CONTRACT DOCUMENTS

FOR CONSTRUCTION OF THE

SOUTHWEST AQUEDUCT REACH 2
SCHEDULE A - 13400 SOUTH TO 11800 SOUTH
SCHEDULE B - 11400 SOUTH JA-2 MAINLINE VALVE VAULT

Volume 2 of 2
DRAWINGS COVER

JORDAN VALLEY WATER CONSERVANCY DISTRICT

JORDAN VALLEY WATER
CONSERVANCY DISTRICT

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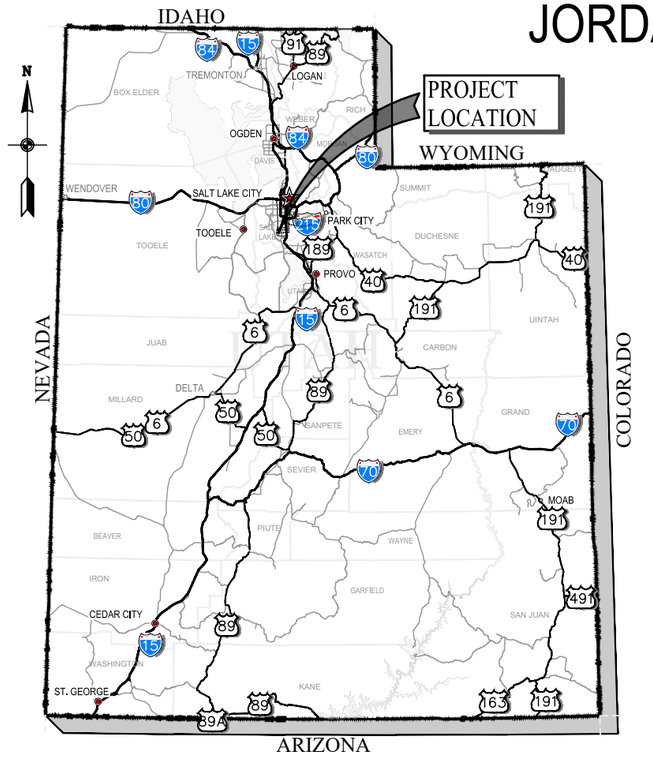
BOWEN COLLINS & ASSOCIATES

JANUARY 2025

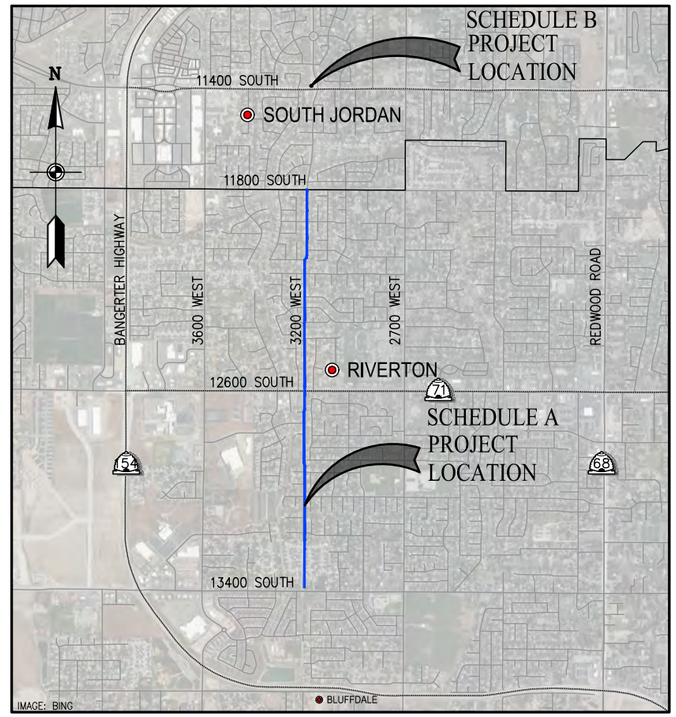
DRAWINGS FOR CONSTRUCTION OF THE

SOUTHWEST AQUEDUCT REACH 2
13400 SOUTH TO 11800 SOUTH AND
11400 SOUTH JA-2 MAINLINE VAULT

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT



PROJECT LOCATION MAP



PROJECT VICINITY MAP

REGISTERED PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH

SCHEDULE A
CIVIL/MECHICANICAL

PROFESSIONAL ENGINEER
NO. 11932046
RYAN JAMES EGBERT
STATE OF UTAH

SCHEDULE B
CIVIL/MECHICANICAL

PROFESSIONAL ENGINEER
9625190
DANIEL JAMES THURGOOD
STATE OF UTAH

TRAFFIC CONTROL

PROFESSIONAL STRUCTURAL ENGINEER
STEPHEN D. COHEN
176558
STATE OF UTAH

STRUCTURAL

LICENSED PROFESSIONAL ENGINEER
No. 8852860-2202
SHANE CURTIS CAVANAUGH
STATE OF UTAH

ELECTRICAL/INSTRUMENTATION

PROFESSIONAL ENGINEER
NO. 11932046
RYAN JAMES EGBERT
STATE OF UTAH

CATHODIC PROTECTION

BOWEN COLLINS & ASSOCIATES

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT
SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK
DRAWN J. BLACK
REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

GENERAL
TITLE PAGE
PROJECT LOCATION MAP
AND VICINITY MAP

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
G-01
SHEET 01 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 SI2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\0102302_G-01.dwg Plotted: 1/14/2025 9:43 AM By: Jeremy Black

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BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

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REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

GENERAL
INDEX OF DRAWINGS

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
G-02
SHEET 02 OF 100

@	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
BH	BORE HOLE
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
BOR	BUREAU OF RECLAMATION
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
CP	CATHODIC PROTECTION
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
JBID	JORDAN BASIN IMPROVEMENT DISTRICT
JT	JOINT
JTS	JOINTS
JVWCD	JORDAN VALLEY WATER CONSERVANCY DISTRICT
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, SLOPE
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, 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
TS	TEST STATION
TT(UG)	TEMPORARY UTILITY LINE
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

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

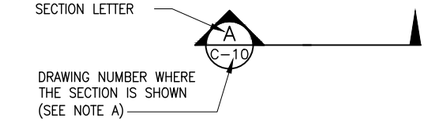
GENERAL
ABBREVIATIONS

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
G-03
SHEET 03 OF 100

SECTION IDENTIFICATION

(1) SECTION CUT SHOWN ON DRAWING AS:



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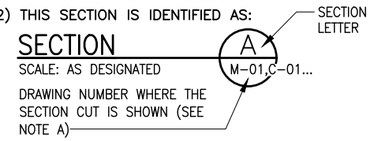

DETAIL IDENTIFICATION

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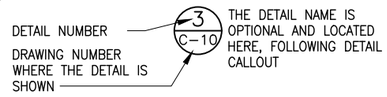

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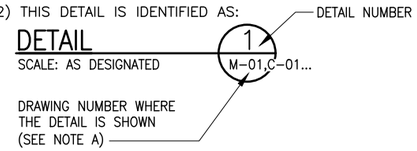
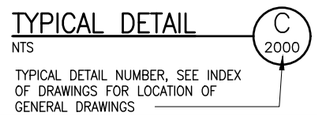


TYPICAL DETAIL IDENTIFICATION



DRAWING IDENTIFICATION SYSTEM

LETTER	DISCIPLINE
G	GENERAL
TC	TRAFFIC CONTROL
PP	PLAN AND PROFILE
C	CIVIL
CP	CATHODIC PROTECTION
GC	GENERAL CIVIL
S	STRUCTURAL
GS	GENERAL STRUCTURAL
M	MECHANICAL
GM	GENERAL MECHANICAL
E	ELECTRICAL
GE	GENERAL ELECTRICAL DETAILS

C-02
- C — DISCIPLINE
- 02 — INDIVIDUAL DRAWING NUMBER

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.

- 1 — COORDINATE IDENTIFICATION
- ELEVATION INDICATOR
- SECTION CORNER
- CONTROL POINT
- MONUMENT INDICATOR
- POTHOLE
- TEST HOLE
- BORING HOLE

- BOR EASEMENT (JORDAN AQUEDUCT)
- SOUTHWEST AQUEDUCT EASEMENT
- JVWCD EASEMENT
- PUBLIC UTILITY EASEMENT (PUE)
- R/W L/A — RIGHT-OF-WAY LIMITED ACCESS
- R/W — RIGHT-OF-WAY
- PL — PROPERTY LINE
- EASEMENT
- PARCEL
- LIMITS OF CONSTRUCTION

- SILT FENCE
- X — X — FENCE
- RAILING
- DITCH
- CULVERT
- RIPRAP
- TREE LINE

- NEW STRUCTURE OR FACILITY
- FUTURE STRUCTURE OR FACILITY

- NEW PIPELINE (CIVIL SHEETS)
- NEW PIPELINE 10" DIA AND SMALLER (CIVIL SHEETS)
- EXISTING 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
- SS — SANITARY SEWER
- SD — STORM DRAIN
- T(ug) — TELEPHONE BURIED
- TEL — TELEPHONE OVERHEAD
- TT(ug) — TELEPHONE TEMPORARY BURIED
- 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
- 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
- UNIT HEATER
- FLOOR DRAIN
- 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)
- STOP GATE
- SLIDE GATE
- SLUICE GATE
- GATE VALVE
- REDUCER OR INCREASER
- LIQUID SURFACE EL
- 1 — REVISION WORK
- 3 — REFERENCE TO NOTE
- T — CATHODIC PROTECTION TEST STATION SYMBOL (TEST STATION BY TYPE INDICATED)
- CPS — IMPRESSED CURRENT CATHODIC PROTECTION SYSTEM

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — 10859954 — LINDSAY K. MINCK — STATE OF UTAH — REGISTERED

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED T. OLSEN — APPROVED J. LUETTINGER

DESIGN — DESIGN L. MINCK — DRAWN J. BLACK

GENERAL

SYMBOLS

PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

DRAWING NO. G-04

SHEET 04 OF 100

GENERAL NOTES

1. SYMBOLS FOR STRUCTURES, PIPE, ETC. USED FOR IDENTIFICATION ARE SHOWN IN LEGENDS AND SHALL BE FOLLOWED THROUGHOUT THE PLANS WHENEVER APPLICABLE. NOT ALL OF THE VARIOUS COMPONENTS SHOWN IN THESE LEGENDS ARE NECESSARILY USED IN THE PROJECT.

2. SCALE OF THE DRAWINGS OR DETAILS ARE SHOWN IN TITLE BLOCK OR DIRECTLY UNDER THE PLAN OR DETAIL. THE SIZE OF THE ORIGINAL PLOTTED DRAWINGS IS 22"X34". CARE SHOULD BE TAKEN TO VERIFY THE SCALE BAR IN THE TITLE BLOCK AREA TO DETERMINE THE SCALE OF REDUCED REPRODUCTIONS.

3. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PERFORM CONSTRUCTION ACTIVITIES PER THE CONTRACT DOCUMENTS AND IN A WORKMANLIKE SAFE MANNER IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND JOB-SITE RELATED CONSTRUCTION CONDITIONS AND REQUIREMENTS. ANY ADDITIONS, DELETIONS, OR MODIFICATIONS SHALL FIRST MEET WITH THE WRITTEN APPROVAL OF THE ENGINEER AND THE OWNER.

4. CONTRACTOR SHALL OBTAIN ALL NECESSARY AND REQUIRED PERMIT(S), INSPECTIONS AND APPROVALS, AND COMPLY WITH ALL REQUIREMENTS OF GOVERNING AGENCIES.

5. THE CONTRACTOR SHALL PREPARE AND SUBMIT TRAFFIC CONTROL PLANS FOR REVIEW AND APPROVAL BY RIVERTON CITY, SOUTH JORDAN CITY AND UDOT. WORK SHALL NOT BEGIN UNTIL THE PLANS HAVE BEEN APPROVED.

6. THE CONTRACTOR SHALL KEEP ALL CONSTRUCTION ACTIVITIES WITHIN THE ESTABLISHED LIMITS OF CONSTRUCTION, RIGHTS-OF-WAY, EASEMENTS AND DESIGNATED STAGING AREAS. 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.

7. UTILITY LOCATIONS:
   - CONTRACTOR SHALL CONTACT BLUE STAKES TO LOCATE EXISTING UTILITIES.
   - ALL UTILITY LOCATIONS, SHOWN ON DRAWINGS, ARE APPROXIMATE AND ARE NOT INCLUSIVE OF ALL EXISTING UTILITIES.
   - CONTRACTOR TO VERIFY DEPTHS OF UTILITIES IN THE FIELD BY POT HOLING A MINIMUM OF TWO WEEKS TIME OR 200-FEET AHEAD OF PIPELINE CONSTRUCTION TO AVOID CONFLICTS WITH DESIGNED PIPELINE GRADE AND ALIGNMENT. IF A CONFLICT ARISES RESULTING FROM THE CONTRACTOR NEGLECTING TO POT HOLE UTILITIES, THE CONTRACTOR TO RESOLVE THE CONFLICT WITHOUT ADDITIONAL COST OR CLAIM TO THE OWNER.
   - CONTRACTOR SHALL POT HOLE CRITICAL LOCATIONS AND OBTAIN ALL EXISTING PIPE O.D. PRIOR TO ORDERING OR OBTAINING MATERIALS REQUIRED FOR CONNECTIONS TO EXISTING PIPING. UTILITY SHUT-DOWNS AND OTHER WORK WILL NOT BE SCHEDULED OR ALLOWED UNTIL THIS IS ACCOMPLISHED AND MATERIALS ARE ON SITE AND APPROVED FOR USE BY OWNER.

8. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES NECESSARY TO PROTECT EXISTING IMPROVEMENTS FROM DAMAGE WHICH ARE TO REMAIN IN PLACE. ALL SUCH IMPROVEMENTS OR STRUCTURES DAMAGED BY THE CONTRACTORS OPERATIONS SHALL BE REPAIRED OR RECONSTRUCTED TO ORIGINAL OR BETTER CONDITION TO THE SATISFACTION OF THE OWNER AT THE EXPENSE OF THE CONTRACTOR.

9. UTILITY SERVICES AND LATERALS MAY BE SHOWN ON THE PLANS AND ARE ESTIMATED LOCATIONS BASED ON DATA AVAILABLE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE SERVICES AND PROTECT IN PLACE OR COORDINATE WITH UTILITY OWNER FOR REMOVAL AND REPLACEMENT TO THE SATISFACTION OF THE UTILITY OWNER. DURATION OF UTILITY OUTAGES AND PUBLIC NOTIFICATION PROCEDURES SHALL CONFORM TO THE STANDARDS OF THE CONTROLLING AGENCY.

