TRENCH WALLS OR SHORE EXCAVATIONS FOR CONSTRUCTION AND SAFETY AND IN ACCORDANCE WITH CURRENT OSHA REQUIREMENTS. PROVIDE SHORING OR BRACING OF EXCAVATION WHERE SHOWN ON THE DRAWINGS OR AS REQUIRED TO PROTECT EXISTING UTILITIES AND TO KEEP EXCAVATIONS WITHIN THE WORK LIMITS.
  - TRENCH ZONE, PIPE ZONE, AND BEDDING MATERIAL SHALL EXTEND TO EDGE OF EXCAVATED TRENCH REGARDLESS OF TRENCH WIDTH. PIPE ZONE MATERIAL SHALL BE CLSM UNLESS NOTED OTHERWISE.
  - WHERE SOFT SOILS ARE ENCOUNTERED, PROVIDE FOUNDATION STABILIZATION MATERIAL ONLY WHERE APPROVED BY THE ENGINEER TO ADDRESS UNFORESEEN WEAK SUBSOILS.
  - FOR PVC, HDPE, AND DUCTILE IRON PIPE, INSTALL TRACER WIRE UNDER WARNING TAPE AS SPECIFIED.

**TYPICAL PIPE TRENCH** (3123-200)  
NTS



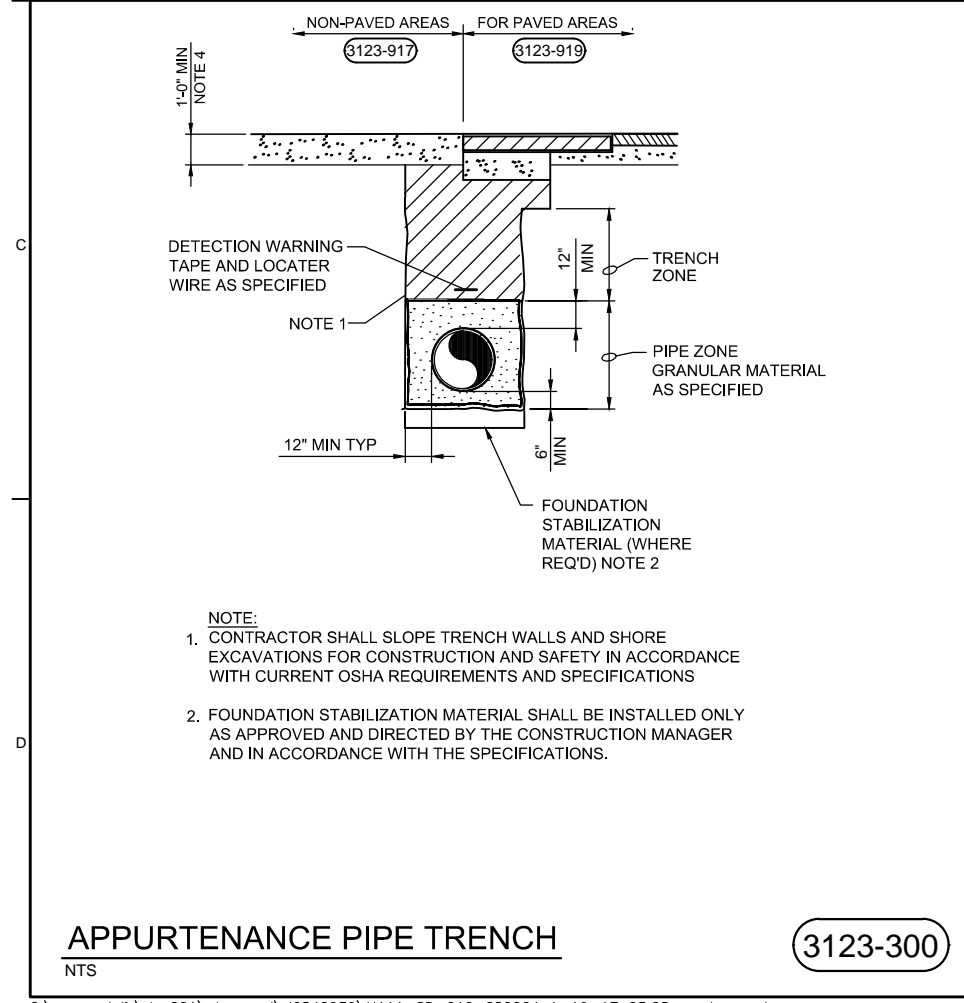
- NOTES:**
- BACKFILL TO BE BROUGHT UP UNIFORMLY ON BOTH SIDES OF SUPPORT. COVER EXISTING UTILITY WITH MIN 6" OF SAND OVER PIPE AND COMPACT WITHOUT CAUSING UTILITY TO SETTLE OR SHIFT.
  - CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE TO DETERMINE THE REQUIREMENTS OF PROVIDING ALL TEMPORARY SUPPORTS TO SUSPEND EXISTING UTILITIES IN OR ACROSS TRENCH DURING THE CONSTRUCTION OF THE NEW PIPE AND PRIOR TO COMPLETION OF THIS SUPPORT.
  - FOR CROSSING UTILITIES 12" AND SMALLER DEPTH OF CLSM BELOW UTILITY MAY BE DECREASED TO 12" MINIMUM.
  - PERFORM AN ADDITIONAL COMPACTION TEST IN PIPE ZONE BENEATH EACH OF THE FIRST 5 UTILITY CROSSINGS AND BENEATH 20% OF UTILITY CROSSINGS THEREAFTER AT LOCATIONS SELECTED BY ENGINEER.

**UNDERGROUND UTILITY SUPPORT** (3123-860)  
NTS



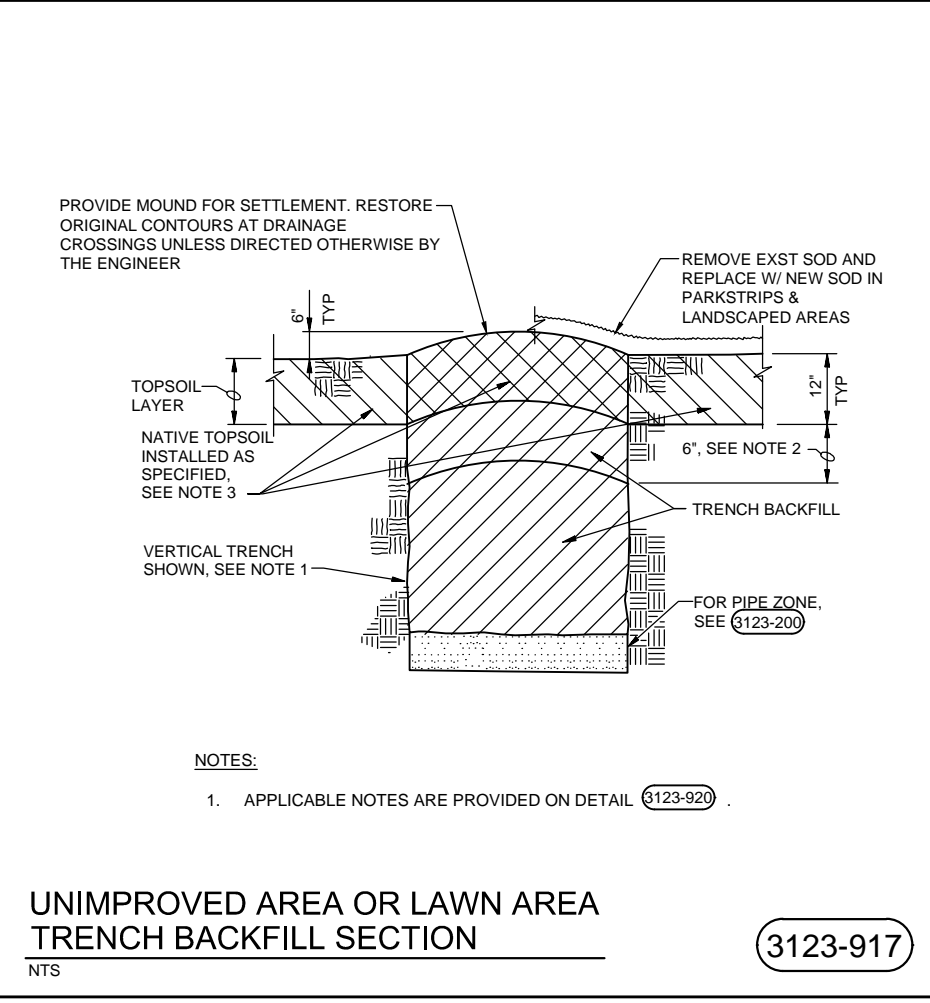
- NOTES:**
- BACKFILL TO BE BROUGHT UP UNIFORMLY ON BOTH SIDES OF SUPPORT. COVER EXISTING UTILITY WITH MIN 6" OF SAND OVER PIPE AND COMPACT WITHOUT CAUSING UTILITY TO SETTLE OR SHIFT.
  - CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE TO DETERMINE THE REQUIREMENTS OF PROVIDING ALL TEMPORARY SUPPORTS TO SUSPEND EXISTING UTILITIES IN OR ACROSS TRENCH DURING THE CONSTRUCTION OF THE NEW PIPE AND PRIOR TO COMPLETION OF THIS SUPPORT.
  - FOR CROSSING UTILITIES 12" AND SMALLER DEPTH OF CLSM BELOW UTILITY MAY BE DECREASED TO 12" MINIMUM.
  - PERFORM AN ADDITIONAL COMPACTION TEST IN PIPE ZONE BENEATH EACH OF THE FIRST 5 UTILITY CROSSINGS AND BENEATH 20% OF UTILITY CROSSINGS THEREAFTER AT LOCATIONS SELECTED BY ENGINEER.

**SECTION A** (3123-860)  
NTS



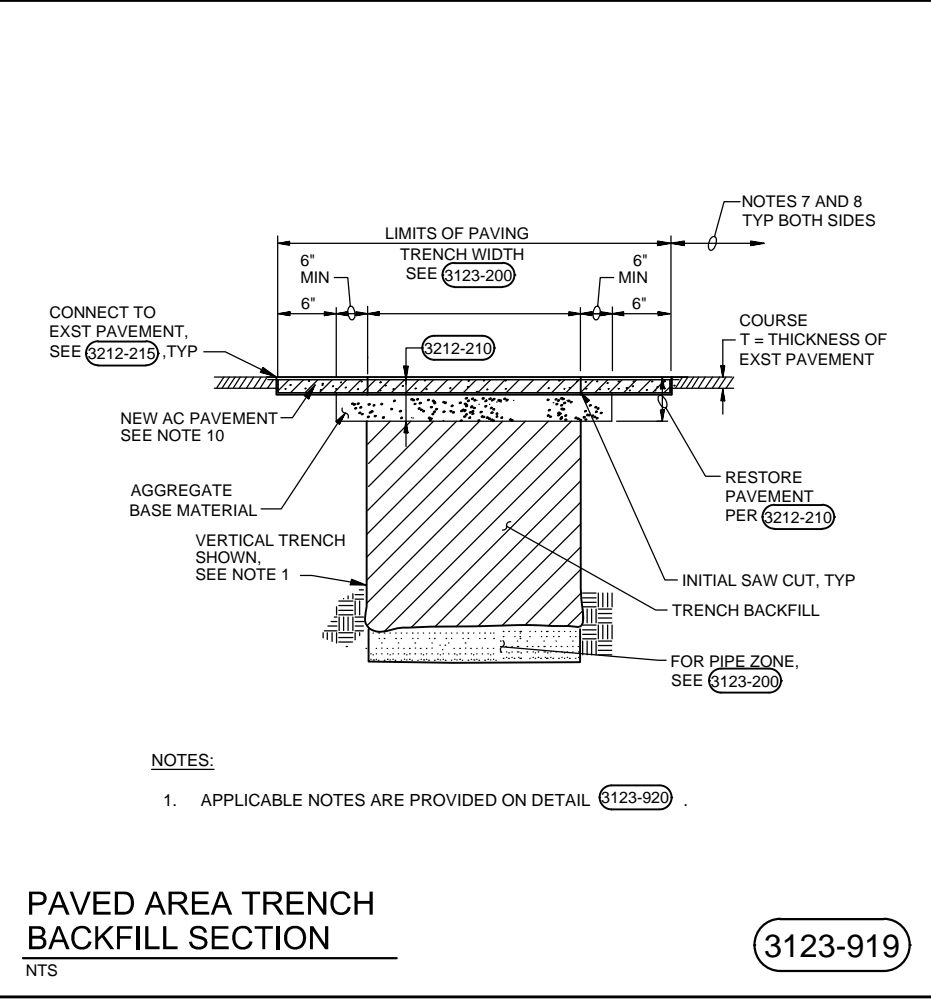
- NOTE:**
- CONTRACTOR SHALL SLOPE TRENCH WALLS AND SHORE EXCAVATIONS FOR CONSTRUCTION AND SAFETY IN ACCORDANCE WITH CURRENT OSHA REQUIREMENTS AND SPECIFICATIONS
  - FOUNDATION STABILIZATION MATERIAL SHALL BE INSTALLED ONLY AS APPROVED AND DIRECTED BY THE CONSTRUCTION MANAGER AND IN ACCORDANCE WITH THE SPECIFICATIONS.

