CONTRACT DOCUMENTS

FOR THE CONSTRUCTION OF

SERWTP DISINFECTANT CONCENTRATION-TIME IMPROVEMENTS PROJECT

Volume 2 of 3
Drawings

DISTRICT PROJECT NO. 4393

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JORDAN VALLEY WATER
CONSERVANCY DISTRICT

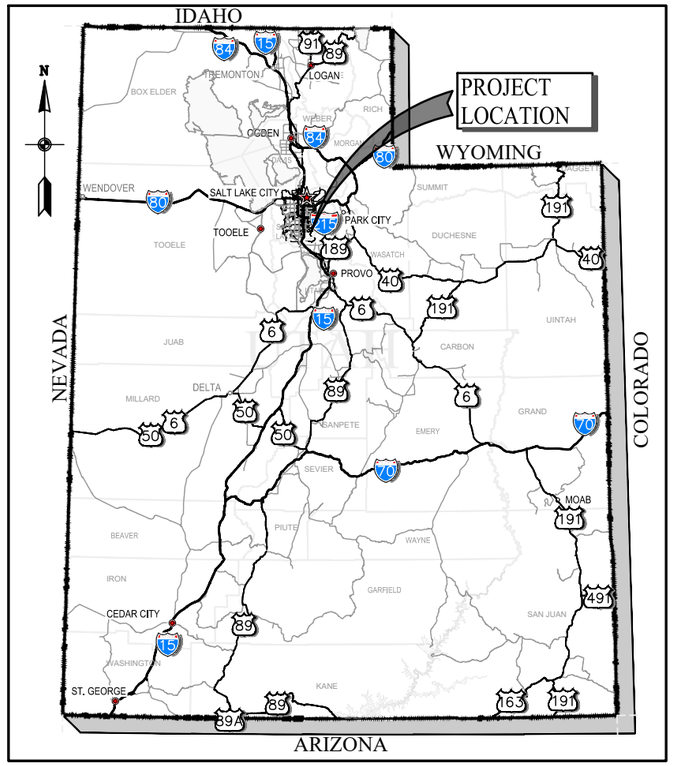
BOWEN COLLINS
& ASSOCIATES

October 2026

DRAWINGS FOR CONSTRUCTION OF THE

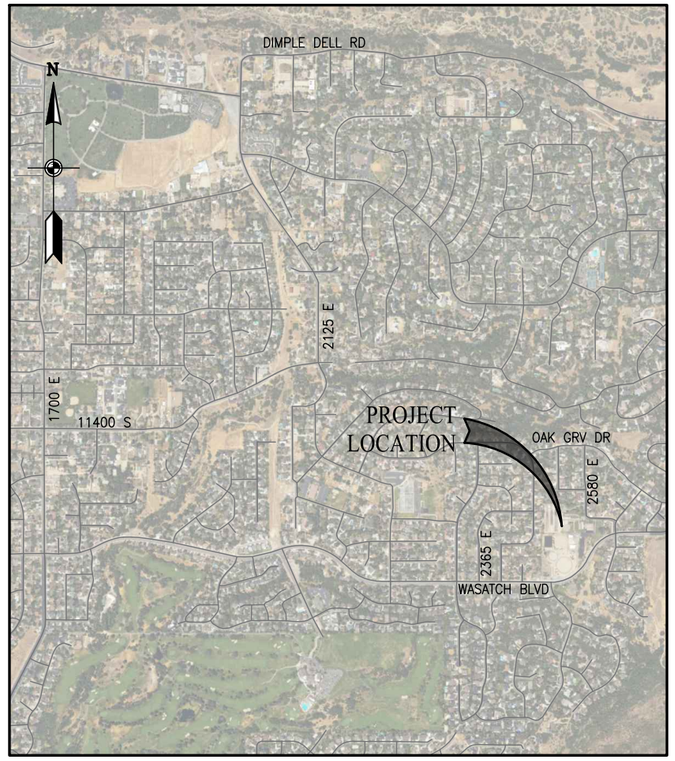
SERWTP DISINFECTANT CONCENTRATION TIME IMPROVEMENTS

JORDAN VALLEY WATER CONSERVANCY DISTRICT



PROJECT LOCATION MAP

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PROJECT VICINITY MAP

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NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN P. OLDHAM
DRAWN P. OLDHAM
CHECKED G. LOSCHER
APPROVED J. CURTIS
REVIEW

GENERAL
INDEX OF DRAWINGS, PROJECT LOCATION AND VICINITY MAPS

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO.
G-01
SHEET 01 OF 40

P:\Jordan Valley WCD\010-25-03 SERWTP Disinfectant CT Improvements\2.0 Design Phase\2.7 Drawings\sht\G-01.dwg Plotted: 10/7/2026 9:21 AM By: Kyle Smoot

@	AT
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABBR	ABBREVIATION
ABS	ACRYLONITRILE–BUTADIENE–STYRENE
AC	ASPHALTIC CONCRETE OR ALTERNATING CURRENT OR ACTIVATED CARBON
ACI	AMERICAN CONCRETE INSTITUTE
ACP	ASPHALTIC CONCRETE PAVEMENT
ADDL	ADDITIONAL
ADJ	ADJACENT OR ADJUSTABLE
AER	AERATION
AFF	ABOVE FINISH FLOOR
AGGR	AGGREGATE
AH	AIR HANDLER
AIR CONT	AIR CONDITIONING
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL	ALUMINUM, ALUM
ALTN	ALTERNATIVE, ALTERNATE
ANOD	ANODIZED
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
APVD	APPROVED
ARCH	ARCHITECTURAL
ARV	AIR RELEASE VALVE
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
AWS	AMERICAN WELDING SOCIETY
AWWA	AMERICAN WATER WORKS ASSOCIATION
B & S	BELL & SPIGOT
BC	BEGIN CURVE, BOLT CIRCLE
BF	BLIND FLANGE, BUTTERFLY VALVE
BFG	BELOW FINISH GRADE
BFP	BACK FLOW PREVENTER
BFV	BUTTERFLY VALVE
BHD	BULKHEAD
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLK	BLACK OR BLOCK
BLKG	BLOCKING
BLT	BOLT
BM	BEAM, BENCH MARK
BO	BLOW–OFF ASSEMBLY, BLOW–OFF
BOT	BOTTOM
BPS	BOOSTER PUMPING STATION
BPV	BACK PRESSURE VALVE
BRK	BRICK
BTU	BRITISH THERMAL UNIT
BTWN	BETWEEN
BUR	BUILT–UP ROOFING
BVC	BEGIN VERTICAL CURVE
BVCE	BEGIN VERTICAL CURVE ELEVATION
BVCS	BEGIN VERTICAL CURVE STATION
BW	BACK WASH, FILTER BACKWASH
C	CENTIGRADE OR CELSIUS
CAB	CABINET
CAP	CAPACITY
CARV	COMBINATION AIR RELEASE VALVE
CB	CATCH BASIN
CC	CENTER TO CENTER
CCP	CONCRETE CYLINDER PIPE
CD	CEILING DIFFUSER CHEMICAL DRAIN AND VENT
CER	CERAMIC
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFR	CODE OF FEDERAL REGULATIONS
CFS	CUBIC FEET PER SECOND
CG	CHLORINE GAS
CGB	CORD GRIP BUSHING
CHBD	CHALKBOARD
CHEM	CHEMICAL
CHG	CHANGE
CHKD PL	CHECKERED PLATE
CI	CAST IRON
CIP	CAST IRON PIPE
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CHLORINATOR, CHAIN LINK, CENTERLINE OR CHLORINE
CLR	CLEAR, CLEARANCE
CLST	CEMENT LINED STEEL PIPE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CM	CENTIMETER
CML & C	CEMENT MORTAR LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
COMM	COMMUNICATION
COMB	COMBINED
CONC	CONCRETE, CONCENTRIC
COND	CONDENSER, CONDENSATE
CONN	CONNECTION
CONST	CONSTRUCTION, CONSTRUCT
CONT	CONTINUED, CONTINUOUS, CONTINUATION
COORD	COORDINATE
COP	COPPER
COTG	CLEAN–OUT TO GRADE
CPLG	COUPLING
CPS	CULINARY PUMP STATION
CPVC	CHLORINATED POLYVINYL CHLORIDE
CS	CAST STEEL OR CAUSTIC SODA
CTRD	CENTERED
CTR	CENTER
CTSK	COUNTERSUNK
CU FT	CUBIC FOOT
CU IN	CUBIC INCH
CU YD	CUBIC YARD
CULV	CULVERT
CV	CHECK VALVE
CW	COLD WATER
CWO	CHAIN WHEEL OPERATOR
CYL	CYLINDER
d	PENNY
DBA	DEFORMED ANCHOR
DBL	DOUBLE
DC	DIRECT CURRENT
DEG	DEGREE
DEMO	DEMOLITION, DEMOLISH
DEQ	DEPARTMENT OF ENVIRONMENTAL QUALITY
DET	DETAIL
DI	DUCTILE IRON, DROP INLET
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DIFF	DIFFUSER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DISCH	DISCHARGE
DIST	DISTANCE
DIV	DIVISION
D–LOAD	LOADING CONDITION FOR RCP
DMPR	DAMPER
DN	DOWN, DECANT
DOT	DEPARTMENT OF TRANSPORTATION
DP	DAMP PROOFING
DR	DOOR, DRAIN
DS	DRENCH SHOWER & EYE WASH, DOWNSPOUT
DWG	DRAWING
DWL	DOWEL
E(UG)	ELECTRICAL (UNDERGROUND)
E(OH)	ELECTRICAL (OVERHEAD POWER)
E	EAST
EA	EACH
EB	EXPANSION BOLT
EC	END CURVE
ECC	ECCENTRIC
EF	EACH FACE, EXHAUST FAN
EFF	EFFLUENT
EG	EXISTING GRADE
EL	ELEVATION
ELB	ELBOW
ELEV	ELEVATION
ELEC	ELECTRICAL, ELECTRONIC
EMB	EMBEDMENT
EMER	EMERGENCY
ENCL	ENCLOSURE
ENG	ENGINE
ENGR	ENGINEER
EP	EDGE OF PAVEMENT
EPDM	ETHYL PROPYLENE DIENE MONOMER
EPS	EXPANDED POLYSTYRENE
EQ	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
ETC	ETCETERA
EVAP	EVAPORATOR
EVC	END VERTICAL CURVE
EVCE	END VERTICAL CURVE ELEVATION
EVCS	END VERTICAL CURVE STATION
EW	EACH WAY, EYE WASH
EXH	EXHAUST
EXIST	EXISTING
EXP ANR	EXPANSION BOLT, ANCHOR
EXP JT	EXPANSION JOINT
EXT	EXTERIOR, EXTENSION, EXTERNAL
F	FAHRENHEIT, FACE
F TO F	FACE TO FACE
FAB	FABRICATION, FABRICATE, OR FABRICATED
FB	FLAT BAR
FC	FLEXIBLE COUPLING
FCA	FLANGE COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDN	FOUNDATION
FDR	FEEDER
FEXT	FIRE EXTINGUISHER
FF	FLAT FACE, FAR FACE, FINISH FLOOR
FG	FINISH GRADE, FLOW GLASS
FH	FIRE HYDRANT
FLR	FLOOR
FL	FLOW LINE
FLEX	FLEXIBLE
FLG	FLANGE
FM	FORCE MAIN (SANITARY SEWER)
FND	FOUND
FNSH	FINISH
FO	FIBER OPTIC
FRP	FIBERGLASS REINFORCED PLASTIC
FW	FINISH WATER
FWR	FINISH WATER RESERVOIR
G	GAS
GA	GAGE, GAUGE
GAL	GALLON
GALV	GALVANIZED
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GI	GALVANIZED IRON
GIS	GEOGRAPHIC INFORMATION SYSTEM
GL	GLASS
GLAZ	GLAZING
GLV	GLOBE VALVE
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRADE
GR BRK	GRADE BREAK, GRADE CHANGE
GRTG	GRATING
GRV	GROOVED
GSP	GALVANIZED STEEL PIPE
GV	GATE VALVE
GYP	GYPSUM BOARD
H	HEIGHT
HAS	HEADED ANCHOR STUD
HB	HOSE BIBB
HD	HUB DRAIN
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HDW	HARDWARE
HEX	HEXAGONAL
HGR	HANGER
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HP	HORSEPOWER, HIGH PRESSURE,HEAT PUMP, HIGH POINT
HR	HEATING RETURN, HOUR, HOSE RACK
HS	HIGH STRENGTH
HSS	HOLLOW STRUCTURAL SECTION
HTG	HEATING
HTR	HEATER
HV	HOSE VALVE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HWL	HIGH WATER LEVEL
HWO	HANDWHEEL OPERATED
HYD	HYDRANT, HYDRAULIC
ICFM	INLET CUBIC FEET PER MINUTE
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IN	INCH
IN LB	INCH–POUND
INFL	INFLUENT
INSUL	INSULATING
INVT	INVERT
IOB	INLET OUTLET BYPASS
IPS	IRON PIPE SIZE
IRR	IRRIGATION
JA	JORDAN AQUEDUCT
JT	JOINT
JTS	JOINTS
JVWTP	JORDAN VALLEY WATER TREATMENT PLANT
K	KELVIN, KILO OR THOUSAND POUNDS
KG	KILOGRAM
KV	KILOVOLT
KW	KILOWATT
KWH	KILOWATT HOUR
L	LEFT OR LITER
LAB	LABORATORY
LAV	LAVATORY
LB	POUND
LC	LENGTH OF CURVE
LF	LINEAR FEET
LG	LENGTH OR LONG
LH	LEFT HAND
LIP	LIP OF GUTTER
LL	LIVE LOAD
LLV	LONG LEG VERTICAL
LOL	LENGTH OF LINE
LP	LOW POINT
LR	LONG RADIUS
LT	LIGHT, LEFT
LVL	LEVEL
LWL	LOW WATER LEVEL
LWR	LOWER
M	METER, MALE (PIPE THREAD)
MACH	MACHINE
MAN	MAGNETIC, MANUAL
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL, MECHANISM
MEMB	MEMBRANE
MET	METAL
MFR	MANUFACTURER
MG	MILLION GALLONS
MGD	MILLION GALLONS PER DAY
MH	MANHOLE, MONORAIL HOIST
MI	MALLEABLE IRON
MID	MIDDLE
MIL	1/1,000 INCH
MIN	MINIMUM OR MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MO	MASONRY OPENING
MPH	MILES PER HOUR
MTG	MOUNTING
MTL	METAL OR MATERIAL
MTR	MOTOR
MWS	MAXIMUM WATER SURFACE
N	NORTH
NAVD	NORTH AMERICAN VERTICAL DATUM
NBS	NATIONAL BUREAU OF STANDARDS
NC	NORMALLY CLOSED
NE	NORTHEAST
NEC	NATIONAL ELECTRIC CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURES ASSOCIATION
NF	NEAR FACE
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NO	NUMBER OR NORMALLY OPEN
NOM	NOMINAL
NPT	NATIONAL PIPE THREAD
NS	NEAR SIDE
NSF	NATIONAL SANITATION FOUNDATION
NTS	NOT TO SCALE
NW	NORTHWEST
O TO O	OUT TO OUT
OC	ON CENTER, OVER–CROSSING
OD	OUTSIDE DIAMETER, OVERALL DIMENSION
OF	OUTSIDE FACE, OVERFLOW
OFS	OVERFLOW STRUCTURE
OH	OVERHEAD
OPER	OPERATOR, OPERATING
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OVHD	OVERHEAD
OZ	OUNCE
PC	PORTLAND CEMENT, POINT OF CURVE OR PRIMARY CLARIFIER
PCC	PORTLAND CEMENT CONCRETE
PCF	POUNDS PER CUBIC FOOT
PE	PLAIN END, POLYELECTROLYTE POLYMER, POLYETHYLENE
PG	PRESSURE GAUGE
pH	HYDROGEN ION CONCENTRATION
PI	PLANT INFLUENT, POINT OF INTERSECTION
PJF	PREMOLDED JOINT FILLER
PL	PLATE, PROPERTY LINE, PLACE
PLYWD	PLYWOOD
PM	PUMP, PROPELLER METER
POB	POINT OF BEGINNING
PP	POTASSIUM PERMANGANATE
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	PARTS PER MILLION
PR	PAIR
PRC	POINT OF REVERSE CURVE
PREFAB	PREFABRICATED
PRI	PRIMARY
PRV	PRESSURE REGULATING/REDUCING VALVE
PS	PRESSURE SWITCH, PUMP STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	POINT OF TANGENT, PRESSURE TREATED
PTDF	PRESSURE TREATED DOUGLAS FIR
PV	PAVEMENT
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PW	POTABLE WATER
RAD	RADIUS
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN OR ROAD
RDCR	REDUCER, REDUCING
RECIRC	RECIRCULATION
RED	REDUCING
REF	REFERENCE, REFER
REG	REGULATING, REGISTER
REINF	REINFORCE, REINFORCED
REQD	REQUIRED
REV	REVISION
RF	ROOF, RAISED FACE
RND	ROUND
RPM	REVOLUTIONS PER MINUTE
RP	RADIUS POINT
RS	RAW SEWAGE
RST	REINFORCING STEEL, RESET
RT	REGULATING TANK, RADIOGRAPHIC, RIGHT
RV	ROOF VENT
R/W	RIGHT OF WAY
RW	RAW WATER
S	SOUTH, SECOND
SA	SAMPLE, SAMPLE LINE
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SD	STORM DRAIN
SECT	SECTION
SHT	SHEET
SIM	SIMILAR
SLP	SLOPE
SP	SPACING, STATIC PRESSURE
SPA	SPACED
SPEC	SPECIFIED, SPECIFICATION
SPECS	SPECIFICATIONS
SPG	SPACING
SPKR	SPEAKER
SPLY	SUPPLY
SPRT	SUPPORT
SQ	SQUARE
SQ FT	SQUARE FOOT
SR	SUPPLY REGISTER
SS	SANITARY SEWER, SERVICE SINK
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRL	STRUCTURAL
SUC	STRUCTURAL UNDERDRAIN COLLECTOR
SWA	SOUTHWEST AQUEDUCT
SYM	SYMBOL
SYMM	SYMMETRICAL
SYS	SYSTEM
T	THICKNESS, TOP, TOILET
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TAN	TANGENT
TBC	TOP BACK OF CURB
TBM	TEMPORARY BENCH MARK
TDH	TOTAL DYNAMIC HEAD
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPERATURE, TEMPORARY
THK	THICK
THR'D	THREADED
TK	TANK
TO	TOP OF
TOC	TOP OF CONCRETE
TOG	TOP OF GRADE
TP	TELEPHONE POLE, TURNING POINT
TW	TOP OF WALL
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UD	UNDERDRAIN
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
USBR	U.S. BUREAU OF RECLAMATION
V	VALVE, VENT, VOLT, VACUUM
VAR	VARIES, OR VARIABLE
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VIC	VICTAULIC COUPLING
VOL	VOLUME
VPI	VERTICAL POINT OF INFLECTION
VSS	VOLATILE SUSPENDED SOLIDS
VTC	VENT THROUGH CEILING
VTR	VENT THROUGH ROOF
W	WEST, WASTE, WIDE FLANGE (BEAM)
W/	WITH
W/O	WITHOUT
WC	WATER COLUMN OR WATER CLOSET
WCO	WALL CLEANOUT
WD	WOOD
WH	WATER HEATER
WS	WATER STOP, WATER SURFACE
WSP	WELDED STEEL PIPE
WSTP	WATER STOP
WT	WEIGHT
WWM	WELDED WIRE MESH
XMFR	TRANSFORMER
XMTR	TRANSMITTER
XS	EXTRA STRONG
YD	YARD
YP	YARD PIPING
YR	YEAR

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX JUDD STATE OF UTAH 10/06/2026

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SERWTP DISINFECTANT CT IMPROVEMENTS

SANDY, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN P. OLDHAM

DRAWN P. OLDHAM

REVIEW

CHECKED G. LOSCHER

APPROVED J. CURTIS

GENERAL

ABBREVIATIONS

PROJECT NUMBER 010-25-03

DATE: OCTOBER 2026

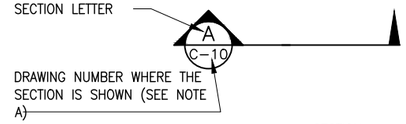
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SHEET 02 OF 40

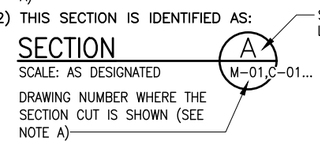
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SECTION IDENTIFICATION

(1) SECTION CUT SHOWN ON DRAWING AS:

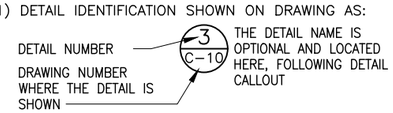


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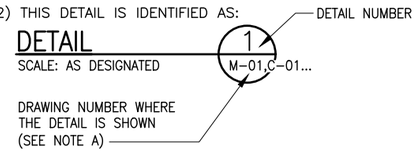


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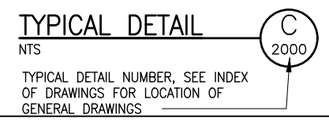
(1) DETAIL IDENTIFICATION SHOWN ON DRAWING AS:



(2) THIS DETAIL IS IDENTIFIED AS:



TYPICAL DETAIL IDENTIFICATION



DRAWING IDENTIFICATION SYSTEM

LETTER	DISCIPLINE
G	GENERAL
C	CIVIL
CP	CORROSION PROTECTION
L	LANDSCAPE
A	ARCHITECTURAL
S	STRUCTURAL
M	MECHANICAL
E	ELECTRICAL
I	INSTRUMENTATION
GC	GENERAL CIVIL DETAILS
GA	GENERAL ARCHITECTURAL DETAILS
GS	GENERAL STRUCTURAL DETAILS
GM	GENERAL MECHANICAL DETAILS
GE	GENERAL ELECTRICAL DETAILS
GI	GENERAL INSTRUMENTATION DETAILS

S-02
- INDIVIDUAL DRAWING NUMBER
- DISCIPLINE

NOTES:

A. IF PLAN AND SECTION (OR DETAIL CALL-OUT AND DETAIL) ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACED BY A HORIZONTAL LINE.

B. ELECTRICAL SYMBOLS SHOWN ON ELECTRICAL DRAWINGS. FOR WELDING SYMBOLS USE AMERICAN WELDING SOCIETY STANDARD SYMBOLS. SEE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL.

- COORDINATE IDENTIFICATION
- ELEVATION INDICATOR
- SECTION CORNER
- BENCH MARK
- MONUMENT INDICATOR
- POTHOLE
- TEST HOLE
- BORING HOLE
- SECTION LINE
- PROPERTY LINE
- EASEMENT
- PARCEL
- R/W — RIGHT-OF-WAY
- NEW ASPHALT
- EXISTING ASPHALT
- CENTERLINE
- 4500 — CONTOUR LINE, FINISHED GRADE
- 4500 — CONTOUR LINE, EXISTING GRADE
- 4500.20 — FINISHED ELEVATION
- (4500.20) — EXISTING ELEVATION
- TOP / TOE — CUT OR FILL SLOPE TO BE CONSTRUCTED
- SILT FENCE
- X — X — FENCE
- RAILING
- DITCH
- CULVERT
- RIPRAP
- TREE LINE/VEGETATION
- EXISTING STRUCTURE OR FACILITY
- NEW STRUCTURE OR FACILITY
- FUTURE STRUCTURE OR FACILITY
- NEW PIPELINE (CIVIL SHEETS)
- NEW PIPELINE 10" DIA AND SMALLER (CIVIL SHEETS)
- EXISTING UTILITY PIPELINE
- ATMS — ATMS
- CTV — CABLE
- C(ug) — COMMUNICATION BURIED
- COMM — COMMUNICATION OVERHEAD
- P(ug) — ELECTRICAL BURIED
- OHP — ELECTRICAL OVERHEAD
- FO — FIBER OPTICS OVERHEAD
- FO(ug) — FIBER OPTICS UNDERGROUND
- G — GAS
- IRR — IRRIGATION
- PETRO — PETROLEUM LINE
- SS — SANITARY SEWER
- SD — STORM DRAIN
- T(ug) — TELEPHONE BURIED
- TEL — TELEPHONE OVERHEAD
- W — WATERLINE
- TV — CABLE BOX
- CATCH BASIN
- EB — ELECTRICAL BOX
- HYDRANT
- G — GAS MANHOLE
- S — SEWER MANHOLE
- D — STORM DRAIN MANHOLE
- T — TELEPHONE MANHOLE
- W — WATER MANHOLE
- WM — WATER METER

- POWER POLE
- TB — TELEPHONE BOX
- LIGHT POLE ONE LUMINAIRE
- LIGHT POLE TWO LUMINAIRS
- LIGHT POLE
- STREET LIGHT WITH BRACKET
- TO BE REMOVED OR ABANDONED
- MASONRY
- STEEL
- INSULATION
- GRAVEL
- CONCRETE
- EARTH
- SAND
- ALUMINUM OR METAL DECKING
- CHECKERED PLATE
- SPAN — GRATING
- PLASTIC, RUBBER OR NEOPRENE
- WOOD (ROUGH FRAMING) OR, OPENING OR DEPRESSION IN SLAB OR WALL
- 12 X 24 — DUCT (FIRST DIMENSION DUCT SIDE SHOWN, SECOND DIMENSION DUCT SIDE NOT SHOWN)
- 24 X 12 — SUPPLY OR OUTSIDE AIR DUCT (FIRST DIMENSION, DUCT WIDTH)
- 24 X 12 — EXHAUST OR RETURN AIR DUCT (FIRST DIMENSION, DUCT WIDTH)
- SIZE / CFM — CEILING SUPPLY DIFFUSER (SIZE IN INCHES)
- SIZE / CFM — CEILING RETURN OR EXHAUST AIR GRILLE OR REGISTER (SIZE IN INCHES, WIDTH X HEIGHT)
- SIZE / CFM — EXHAUST OR RETURN AIR GRILLE OR REGISTER (SIZE IN INCHES, WIDTH X HEIGHT)
- SIZE / CFM — SUPPLY GRILLE OR REGISTER (SIZE IN INCHES, WIDTH X HEIGHT)
- AIR TURNING VANES IN DUCT
- DD — DEFLECTING DAMPER
- FHC — FIRE HOSE CABINET
- FE — FIRE EXTINGUISHER
- UNIT HEATER
- PCOTG — PRESSURE CLEANOUT TO GRADE
- WCO — WALL CLEANOUT
- FCO — FLOOR CLEANOUT
- COTG — CLEANOUT TO GRADE
- BLOW OFF ASSEMBLY
- HUB DRAIN
- FLOOR DRAIN
- FLOOR SINK
- DRAIN TRAP

- CHANGE IN PIPING MATERIAL
- 24" RCP-RW — PIPE SIZE AND TYPE/FLUID ABBREVIATION (USE FOR EXISTING PIPE CALLOUT)
- 10" PW (2) — PIPE CALLOUT (SEE PIPING SCHEDULE)
- ME-2 — EQUIPMENT NUMBER (SEE EQUIPMENT SCHEDULE)
- BACKWATER VALVE
- BACKFLOW PREVENTER
- STOP GATE
- SLIDE GATE
- SLUICE GATE
- GATE VALVE, BURIED WITH VALVE BOX
- MUD VALVE
- BUTTERFLY VALVE, BURIED WITH VALVE BOX
- ECCENTRIC PLUG VALVE, BURIED WITH VALVE BOX
- LUBRICATED PLUG VALVE, BURIED WITH VALVE BOX
- KNIFE VALVE
- GATE VALVE
- BUTTERFLY VALVE
- ECCENTRIC PLUG VALVE
- LUBRICATED PLUG VALVE
- GLOBE VALVE
- BALL VALVE
- DIAPHRAGM VALVE
- CHECK VALVE
- PRESSURE REGULATING VALVE
- BACK-PRESSURE VALVE
- M / P — MOTOR OPERATOR FOR VALVES (M = ELECTRIC, P = PNEUMATIC, H = HYDRAULIC)
- T — TEMPERATURE CONTROL VALVE
- SOLENOID SHIELD
- S — SOLENOID VALVE
- B — MULTIPORT VALVE - 3 WAY
- B — MULTIPORT VALVE - 4 WAY
- FLOAT OPERATED VALVE
- NEEDLE VALVE
- PRESSURE RELIEF VALVE
- ANGLE VALVE
- HOSE BIBB (H/B)
- B — BUBBLER LEVEL CONTROL
- CENTRIFUGAL OR TURBINE PUMP OR FAN
- METERING PUMP
- PROGRESSIVE CAVITY, POSITIVE DISPLACEMENT PUMP
- BLOWER OR COMPRESSOR
- INJECTOR OR EDUCTOR
- F/A — FLAME ARRESTER
- AIR VACUUM AND AIR RELEASE ASSEMBLY
- M — METER

- THERMOMETER
- T — ROOM THERMOSTAT
- G — PRESSURE GAUGE
- G — PRESSURE GAUGE WITH DIAPHRAGM SEAL
- S — PRESSURE SWITCH
- S — PRESSURE SWITCH WITH DIAPHRAGM SEAL
- FLANGED FITTING
- WELDED FITTING
- MECHANICAL-TYPE FITTING (GROOVED)
- SCREWED, SOCKET-WELD, BELL AND SPIGOT OR HUBLESS FITTING
- SLEEVE-TYPE COUPLING
- FLANGED ADAPTER COUPLING
- FLANGED ADAPTER - SET SCREW TYPE
- EXPANSION JOINT
- MECHANICAL TYPE COUPLING
- EXPANSION JOINT
- EXPANSION LOOP
- FLEXIBLE COUPLING
- UNION
- QUICK DISCONNECT COUPLER
- CAPPED END OR PLUGGED END
- BLIND FLANGE
- REDUCER OR INCREASER
- ECCENTRIC REDUCER OR INCREASER
- CUT PIPE
- STRAINER
- THERMOSTATIC TRAP
- DRAIN
- FLOW TUBE
- M M — MAGNETIC METER
- D M — DENSITY METER
- P M — PROPELLER METER
- ORIFICE PLATE AND FLANGES
- ROTAMETER
- T — CONDENSATE TRAP
- PIPE SUPPORT (IN PLAN ONLY)
- PULSATION DAMPENER
- AD — AREA DRAIN
- LIQUID SURFACE EL
- PIPE ANCHOR

- 1 — REVISION WORK
- 3 — REFERENCE TO NOTE
- 1 — COLUMN LINE GRID
- A — WINDOW TYPE
- 05 — DOOR NUMBER
- 05 — ROOM NUMBER

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — No. 12141991 — JOSHUA REX CURTIS — STATE OF UTAH — 10/06/2026

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SERWTP DISINFECTANT CT IMPROVEMENTS

SANDY, UT

DESIGN P. OLDHAM — DRAWN P. OLDHAM — CHECKED G. LOSCHER — APPROVED J. CURTIS — REVIEW

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

GENERAL

SYMBOLS

DATE: OCTOBER 2026 — PROJECT NUMBER 010-25-03

DRAWING NO. G-03

SHEET 03 OF 40

P:\jordan valley wcd\010-25-03 serwtp disinfectant ct improvements\2.0 design phase\2.7 drawings\sht\G-03.dwg Plotted: 10/7/2026 8:54 AM By: Kyle Smoot

GENERAL NOTES:

1. EROSION AND SEDIMENTATION CONTROL:
CONTRACTOR SHALL CONSTRUCT BERMS AND/OR DRAINAGE DITCHES AS NEEDED TO KEEP STORM RUNOFF FROM ENTERING CONSTRUCTION EXCAVATIONS OR INTERFERING WITH CONSTRUCTION EFFORTS. CONTRACTOR SHALL INSTALL EXCELSIOR EROSION CONTROL MATTING ON ALL DISTURBED AREAS WITH SLOPES OF 3H:1V OR STEEPER. EROSION CONTROL MATS SHALL BE CURLEX TYPE I AS MANUFACTURED BY AMERICAN EXCELSIOR COMPANY, OR APPROVED EQUAL. INSTALL AND ANCHOR PER MANUFACTURER'S RECOMMENDATIONS.

2. CHANGES:
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM CONSTRUCTION AS PER THE CONTRACT DOCUMENTS. ANY ADDITIONS, DELETIONS, OR CHANGES SHALL FIRST MEET WITH THE APPROVAL OF THE ENGINEER AND THE OWNER.

3. SYMBOLS:
SYMBOLS, LEGENDS, AND PIPE USE IDENTIFICATIONS SHOWN SHALL BE FOLLOWED THROUGHOUT THE PLANS, WHEREVER APPLICABLE. NOT ALL OF THE VARIOUS PIPING COMPONENTS ARE NECESSARILY USED IN THE PROJECT.

4. EXISTING FACILITIES:
THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING IMPROVEMENTS, WHICH ARE TO REMAIN IN PLACE, FROM DAMAGE. ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR RECONSTRUCTED TO ORIGINAL OR BETTER CONDITION TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE CONTRACTOR, UNLESS NOTED OTHERWISE.

5. EASEMENTS:
THE CONTRACTOR SHALL BE REQUIRED TO KEEP ALL CONSTRUCTION ACTIVITIES WITHIN THE ESTABLISHED RIGHTS-OF-WAY AND EASEMENTS AS SHOWN. THIS SHALL INCLUDE BUT NOT BE LIMITED TO, VEHICLES AND EQUIPMENT, LIMITS OF TRENCH EXCAVATION, AND EXCAVATED MATERIAL AND BACKFILL STORAGE. IF THE CONTRACTOR REQUIRES ADDITIONAL CONSTRUCTION EASEMENTS, IT SHALL BE SOLELY THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SUCH EASEMENTS FROM INDIVIDUAL PROPERTY OWNERS.

6. PIPELINE CONSTRUCTION:
LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS AND ALONG HORIZONTAL ALIGNMENT AS DEFINED IN THESE DRAWINGS. CONTRACTOR SHALL NOT DEVIATE FROM PROPOSED ALIGNMENT WITHOUT A WRITTEN APPROVAL BY THE ENGINEER.

7. JOINTS AND FITTINGS:
SIZE OF FITTINGS SHOWN ON THE PLANS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS INDICATED OTHERWISE. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE. ALL JOINTS SHALL BE WATER TIGHT.

8. UTILITY LOCATIONS:
EXISTING UTILITIES SHOWN ON PLANS ARE BASED ON A RECORD SEARCH BY LOCAL CONTROLLING AGENCIES AND ARE APPROXIMATELY LOCATED. EXISTING UTILITIES ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF, AND PRESERVING, ALL UTILITIES INCLUDING THOSE NOT SHOWN OR INCORRECTLY SHOWN ON THE PLANS. CONTRACTOR SHALL NOTIFY UTILITY COMPANIES TWO (2) WEEKS IN ADVANCE OF UTILITY CONFLICTS REQUIRING RELOCATION OF MAIN LINES, AND ONE (1) WEEK IN ADVANCE OF CONFLICTS REQUIRING RELOCATION OF SERVICE LATERALS. NOTIFY BLUE STAKES (1-800-662-4111) AT LEAST 48 HOURS PRIOR TO EXCAVATION IN THE VICINITY OF UNDERGROUND UTILITIES.

9. EXCAVATION SAFETY:
THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFORMANCE WITH LOCAL AND FEDERAL CODES GOVERNING SHORING AND BRACING OF EXCAVATIONS AND TRENCHES, AND FOR PROTECTION OF WORKERS. TRENCH EXCAVATION TO BE IN ACCORDANCE WITH OSHA SAFETY AND HEALTH STANDARDS FOR CONSTRUCTION (29 CFR 1926).

10. THRUST RESTRAINT:
CONTRACTOR SHALL PROTECT ADJACENT PRESSURE PIPELINES AND PROVIDE TEMPORARY THRUST RESTRAINT AS NECESSARY DURING CONSTRUCTION. ALL NEW PRESSURE PIPE AND FITTINGS SHALL HAVE THRUST RESTRAINED JOINTS, THRUST BLOCKS, THRUST TIES OR OTHER APPROVED RESTRAINT. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURE SPECIFIED.

11. SURVEY MONUMENTS:
CONTRACTOR SHALL NOT DESTROY, REMOVE, OR DISTURB ANY EXISTING SURVEY MONUMENTS WITHOUT AUTHORIZATION OF CONTROLLING AGENCY. NO PAVEMENT CUTTING OR REMOVAL SHALL BEGIN UNTIL ALL SURVEY MARKERS OR MONUMENT POINTS THAT HAVE THE POTENTIAL OF BEING DISTURBED BY THE CONSTRUCTION OPERATIONS HAVE BEEN PROPERLY REFERENCED BY A REGISTERED LAND SURVEYOR. ALL SURVEY MONUMENTS OR POINTS DISTURBED BY THE CONTRACTOR SHALL BE ACCURATELY RESET BY A REGISTERED LAND SURVEYOR AFTER ALL RESTORATION AND RESURFACING HAS BEEN COMPLETED.

12. SURFACE RESTORATION:
ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED AND SEEDED AS SPECIFIED.

13. UTILITY CROSSINGS:
CONTRACTOR SHALL BACKFILL TRENCH AREAS WHERE NEW WATERLINES CROSS UNDER EXISTING BURIED UTILITIES WITH FLOWABLE FILL (CLSM) IN ACCORDANCE WITH SPECIFICATION SECTION 31 23 26 IF STANDARD MECHANICAL COMPACTION EQUIPMENT CANNOT ADEQUATELY COMPACT BACKFILL.

14. BURIED FITTINGS (WELDED STEEL PIPE):
ALL BURIED REBAR, FITTINGS, COUPLINGS, VALVES, FLANGES, AND MECHANICAL JOINT NUTS AND BOLTS ARE TO BE WAX TAPE WRAPPED PER AWWA C217.

15. BURIED FITTINGS (ALL OTHER PIPE):
ALL BURIED REBAR, FITTINGS, COUPLINGS, VALVES, FLANGES, AND MECHANICAL JOINT NUTS AND BOLTS ARE TO BE COATED WITH NON-OXIDE GREASE CHEVRON FM1 OR APPROVED EQUAL, COVERED WITH 8 MIL POLYETHYLENE SHEETING AND TAPE WRAPPED PER AWWA C105.