10. CONTRACTOR IS SOLELY RESPONSIBLE FOR CONFORMANCE WITH LOCAL AND FEDERAL CODES GOVERNING SHORING AND BRACING OF EXCAVATIONS AND TRENCHES. CONTRACTOR IS RESPONSIBLE FOR THE SAFETY OF THE PUBLIC AND PROTECTION OF PERSONNEL AND WORKERS.

11. IF THE CONTRACTOR CHOOSES TO WORK ON THE PROJECT WHEN HOT MIX ASPHALT IS NOT AVAILABLE, THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE 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.

12. 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.

13. TRENCHING OPERATIONS SHALL BE PERFORMED SO AS TO PROTECT THE EXISTING CURB AND GUTTER, UNLESS IDENTIFIED FOR REMOVAL. DAMAGED CURB AND GUTTER SHALL BE REPLACED TO MATCH THE EXISTING AT THE CONTRACTOR'S EXPENSE, REPLACE PER APWA STANDARDS FOR RIVERTON CITY AND SOUTH JORDAN CITY AND PER UDOT STANDARDS IN UDOT RIGHTS-OF-WAY. TRENCH SUPPORTS AND DEWATERING SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR. MAXIMUM OPEN TRENCH DURING WORKING HOURS SHALL BE 500 FEET. ALL TRENCHES SHALL BE BACKFILLED, FENCED TEMPORARILY, AND/OR PLATED DURING NON-WORKING HOURS, PER EXCAVATION PERMIT REQUIREMENTS.

14. DEWATERING: GROUND WATER AND SURFACE WATER CONTROL SHALL BE PERFORMED AND RESPONSIBLY HANDLED BY THE CONTRACTOR ACCORDING TO, AND IN COMPLIANCE WITH, ALL LOCAL GOVERNING AUTHORITIES. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE POTENTIAL PUMPING NEEDS. THE CONTRACTOR SHALL NOT RELY ON OWNER SUPPLIED PROCTOR, GROUND WATER AND/OR SURFACE WATER DATA. CONTRACTOR SHALL OBTAIN DEWATERING PERMIT AS NECESSARY.

15. AERIAL PHOTOS IN DRAWINGS:
    THE AERIAL PHOTOS PROVIDED AS BACKGROUND IN THESE DRAWINGS ARE PROVIDED TO HELP CLARIFY THE WORK SITE. HOWEVER, THE PHOTOS DEPICT CONDITIONS AS THEY EXISTED IN NOVEMBER 2023. PRESENT DAY CONDITIONS MAY VARY FROM THOSE SHOWN. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS PRIOR TO BIDDING. BID SHALL INCLUDE ALL WORK REQUIRED TO COMPLETE THE PROJECT.

16. CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ANY SETTLEMENT OF EXCAVATIONS, AND ANY DAMAGE OF UTILITIES RESULTING FROM SETTLEMENT.

17. CONTRACTOR SHALL PREVENT ANY GROUND WATER OR DEBRIS FROM ENTERING NEW PIPES DURING CONSTRUCTION. THE ENDS OF THE PIPES SHALL BE SEALED AT THE END OF EACH WORKDAY.

18. PROFILE DRAWINGS ARE HORIZONTAL PROJECTIONS OF THE PIPELINE CENTERLINE, UNLESS OTHERWISE NOTED. PLAN AND PROFILE SHEETS SHOW REPRESENTED HORIZONTAL, VERTICAL AND COMBINATION CURVES, TO BE MET BY THE FABRICATOR, SUBMIT SHOP DRAWINGS FOR REVIEW.

19. LAY PIPE TO DEPTH AND ALONG HORIZONTAL ALIGNMENT AS DEFINED IN THESE DRAWINGS. CONTRACTOR SHALL NOT DEVIATE FROM PROPOSED ALIGNMENT OR GRADE WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. AVOID HIGH AND LOW POINTS EXCEPT WHERE DESIGNED.

20. CONTRACTOR SHALL BACKFILL TRENCH AREAS WHERE NEW WATERLINES CROSS UNDER EXISTING BURIED UTILITIES WITH FLOWABLE FILL (SOIL CEMENT BACKFILL, CLSM), WHERE MECHANICAL COMPACTION CANNOT BE ADEQUATELY PERFORMED.

21. ALL BURIED REBAR, FITTINGS, COUPLINGS, VALVES, AND MECHANICAL JOINTS, NUTS AND BOLTS ARE TO BE COATED WITH WAX TAPE (TRENTON SYSTEM NO. 1 OR ENGINEER APPROVED EQUAL) IN ACCORDANCE WITH PROJECT SPECIFICATIONS.

22. CONTRACTOR SHALL MAINTAIN A 10-FOOT HORIZONTAL AND AN 18-INCH VERTICAL SEPARATION (OUTSIDE OF PIPE TO OUTSIDE OF PIPE/MANHOLE) BETWEEN ALL SEWER AND WATER LINES, UNLESS EXCEPTION IS NOTED.

23. CONTRACTOR SHALL NOTE THAT OWNER HAS NEGOTIATED CERTAIN RESPONSIBILITIES FOR PRIVATE PROPERTY RESTORATION WITH INDIVIDUAL PROPERTY OWNERS WITHIN SWA2 EASEMENT ALONG 3200 WEST. REFER TO SPECIFICATIONS AND ATTACHED EXHIBITS FOR COMMITMENTS MADE REGARDING CONTRACTOR'S RESPONSIBILITIES WITHIN INDIVIDUAL PRIVATE PROPERTIES.

    SPECIFIC REQUIREMENTS FOR COMMON SPACES AND COMMERCIAL PROPERTIES (INCLUDING RIVERTON PARK AREA, PARK STRIPS, AND COMMERCIAL CARWASH PROPERTY) ARE SHOWN ON PLANS AND WITHIN SPECIFICATIONS. CONTRACTOR SHALL REPLACE ALL SURFACE IMPROVEMENTS, INCLUDING SPRINKLING SYSTEMS AND OTHER FEATURES, IN KIND FOLLOWING CONSTRUCTION IN THESE AREAS.

24. CONTRACTOR SHALL PROTECT ADJACENT PRESSURE PIPELINES AND PROVIDE TEMPORARY THRUST RESTRAINT AS NECESSARY DURING CONSTRUCTION INCLUDING EXISTING VALVES, TEES, BENDS, ETC. ALL NEW PRESSURE PIPE AND FITTINGS SHALL HAVE THRUST RESTRAINED JOINTS, THRUST BLOCKS, THRUST TIES OR OTHER APPROVED THRUST RESTRAINT. THRUST PROTECTION SHALL BE ADEQUATE FOR THE TEST PRESSURE SPECIFIED.

25. MINIMUM DEPTH OF SOUTHWEST AQUEDUCT: 5 FEET TO TOP OF PIPE UNLESS OTHERWISE NOTED.

26. COORDINATE ANY RELOCATIONS OF EXISTING WATER MAINS WITH OWNER (JVWCD, RIVERTON CITY AND/OR SOUTH JORDAN CITY).
    - OPERATION OF ALL EXISTING MAIN LINE VALVES TO BE COORDINATED THROUGH OWNER 48-HOURS IN ADVANCE OF SHUTDOWN. CONNECTIONS TO SOME WATERLINES SERVING MAY REQUIRE NIGHT OR WEEKEND SHUTDOWNS. CONTRACTOR TO PERFORM NIGHT OR WEEKEND WORK IN THESE AREAS AT NO ADDITIONAL COST TO OWNER.
    - OWNER DOES NOT GUARANTEE WATER SHUT-DOWNS. CONTRACTOR TO DEVISE PLANS TO AVOID WORK STOPPAGES IN THE EVENT A SHUT-DOWN DOES NOT GO AS PLANNED
    - CONTRACTOR SHALL SUBMIT FOR REVIEW A SEQUENTIAL PLAN FOR CONNECTION, TESTING, AND FLUSHING OF ALL NEW WATER MAINS, HYDRANTS, AND SERVICE CONNECTIONS.

28. CONTRACTOR SHALL PERFORM CHLORINATION TEST, PRESSURE TEST, AND BACTERIA TEST. ALL WATERLINES INSTALLED SHALL BE DISINFECTED IN ACCORDANCE WITH THE "AMERICAN WATER WORKS ASSOCIATION STANDARD FOR DISINFECTING WATER MAINS" (AWWA C651) AND SPECIFICATIONS. ALL CHLORINATED WATER SHALL BE DISPOSED OF IN ACCORDANCE WITH THE UTAH DEPT OF ENVIRONMENTAL QUALITY RULES AND REQUIREMENTS FOR SURFACE DISCHARGE AND COORDINATED WITH RIVERTON CITY AND JORDAN VALLEY WATER CONSERVANCY DISTRICT.

29. PRESSURE TEST SOUTHWEST AQUEDUCT TO HYDROSTATIC TEST HGL AS SHOWN ON DRAWING G-08 FOR FOUR HOURS WITH ZERO LEAKAGE. IN THE CASE OF FAIL TO PASS THE LEAKAGE TEST, THE CONTRACTOR SHALL DETERMINE THE CAUSE OF THE LEAKAGE, SHALL TAKE CORRECTIVE MEASURES NECESSARY TO REPAIR THE LEAKS, AND SHALL AGAIN TEST THE PIPELINES, ALL AT NO COST TO THE OWNER.

30. WORKING PRESSURE FOR THIS PORTION OF THE SOUTHWEST AQUEDUCT PIPELINE SHOWN ON THE HYDRAULIC PROFILE ON DRAWING G-08, ALL FLANGES, VALVES, FITTINGS, THRUST BLOCKS, ETC. SHALL BE RATED APPROPRIATELY.

31. ALL MATERIALS WHICH MAY CONTACT DRINKING WATER INCLUDING PIPES, GASKETS, FITTINGS, LUBRICANTS, LININGS, FIELD JOINT REPAIR MATERIALS, O-RINGS, AND VALVES SHALL BE NSF 61 COMPLIANT FOR CULINARY WATER USE. TO PERMIT FIELD VERIFICATION OF THIS CERTIFICATION, ALL SUCH COMPONENTS SHALL BE APPROPRIATELY STAMPED WITH THE NSF LOGO.

32. CONTRACTOR TO PROVIDE AND DISTRIBUTE APPROVED WRITTEN NOTICE OF CONSTRUCTION ACTIVITIES TO ALL RESIDENTS AND BUSINESSES LOCATED IN THE CONSTRUCTION AREA AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. WRITTEN NOTICE SHALL BE APPROVED BY THE ENGINEER PRIOR TO DISTRIBUTION.

33. CONTRACTOR SHALL PROVIDE AND UPDATE A CONSTRUCTION SCHEDULE FOR WORKING IN THE PUBLIC RIGHT-OF-WAY PRIOR TO CONSTRUCTION.

34. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTROL OF DRAINAGE AND EROSION DURING CONSTRUCTION AT CONSTRUCTION SITE, STAGING, AND SPOILS AREA. CONTRACTOR SHALL SUBMIT STORM RUNOFF CONTROL PLAN FOR APPROVAL BY ENGINEER AND OBTAIN A SWPPP PERMIT FROM THE UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY.

35. ALL ASBESTOS CEMENT PIPES REQUIRING REMOVAL SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REQUIREMENTS IN AN APPROVED LOCATION EQUIPPED TO HANDLE SUCH MATERIALS. ANY CUTTING REQUIRED SHALL BE PERFORMED IN ACCORDANCE WITH PROPER REGULATORY PROCEDURES. IN NO CASE SHALL THE PIPE AND FITTINGS BE BROKEN OR CRUSHED.

36. CONTRACTOR SHALL SAW CUT ASPHALT, CURB AND GUTTER AND SIDEWALK TO THE NEAREST JOINT AT THE LIMITS OF ALL TRENCH EXCAVATION, WHERE REQUIRED.

37. CONTRACTOR SHALL COORDINATE WITH DRIVEWAY OWNERS FOR ACCESS DURING WORKING HOURS. ALL TRENCHES SHALL BE BACKFILLED AND/OR PLATED DURING NON-WORKING HOURS.

38. WORKING HOURS IN RIVERTON CITY AND SOUTH JORDAN CITY SHALL BE 8:00 AM TO 7:00 PM. WORKING HOURS IN THE UDOT RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE UDOT PERMIT REQUIREMENTS.

39. INSTALL ALL MATERIALS ACCORDING TO MANUFACTURER RECOMMENDATIONS AND STATE AND LOCAL REQUIREMENTS. USE ONLY NEW AND UNUSED MATERIALS. ALL MATERIALS SHALL BE PROVIDED BY MANUFACTURERS REGULARLY ENGAGED IN PRODUCING SAID ITEMS, AND WHICH SHALL BE FIRST QUALITY, HEAVY DUTY, COMMERCIAL/INDUSTRIAL GRADE, SUITABLE FOR THE INTENDED USE.

40. ANY WORK RELATED TO NATURAL GAS LINES (RELOCATION, ABANDONMENT, ETC.) SHALL BE COORDINATED DIRECTLY WITH ENBRIDGE GAS, FORMERLY DOMINION ENERGY.

41. SEE SPECIFICATION FOR VIBRATION AND SETTLEMENT MONITORING REQUIREMENTS WHEN WORKING NEAR EXISTING JORDAN AQUEDUCT AND WITHIN THE BOR EASEMENT.