**APPURTENANCE PIPE TRENCH** (3123-300)  
NTS



- NOTES:**
- APPLICABLE NOTES ARE PROVIDED ON DETAIL (3123-920).

**UNIMPROVED AREA OR LAWN AREA TRENCH BACKFILL SECTION** (3123-917)  
NTS



- NOTES:**
- APPLICABLE NOTES ARE PROVIDED ON DETAIL (3123-920).

**PAVED AREA TRENCH BACKFILL SECTION** (3123-919)  
NTS

NO.	DATE	DR	CHK	BY	APVD	REVISION	APVD	BY	APVD
		R. WILLEITNER	CHOGGARD	A. MURDOCK	R. WILLEITNER				

**JORDAN VALLEY WATER CONSERVANCY DISTRICT**

**11800 SOUTH U-111 PROJECT**

**STANDARD DETAILS**

**VERIFY SCALE**

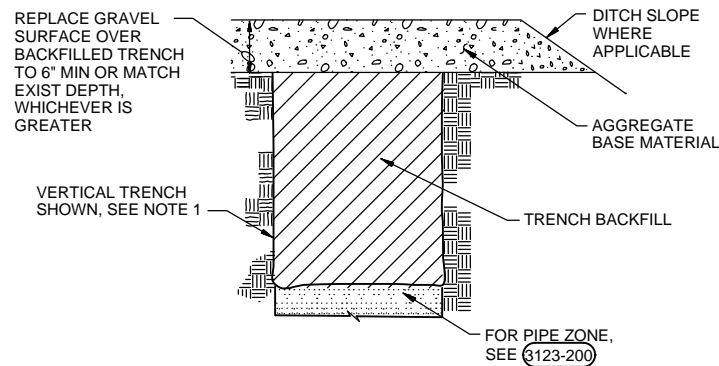
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DATE	JANUARY 2017
PROJ	680064
DWG	SD-10
SHEET	of



**NOTES:**

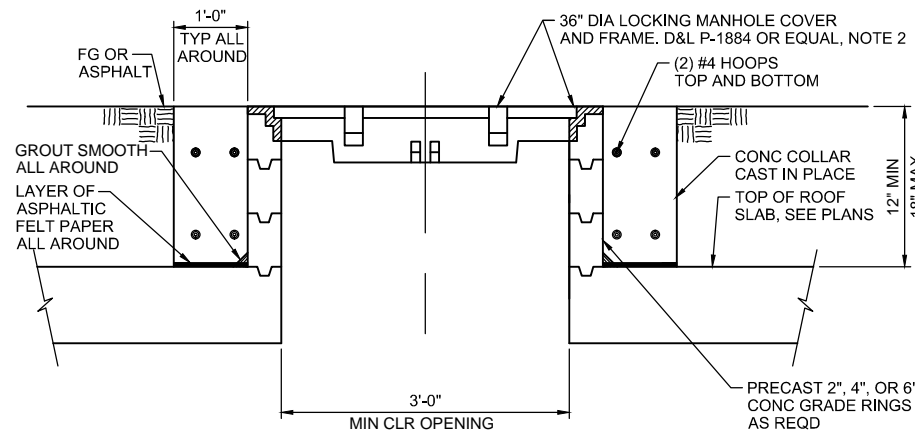
1. CONTRACTOR SHALL SLOPE TRENCH WALLS OR SHORE EXCAVATIONS FOR CONSTRUCTION AND SAFETY AND IN ACCORDANCE WITH CURRENT OSHA REQUIREMENTS.
2. THE TOP 6" OF TRENCH BACKFILL, BENEATH THE TOPSOIL LAYER, SHOULD BE INSTALLED, SMOOTHED, BUT LEFT UN-COMPACTED.
3. TOPSOIL SHALL EXTEND BEYOND TOP OF TRENCH AND TO THE LIMITS SPECIFIED.
4. WHERE PART OF TRENCH IS IN GRAVEL ROAD OR IN ROAD SHOULDER, USE DETAIL (3123-920) AS REQUIRED OR DIRECTED BY THE ENGINEER.
5. SEE TRAFFIC CONTROL SPECIFICATIONS FOR LANE CLOSURE, DETOUR, AND TRAFFIC CONTROL REQUIREMENTS.
6. CONTRACTOR SHALL PERMANENTLY REPLACE ALL PAVEMENT SURFACES, STRIPING, AND TRAFFIC CONTROLS PRIOR TO REMOVING DETOURS.
7. PRIOR TO PLACEMENT OF PERMANENT PAVING, EXISTING PAVEMENT SHALL BE SAW CUT OUTSIDE THE LIMITS OF CONTRACTOR-DISTURBED PAVEMENT TO A NEAT STRAIGHT LINE. ALL CRACKED PAVEMENT WITHIN 10 FEET EITHER SIDE OF THE TRENCH AND ALL CONTRACTOR-DAMAGED PAVEMENT REGARDLESS OF DISTANCE FROM TRENCH SHALL BE REMOVED AND REPLACED.
8. REMOVE ADDITIONAL PAVEMENT TO A PAINTED LANE STRIPE, A LIP OF GUTTER, A CURB, AN EXISTING PAVEMENT PATCH, OR AN EDGE OF THE PAVEMENT IF SUCH A FEATURE IS WITHIN TWO FEET OF THE SECOND SAW CUT.
9. NOT USED.
10. HOT ASPHALTIC CONCRETE PAVEMENT SHALL BE PLACED IN AT LEAST TWO LIFTS WITH MAXIMUM COMPACTED LIFT NOT EXCEEDING 3 INCHES. A TACK COAT SHALL BE PLACED BETWEEN LIFTS AND ALONG ALL VERTICAL SURFACES OF EXISTING PAVEMENT.
11. COMPACTION OF BACKFILL SHALL BE VERIFIED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER AS SPECIFIED.



**GRAVEL SURFACE TRENCH BACKFILL SECTION**

(3123-920)

NTS



**NOTES:**

1. SET MANHOLE COVER AND CONCRETE COLLAR 1/4" BELOW GRADE IN PAVED AREAS AND FLUSH WITH FINISH GRADE ELSEWHERE.
2. COVER SHALL BE LOCK DOWN, HINGED, AND INCLUDE STAINLESS STEEL LIFT ASSIST.

**36" SQUARE LOCKING FRAME AND COVER**

(3305-728)

NTS

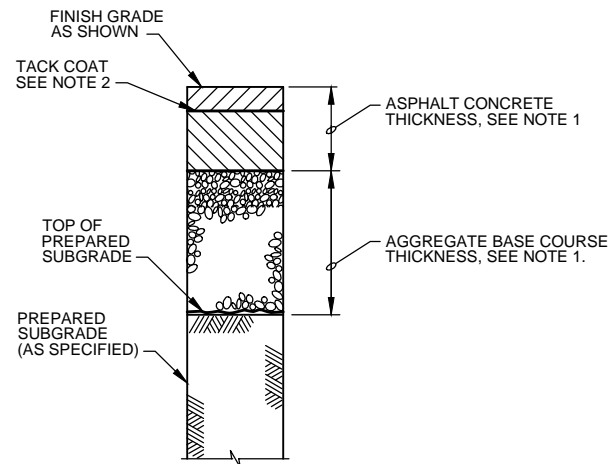


TABLE 1 - ASPHALT CONCRETE PAVEMENT SCHEDULE

ROADWAY SECTION	ASPHALT CONCRETE THICKNESS (IN)	AGGREGATE BASE COURSE THICKNESS (IN)
11800 SOUTH	6	12
HIGHWAY U-111	7	15
10200 SOUTH	6	12

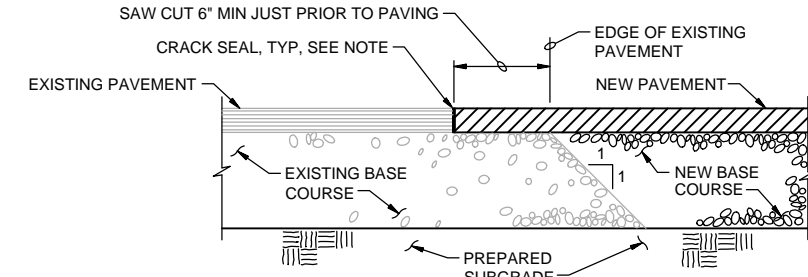
**NOTE:**

1. PROVIDE ASPHALT CONCRETE PAVEMENT AND BASE COURSE THICKNESS AS SHOWN IN TABLE 1 FOR EACH ROAD SHOWN ON PLANS.
2. TACK COAT BETWEEN LIFTS.

**ASPHALT CONCRETE PAVEMENT**

(3212-210)

NTS



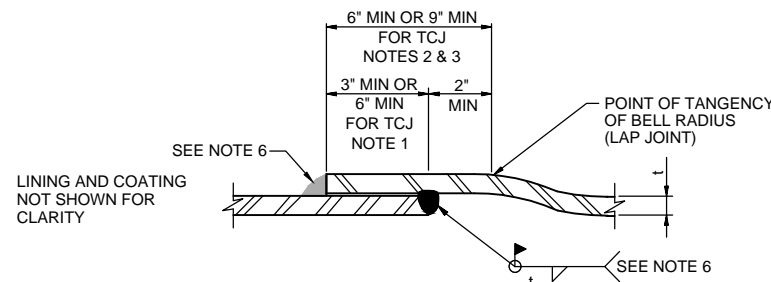
**NOTE:**

1. PAINT EDGE OF EXISTING ASPHALT WITH TACK COAT PRIOR TO PAVING. CRACK SEAL JOINT AFTER PAVING OPERATION HAS BEEN COMPLETED.

**PAVEMENT CONNECTION**

(3212-215)

NTS



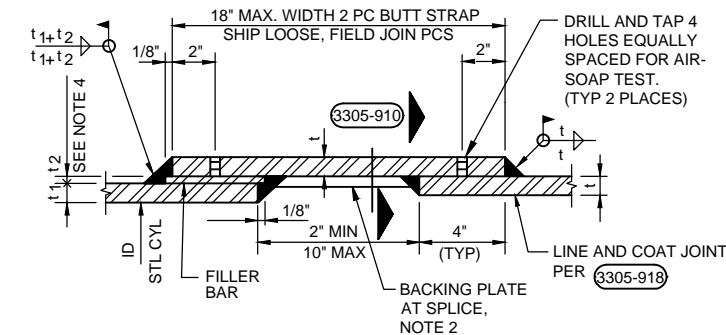
**NOTES:**

1. COMPLETED JOINT OVERLAP AFTER WELDING SHALL BE 3" FOR STANDARD JOINTS. FOR SPECIAL TEMPERATURE CONTROL JOINTS, THE JOINT OVERLAP, SHALL BE 6 INCHES AS FURTHER DISCUSSED IN NOTE 3.
2. FOR LINING AND COATING HOLD BACKS, SEE (3305-918)
3. FOR SPECIAL TEMPERATURE CONTROL JOINTS, THE SPIGOT SHALL BE INSERTED INTO THE LENGTHENED BELL TO PROVIDE 6 INCHES MINIMUM JOINT OVERLAP. SEE SPECIFICATIONS SECTION 33 05 01.01 FOR SPECIAL TEMPERATURE CONTROL JOINT WELDING REQUIREMENTS.
4. FILLET WELDS FOR BELL AND SPIGOT LAP JOINTS SHOWN. FILLET WELDS ON OTHER JOINTS ARE SIMILAR.
5. THE JOINTS SHALL BE FABRICATED AND INSTALLED TO BE WITHIN THE TOLERANCES INDICATED. THE TOLERANCE REQUIREMENTS SHALL APPLY TO BOTH WELDS AND TO BOTH STRAIGHT AND DEFLECTED JOINTS.
6. FOR SINGLE LAP JOINTS WELD MAY BE ON THE INTERIOR OR EXTERIOR OF THE PIPE.
7. WELD AFTER BACKFILL WILL NOT BE ALLOWED.

**SINGLE LAP JOINT WELD**

(3305-883)

NTS



**NOTES:**

1. LININGS AND COATINGS NOT SHOWN FOR CLARITY, SEE (3305-918)
2. FOR FIELD WELDING OF INDIVIDUAL BUTT STRAP PIECES TO EACH OTHER, SEE (3305-910)
3. AFTER INSTALLATION OF HEAT SHRINK SLEEVE, HOLIDAY TEST AS SPECIFIED.
4. THICKNESS "t<sub>2</sub>" INDICATES OFFSET OF ID BETWEEN STEEL CYLINDERS. PROVIDE FILLER BAR WHERE "t<sub>2</sub>" IS 3/16" OR GREATER.