16. STATIONING:
STATIONS AND LENGTHS SHOWN ON THE DRAWINGS ARE CENTERLINE OF PIPELINE. PROFILE DRAWINGS ARE HORIZONTAL PROJECTIONS OF THE PIPELINE CENTERLINE, UNLESS OTHERWISE NOTED.

17. UTILITY POTHOLING:
CONTRACTOR TO VERIFY DEPTHS OF BURIED UTILITIES IN THE FIELD BY POT HOLING A MINIMUM OF 100-FEET AHEAD OF PIPELINE CONSTRUCTION TO AVOID CONFLICTS WITH DESIGNED PIPELINE GRADE AND ALIGNMENT. IF A CONFLICT ARISES RESULTING FROM THE CONTRACTOR NEGLECTING TO POTHOLE UTILITIES, THE CONTRACTOR SHALL RESOLVE THE CONFLICT WITHOUT ADDITIONAL COST OR CLAIM TO THE OWNER AND IN A MANNER APPROVED BY THE ENGINEER AND THE OWNER.

18. FINAL RIM ELEVATIONS:
CONTRACTOR SHALL ADJUST GRADE OF NEW MANHOLE RIMS, VALVE BOXES, AND INLET GRATES TO MATCH FINAL GRADES.

19. PIPELINE PROTECTION:
CONTRACTOR SHALL IMPLEMENT MEASURES DURING CONSTRUCTION THAT WILL PREVENT RUNOFF, DEBRIS AND SEDIMENT FROM ENTERING UNFINISHED PORTIONS OF THE NEW PIPE DURING CONSTRUCTION.

20. CONSTRUCTION SURVEYING:
CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING AND FOR LAYING OUT WORK.

21. SEPARATION:
CONTRACTOR SHALL COMPLY WITH UTAH DEQ AND SALT LAKE COUNTY HEALTH DEPARTMENT CRITERIA FOR MINIMUM SEPARATION OF WATER MAINS AND SANITARY SEWERS.

22. PIPELINE MINIMUM COVER:
FOR PIPELINES WHERE ELEVATIONS ARE NOT SHOWN, PROVIDE A MINIMUM OF 4-FEET OF COVER FOR PIPES SUBJECT TO FREEZING AND A MINIMUM OF 3-FEET OF COVER FOR ALL OTHERS.

23. DEMOLITION:
CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF DEBRIS FROM DEMOLITION AT CONTRACTOR EXPENSE.

24. DUST CONTROL:
FUGITIVE DUST FROM THE SITE SHALL BE CONTROLLED AS REQUIRED BY SALT LAKE COUNTY.

25. TEST PRESSURE:
ALL PIPING SHALL BE PRESSURE TESTED TO 100 PSI. PRESSURE TEST WASHDOWN, SAMPLE AND IRRIGATION LINES TO 200 PSI.

26. NSF STANDARDS:
ALL MATERIALS WHICH MAY CONTACT DRINKING WATER, INCLUDING PIPES, GASKETS, LUBRICANTS, AND O-RINGS, SHALL BE ANSI-CERTIFIED AS MEETING THE REQUIREMENTS OF NSF STANDARD 61. TO PERMIT FIELD VERIFICATION, COMPONENTS SHALL BE STAMPED WITH THE APPROPRIATE NSF LOGO.

27. SEALING PIPES DURING CONSTRUCTION:
THE OPEN END OF ALL PIPELINE UNDER CONSTRUCTION SHALL BE COVERED AND EFFECTIVELY SEALED AT THE END OF EACH DAY'S WORK.

PIPE MATERIAL:
28. ALL DUCTILE IRON PIPE SHALL BE CLASS 52. ALL RCP PIPE SHALL BE CLASS III. ALL HDPE SHALL BE DR 17 (SIZES 12-INCH AND LARGER) AND DR 11 (SIZES 8-INCH AND SMALLER). SEE WELDED STEEL PIPE THICKNESS TABLE BELOW.

STEEL PIPE WALL THICKNESS	
DIA (IN)	THICKNESS (IN)
4"	STD WT
8"	STD WT
12"	STD WT
18"	STD WT
24"	STD WT
30"	3/8"
33"	3/8"

29. OVERHEAD POWER:
CONTRACTOR SHALL COMPLY WITH SAFETY REQURIEMENTS AS REQUIRED FOR OPERATING CONSTRUCTION EQUIPMENT BENEATH HIGH VOLTAGE POWER LINES.

30. ASPHALT:
IF THE CONTRACTOR CHOOSES TO WORK ON THE PROJECT WHEN HOT MIX ASPHALT IS NOT AVAILABLE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPROVAL FROM THE APPROPRIATE GOVERNING AGENCY PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY ASPHALT SURFACING MATERIAL WHEN PERMANENT ASPHALT BECOMES AVAILABLE, THE CONTRACTOR SHALL REMOVE THE TEMPORARY ASPHALT, FURNISH AND INSTALL THE PERMANENT ASPHALT AT NO ADDITIONAL COST TO THE OWNER.

31. REFERENCE STANDARDS:
REFERENCES TO STANDARD SPECIFICATIONS AND DETAILS REFER TO THE LATEST REVISION OF THE APWA STANDARD SPECIFICATIONS AND PLANS FOR MUNICIPAL CONSTRUCTION.

32. CITY STANDARDS COMPLIANCE: THE PROPOSED IMPROVEMENTS COMPLY WITH SANDY CITY'S DESIGN AND CONSTRUCTION STANDARDS.

33. COATING SCHEDULE:

COATING SCHEDULE

LOCATION	DESCRIPTION	BURIED/ EXPOSED/ SUBMERGED	SIZE	COATING	SPECIFICATION	NOTES
SITE	WELDED STEEL PIPE	BURIED	8-INCH DIA AND LARGER	EPOXY AND CEMENT MORTAR COATING	09 97 01	CEMENT MORTAR LINING PER 09 97 01
SITE	WELDED STEEL PIPE - SPECIALS	BURIED	8-INCH DIA AND LARGER	EPOXY AND CEMENT MORTAR COATING	09 97 01	CEMENT MORTAR LINING PER 09 97 01
VAULTS	WELDED STEEL PIPE AND SPECIALS	EXPOSED (INTERIOR)	8-INCH DIA AND LARGER	SYSTEM 4	09 90 00	CEMENT MORTAR LINING PER 09 97 01
RESERVOIR	WELDED STEEL PIPE AND SPECIALS	SUBMERGED	8-INCH DIA AND LARGER	SYSTEM 1	09 90 00	CEMENT MORTAR LINING PER 09 97 01

NOTES:
1. COATING FOR VALVES, COUPLINGS, EQUIPMENT AND FITTINGS SHALL MATCH ADJACENT PIPE.
2. COATING SCHEDULE IS FOR GENERAL INFORMATION AND IS NOT INTENDED TO BE COMPREHENSIVE. SEE SPECIFICATIONS FOR ADDITIONAL DETAILS AND REQUIREMENTS.

SURVEY NOTES:

34. HORIZONTAL CONTROL: UTAH STATE PLANE SYSTEM, NAD 1983, UTAH CENTRAL ZONE, US SURVEY FEET.

35. VERTICAL CONTROL: NAVD 88

36. SURVEY CONTROL AND TOPOGRAPHIC MAPPING ARE BASED ON INFORMATION PROVIDED BY APEX LAND SURVEYORS, INC., PROFESSIONAL LAND SURVEYOR. CONTACT GARY WEIR, PLS, (801) 372-8558.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN P. OLDHAM
DRAWN P. OLDHAM
CHECKED G. LOSCHER
APPROVED J. CURTIS
REVIEW

GENERAL
GENERAL NOTES

PROJECT NUMBER 010-25-03
DATE: OCTOBER 2026

DRAWING NO. G-04
SHEET 04 OF 40

P:\jordan valley wcd\010-25-03 serwtp disinfectant ct improvements\2.0 design phase\2.7 drawings\sht\G-04.dwg Plotted: 10/7/2026 8:54 AM By: Kyle Smoot

FLUID ABBREVIATION	FUNCTION THIS LIST INCLUDES SOME LINES NOT USED IN THIS PROJECT	PIPING MATERIAL (SEE SCHEDULE AT RIGHT)				FIELD TEST REQUIREMENTS (SEE NOTE 3 AND NOTE 4)		
		EXPOSED PIPING (SEE NOTE 14)		BURIED PIPING (SEE NOTE 13)		MINIMUM TEST PRESSURE PSI	TEST MEDIUM	LEAKAGE ALLOWANCE (SEE NOTE 2)
		2" DIA & SMALLER	2 ½" DIA & LARGER	2" DIA & SMALLER	2 ½" DIA & LARGER			
A	AERATION	1,16,18	5,11,16,18	1,16,18	5,11,16,18	25	AIR	(A) (D)
AC	ACTIVATED CARBON	16	16	16	16	125	WATER	(A)
AS	ACTIVATED SILICA	6,16	6,16	6,16	6,16	125	WATER	(A)
AW	FILTER AIR WASH	16	16	16	16	25	AIR	(A)
BR	BRINE SOLUTION	16	16	--	--	125	WATER	(A)
BW	FILTER BACKWASH	--	8	--	8	75	WATER	(A)
CAW	CHANNEL AGITATION WATER	16	16	16	16	25	WATER	(A)
CD	CHEMICAL DRAIN AND VENT	13,17,23	13,17,23	13,17,23	13,17,23	NOTE 7	--	--
CL	CHLORINE (GAS OR LIQUID STATE)	10	--	10	--	300	DRY AIR	(A) (D)
CLS	CHLORINE SOLUTION	16	16	16	16	125	WATER	(A)
CLV	CHLORINE GAS UNDER VACUUM	16	16	16	16	15 IN. Hg	VACUUM	(A) (E)
CS	CAUSTIC SODA	6	6	6	6	125	WATER	(A)
CT	CALCIUM THIOSULFATE	16,29	16,29,31	16,29,31	16,29,31	125	WATER	(A)
CV	CHLORINATOR VENT & DETECTION LINE	16	16	16	16	NOTE 8	--	--
CWR	CHILLED WATER RETURN	1*, 24*	1*	1*, 24*	1*	125	WATER	(A)
CWS	CHILLED WATER SUPPLY	1*, 24*	1*	1*, 24*	1*	125	WATER	(A)
DR	DRAIN	16	16	--	--	100,NOTE 7	WATER	(A)
DW	DEMINERALIZED WATER	16,18	16,18	16,18	16,18	125	WATER	(A)
EE	ENGINE EXHAUST	14*	14*	14	14	NOTE 8	--	--
EWR	ENGINE COOLING WATER RETURN	1*	1*	1	1	125	WATER	(A)
EWS	ENGINE COOLING WATER SUPPLY	1*	1*	1	1	125	WATER	(A)
FC	FERRIC CHLORIDE	16	16	16	16	125	WATER	(A)
FI	FILTER INFLUENT	--	8	--	8	NOTE 6	WATER	(A)
FOR	FUEL OIL RETURN	9	9	9	9	125	AIR	(A) (D)
FOS	FUEL OIL SUPPLY	9	9	9	9	125	AIR	(A) (D)
FSP	FIRE PROTECTION SPRINKLER SYSTEM	NOTE 10	NOTE 10	NOTE 10	NOTE 10	NOTE 9	WATER	--
FW	FINISHED WATER	2, 24	8	2,24	8,28	25	WATER	2, 24(A) 28(B)
HF	HYDROFLUOSILICIC ACID	16	16	16	16	125	WATER	(A)
HR	HEATING WATER RETURN	1*	1*	1*	1*	125	WATER	(A)
HS	HEATING WATER SUPPLY	1*	1*	1*	1*	125	WATER	(A)
HWR	DOMESTIC HOT WATER RETURN	24*	2*	24*	2*	125	WATER	(A)
HWS	DOMESTIC HOT WATER SUPPLY	24*	2*	24*	2*	125	WATER	(A)
IA	INSTRUMENT AIR	24	2	24	2	125	AIR	(A) (D)
LA	LIQUID ALUM	16	16	16	16	125	WATER	(A)
LO	LUBE OIL	9	9	9	9	125	AIR	(A) (D)
LPG	LIQUEFIED PETROLEUM GAS	3	3	3	3	NOTE 7	AIR	3
LS	LIME SLURRY	NOTE 15	NOTE 15	NOTE 15	NOTE 15	NOTE 8	--	--
LSP	LANDSCAPING SPRINKLER SYSTEM	2,16	2,16	2,16	2,16	NOTE 7	--	--
NG	NATURAL GAS	9	9	9	9	NOTE 7	AIR	
OF	OVERFLOW	2,16	8	16	8	100	WATER	(A)
PA	PLANT AIR	7	7	7	7	300	AIR	(A) (D)
PD	PLANT DRAIN	2	8,12	2	8,12,22,28	NOTE 6	WATER	2,8(A) 12,28(B)22(C)
PEA	POLYMER – ANIONIC	16	16	16	16	125	WATER	(A)
PEC	POLYMER–CATIONIC	16	16	16	16	125	WATER	(A)
PEN	POLYMER–NONIONIC	16	16	16	16	125	WATER	(A)
PO	PLANT OVERFLOW	2	8	2	8,28	NOTE 6	WATER	2, 8(A) 28(B)
PP	POTASSIUM PERMANGANATE	6,14,16	6,14,16	6,14,16	6,14,16	125	WATER	(A)
PW	POTABLE WATER	--	8,14,16	--	8,14,33	100,200	WATER	2,11,24(A) 19(B)
RW	RAW WATER	2	8	2	8,28	125	WATER	2,8(A) 28(B)
RWL	RAINWATER LEADER	4,12	4,12	12	12	NOTE 7	--	--
SA	SAMPLE LINE (SEE LIST AT RIGHT)	16	--	16	--	100	WATER	(A)
SC	SPARE CHEMICAL	16	16	16	16	125	WATER	(A)
SD	SANITARY DRAIN AND VENT	4,12	12	12	12,21	NOTE 7	--	--
SDR	STORM DRAIN	--	8	--	22,28	NOTE 6	WATER	8(A) 28(B) 22(C)
SH	SODIUM HYPOCHLORITE	16,29,30,31	16,29,30,31	16,29,30,31	16,29,30,31	125	WATER	(A)
SI	SODIUM SILICATE	6,16	6,16	6,16	6,16	125	WATER	(A)
SL	SLUDGE	16,18	16,18	16,18	12,16,18	50	WATER	16, 18(A) 12(B)
SLT	SALT	--	15	--	--	25	AIR	(A) (D)
SPD	SUMP PUMP DISCHARGE	2	26	2	26	50	WATER	(A)
SS	SANITARY SEWER	--	12	--	12,21	NOTE 7	--	--
SU	STRUCTURE UNDERDRAIN	--	--	16,21	16,21	--	NO TEST REQ'D	
SUC	STRUCTURE UNDERDRAIN COLLECTOR	--	12,16	--	12,16,21	NOTE 6	WATER	(C)
SW	FILTER SURFACE WASHWATER	14,16,18	8,14,15,16,18	2,16,18	2,8,15,16,18	125	WATER	(A)
TW	TEMPERED WATER	16	16	--	--	125	WATER	(A)
UW	UTILITY WATER (NON-POTABLE WATER)	2,24	2,11	2,24	2,11,19	125	WATER	2,11,24(A) 19(B)
V	VENT	16,24,29	2,16,29	16,24,29	2,16,29	15 IN. Hg	VACUUM	(A) (E)
WLO	WASTE LUBE OIL	9	9	9	9	50	AIR	(A) (D)
WW	FILTER WASTE WASHWATER	--	8		8	NOTE 6	WATER	(A)

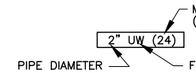
(* SEE NOTE 5)

GROUP NO.	PIPE (SEE NOTE 13)	FITTINGS	VALVES, 6 INCHES & SMALLER 9SEE NOTE 1, NOTE 11 & NOTE 16)
1	STEEL, ASTM A53, SCHEDULE 40, BLACK WELDED.	2 1/2 INCH AND SMALLER, MALLEABLE IRON, ANSI B16.3, THREADED, BANDED, BLACK, 150 PSI OR STEEL, ANSI B16.9, BUTT–WELDED. 3 INCH AND LARGER, CAST IRON, ANSI B16.1, 125 PSI FLANGED OR MECHANICAL COUPLINGS.	BRONZE, THREADED, GATE, CRANE NO. 428 UB OR STOCKHAM B–105. GLOBE, CRANE NO. 14 1/2 P OR STOCKHAM B–29. CHECK, CRANE NO. 37 OR STOCKHAM B–319. STEEL, LUBRICATED PLUG, ROCKWELL FIG. 142 OR 143 OR POWELL FIG 2200 OR 2201, ECCENTRIC PLUG, DEZURIK SERIES 118 OR KEYSTONE 1512. BALL, JENKINS NO. 900T OR JAMESBURY FIG. 351
2	STEEL, ASTM A53, SCHEDULE 40 WELDED, GALVANIZED.	2 1/2 INCH AND SMALLER, MALLEABLE IRON, ANSI B16.3, THREADED, BANDED, GALVANIZED 150 PSI. 3 INCH AND LARGER, CAST IRON, ANSI B16.1, 125 PSI FLANGED OR MECHANICAL COUPLINGS.	2 1/2 INCH AND SMALLER, ECCENTRIC PLUG, SYNTHETIC RUBBER, FACED, DEZURIK 118S OR HOMESTEAD 1512. BALL, JENKINS NO. 900T, JAMESBURY FIG. 351 3 INCH AND LARGER, ECCENTRIC PLUG–SYNTHETIC RUBBER FACED, DEZURIK 118F OR KEYSTONE 1552 OR 1532 EWG. GATE, AWWA C500. BUTTERFLY, AWWA, FLANGED.
3	STEEL, ASTM A106 OR A53, SCHEDULE 80, SEAMLESS, BLACK.	FORGED STEEL, ANSI B16.11, SOCKET WELDED OR THREADED, BLACK, 2000 PSI, OR STEEL, ANSI B16.9, BUTT–WELDED, SCHEDULE 80.	CAST IRON, LUBRICATED PLUG, NORDSTROM FIG. 214 OR 305.
4	SAME AS GROUP NO. 1	CAST IRON, ANSI B16.12, THREADED, DRAINAGE PATTERN.	---------
5	WELDED STEEL, AWWA C200, UNLINED.	WELDED STEEL, FABRICATED, AWWA C200, UNLINED.	AS INDICATED ON DRAWINGS
6	STEEL, ASTM A106, OR A53, SCHEDULE 40, SEAMLESS, BLACK.	STEEL, ANSI B16.9, BUTT–WELDED. CAST IRON, ANSI B16.1, 125 PSI, FLANGED. FORGED STEEL, SOCKET WELDED, ANSI B16.11, 2000 PSI OR STEEL, ANSI B16.5, 150 PSI FLANGED.	CAST IRON, FLANGED, LUBRICATED PLUG, NORDSTROM FIG. 143 OR SERCK–AUDCO MSW 133GG.
7	SAME AS GROUP NO. 2.	MALLEABLE IRON, ANSI B16.3, THREADED. BANDED, GALVANIZED, 300 PSI.	BRONZE THREADED, GLOBE, CRANE NO. 212P OR 229C OR STOCKHAM B–62 OR B–32. BALL, JENKINS NO. 900T OR JAMES–BURY FIG. 351, CHECK, CRANE NO. 27 OR STOCKHAM B–322.
8	WELDED STEEL, AWWA C200.	WELDED STEEL, AWWA C200, FABRICATED.	AS INDICATED ON DRAWINGS.
9	SAME AS GROUP NO. 1.	2 1/2 INCH AND SMALLER, MALLEABLE IRON, ANSI B16.3, THREADED, BANDED, BLACK, 150 PSI. 3 INCH AND LARGER, STEEL, ANSI B16.9, BUTT–WELDED	ECCENTRIC PLUG, DEZURIK SERIES 118 OR KEYSTONE 1512, CHECK CRANE NO. 336E OR WALWORTH NO. 904 OR POWELL FIG 668Y. BALL, JENKINS NO. 900T OR JAMESBURY FIG. 351.
10	SAME AS GROUP NO. 3.	1 1/4 INCH AND SMALLER, FORGED STEEL, ANSI B16.11, THREADED OR SOCKET WELDED, BLACK, 3000 PSI, WITH FLANGED AMMONIA UNIONS. 1 1/2 INCH AND LARGER, STEEL, ANSI B16.9, BUTT–WELDED OR FLANGED, SCHEDULE 80	SEMI–PLUG AND YOKE TYPE OR BALL FOR CHLORINE SERVICE, FORGED CARBON STEEL
11	DUCTILE IRON, ANSI A21.51, (AWWA C151) OR CAST IRON ANSI A21.6, 150 PSI, BELL AND SPIGOT, MECHANICAL JOINTS, MECHANICAL COUPLINGS, OR 125 PSI FLANGED (TYPICAL SERVICE – WATER LINES)	DUCTILE IRON OR CAST IRON, ANSI A21.10, OR AWWA C110, BELL AND SPIGOT, MECHANICAL COUPLINGS, FLANGED OR MECH. JOINTS, 250 PSI, (PRESSURE RATING) 12 INCHES AND SMALLER, 150 PSI, (PRESSURE RATING) 14 INCHES AND LARGER, WITH 125 PSI ANSI B16.1 FLANGES.	GATE, AWWA C500, 'O' RING SEALS, MECHANICAL JOINTS ENDS, MUELLER A–2380–20, OR EDDY–IOWA (CLOW) F–5155. BUTTERFLY, AWWA. ECCENTRIC PLUG, DEZURIK SERIES 118 OR KEYSTONE 1512, OR BALL, PRATT OR W–K–M.
12	CAST IRON SOIL, ANSI/ASTM A–74, SERVICE WEIGHT, BELL AND SPIGOT OR HUBLESS. AT THE OPTION OF THE CONTRACTOR, DUCTILE IRON (GROUP NO. 11) MAY BE SUBSTITUTED	CAST IRON SOIL, ANSI/ASTM A–74, SERVICE WEIGHT, BELL AND SPIGOT OR HUBLESS. AT THE OPTION OF THE CONTRACTOR, DUCTILE IRON(GROUP NO.11) MAY BE SUBSTITUTED.	AS INDICATED ON DRAWINGS.
13	CORROSION RESISTANT (HIGH SILICON CONTENT) CAST IRON, SERVICE WEIGHT, BELL AND SPIGOT OR HUBLESS.	CORROSION RESISTANT (HIGH SILICON CONTENT) CAST IRON, SERVICE WEIGHT, BELL AND SPIGOT OR HUBLESS.	---------
14	STAINLESS STEEL (TYP)E 316, ASTM A312, SCHEDULE 40S.	STAINLESS STEEL (TYP)E 316 ANSI B16.3, SCREWED, 150 PSI, ANSI B16.9, BUTT–WELDED, SCHEDULE 40S, OR 150 PSI FLANGED.	STAINLESS STEEL, BALL, FLANGED, LADISH NO. 4202, OR JAMESBURY TYPE A/D150F. CHECK, LADISH, NO.5272 OR STOCKHAM FIG. 15 SF 316 OR AS SHOWN ON DRAWINGS.
15	STAINLESS STEEL (TYP)E 316, ASTM A312, SCHEDULE 10S.	STAINLESS STEEL (TYP)E 316 ANSI B16.9 BUTT–WELDED SCHEDULE 10S OR 150 PSI FLANGED.	STAINLESS STEEL, AS INDICATED ON DRAWINGS.
16	POLYVINYL CHLORIDE, SCHEDULE 80, NORMAL IMPACT. ASTM D1785	POLYVINYL CHLORIDE, SCHEDULE 80, NORMAL IMPACT, SOCKET SOLVENT WELD JOINTS, ASTM D2467.	POLYVINYL CHLORIDE, BALL, DIAPHRAGM, BUTTERFLY, BALL OR LIFT CHECK. CHEMTROL, HILLS–MCCANNA OR GSR–R.G. SLOAN CO.
17	POLYPROPYLENE, ASTM D4101, SCHEDULE 40, WITH HEAT FUSED JOINTS.	POLYPROPYLENE, SCHEDULE 40, DRAINAGE TYPE WITH HEAT FUSED SOCKET JOINTS.	---------
18	FIBERGLASS REINFORCED PLASTIC, ASTM D2996, FILAMENT–WOUND, SOCKET AND SPIGOT ENDS, ADHESIVE BONDED.	FIBERGLASS REINFORCED PLASTIC, FILAMENT–WOUND, SOCKET ENDS, ADHESIVE BONDED, OR FIBERGLASS FLANGED.	PLASTIC LINED, FLANGED. FLANGES TO MATCH 150 PSI ANSI B16.5 DIMENSIONS, OR AS INDICATED ON DRAWINGS.
19	POLYVINYL CHLORIDE PRESSURE PIPE ASTM D2241 WITH BELL AND SPIGOT JOINTS.	CAST IRON, 150 PSI, FOR POLYVINYL CHLORIDE PIPE, AWWA C110 CEMENT MORTAR LINED, AWWA C104.	SAME AS GROUP NO. 11.
20			
21	POLYETHYLENE, ASTM 03350 TYPE C, CURRUGATED SURFACE	POLYETHYLENE, ASTM 03350, ROTATIONAL MOLDED JOINTS AND FITTINGS.	GEOTEXTILE FILTER FABRIC REQUIRED ON ALL SU LINES.
22	REINFORCED CONCRETE, ASTM C76, TONGUE AND GROOVED JOINTS. CLASS III (TYPICAL SERVICE–CULVERTS)	SAME AS GROUP NO. 8	---------
23	TEMPERED GLASS. (ARMORED, WHERE BURIED). ANSI/ASTM C599	TEMPERED GLASS DRAINAGE TYPE WITH COMPRESSION COUPLINGS AND TEFLON JOINTS. ANSI/ASTM C599 (ARMORED WHERE BURIED)	---------
24	COPPER, ASTM B88 (TYP)E K, SOFT TEMPERED WHERE BURIED, HARD TEMPERED WHERE EXPOSED.	WROUGHT COPPER OR CAST BRONZE, ANSI B16.22, SOLDER JOINT, 150 PSI, OR COMPRESSION FITTINGS. (FOR OXYGEN PIPING USE SILVER SOLDER, FOR COMPRESSED AIR PIPING USE 95–5 TIN–ANTIMONY SOLDER).	BRONZE,SOLDER JOINT,GLOBE,CRANE NO.1310 OR STOCKHAM B–14. CHECK, CRANE NO. 1342 OR 36, OR STOCKHAM B–309 OR B–345. GATE, CRANE NO. 1320 OR 426, OR STOCKHAM B–104 OR B–105.
25	STEEL, ASTM A106 OR A53, SCHEDULE 40, SEAMLESS, BLACK, SARAN OR POLYPROPYLENE–LINED	STEEL, ANSI B16.5, 150 PSI FLANGED, SARAN OR POLYPROPYLENE–LINED.	CAST STEEL PLUG, DIAPHRAGM OR CHECK, 150 PSI FLANGED, SARAN OR POLYPROPYLENE–LINED.
26	SAME AS GROUP NO. 11 (TYPICAL SERVICE – SLUDGE & SEWAGE LINES)	SAME AS GROUP NO. 11.	ECCENTRIC PLUG, SYNTHETIC RUBBER FACED, DEZURIK 118F OR KEYSTONE 1522. SWING TYPE CHECK,CRANE NO. 383 OR POWELL FIG. 559. BALL, PRATT OR W–K–M.
27	POLYVINYL CHLORIDE GRAVITY SEWER PIPE, ASTM D3034, BELL AND SPIGOT.	POLYVINYL CHLORIDE, ANSI/ASTM D3034, BELL AND/OR SPIGOT.	---------
28	REINFORCED CONCRETE, AWWA C302, CLASS–SEE DRAWINGS. (TYPICAL SERVICE – PRESSURE PIPELINES)	SAME AS GROUP NO. 8.	AS INDICATED ON DRAWINGS.
29	CHLORINATED POLYVINYL CHLORIDE, SCHEDULE 80, ASTM F441	CHLORINATED POLYVINYL CHLORIDE, SCHEDULE 80, SOLVENT SOCKET WELD JOINTS PER ASTM F439 OR FLANGED	CHLORINATED POLYVINYL CHLORIDE, BALL OR DIAPHRAGM
30	POLYVINYL CHLORIDE BRAID REINFORCED FLEXIBLE TUBING	POLYVINYL CHLORIDE, SCHEDULE 80, SOLVENT SOCKET WELD JOINTS ASTM D2467	POLYVINYL CHLORIDE BALL OR DIAPHRAGM
31	DOUBLE CONTAINTMENT POLYVINYL CHLORIDE, ASTM D1785, SCH 80 INSIDE, SCH 40 OUTSIDE	POLYVINYL CHLORIDE, SOLVENT SOCKET WELD JOINTS, ASTM D2467 SCH 80 INSIDE, SCH 40 OUTSIDE	POLYVINYL CHLORIDE BALL OR DIAPHRAGM
32	POLYVINYL CHLORIDE (TYP)E 1, GRADE 1 18 ASTM D1784, AWWA C905	SHORT BODY CAST IRON OR DUCTILE IRON AWWA C110	SAME AS GROUP 11
33	POLYVINYL CHLORIDE (TYP)E 1, GRADE 1 18 ASTM D1784, AWWA C900	SHORT BODY CAST IRON OR DUCTILE IRON AWWA C110	SAME AS GROUP 11
34	HIGH DENSITY POLYETHYLENE, AWWA C906 PE 4710	HIGH DENSITY POLYEHTYLENE, AWWA C906, PE 4710, FUSION WELD JOINTS PER ASTM F2620 OR FLANGED	SAME AS GROUP 11, FLANGED
35	PLASTIC PIPE WHICH IS ACCEPTABLE TO QUESTAR GAS COMPANY AND IS IN CONFORMANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES	---------	---------
55	DOUBLE – WALL CORRUGATED HDPE, ADS N–12, SLOTTED	FABRICATED OR MOLDED	
56	DOUBLE – WALL CORRUGATED HDPE, ADS N–12	FABRICATED OR MOLDED	

LIST OF SAMPLE LINES

PIPE DESIGNATION	SAMPLE POINT

TYPICAL PIPE DESIGNATION:



NOTES

GENERAL NOTE

ALTHOUGH SEVERAL PIPING MATERIALS ARE SHOWN THAT MAY BE USED FOR A GIVEN FUNCTION, ONLY THE CALLED OUT PIPING MATERIAL SHOWN ON THE CONSTRUCTION DRAWINGS AND SPECIFICATIONS SHALL BE USED. THE CONTRACTOR DOES NOT HAVE THE OPTION TO USE A DIFFERENT MATERIAL.

CONTACT BETWEEN DISSIMILAR METALS SHALL NOT BE ALLOWED. ANY SUCH CONTACT SHALL BE ISOLATED BY USING INSULATING FLANGE SETS AND/OR BUSHING SETS IN APPROPRIATE LOCATIONS.

NOTE 1

PROPRIETARY NAMES HAVE BEEN QUOTED FOR IDENTIFICATION PURPOSES ONLY. SUBSTITUTIONS WILL BE PERMITTED SUBJECT TO PROVISIONS OF THE SPECIFICATIONS.

NOTE 2

LEAKAGE ALLOWANCE IS AS FOLLOWS:

(A) PIPES SO DESIGNATED SHALL SHOW ZERO LEAKAGE.
(B) PIPES SO DESIGNATED SHALL SHOW ZERO LEAKAGE FOR UNBURIED PIPE AND NOT MORE THAN 0.02 GALLON PER HOUR PER INCH DIAMETER PER 100 FEET OF BURIED PIPE.
(C) PIPES SO DESIGNATED SHALL NOT SHOW A LEAKAGE OF MORE THAN 0.15 GALLON PER HOUR PER INCH OF DIAMETER PER 100 FEET OF PIPE.
(D) PIPES SO DESIGNATED SHALL NOT SHOW A LOSS OF PRESSURE OF MORE THAN 5 PERCENT.
(E) PIPES SO DESIGNATED SHALL NOT SHOW A LOSS OF VACUUM OF MORE THAN 4 INCHES MERCURY COL.

NOTE 3

FOR FIELD TEST PROCEDURES AND ADDITIONAL TEST REQUIREMENTS, SEE PIPING SECTION OF SPECIFICATIONS.

NOTE 4

ANY DEVIATION FROM THE PIPING MATERIALS OR FIELD TEST REQUIREMENTS SHOWN WILL BE NOTED IN THE SPECIFICATIONS OR ON THE DRAWINGS.

NOTE 5

PIPING GROUP NUMBER SHOWN THUSSHALL BE INSULATED, SEE PIPING SECTION OF SPECIFICATIONS FOR INSULATING MATERIALS.

NOTE 6

STATIC WATER TEST WITH SURFACE 5 FEET ABOVE HIGH POINT OF PIPE.

NOTE 7

INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE PLUMBING CODE.

NOTE 8

NO APPARENT LEAKS UNDER NORMAL OPERATING CONDITIONS.

NOTE 9

INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.

NOTE 10

PIPING MATERIALS SHALL BE IN ACCORDANCE WITH NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.

NOTE 11

FOR VALVES 8 INCHES AND LARGER SEE VALVE SCHEDULE. FOR SPECIAL VALVES SEE SPECIFICATIONS.

NOTE 12

CHANGE IN PIPING MATERIAL GROUP NUMBER IS INDICATED THUS: ——◆

NOTE 13

FOR PIPE LINING AND COATING, SEE SPECIFICATIONS.

NOTE 14

EXPOSED PIPING SHALL BE PAINTED IN ACCORDANCE WITH SPECIFICATIONS. COLORS TO BE SELECTED BY ENGINEER.

NOTE 15

PIPING MATERIAL SHALL BE NON–ABRASIVE FLEXIBLE RUBBER HOSE AND QUICK CONNECTION COUPLINGS WITH GROUP NO.1 AT EQUIPMENT.

NOTE 16

VALVES 2 1/2 INCH AND SMALLER MAY HAVE SCREWED ENDS VALVES 3 INCH AND LARGER SHALL HAVE FLANGED ENDS, UNLESS OTHERWISE SHOWN OR SPECIFIED.

REV. 071195

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

REVIEW CHECKED G. LOSCHER APPROVED J. CURTIS

DESIGN DESIGN P. OLDHAM DRAWN P. OLDHAM

GENERAL
PIPE MATERIAL SCHEDULE

PROJECT NUMBER 010-25-03
DATE: OCTOBER 2026

DRAWING NO. G-05
SHEET 05 OF 40

3 MG RESERVOIR ACCESS

11575 S

SALT LAKE COUNTY WATER CONSERVANCY DISTRICT
28224260140000

CONTRACTOR STAGING AREA

1 MG RESERVOIR ACCESS

PRETREATMENT BUILDING

PRESEDIMENTATION BASINS

SOLIDS SETTLING BASINS

2580 E

SALT LAKE COUNTY WATER CONSERVANCY DISTRICT
28224260160000

SERWTP SITE ACCESS GATE

SALT LAKE COUNTY WATER CONSERVANCY DISTRICT
28224760040000

SEE NOTE 5, TYP

WASATCH BLVD

ACCESS GATE

CONTACT BASINS

5030

5025

5020

FILTERS

OPERATIONS BUILDING

1 MG RESERVOIR

5015

5010

NEW 4' WIDE ACCESS GATE IN EXISTING CHAIN LINK FENCE (C 2268)

3 MG RESERVOIR

JORDAN VALLEY WATER CONSERVANCY DISTRICT
28224760060000

(C 2163) 4' CONCRETE SIDEWALK SEE NOTE 4

DRYING BEDS

EXISTING 3 MG RESERVOIR VALVE VAULT SEE M-02

10'-4"

11'-4"

SAFETY RAIL (S 4425)

PLAN

IMAGE: HEXAGON, DRONE FLOWN

DRAPER IRRIGATION CO
28224760070000

DRAPER IRRIGATION CO
28224760020000

DRAPER IRRIGATION CO
28224760020000

EXISTING WATER PRO METER VAULT SEE M-08

N

15 0 30 60
SCALE IN FEET

NOTES:

1. EXISTING GRADE SHOWN AS SCREENED (GRAY) CONTOURS (1-FOOT CONTOUR INTERVAL). EXISTING TOPOGRAPHY CONTOURS BASED ON JUNE 2026 SURVEY.
2. RESTORE ALL AREAS DISTURBED DURING CONSTRUCTION IN ACCORDANCE WITH SPECIFICATION SECTIONS 01 71 50 PROTECTION AND RESTORATION OF EXISTING FACILITIES AND 32 90 01 LANDSCAPE RESTORATION. RESTORATION TO MATCH PRE-CONSTRUCTION CONDITIONS.
3. YARD PIPING, SEE DRAWING C-03.
4. NEW SIDEWALK TO BE PERPENDICULAR TO EXISTING CONCRETE SIDEWALK, TURN AT APPROXIMATELY 65° (FIELD VERIFY), AND EXTEND THROUGH THE NEW GATE (PERPENDICULAR TO THE FENCE) TO ASPHALT ACCESS ROAD. TOP OF CONCRETE TO BE FLUSH WITH EXISTING CONCRETE ON THE WEST END AND EXISTING ASPHALT ON THE EAST END.
5. JORDAN VALLEY WCD WAS FORMERLY NAMED SALT LAKE COUNTY WCD. PARCELS RECORDED PRIOR TO THE NAME CHANGE BEAR THE FORMER NAME.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

NO.	DATE	REV. BY	DESCRIPTION
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JORDAN VALLEY WATER CONSERVANCY DISTRICT

SERWTP DISINFECTANT CT IMPROVEMENTS

SANDY, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN P. OLDHAM
DRAWN P. OLDHAM
REVIEW
CHECKED G. LOSCHER
APPROVED J. CURTIS

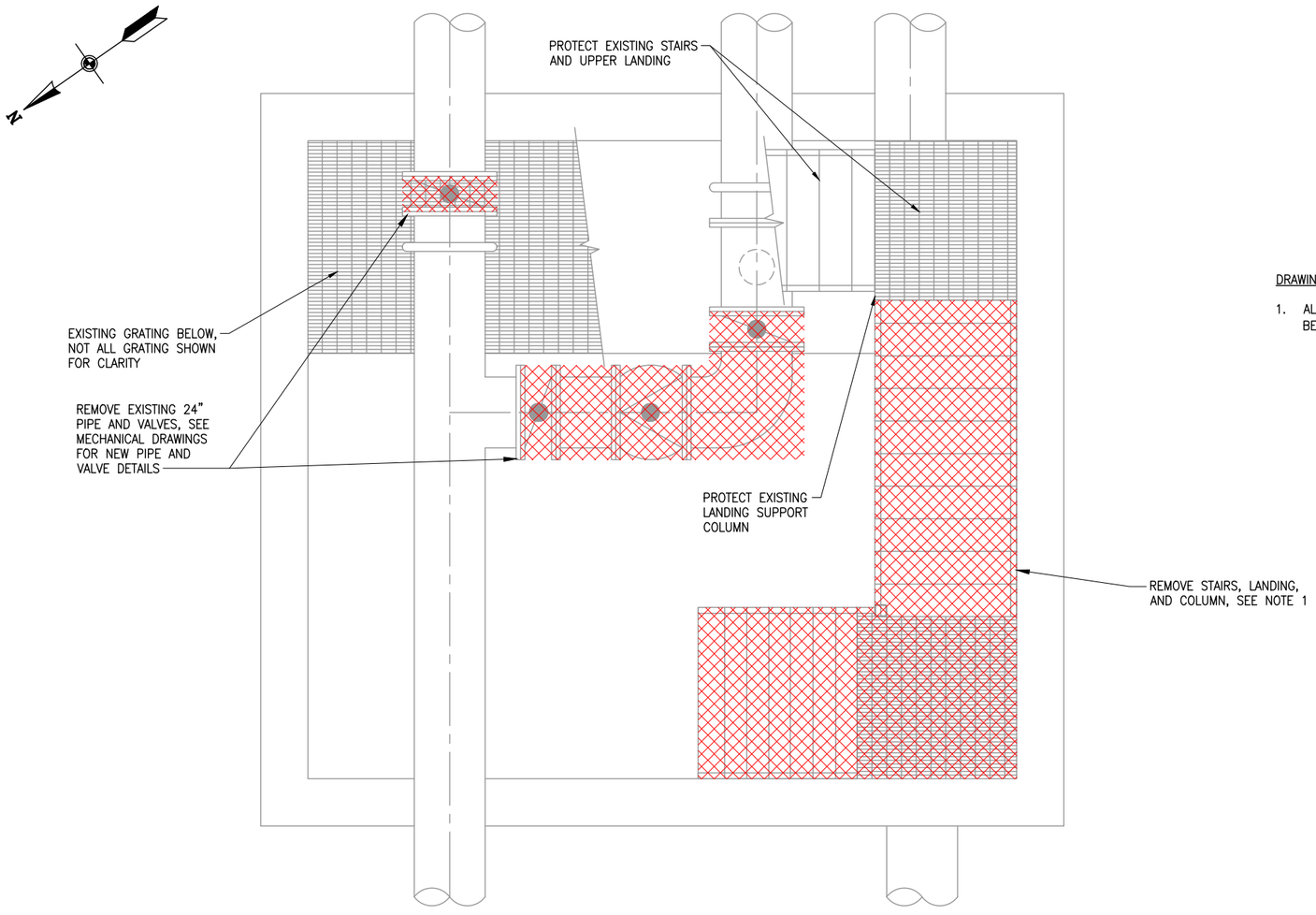
CIVIL

SITE PLAN

PROJECT NUMBER 010-25-03
DATE: OCTOBER 2026

DRAWING NO.
C-01
SHEET 06 OF 40

P:\jordan valley wcd\010-25-03 serwtp disinfectant ct improvements\2.0 design phase\2.7 drawings\sht\C-01.dwg Plotted: 10/7/2026 8:55 AM By: Kyle Smoot



LEGEND

TO BE DEMOLISHED

DRAWINGS NOTES:

1. ALL EMBEDDED BOLTS REMAINING FROM REMOVING STAIRS, LANDING, AND COLUMN ARE TO BE CUT FLUSH WITH THE FACE OF THE CONCRETE AND COATED WITH EPOXY (SYSTEM 1).