42. THE CONSTRUCTION AREA CONTAINS TREES THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES DUE TO BRANCHES OR ROOTS EXTENDING INTO THE CONSTRUCTION AREA. CONTRACTOR TO PRESERVE AND PROTECT TREES UNLESS IDENTIFIED TO BE REMOVED. CONTRACTOR TO COORDINATE WITH CITY FOR ANY TREE WORK PRIOR TO CONSTRUCTION.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

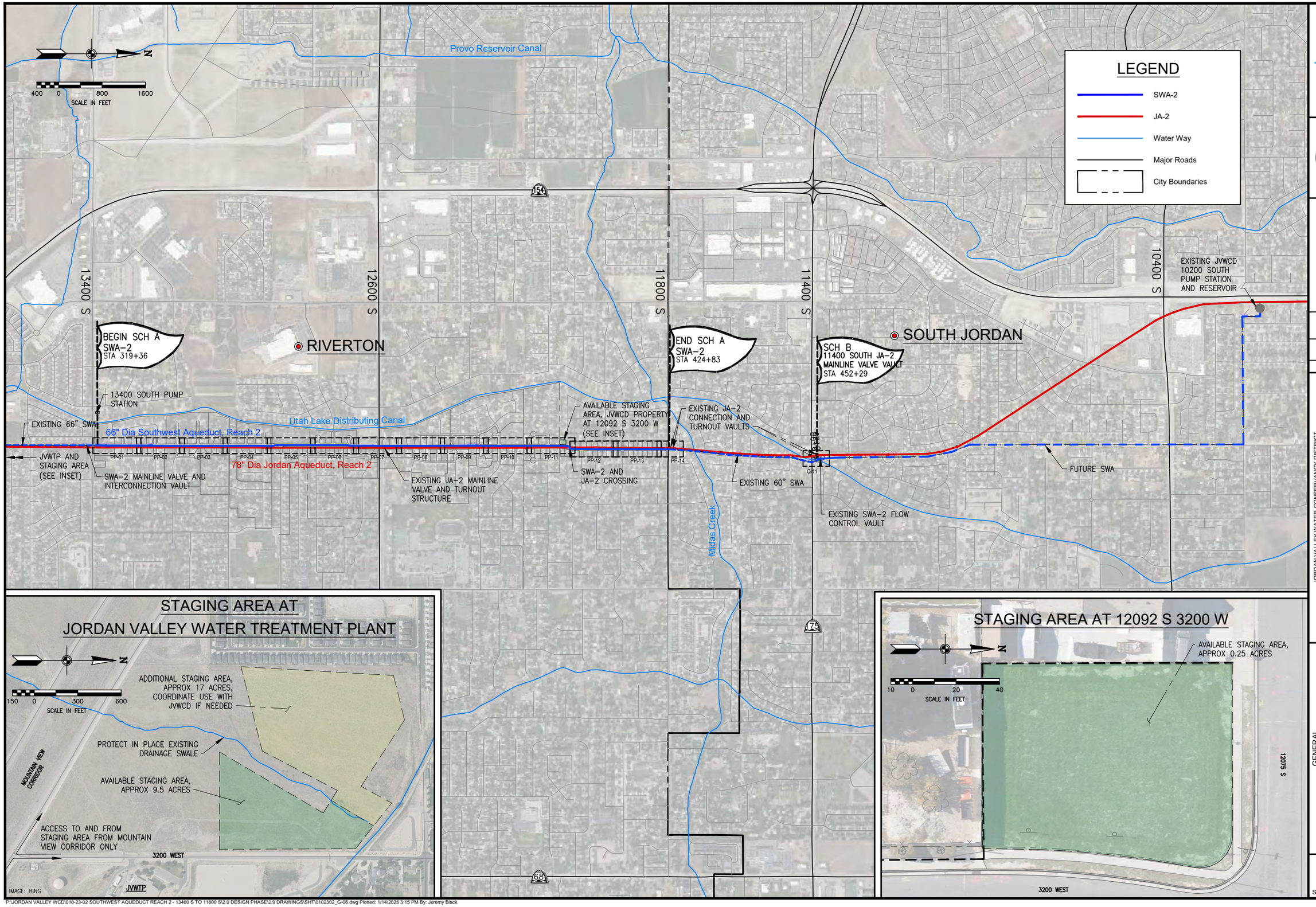
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK
DRAWN J. BLACK
REVIEW CHECKED T. OLSEN
APPROVED J. LUETTINGER

GENERAL
GENERAL NOTES

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
G-05
SHEET 05 OF 100



BOWEN COLLINS & ASSOCIATES

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK
DRAWN J. BLACK
REVIEW T. OLSEN
CHECKED
APPROVED J. LUETTINGER

GENERAL

SWA OVERALL SYSTEM LAYOUT

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
G-06
SHEET 06 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\0102302_G-06.dwg Plotted: 1/14/2025 3:15 PM By: Jeremy Black

SURVEY NOTES:

1. PROJECT COORDINATES ARE BASED ON NAD 1983, USING EXISTING AQUEDUCT CONTROL MONUMENTS, AND ESTABLISHED IN US SURVEY FEET. NAD 1983, THE STATE OF UTAH (TURN) GPS VRS NETOWRK WAS USED TO CALIBRATE TO EXISTING AQUEDUCT CONTROL AND ESTABLISH NEW LOCAL CONTROL. A CSF COMBINED SCALE FACTOR OF 1.0002286679 WAS DETERMINED FROM SAID SITE CALIBRATION, A HORIZONTAL ROTATION OF −0°19'13.55529" WAS ALSO DETERMINED.

2. PROJECT ELEVATIONS ARE BASED ON NAVD88 VERTICAL CONTROL. IT IS NOTED THAT EXISTING STRUCTURES, PIPELINES, ETC. MAY HAVE REFERENCE DRAWINGS UTILIZING NAVD29 VERTICAL DATUM. CARE SHOULD BE TAKEN TO CONVERT BETWEEN THE TWO VERTICAL DATUM WHEN REFERENCING BETWEEN THESE DRAWINGS AND RECORD DRAWINGS OF ADJACENT EXISTING FACILITIES.

N

100 0 200 400
SCALE IN FEET

LEGEND
- SURVEY CONTROL POINT
- BORE HOLE
- MONUMENT

SURVEY CONTROL

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
201	40685.45	59097.76	4559.36	CP
202	41493.53	59115.17	4557.54	CP
203	42310.80	59084.96	4555.09	CP
204	43118.59	59122.21	4553.62	CP
205	43929.29	59085.69	4558.49	CP
206	44722.40	59105.33	4561.55	CP
207	45418.99	58969.80	4565.12	CP
211	51945.64	59247.76	4550.26	CP
212	51140.25	59179.54	4550.36	CP
213	50341.43	59145.98	4547.04	CP

SURVEY CONTROL

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
214	49470.17	59161.56	4543.58	CP
215	48636.56	59095.45	4546.01	CP
216	47774.31	59114.28	4549.50	CP
217	47765.84	58778.76	4554.00	CP
218	47295.16	58966.20	4555.89	CP
219	47356.01	59260.74	4550.24	CP
220	45987.08	59041.55	4562.46	CP
221	45995.10	59408.41	4556.11	CP
403	51300.15	59003.35	4552.18	CP
404	51300.08	59343.08	4546.06	CP

SURVEY CONTROL

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
405	49078.47	58980.92	4547.63	CP
406	49074.33	59255.26	4540.96	CP
407	41843.63	59234.71	4553.25	CP
408	41850.57	58955.60	4558.89	CP
409	43838.72	59230.87	4555.03	CP
410	43840.54	58977.05	4560.14	CP

320+00 330+00 340+00 350+00 360+00 370+00

201 BH-01 202 BH-02 407 203 BH-03 204 BH-04 410 205 BH-05 206 BH-06 207 BH-07 220 BH-08

3200 WEST

PP-01 PP-02 PP-03 PP-04 PP-05 PP-06 PP-07

409 66" SWA-2 EXISTING 78" JA-2 221

RIVERTON

13400 SOUTH 13200 SOUTH 12875 SOUTH 12600 SOUTH

MATCHLINE STA 375+00 SEE BELOW

PLAN

IMAGE: HEXAGON

GEOTECHNICAL NOTES:

1. GEOTECHNICAL INVESTIGATION REPORT PROVIDED BY:
   RB&G ENGINEERING, INC.
   CONTACT: ROB JOHNSON, P.E.
   1435 WEST 820 NORTH
   PROVO, UTAH 84601
   801−374−5771

2. GEOTECHNICAL BORINGS SHOWN ALONG ALIGNMENT ARE APPROXIMATE. REFER TO GEOTECHNICAL REPORT FOR INFORMATION REGARDING SUBSURFACE CONDITIONS THAT MAY BE PRESENT ALONG THE ALIGNMENT.

BORE HOLE DATA

POTHOLE NO.	NORTHING	EASTING
BH−01	40821.30	59115.28
BH−02	41748.92	59114.78
BH−03	42734.46	59106.49
BH−04	43608.03	59107.18
BH−05	44412.60	59102.48
BH−06	45218.94	59104.94
BH−07	45900.00	59109.55
BH−08	46057.96	59134.58

BORE HOLE DATA

POTHOLE NO.	NORTHING	EASTING
BH−09	47050.97	59126.28
BH−10	47778.53	59104.55
BH−11	48455.95	59099.95
BH−13	49455.92	59079.27
BH−14	49517.10	59170.61
BH−15	50388.66	59176.90
BH−16	51237.89	59178.16

POTHOLE NOTES:

1. SEE PP SHEETS FOR UTILITY POTHOLE LOCATIONS.
2. SEE C−03 SHEET FOR UTILITY POTHOLE INFORMATION.

EASEMENT AND PARCEL NOTES:

1. THE JVWCD SOUTHWEST AQUEDUCT HAS EXISTING EASEMENTS, WHICH ARE SHOWN BASED ON LINEWORK FROM THE JVWCD EASEMENT DESCRIPTIONS.
2. THE BOR EASEMENT LINEWORK IS SHOWN FOR REFERENCE ONLY.
3. THE PROPERTIES AND RIGHTS−OF−WAY ARE SHOWN BASED ON SUBDIVISION PLATS AND LEGAL DESCRIPTIONS.

N

100 0 200 400
SCALE IN FEET

LEGEND
- SURVEY CONTROL POINT
- BORE HOLE
- MONUMENT

380+00 390+00 400+00 410+00 420+00 430+00

220 BH-08 BH-09 218 BH-10 216 219 BH-11 215 406 405 BH-13 214 BH-14 213 BH-15 212 BH-16 403 211 404

STAGING AREA AT 12092 S 3200 W

66" SWA-2 EXISTING 78" JA-2

3200 WEST

PP-08 PP-09 PP-10 PP-11 PP-12 PP-13 PP-14

221

RIVERTON SOUTH JORDAN

12600 SOUTH 12130 SOUTH 11800 SOUTH

MATCHLINE STA 375+00 SEE ABOVE

PLAN

IMAGE: HEXAGON

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\0102302_G-07.dwg Plotted: 1/14/2025 3:18 PM By: Jeremy Black

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK REGISTERED STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

REVIEW CHECKED T. OLSEN APPROVED J. LUETTINGER

DESIGN DESIGN L. MINCK DRAWN J. BLACK

GENERAL

OVERALL DRAWING INDEX MAP

DATE: JANUARY 2025 PROJECT NUMBER 010-23-02

DRAWING NO. G-07

SHEET 07 OF 100

SOUTHWEST AQUEDUCT REACH 2 OVERALL PIPELINE PROFILE AND HYDROSTATIC TEST DATA

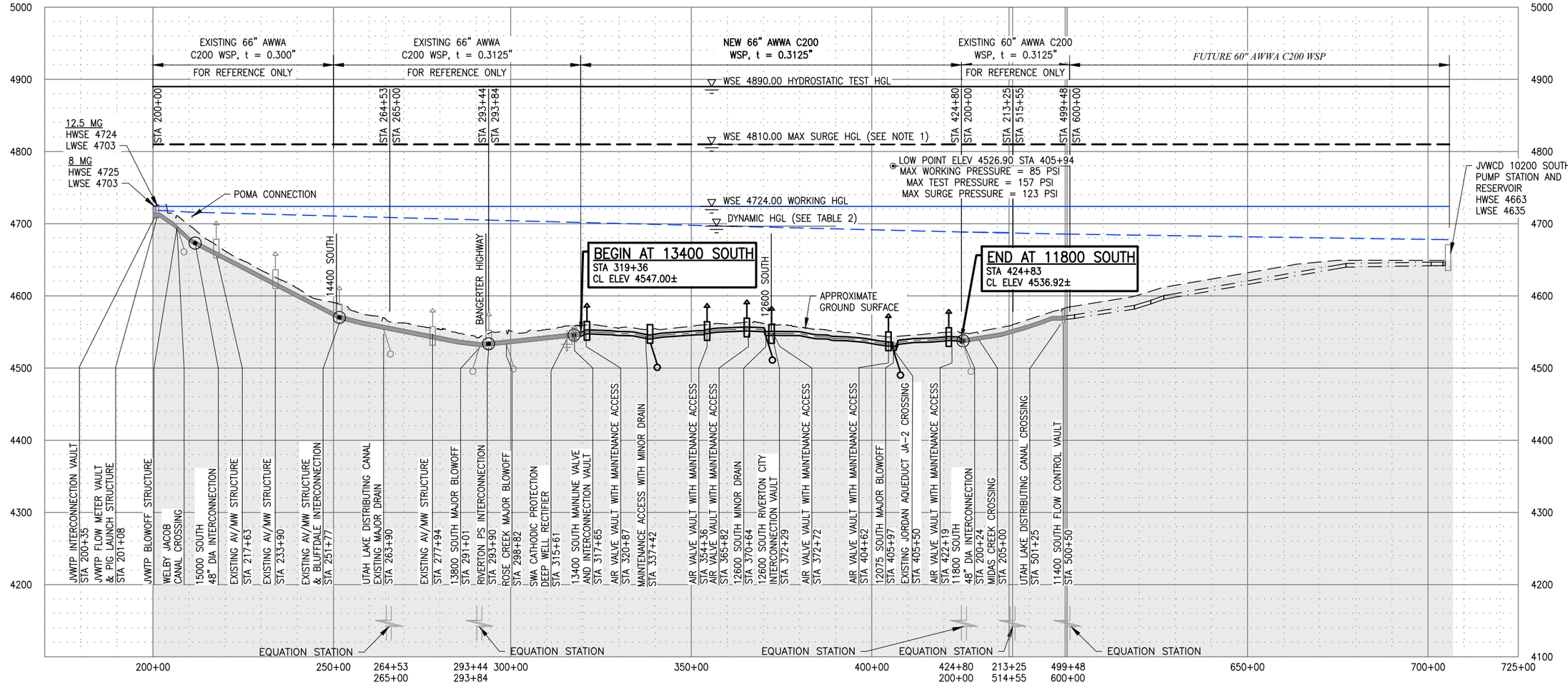


TABLE 1 HYDRAULIC CAPACITY	
EXISTING JVWTP CAPACITY	180 mgd (279 cfs)
FUTURE JVWTP CAPACITY	255 mgd (395 cfs)
JA–2 DESIGN CAPACITY, SEE NOTE 3	155 mgd (240 cfs)
SWA DESIGN CAPACITY	100 mgd (155 cfs)
CWP DESIGN CAPACITY	22.6 mgd (35 cfs)
AVE. PEAK DAY DEMAND WATER SURFACE ELEVATION AT JVWTP	4718.5 feet
HAZEN WILLIAMS "C"	120