**WSP BUTT STRAP JOINT DETAILS**

(3305-885)

NTS



NO.	DATE	DR	CHK	REVISION	BY

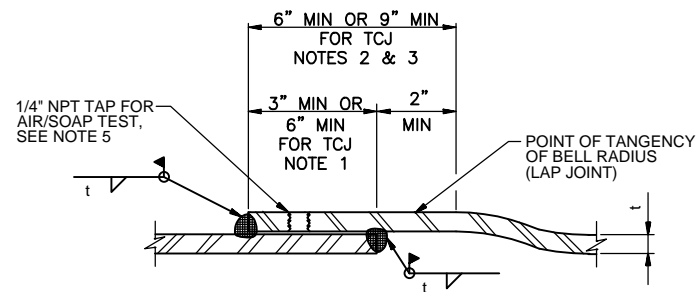
JORDAN VALLEY WATER CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

STANDARD DETAILS



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DATE	JANUARY 2017
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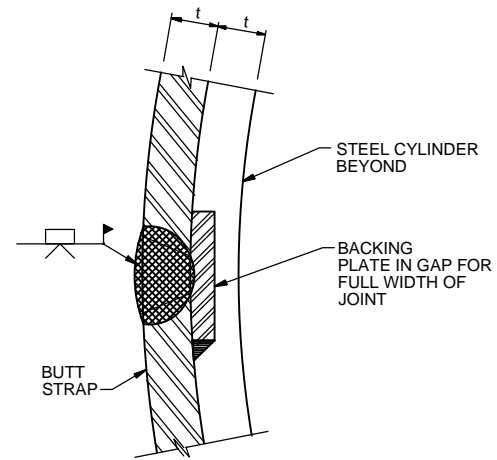
**NOTES:**

1. COMPLETED JOINT OVERLAP AFTER WELDING SHALL BE 3" FOR STANDARD JOINTS. FOR SPECIAL TEMPERATURE CONTROL JOINTS, THE JOINT OVERLAP, SHALL BE 6 INCHES AS FURTHER DISCUSSED IN NOTE 3.
2. FOR LINING AND COATING HOLD BACKS, SEE (3305-918).
3. FOR SPECIAL TEMPERATURE CONTROL JOINTS, THE SPIGOT SHALL BE INSERTED INTO THE LENGTHENED BELL TO PROVIDE 6 INCHES MINIMUM JOINT OVERLAP. SEE SPECIFICATIONS SECTION 33 05 01.01 FOR SPECIAL TEMPERATURE CONTROL JOINT WELDING REQUIREMENTS.
4. CONFIGURATION FOR BELL AND SPIGOT LAP JOINTS SHOWN. CONFIGURATION ON BUTT STRAP JOINTS ARE SIMILAR.
5. TAP HOLES MAY BE ON INSIDE OR OUTSIDE OF JOINT. PERFORM AIR/SOAP TEST AND OTHER WELD TESTS AS REQUIRED IN ACCORDANCE WITH SPECIFICATIONS. PLUG TAP WITH WELDED PLUG AFTER COMPLETION OF SUCCESSFUL AIR/SOAP TEST.
6. FABRICATE AND INSTALL JOINTS WITHIN THE TOLERANCES INDICATED. TOLERANCE REQUIREMENTS APPLY TO BOTH WELDS AND TO BOTH STRAIGHT AND DEFLECTED JOINTS.
7. WELD AFTER BACKFILL WILL NOT BE ALLOWED.

**DOUBLE LAP JOINT WELD**

NTS

(3305-903)



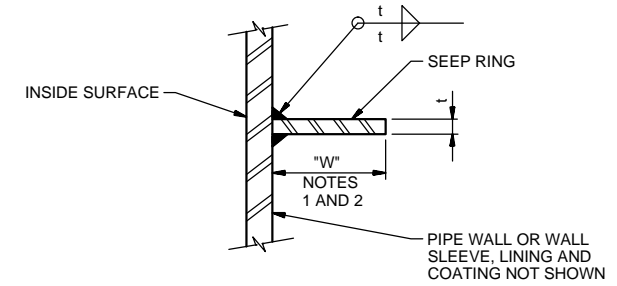
**NOTES:**

1. LININGS AND COATINGS ARE NOT SHOWN FOR CLARITY.
2. BEVEL ENDS OF BACKING PLATE AT BUTT STRAP PRIOR TO WELDING OR BACK GOUGE AT CONTACT WITH ADJACENT CYLINDER PRIOR TO COMPLETING INSIDE FILLET WELD.

**BUTT STRAP SPLICE**

NTS

(3305-910)



SEEP RING THICKNESS		
PIPE SIZE	THICKNESS-t	WIDTH-W
30" & UNDER	1/4"	2"
31" TO 60"	1/2"	4"

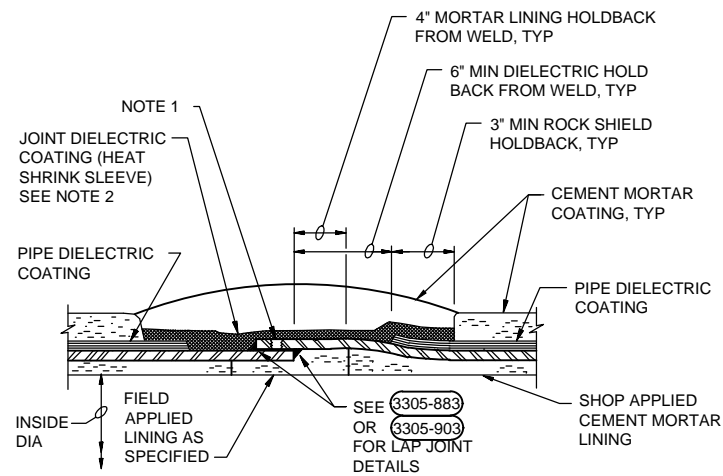
**NOTES:**

1. PROVIDE 2" CLEAR BETWEEN REINFORCING BARS AND SEEP RING.
2. LINE AND COAT AS SPECIFIED.

**SEEP RING**

NTS

(3305-916)



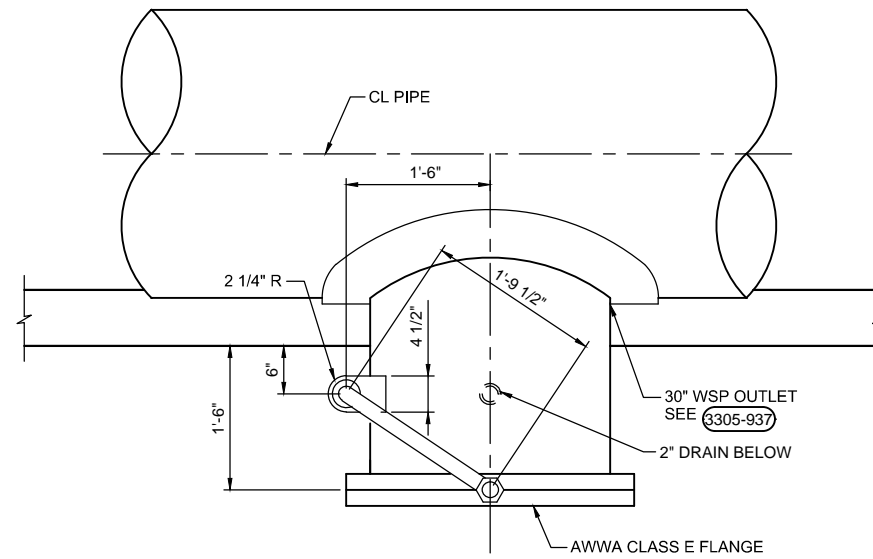
**NOTES:**

1. ON DOUBLE LAP WELDED JOINTS, CONTRACTOR SHALL CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 40 PSI AIR PRESSURE IN ADDITION TO DYE PENETRANT OR MAGNETIC PARTICLE TESTING AS SPECIFIED. IF LEAKS ARE DETECTED, THE CONTRACTOR SHALL REPAIR AND RETEST THE WELDS UNTIL THERE ARE NO DEFECTS. PLUG TAPS WITH A THREADED OR WELDED PLUG AT COMPLETION OF TEST AND COAT AND LINE AS SHOWN OR SPECIFIED. TAP HOLES MAY BE ON INSIDE OR OUTSIDE OF JOINT.
2. AFTER INSTALLATION OF JOINT DIELECTRIC COATING, A HOLIDAY TEST SHALL BE COMPLETED AS SPECIFIED.

**LAP WELDED SLIP JOINT**

NTS

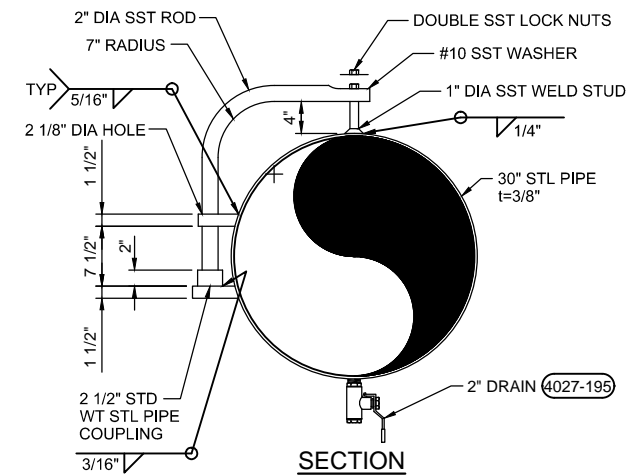
(3305-918)



**PLAN**

**30" HINGED MANWAY**

NTS



**SECTION**

(3305-935)



NO.	DATE	DR	CHK	REVISION	APVD	BY	APVD

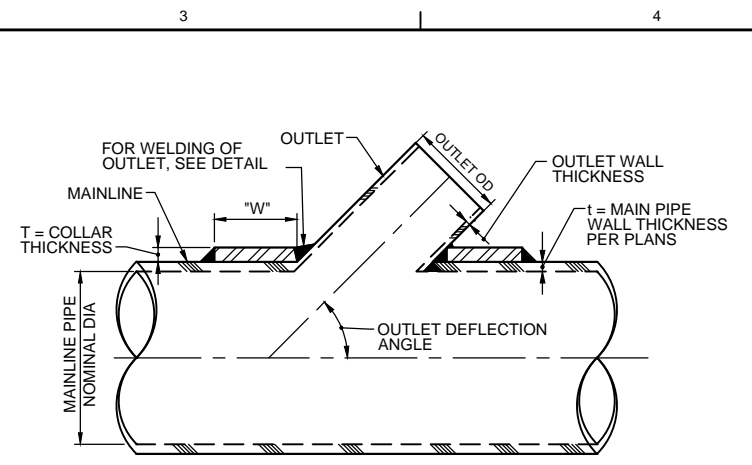
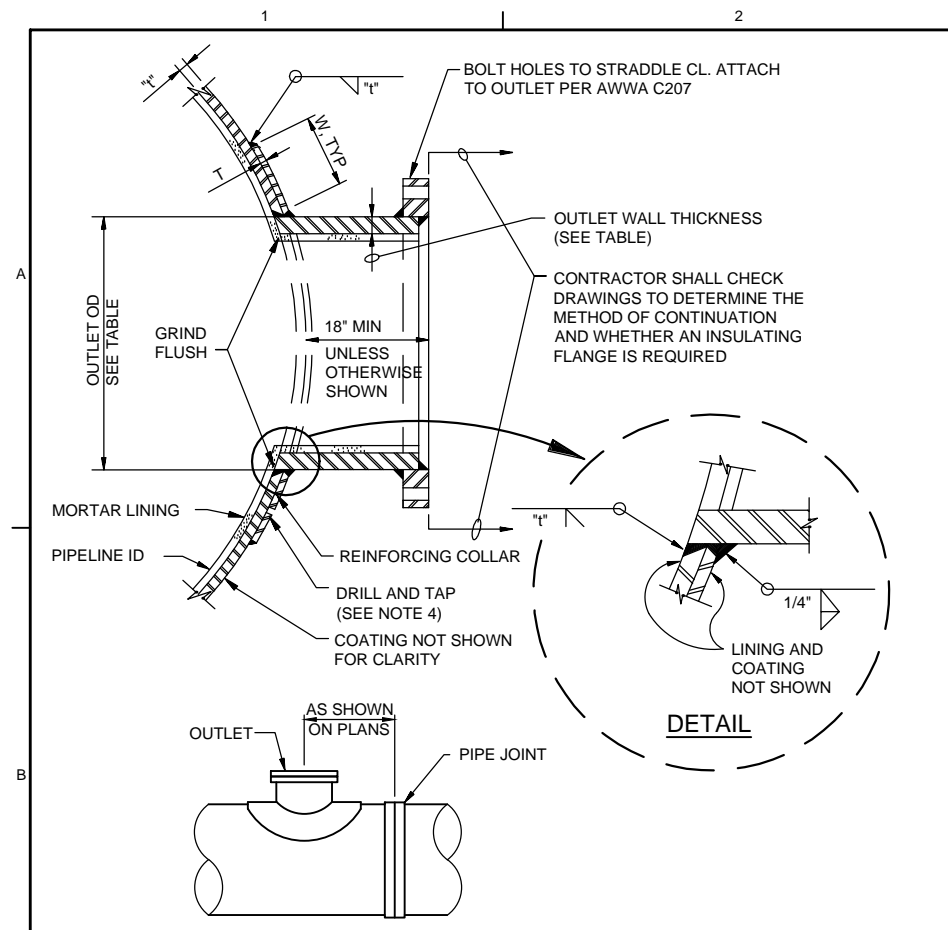
JORDAN VALLEY WATER CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