EXISTING 3 MG RESERVOIR VALVE VAULT PLAN

SCALE: 1/2" = 1'-0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SERWTP DISINFECTANT CT IMPROVEMENTS

SANDY, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN P. OLDHAM

DRAWN P. OLDHAM

REVIEW

CHECKED G. LOSCHER

APPROVED J. CURTIS

CIVIL

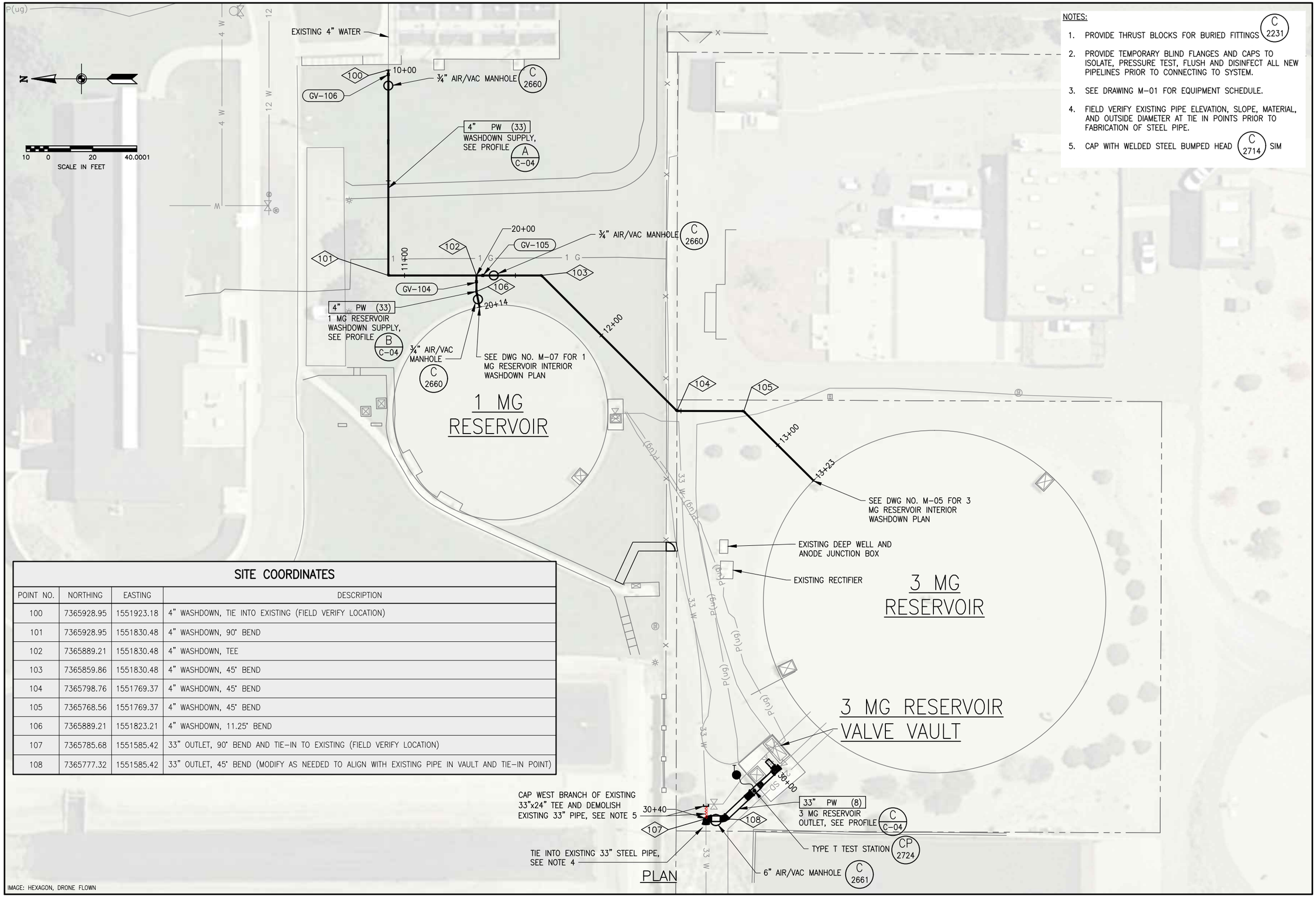
EXISTING 3 MG RESERVOIR VALVE VAULT DEMOLITION PLAN

DATE: OCTOBER 2026

PROJECT NUMBER 010-25-03

DRAWING NO. C-02

SHEET 07 OF 40



NOTES:

1. PROVIDE THRUST BLOCKS FOR BURIED FITTINGS (C 2231)
2. PROVIDE TEMPORARY BLIND FLANGES AND CAPS TO ISOLATE, PRESSURE TEST, FLUSH AND DISINFECT ALL NEW PIPELINES PRIOR TO CONNECTING TO SYSTEM.
3. SEE DRAWING M-01 FOR EQUIPMENT SCHEDULE.
4. FIELD VERIFY EXISTING PIPE ELEVATION, SLOPE, MATERIAL, AND OUTSIDE DIAMETER AT TIE IN POINTS PRIOR TO FABRICATION OF STEEL PIPE.
5. CAP WITH WELDED STEEL BUMPED HEAD (C 2714) SIM

SITE COORDINATES

POINT NO.	NORTHING	EASTING	DESCRIPTION
100	7365928.95	1551923.18	4" WASHDOWN, TIE INTO EXISTING (FIELD VERIFY LOCATION)
101	7365928.95	1551830.48	4" WASHDOWN, 90° BEND
102	7365889.21	1551830.48	4" WASHDOWN, TEE
103	7365859.86	1551830.48	4" WASHDOWN, 45° BEND
104	7365798.76	1551769.37	4" WASHDOWN, 45° BEND
105	7365768.56	1551769.37	4" WASHDOWN, 45° BEND
106	7365889.21	1551823.21	4" WASHDOWN, 11.25° BEND
107	7365785.68	1551585.42	33" OUTLET, 90° BEND AND TIE-IN TO EXISTING (FIELD VERIFY LOCATION)
108	7365777.32	1551585.42	33" OUTLET, 45° BEND (MODIFY AS NEEDED TO ALIGN WITH EXISTING PIPE IN VAULT AND TIE-IN POINT)

IMAGE: HEXAGON, DRONE FLOWN

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

VERIFY SCALE
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REVIEW

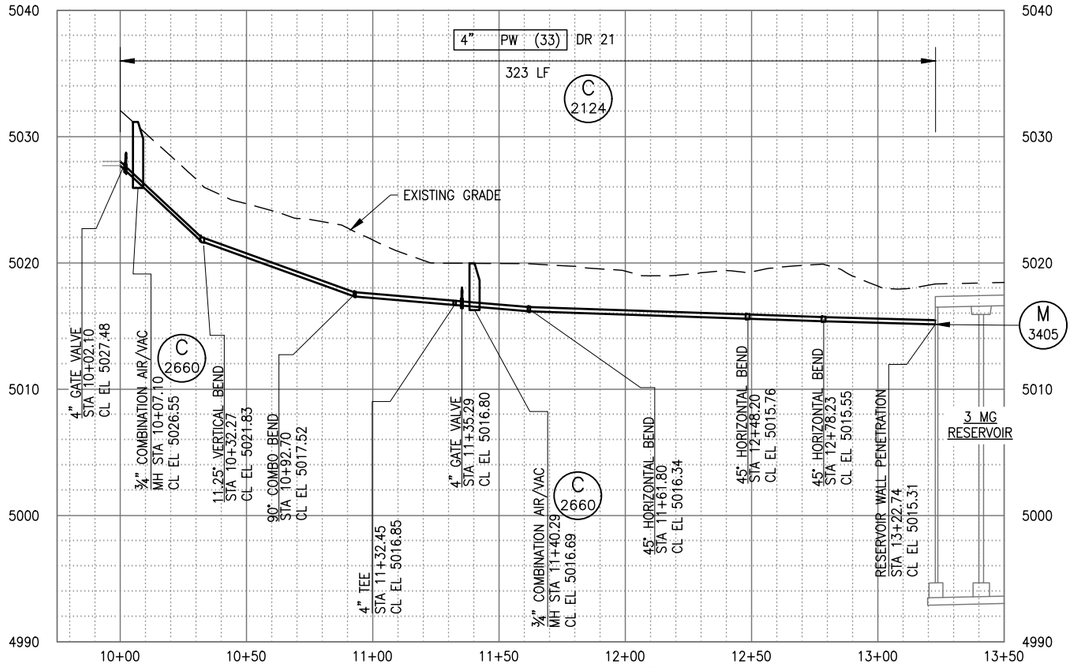
CIVIL

YARD PIPING PLAN

PROJECT NUMBER 010-25-03
DATE: OCTOBER 2026

DRAWING NO. C-03
SHEET 08 OF 40

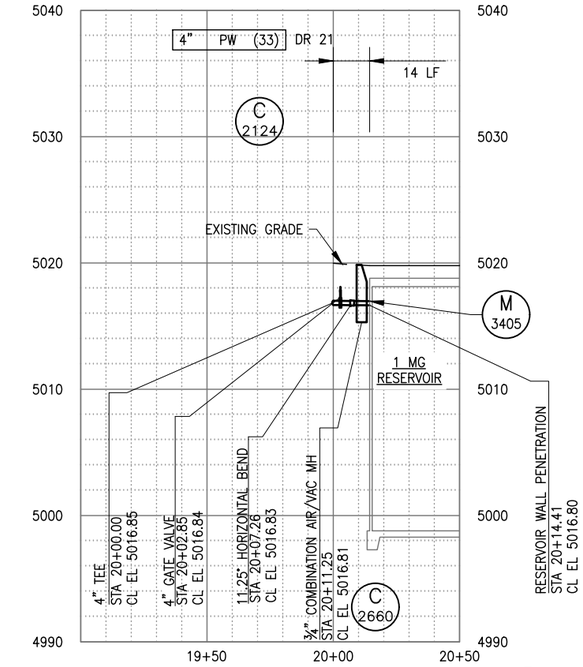
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4" WASHDOWN PROFILE

SCALE: HORIZ 1"=30'
VERT 1"=6'

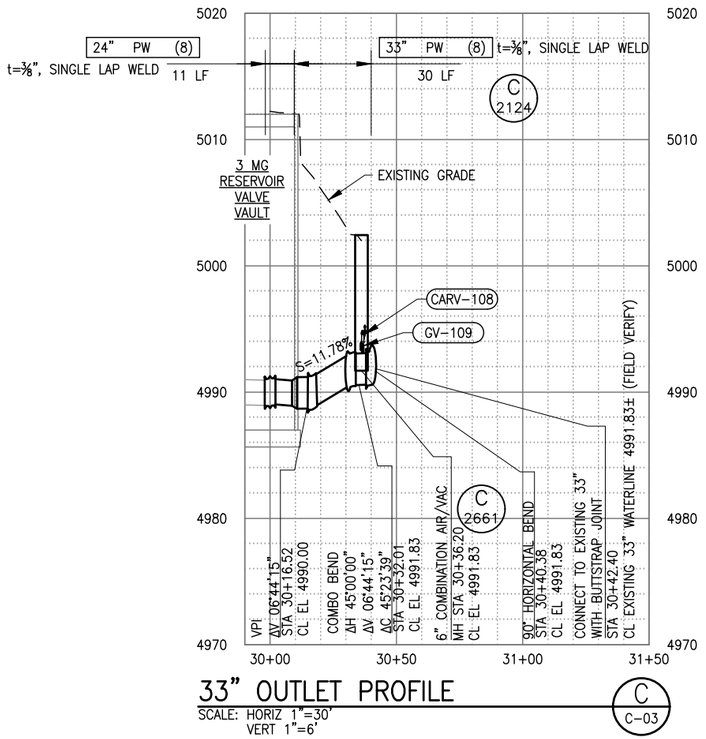
A
C-03



4" WASHDOWN PROFILE – 1 MG RESERVOIR

SCALE: HORIZ 1"=30'
VERT 1"=6'

B
C-03



33" OUTLET PROFILE

SCALE: HORIZ 1"=30'
VERT 1"=6'

C
C-03

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12141991
JOSHUA REX CURTIS
STATE OF UTAH
10/06/2026

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN P. OLDHAM
DRAWN P. OLDHAM
CHECKED G. LOSCHER
APPROVED J. CURTIS
REVIEW

CIVIL

PIPE PROFILES

PROJECT NUMBER 010-25-03
DATE: OCTOBER 2026

DRAWING NO.
C-04
SHEET 09 OF 40

VALVE SCHEDULE (4" AND LARGER)

VALVE NO.	LOCATION	TYPE	SIZE (IN)	WORKING PRESSURE (PSI)	TEST PRESSURE (PSI)	OPERATOR	VOLTAGE	PHASE	DC BLOCKER REQUIRED (2)	REMARKS
BFV-101	3 MG RESERVOIR VALVE VAULT	BUTTERFLY	24	14	100	ELECTRIC	480	3	NO	FLANGED END AWWA C504, DOUBLE OFFSET, CLASS 150B
BFV-102	3 MG RESERVOIR VALVE VAULT	BUTTERFLY	24	14	100	ELECTRIC	480	3	NO	FLANGED END AWWA C504, DOUBLE OFFSET, CLASS 150B
BFV-103	3 MG RESERVOIR VALVE VAULT	BUTTERFLY	24	14	100	ELECTRIC	480	3	NO	FLANGED END AWWA C504, DOUBLE OFFSET, CLASS 150B
GV-104	SITE	GATE	4	100	200	BURIED NUT	NA	NA	NA	AWWA C515, CLASS 250 (C 2662)
GV-105	SITE	GATE	4	100	200	BURIED NUT	NA	NA	NA	AWWA C515, CLASS 250 (C 2662)
GV-106	SITE	GATE	4	100	200	BURIED NUT	NA	NA	NA	AWWA C515, CLASS 250 (C 2662)
CV-107	WATER PRO METER VAULT	CHECK	24	21	100	NA	N	NA	NA	FL X FL, VAL-MATIC 500A SWING-FLEX CHECK VALVE, CLASS 125 OR APPROVED EQUAL, INCLUDE MECHANICAL INDICATOR
CARV-108	AIR/VAC MANHOLE	CARV	6	14	100	NA	NA	NA	NO	APCO MODEL NO. 150C WITH 6" VENT PIPE
GV-109	AIR/VAC MANHOLE	GATE	6	14	100	NA	NA	NA	NO	FLANGED END, AWWA C515, CLASS 250

METER SCHEDULE

METER NO.	LOCATION	TYPE	SIZE (IN)	WORKING PRESSURE (PSI)	TEST PRESSURE (PSI)	REMARKS
M-110	WATER PRO METER VAULT	ELECTROMAGNETIC	24	21	100	PROMAG W 400, 5W4C6H, DN600 (ZERO UP, ZERO DOWN)

PUMP SCHEDULE

PUMP NO.	LOCATION	SERVICE	TYPE	DISCHARGE SIZE (IN)	MAX FLOW (GPM)	MAX HEAD (FT)	VOLTAGE	PHASE	HP (MIN)	REMARKS
P-120	3 MG RESERVOIR VALVE VAULT – 1 MG EFFLUENT	SAMPLE	REGENERATIVE TURBINE	1	4	30	120	1	0.33	REGENERATIVE TURBINE PUMP, SEE SPECIFICATIONS
P-121	3 MG RESERVOIR VALVE VAULT – 3 MG EFFLUENT	SAMPLE	REGENERATIVE TURBINE	1	4	30	120	1	0.33	REGENERATIVE TURBINE PUMP, SEE SPECIFICATIONS

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PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT

SERWTP DISINFECTANT CT IMPROVEMENTS

SANDY, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED G. LOSCHER APPROVED J. CURTIS

DESIGN DESIGN P. OLDHAM DRAWN P. OLDHAM

MECHANICAL

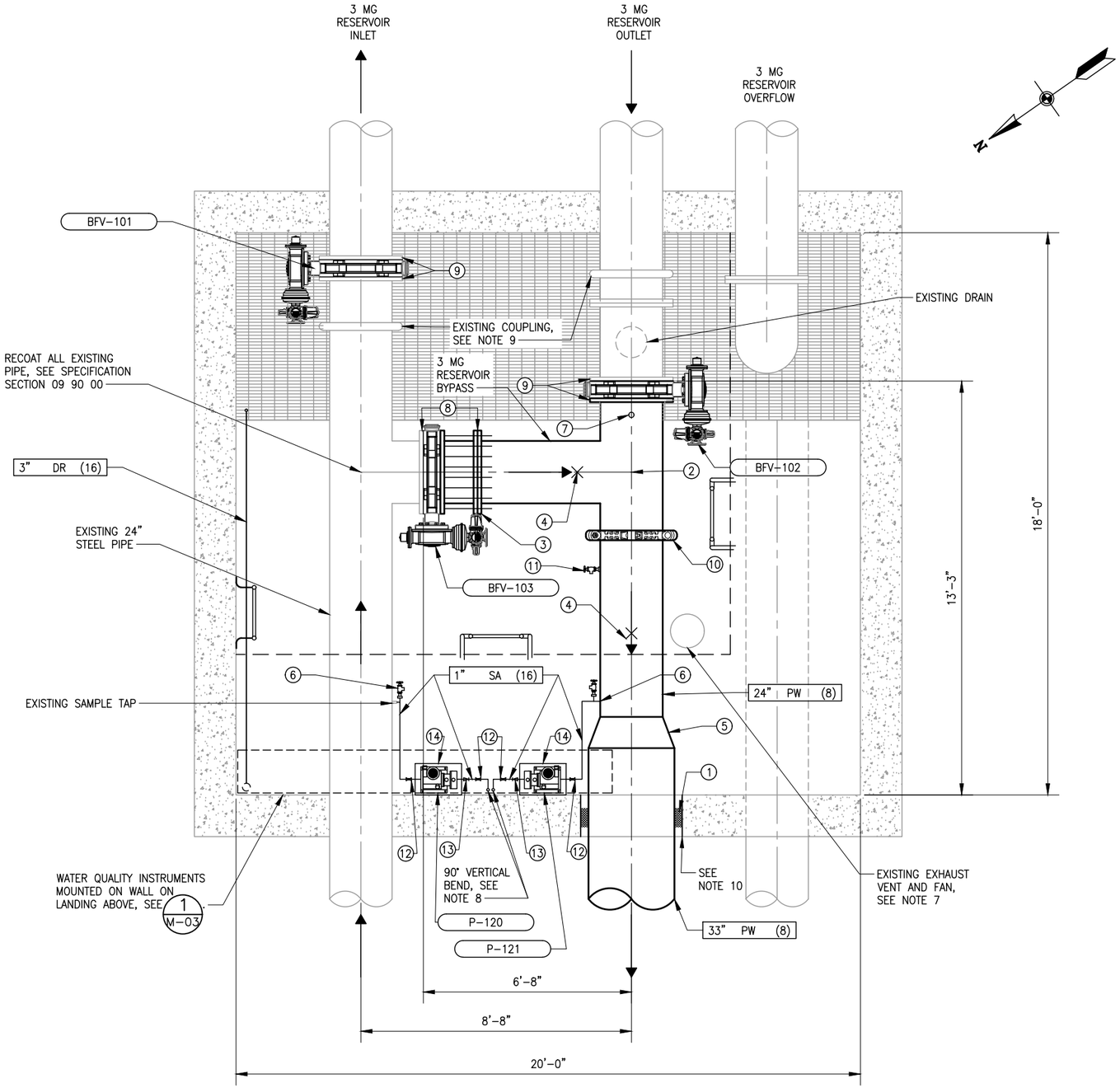
MECHANICAL EQUIPMENT SCHEDULES

PROJECT NUMBER 010-25-03

DATE: OCTOBER 2026

DRAWING NO. M-01

SHEET 10 OF 40



EXISTING 3 MG RESERVOIR VALVE VAULT PLAN

SCALE: 1/2" = 1'-0"

MATERIAL SCHEDULE	
1	PIPE WALL PENETRATION M 3411 (TYPE 2)
2	24" X 24" X 24" TEE
3	24" RESTRAINED DISMANTLING JOINT
4	PIPE SUPPORT M 3388
5	24" X 33" REDUCER
6	SAMPLE TAP M 3002 SIM M 3167
7	2" DRAIN ASSEMBLY M 3142
8	MOV VALVE ISOLATION CP 2783
9	INSULATING FLANGE CP 2777
10	GROOVED MECHANICAL COUPLING
11	HOSE BIB M 3002 M 3167
12	1" TRUE UNION BALL VALVE
13	1" TRUE UNION CHECK VALVE
14	PUMP SUPPORT M 3251

NOTES:

1. MECHANICAL EQUIPMENT SCHEDULE, SEE DRAWING M-01.
2. PROVIDE MINIMUM OF 1-0" CLEARANCE SPACE BETWEEN ALL FLANGES AND PIPE SUPPORTS, WALLS, FITTINGS, ETC. TO ALLOW UNRESTRICTED REMOVAL OF FLANGE BOLTS. NOTIFY ENGINEER OF POTENTIAL CONFLICTS TO ALLOW FOR FIELD ADJUSTMENT PRIOR TO FABRICATION.
3. COAT EXPOSED PIPE PER SECTION 09 90 00.
4. REFER TO ELECTRICAL DRAWINGS FOR MODIFICATIONS TO LIGHTING PLAN AND POWER AND CONTROL PLANS FOR VAULT.
5. REFER TO STRUCTURAL DRAWINGS FOR REVISED VAULT ACCESS LANDING AND LADDERS.
6. COORDINATE ORIENTATION OF VALVE ACTUATORS PRIOR TO MANUFACTURING. ACTUATORS ORIENTED INCORRECTLY WILL BE ROTATED IN THE FIELD AT NO EXPENSE TO THE OWNER.
7. IF EXISTING EXHAUST FAN CONFLICTS WITH NEW PIPE, RAISE FAN BY 1 TO 2 FEET AND EXTEND VENT PIPE BELOW FAN TO CURRENT BOTTOM ELEVATION.
8. 1" SAMPLE PIPES RUN VERTICALLY UP THROUGH LANDING TO SAMPLING INSTRUMENTATION PANEL, SEE M-03.
9. PROVIDE NEW GROOVE COUPLING GASKETS ON ANY DISTURBED COUPLINGS.
10. CORE DRILL THROUGH EXISTING WALL. COORDINATE HOLE DIAMETER BASED ON PIPE OD AND LINK SEAL SIZE. COAT INSIDE FACE OF CORE HOLE WITH TNEMIC SERIES FC22 EPOXOLINE.

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PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

VERIFY SCALE
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DESIGN DESIGN P. OLDHAM DRAWN P. OLDHAM
REVIEW CHECKED G. LOSCHER APPROVED J. CURTIS

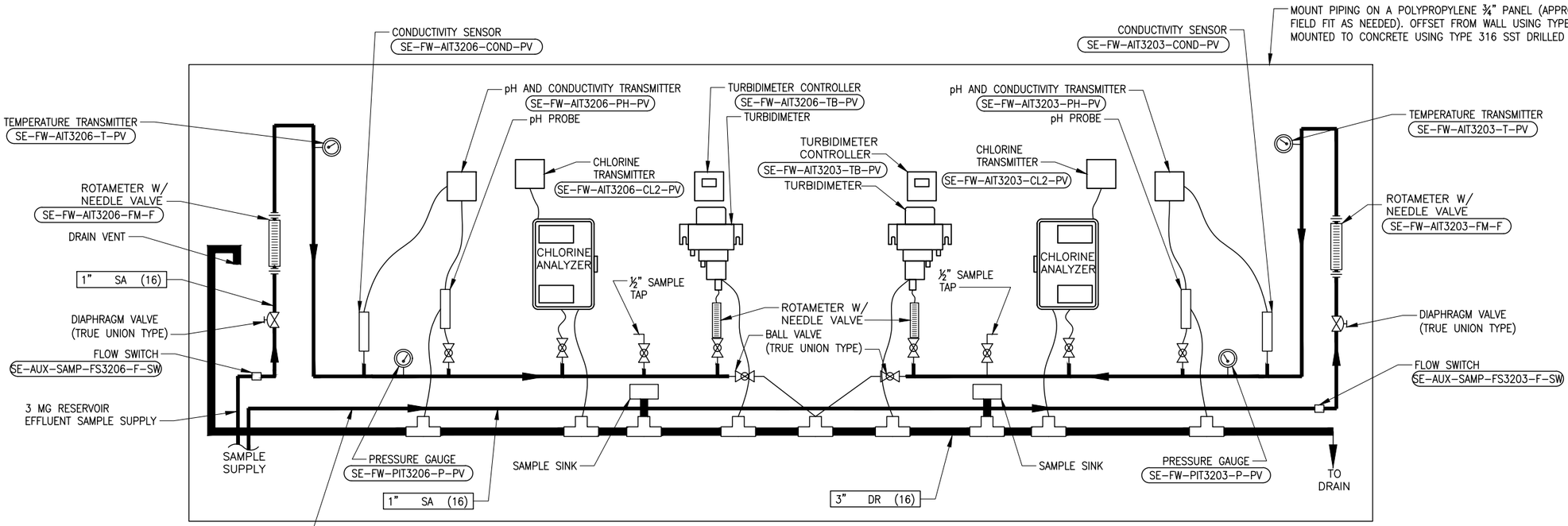
MECHANICAL
3 MG RESERVOIR VALVE VAULT MODIFICATIONS
DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO. M-02
SHEET 11 OF 40

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NOTES:

1. SEE SPECIFICATION SECTION 40 75 01: INSTRUMENT LIST FOR INSTRUMENT DETAILS.
2. THE EXISTING HATCH DRAIN PIPE RUNNING ON VAULT WALL SHOULD BE TIED INTO THE INSTRUMENTATION PANEL DRAIN PIPE.
3. THERE ARE EXISTING ELECTRICAL LB CONDUIT BODIES WHERE POWER ENTERS THE VAULT ON THE SAME WALL WHERE THE INSTRUMENTATION PANEL WILL BE MOUNTED (NEAR THE BOTTOM OF THE PANEL). NOTCH OUT A PORTION OF THE POLYPROPYLENE PANEL AS NECESSARY TO WORK AROUND EXISTING CONDUIT WALL PENETRATIONS.
4. ALL ELECTRICAL CONDUIT TO BE MOUNTED ABOVE INSTRUMENT PANEL.



3 MG RESERVOIR VALVE VAULT SAMPLING INSTRUMENTATION PANEL

1 / M-03

NTS

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — JOSHUA REX CURTIS — No. 12141991 — STATE OF UTAH — 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT

SERWTP DISINFECTANT CT IMPROVEMENTS

SANDY, UT

VERIFY SCALE

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DESIGN — DESIGN P. OLDHAM — DRAWN P. OLDHAM

REVIEW — CHECKED G.LOSCHER — APPROVED J.CURTIS

MECHANICAL

SAMPLE INSTRUMENTATION ELEVATIONS

DATE: OCTOBER 2026

PROJECT NUMBER 010-25-03

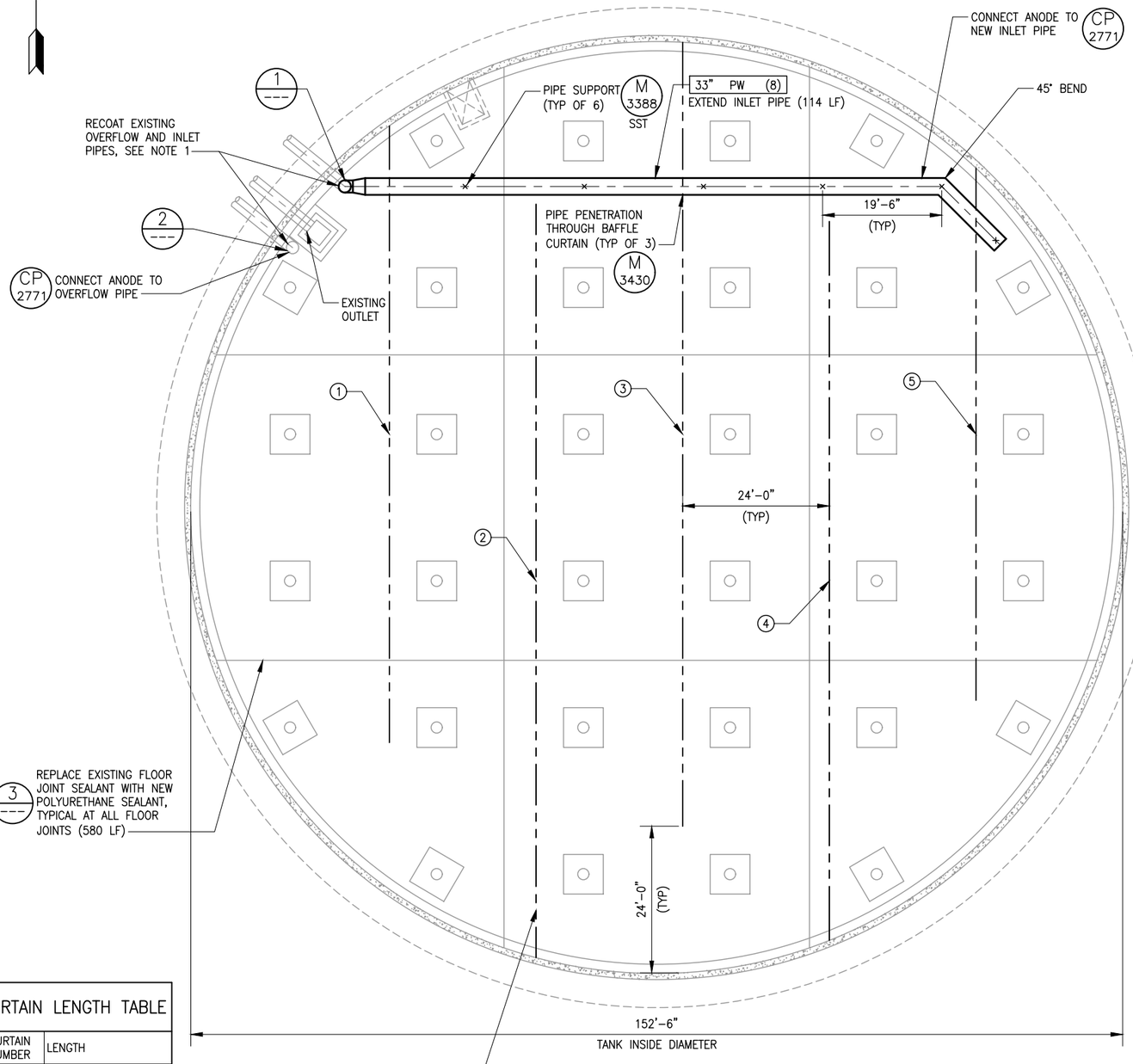
DRAWING NO. M-03

SHEET 12 OF 40

NOTES:

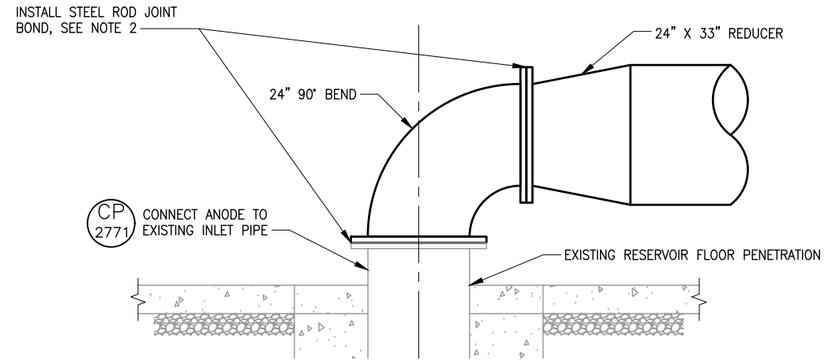
1. RECOAT THE EXISTING PIPES AS FOLLOWS:
   1.1. SAND BLAST OR WIRE BRUSH THE EXISTING PIPES TO REMOVE THE EXISTING COATING AND CORROSION.
   1.2. COAT THE EXISTING PIPE WITH TNEMEC SERIES 21 EPOXOLINE, 3 COATS, 3 MILS DFTPC OR TNEMEC SERIES FC22 EPOXOLINE, 3 COATS, 3 MILS DFTPC.

2. INSTALL TWO BONDS AT EACH JOINT. BOND CONSISTS OF ⅝" DIA STEEL ROD, CUT TO LENGTH OF TWO ADJACENT FLANGES. WELD DIRECTLY TO BOTH FLANGES. COAT STEEL ROD WITH SYSTEM 1 TO MATCH PIPE.

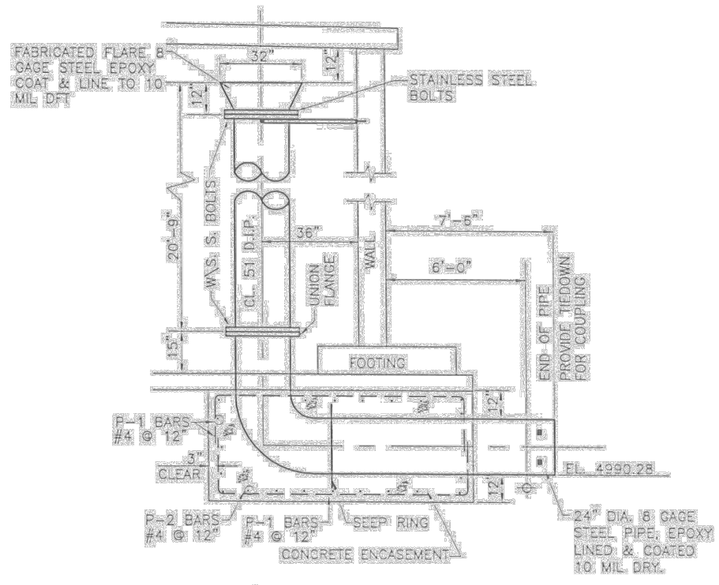


PLAN
SCALE: 3/32" = 1'-0"

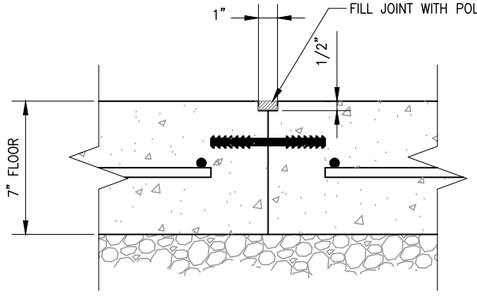
CURTAIN LENGTH TABLE	
CURTAIN NUMBER	LENGTH
①	100'-11"
②	123'-3 3/4"
③	128'-3"
④	117'-7 3/4"
⑤	87'-0 3/4"



INLET PIPE EXTENSION CONNECTION TO EXISTING 1
SCALE: NTS



EXISTING RESERVOIR OVERFLOW SECTION 2
SCALE: NTS



NOTES:
1. REMOVE EXISTING SEALANT (ALL EXISTING SEALANT MUST BE REMOVED. THIS MAY REQUIRE GRINDING OR SAND BLASTING). PREPARE SURFACE AND PRIME PER MANUFACTURERS RECOMMENDATION BEFORE INSTALLING POLYURETHANE SEALANT.
2. WIDTH AND DEPTH OF SEALANT GROOVE ARE APPROXIMATE. FINAL SIZE TO BE FIELD VERIFIED.