LEGEND:

INTERCONNECTION	⊙	DYNAMIC HGL	– – – –
AIR VALVE	↑	WORKING HGL	———
BLOW–OFF	↓	HYDROSTATIC TEST HGL	———
VAULT	□	MAX SURGE HGL	– – – –
MAINLINE VALVE	⋈		

TABLE 2 SWA CONNECTIONS HYDRAULIC CRITERIA					
SWA CONNECTION LOCATION	APPROX STATION	AGENCY RECEIVING SWA WATER	EXPECTED DEMANDS AT CONNECTIONS (SEE NOTE 3)		SWA APPROX HGL
			(mgd)	(cfs)	(ft)
15000 SOUTH	210+86	BLUFFDALE CITY & HERRIMAN	15.4	23.8	4715.91
14400 SOUTH	251+77	BLUFFDALE CITY & HERRIMAN	16.4	25.4	4710.56
RIVERTON PUMP STATION	293+90	RIVERTON CITY	1.7	2.6	4705.07
13400 SOUTH	317+03	HERRIMAN	5.1	7.9	4701.76
12600 SOUTH	373+26	HERRIMAN & RIVERTON CITY	1.5	2.3	4695.04
11800 SOUTH	200+24	HERRIMAN & SOUTH JORDAN	25.4	39.3	4688.58
11400 SOUTH	500+50	RIVERTON CITY & SOUTH JORDAN	12.4	19.2	4685.73
10200 SOUTH	718+00	SOUTH JORDAN & WEST JORDAN	45.2	70	4677.90

NOTES:

1. BASED UPON DATA PROVIDED IN "JVWCD SURGE ANALYSIS – SOUTHWEST BOOSTER PUMP STATION" BY CH2M HILL DATED AUGUST 21, 2006.
2. ELEVATIONS REFERENCED TO NAVD 88 VERTICAL DATUM.
3. EXPECTED DEMANDS WERE OBTAINED FROM THE JVWCD 2065 MAX DAY WATER MODEL AND DRAFT WATER MASTER PLAN BY BROWN & CALDWELL, 2024.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED T. OLSEN APPROVED J. LUETTINGER

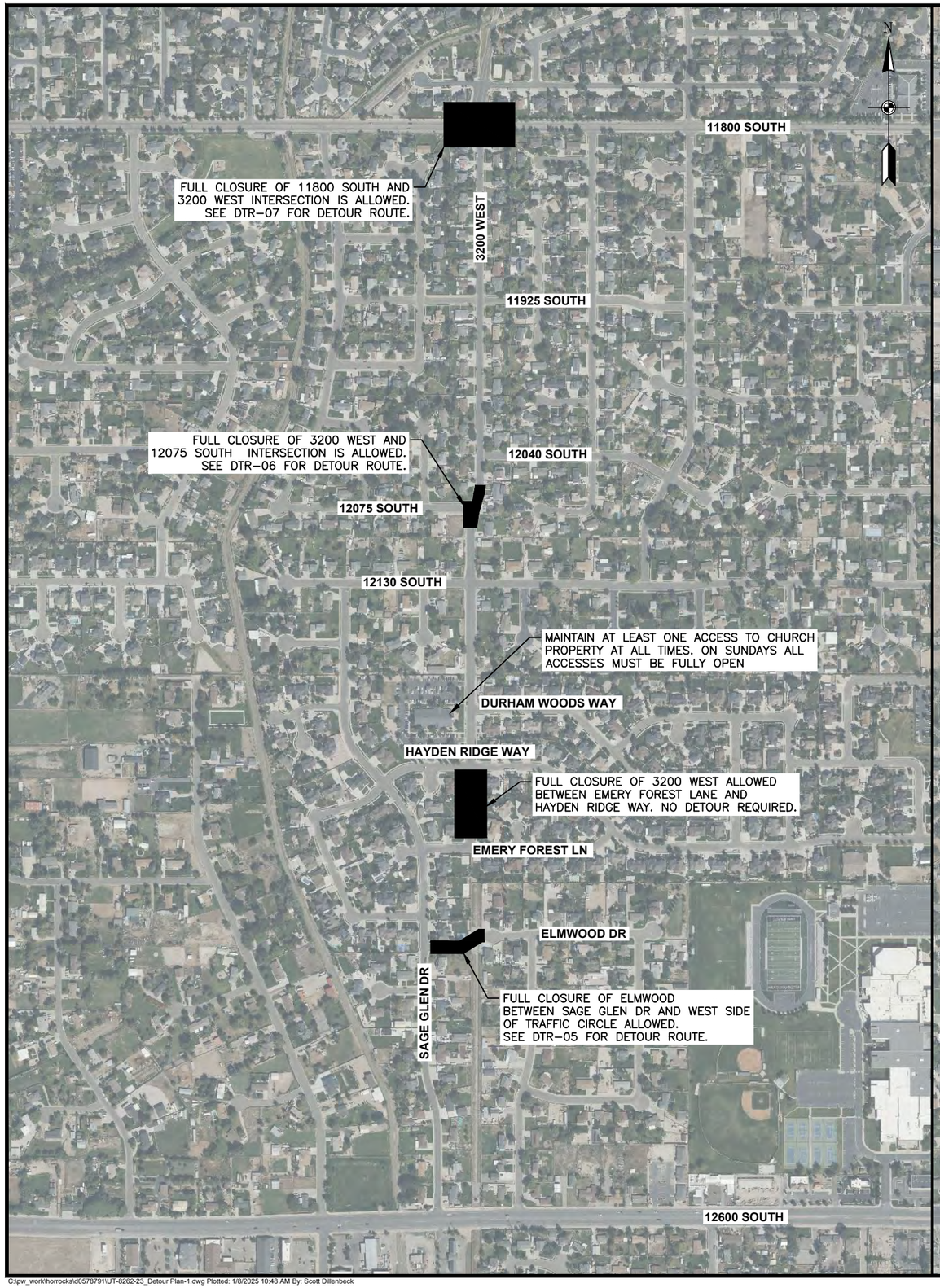
DESIGN DESIGN L. MINCK DRAWN J. BLACK

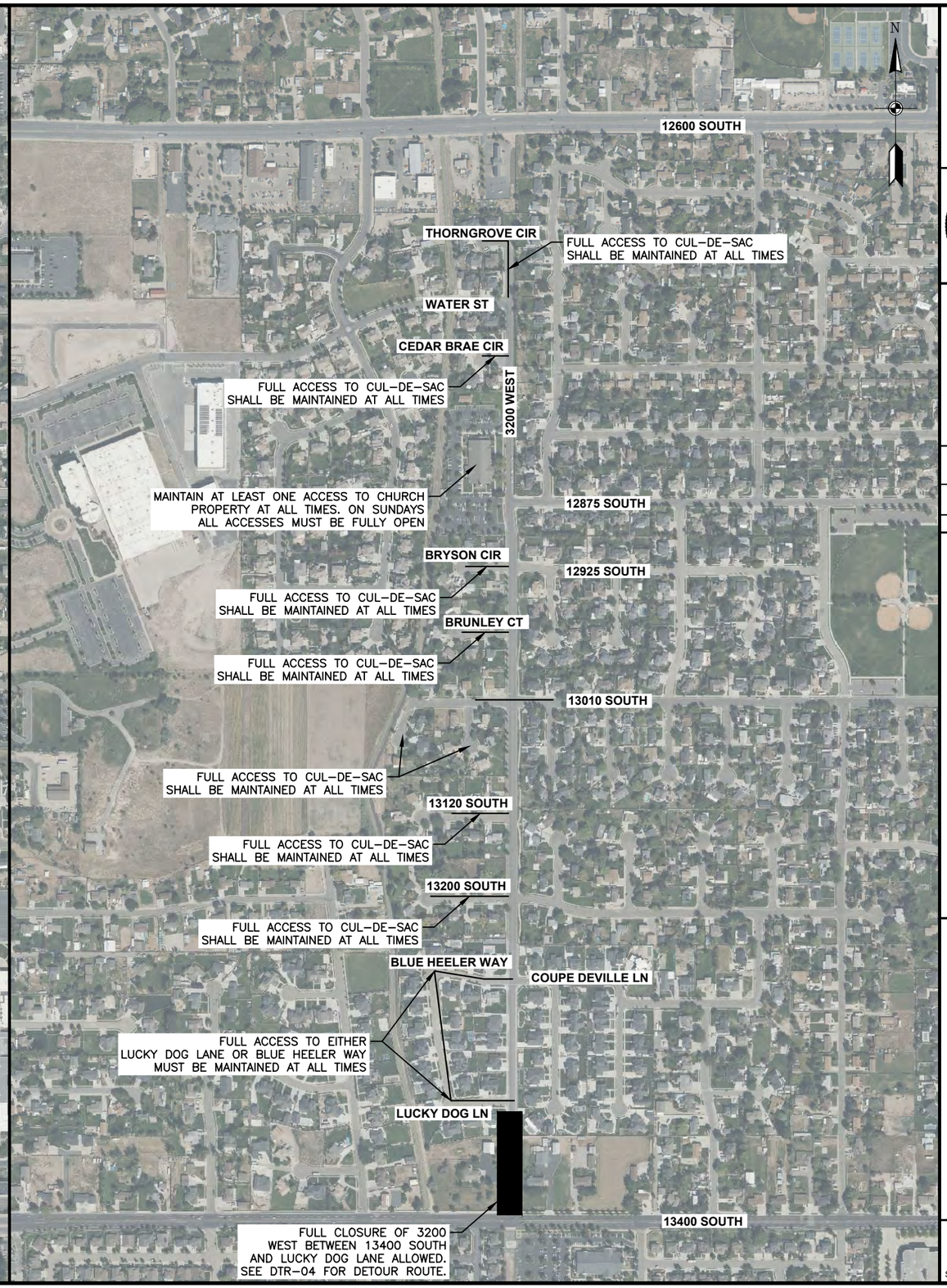
GENERAL
OVERALL SWA-2 HYDRAULIC PROFILE AND DESIGN CRITERIA

DATE: JANUARY 2025 PROJECT NUMBER 010-23-02

DRAWING NO. G-08

SHEET 08 OF 100





Horrocks.

PROFESSIONAL ENGINEER No. 9025190 DANIEL JAMES THURGOOD LICENSING STATE OF UTAH
01/10/2025

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

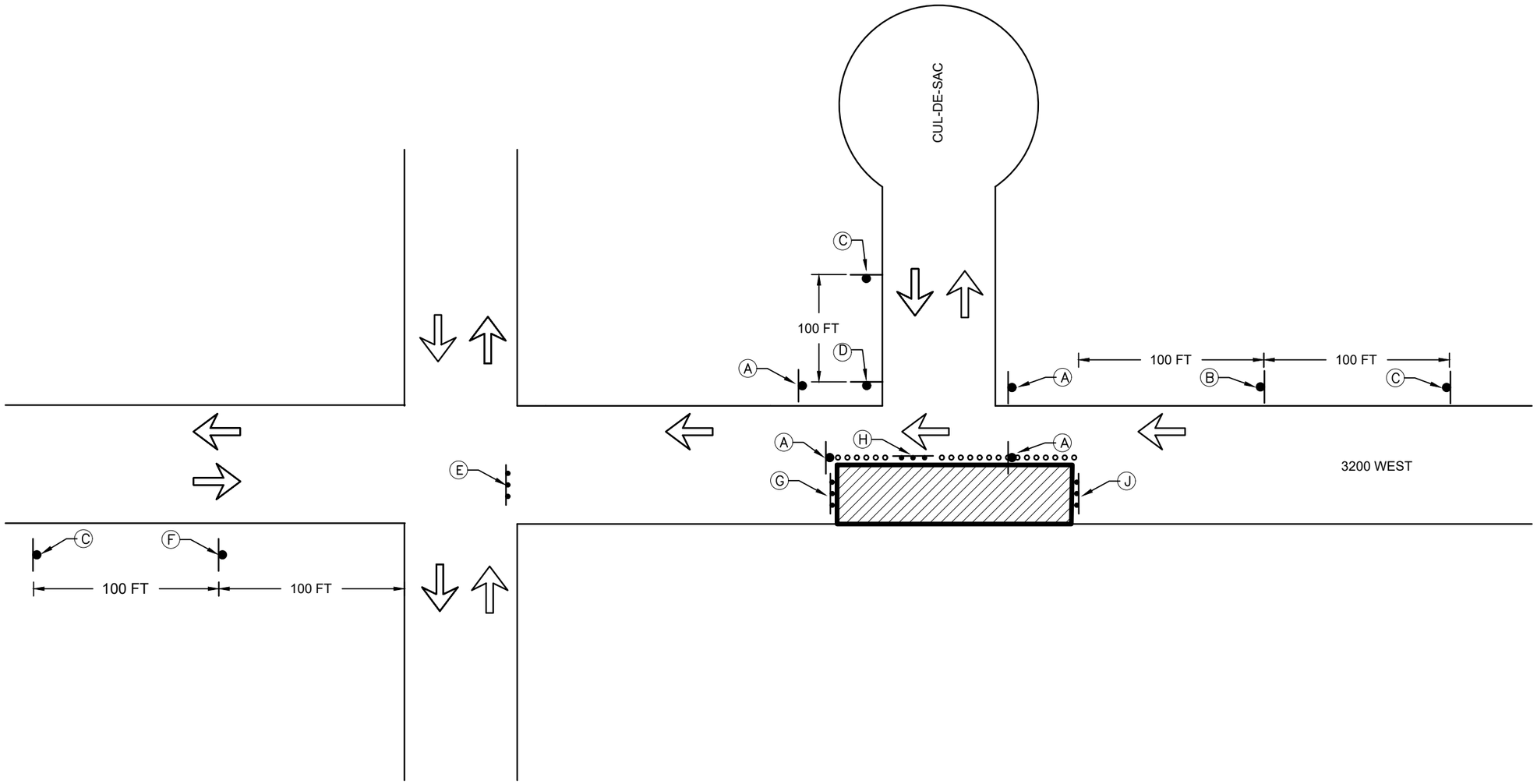
DESIGN C. WELLER
DRAWN S. DILLENBECK
CHECKED D. THURGOOD
APPROVED J. LUETTINGER
REVIEW

JVWCD AQUEDUCT DETOUR LOCATION PLAN

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
DTR-01
SHEET 9 OF 100

C:\pw_work\horrocks\d0578791\UT-8262-23_Detour Plan-1.dwg Plotted: 1/8/2025 10:48 AM By: Scott Dillenbeck



NOTES:

1. ROLLING CLOSURE SHOULD BE A MAXIMUM OF 500 FEET.
2. ADD OR ADJUST DETOUR SIGNS AS NEEDED.
3. MAINTAIN CUL-DE-SAC ACCESSES AT ALL TIMES.