STANDARD DETAILS  
STANDARD DETAILS



VERIFY SCALE	
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DATE	JANUARY 2017
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DWG	SD-12
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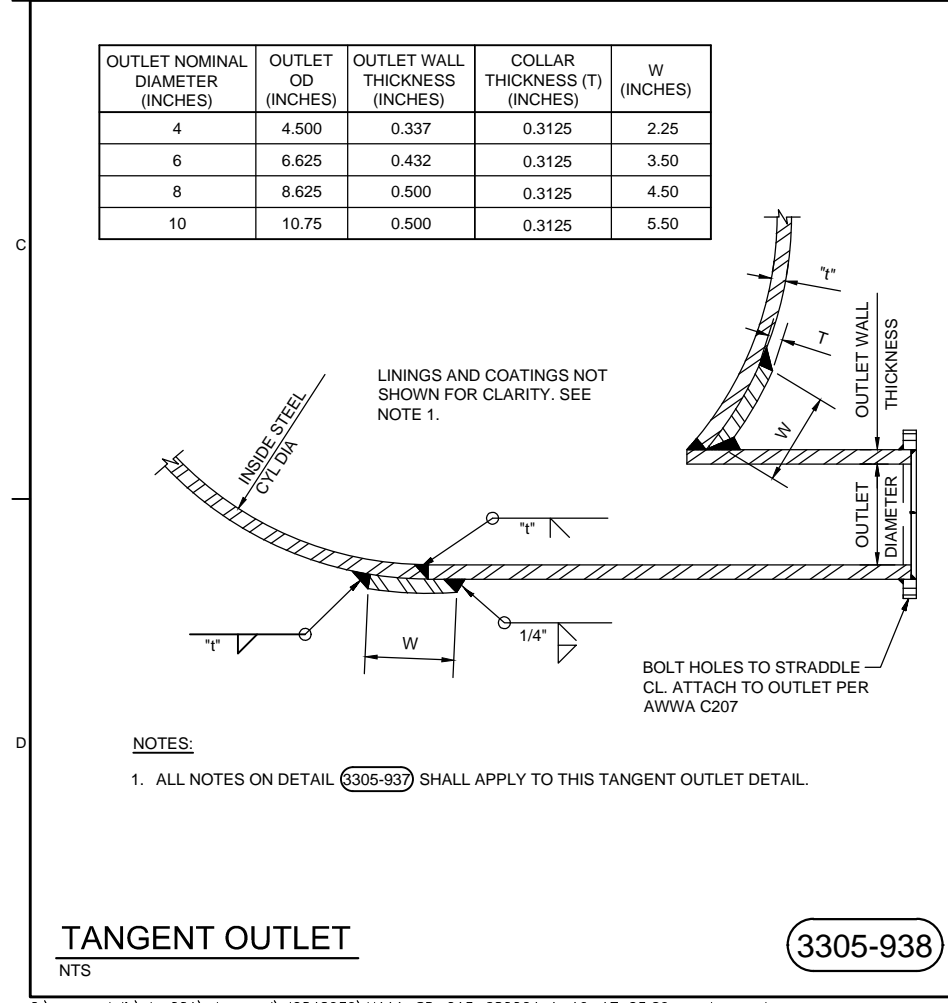


Main Pipe Nominal Diameter (in)	Outlet Nominal Diameter (in)	Outlet OD (in)	Outlet Wall Thickness (in)	Outlet Deflection Angle (DEG)	Collar Thickness (T) (in)	Collar Width (w) (in)	
48	30	30	0.375	90	0.1875	10.5	
48	16	16	0.375	90	0.1875	8	
36	8	8.625	0.375	90	0.1875	3	
36	30	SEE (3305-939)					

- NOTES:**
- LINE AND COAT ALL EXPOSED SURFACES AS SPECIFIED EXCEPT GASKET SURFACES.
  - "t" INDICATES THE THICKNESS OF THE WSP AT THE STATION WHERE USED. SEE PLANS.
  - PIPE MANUFACTURER SHALL DYE PENETRANT TEST ALL WELDS.
  - PIPE MANUFACTURER SHALL PERFORM THE FOLLOWING COLLAR LEAK TEST PROCEDURES AFTER DYE PENETRANT TESTING:
    - DRILL AND TAP 1/4" NPT HOLE BEFORE WELDING.
    - CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 40 PSI AIR PRESSURE AS SPECIFIED FOR FIELD WELDED JOINTS.
    - IF LEAKS ARE DETECTED REPAIR AND RETEST THE WELDS UNTIL THERE ARE NO DEFECTS.
    - PLUG HOLE ON COMPLETION OF TESTS AND COAT AS SPECIFIED.
  - MATERIAL FOR CONSTRUCTION OF REINFORCING COLLARS SHALL BE THE SAME AS THE ADJOINING PIPELINE WITH WALL THICKNESS AS INDICATED.
  - OUTLETS ARE DESIGNED FOR SPECIFIC APPLICATIONS ONLY. IF ANY OUTLETS ARE ADDED TO THOSE CURRENTLY SHOWN ON THE DRAWINGS, NEW COLLAR DIMENSIONS SHALL BE CALCULATED SPECIFICALLY FOR THE APPLICATION. CALCULATIONS SHALL CONFORM TO THE SPECIFICATIONS.