JOINT SEALANT REPLACEMENT DETAIL 3
SCALE: NTS

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

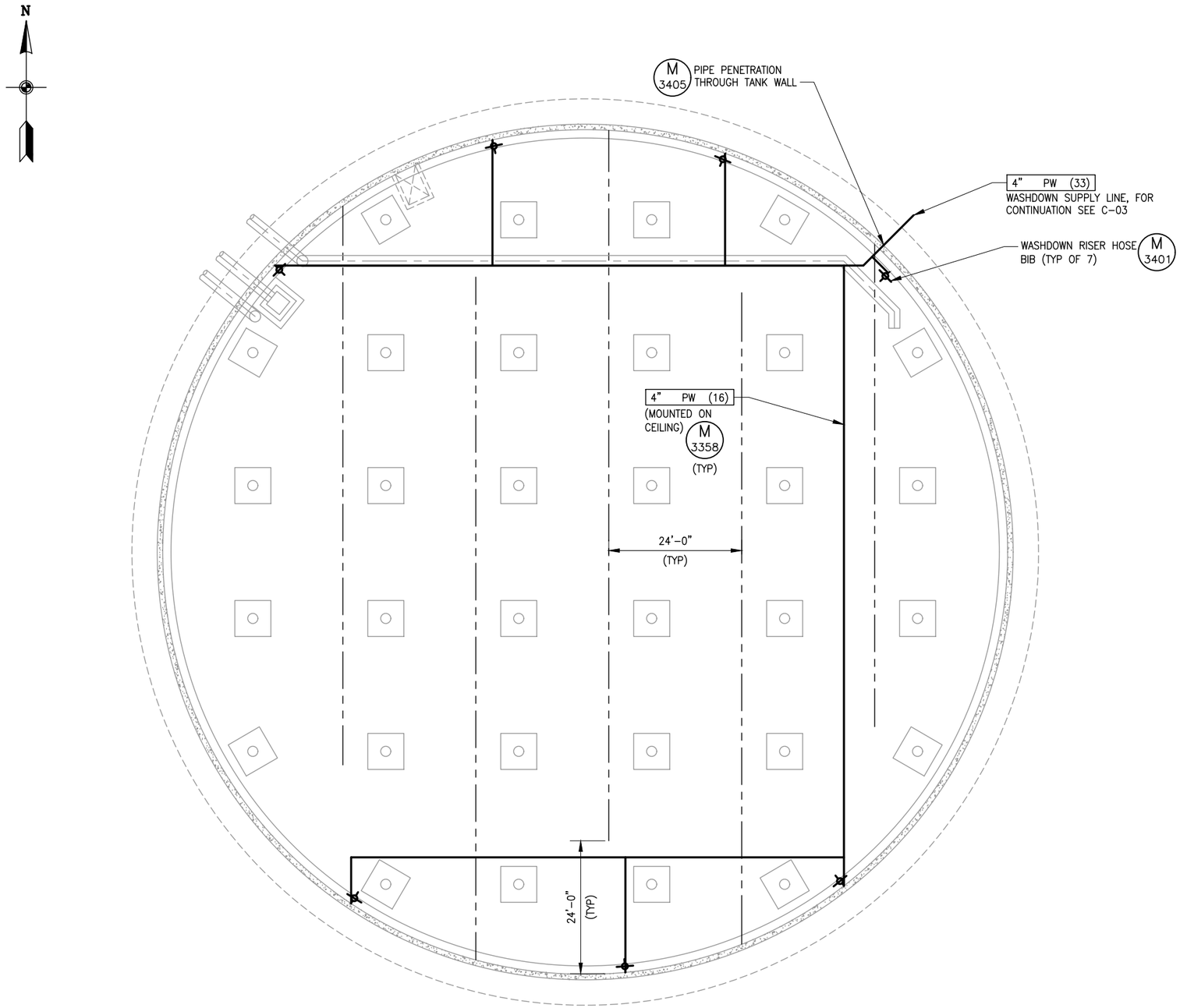
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN P. OLDHAM
DRAWN P. OLDHAM
CHECKED G. LOSCHER
APPROVED J. CURTIS
REVIEW

MECHANICAL
3 MG RESERVOIR BAFFLING PLAN AND PIPING MODIFICATIONS
DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO. M-04
SHEET 13 OF 40

P:\jordan valley wcd\010-25-03 serwtp disinfectant ct improvements\2.0 design phase\2.7 drawings\sht\M-04.dwg Plotted: 10/7/2026 8:56 AM By: Kyle Smoot



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

NOTES:

1. ALL INTERIOR RESERVOIR SURFACES OR COATINGS SHALL CONSIST OF PRODUCTS WHICH ARE CERTIFIED BY LABORATORIES APPROVED BY ANSI AND WHICH COMPLY WITH ANSI/NSF STANDARD 61. THIS REQUIREMENT APPLIES TO ANY PIPES AND FITTINGS, PROTECTIVE MATERIALS, JOINING AND SEALING MATERIALS, AND MECHANICAL DEVICES WHICH ARE LOCATED SO AS TO COME INTO CONTACT WITH DRINKING WATER.
2. SST BALL VALVE WITH SST HANDLE AND NUT, BRONZE CAP AND CHAIN AND BRONZE THREADED MALE TO MALE ADAPTER FOR 1½" FIRE HOSE, SEE (M 3401)
3. PROVIDE TWO 100-FOOT LENGTHS OF 1½" NST FIREHOSE AND TWO BRASS HOSE NOZZLES.
4. ALL SST FITTINGS AND HARDWARE SHALL BE TYPE 316 PER SPECIFICATIONS.
5. ALL BURIED WASHDOWN PIPING SHALL BE FIRMLY BEDDED, BACKFILLED AND COMPACTED TO AVOID DAMAGE DURING CONSTRUCTION.
6. PRESSURE TEST ALL WASHDOWN PIPING.

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PROFESSIONAL ENGINEER
No. 12141991
JOSHUA REX CURTIS
STATE OF UTAH
10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
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SANDY, UT

VERIFY SCALE
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DESIGN
DESIGN P. OLDHAM
DRAWN P. OLDHAM

REVIEW
CHECKED G. LOSCHER
APPROVED J. CURTIS

MECHANICAL

3 MG RESERVOIR WASHDOWN PLAN

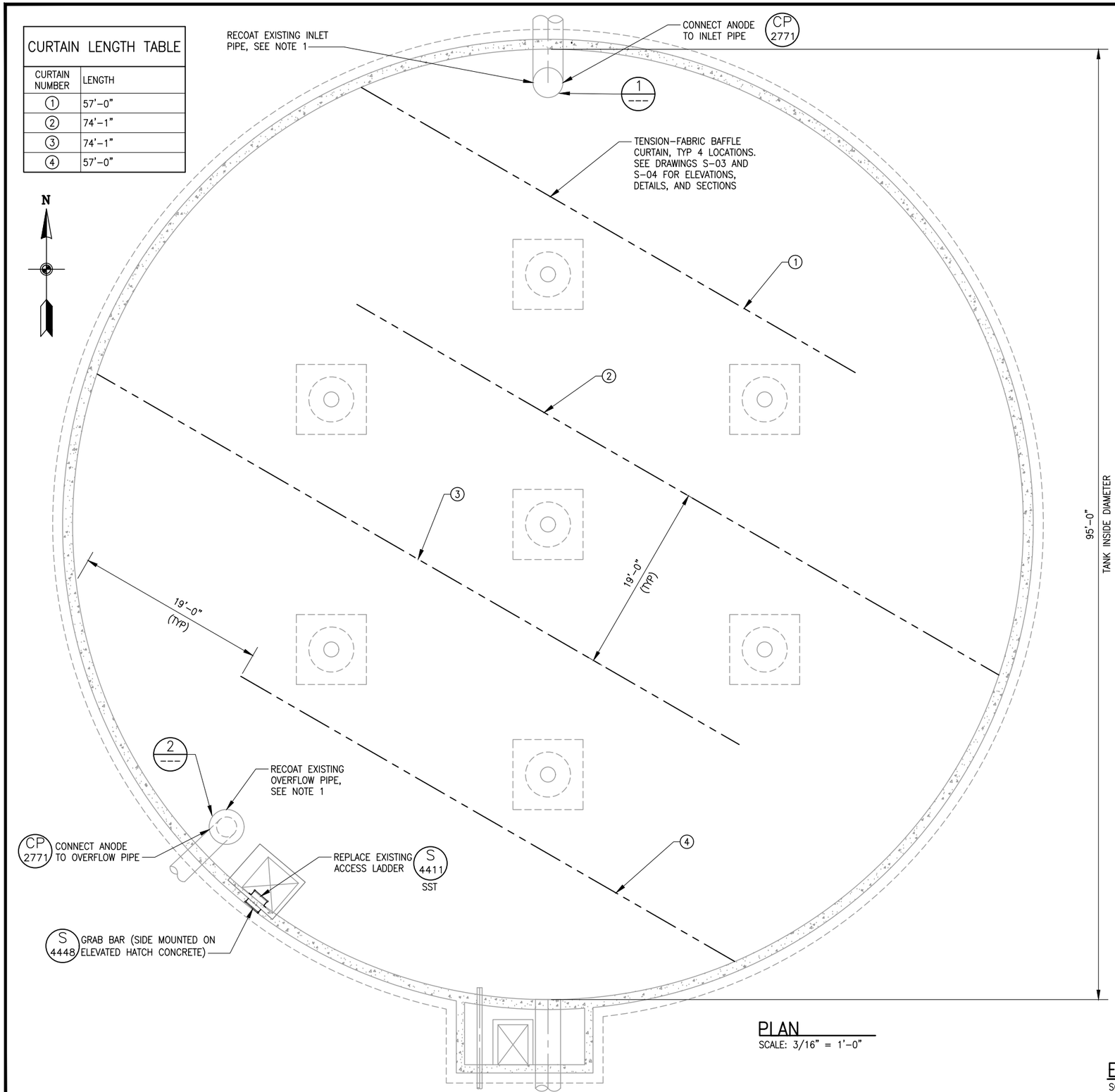
DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO.
M-05

SHEET 14 OF 40

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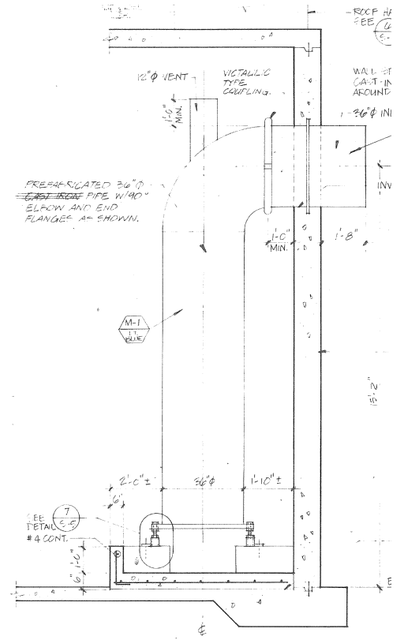
CURTAIN LENGTH TABLE	
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②	74'–1"
③	74'–1"
④	57'–0"



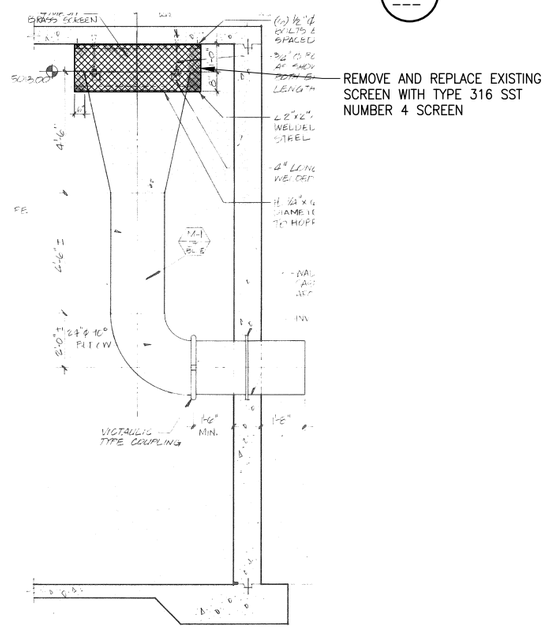
PLAN
SCALE: 3/16" = 1'–0"

NOTES:

1. RECOAT THE EXISTING PIPES AS FOLLOWS:
   1.1. SAND BLAST OR WIRE BRUSH THE EXISTING PIPES TO REMOVE THE EXISTING COATING AND CORROSION.
   1.2. COAT THE EXISTING PIPE WITH TNEMEC SERIES 21 EPOXOLINE, 3 COATS, 3 MILS DFTPC OR TNEMEC SERIES FC22 EPOXOLINE, 3 COATS, 3 MILS DFTPC.



EXISTING RESERVOIR INLET SECTION 1
SCALE: NTS



EXISTING RESERVOIR OVERFLOW SECTION 2
SCALE: NTS

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PROFESSIONAL ENGINEER — No. 12141991 — JOSHUA REX CURTIS — STATE OF UTAH — 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT

SERWTP DISINFECTANT CT IMPROVEMENTS

SANDY, UT

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DESIGN P. OLDHAM
DRAWN P. OLDHAM
CHECKED G. LOSCHER
APPROVED J. CURTIS
REVIEW

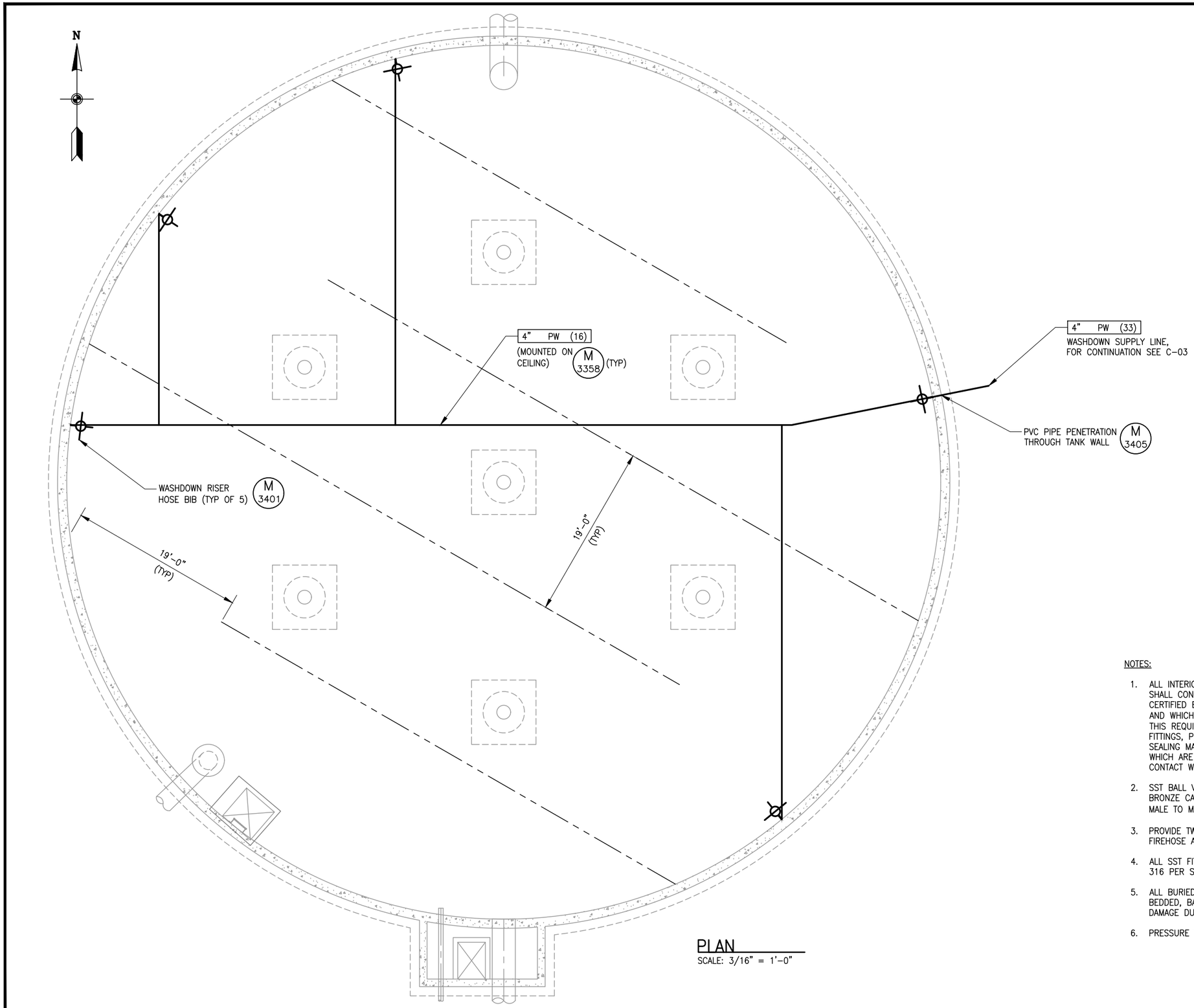
MECHANICAL

1 MG RESERVOIR BAFFLING PLAN

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO. M-06

SHEET 15 OF 40



PLAN
SCALE: 3/16" = 1'-0"

NOTES:

1. ALL INTERIOR RESERVOIR SURFACES OR COATINGS SHALL CONSIST OF PRODUCTS WHICH ARE CERTIFIED BY LABORATORIES APPROVED BY ANSI AND WHICH COMPLY WITH ANSI/NSF STANDARD 61. THIS REQUIREMENT APPLIES TO ANY PIPES AND FITTINGS, PROTECTIVE MATERIALS, JOINING AND SEALING MATERIALS, AND MECHANICAL DEVICES WHICH ARE LOCATED SO AS TO COME INTO CONTACT WITH DRINKING WATER.
2. SST BALL VALVE WITH SST HANDLE AND NUT, BRONZE CAP AND CHAIN AND BRONZE THREADED MALE TO MALE ADAPTER FOR 1½" FIRE HOSE, SEE M 3401
3. PROVIDE TWO 100-FOOT LENGTHS OF 1½" NST FIREHOSE AND TWO BRASS HOSE NOZZLES.
4. ALL SST FITTINGS AND HARDWARE SHALL BE TYPE 316 PER SPECIFICATIONS.
5. ALL BURIED WASHDOWN PIPING SHALL BE FIRMLY BEDDED, BACKFILLED AND COMPACTED TO AVOID DAMAGE DURING CONSTRUCTION.
6. PRESSURE TEST ALL WASHDOWN PIPING.

BOWEN COLLINS & ASSOCIATES

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
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SANDY, UT

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DESIGN
DESIGN P. OLDHAM
DRAWN P. OLDHAM

REVIEW
CHECKED G. LOSCHER
APPROVED J. CURTIS

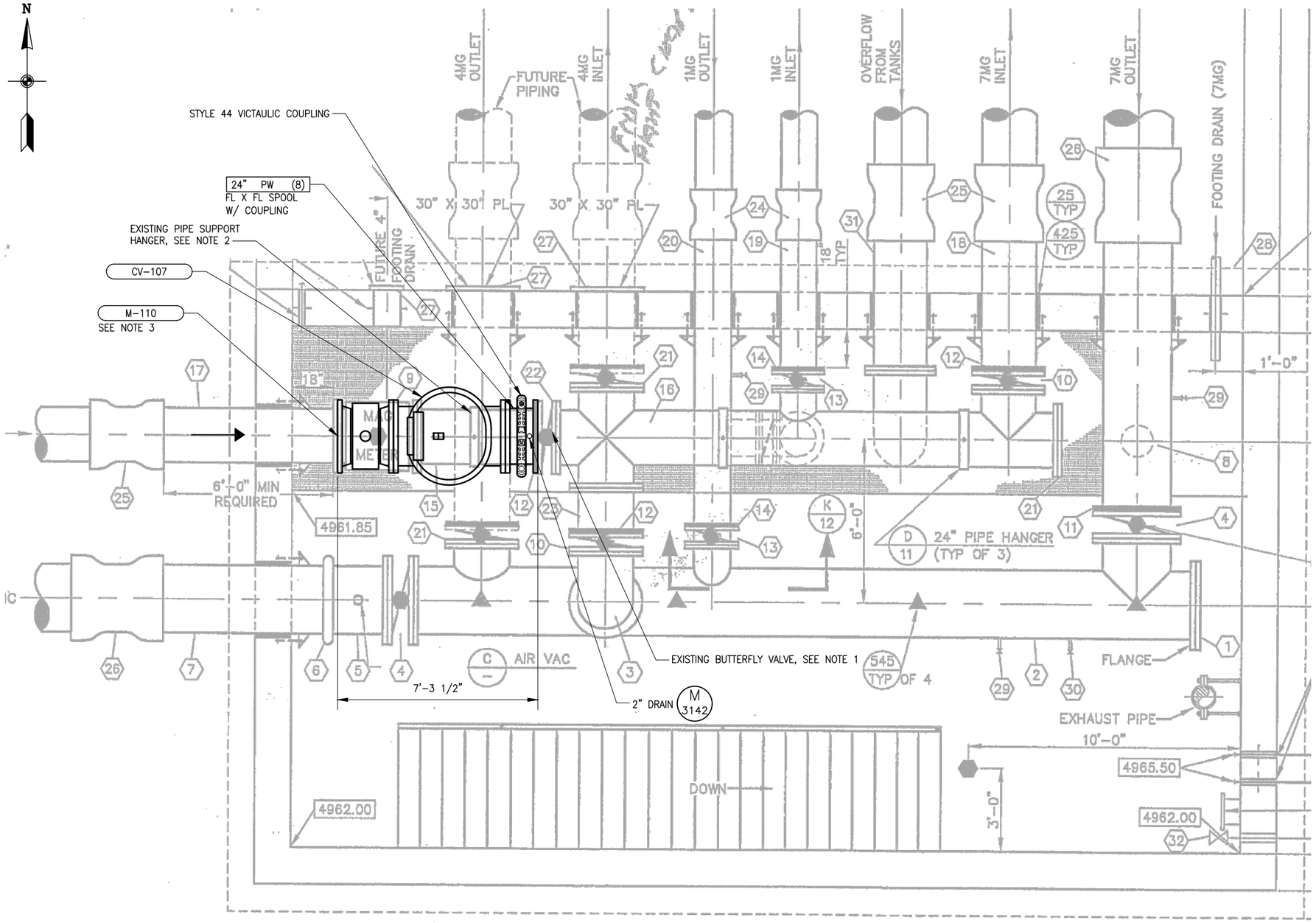
MECHANICAL

1 MG RESERVOIR WASHDOWN PLAN

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO.
M-07
SHEET 16 OF 40

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EXISTING WATER PRO METER VAULT PLAN

SCALE: 1/2" = 1'-0"

NOTES:

1. BEFORE CONSTRUCTING VAULT PIPING MODIFICATIONS, COORDINATE WITH WATER PRO TO CLOSE ISOLATION VALVE, THEN TAP EXISTING PIPE WEST OF THE VALVE TO CONFIRM WHETHER ISOLATION VALVE SEALS.
2. INSTALL NEW PIPE SUPPORT HANGER USING EXISTING SUPPORT ANCHOR POINT IF POSSIBLE. RELOCATE ANCHOR POINT IF NEEDED. (M 3358)
3. DISCONNECT AND RECONNECT POWER, CONTROL, AND SIGNAL WIRING FOR NEW METER. TAKE OUT MANUFACTURER CABLING BETWEEN TRANSMITTER AND FLOW METER AND REINSTALL NEW CABLING. TRANSMITTER IS WALL MOUNTED (REMOTE).

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
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SANDY, UT

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DRAWN P. OLDHAM
REVIEW G. LOSCHER
APPROVED J. CURTIS

MECHANICAL

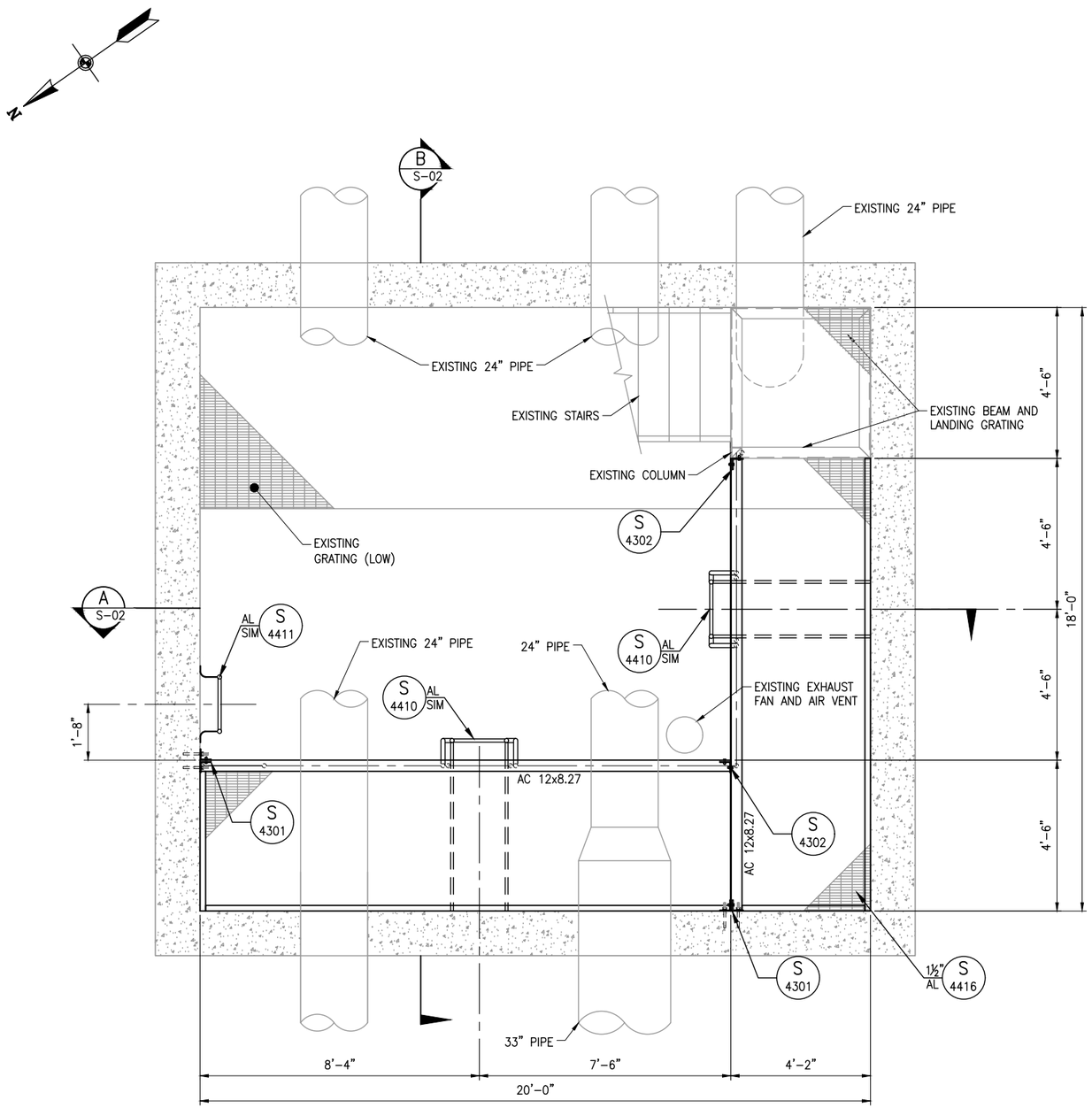
WATERPRO METER VAULT MODIFICATIONS

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO. M-08

SHEET 17 OF 40

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PLAN

SCALE: 1/2"=1'-0"

DRAWING NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2. ALL BEAMS, COLUMNS, GRATING, LADDERS, AND RAILINGS TO BE ALUMINUM. ALL CONCRETE ANCHORS AND BOLTS ARE TO BE TYPE 316 SST.
3. COAT ALL ALUMINUM SURFACES WITHIN 6" OF CONCRETE PER SPECIFICATIONS.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12029530
KYLE ROBERT SMOOT
STATE OF UTAH
10/06/2026

REVISIONS

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VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

DESIGN
DESIGN J. MCCLURE
DRAWN J. MCCLURE

REVIEW
CHECKED K. SMOOT
APPROVED K. SMOOT

STRUCTURAL
3 MG RESERVOIR VALVE VAULT
MODIFICATION PLAN

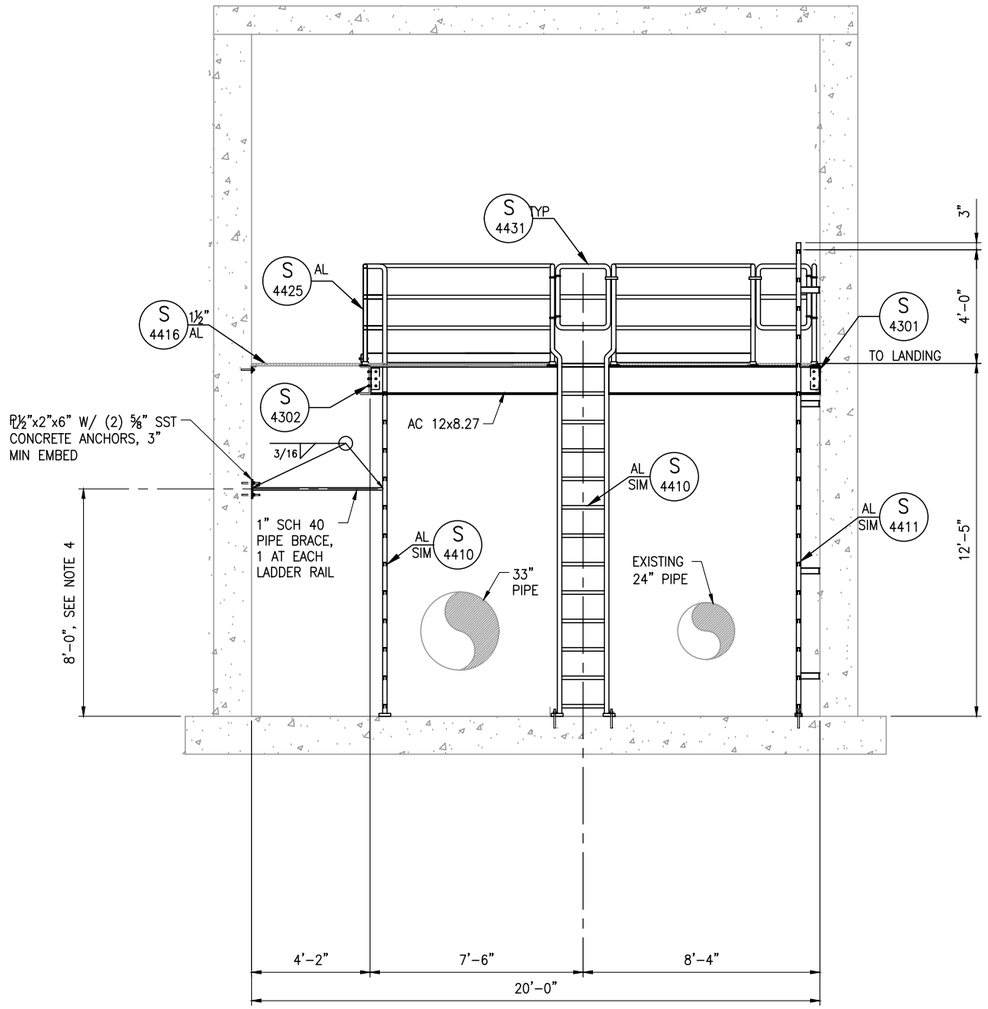
DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO.
S-01

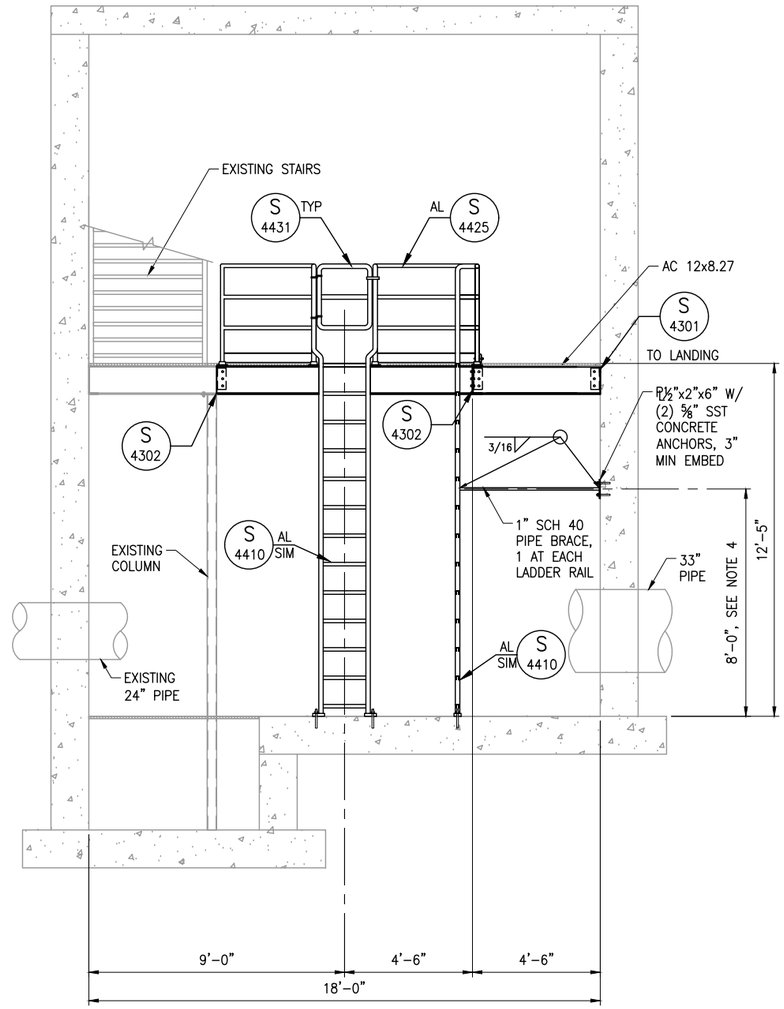
SHEET 18 OF 40

DRAWING NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
2. ALL BEAMS, COLUMNS, GRATING, LADDERS, AND RAILINGS TO BE ALUMINUM. ALL CONCRETE ANCHORS AND BOLTS ARE TO BE TYPE 316 SST.
3. COAT ALL ALUMINUM SURFACES WITHIN 6" OF CONCRETE PER SPECIFICATION.
4. LADDER PIPE BRACE CAN BE MOVED UP TO 6" UP OR DOWN TO AVOID CONFLICTS WITH EXISTING CONDITIONS. APPROVAL FROM THE ENGINEER IS REQUIRED FOR ADJUSTMENTS GREATER THAN 6".