- WORK ZONE
- TEMPORARY SIGN
- TYPE 3 BARRICADE
- CHANNELIZING DEVICES
- TRAVEL DIRECTION

A — R5-1, 30" X 30" — DO NOT ENTER

B — W20-4, 48" X 48" — ONE LANE ROAD AHEAD

C — W20-1, 48" X 48" — ROAD WORK AHEAD

D — R3-2, 24" X 24"

E — R11-3A, 60" X 30" + M4-10R, 48" X 18", MOUNTED ON TYPE 3 BARRICADE — ROAD CLOSED TO THRU TRAFFIC / DETOUR

F — W20-3, 48" X 48" — ROAD CLOSED AHEAD

G — R11-2, 48" X 30", MOUNTED ON TYPE 3 BARRICADE — ROAD CLOSED

H — M4-10R, 48" X 18", MOUNTED ON TYPE 3 BARRICADE — DETOUR

J — TYPE 3 BARRICADE

Horrocks.

PROFESSIONAL ENGINEER — No. 9025190 — DANIEL JAMES THURGOOD — LICENSING — STATE OF UTAH — 01/10/2025

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN G. BLANTHORN
DRAWN G. BLANTHORN
REVIEW
CHECKED D. THURGOOD
APPROVED J. LUETTINGER

JVWCD AQUEDUCT DETOUR
ROLLING CLOSURE TYPICAL DETAIL-1

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
DTR-02
SHEET 10 OF 100

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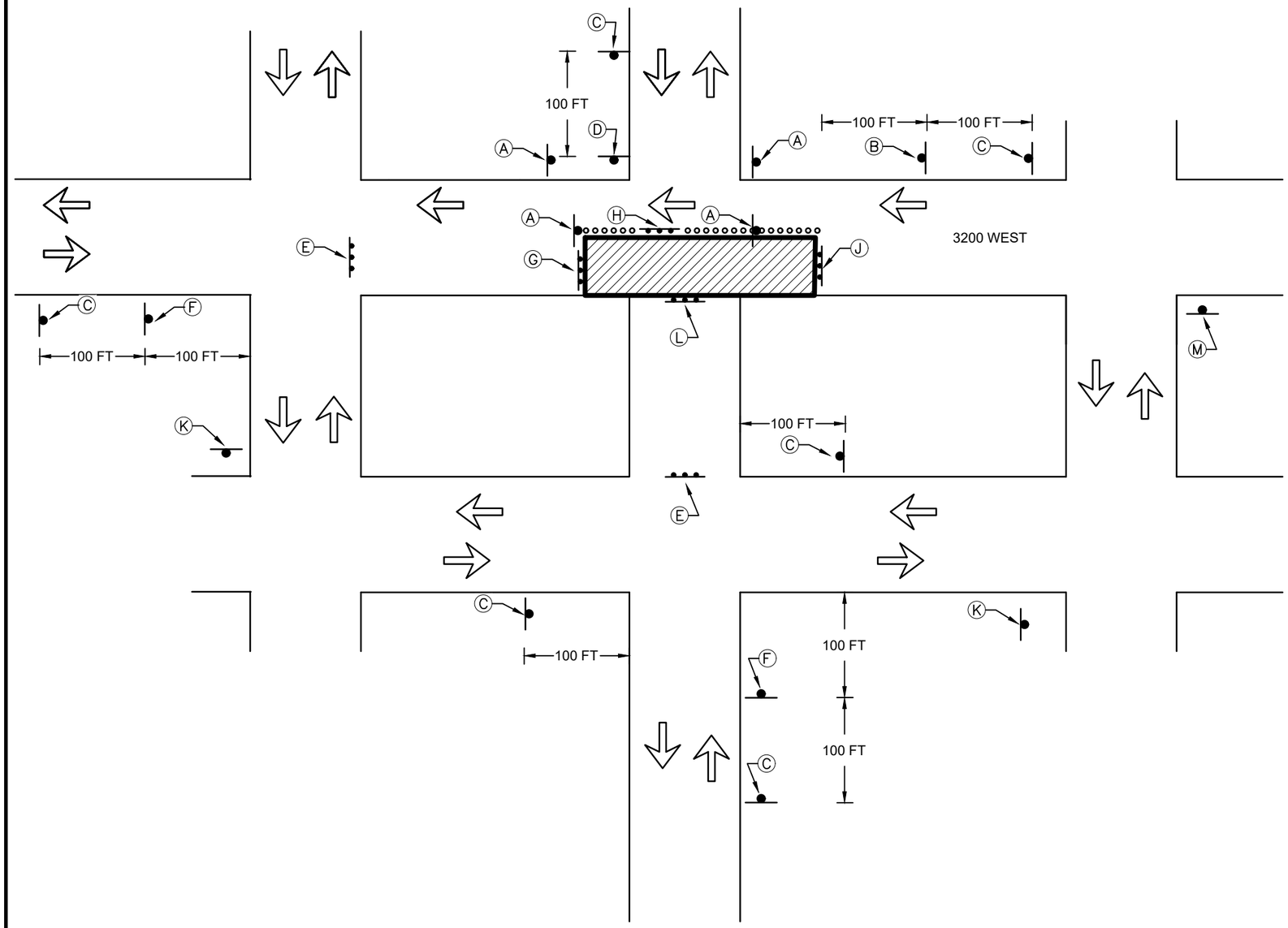


A


R5-1
30" X 30"

B


W20-4
48" X 48"

C


W20-1
48" X 48"

D

R3-2
24" X 24"

E


R11-3A
60" X 30"
M4-10R
48" X 18"
MOUNTED ON
TYPE 3 BARRICADE

F

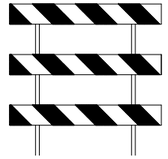

W20-3
48" X 48"

G


R11-2
60" X 30"
MOUNTED ON
TYPE 3 BARRICADE

H


M4-10R
48" X 18"
MOUNTED ON
TYPE 3 BARRICADE

J

TYPE 3 BARRICADE

K


M4-9L
30" X 24"

L


R11-2
60" X 30"
MOUNTED ON
TYPE 3 BARRICADE

M


M4-9R
30" X 24"

NOTES:
1. ROLLING CLOSURE SHOULD BE A MAXIMUM OF 500 FEET.
2. ADD OR ADJUST DETOUR SIGNS AS NEEDED.
3. MAINTAIN CUL-DE-SAC ACCESSES AT ALL TIMES.

WORK ZONE
TEMPORARY SIGN
TYPE 3 BARRICADE
CHANNELIZING DEVICES
TRAVEL DIRECTION

Horrocks.

PROFESSIONAL ENGINEER No. 9025190 DANIEL JAMES THURGOOD LICENSED STATE OF UTAH 01/10/2025

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED D. THURGOOD APPROVED J. LUETTINGER

DESIGN DESIGN G. BLANTHORN DRAWN G. BLANTHORN

JVWCD AQUEDUCT DETOUR
ROLLING CLOSURE TYPICAL DETAIL-2

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
DTR-03
SHEET 11 OF 100

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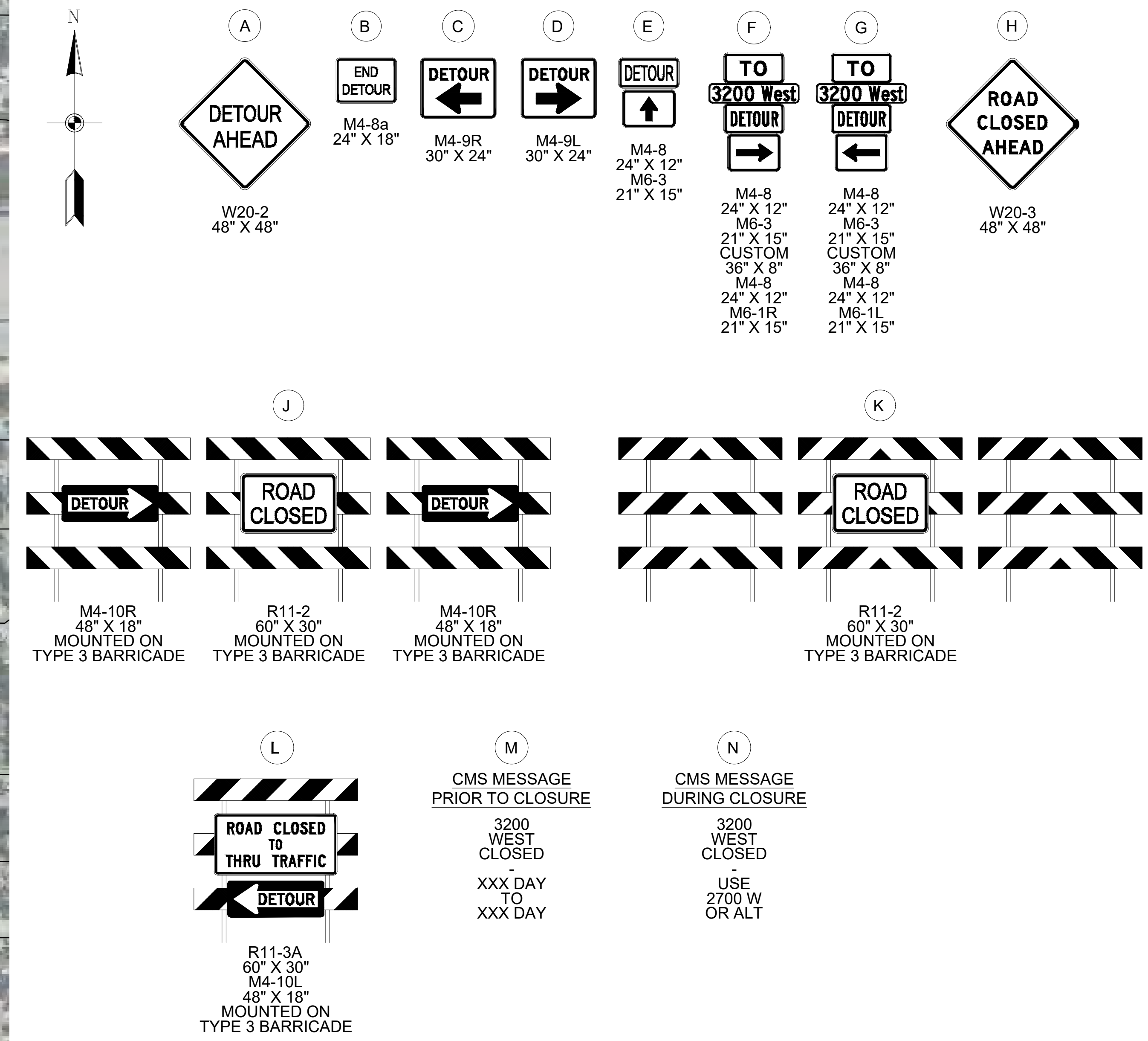
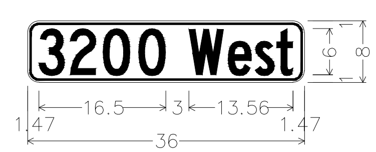




1.50" Radius, 0.25" Border, 0.25" Indent, Black on Orange;
"3200 West", C 2K;

SIGN DETAIL

LEGEND	
(hatched box)	WORK ZONE
(heavy line)	DETOUR ROUTE
(dot)	TEMPORARY SIGN
(dots)	TYPE 3 BARRICADE
(circle)	PCMS (PORTABLE CHANGEABLE MESSAGE SIGN)

NOTES:

1. MAINTAIN A MINIMUM SIGN SPACING OF 350 FT ON 13400 SOUTH AND 2700 WEST, AND 100 FT ON ROADS WITH A POSTED SPEED LIMIT OF 25 MPH. SIGN SPACING APPLIES BETWEEN SIGNS AND IN ADVANCE OF INTERSECTIONS AND WORK ZONE.
2. MAINTAIN RESIDENTIAL ACCESS AT ALL TIMES.

Horrocks.