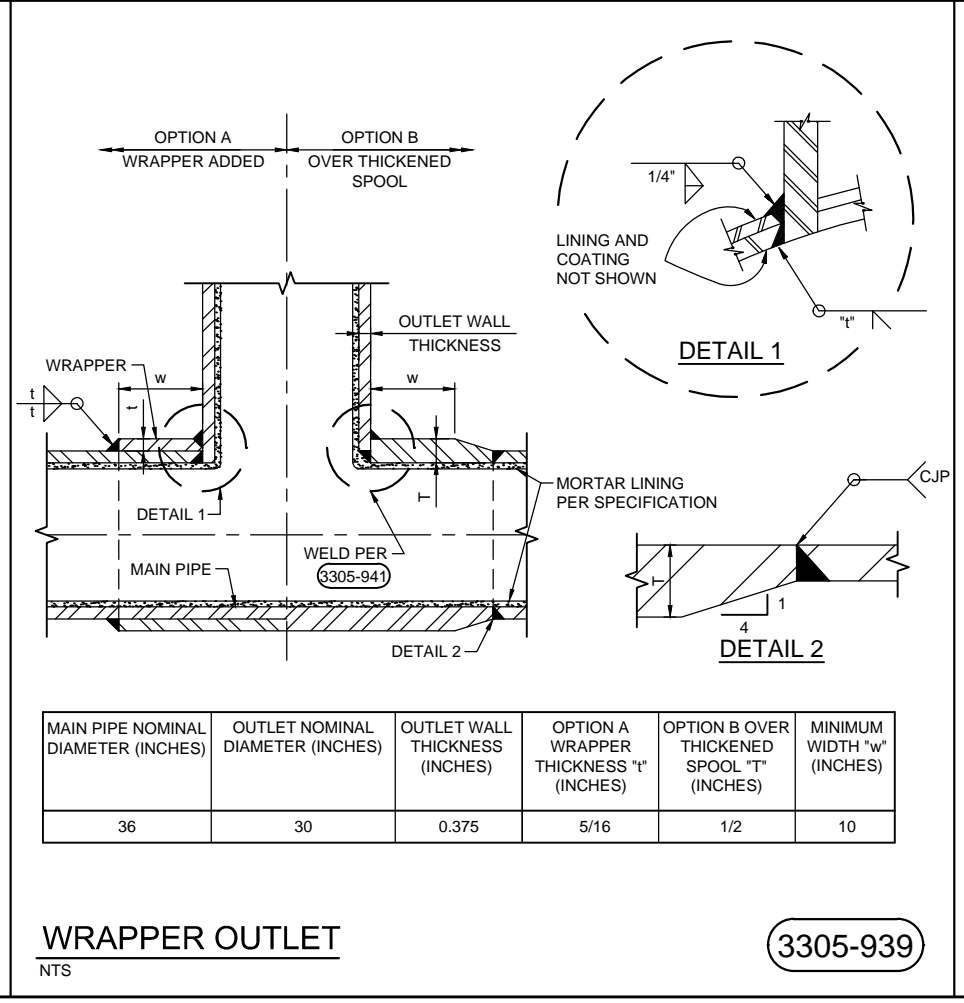
**3-INCH AND LARGER COLLARED OUTLETS & SCHEDULE NTS**

3305-937



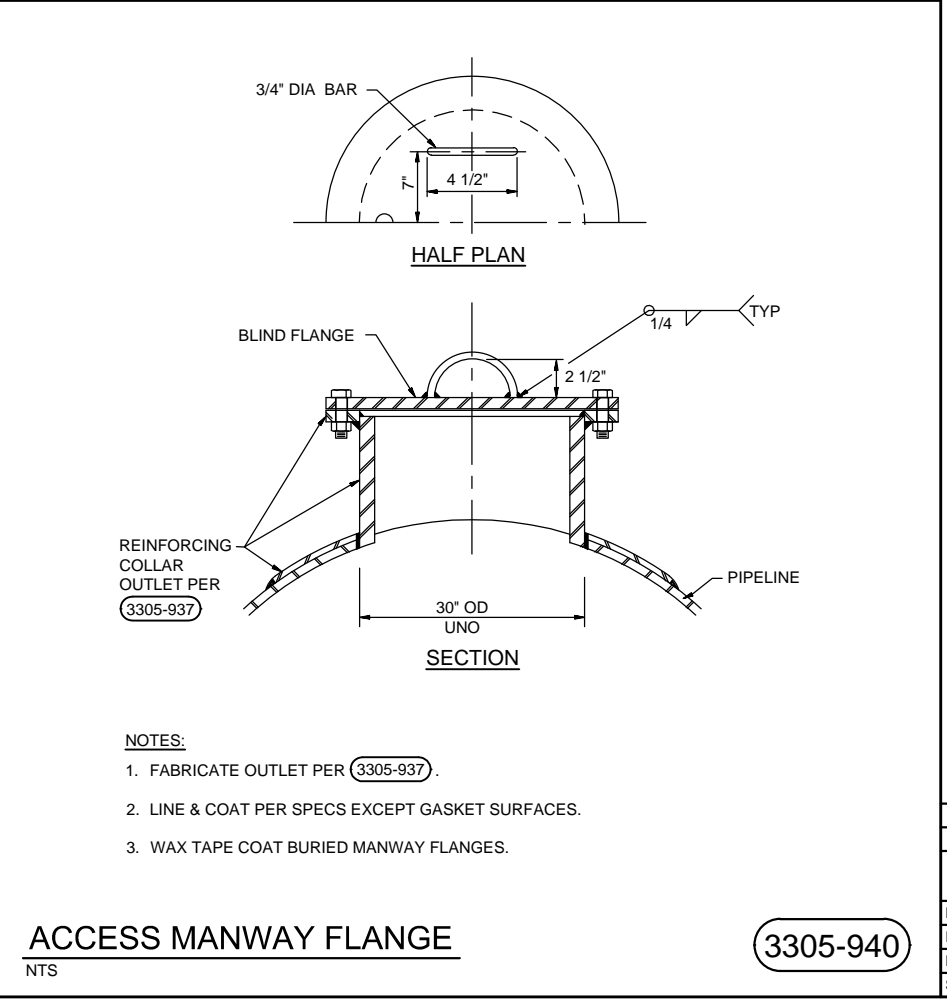
**TANGENT OUTLET NTS**

3305-938



**WRAPPER OUTLET NTS**

3305-939



**ACCESS MANWAY FLANGE NTS**

3305-940



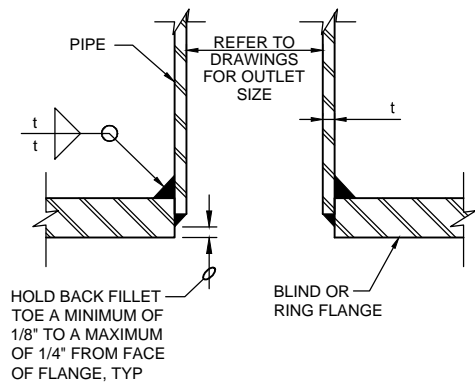
NO.	DATE	DR	CHK	REVISION	BY	APVD

Jordan Valley Water Conservancy District  
11800 SOUTH U-111 PROJECT

**ch2m**  
STANDARD DETAILS  
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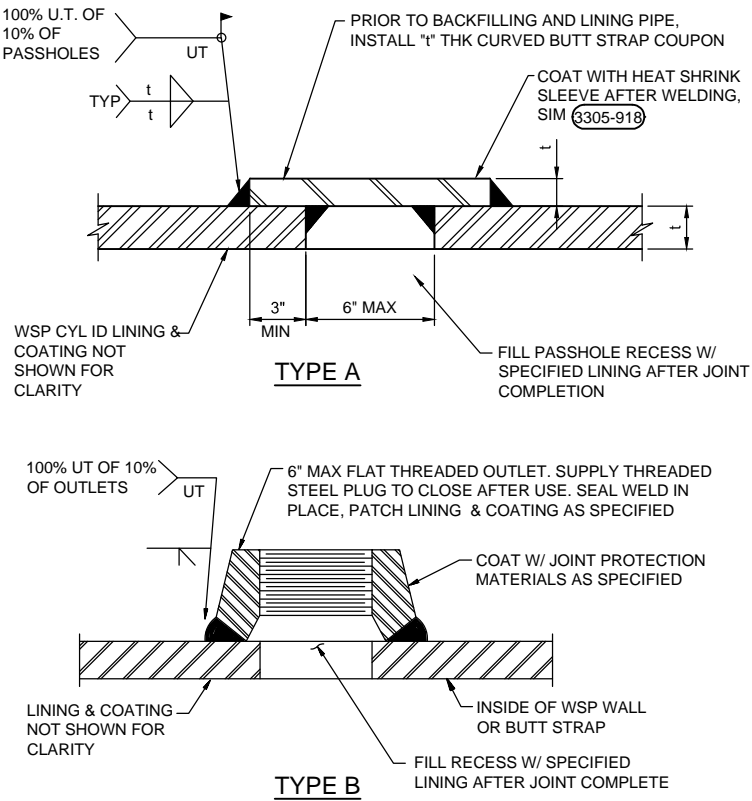
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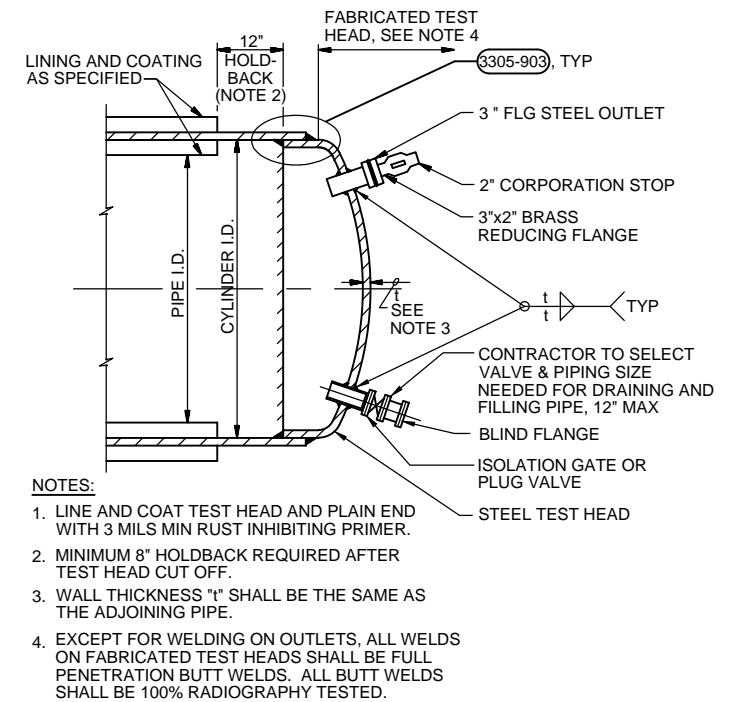
**WSP TO FLANGE JOINT**  
NTS

3305-941



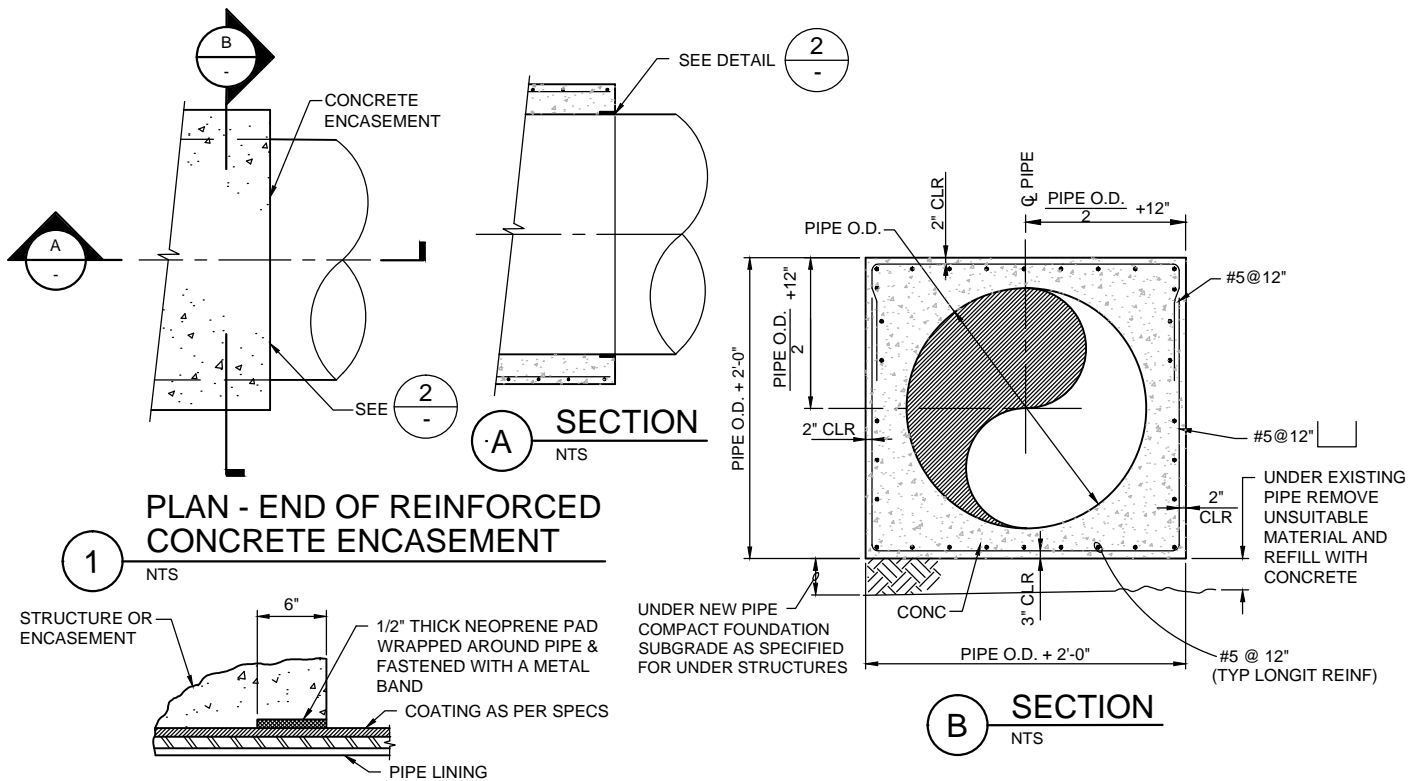
**WSP PASSHOLE**  
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3305-942



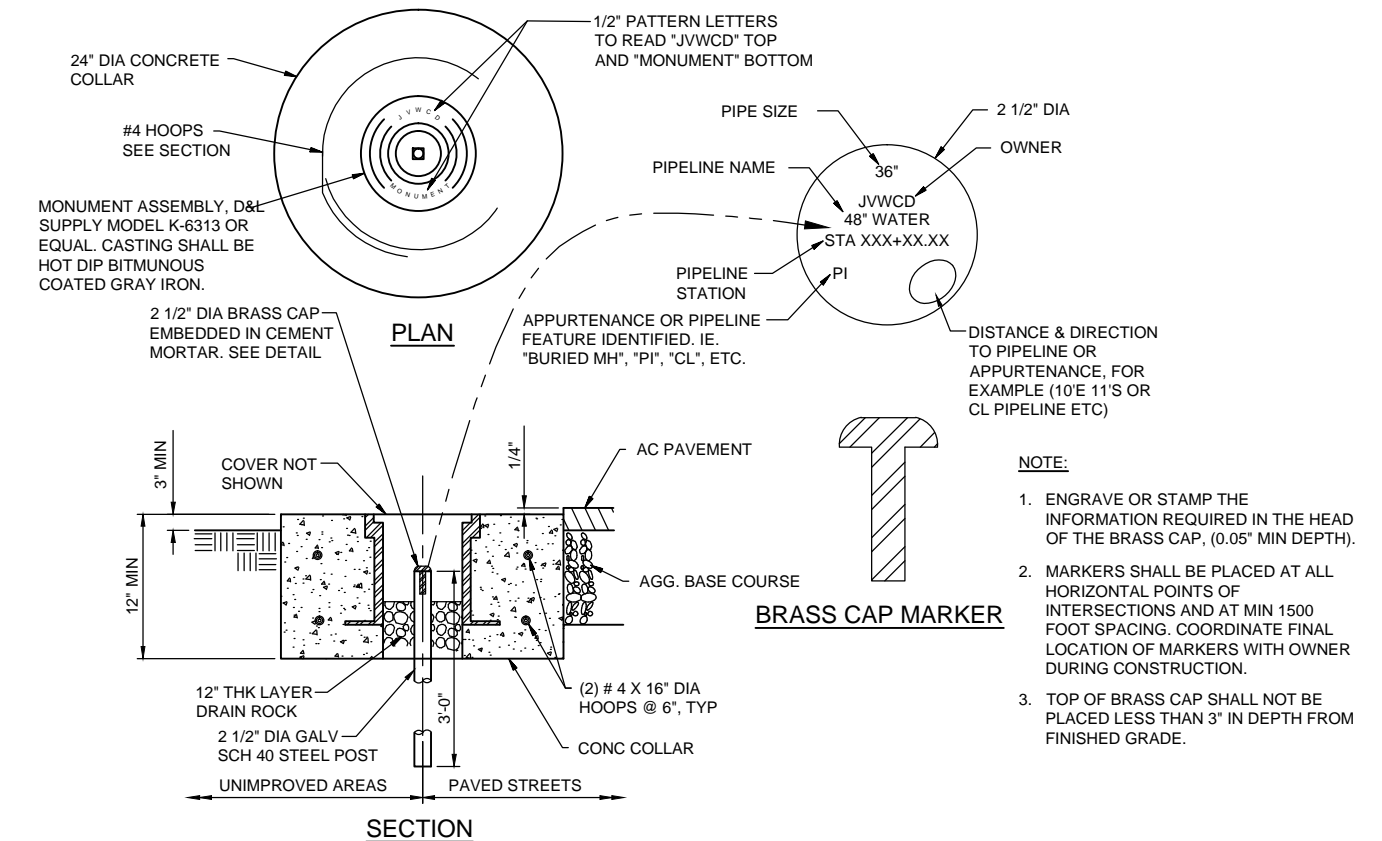
**TEST HEAD**  
NTS

3305-945



**CONCRETE ENCASEMENT**  
NTS

3305-950



**STANDARD PIPELINE MARKERS**  
NTS

3305-959



NO.	DATE	DR	REVISION	BY	APVD
		R. WILLEITNER	CHK	A. MURDOCK	APVD
				R. WILLEITNER	BY
					APVD

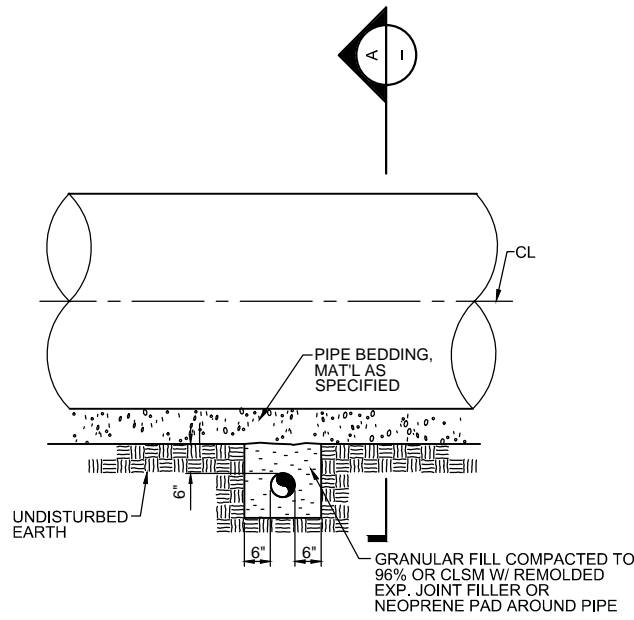
JORDAN VALLEY WATER CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

**ch2m** STANDARD DETAILS  
STA NDARD DETAILS

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE: JANUARY 2017  
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DWG: SD-14  
SHEET: of





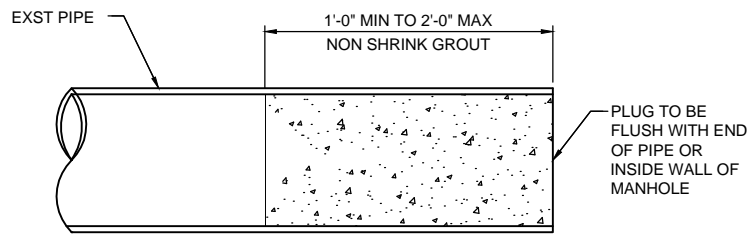
**NOTES:**

1. IF GRANULAR FILL IS USED AROUND PVC PIPE, ONLY HAND OPERATED OR SMALL VIBRATORY COMPACTORS ARE ALLOWED FOR PLACING AND COMPACTING PIPE BEDDING AND PIPE ZONE MATERIAL WITHIN 3.0' EITHER SIDE OF PVC SEWER PIPE.
2. CONTRACTOR TO IDENTIFY, LOCATE, AND RECONSTRUCT SEWER SERVICE LATERALS WHICH CONFLICT WITH THE ALIGNMENT. CONTRACTOR WILL COORDINATE WITH HOME OWNERS TO MINIMIZE SERVICE DOWNTIME.
3. RELOCATE WATER, GAS, AND OTHER SERVICES PER THE UTILITY COMPANIES STANDARD DETAILS.
4. ALL SEWER CROSSINGS MUST HAVE 18" MINIMUM SEPARATION FROM WATER LINES.