SECTION
SCALE: 3/8"=1'-0"
A S-01



SECTION
SCALE: 3/8"=1'-0"
B S-01

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12629530 KYLE ROBERT SMOOT STATE OF UTAH 10/06/2026

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SANDY, UT

SERWTP DISINFECTANT CT IMPROVEMENTS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

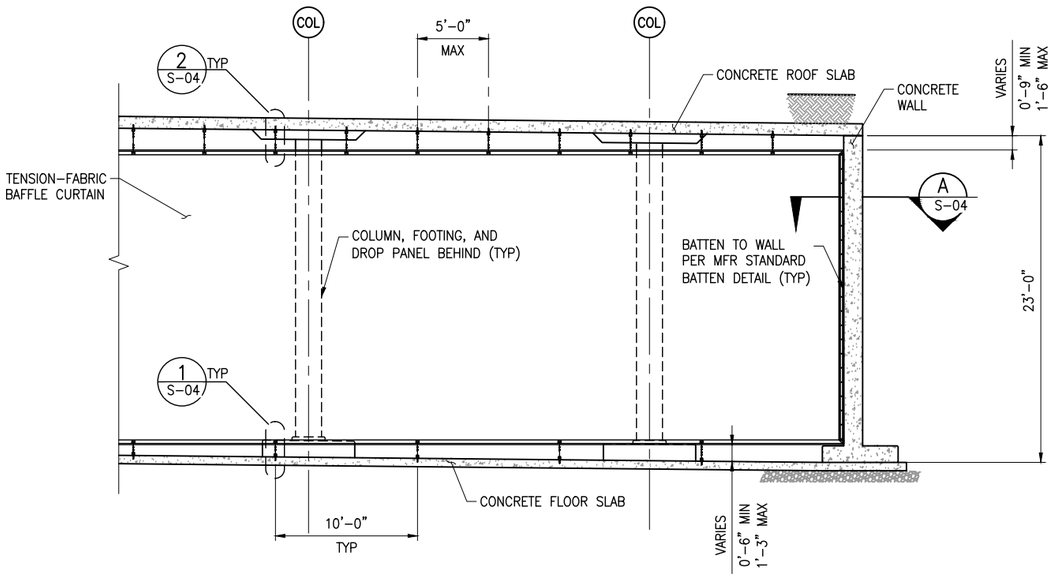
DESIGN J. MCCLURE
DRAWN J. MCCLURE
CHECKED K. SMOOT
APPROVED K. SMOOT
REVIEW

STRUCTURAL

3 MG RESERVOIR VALVE VAULT MODIFICATION SECTIONS

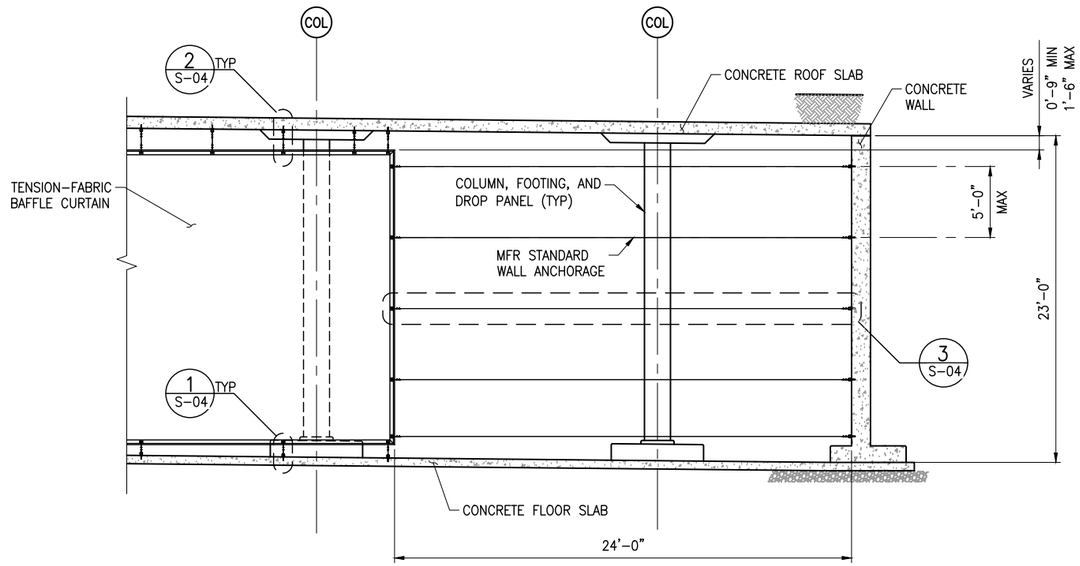
DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO.
S-02
SHEET 19 OF 40



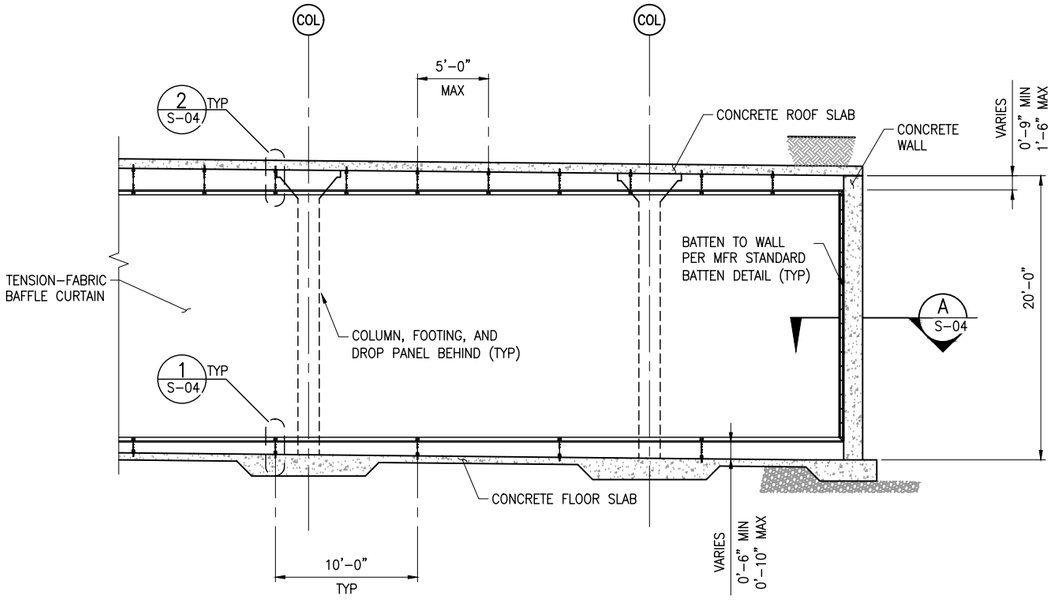
3 MG TANK BAFFLE ELEVATION

SCALE: 3/16"=1'-0"



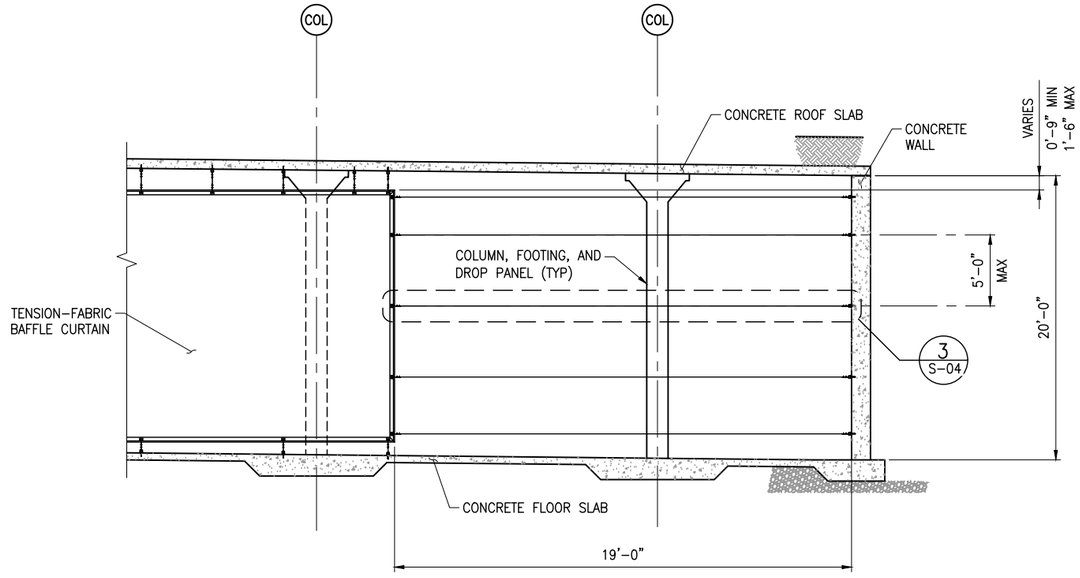
3 MG TANK BAFFLE ELEVATION

SCALE: 3/16"=1'-0"



1 MG TANK BAFFLE ELEVATION

SCALE: 3/16"=1'-0"



1 MG TANK BAFFLE ELEVATION

SCALE: 3/16"=1'-0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12029530
KYLE ROBERT SMOOT
STATE OF UTAH
10/06/2026

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SANDY, UT

VERIFY SCALE
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DESIGN
DESIGN J. MCCLURE
DRAWN J. MCCLURE

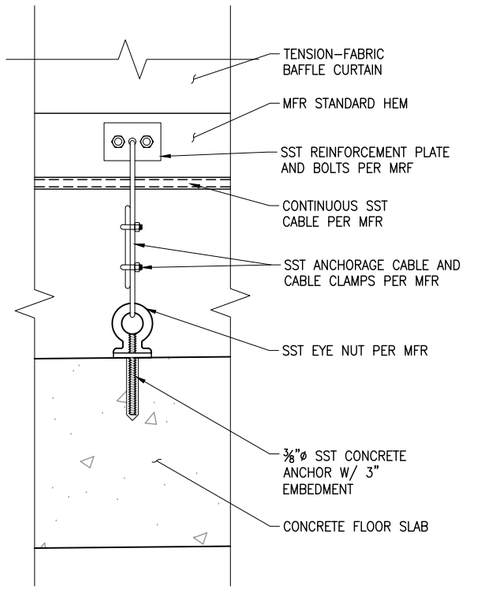
REVIEW
CHECKED K. SMOOT
APPROVED K. SMOOT

STRUCTURAL

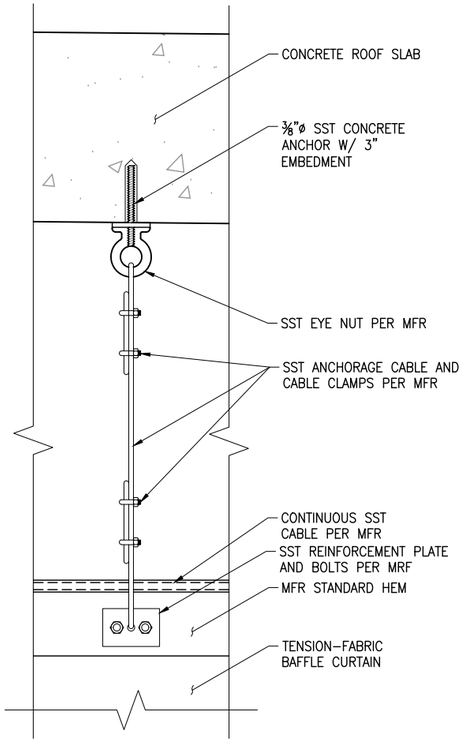
RESERVOIR BAFFLE CURTAIN ELEVATIONS

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

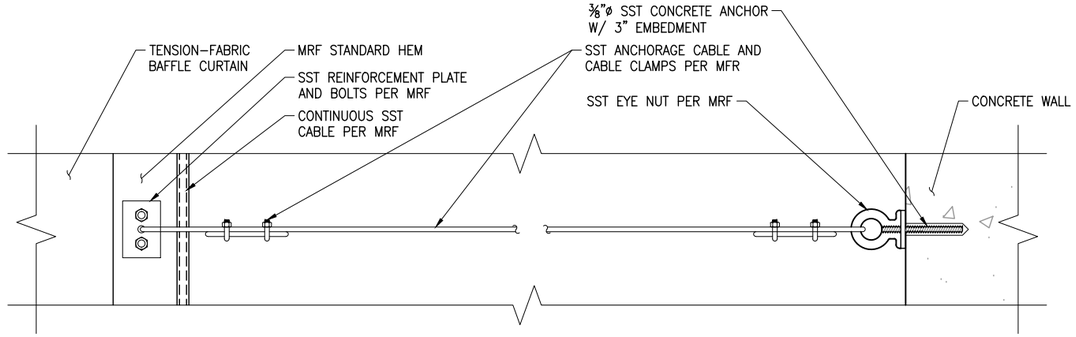
DRAWING NO.
S-03
SHEET 20 OF 40



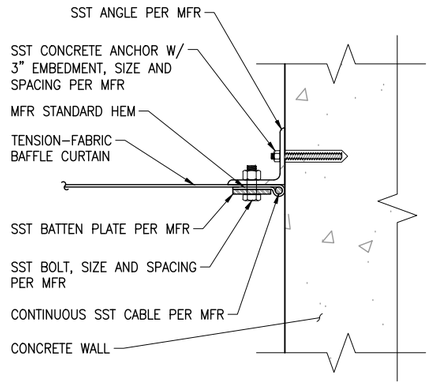
DETAIL
SCALE: 3"=1'–0"
1
S–03



DETAIL
SCALE: 3"=1'–0"
2
S–03



DETAIL
SCALE: 3"=1'–0"
3
S–03



SECTION
SCALE: 3"=1'–0"
A
S–03

IMPORTANT

WHEN DRILLING HOLES, THE DRILL MUST BE EQUIPPED WITH A POSITIVE STOP TO PREVENT DRILLING MORE THAN 3 INCHES IN DEPTH.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12829530
KYLE ROBERT SMOOT
STATE OF UTAH
10/06/2026

NO.	DATE	REV. BY	DESCRIPTION
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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN J. MCCLURE
DRAWN J. MCCLURE

REVIEW
CHECKED K. SMOOT
APPROVED K. SMOOT

STRUCTURAL

RESERVOIR BAFFLE CURTAIN DETAILS & SECTIONS

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO.
S-04

SHEET 21 OF 40

P:\jordan valley wcd\010-25-03 serwtp disinfectant ct improvements\2.0 design phase\2.7 drawings\sht\S-04.dwg Plotted: 10/7/2026 8:57 AM By: Kyle Smoot

LEGEND

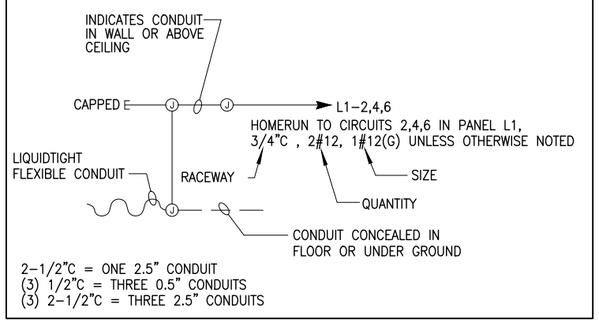
SYMBOL	LIGHTING
	RECESSED TROFFER
	WALL MOUNTED LINEAR FIXTURE
	SURFACE MOUNTED LINEAR FIXTURE
	SUSPENDED LINEAR FIXTURE
	SHADED FIXTURE INDICATES EMERGENCY BALLAST
	RECESSED DOWNLIGHT
	WALL MOUNTED FIXTURE
	POLE MOUNTED AREA LIGHT
	WALL MOUNT EXIT LIGHT (W/ DIRECTIONAL ARROWS)
	SURFACE MOUNTED DOWNLIGHT
	EMERGENCY WALL LIGHT, SINGLE
	EMERGENCY WALL LIGHT, DOUBLE

SYMBOL	DEVICES & POWER
$	SWITCH – SPST 3 THREE WAY 4 FOUR WAY WP WEATHER PROOF EXP EXPLOSION PROOF M MANUAL MOTOR DISCONNECT/STARTER T TIMER MC MOMENTARY CONTACT HC HANDICAPPED
	RECEPTACLE – SIMPLEX
GFI WP	RECEPTACLE – DUPLEX GFI GROUND FAULT INTERRUPT WP WEATHER RESISTANT DEVICE W/ WHILE–IN–USE COVER
	RECEPTACLE – DOUBLE DUPLEX SAME INDICATORS AS SHOWN FOR DUPLEX
J J	J–BOX, J–BOX WALL MOUNTED, 4"x4"x2 1/8" DEEP UNLESS NOTED OTHERWISE
T	J–BOX, CONDUIT, PULL STRING BY EC THERMOSTAT, SUPPLIED AND INSTALLED BY MC
	LCS (LOCAL CONTROL STATION)
	EMERGENCY PUSHBUTTON
PC	PHOTOCELL
	SPECIAL PURPOSE CONNECTION, BOX INDICATES FLOOR MOUNTING, WORK AS NOTED
	PANELBOARD, MOUNTING AS INDICATED ON PANEL SCHEDULE
	COMBINATION STARTER
	DISCONNECT SWITCH
	CONTACTOR
	CIRCUIT BREAKER AF/AT FRAME RATING, TRIP RATING LSIG ADJUSTABLE (L)ONG, (S)HORT, (I)NSTANTANEOUS (G) GROUND FAULT ARMS ARC ENERGY REDUCTION MAINTENANCE SWITCH
	TRANSFORMER, DRY–TYPE
	TRANSFORMER, PAD MOUNTED

SYMBOL	GROUNDING
	GROUND ROD
	GROUND ROD WITH GROUND TEST WELL
	GROUND RISER FROM REBAR
	MECHANICALLY CRIMPED OR WELDED GROUND CONNECTIONS
	GROUND CABLE: EMBEDDED IN CONCRETE BURIED IN EARTH EXPOSED

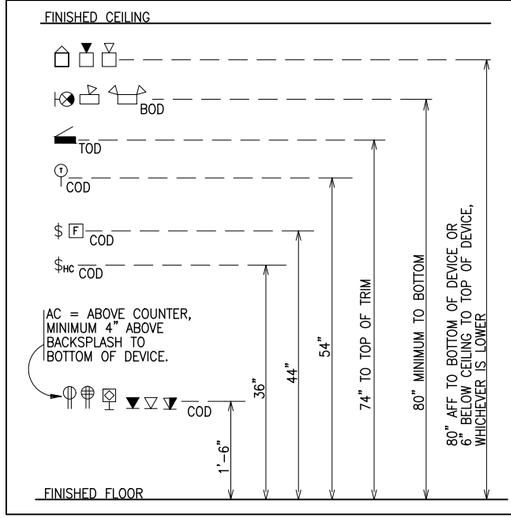
SYMBOL	SCHEMATIC
	SELECTOR SWITCH 2 POSITION
TR	NORMALLY OPEN TIME DELAY CLOSING AFTER COIL ENERGIZED
TR	NORMALLY CLOSED TIME DELAY OPENING AFTER COIL ENERGIZED
W	INDICATOR LIGHT
	REMOTE DEVICE CONNECTION
	CLOSED RELAY CONTACT
	OPEN RELAY CONTACT
	TERMINAL TO EXTERNAL REMOTE DEVICE
	WIRE TERMINAL OR CONNECTION POINT
	LIMIT SWITCH
CR	CONTROL RELAY
	VT/PT CPT
HAND OFF AUTO	SELECTOR SWITCH 3 POSITION MAINTAINED CONTACT
	LEVEL SWITCH CLOSES ON FALLING LEVEL
	LEVEL SWITCH CLOSES ON RISING LEVEL
	CONTROL SWITCH PUSHBUTTON, MOMENTARY CONTACT N.C.
	GROUND CONNECTION
	SOLENOID
	FLOW SWITCH CLOSES ON LOW FLOW
	PRESSURE SWITCH CLOSES ON RISING PRESSURE
	TRANSFORMER W/ DELTA–Y AND GROUND
M	UTILITY METER, UTILITY CT
	CIRCUIT BREAKER
	ELECTRICAL PANEL
	FUSE
2	MOTOR STARTER NEMA SIZE AS NOTED
	DISCONNECT SWITCH SIZE AS NOTED
AHF	ACTIVE HARMONIC FILTER
PHF	PASSIVE HARMONIC FILTER
M	MOTOR (10 HORSEPOWER NOTED)
SPD	SURGE PROTECTION DEVICE
PQM	POWER QUALITY METER
VFD	VARIABLE FREQUENCY DRIVE
PMR	PUMP MONITOR RELAY
RVSS	REDUCED VOLTAGE SOFT STARTER
dV/dt	dV/dt FILTER

CIRCUITING SYMBOLS



2–1/2"C = ONE 2.5" CONDUIT
(3) 1/2"C = THREE 0.5" CONDUITS
(3) 2–1/2"C = THREE 2.5" CONDUITS

INTERIOR BOX MOUNTING HEIGHTS



SYMBOL	ABBREVIATIONS AND MISCELLANEOUS
ATS	AUTOMACTIC TRANSFER SWITCH
EC	ELECTRICAL CONTRACTOR
MC	MECHANICAL CONTRACTOR
GC	GENERAL CONTRACTOR
C	CONDUIT
GND, G	GROUND
BOD	BOTTOM OF DEVICE
COD	CENTER OF DEVICE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BLG	BELOW GRADE
AC	ABOVE COUNTER, 4" ABOVE BACK SPLASH
BC	BELOW COUNTER, 4" BELOW COUNTER TOP
W/	WITH
a,b,c	SWITCH DESIGNATION
UON	UNLESS OTHERWISE NOTED
UG	UNDERGROUND
WP	WEATHER PROOF
FO	FIBER OPTIC
MD	MEDIUM VOLTAGE
X / X	INDICATES STANDARD DETAIL
XXX	EQUIPMENT TAG NUMBER
x,xxx	FAULT CURRENT VALUE
XXX	CONDUIT TAG

GENERAL NOTES:

1. NOT ALL EQUIPMENT SYMBOLS SHOWN ARE USED.
2. VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH–IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO ENSURE NEC CODE CLEARANCE REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
3. CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED BEFORE BEGINNING ROUGH–IN.
4. SEE APPLICABLE SHOP DRAWINGS FOR ROUGH–IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC.
5. THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THROUGH ELECTRICAL ROOMS OR SPACES; OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN THE OTHER AREAS.
6. ALL PENETRATIONS OF FLOORS, WALLS AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL.
7. FOR PACKAGE EQUIPMENT PROVIDED ON THE PROJECT, SOME CONDUITS AND WIRES ARE SHOWN ON THE DRAWINGS, BUT IT IS EXPECTED THAT SOME ADDITIONAL CONDUITS AND WIRES MAY BE REQUIRED BY EQUIPMENT MANUFACTURERS TO COMPLETE INSTALLATION. IT IS INCUMBENT UPON THE GENERAL CONTRACTOR TO COORDINATE THIS REQUIREMENT WITH HIS SUBCONTRACTORS TO MAKE SURE THAT EQUIPMENT SUPPLIER PROVIDED ALL NECESSARY ELECTRICAL INFORMATION TO ELECTRICAL SUBCONTRACTOR FOR INCLUSION WHETHER SHOWN OR NOT SHOWN ON THE DRAWINGS.
8. IF OTHER THAN FIRST NAMED EQUIPMENT IS USED, IT SHALL BE CAREFULLY CHECKED FOR ELECTRICAL REQUIREMENTS AND CONTROL REQUIREMENTS OF ALTERNATE EQUIPMENT. SHOULD CHANGES OR ADDITIONS OCCUR IN ELECTRICAL WORK, OR THE WORK OF OTHER CONTRACTORS BE REVISED BY THE ALTERNATE EQUIPMENT, THE COST OF ALL CHANGES SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
9. IT IS THE ELECTRICAL SUBCONTRACTOR'S RESPONSIBILITY TO RECEIVE THE COMPLETE SET OF PLANS IN ORDER TO ENSURE THAT ALL ITEMS RELATED TO ELECTRICAL POWER AND CONTROL SYSTEMS ARE COMPLETELY ACCOUNTED FOR.
10. ALL EQUIPMENT DIMENSIONS SHOWN ON PLANS AND ELEVATIONS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL USE THE SHOP DRAWINGS FOR PROPER LAYOUT, FOUNDATION AND PAD, ETC. FOR FINAL INSTALLATION WITHOUT ANY ADDITIONAL COST TO THE OWNER.
11. THE DRAWINGS GENERALLY ILLUSTRATE THE APPROXIMATE DESIRED LOCATION AND ARRANGEMENT OF OUTLETS, CONDUIT RUNS, EQUIPMENT AND OTHERS ITEMS. DETERMINE EXACT LOCATIONS IN THE FIELD BASED ON PHYSICAL SIZE AND ARRANGEMENT OF EQUIPMENT, FINISHED ELEVATIONS, EASEMENT LOCATIONS, AND OTHER OBSTRUCTIONS. LOCATIONS SHOWN ON THE DRAWINGS, HOWEVER, SHALL BE ADHERED TO AS CLOSELY AS POSSIBLE.
12. THE ELECTRICAL INSTALLATION SHALL COMPLY WITH THE CURRENT VERSION OF THE NEC, LOCAL, AND STATE CODES.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12649767 JOSHUA JAY LAKE STATE OF UTAH 10/06/2026

REVISIONS

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VERIFY SCALE
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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

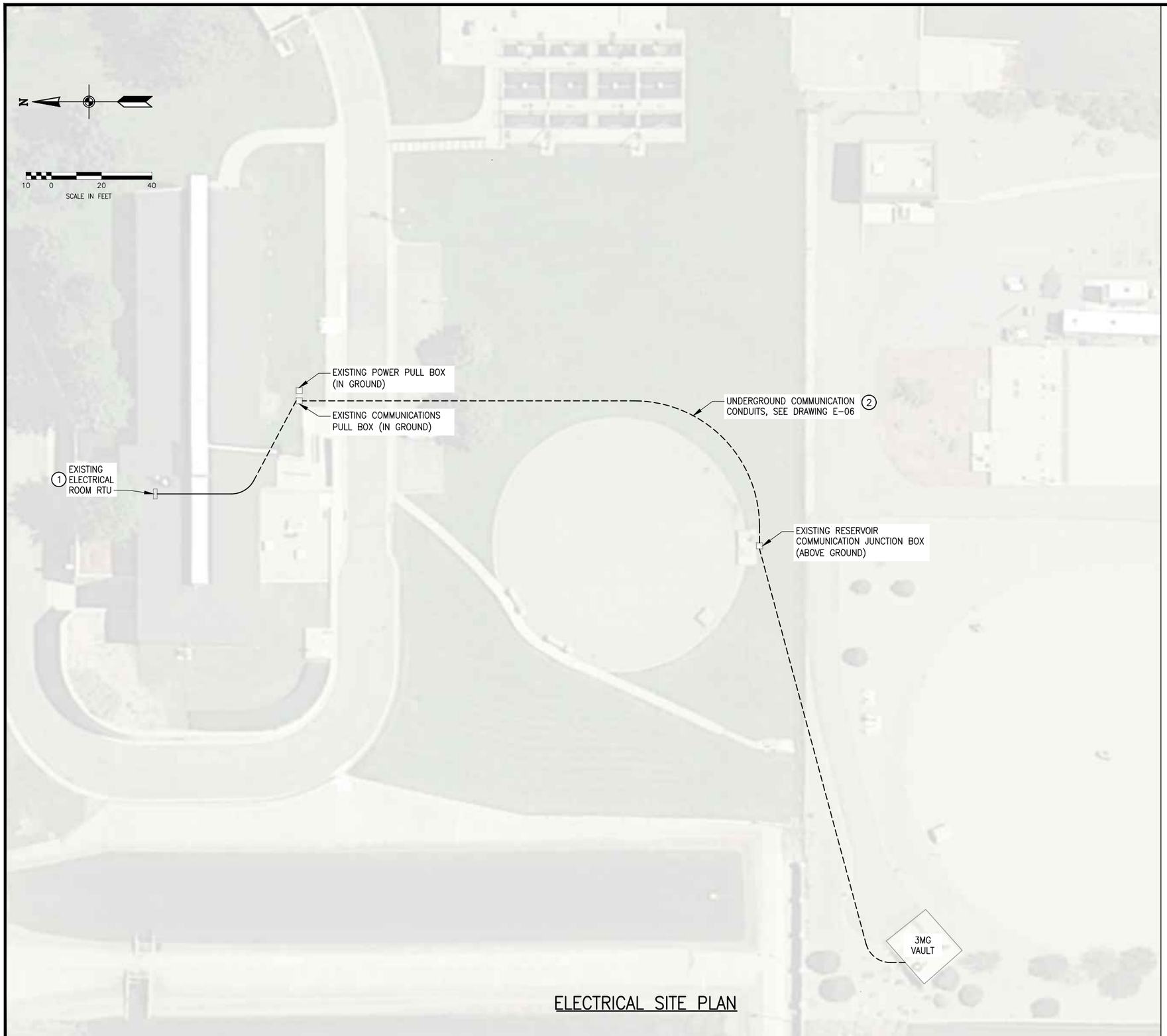
REVIEW
CHECKED J. LAKE
APPROVED J. LAKE

DESIGN
DESIGN C. WASDEN
DRAWN C. WASDEN

ELECTRICAL
ELECTRICAL LEGEND AND NOTES
DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO.
E-01
SHEET 22 OF 40

P:\jordan valley wcd\010-25-03 serwtp disinfectant ct improvements\2.0 design phase\2.7 drawings\sht\E-01.dwg Plotted: 10/7/2026 8:57 AM By: Kyle Smoot



ELECTRICAL SITE PLAN

GENERAL NOTES:

A. SEE VAULT ELECTRICAL PLAN ON SHEET E-03 FOR EQUIPMENT INSIDE THE 3MG VAULT.

B. FOR MORE INFORMATION REGARDING CONDUIT AND CONDUCTOR SIZES AND QUANTITIES, SEE CONTROL BLOCK DIAGRAM ON DRAWING E-06.

KEY NOTES: (#)

1. RTU LOCATED IN ELECTRICAL ROOM IN BASEMENT OF OPERATIONS BUILDING. CONTRACTOR SHALL COORDINATE ROUTING OF CONDUIT INSIDE ELECTRICAL ROOM WITH OWNER. CONTRACTOR REQUIRED TO ATTEND PREBID MEETING DURING WHICH CONDUIT ROUTING WILL BE DISCUSSED.
2. CONTRACTOR SHALL PERFORM SURFACE REPAIR MATCHING EXISTING MATERIALS. (E 5010)

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12649767 JOSHUA JAY LAKE STATE OF UTAH 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT

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SANDY, UT

VERIFY SCALE

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DESIGN C. WASDEN

DRAWN C. WASDEN

REVIEW

CHECKED J. LAKE

APPROVED J. LAKE

ELECTRICAL

ELECTRICAL SITE PLAN

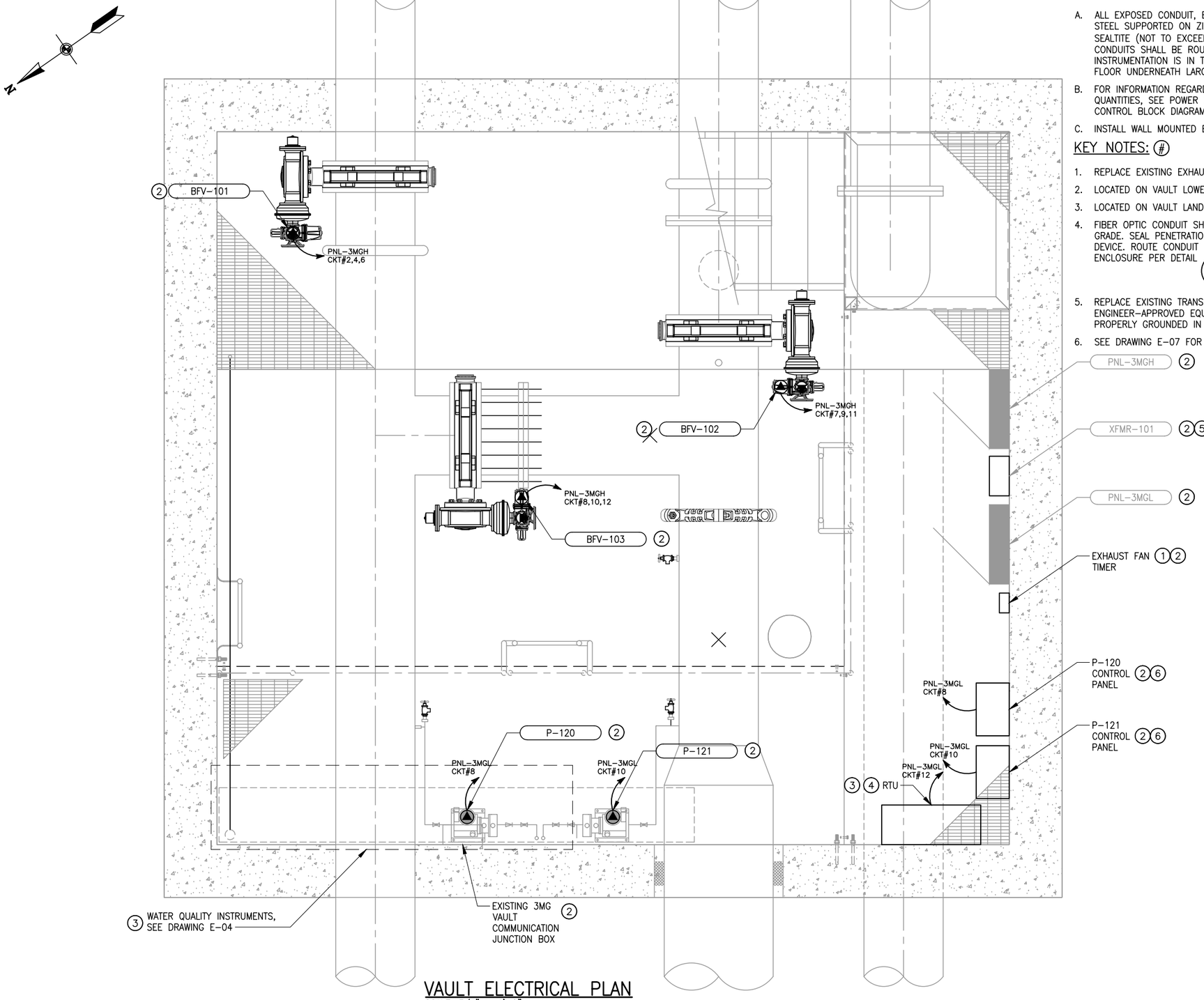
DATE: OCTOBER 2026

PROJECT NUMBER 010-25-03

DRAWING NO. E-02

SHEET 23 OF 40

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VAULT ELECTRICAL PLAN
SCALE: 3/4" = 1'-0"

GENERAL NOTES:

A. ALL EXPOSED CONDUIT, BOXES, AND FITTINGS SHALL BE GALVANIZED RIGID STEEL SUPPORTED ON ZINC COATED STRUT OR BACKSTRAP CLAMPS. SEALTITE (NOT TO EXCEED 24") MAY BE USED WHERE REQUIRED. CONDUITS SHALL BE ROUTED ALONG VAULT WALLS. WHERE INSTRUMENTATION IS IN THE CENTER OF THE VAULT, ROUTE CONDUIT ON FLOOR UNDERNEATH LARGE DIAMETER WATER PIPING.

B. FOR INFORMATION REGARDING CONDUIT AND CONDUCTOR SIZES AND QUANTITIES, SEE POWER ONE-LINE DIAGRAM ON SHEET E-05 AND CONTROL BLOCK DIAGRAM ON SHEET E-06.

C. INSTALL WALL MOUNTED EQUIPMENT PER DETAIL (E / 5001).

KEY NOTES: (#)

1. REPLACE EXISTING EXHAUST FAN TIMER WITH TORK 3009A TIMER.
2. LOCATED ON VAULT LOWER LEVEL.
3. LOCATED ON VAULT LANDING.
4. FIBER OPTIC CONDUIT SHALL PENETRATE WALL AT 36 INCHES BELOW GRADE. SEAL PENETRATION WITH LINKSEAL OR ENGINEER-APPROVED GLAND DEVICE. ROUTE CONDUIT DOWN WALL AND PENETRATE BOTTOM OF RTU ENCLOSURE PER DETAIL (E / 5012).
5. REPLACE EXISTING TRANSFORMER WITH SQUARE D P/N 10S40F OR ENGINEER-APPROVED EQUAL. ENSURE THAT NEW TRANSFORMER IS PROPERLY GROUNDED IN ACCORDANCE WITH THE NEC.
6. SEE DRAWING E-07 FOR MORE INFORMATION.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — No. 12649767 — JOSHUA JAY LAKE — STATE OF UTAH — 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

DESIGN — DESIGN C. WASDEN — DRAWN C. WASDEN
REVIEW — CHECKED J. LAKE — APPROVED J. LAKE

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

ELECTRICAL

VAULT ELECTRICAL PLAN

PROJECT NUMBER 010-25-03
DATE: OCTOBER 2026

DRAWING NO. E-03
SHEET 24 OF 40

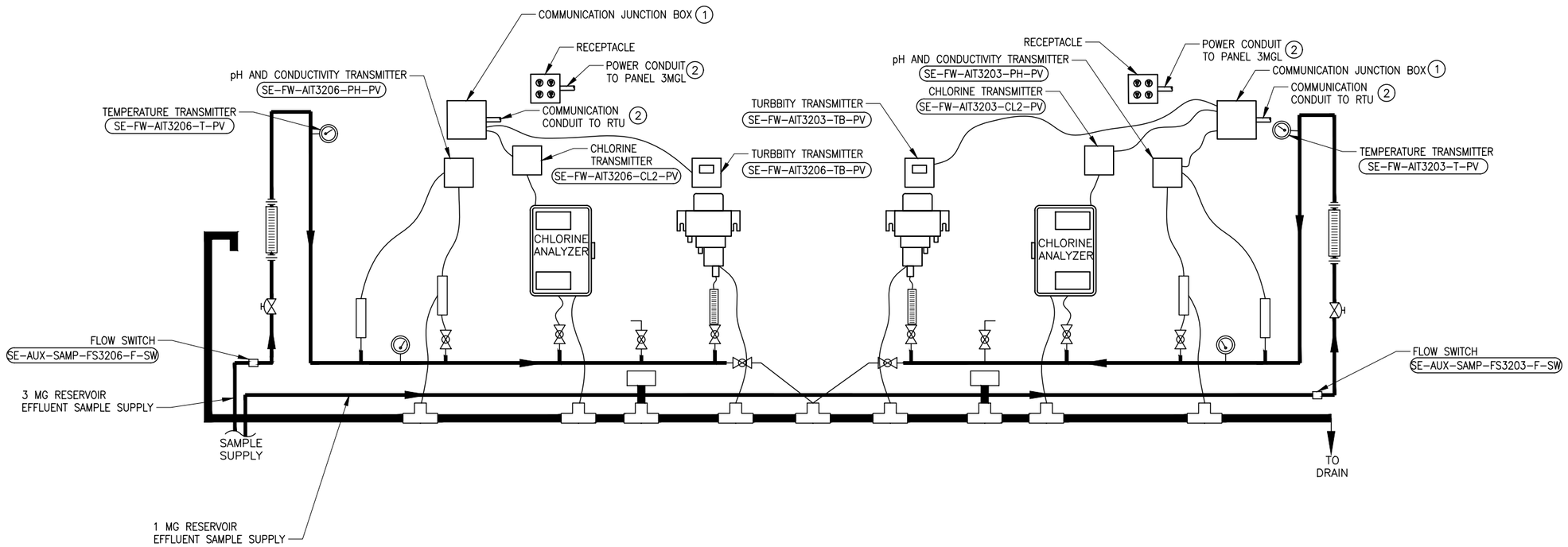
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GENERAL NOTES:

A. FOR INFORMATION REGARDING CONTROL CONDUIT AND CONDUCTORS, SEE CONTROL BLOCK DIAGRAM ON DRAWING E-06.

KEY NOTES: (#)

1. NEMA 4X STAINLESS STEEL JUNCTION BOX. MINIMUM SIZE SHALL BE 6"WX6"HX4"D.
2. ELECTRICAL CONDUIT SHALL BE ROUTED ABOVE WATER QUALITY INSTRUMENTATION AND PIPING.