PROFESSIONAL ENGINEER No. 9625190 DANIEL JAMES THURGOOD STATE OF UTAH 01/10/2025

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON, UT

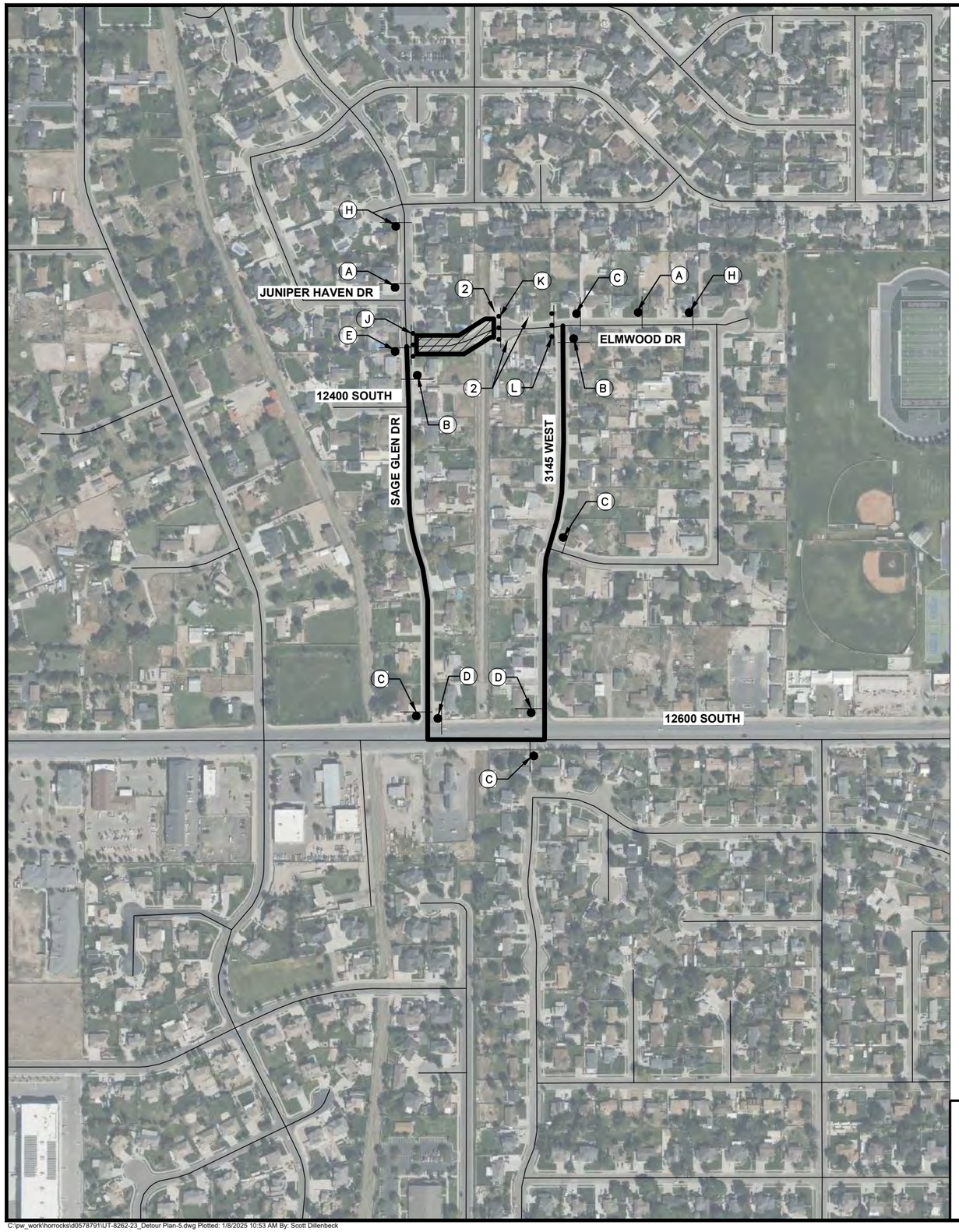
DESIGN: DESIGN G. BLANTHORN; DRAWN S. DILLENBECK
REVIEW: CHECKED D. THURGOOD; APPROVED J. LUETTINGER

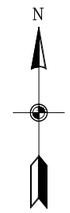
3200 WEST AT 13400 SOUTH DETOUR PLAN

DATE: JANUARY 2025
PROJECT NUMBER: 010-23-02

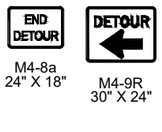
DRAWING NO. DTR-04

SHEET 12 OF 100





W20-2
48" X 48"



M4-8a
24" X 18"

M4-9R
30" X 24"

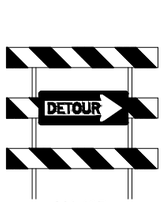
M4-9L
30" X 24"

M4-8
24" X 12"
M6-3
21" X 15"

W20-3
48" X 48"

M4-10R
48" X 18"
MOUNTED ON
TYPE 3 BARRICADE

R11-2
60" X 30"
MOUNTED ON
TYPE 3 BARRICADE



M4-10R
48" X 18"
MOUNTED ON
TYPE 3 BARRICADE

R11-2
60" X 30"
MOUNTED ON
TYPE 3 BARRICADE

R11-4
60" X 30"
M4-10L
48" X 18"
MOUNTED ON
TYPE 3 BARRICADE

WORK ZONE

DETOUR ROUTE

TEMPORARY SIGN

TYPE 3 BARRICADE

NOTES:

1. MAINTAIN A MINIMUM SIGN SPACING OF 350 FT ON 12600 SOUTH AND 100 FT ON ROADS WITH A POSTED SPEED LIMIT OF 25 MPH. SIGN SPACING APPLIES BETWEEN SIGNS AND IN ADVANCE OF INTERSECTIONS AND WORK ZONE.
2. MAINTAIN RESIDENTIAL ACCESS AT ALL TIMES.

Horrocks.

PROFESSIONAL ENGINEER
No. 9025190
DANIEL JAMES THURGOOD
LICENSING
STATE OF UTAH

01/10/2025

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED D. THURGOOD
APPROVED J. LUETTINGER

DESIGN
DESIGN K. LEJA
DRAWN S. DILLENBECK

ELMWOOD DR DETOUR PLAN

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
DTR-05
SHEET 13 OF 100

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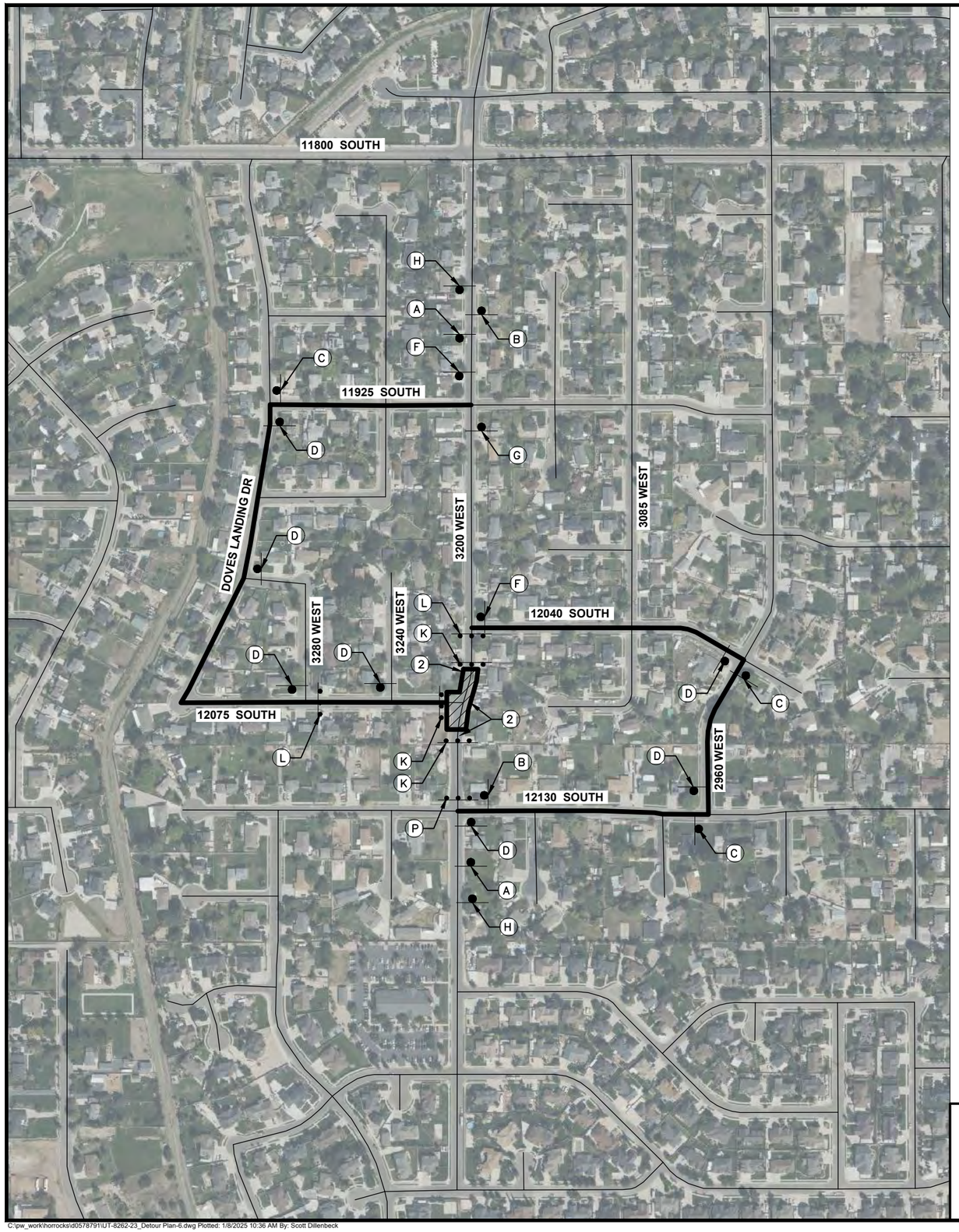


N

A
DETOUR AHEAD
W20-2
48" X 48"

B
END DETOUR
M4-8a
24" X 18"

C
DETOUR
M4-9R
30" X 24"

D
DETOUR
M4-9L
30" X 24"

E
DETOUR
M4-8
24" X 12"
M6-3
21" X 15"

F
TO 12075 South
DETOUR
M4-8
24" X 12"
M6-3
21" X 15"
CUSTOM
48" X 8"
M4-8
24" X 12"
M6-1R
21" X 15"

G
TO 12075 South
DETOUR
M4-8
24" X 12"
M6-3
21" X 15"
CUSTOM
48" X 8"
M4-8
24" X 12"
M6-1L
21" X 15"

H
ROAD CLOSED AHEAD
W20-3
48" X 48"

L
ROAD CLOSED TO THRU TRAFFIC
DETOUR
R11-4
60" X 30"
M4-10L
48" X 18"
MOUNTED ON
TYPE 3 BARRICADE

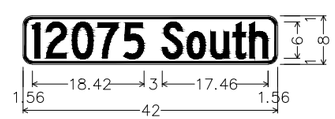
P
ROAD CLOSED TO THRU TRAFFIC
DETOUR
R11-4
60" X 30"
M4-10R
48" X 18"
MOUNTED ON
TYPE 3 BARRICADE

J
DETOUR
M4-10R
48" X 18"
MOUNTED ON
TYPE 3 BARRICADE

ROAD CLOSED
R11-2
60" X 30"
MOUNTED ON
TYPE 3 BARRICADE

DETOUR
M4-10R
48" X 18"
MOUNTED ON
TYPE 3 BARRICADE

K
ROAD CLOSED
R11-2
60" X 30"
MOUNTED ON
TYPE 3 BARRICADE



1.50" Radius, 0.25" Border, 0.25" Indent, Black on Orange;
"12075 South", C 2K;

SIGN DETAIL

WORK ZONE
DETOUR ROUTE
TEMPORARY SIGN
TYPE 3 BARRICADE

NOTES:
1. MAINTAIN A MINIMUM SIGN SPACING OF 100 FT BETWEEN SIGNS AND IN ADVANCE OF INTERSECTIONS OR WORK ZONE.
2. MAINTAIN RESIDENTIAL ACCESS AT ALL TIMES. MAINTAIN AT LEAST ONE DRIVEWAY TO EACH RESIDENCE.

Horrocks.

PROFESSIONAL ENGINEER No. 9025190 DANIEL JAMES THURGOOD LICENSED STATE OF UTAH
01/10/2025

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED D. THURGOOD APPROVED J. LUETTINGER

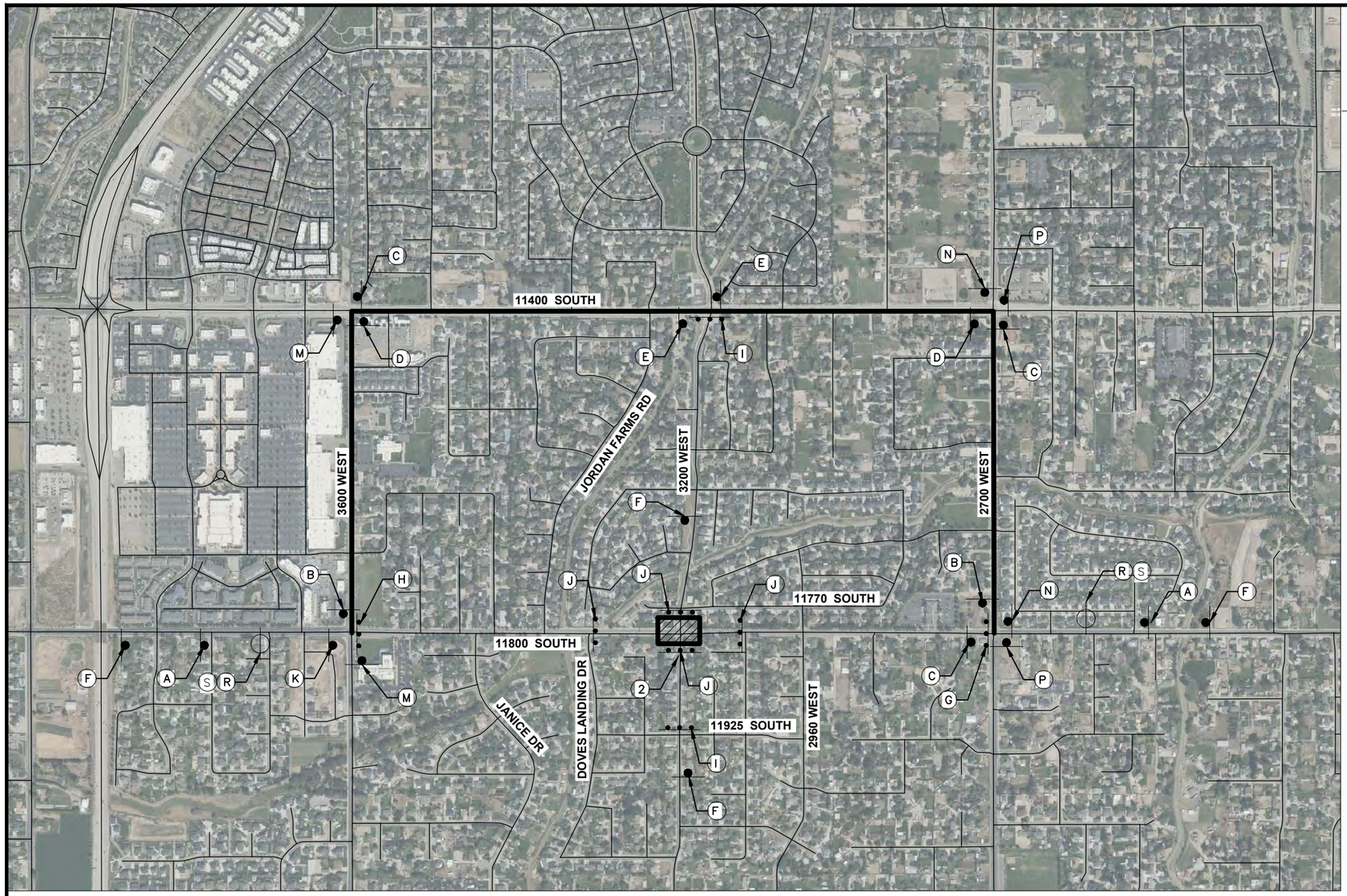
DESIGN DESIGN K. LEJA DRAWN S. DILLENBECK