**SEWER SERVICE LATERAL RECONSTRUCTION**

NTS

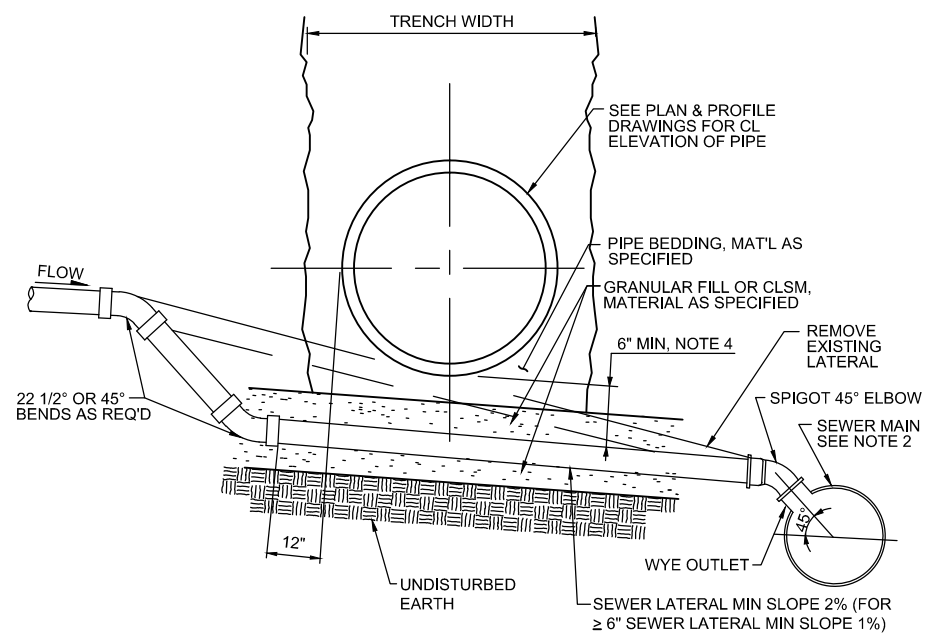
3311-830



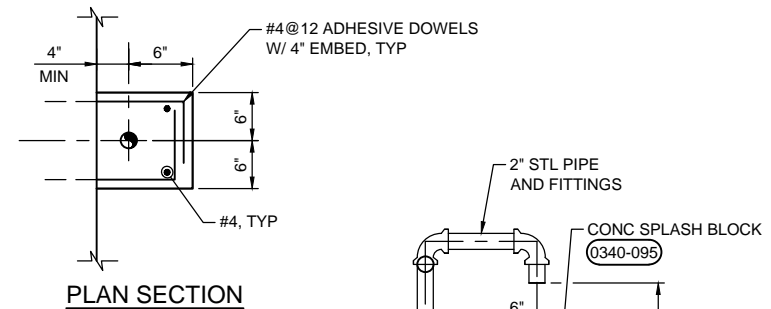
**CONCRETE PIPE PLUG**

NTS

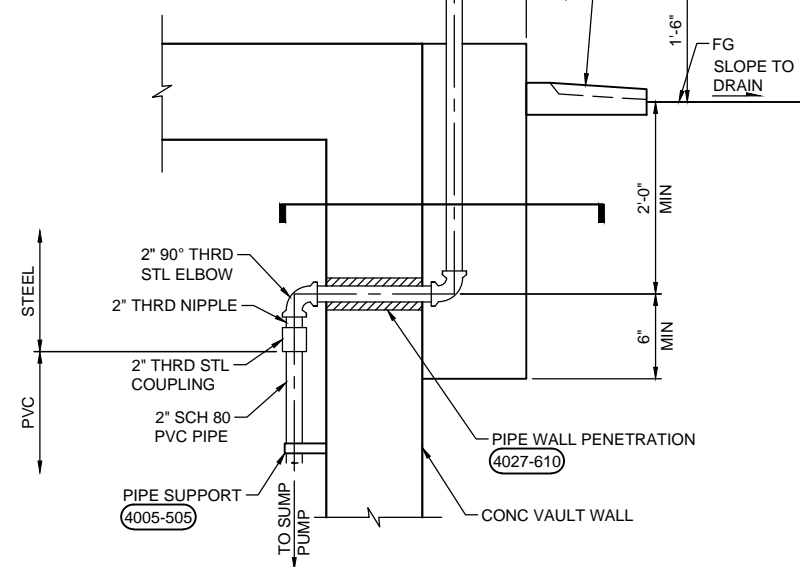
3311-887



**SECTION A**  
NTS



**PLAN SECTION**



**SUMP DISCHARGE AND SPLASH BLOCK**

NTS

3311-850



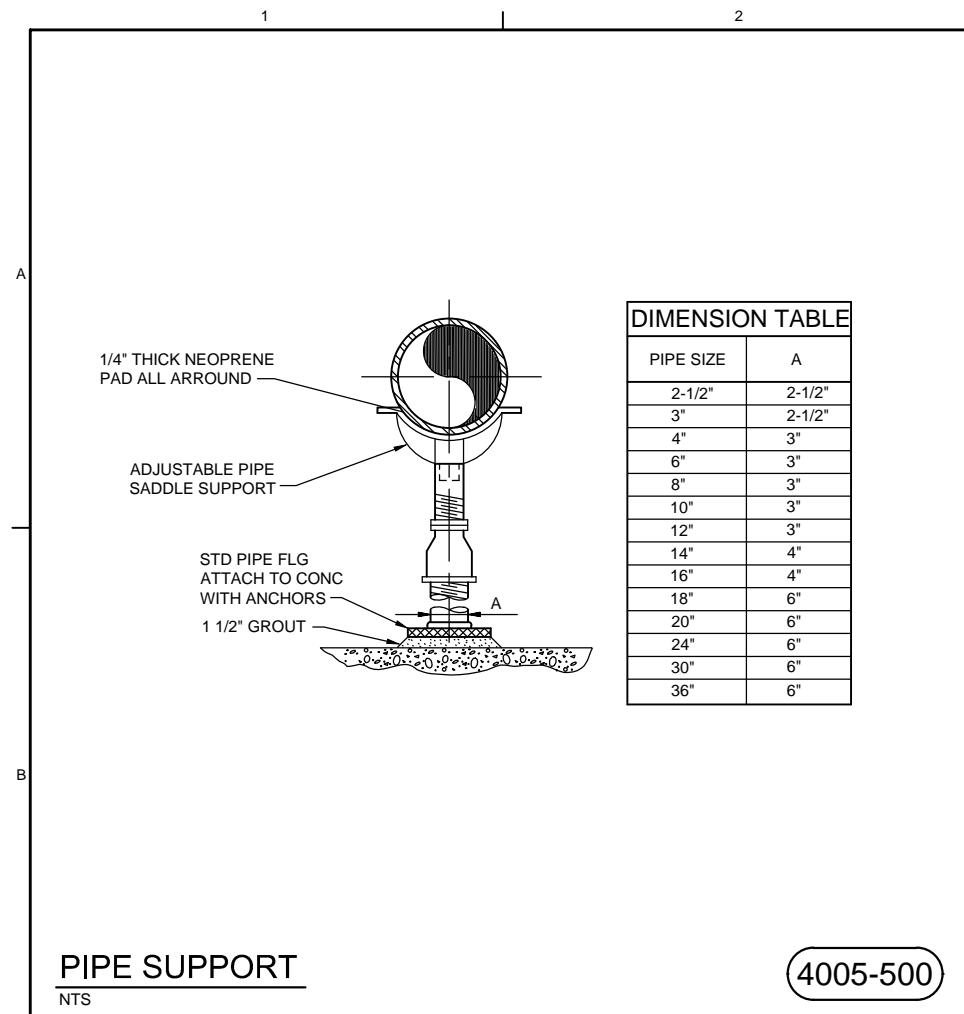
NO.	DATE	DR	CHK	BY
		R. WILLEITNER	A. MURDOCK	R. WILLEITNER

JORDAN VALLEY WATER CONSERVANCY DISTRICT  
11800 SOUTH U-111 PROJECT

**ch2m**  
STANDARD DETAILS  
**STANDARD DETAILS**

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	JANUARY 2017
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DWG	SD-15
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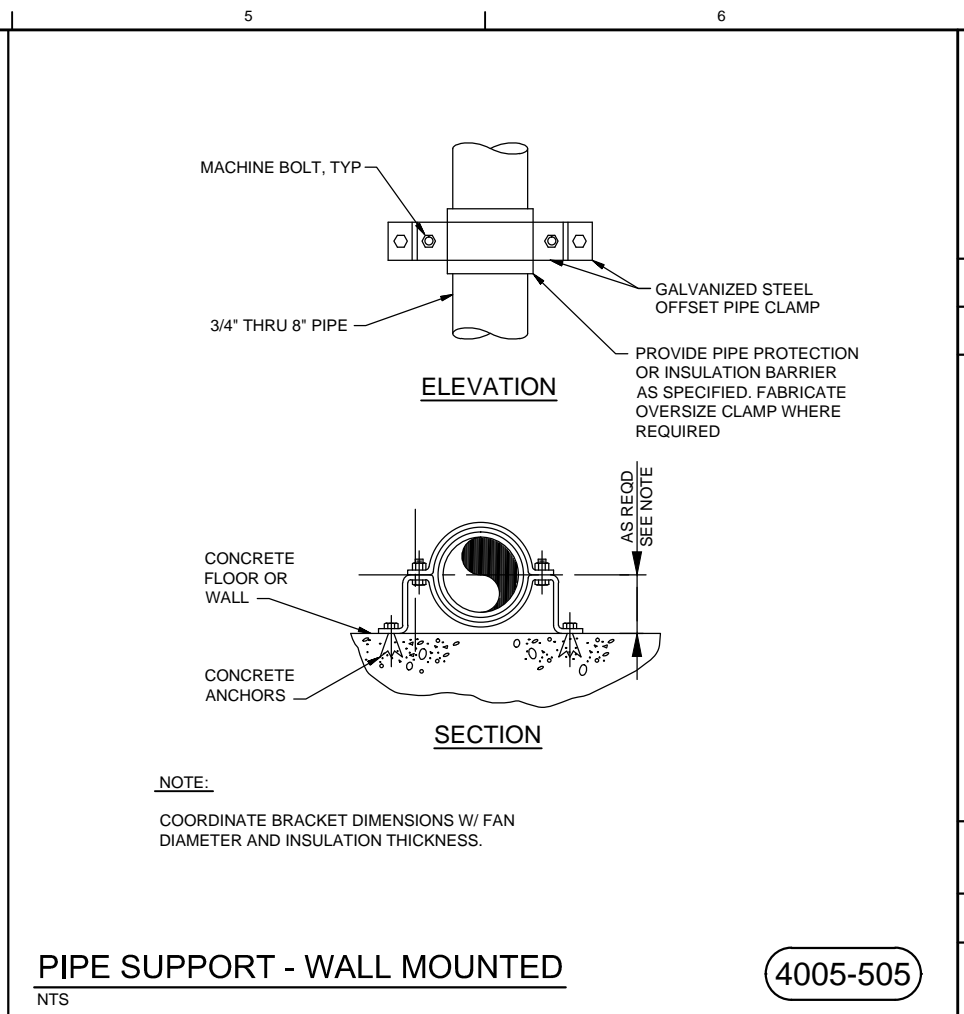


**DIMENSION TABLE**

PIPE SIZE	A
2-1/2"	2-1/2"
3"	2-1/2"
4"	3"
6"	3"
8"	3"
10"	3"
12"	3"
14"	4"
16"	4"
18"	6"
20"	6"
24"	6"
30"	6"
36"	6"