SAMPLE INSTRUMENTATION ELEVATIONS

SCALE: NTS

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12649767 JOSHUA JAY LAKE STATE OF UTAH
10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

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REVIEW — CHECKED J. LAKE — APPROVED J. LAKE

ELECTRICAL

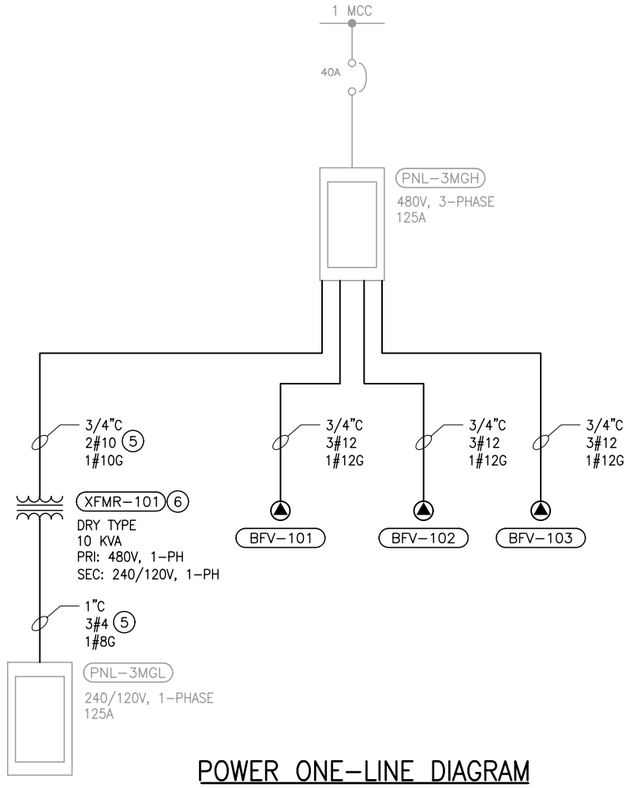
SAMPLE INSTRUMENTATION ELEVATIONS

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO. E-04

SHEET 25 OF 40

P:\jordan valley wcd\010-25-03 serwtp disinfectant ct improvements\2.0 design phase\2.7 drawings\sht\E-04.dwg Plotted: 10/7/2026 8:58 AM By: Kyle Smoot



POWER ONE–LINE DIAGRAM

LINETYPE LEGEND

EXISTING CONDUIT, CONDUCTOR, OR EQUIPMENT

NEW CONDUIT, CONDUCTOR, OR EQUIPMENT FURNISHED AND INSTALLED BY CONTRACTOR

PANEL NAME: 3MGH

PANEL RATING:	125 A	UPDATED:	10/6/26	NEMA:	12	NOTES:	1		
LOCATION:	3MG VAULT	TOTAL AMPS:	9	PHASE:	3		2		
MOUNTING:	SURFACE	TOTAL VOLT-AMPS:	7.82 kVA	WIRE:	4		3		
MAIN TYPE:	MLO	VOLTAGE L-L:	480 V				4		
GROUND BUS:	YES	VOLTAGE L-N:	277 V				5		

PHASE DEMAND	3756.25	3687.5	375
PHASE CONNECTED	3005	2950	300

NOTE	CONDUIT	PHASE	NEUTRAL	GROUND	CIRCUIT DESCRIPTION	POLE	RATING	NUMBER	A	B	C	NUMBER	RATING	POLE	CIRCUIT DESCRIPTION	CONDUIT	PHASE	NEUTRAL	GROUND	NOTE
					(E) PNL-3MGL	2	20	1	0 100			2	20	3	BFV-101					(1)
					"	*	**	3		0 100		4	**	*	"					
					SPACE	*	**	5			0 100	6	**	*	"					(2)
(2)					BFV-102	3	20	7	100 100			8	20	3	BFV-103					
					"	*	**	9		100 100		10	**	*	"					
					"	*	**	11			100 100	12	**	*	"					
(7)					(N) PNL-3MGL	2	30	13	2,705 0			14	**	*	SPACE					
					"	*	**	15	.	2,650 0		16	**	*	SPACE					
					SPACE	*	**	17			0 0	18	**	*	SPACE					

PANEL SCHEDULE PNL–3MGH

PANEL NAME: 3MGL

PANEL RATING:	125 A	UPDATED:	10/5/26	NEMA:	12	NOTES:		
LOCATION:	3MG VAULT	TOTAL AMPS:	22	PHASE	1	1.		
MOUNTING:	SURFACE	TOTAL VOLT-AMPS:	5.36 kVA	WIRE:	3	2.		
MAIN TYPE:	60 A MCB	VOLTAGE L-L:	240 V			3.		
GROUND BUS:	YES	VOLTAGE L-N:	120 V			4.		

PHASE DEMAND	2705	2650
PHASE CONNECTED	2,164	2120

NOTE	CONDUIT	PHASE	NEUTRAL	GROUND	CIRCUIT DESCRIPTION	POLE	RATING	NUMBER	A	B	NUMBER	RATING	POLE	CIRCUIT DESCRIPTION	CONDUIT	PHASE	NEUTRAL	GROUND	NOTE
					LIGHTS	1	20	1	400 180		2	20	1	VAULT GFI PLUG					
					3 MG TANK PLUG	1	20	3		180 576	4	20	1	FAN					
					SPARE	2	30	5	0 0		6	20	1	SPARE					(4)
					SPARE	*	**	7		0 864	8	15	1	P-120 (1/3 HP)					(4)
(3)					WATER QUALITY INSTRUMENTS	1	20	9	720 864		10	15	1	P-121 (1/3 HP)					
					SPACE			11		0 500	12	20	1	RTU					(3)

PANEL SCHEDULE PNL–3MGL

GENERAL NOTES:

A. FOR EQUIPMENT LOCATIONS, SEE VAULT ELECTRICAL PLAN ON SHEET E–03.

B. UNLESS OTHERWISE NOTED, POWER CONDUCTORS SHALL BE #12 AWG, AND CONDUIT SHALL BE 3/4–INCH.

KEY NOTES: (#)

1. UTILIZE EXISTING SPARE CIRCUIT BREAKER.
2. FURNISH AND INSTALL 20A, 3–POLE CIRCUIT BREAKER. PROVIDE SIEMENS BQD320.
3. FURNISH AND INSTALL 20A, 1–POLE CIRCUIT BREAKER. PROVIDE SIEMENS B120.
4. FURNISH AND INSTALL 15A, 1–POLE CIRCUIT BREAKER. PROVIDE SIEMENS B115.
5. REPLACE EXISTING CONDUIT AND CONDUCTORS.
6. REPLACE EXISTING TRANSFORMER. SEE DRAWING E–05 FOR ADDITIONAL INFORMATION.
7. FURNISH AND INSTALL 30A, 2–POLE CIRCUIT BREAKER FOR NEW FEEDS TO XFMR–101 AND PNL–3MGL. PROVIDE SIEMENS BQD130.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12649767 JOSHUA JAY LAKE STATE OF UTAH
10/06/2026

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			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

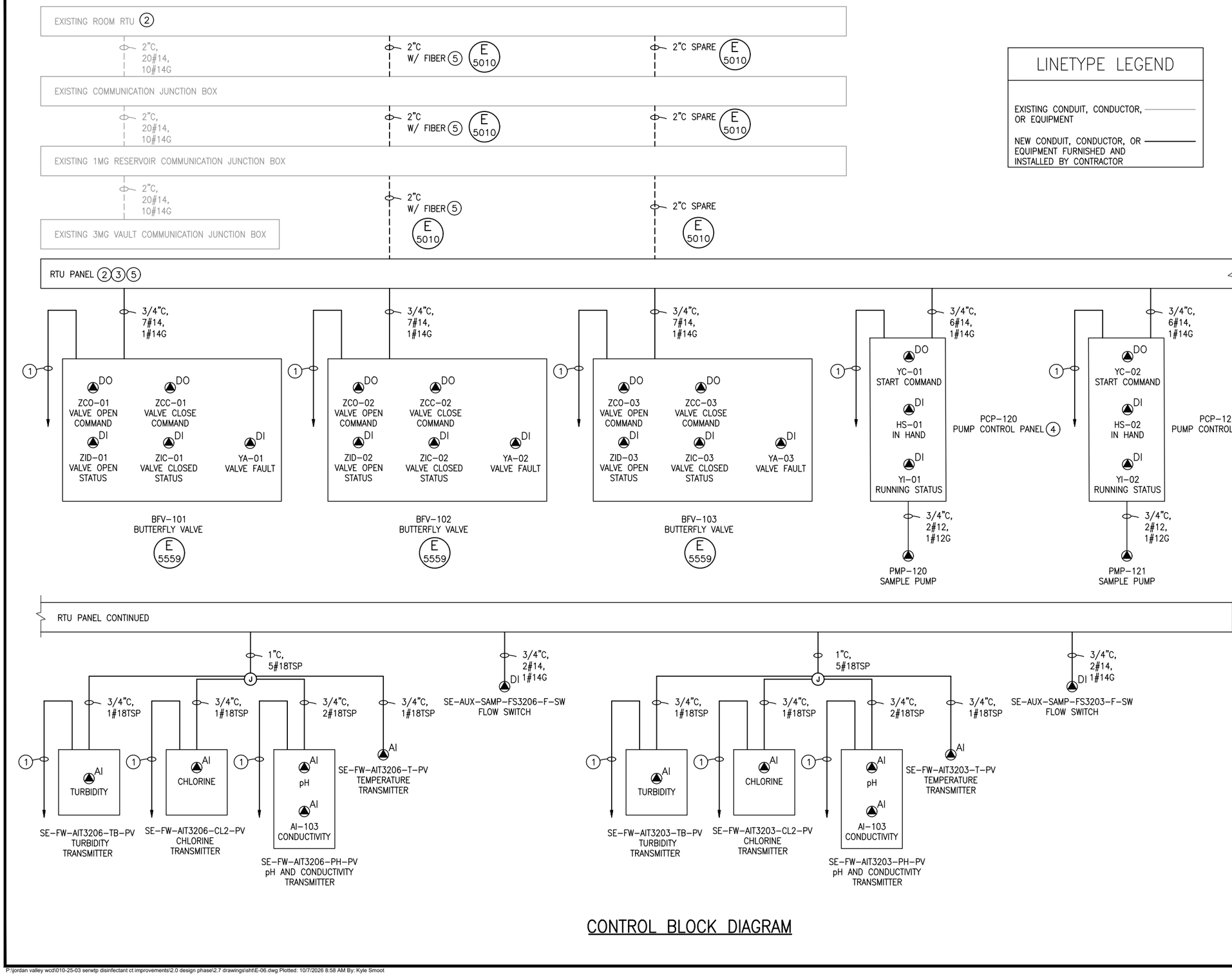
REVIEW CHECKED J. LAKE APPROVED J. LAKE

DESIGN DESIGN C. WASDEN DRAWN C. WASDEN

ELECTRICAL
POWER ONE-LINE DIAGRAM

PROJECT NUMBER 010-25-03
DATE: OCTOBER 2026

DRAWING NO. E-05
SHEET 26 OF 40



LINETYPE LEGEND

EXISTING CONDUIT, CONDUCTOR, OR EQUIPMENT

NEW CONDUIT, CONDUCTOR, OR EQUIPMENT FURNISHED AND INSTALLED BY CONTRACTOR

GENERAL NOTES:

A. FOR EQUIPMENT LOCATIONS, SEE SITE PLAN ON SHEET E-02 AND VAULT ELECTRICAL PLAN ON SHEET E-03.

KEY NOTES: (#)

1. SEE POWER ONE-LINE DIAGRAM FOR INFORMATION REGARDING POWER CONDUIT AND CONDUCTORS.
2. CONTRACTOR SHALL LABEL BOTH ENDS OF CONDUCTORS ENTERING THE RTU CABINETS, PERFORM FIELD SIDE TERMINATION OF CONDUCTORS, AND LEAVE AMPLE CONDUCTOR/CABLING IN THE RTU CABINETS FOR OWNER TERMINATION. OWNER SHALL PROVIDE ANY REQUIRED RTU HARDWARE, PROGRAMMING, AND INTEGRATION. CONTRACTOR SHALL ASSIST OWNER WITH POINT TO POINT TESTING.
3. PROVIDE AND INSTALL HOFFMAN P/N A36H30DLP3PT. OWNER SHALL PROVIDE AND INSTALL POPULATED BACKPLATE.
4. SEE WIRING SCHEMATIC ON SHEET E-07.
5. FURNISH AND INSTALL CORNING 012T8P-31190-29-FREEDM, 12-STRAND, MUTLTIMODE, OM4, TIGHT-BUFFERED FIBER OPTIC CABLE. FURNISH DINSPACE SNAP-12LC-MM OM3/4 COMPACT FIBER OPTIC PATCH PANEL AND PROVIDE TO OWNER FOR INSTALLATION IN RTU CABINET. CONTRACTOR RESPONSIBLE FOR FIBER OPTIC CABLE TERMINATIONS AND TESTING.

CONTROL BLOCK DIAGRAM

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12649767 JOSHUA JAY LAKE STATE OF UTAH 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
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SANDY, UT

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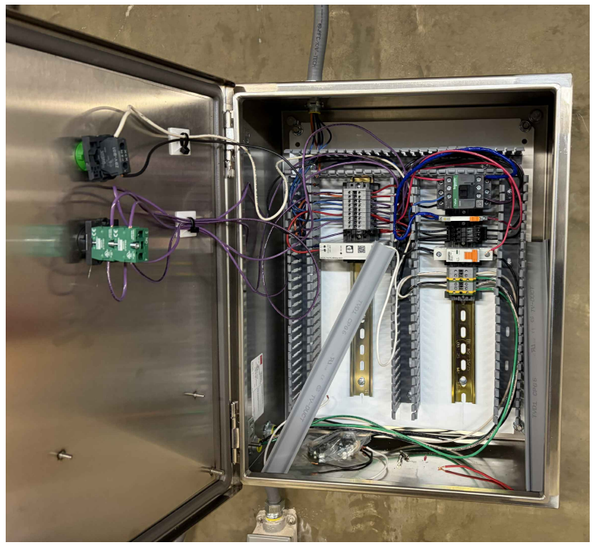
DESIGN C. WASDEN
DRAWN C. WASDEN
REVIEW
CHECKED J. LAKE
APPROVED J. LAKE

ELECTRICAL
CONTROL BLOCK DIAGRAM
PROJECT NUMBER 010-25-03
DATE: OCTOBER 2026

DRAWING NO. E-06
SHEET 27 OF 40

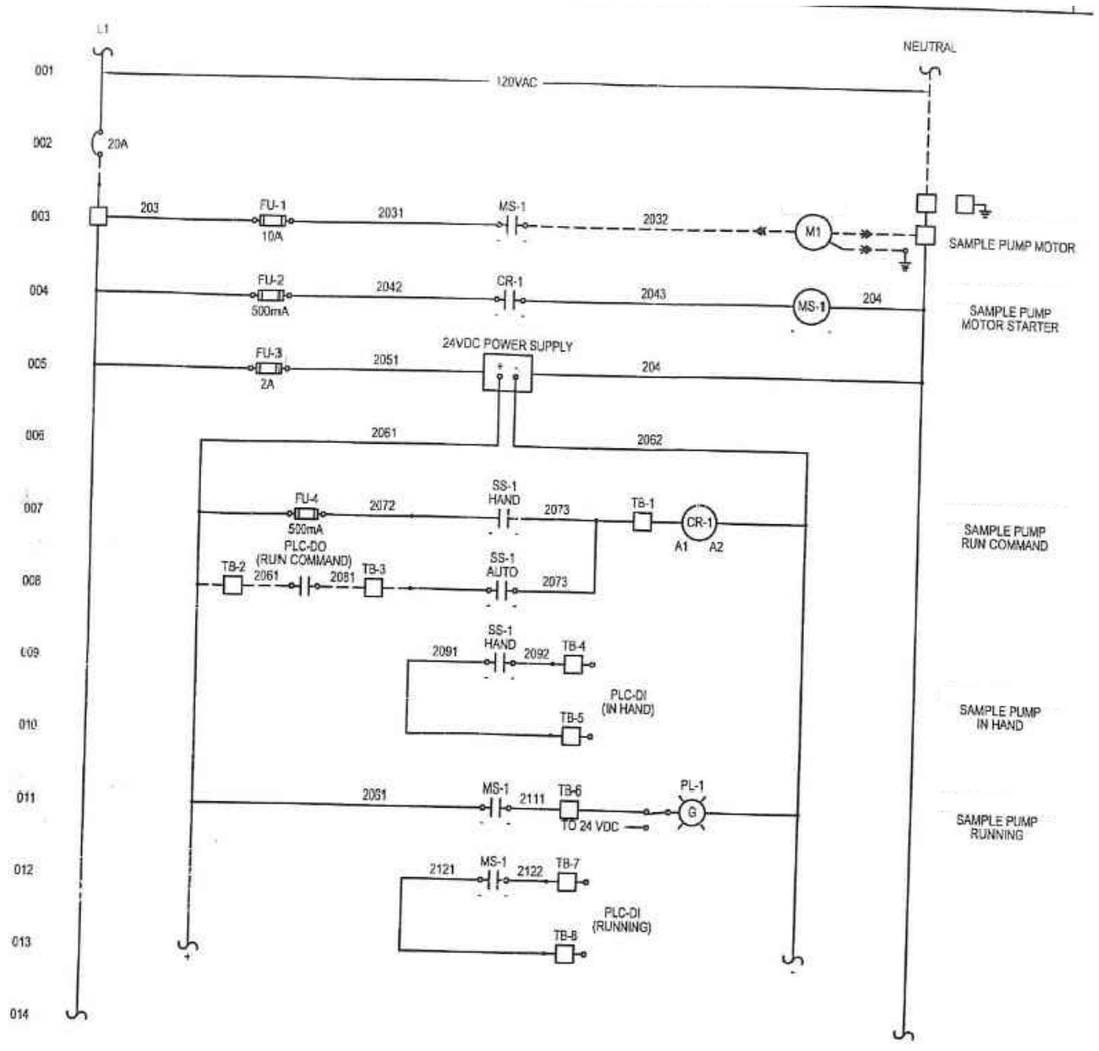


ELEVATION



LAYOUT

BILL OF MATERIALS				
ITEM	QTY	MANUFACTURER	PART #	DESCRIPTION
1	1	RITTAL	LW201608SS	20" x 16" X 10" NEMA TYPE 4 ENCLOSURE
2	1	RITTAL	LW20P16	20" x 16" BACKPLATE
3	1	GE	CR104PSG33B92	3-POSITION SELECTOR SWITCH
4	1	GE	CR104PLT88G	PUSH TO TEST LIGHT (GREEN)
5	1	TESYS	LC1D09	MOTOR STARTER
6	1	IDEC	PS5RC24	POWER SUPPLY, 30 WATT
7	1	PHOENIX CONTACT	RU2S-A110	2-POLE RELAY WITH LIGHT
8	15	PHOENIX CONTACT	3004362	1L FEED THRU TERMINAL BLOCK, UK5
9	4	PHOENIX CONTACT	3003020	TERMINAL BLOCK END PLATE, UK5
10	6	PHOENIX CONTACT	800886	TERMINAL BLOCK END CLAMP
11	3	PHOENIX CONTACT	3004100	1L FUSED TERMINAL BLOCK, 24VDC
12	1	PHOENIX CONTACT	3004100	1L FUSED TERMINAL BLOCK, 120VAC
13	1	PHOENIX CONTACT	5601515	120VAC, 20A CIRCUIT BREAKER
14	4	PHOENIX CONTACT	–	DIN RAIL
15	2	PHOENIX CONTACT	–	TERMINAL BLOCK GROUNDING
16	1'-2"	PANDUIT	F1.5X3LG6	1.5" x 3" WIREWAY
17	1'-2"	PANDUIT	C1.5LG6	1.5" WIREWAY COVER



WIRING SCHEMATIC

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12649767
JOSHUA JAY LAKE
STATE OF UTAH
10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SANDY, UT

SERWTP DISINFECTANT CT IMPROVEMENTS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN C. WASDEN
DRAWN C. WASDEN
REVIEW
CHECKED J. LAKE
APPROVED J. LAKE

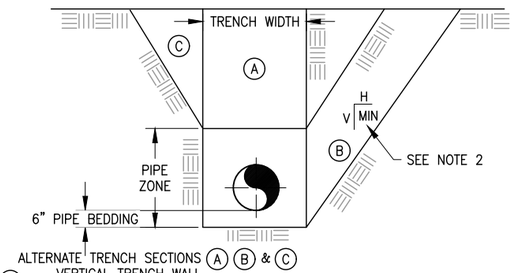
ELECTRICAL

SAMPLE PUMP ELEVATION, LAYOUT, BILL OF MATERIALS, AND WIRING SCHEMATICS

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO.
E-07

SHEET 28 OF 40



ALTERNATE TRENCH SECTIONS (A) (B) & (C)

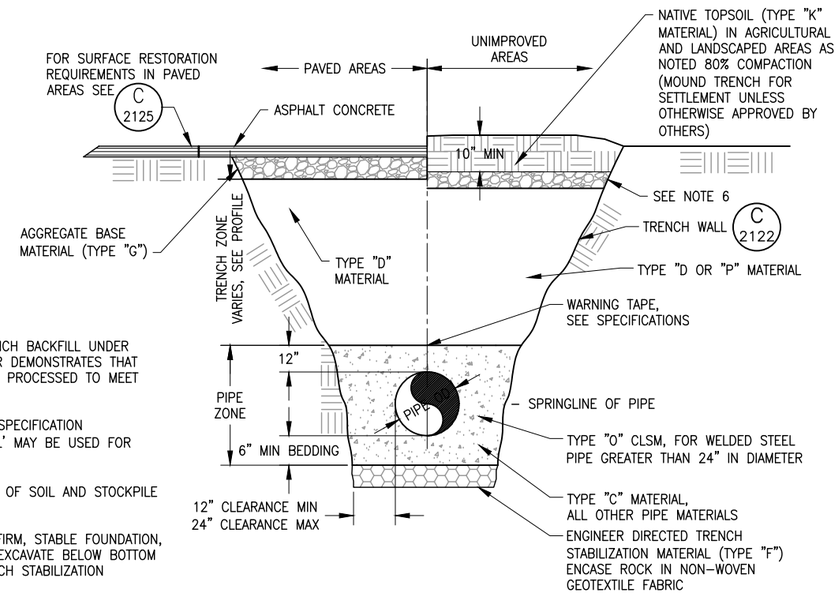
(A) VERTICAL TRENCH WALL
1. MAX UNSUPPORTED HEIGHT = 3.5 FT.
2. FOR DEPTH OVER 3.5 FT SHORING OR SHEATHING REQUIRED.

(B) SLOPING TRENCH WALL
1. NOT TO BE USED WITHOUT APPROVAL OF ENGINEER.
2. REQUIRES IMPROVED PIPE ZONE BACKFILL OR INCREASE IN PIPE CLASS

(C) COMBINATION VERTICAL/SLOPING TRENCH
1. TRENCH IN PIPE ZONE SHALL HAVE VERTICAL WALLS WHERE STABLE SOIL EXISTS

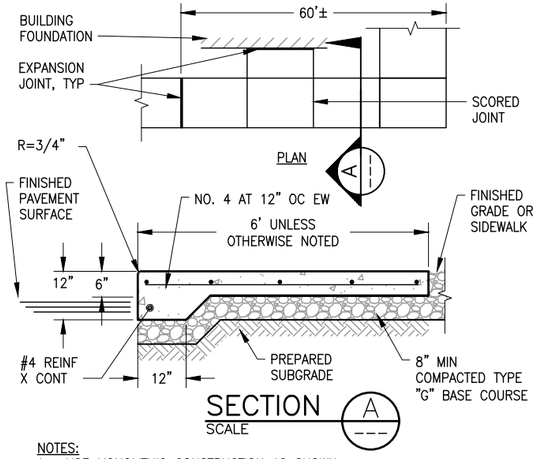
NOTES:
1. TRENCH EXCAVATIONS TO BE IN ACCORDANCE WITH OSHA SAFETY AND HEALTH STANDARDS FOR CONSTRUCTION. (29 CFR 1926).
2. CONTRACTOR TO PROVIDE SHORING OR TRENCH BOX IN ROADWAY AREAS TO MINIMIZE TRENCH WIDTH.
3. CONTRACTOR TO PROVIDE ALL DEWATERING MEASURES AS REQUIRED. GROUNDWATER ELEVATION SHALL BE MAINTAINED AT LEAST 2' BELOW BOTTOM OF TRENCH UNTIL BACKFILL IS COMPLETE.
4. SLIDE SLOPES SHALL MEET MINIMUM REQUIREMENTS OF THE GEOTECHNICAL INVESTIGATION.

TYPICAL TRENCH EXCAVATION SECTION
NTS — C 2122



NOTES:
1. IMPORT BACKFILL REQUIRED FOR TRENCH BACKFILL UNDER ROADWAY AREAS, UNLESS CONTRACTOR DEMONSTRATES THAT SUITABLE ON-SITE MATERIAL CAN BE PROCESSED TO MEET SPECIFIED BACKFILL REQUIREMENTS.
2. SCREENED NATIVE MATERIAL MEETING SPECIFICATION REQUIREMENT FOR 'SUITABLE MATERIAL' MAY BE USED FOR TRENCH ZONE BACKFILL.
3. IN UNIMPROVED AREAS, STRIP TOP 8" OF SOIL AND STOCKPILE PRIOR TO TRENCH EXCAVATION.
4. IF NATIVE SOILS DO NOT PROVIDE A FIRM, STABLE FOUNDATION, AS DETERMINED BY ENGINEER, OVER EXCAVATE BELOW BOTTOM OF TRENCH AND BACKFILL WITH TRENCH STABILIZATION MATERIAL AS SHOWN.
5. TOP 6" OF TRENCH BACKFILL BENEATH THE TOPSOIL LAYER SHOULD BE INSTALLED, SMOOTHED, BUT LEFT UN-COMPACTED.

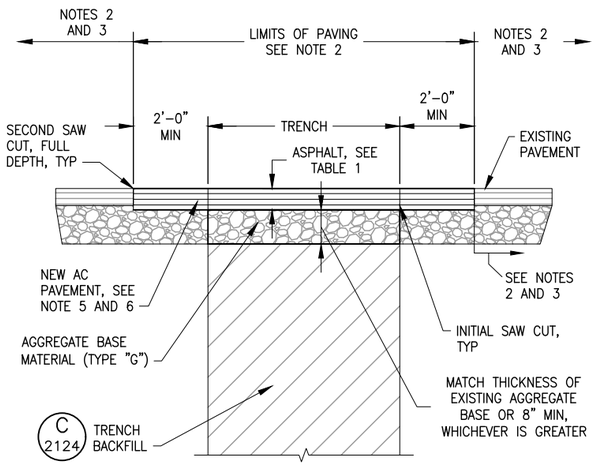
TYPICAL TRENCH BACKFILL SECTION
NTS — C 2124



SECTION A
SCALE

NOTES:
1. USE MONOLITHIC CONSTRUCTION AS SHOWN.
2. EXPANSION JOINTS OF ½" PREMOLDED JOINT FILLER SHALL BE PLACED 60' ON CENTER.
3. PLACE CONTROL JOINTS AT INTERVALS EQUAL TO 1 TO 1½" TIMES THE WIDTH OF THE SIDEWALK UNIFORMLY PLACED ALONG LENGTH OF SIDEWALK. DEPTH OF JOINT SHALL BE 1" MINIMUM.
4. EDGE SIDEWALK WITH ½" RADIUS EDGING TOOL, UNLESS OTHERWISE NOTED. ROUND EDGES AT EXPANSION JOINTS TO A RADIUS OF ½".

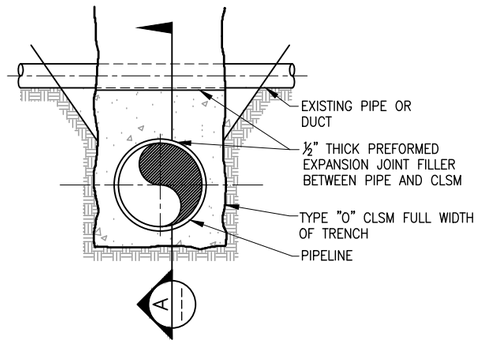
CONCRETE SIDEWALK-THICKENED EDGE
SCALE:NTS — C 2163

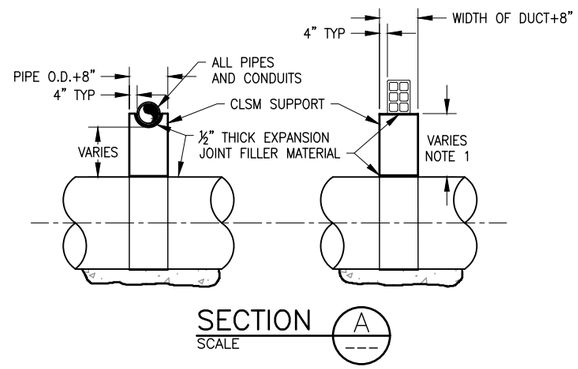


NOTES:
1. CONTRACTOR SHALL PERMANENTLY REPLACE ALL PAVEMENT SURFACES, STRIPING, AND TRAFFIC CONTROLS IN ACCORDANCE WITH STANDARDS PRIOR TO REMOVING DETOURS.
2. REMOVE ADDITIONAL PAVEMENT TO A PAINTED LANE STRIPE, A LIP OF GUTTER, A CURB, AN EXISTING PAVEMENT PATCH, OR AN EDGE OF THE PAVEMENT IF SUCH A FEATURE IS WITHIN FIVE FEET OF THE SECOND SAW CUT. IN NO CASE SHALL ASPHALT SEAM BE PLACED IN WHEEL PATH. IF MORE THAN 50% OF THE PERMANENT SURFACING OF A TRAVELED LANE IS IMPACTED BY THE EXCAVATION, THE ENTIRE LANE WIDTH SHALL BE SAW CUT, REMOVED, AND REPLACED.
3. ALL CONTRACTOR DAMAGED PAVEMENT OUTSIDE OF THE LIMITS SHOWN SHALL BE REMOVED AND REPLACED AT CONTRACTORS EXPENSE.
4. AMBIENT TEMPERATURE MUST BE 45° F AND RISING IN ORDER TO PLACE ASPHALT. ASPHALT PLACEMENT BETWEEN OCTOBER 1ST AND APRIL 1ST MUST HAVE ENGINEERS APPROVAL.
5. HOT ASPHALTIC CONCRETE PAVEMENT SHALL BE PLACED IN A MINIMUM TWO LIFTS. A TACK COAT SHALL BE PLACED BETWEEN LIFTS AND ALONG ALL VERTICAL SURFACES OF EXISTING PAVEMENT.
6. ASPHALT MIX DESIGN SHALL MEET LATEST VERSION OF THE GOVERNING AGENCIES CONSTRUCTION SPECIFICATIONS, SEE TABLE. MIX DESIGN MUST BE SUBMITTED AND APPROVED PRIOR TO PLACEMENT.

LOCATION	PAVEMENT THICKNESS	ASPHALT TYPE
WASHDOWN PIPE ASPHALT ROAD CROSSING	4"	PG 58-28 DM-1/2

TRENCH BACKFILL AND SURFACE RESTORATION IN PAVED AREAS
NTS — C 2125





SECTION A
SCALE

NOTES:
1. BACKFILL TO BE BROUGHT UP UNIFORMLY ON BOTH SIDES OF CLSM SUPPORT.
2. 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 THE COMPLETION OF THIS NEW SUPPORT.

UNDERGROUND UTILITY SUPPORT
SCALE:NTS — C 2128

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED G. LOSCHER
APPROVED J. CURTIS

DESIGN
DESIGN P. OLDHAM
DRAWN P. OLDHAM

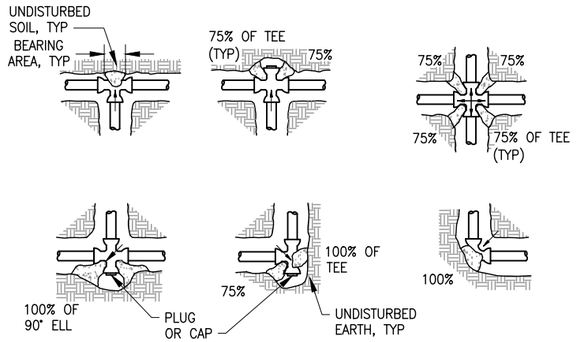
CIVIL

GENERAL CIVIL DETAILS - 1

PROJECT NUMBER 010-25-03
DATE: OCTOBER 2026

DRAWING NO.
GC-01
SHEET 29 OF 40

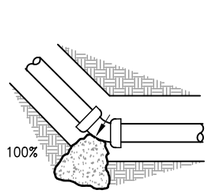
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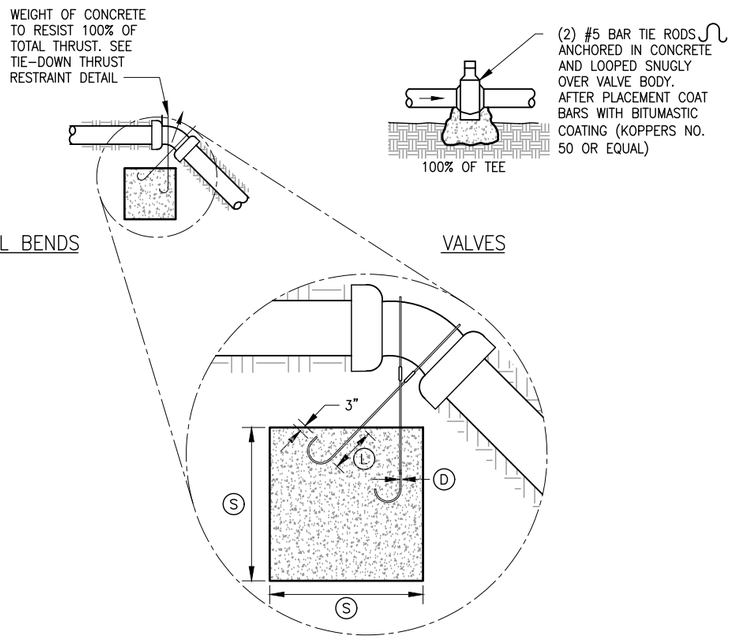
DEAD–END

HORIZONTAL FITTINGS

NOTES:
1. ARROWS INDICATE THRUST DIRECTION
2. FIGURE (100%) AT THRUST BLOCK INDICATES PERCENT OF TOTAL THRUST TO BE APPLIED FOR BEARING AREA.
3. CONCRETE FOR THRUST BLOCKS SHALL BE 4,000 PSI.



VERTICAL BENDS



VALVES

NOTES:
1. THRUST BLOCKS TO BE INSTALLED IN ACCORDANCE WITH DETAIL SHOWN ABOVE.
2. CONCRETE MUST BE ALLOWED TO CURE IN THRUST RESTRAINTS FOR 5 DAYS PRIOR TO PRESSURIZING WATER LINES OR HAVE ADDITIONAL APPROVED THRUST RESTRAINTS INSTALLED PRIOR TO PRESSURIZING THE WATERLINE.
3. PRIOR TO POURING CONCRETE FOR THRUST BLOCKS, WRAP PIPE SYSTEM WITH 8 MILLIMETER THICK PLASTIC SHEET AND TAPE PER AWWA C105 TO PREVENT BONDING OF CONCRETE TO PIPE SYSTEM.
4. VALUES PROVIDED ASSUME AT LEAST 4' OF COVER SOIL BEARING STRENGTH OF 1,500 PSF, AND TEST PRESSURE OF 200 PSI.
5. RESTRAINED LENGTH GIVEN FOR BENDS REPRESENTS THE RESTRAINED LENGTH REQUIRED FOR EACH SIDE OF BEND.
6. CONTRACTOR SHALL INSTALL THRUST RESTRAINT AT ALL FITTINGS PRIOR TO PRESSURIZING THE WATER LINE. IN ALL AREAS WHERE THE PIPELINE WILL NOT BE PRESSURIZED FOR 5 DAYS, CONTRACTOR SHALL HAVE THE OPTION OF USING RESTRAINED PIPE LENGTHS OR CONCRETE THRUST BLOCKS IN ACCORDANCE WITH THE TABLES ABOVE. WHERE THE NEW LINES WILL CONNECT TO EXISTING WATER MAINS, MECHANICAL THRUST RESTRAINTS AND THRUST BLOCKS WILL BE REQUIRED TO ALLOW THE NEW PIPELINE TO BE PUT INTO SERVICE IMMEDIATELY AFTER ACCEPTANCE.

CONCRETE THRUST BLOCKS

SCALE:NTS

C 2231

REQUIRED LENGTH OF RESTRAINED PIPE FOR VARIOUS FITTINGS (FT)

POLY–WRAPPED DUCTILE IRON				
PIPE SIZE	DEAD END OR TEE	90° ELBOW	45° ELBOW	22½° ELBOW
4"	46	18	27	4
6"	66	26	39	5
8"	84	32	49	7
10"	105	39	61	8
12"	122	45	71	9
14"	142	52	83	11
16"	160	58	93	12
18"	179	64	104	13
20"	196	69	113	14

MINIMUM BEARING AREA OF CONCRETE THRUST BLOCKS FOR VARIOUS FITTINGS (FT²)

PIPE SIZE	DEAD END OR TEE	90° ELBOW	45° ELBOW	22½° ELBOW	11¼° ELBOW
4"	4	6	3	2	1
6"	8	11	6	3	2
8"	13	19	10	5	3
10"	20	28	15	8	4
12"	28	39	21	11	6
14"	37	52	29	15	8
16"	48	68	37	19	10
18"	60	85	46	24	12
20"	74	104	57	29	15
24"	105	148	80	41	21

TIE–DOWN (GRAVITY) THRUST RESTRAINT FOR 45° VERTICAL BENDS TABLE OF DIMENSIONS

PIPE SIZE	VOLUME OF BLOCK (CF)	DIA OF SHANK OR REBAR RODS	DEPTH OF ROD
	(S)	(D)	(L)
4"	29	⅝"	2.0
6"	60	⅝"	2.5
8"	102	⅝"	3.0
10"	153	⅝"	3.0
12"	217	⅝"	4.0
14"	292	¾"	4.0
16"	377	¾"	4.0
20"	581	¾"	4.0

BOWEN COLLINS & ASSOCIATES

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JORDAN VALLEY WATER CONSERVANCY DISTRICT

SERWTP DISINFECTANT CT IMPROVEMENTS

SANDY, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN P. OLDHAM
DRAWN P. OLDHAM
REVIEW
CHECKED G. LOSCHER
APPROVED J. CURTIS

CIVIL

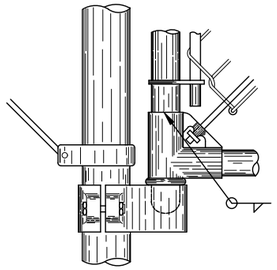
GENERAL CIVIL DETAILS - 2

PROJECT NUMBER 010-25-03
DATE: OCTOBER 2026

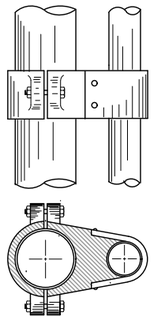
DRAWING NO. GC-02

SHEET 30 OF 40

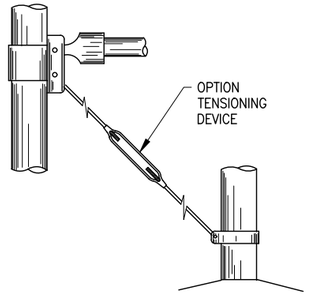
NOTES:
1. FENCE SHALL BE INSTALLED LEVEL, ACROSS GRADE. AREAS WITH MORE THAN 6" OPENING BELOW BOTTOM OF FENCE SHALL BE FILLED WITH MATERIAL.
2. POST CONCRETE SHALL BE BATCHED.