3200 WEST AT 12075 SOUTH DETOUR PLAN

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO. DTR-06
SHEET 14 OF 100

C:\pw_work\horrocks\d0578791\UT-8262-23_Detour Plan-6.dwg Plotted: 1/8/2025 10:36 AM By: Scott Dillenbeck



N

(A) DETOUR AHEAD — W20-2, 48" X 48"

(B) END DETOUR — M4-8a, 24" X 18"

(C) DETOUR — M4-9R, 30" X 24"

(D) DETOUR — M4-9L, 30" X 24"

(E) DETOUR — M4-8, 24" X 12", M6-3, 21" X 15"

(F) ROAD CLOSED AHEAD — W20-3, 48" X 48"

(G) ROAD CLOSED TO THRU TRAFFIC / DETOUR — R11-3A, 60" X 30", M4-10R, 48" X 18", MOUNTED ON TYPE 3 BARRICADE

(H) ROAD CLOSED TO THRU TRAFFIC / DETOUR — R11-3A, 60" X 30", M4-10L, 48" X 18", MOUNTED ON TYPE 3 BARRICADE

(I) ROAD CLOSED TO THRU TRAFFIC — R11-4, 60" X 30", MOUNTED ON TYPE 3 BARRICADE

(R) CMS MESSAGE PRIOR TO CLOSURE: 11800 S / CLOSD AT / 3200 W / - / XXX DAY / TO / XXX DAY

(S) CMS MESSAGE DURING CLOSURE: 11800 S / CLOSD AT / 3200 W / - / USE / 11400 W / OR ALT

(J) ROAD CLOSED — R11-2, 60" X 30", MOUNTED ON TYPE 3 BARRICADE

(K) TO EAST 11800 South DETOUR (←) — M4-8, 24" X 12", M3-2, 24" X 12", CUSTOM 42" X 8", M4-8, 24" X 12", M6-1L, 21" X 15"

(M) TO EAST 11800 South DETOUR (↑) — M4-8, 24" X 12", M3-2, 24" X 12", CUSTOM 42" X 8", M4-8, 24" X 12", M6-3, 21" X 15"

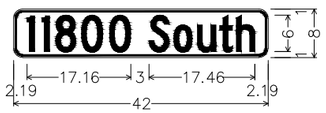
(N) TO WEST 11800 South DETOUR (→) — M4-8, 24" X 12", M3-4, 24" X 12", CUSTOM 42" X 8", M4-8, 24" X 12", M6-1R, 21" X 15"

(P) TO WEST 11800 South DETOUR (↑) — M4-8, 24" X 12", M3-4, 24" X 12", CUSTOM 42" X 8", M4-8, 24" X 12", M6-3, 21" X 15"

WORK ZONE
DETOUR ROUTE
TEMPORARY SIGN
TYPE 3 BARRICADE
PCMS (PORTABLE CHANGEABLE MESSAGE SIGN)

NOTES:

1. MAINTAIN A MINIMUM SIGN SPACING OF 500 FT ON 11400 SOUTH, 350 FT ON 11800 SOUTH, 2700 WEST, AND 3600 WEST, AND 100 FT ON ROADS WITH A POSTED SPEED LIMIT OF 25 MPH. SIGN SPACING APPLIES BETWEEN SIGNS AND IN ADVANCE OF INTERSECTIONS AND WORK ZONE.
2. MAINTAIN RESIDENTIAL ACCESS AT ALL TIMES.



1.50" Radius, 0.25" Border, 0.25" Indent, Black on Orange; "11800 South", C 2K;

SIGN DETAIL

Horrocks.

PROFESSIONAL ENGINEER — No. 9025190 — DANIEL JAMES THURGOOD — LICENSING — STATE OF UTAH — 01/10/2025

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON, UT

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED D. THURGOOD — APPROVED J. LUETTINGER

DESIGN — DESIGN C. WELLER — DRAWN S. DILLENBECK

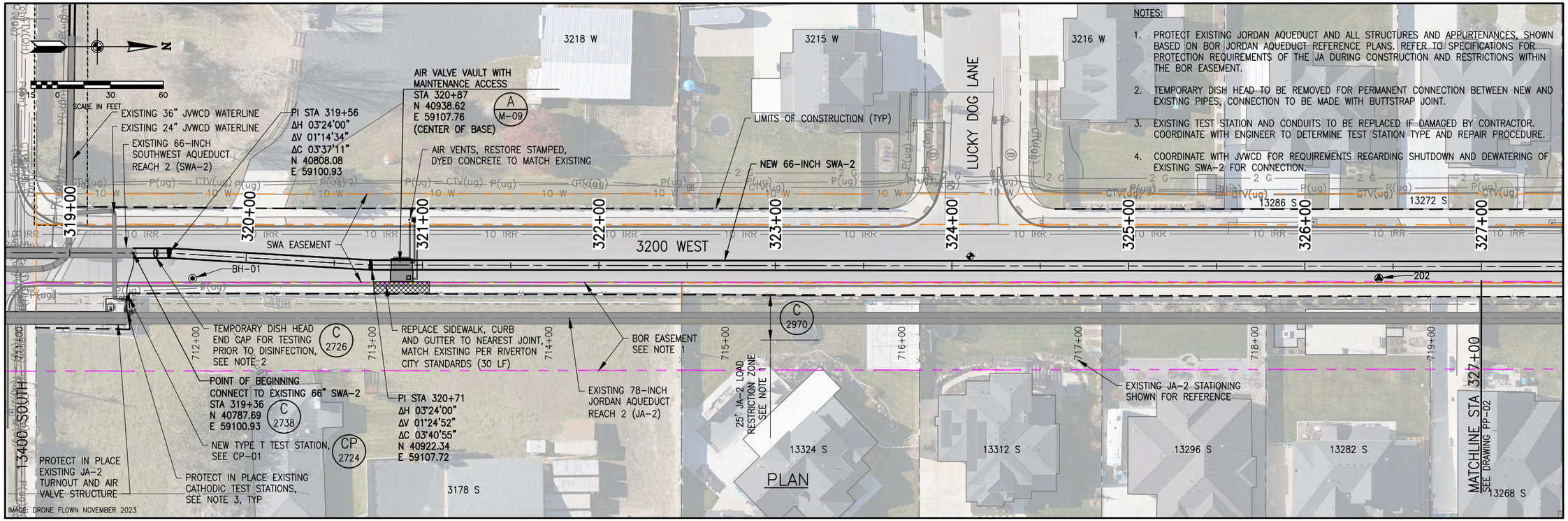
11800 SOUTH AT 3200 WEST DETOUR PLAN

DATE: JANUARY 2025 — PROJECT NUMBER 010-23-02

DRAWING NO. DTR-07

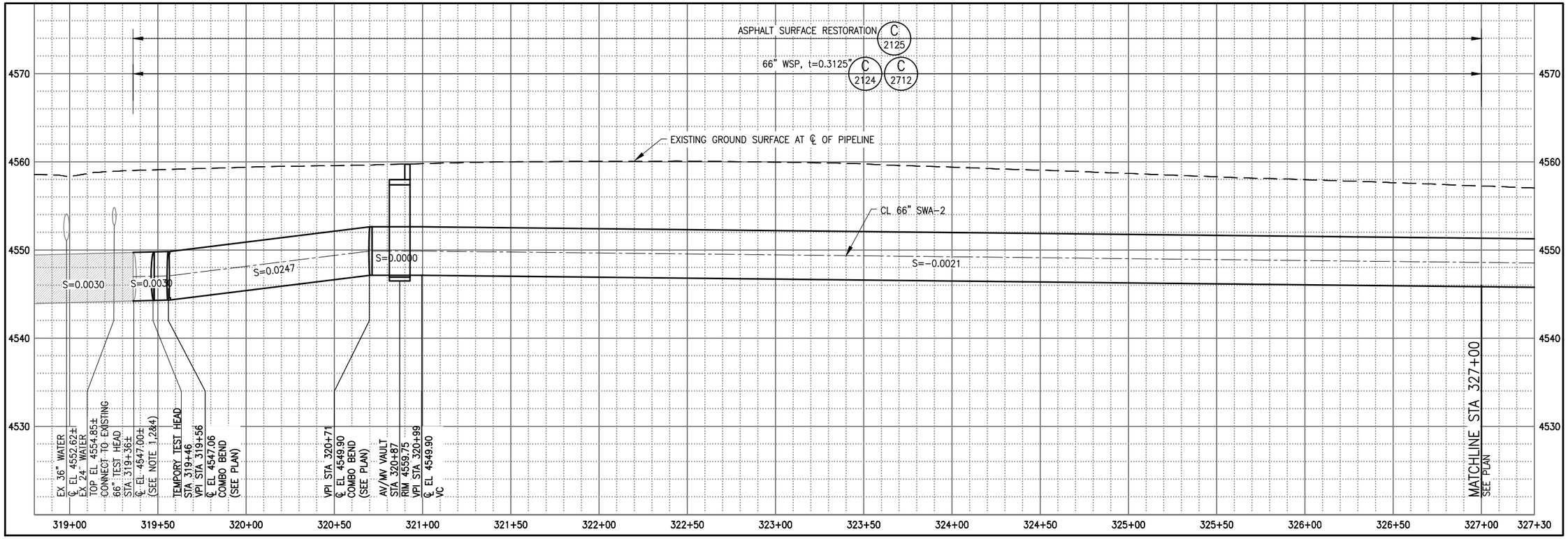
SHEET 15 OF 100

C:\pw_work\horrocks\d0578791\UT-8262-23_Detour Plan-7.dwg Plotted: 1/8/2025 10:33 AM By: Scott Dillenbeck



NOTES:

1. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, SHOWN BASED ON BOR JORDAN AQUEDUCT REFERENCE PLANS. REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS OF THE JA DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
2. TEMPORARY DISH HEAD TO BE REMOVED FOR PERMANENT CONNECTION BETWEEN NEW AND EXISTING PIPES, CONNECTION TO BE MADE WITH BUTTSTRAP JOINT.
3. EXISTING TEST STATION AND CONDUITS TO BE REPLACED IF DAMAGED BY CONTRACTOR. COORDINATE WITH ENGINEER TO DETERMINE TEST STATION TYPE AND REPAIR PROCEDURE.
4. COORDINATE WITH JVWCD FOR REQUIREMENTS REGARDING SHUTDOWN AND DEWATERING OF EXISTING SWA-2 FOR CONNECTION.



BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

PLAN & PROFILE

PLAN & PROFILE - 1

DATE: JANUARY 2025

PROJECT NUMBER 010-23-02

DRAWING NO.
PP-01

SHEET 16 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-01.dwg Plotted: 1/15/2025 9:47 AM By: Jeremy Black

NOTES:

1. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, SHOWN BASED ON BOR JORDAN AQUEDUCT REFERENCE PLANS. REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS OF THE JA DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
2. LOOP UTILITY OVER SWA IF 6" MINIMUM SEPARATION IS NOT AVAILABLE, MAINTAIN 3 FT OF COVER FOR PI AND 4 FT OF COVER FOR WATERLINES, COORDINATE WITH ENGINEER ON UTILITY RELOCATION.
3. EXISTING TEST STATION, RECTIFIER, AND BURIED CONDUITS TO BE REPLACED IF DAMAGED BY CONTRACTOR. COORDINATE WITH ENGINEER TO DETERMINE TEST STATION TYPE AND REPAIR PROCEDURE.

N

SCALE IN FEET 15 0 30 60

13258 S
13272 S
13242 S
13208 S
13268 S
13254 S
13238 S
3188 W
3211 W
3212 W
3195 W
13200 SOUTH
13174 S

BLUE HEELER WAY
COUPE DEVILLE LANE
3200 WEST

PI STA 329+53
ΔH 03°11'23"
ΔV 00°30'54"
ΔC 03°13'52"
N 41804.74
E 59108.81

PI STA 330+34
ΔH 03°31'47"
N 41885.84
E 59113.68

SWA EASEMENT
LIMITS OF CONSTRUCTION (TYP)
NEW 66-INCH SWA-2
REPLACE CONCRETE WATERWAY TO NEAREST JOINT, PER RIVERTON CITY STANDARDS (20 LF)
EXISTING JA-2 STATIONING SHOWN FOR REFERENCE
EXISTING 78-INCH JORDAN AQUEDUCT REACH 2 (JA-2)
NEW TYPE T TEST STATION, SEE CP-01
PROTECT IN PLACE EXISTING JA-2 CATHODIC PROTECTION RECTIFIER AND TEST STATION, SEE NOTE 3
BOR EASEMENT SEE NOTE 1
25' JA-2 EOAD RESTRICTION ZONE SEE NOTE 1
TH-02
TH-03
TH-04
TH-05
TH-06
BH-02
407
203
C 2992
C 2970
CP 2724

MATCHLINE STA 327+00
SEE DRAWING PP-01

MATCHLINE STA 335+00
SEE DRAWING PP-03

IMAGE: DRONE FLOWN NOVEMBER 2023

PLAN

ASPHALT SURFACE RESTORATION C 2125
66" WSP, t=0.3125" C 2124 C 2712
EXISTING GROUND SURFACE AT ℄ OF PIPELINE
CL 66" SWA-2
5' MIN COVER
16" MIN CLEARANCE REQ'D
12" MIN CLEARANCE
1'-6" MIN CLEARANCE
S=-0.0021
S=-0.0099
S=-0.0010
S=-0.0010
S=-0.0010
S=-0.0103

MATCHLINE STA 327+00
SEE PLAN
VPI STA 327+90
℄ EL 4548.48
VC
VPI STA 329+53
℄ EL 4546.85
COMBO BEND
(SEE PLAN)
EX 8" IRRIGATION SEE NOTE 2
EX 8" SANITARY SEWER (IN CASING)
IE 4537.89±
EX 2" FIBER OPTIC
EX 10" WATER
TOP EL 4551.50±
EX CABLE TV
EXIST POWER
EX TELEPHONE
EX 4" GAS
TOP EL 4553.82±
EX 3" POWER
TOP EL 4554.17±
EX FIBER OPTIC
EX 8" IRRIGATION
EX 8" SANITARY SEWER IN 14" STEEL CASING
IE 4541.17±
VPI STA 334+00
℄ EL 4546.40
VC
EX 8" WATER
TOP EL 4551.15±
EX 24" STORM DRAIN
IE 4551.47±
EX 4" POWER
TOP EL 4553.01±
MATCHLINE STA 335+00
SEE PLAN