**PIPE SUPPORT**  
NTS

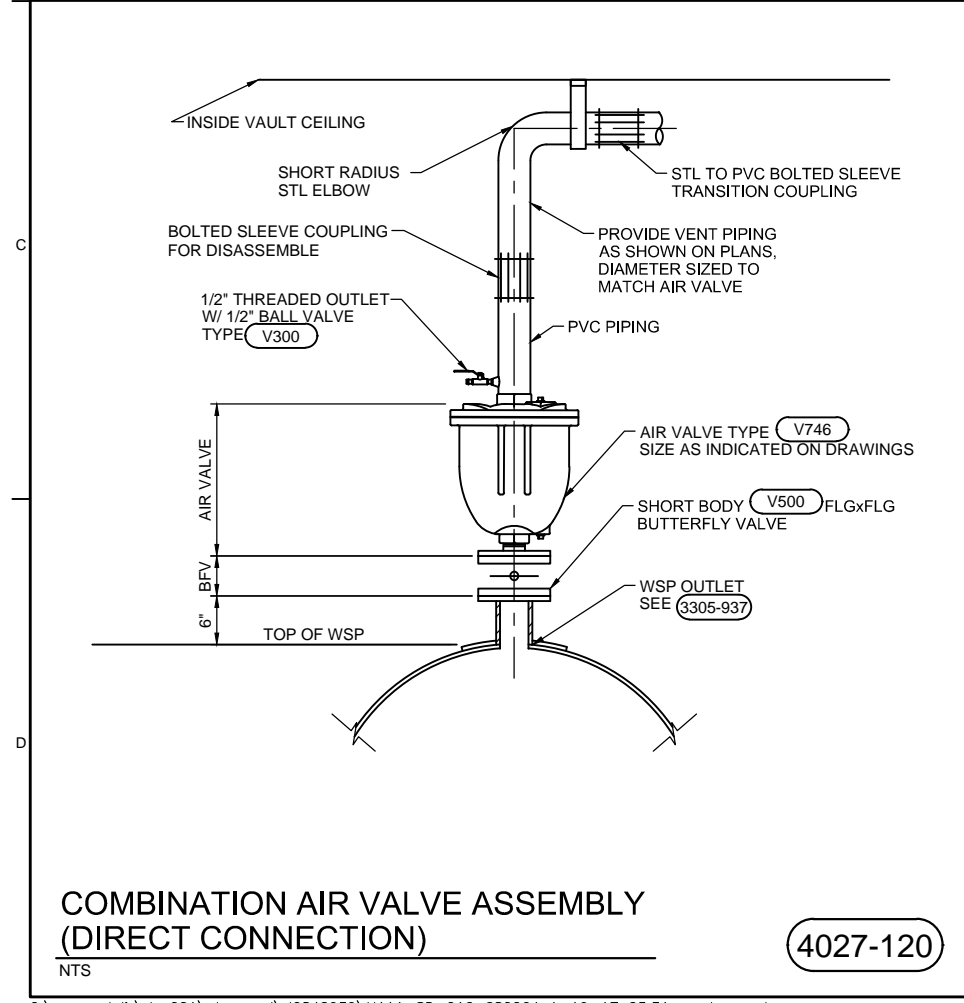
4005-500



**NOTE:**  
COORDINATE BRACKET DIMENSIONS W/ FAN DIAMETER AND INSULATION THICKNESS.

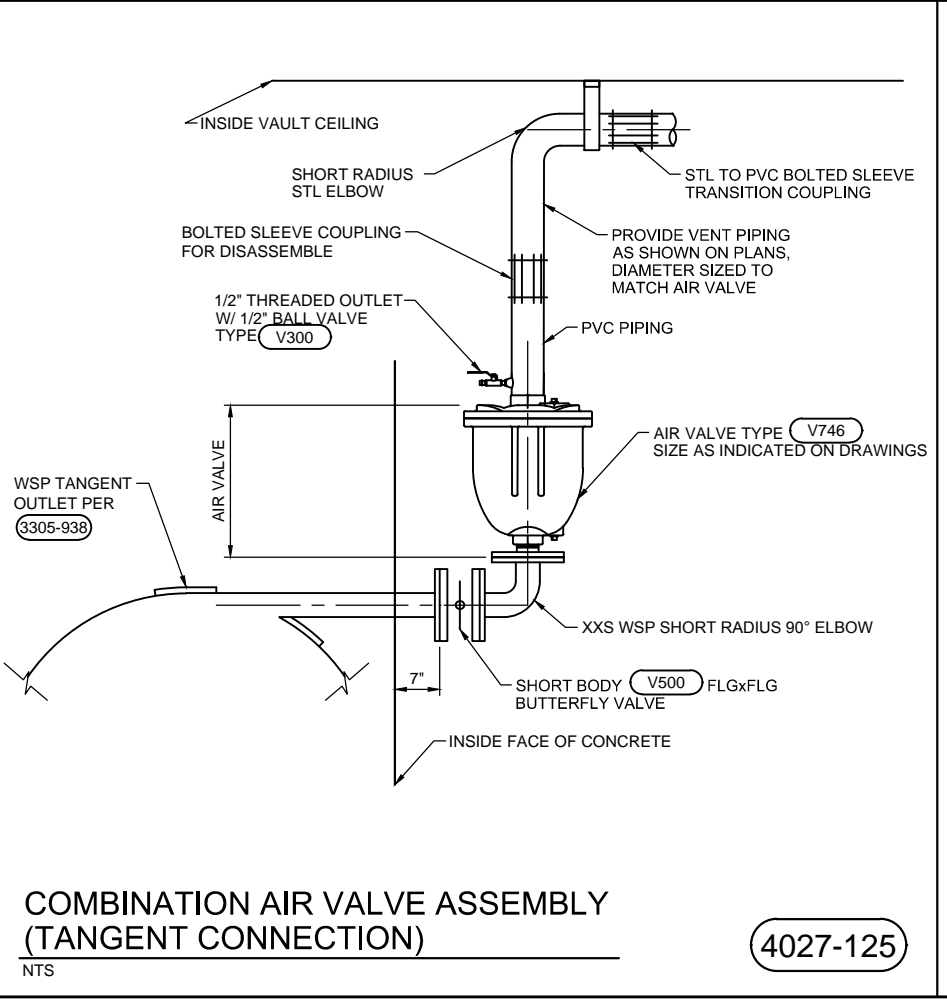
**PIPE SUPPORT - WALL MOUNTED**  
NTS

4005-505



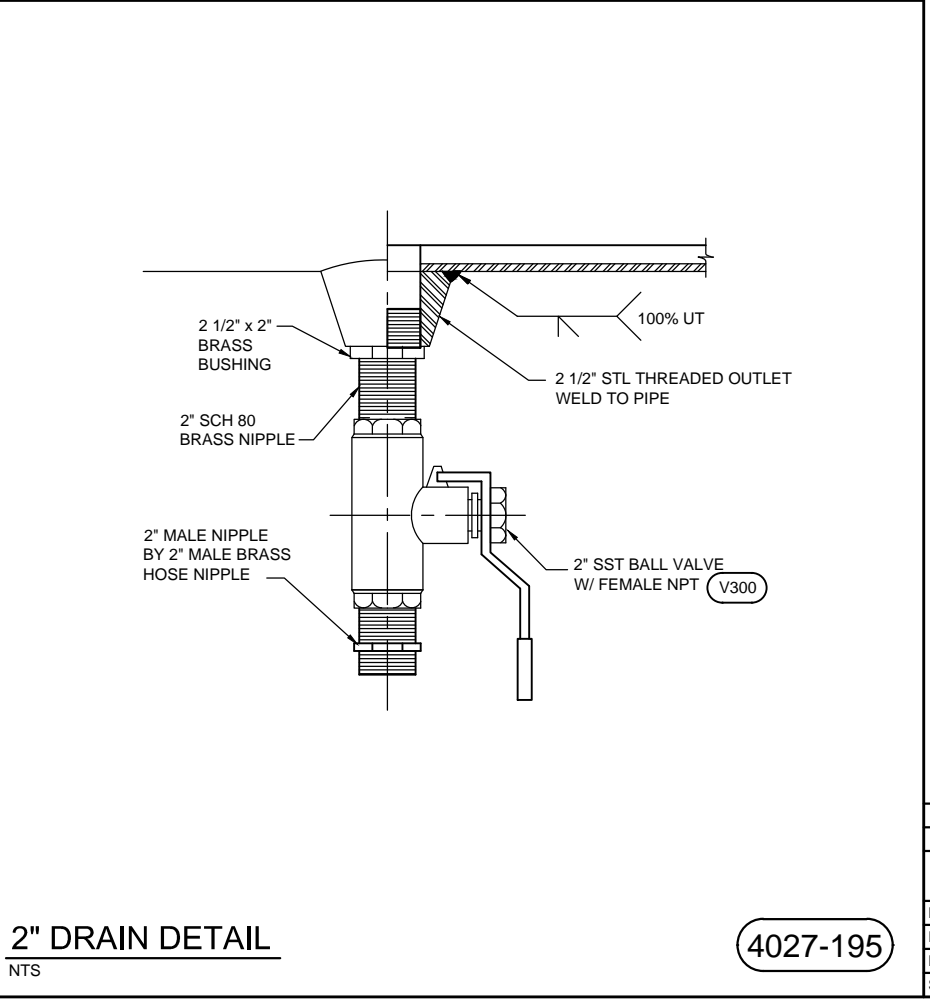
**COMBINATION AIR VALVE ASSEMBLY (DIRECT CONNECTION)**  
NTS

4027-120



**COMBINATION AIR VALVE ASSEMBLY (TANGENT CONNECTION)**  
NTS

4027-125



**2\"/>NTS**

4027-195

NO.	DATE	DR	APVD	BY	APVD	CHK	REVISION	APVD	BY
		R. WILLEITNER				C. HOGGARD			R. WILLEITNER

**JORDAN VALLEY WATER CONSERVANCY DISTRICT**

11800 SOUTH U-111 PROJECT