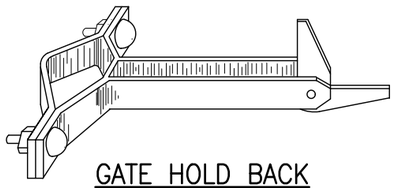
BOTTOM GATE HINGE AND GATE DETAILS
SCALE:NONE



TOP GATE HINGE
SCALE:NONE

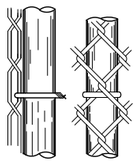


BRACE AND TRUSS CONNECTIONS
SCALE:NONE



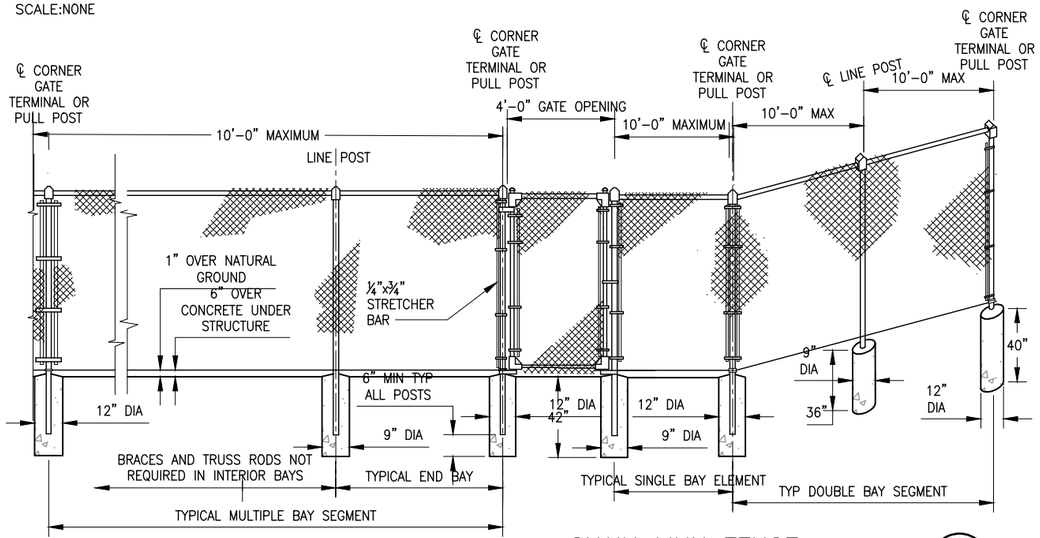
GATE HOLD BACK
SCALE:NONE

HEIGHT OF FABRIC	DEPTH OF POSTS	LENGTH OF END CORNER OR PULL POSTS	LENGTH OF LINE POSTS	SIZE OF POSTS (OD)	
				END CORNER AND PULL	LINE POST (MIN SIZE)*
				PIPE OPTION	PIPE OPTION
6'	3'+	9'+	8'-8"	3"	2½"

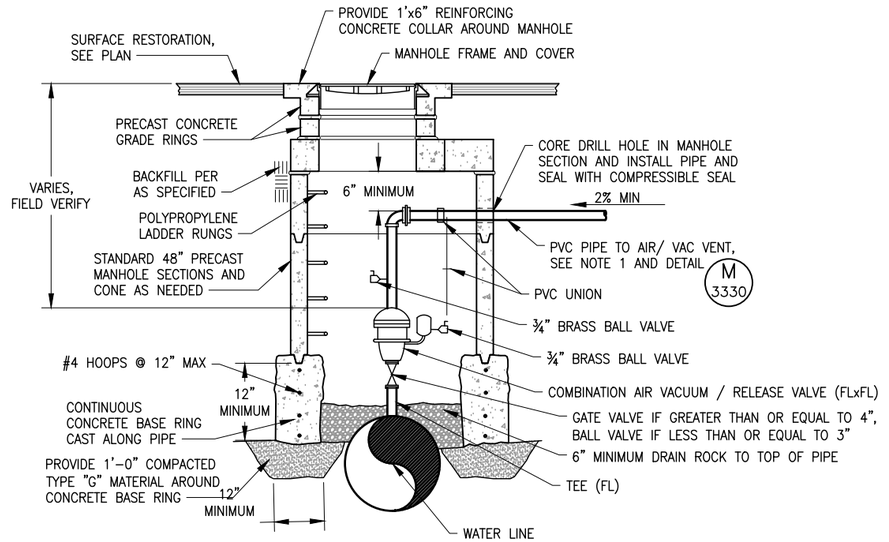


PIPE POST TIE
SCALE:NONE

GATES			
GATE POSTS AND GATE FRAMES			
HEIGHT	GATE OPENING	GATE POST	GATE FRAME
6 FEET AND OVER	SINGLE TO 6' OR DOUBLE TO 12'	4"	2"
	SINGLE OVER 6' TO 13' OR DOUBLE OVER 12' OR 24'	4"	
	SINGLE OVER 13' TO 18' OR DOUBLE OVER 24' OR 36'	6⅝"	
	SINGLE OVER 18' OR DOUBLE 36'	8"	

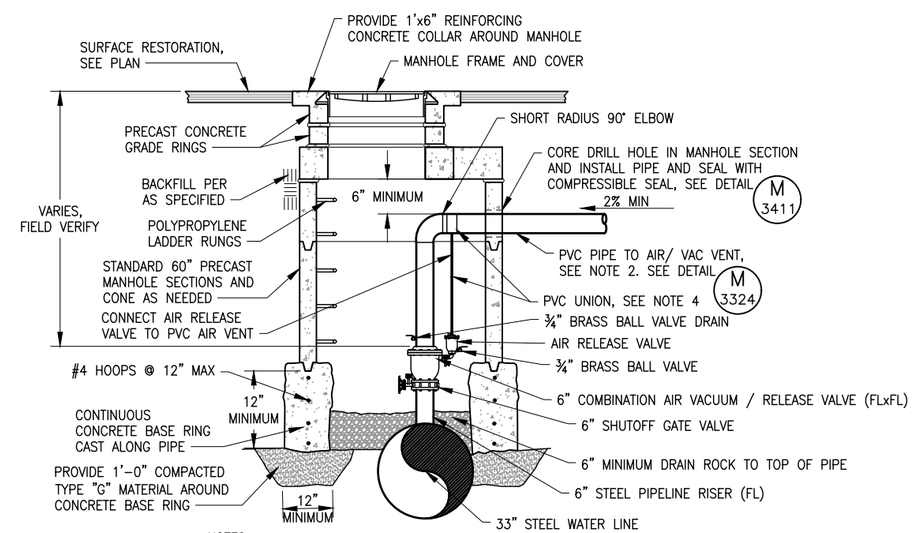


CHAIN LINK FENCE
SCALE:NTS
C 2268



NOTES:
1. INSTALL SCHEDULE 80 PVC PIPE OF SAME DIAMETER AS COMBINATION AIR VALVE.

3/4" AIR/VAC MANHOLE
SCALE:NTS
C 2660



NOTES:
1. PROVIDE AND INSTALL 6" COMBINATION AIR/VAC AND AIR RELEASE VALVE, APCO MODEL 150C OR EQUAL.
2. INSTALL SCHEDULE 80 PVC PIPE OF SAME DIAMETER AS COMBINATION AIR VALVE.
3. TAPE WRAP PIPE AND VALVE AS SPECIFIED.
4. USE PVC UNION FOR SMALL DIAMETER 4" AND LESS. PROVIDE GROOVED MECHANICAL COUPLING ON PIPE DIAMETERS 6" AND LARGER FOR DISASSEMBLY.

6" AIR/VAC MANHOLE
SCALE:NTS
C 2661

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

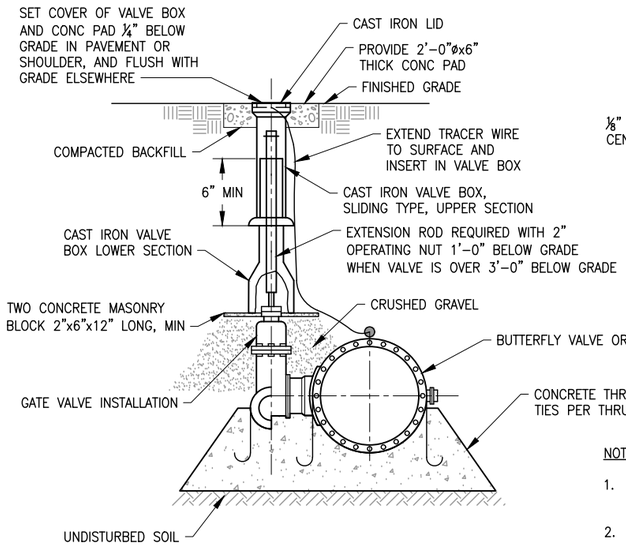
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

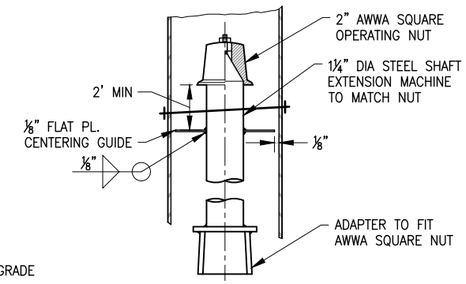
REVIEW
CHECKED G. LOSCHER
APPROVED J. CURTIS

DESIGN
DESIGN P. OLDHAM
DRAWN P. OLDHAM

CIVIL
GENERAL CIVIL DETAILS - 3
DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO.
GC-03
SHEET 31 OF 40





EXTENSION STEM

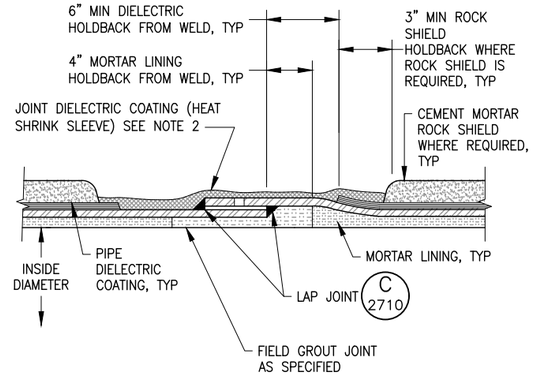
NOTES:

1. PROVIDE PROTECTIVE COATING TO EXTERIOR SURFACE OF VALVE BODY IN ACCORDANCE WITH SPECS.
2. FOR LUBRICATED PLUG VALVE, EXTEND LUBRICATION LINE TO GRADE PER MANUFACTURES INSTRUCTIONS.
3. LOCK VALVE EXTENSION STEM TO NUT
4. ALL BOLTS AND OTHER HARDWARE SHALL BE STAINLESS STEEL

BURIED VALVE INSTALLATION

SCALE: NTS

C 2662



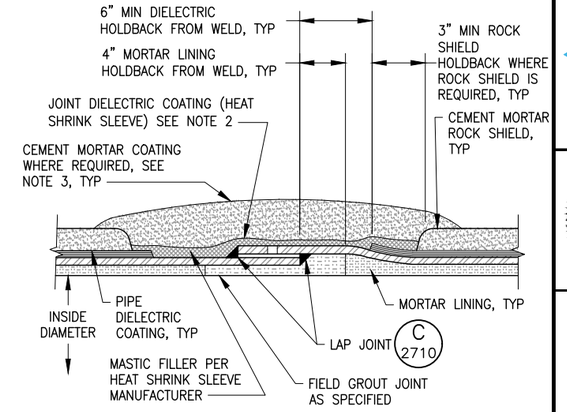
NOTES:

1. CONTRACTOR SHALL CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 40 PSI AIR PRESSURE IN ADDITION TO DYE PENETRATE OR MAGNETIC PARTICLE TESTING PERFORMED BY THE ENGINEER. IF LEAKS ARE DETECTED, THE CONTRACTOR SHALL REPAIR AND RETEST THE WELDS UNTIL THERE ARE NO DEFECTS. PLUG TAPS WITH 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 BY NACE CERTIFIED SPECIALIST.

MORTAR LINED AND MORTAR COATED STEEL PIPE JOINT

SCALE: NTS

C 2707



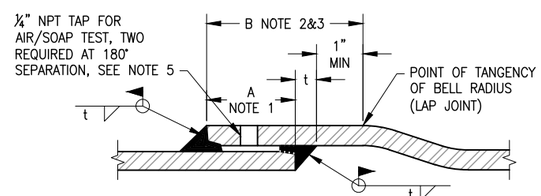
NOTES:

1. CONTRACTOR SHALL CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 40 PSI AIR PRESSURE IN ADDITION TO DYE PENETRATE OR MAGNETIC PARTICLE TESTING AS REQUIRED BY SPECIFICATIONS. IF LEAKS ARE DETECTED, THE CONTRACTOR SHALL REPAIR AND RETEST THE WELDS UNTIL THERE ARE NO DEFECTS. PLUG TAPS WITH THREADED PLUG AND SEAL WELD 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 BY NACE CERTIFIED SPECIALIST.
3. FIELD APPLIED CEMENT MORTAR COATING AT JOINT (GROUT DIAPERS) REQUIRED ON DIELECTRICALLY COATED PIPE UNLESS OTHERWISE NOTED ON PLANS.

LAP WELDED STEEL PIPE JOINT

SCALE: NTS

C 2708



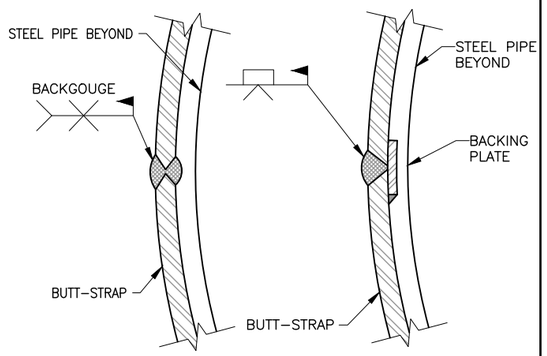
NOTES:

1. DIMENSION "A" CORRESPONDS TO THE COMPLETED JOINT OVERLAP AFTER WELDING. DIMENSION "A" SHALL BE 3" MINIMUM FOR STANDARD JOINTS. FOR SPECIAL TEMPERATURE CONTROL JOINTS, THE DIMENSION "A" JOINT OVERLAP SHALL BE INCREASED BY 3 INCHES AS FURTHER DISCUSSED IN NOTE 3.
2. FOR STANDARD JOINTS THE MINIMUM DIMENSION "B" SHALL BE AS REQUIRED TO PROVIDE THE MINIMUM OVERLAP DIMENSION "A" AND MAINTAIN THE INDICATED HOLDBACK FOR THE WELD.
3. FOR SPECIAL TEMPERATURE CONTROL JOINTS, THE MINIMUM DIMENSION "B" SHALL BE INCREASED BY AT LEAST 3 INCHES. AT THE TIME OF INSTALLATION AND PRIOR TO WELDING, THE SPIGOT SHALL BE INSERTED INTO THE LENGTHENED BELL TO PROVIDE "A" +3 INCHES MINIMUM JOINT OVERLAP. SEE SPECIFICATIONS FOR SPECIAL TEMPERATURE CONTROL JOINT WELDING REQUIREMENTS.
4. FILLET WELDS FOR BELL AND SPIGOT LAP JOINTS SHOWN. FILLET WELDS ON OTHER JOINTS SIMILAR.
5. CONTRACTOR SHALL CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 40 PSI AIR PRESSURE IN ADDITION TO DYE PENETRATE OR MAGNETIC PARTICLE TESTING AS REQUIRED BY SPECIFICATIONS. IF LEAKS ARE DETECTED, REPAIR AND RETEST UNTIL THERE ARE NO DEFECTS. PLUG TAPS WITH THREADED PLUG AND SEAL WELD PLUG AT COMPLETION OF TEST AND COAT AND LINE AS SHOWN OR SPECIFIED. TAP HOLES MAY BE ON INSIDE OR OUTSIDE OF JOINT.
6. 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.
7. LAP JOINTS SHALL BE SINGLE LAP, UNLESS NOTED OTHERWISE. SINGLE LAP JOINTS SHALL BE INSIDE OR OUTSIDE AT CONTRACTORS OPTION. REFER TO SPECIFICATIONS FOR SPECIAL REQUIREMENTS.

LAP JOINT WELD

SCALE: NTS

C 2710



NOTES:

1. LININGS AND COATINGS ARE NOT SHOWN FOR CLARITY.

TYPE A

(USED FOR PIPE > 36"ø ACCESS TO BOTH INSIDE AND OUT)

NOTES:

1. LININGS AND COATINGS ARE NOT SHOWN FOR CLARITY.

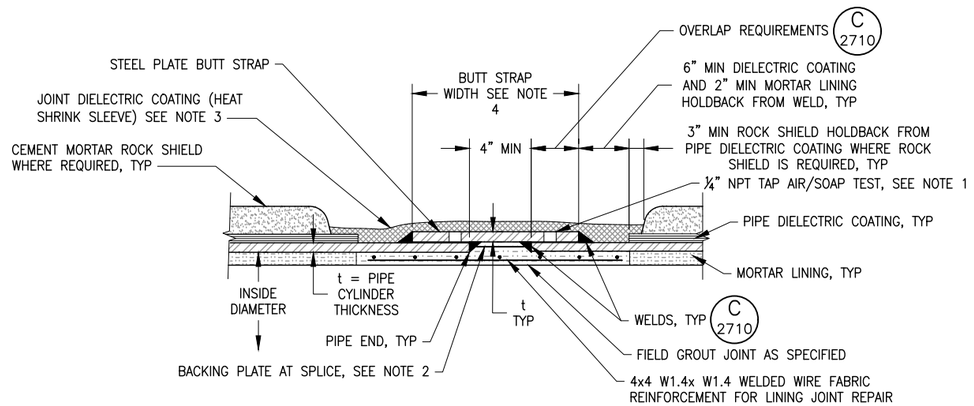
TYPE B

(USED FOR PIPE ≤ 36"ø ACCESS TO OUTSIDE ONLY)

BUTT–STRAP WELD

SCALE: NTS

C 2711



NOTES:

1. CONTRACTOR SHALL CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 40 PSI AIR PRESSURE IN ADDITION TO DYE PENETRATE OR MAGNETIC PARTICLE TESTING PERFORMED BY THE ENGINEER. IF LEAKS ARE DETECTED, THE CONTRACTOR SHALL REPAIR AND RETEST THE WELDS UNTIL THERE ARE NO DEFECTS. PLUG TAPS WITH 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. FOR FIELD WELDING OF INDIVIDUAL BUTT STRAP PIECES TO EACH OTHER USING BUTT WELDS, SEE C 2711.
3. AFTER INSTALLATION OF JOINT DIELECTRIC COATING, A HOLIDAY TEST SHALL BE COMPLETED AS SPECIFIED BY NACE CERTIFIED SPECIALIST.
4. UNLESS OTHERWISE NOTED, BUTT STRAP WIDTH SHALL CONFORM TO THE LIMITATIONS SHOWN FOR PIPE END SEPARATION AND STEEL OVERLAP REQUIREMENTS.

BUTT–STRAP JOINT

SCALE: NTS

C 2713

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

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			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

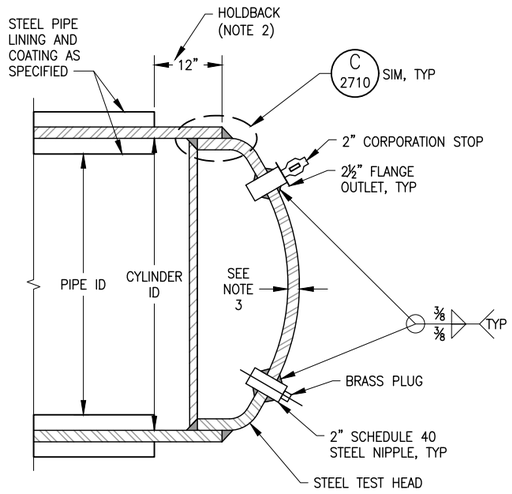
DESIGN P. OLDHAM
DRAWN P. OLDHAM
CHECKED G. LOSCHER
APPROVED J. CURTIS
REVIEW

CIVIL
GENERAL CIVIL DETAILS - 4

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO. GC-04
SHEET 32 OF 40

P:\jordan valley wcd\010-25-03 serwtp disinfectant ct improvements\2.0 design phase\2.7 drawings\sht\GC-04.dwg Plotted: 10/7/2026 8:59 AM By: Kyle Smoot



NOTES:

1. LINE AND COAT TEST HEAD AND PLAIN END WITH 3 MILS MIN RUST INHIBITING PRIMER.
2. MINIMUM 8" HOLDBACK REQUIRED AFTER TEST HEAD IS CUT OFF.
3. WALL THICKNESS SHALL BE THE SAME AS THE ADJOINING PIPE.
4. PROVIDE TEMPORARY PIPING IN BURIED LOCATIONS WHERE IT IS NOT PRACTICAL TO MAINTAIN AN EXPOSED TEST HEAD.
5. TEMPORARY TEST HEADS SHALL BE COATED WITH PRIMER SYSTEM ONLY. SEE SPECIFICATIONS.

TEST HEAD

SCALE: NTS

C 2714

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
JOSHUA REX CURTIS
No. 12141991
STATE OF UTAH
10/06/2026

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

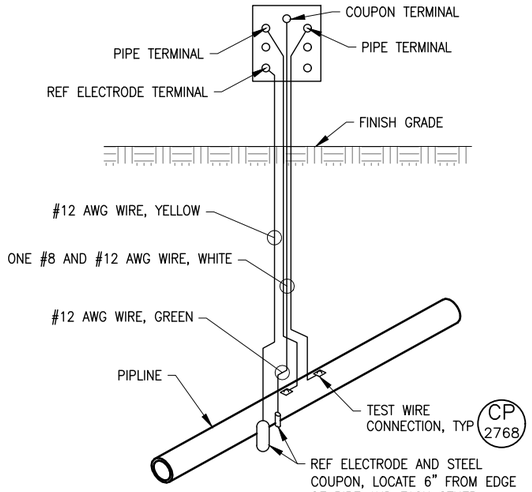
REVIEW
CHECKED G. LOSCHER
APPROVED J. CURTIS

DESIGN
DESIGN P. OLDHAM
DRAWN P. OLDHAM

CIVIL
GENERAL CIVIL DETAILS - 5

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO.
GC-05
SHEET 33 OF 40



WIRING DIAGRAM

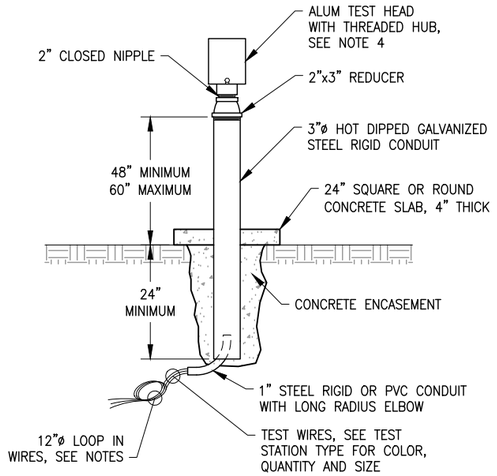
SCALE:

NOTES:

1. SEE TEST STATION STYLE DETAIL AS REQUIRED BY TEST STATION SCHEDULE.

TYPE T TEST STATION

SCALE: CP 2724

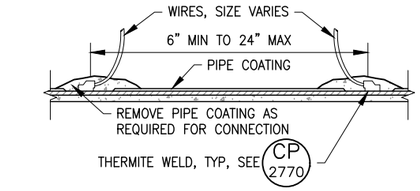


NOTES:

1. TERMINAL QUANTITY AND WIRE CONNECTIONS VARY, SEE TEST STATION TYPE DETAIL.
2. LOOP WIRE AT BASE OF POST TO MINIMIZE WIRE STRESS
3. COAT THREADS WITH INORGANIC ZINC PRIMER OR COLD GALVANIZING REPAIR COATING.
4. TESTOX SERIES 700 TEST STATION FOR TYPE T, C, AND I TEST STATIONS OR TESTOX SERIES 2000 TEST STATION FOR TYPE F AND A TEST STATIONS WITH THREADED HUBS.
5. SLIP FIT HUBS WILL NOT BE PERMITTED.

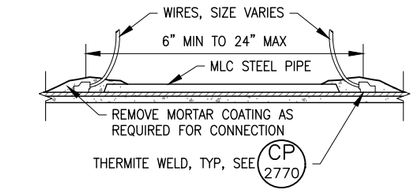
POST STYLE, STEEL CONDUIT

SCALE: NTS CP 2747



DIELCTRIC COATED STEEL

SCALE: NTS

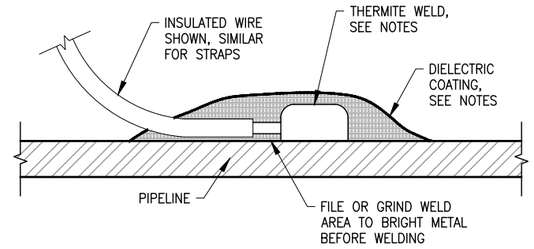


CCP OR MLC STEEL

SCALE: NTS

TEST WIRE CONNECTION

SCALE: NTS CP 2768

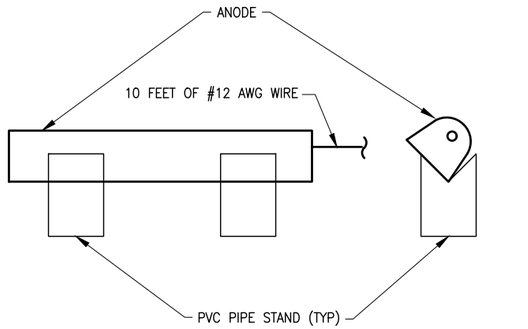


NOTES:

1. MAKE WIRE CONNECTION TO PIPE AT FIELD JOINT WHERE HOLDBACK OCCURS ON PIPELINE COATING, WHERE POSSIBLE.
2. COPPER SLEEVE REQUIRED FOR #2 AWG JOINT BONDS OR FOR #12 AWG OR SMALLER TEST WIRES.
3. WELDER AND CARTRIDGE SIZE VARIES ACCORDING TO PIPE AND WIRE SIZE AND PIPE MATERIAL, CONSULT WELDER MANUFACTURER FOR RECOMMENDED WELDER AND CARTRIDGE
4. COAT COMPLETED WELDS, EXPOSED COPPER, AND EXPOSED METAL WITH SYSTEM 1 DIELECTRIC COATING AS SPECIFIED FOR SUBMERGED PIPELINE.

THERMITE WELD CONNECTION

SCALE: NTS CP 2770

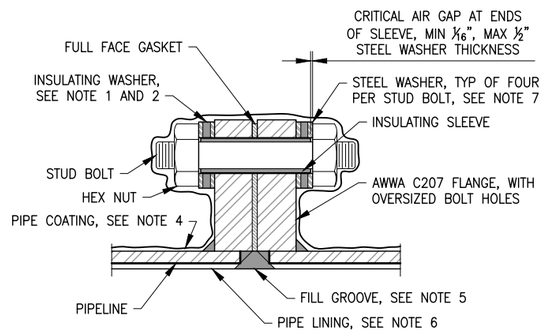


NOTES:

1. BARE 32 LB MAGNESIUM ANODE (D TYPE)
2. CAD WELD CONNECTION OF ANODE WIRE TO PIPE PER DETAIL CP 2770. FOLLOW MANUFACTURERS RECOMMENDATION FOR CAD WELD MOLD AND SHOT SIZE. CAD WELD SUBMITTAL OF MATERIALS MUST BE APPROVED PRIOR TO INSTALLATION.
3. THERMITE WELD TO BE COATED TO MATCH PIPELINE COATING FOLLOWING INSTALLATION, SEE SPECIFICATIONS.
4. SET ANODE ON PVC PIPE STANDS ON CONCRETE FLOOR NEXT TO PIPE.

TANK ANODE DETAIL

SCALE: NTS CP 2771

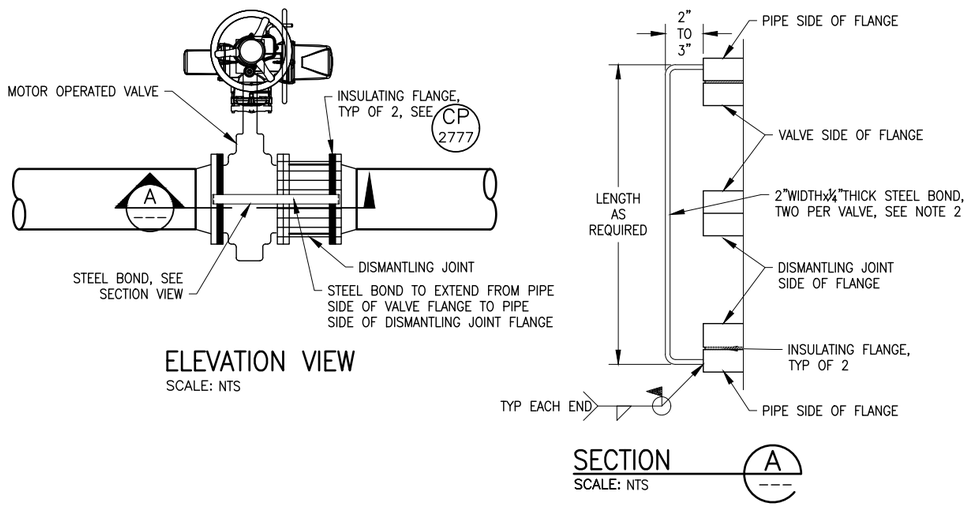


NOTES:

1. DOUBLE INSULATING WASHER SET FOR VAULT OR EXPOSED FLANGES.
2. SINGLE INSULATING WASHER SET FOR BURIED OR SUBMERGED FLANGES, PLACE INSULATORS ON UNPROTECTED SIDE OF FLANGE.
3. TEST COMPLETED JOINT FOR ELECTRICAL ISOLATION AS SPECIFIED AND REPAIR AS REQUIRED.
4. COAT BURIED OR IMMERSED INSULATING FLANGES FOR 12–INCHES MINIMUM ON EACH SIDE OF FLANGE WITH PIPELINE DIELECTRIC JOINT COATING OR HEAT SHRINK SLEEVE, INCLUSIVE OF OVERCOATING CEMENT MORTAR.
5. FILL INTERIOR GAP BETWEEN FLANGES WITH DIELECTRIC FILLER OR SEALANT COMPATIBLE WITH SPECIFIED PIPE LINING.
6. EXTEND SPECIFIED PIPE LINING TO FACE OF FLANGE AND COAT INTERIOR OF MORTAR LINED PIPE FOR TWO PIPEøMETERS WITH NSF APPROVED EPOXY AT 20 MILS DFT.
7. FOR PIPE LESS THAN 36–INCHESøMETER, DELETE INNER STEEL WASHERS.

INSULATING FLANGE

SCALE: NTS CP 2777



ELEVATION VIEW

SCALE: NTS

SECTION A

SCALE: NTS

NOTES:

1. PROVIDE INSULATING FLANGE AND STEEL BOND AT ALL MOV VALVES.
2. PROVIDE TWO BONDS PER VALVE, OPPOSITE SIDES OF PIPE AT OR BELOW SPRINGLINE.
3. SURFACE PREPARE AND COAT ALL WELDS AND STEEL BONDS AS SPECIFIED FOR THE PIPE.

MOV VALVE ISOLATION

SCALE: NTS CP 2783

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SERWTP DISINFECTANT CT IMPROVEMENTS

SANDY, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN DESIGN P. OLDHAM DRAWN P. OLDHAM

REVIEW CHECKED G. LOSCHER APPROVED J. CURTIS

CIVIL

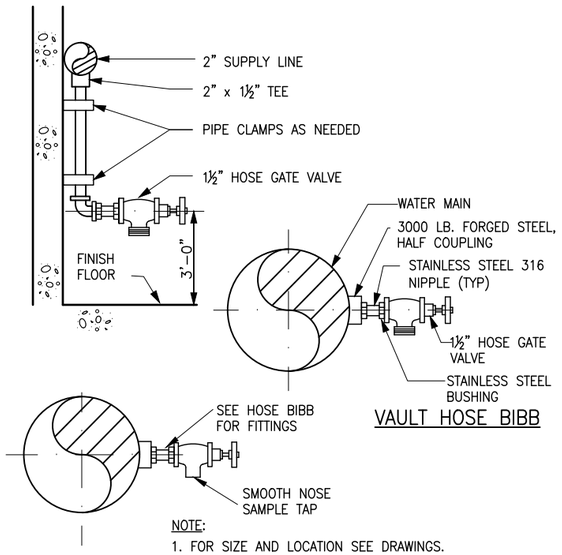
CATHODIC PROTECTION DETAILS - 1

DATE: OCTOBER 2026 PROJECT NUMBER 010-25-03

DRAWING NO. CP-01

SHEET 34 OF 40

P:\jordan valley wcd\010-25-03 serwtp disinfectant ct improvements\2.0 design phase\2.7 drawings\sht\CP-01.dwg Plotted: 10/7/2026 8:59 AM By: Kyle Smoot

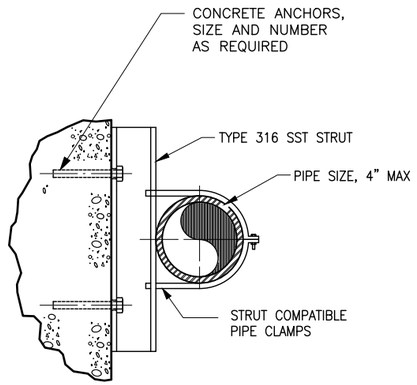


VAULT HOSE BIBB

SAMPLE TAP

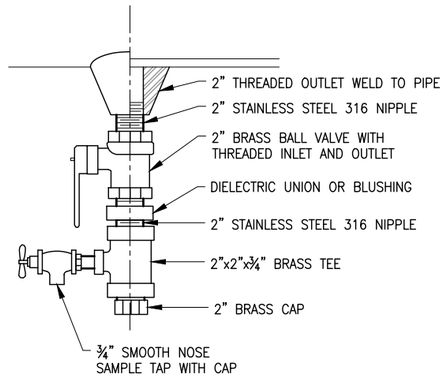
NOTE:
1. FOR SIZE AND LOCATION SEE DRAWINGS.
2. ALL THREADED HOSE BIBBS SHALL HAVE HOSE BIBB VACUUM BREAKERS.
2. ALL SAMPLE TAP COMPONENTS SHALL BE TYPE 316 SST.

HOSE BIBBS AND SAMPLE TAPS
SCALE: NTS — M 3002



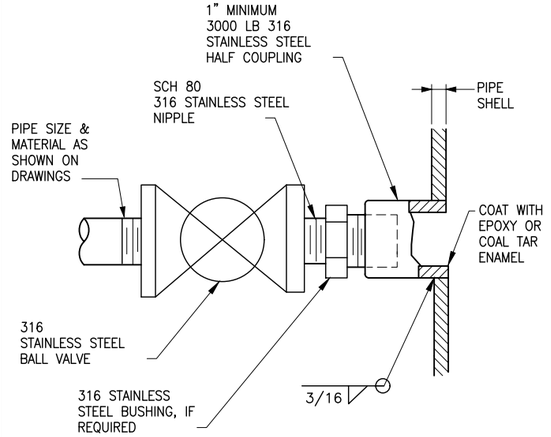
NOTE:
ALL HARDWARE SHALL BE TYPE 316 STAINLESS STEEL.

PIPE SUPPORT
SCALE: NTS — M 3021



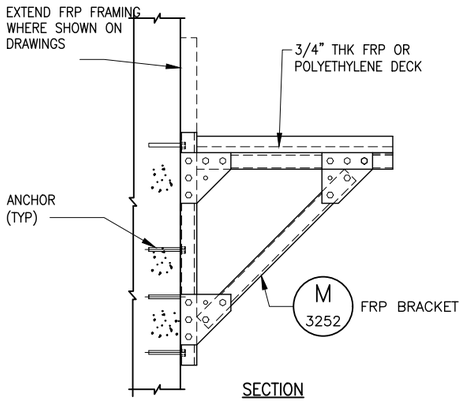
NOTES:
1. ALL THREADED HOSE BIBS SHALL HAVE HOSE BIBB VACUUM BREAKERS.

2" DRAIN ASSEMBLY
SCALE: NTS — M 3142

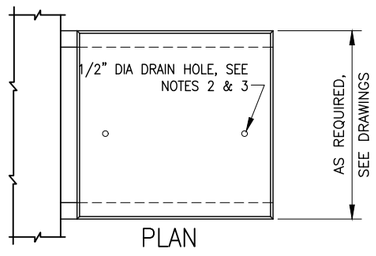


NOTE:
IF PIPE MATERIAL IS STAINLESS STEEL, SAME TYPE MATERIAL ATTACHMENT SHALL BE USED.