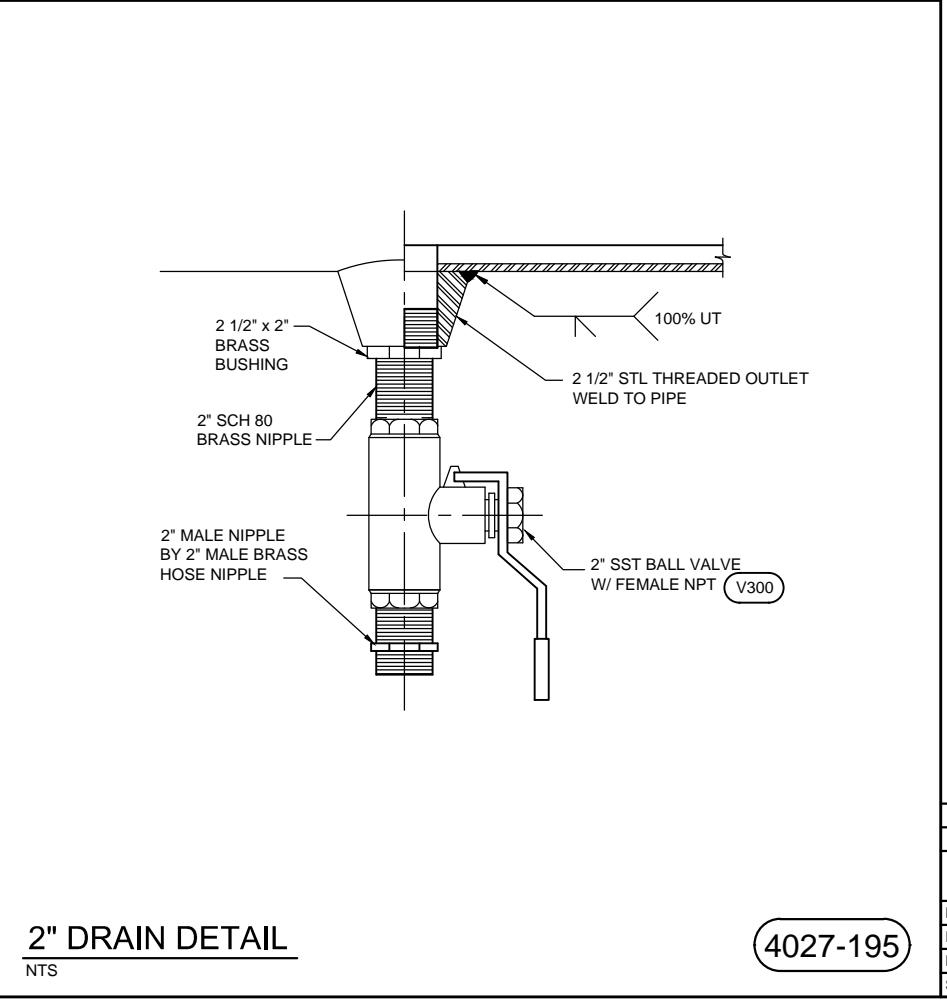
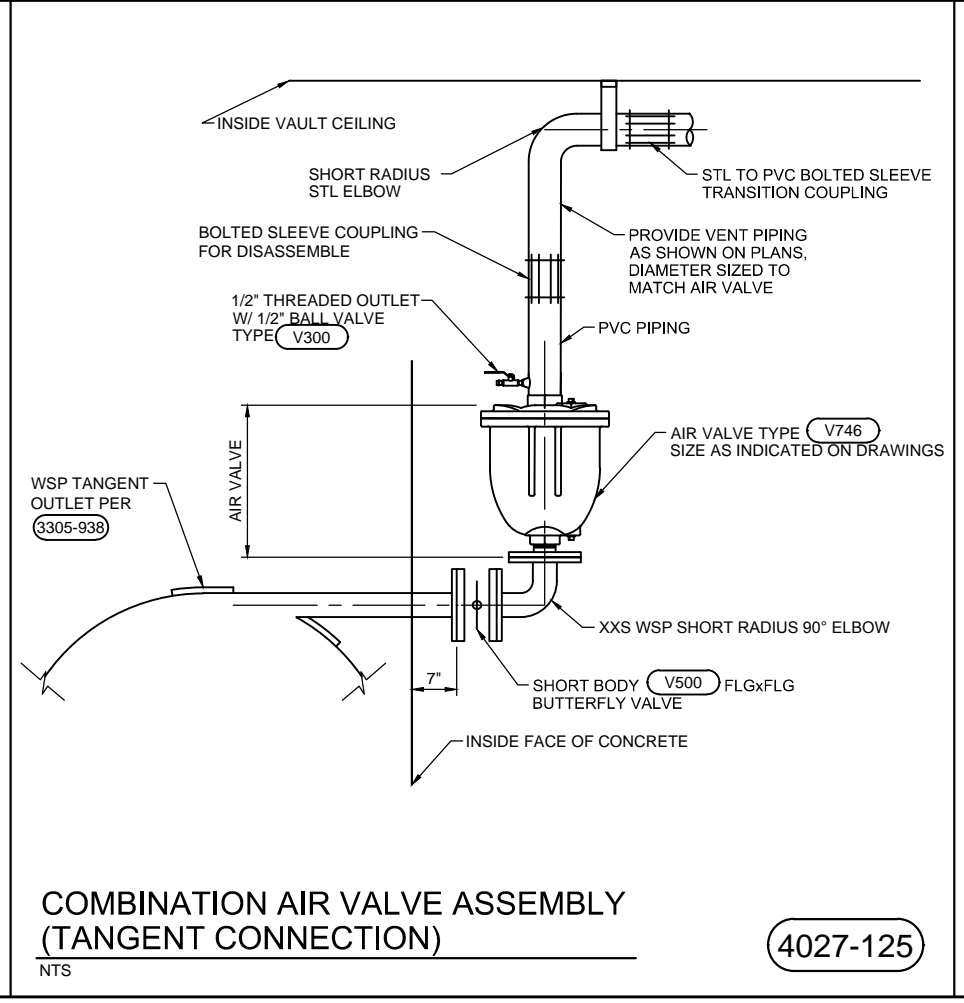
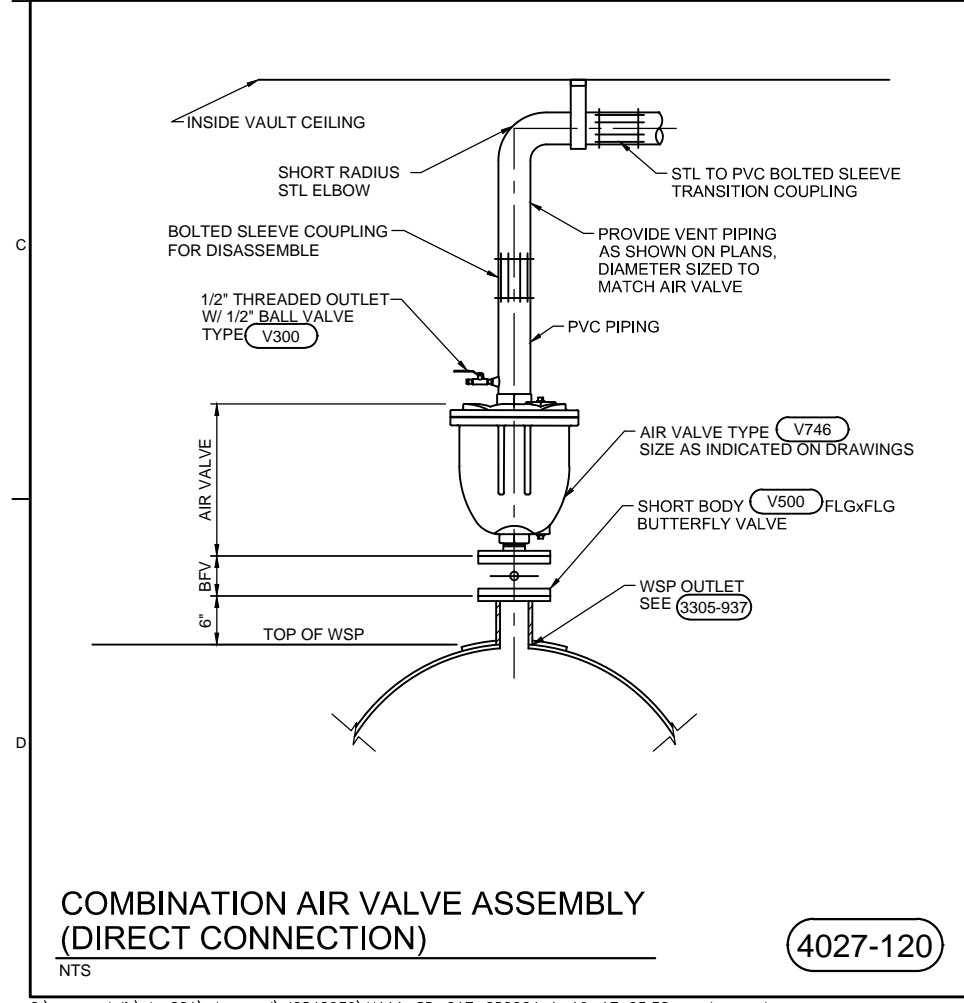
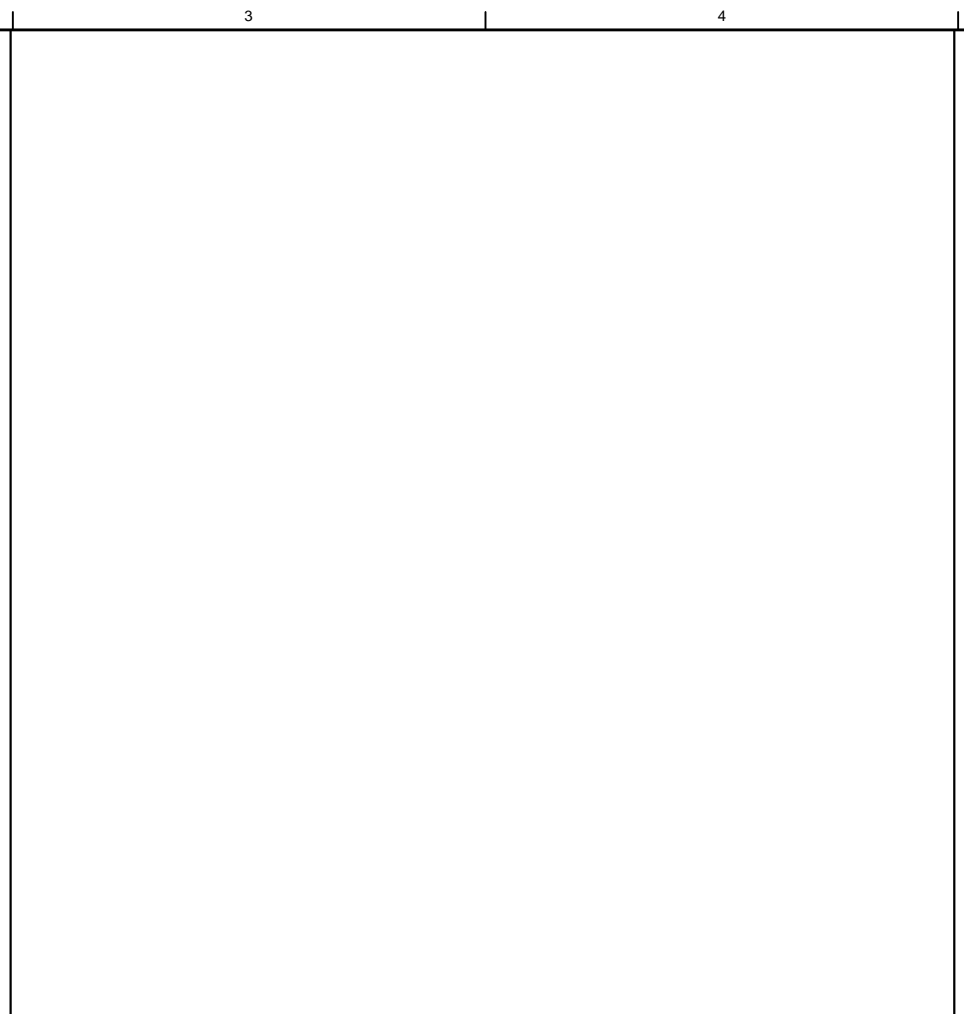
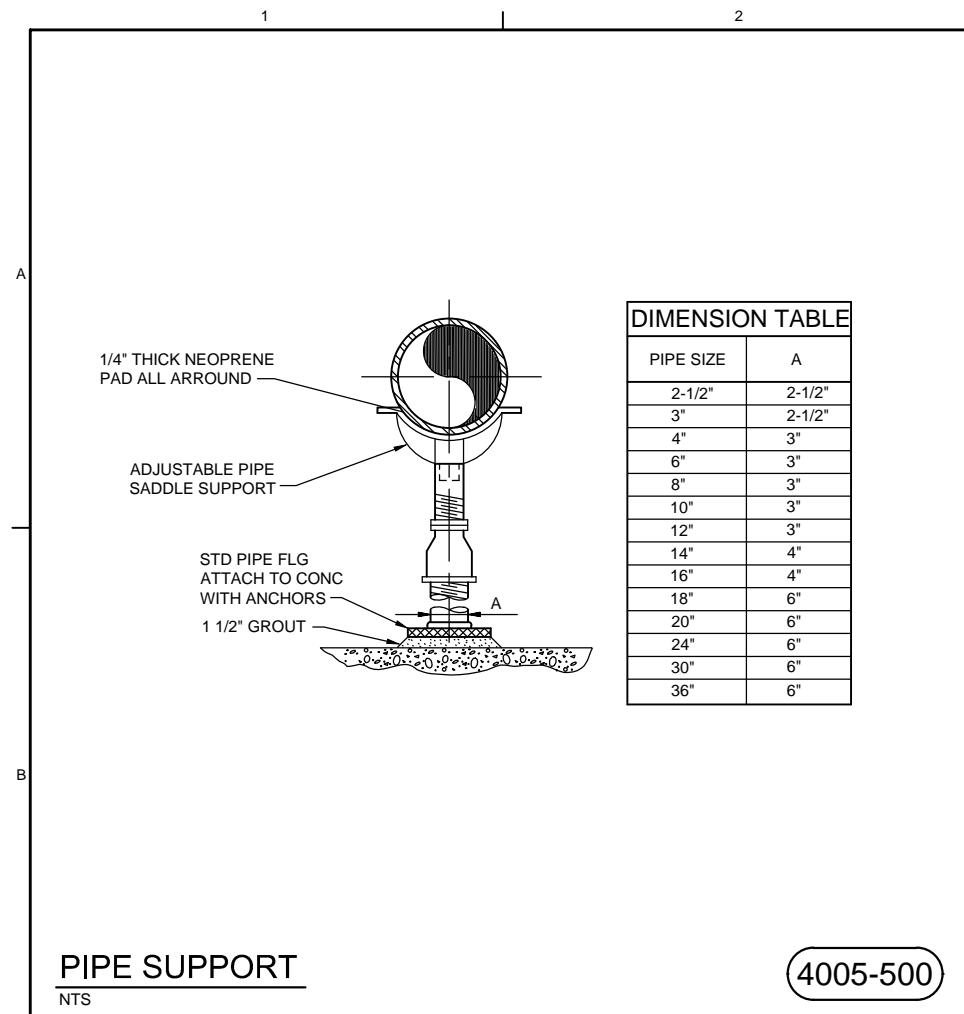
**STANDARD DETAILS**

**VERIFY SCALE**

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PROJ	680064
DWG	SD-16
SHEET	of





R. WILLEITNER  
APVD  
BY APVD

NO.	DATE	DR	REVISION	CHK	APVD

**ch2m**  
 STANDARD DETAILS  
**STANDARD DETAILS**

JORDAN VALLEY WATER CONSERVANCY DISTRICT  
 11800 SOUTH U-111 PROJECT

VERIFY SCALE  
 BAR IS ONE INCH ON ORIGINAL DRAWING.

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DWG	SD-17
SHEET	of