PIPE CONNECTION 2 1/2" AND SMALLER
SCALE: NTS — M 3167



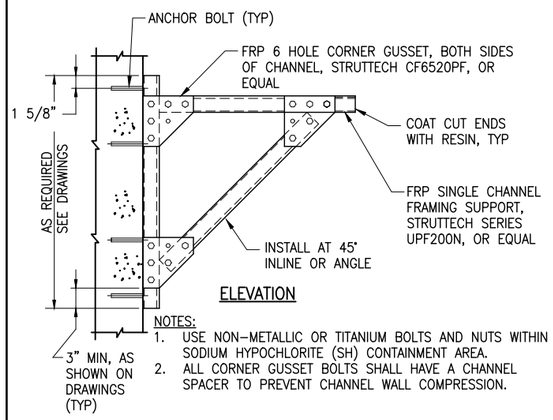
SECTION



PLAN

NOTES:
1. ALL HARDWARE TO BE 316 SST, EXCEPT FOR SH AREAS WHICH SHALL BE TITANIUM.
2. PROVIDE 1/2" DIA DRAIN LINES ROUTED TO WALL AND TERMINATE 6" ABOVE FF AND LEAK DETECTION SWITCH.
3. SECURE DECK TO SUPPORT BRACKETS WITH CONTINUOUS STRIP OF FRP FLAT PLATE ABOVE EACH BRACKET BOLTED AT 2" OC, MAX SPACING.
4. DESIGN AND FURNISH NECESSARY PUMP ANCHORAGE TO MEET SPECIFIED SEISMIC CRITERIA OF CONTRACT DOCUMENTS.

FRP PUMP SUPPORT INSTALLATION
NTS — M 3251



ELEVATION

NOTES:
1. USE NON-METALLIC OR TITANIUM BOLTS AND NUTS WITHIN SODIUM HYPOCHLORITE (SH) CONTAINMENT AREA.
2. ALL CORNER GUSSET BOLTS SHALL HAVE A CHANNEL SPACER TO PREVENT CHANNEL WALL COMPRESSION.

FRP FABRICATED BRACKET
NTS — M 3252

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — No. 12141991 — JOSHUA REX CURTIS — STATE OF UTAH — 10/06/2026

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

REVIEW — CHECKED G. LOSCHER — APPROVED J. CURTIS

DESIGN — DESIGN P. OLDHAM — DRAWN P. OLDHAM

CIVIL

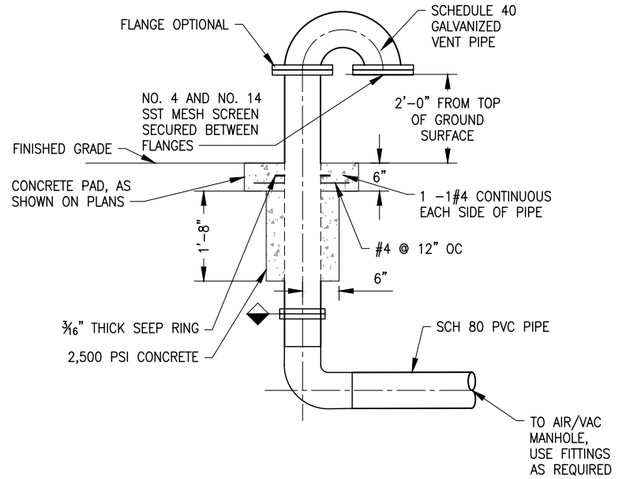
GENERAL MECHANICAL DETAILS - 1

DATE: OCTOBER 2026 — PROJECT NUMBER 010-25-03

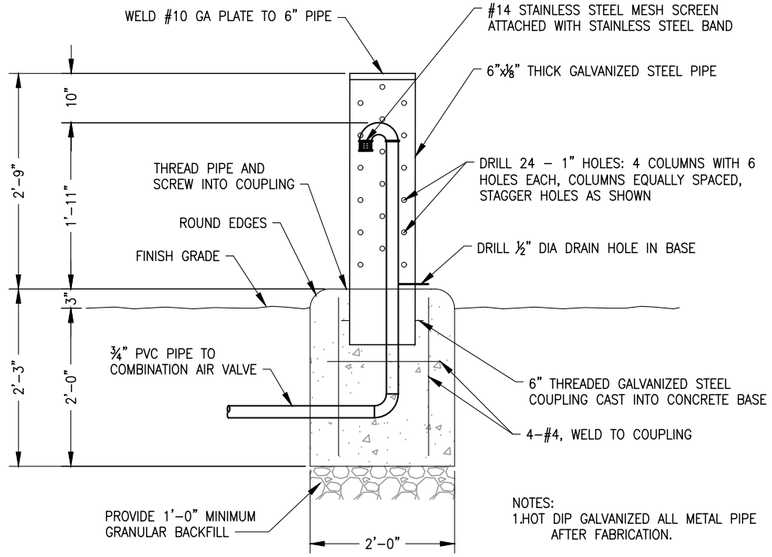
DRAWING NO. GM-01

SHEET 35 OF 40

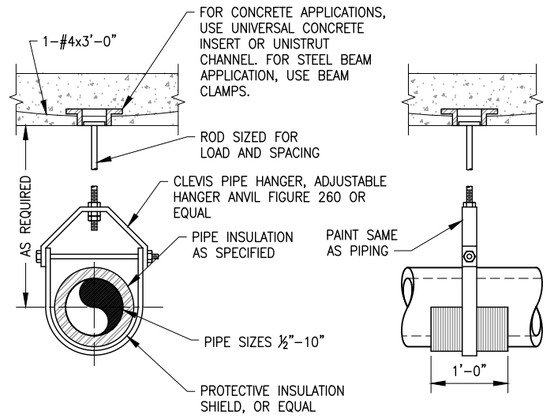
NOTES:
1. SIZE OF PIPING, SEE VAULT DETAILS.
2. WELD ALL STEEL FITTINGS EXCEPT MATCHING BOLT ON FLANGE.
3. ALL ABOVE GRADE STEEL PIPING SHALL BE HOT DIP GALVANIZED.
4. VENT PIPE MATERIAL AS SHOWN ON PLANS.



VENT STACK
SCALE: NTS
M 3324

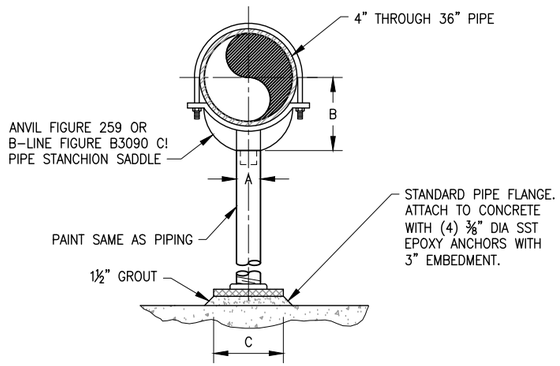


AIR VENT PIPE DETAIL 4" AND SMALLER
SCALE: NTS
M 3330



NOTES:
1. PIPE HANGERS SHALL BE OVERSIZED AS REQUIRED TO ACCOMMODATE THICKNESS OF INSULATION SPECIFIED. HANGER SHALL NOT COME INTO CONTACT WITH THE INSULATION DIRECTLY, EITHER AT THE VERTICAL YOKE OR AT THE POINT OF SUPPORT. FOR REQUIREMENTS ON ISOLATORS USED WITH PIPE HANGERS, SEE SPECIFICATIONS.
2. TOTAL LOADING ON EACH CONCRETE INSERT OR OTHER TYPE HANGER ROD ANCHOR SHALL NOT EXCEED MANUFACTURER'S RECOMMENDED LOADINGS.
3. ISOLATION PAD TO BE NEOPRENE WAFFLE TYPE UNLESS NOTED OTHERWISE.

PIPE HANGER
SCALE: NTS
M 3358

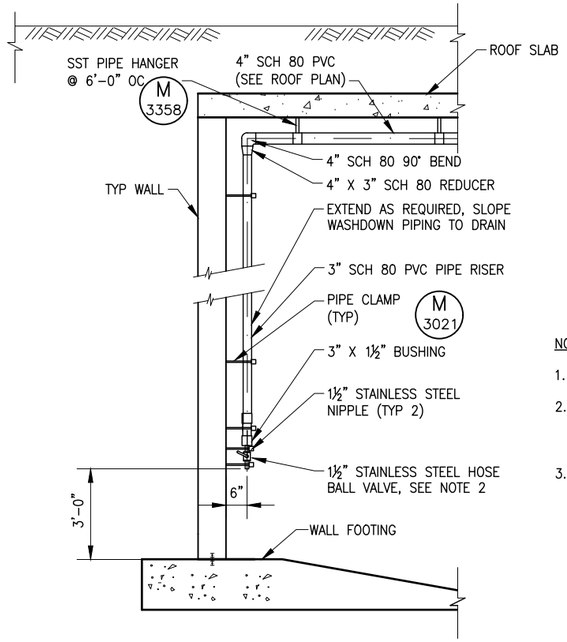


NOTES:
1. PROVIDE HALF ROUND RIGID INSULATION AND ISOLATION PROTECTION SHIELD, SIMILAR TO ANVIL FIGURE 167 OR ELCEN FIGURE 219, WHERE PIPING IS INSULATED.
2. PROVIDE NEOPRENE WAFFLE ISOLATION PAD, SIMILAR TO MASON TYPE 'W' OR KORFUND (ISOLATE FROM BOTTOM SADDLE AND TOP STRAP).
3. FOR BASE, HEIGHT AND FLANGE DIMENSIONS, SEE TABLE.
4. PIPE SUPPORTS LOCATED INSIDE DRINKING WATER STORAGE RESERVOIR SHALL BE MADE WITH TYPE 316 SST.

DIMENSION TABLE

PIPE SIZE	A	B	C
4"	3"	4 3/16"	9"
5"	3"	4 3/16"	9"
6"	3"	5 7/16"	9"
8"	3"	6 15/16"	9"
10"	3"	8 7/16"	9"
12"	3"	9 15/16"	9"
14"	4"	10 15/16"	11"
16"	4"	12 3/8"	11"
18"	4"	13 7/8"	11"
20"	6"	15 3/8"	13 1/2"
22"	6"	16 5/8"	13 1/2"
24"	6"	17 15/16"	13 1/2"
26"	6"	19 3/8"	13 1/2"
30"	6"	21 5/16"	13 1/2"
32"	6"	22 1/2"	13 1/2"
33"	8"	24 1/2"	16"

PIPE SUPPORT
SCALE: NTS
M 3388



NOTES:
1. SLOPE WASHDOWN PIPING TO DRAIN.
2. STAINLESS STEEL BALL VALVE WITH HANDLE AND NUT, BRONZE CAP AND CHAIN AND BRONZE THREADED MALE TO MALE ADAPTER FOR 1 1/2" FIRE HOSE. ATTACHED CHAIN TO PIPE CLAMP
3. PROVIDE TWO 100-FOOT LENGTHS OF 1 1/2" NST FIRE HOSE AND TWO BRASS HOSE NOZZLES.

UTILITY WATER HOSE VALVE AND RISER
SCALE: NTS
M 3401

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

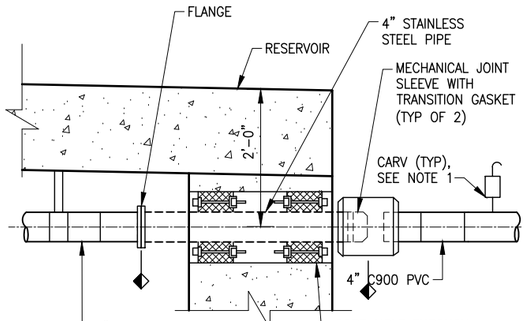
DESIGN DESIGN P. OLDHAM DRAWN P. OLDHAM
REVIEW CHECKED G. LOSCHER APPROVED J. CURTIS

CIVIL
GENERAL MECHANICAL DETAILS - 2

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO. GM-02
SHEET 36 OF 40

P:\jordan valley wcd\010-25-03 serwtp disinfectant ct improvements\2.0 design phase\2.7 drawings\sht\GM-02.dwg Plotted: 10/7/2026 8:59 AM By: Kyle Smoot



NOTES:

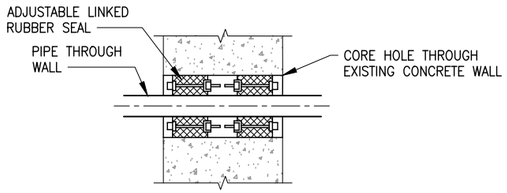
1. PROVIDE 30" HDPE (ADS-N-12) MANHOLE WITH CAST IRON LID FOR AIR VALVE ACCESS.
2. FILL EXTERIOR ANNULAR SPACE WITH CLOSED-CELL POLYURETHANE FOAM. FILL INTERIOR ANNULAR SPACE WITH NON-SHRINK GROUT.

PVC PIPE PENETRATION THROUGH RESERVOIR WALL

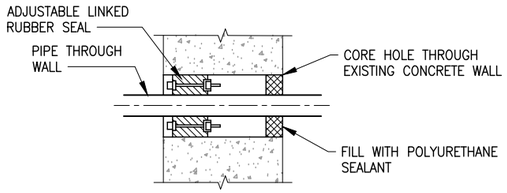
SCALE: NTS

M 3405

TYPE 1: FOR WATER BEARING WALLS



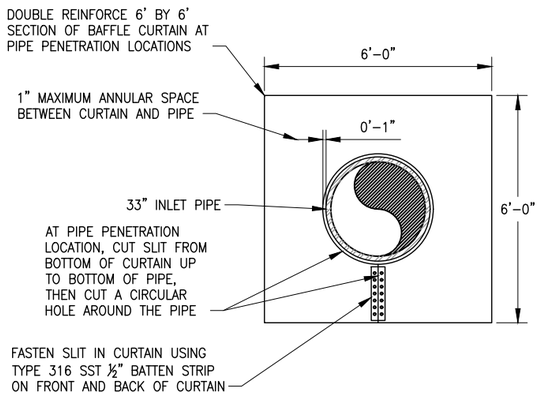
TYPE 2: FOR NON-WATER BEARING WALLS



PIPE WALL PENETRATION

SCALE: NTS

M 3411



BAFFLE CURTAIN PENETRATION

SCALE: NTS

M 3430

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12141991 JOSHUA REX CURTIS STATE OF UTAH 10/06/2026

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REVISIONS

VERIFY SCALE
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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SERWTP DISINFECTANT CT IMPROVEMENTS
SANDY, UT

DESIGN
DESIGN P. OLDHAM
DRAWN P. OLDHAM

REVIEW
CHECKED G. LOSCHER
APPROVED J. CURTIS

CIVIL

GENERAL MECHANICAL DETAILS - 3

DATE: OCTOBER 2026

PROJECT NUMBER 010-25-03

DRAWING NO. GM-03

SHEET 37 OF 40

GENERAL STRUCTURAL NOTES

GENERAL

1. THE SPECIFICATIONS AND REQUIREMENTS INDICATED ON THIS SHEET ARE INTENDED AS A BASIC SUMMARY OF THE MATERIAL CONSTRUCTION AND INSPECTION REQUIREMENTS FOR THIS PROJECT. ADDITIONAL REQUIREMENTS ARE GIVEN IN THE PROJECT SPECIFICATIONS. IN THE EVENT OF A CONFLICT BETWEEN THESE GENERAL NOTES AND THE REQUIREMENTS GIVEN IN THE PROJECT SPECIFICATIONS, THE ENGINEER SHALL BE CONTACTED TO DETERMINE WHICH PROVISION GOVERNS.
2. FOR LOCATION AND DIMENSIONS OF SLEEVES, CURBS, OPENINGS, AND DEPRESSIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS, SEE CIVIL, MECHANICAL, AND ELECTRICAL DRAWINGS. THE CONTRACTOR SHALL VERIFY AND COORDINATE PENETRATIONS SHOWN ON THE OTHER PROJECT DRAWINGS, WHETHER THEY ARE SHOWN ON THE STRUCTURAL DRAWINGS OR NOT.
3. NO STRUCTURAL MEMBER SHALL BE CUT FOR PIPES, DUCTS, ETC. UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
4. DESIGN DETAILS AS SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND APPLY TO ALL SIMILAR SITUATIONS OCCURRING ON THE PROJECT, WHETHER OR NOT THEY ARE SPECIFICALLY REFERENCED IN EACH LOCATION. CONSULT THE ENGINEER FOR CONCURRENCE PRIOR TO CONSTRUCTION.
5. SUBMIT DRAWINGS AND RECEIVE REVIEW OF ALL STRUCTURAL RELATED SHOP DRAWINGS PRIOR TO ERECTION OR CONSTRUCTION.
6. APPLICABLE BUILDING CODE FOR THE PROJECT IS THE 2024 EDITION OF THE INTERNATIONAL BUILDING CODE (IBC). ANY CHANGES MADE DURING CONSTRUCTION TO THE APPROVED CONSTRUCTION DOCUMENTS SHALL BE APPROVED BY THE ENGINEER AND SHALL BE RESUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL AS AN AMENDED SET OF CONSTRUCTION DOCUMENTS.

STAINLESS STEEL

1. WHERE REQUIRED, PROVIDE STAINLESS STEEL SHAPES, PLATES, BARS, AND RODS CONFORMING TO ASTM A666 AND A276, TYPE 316 OR 316L.
2. PROVIDE STAINLESS STEEL BOLTS AND NUTS CONFORMING TO ASTM F593 AND F594.

ALUMINUM

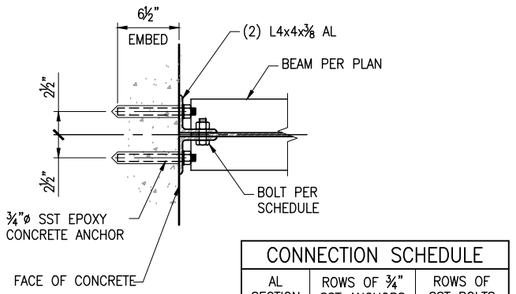
1. WHERE REQUIRED, PROVIDE ALLOY 6061-T6 FOR ALL ALUMINUM STRUCTURAL MATERIALS.
2. COAT ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR DISSIMILAR METALS AS DETAILED IN THE SPECIFICATIONS TO PREVENT ALUMINUM-CONCRETE REACTION OR ELECTROLYTIC ACTION.
3. PERFORM ALUMINUM WELDING TO CONFORM TO THE PROVISIONS OF THE LATEST STRUCTURAL WELDING CODE (AWS D1.2).

EPOXY ANCHORS

1. EPOXY ANCHORS SHALL BE AN ADHESIVE ANCHOR SYSTEM AS LISTED BELOW:
   A. HILTI HIT-HY 200 OR HIT-RE 500 V3 FOR CONCRETE
   B. ITW RED HEAD C6+, A7+ OR G5
   C. SIMPSON AT, SET-3G
2. ANCHOR RODS SHALL BE STAINLESS STEEL, DIAMETER AS INDICATED ON DRAWINGS, THREADED AND GALVANIZED.

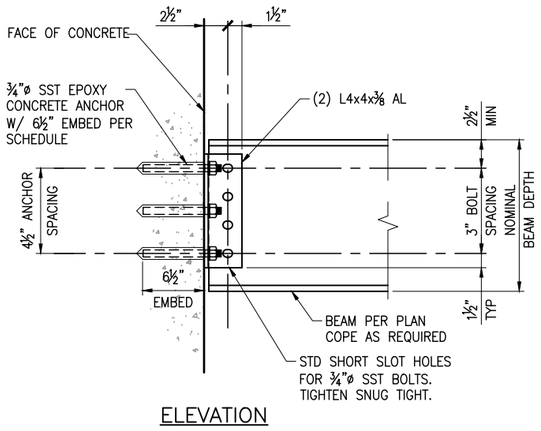
LOADING CRITERIA

1. DEAD LOAD	CALCULATED FROM UNIT WEIGHT
2. LIVE LOADS:	
STAIRS / PLATFORMS	100 PSF



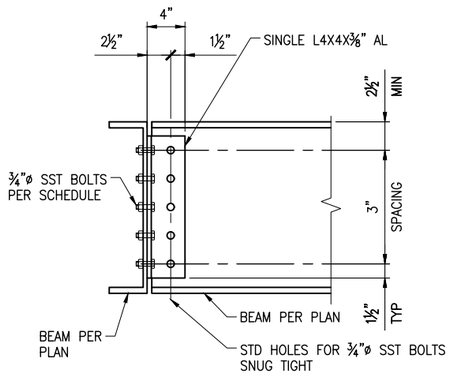
PLAN

CONNECTION SCHEDULE		
AL SECTION	ROWS OF ¾" SST ANCHORS	ROWS OF SST BOLTS
AC12	2	2



ELEVATION

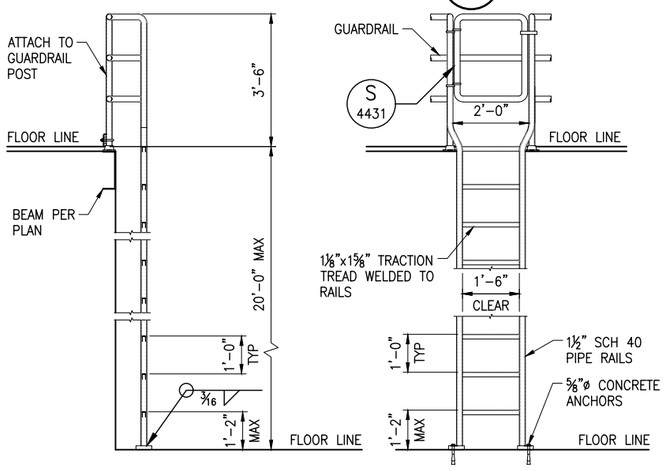
NOTE:
TOP OF CONNECTING BEAMS TO BE FLUSH UNLESS OTHERWISE INDICATED ON THE PLANS.



CONNECTION SCHEDULE	
NOMINAL BEAM DEPTH (IN)	ROWS OF SST BOLTS
AC12	3

EMBEDDED BEAM CONNECTION

NOT TO SCALE — S 4301



SINGLE-PLATE BEAM CONNECTION

NOT TO SCALE — S 4302

LADDER NOTES:
1. LADDER MATERIAL SHALL MATCH GUARDRAIL MATERIAL FOR PARTICULAR LOCATION/APPLICATION.
2. USE 316 STAINLESS STEEL FOR ANCHORS & FASTENERS.
3. FABRICATE AND INSTALL LADDERS TO COMPLY WITH OSHA AND ANSI STANDARDS.

FIXED LADDER

NOT TO SCALE — S 4410

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
No. 12829530
KYLE ROBERT SMOOT
STATE OF UTAH
10/06/2026

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SERWTP DISINFECTANT CT IMPROVEMENTS

SANDY, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED K.SMOOT
APPROVED K.SMOOT

DESIGN
DESIGN J.MCCLURE
DRAWN J.MCCLURE

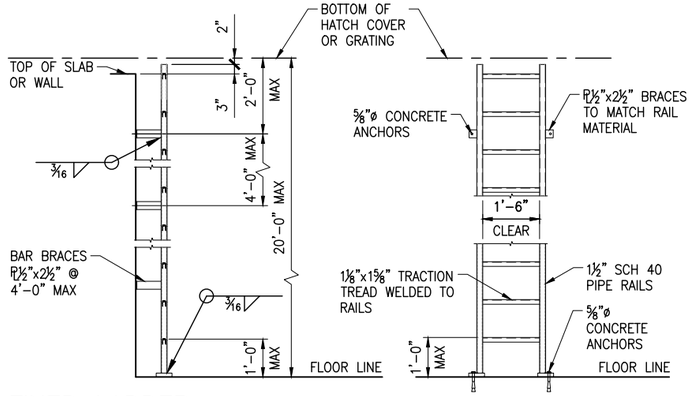
STRUCTURAL

GENERAL STRUCTURAL DETAILS - 1

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

DRAWING NO.
GS-01

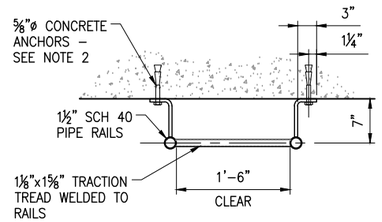
SHEET 38 OF 40



FIXED LADDER

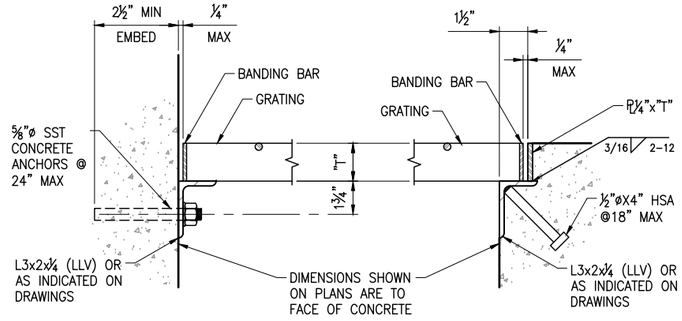
NOT TO SCALE

S 4411



LADDER NOTES:

1. LADDER MATERIAL SHALL BE ALUMINUM FOR VAULTS, 316 STAINLESS STEEL INSIDE RESERVOIRS.
2. USE 316 STAINLESS STEEL FOR ANCHORS & FASTENERS.
3. FABRICATE AND INSTALL LADDERS TO COMPLY WITH OSHA AND ANSI STANDARDS.



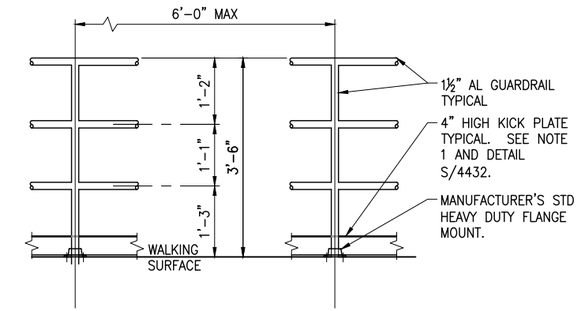
DETAIL NOTES:

1. GRATING DEPTH "T" AS NOTED ON DRAWINGS.
2. ALL EDGES AND OPENINGS ARE TO BE BANDED.
3. WEIGHT OF INDIVIDUAL GRATING SECTION SHALL NOT EXCEED 80 LBS.
4. METAL BEARING BARS ARE TO BE DEPTH "T"x3⁄16" @ 1 3⁄16" OC. CROSS BARS ARE TO BE AT 4" OC.
5. PROVIDE A MINIMUM OR 4 CLIPS PER GRATING PANEL AND LOCATE APPROXIMATELY 4" FROM PANEL CORNERS. MAXIMUM SPACING OF CLIPS IS 2'-0".
6. MATERIALS:
   ALUMINUM GRATING – USE ALUMINUM ANGLE SUPPORTS AND STAINLESS STEEL BOLTS AND CLIPS.
   GALVANIZED STEEL GRATING – USE GALVANIZED STEEL SUPPORTS, BOLTS, AND CLIPS. HOT–DIP GALVANIZE AFTER FABRICATION.
   STAINLESS STEEL GRATING – USE 316 STAINLESS STEEL ANGLE SUPPORTS, BOLTS, AND CLIPS.

METAL GRATING

NOT TO SCALE

S 4416



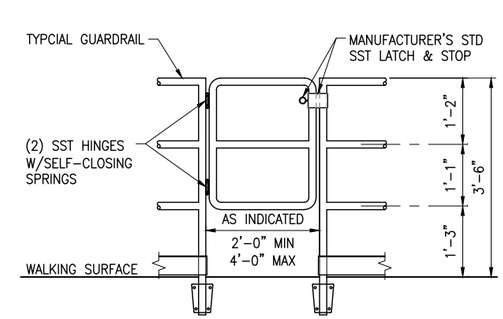
DETAIL NOTES:

1. KICKPLATE MAY BE EXTRUDED SHAPE OR BENT PLATE AND SHALL BE ATTACHED WITH STAINLESS STEEL BOLTS. BOLT KICKPLATE TO POSTS WITH BOTTOM ¼" CLEAR FROM WALKING SURFACE. PROVIDE KICKPLATE AT ALL PLACES WHERE DROP FROM ONE LEVEL TO ANOTHER EXCEEDS 2'–6" AND WHERE INDICATED ON THE DRAWINGS. HAND TIGHTEN AND CENTER PUNCH BOLT THREADS TO LOCK.
2. COAT ALL SURFACES OF ALUMINUM IN CONTACT WITH CONCRETE IN ACCORDANCE WITH SPECIFICATIONS. PLACE NEOPRENE GASKET BETWEEN ALUMINUM AND STEEL.
3. ALL GUARDRAILS ARE FIXED UNLESS OTHERWISE NOTED ON DRAWINGS.
4. FOR RAIL POSTS MOUNTED TO BEAM OR STAIR CHANNEL, PROVIDE MANUFACTURER'S STANDARD REINFORCED CONNECTION FROM POST TO PLATE. BOTH THE PLATE AND REINFORCED INSERT TO BE ALUMINUM OR STAINLESS STEEL.

THREE–RAIL GUARDRAIL

NOT TO SCALE

S 4425



DETAIL NOTES:

1. GATE MATERIAL AND FINISH TO MATCH ADJACENT GUARDRAIL.
2. GATE TO OPEN TOWARD WALKWAY AND AWAY FROM LADDER.

GUARDRAIL GATE

NOT TO SCALE

S 4431

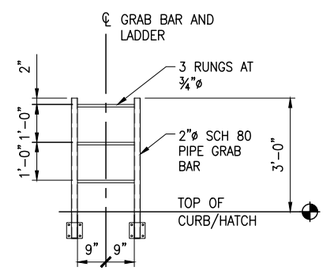
DETAIL NOTES:

1. COPE KICK PLATE AROUND GUARDRAIL.
2. MANUFACTURER'S STANDARD 4" KICK PLATE MAY BE SUBSTITUTED.
3. PLATE MATERIAL TO MATCH RAIL MATERIAL

KICK PLATE

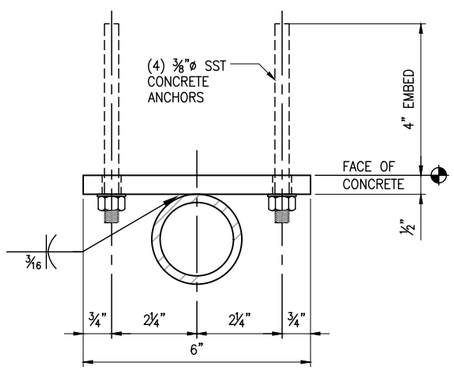
NOT TO SCALE

S 4432

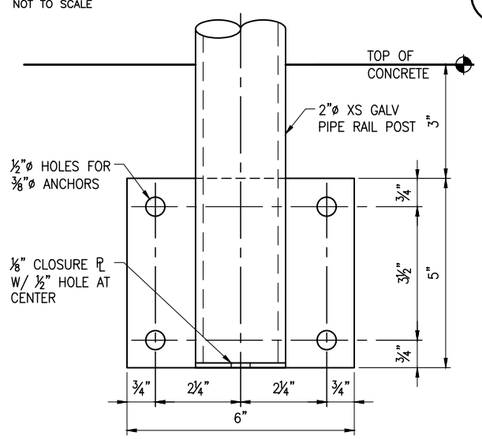


DETAIL NOTES:

1. MATERIAL FOR GRAB BAR ASSEMBLY SHALL BE HOT–DIP GALVANIZED STEEL.
2. LOCATE GRAB BAR ASSEMBLY AS CLOSE AS PRACTICAL TO CONCRETE CURB/HATCH.
3. ATTACH TO CONCRETE SLAB WITH SST CONCRETE ANCHORS.
4. MINIMUM DESIGN LOAD 200 LBS HORIZONTAL AT TOP RUNG.



SIDE MOUNTED BASE PLATE PLAN



SIDE MOUNTED BASE PLATE ELEVATION

GRAB BAR

NOT TO SCALE

S 4448

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12629530 KYLE ROBERT SMOOT STATE OF UTAH 10/06/2026

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SANDY, UT

SERWTP DISINFECTANT CT IMPROVEMENTS

DESIGN J. MCCLURE
DRAWN J. MCCLURE
CHECKED K. SMOOT
APPROVED K. SMOOT
REVIEW

STRUCTURAL

GENERAL STRUCTURAL DETAILS - 2

DATE: OCTOBER 2026
PROJECT NUMBER 010-25-03

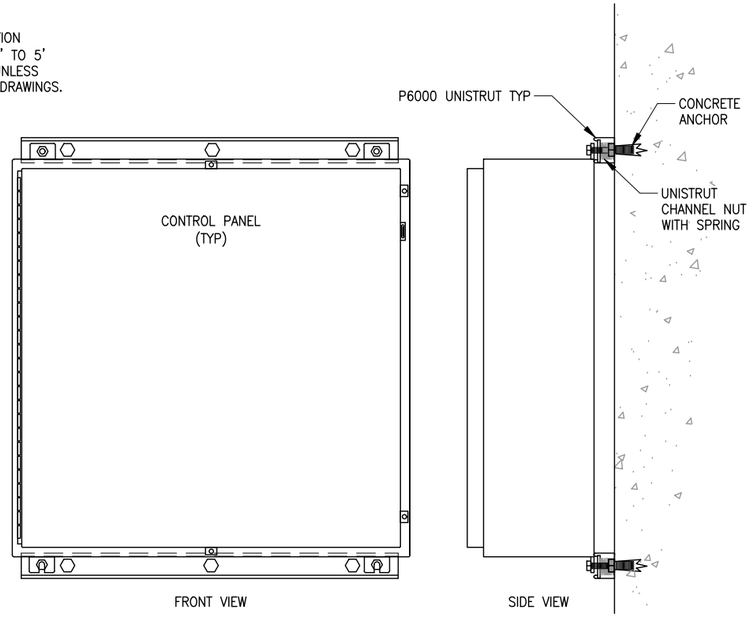
DRAWING NO. GS-02

SHEET 39 OF 40

P:\jordan valley wcd\010-25-03 serwtp disinfectant ct improvements\2.0 design phase\2.7 drawings\sht\GS-02.dwg Plotted: 10/7/2026 9:00 AM By: Kyle Smoot

NOTES:

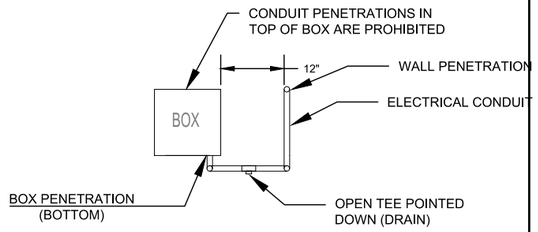
1. MOUNT PANEL OR INDICATION TRANSMITTER AT ABOUT 4' TO 5' ABOVE FINISHED FLOOR UNLESS OTHERWISE SPECIFIED IN DRAWINGS.



TYPICAL PANEL MOUNTING DETAIL ON WALL

SCALE: NTS

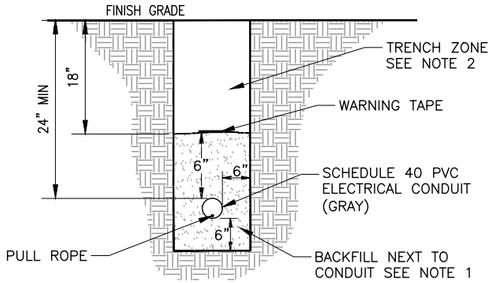
E 5001



CONDUIT INTO JUNCTION BOX TYP.

SCALE: NTS

E 5012



NOTES:

1. BACKFILL MATERIAL SHALL BE TYPE C COMPACTED TO 95% PER ASTM D 1557. SEE SPECIFICATION 31 23 00.
2. NATIVE MATERIAL MEETING SPECIFICATION 31 23 00 FOR SUITABLE MATERIAL MAY BE USED FOR TRENCH ZONE BACKFILL IN UNIMPROVED AREAS, COMPACT TO 85%.
3. FOR MORE THAN ONE CONDUIT OF THE SAME VOLTAGE IN TRENCH ALLOW 6 INCHES BETWEEN CONDUITS.
4. REFER TO DRAWINGS FOR CONDUIT SIZES.

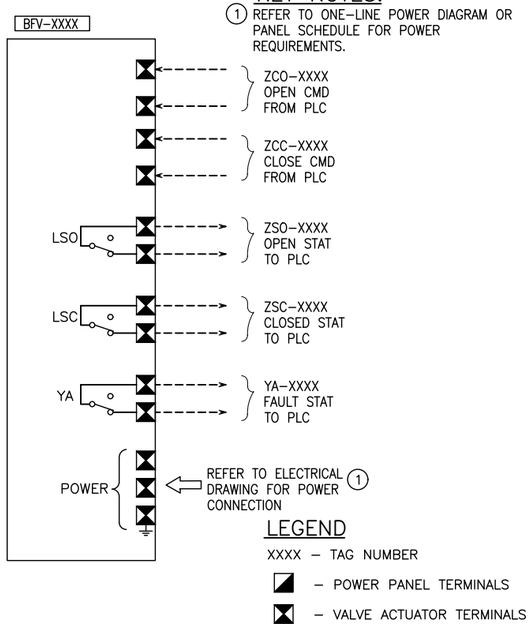
CONDUIT TRENCH DETAIL

SCALE: NTS

E 5010

KEY NOTES:

(1) REFER TO ONE-LINE POWER DIAGRAM OR PANEL SCHEDULE FOR POWER REQUIREMENTS.



LEGEND

XXXX – TAG NUMBER

– POWER PANEL TERMINALS

– VALVE ACTUATOR TERMINALS

TYPICAL REVERSING VALVE ACTUATOR CONTROL SCHEMATIC

SCALE: NTS

E 5559

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER No. 12649767 JOSHUA JAY LAKE STATE OF UTAH 10/06/2026

NO.	DATE	REV. BY	REVISIONS DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SERWTP DISINFECTANT CT IMPROVEMENTS

SANDY, UT

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN: DESIGN C. WASDEN DRAWN C. WASDEN

REVIEW: CHECKED J. LAKE APPROVED J. LAKE

ELECTRICAL

GENERAL ELECTRICAL DETAILS - 01

DATE: OCTOBER 2026 PROJECT NUMBER 010-25-03

DRAWING NO. GE-01

SHEET 40 OF 40

P:\jordan valley wcd\010-25-03 serwtp disinfectant ct improvements\2.0 design phase\2.7 drawings\sht\GE-01.dwg Plotted: 10/7/2026 9:00 AM By: Kyle Smoot