4570 4560 4550 4540 4530 4520

327+00 327+50 328+00 328+50 329+00 329+50 330+00 330+50 331+00 331+50 332+00 332+50 333+00 333+50 334+00 334+50 335+00 335+30

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

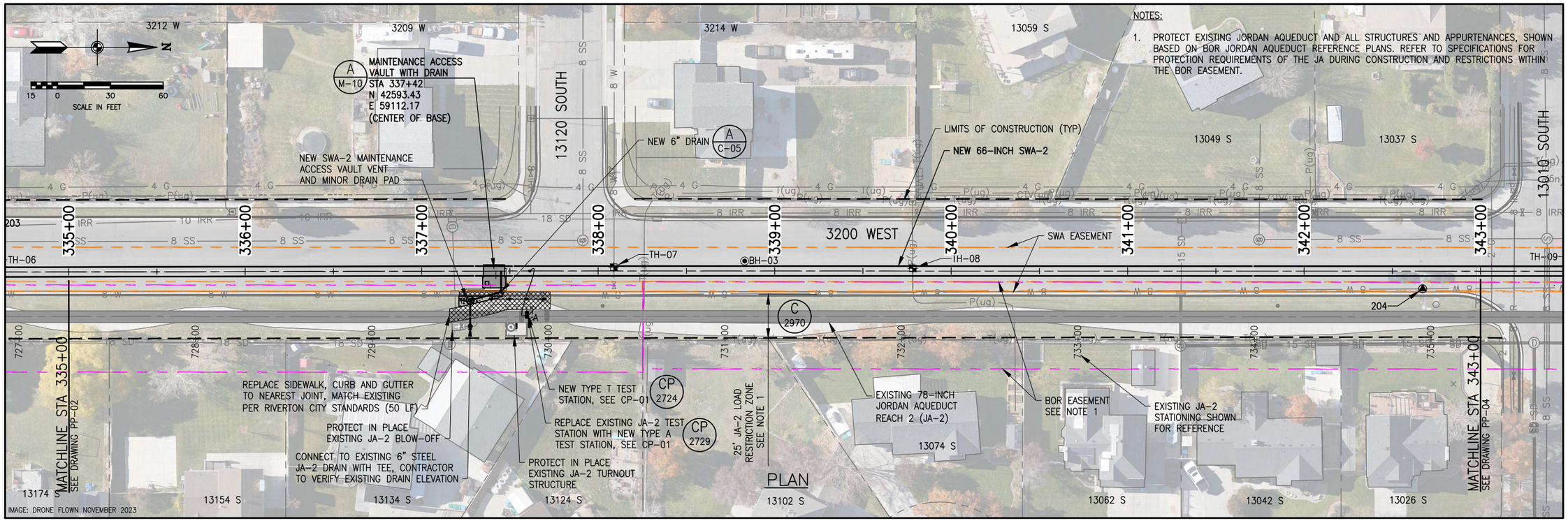
PLAN & PROFILE

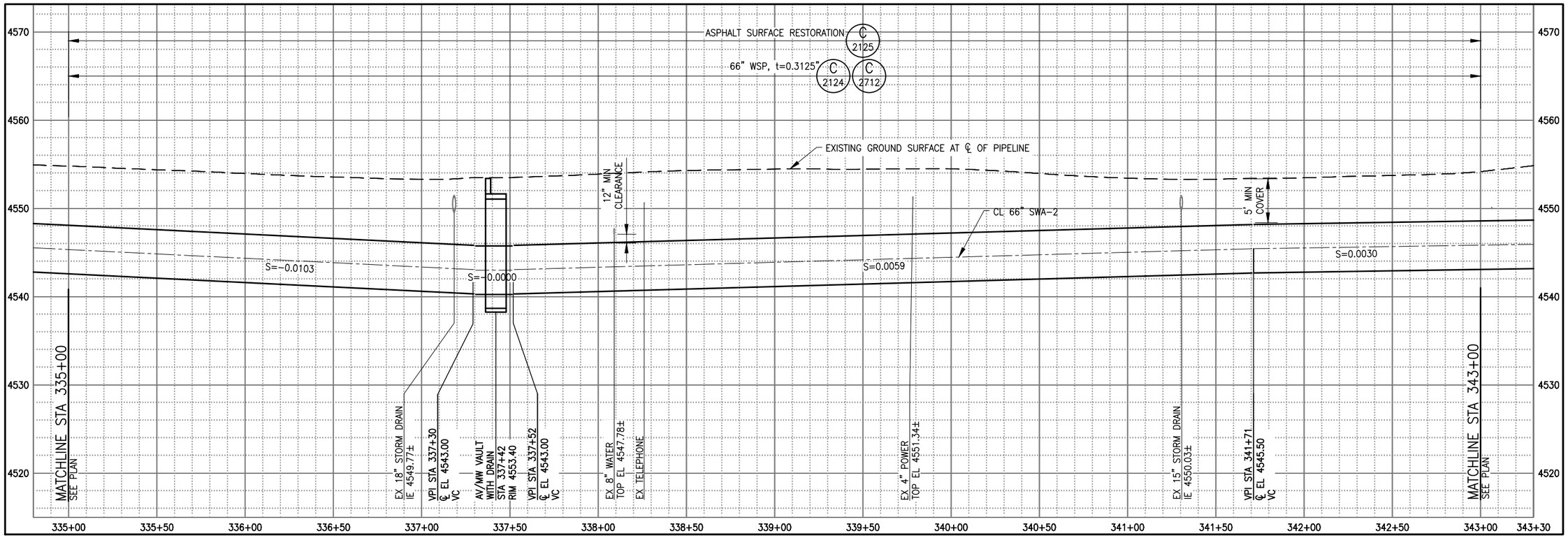
PLAN & PROFILE - 2

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
PP-02
SHEET 17 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-02.dwg Plotted: 1/15/2025 9:49 AM By: Jeremy Black





BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

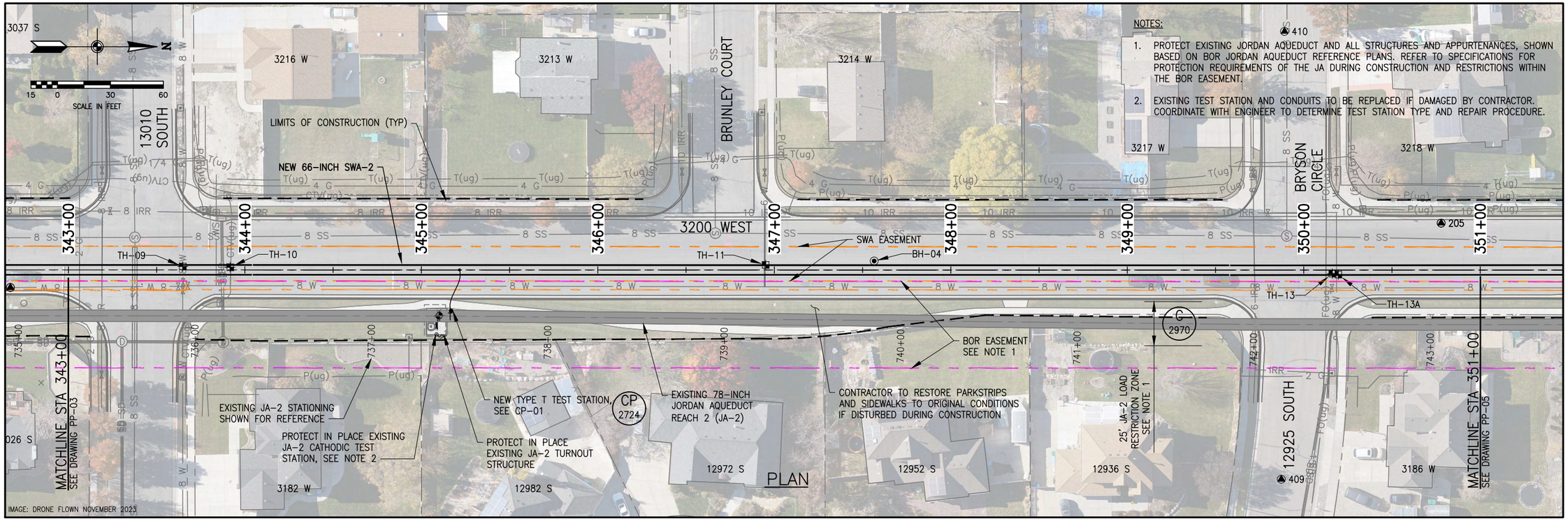
JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

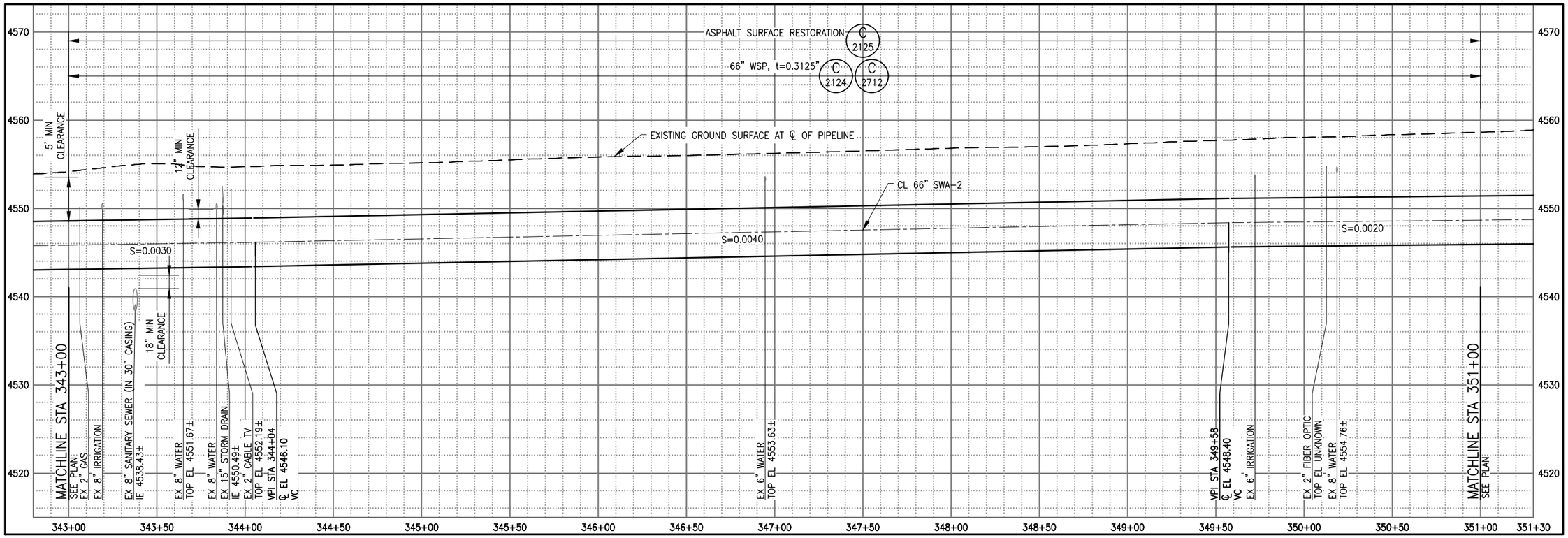
DESIGN L. MINCK
DRAWN J. BLACK
REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

PLAN & PROFILE
PLAN & PROFILE - 3
DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO. PP-03
SHEET 18 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-03.dwg Plotted: 1/16/2025 3:23 PM By: Jeremy Black





BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK
DRAWN J. BLACK
REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

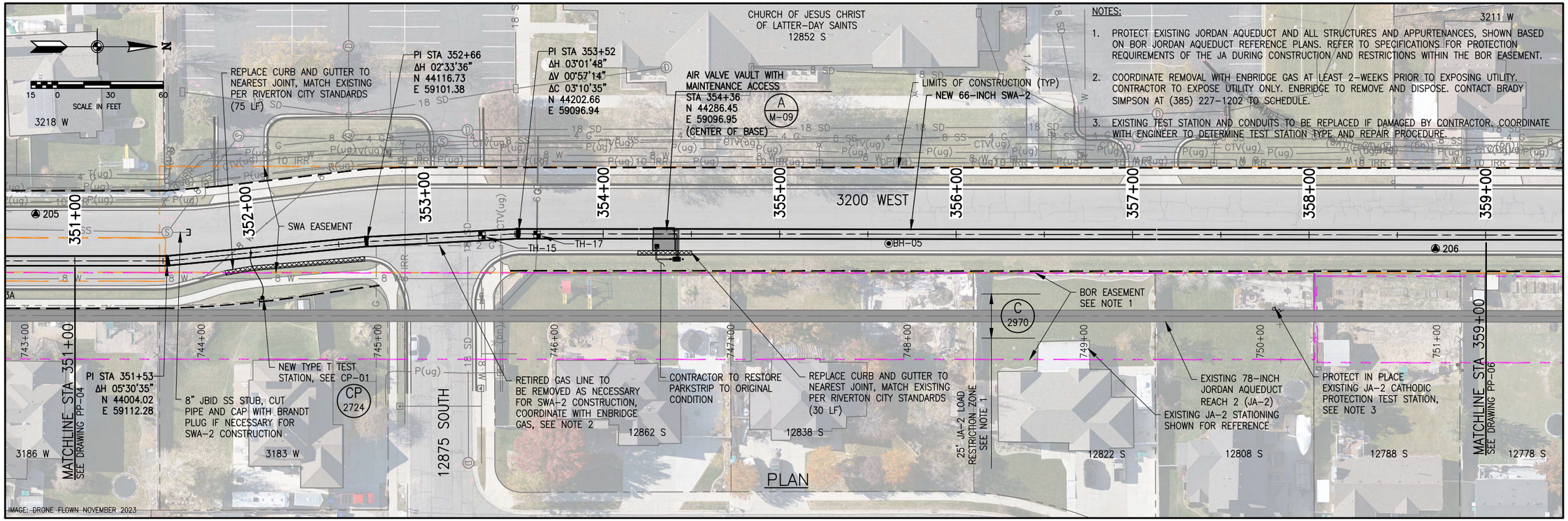
PLAN & PROFILE

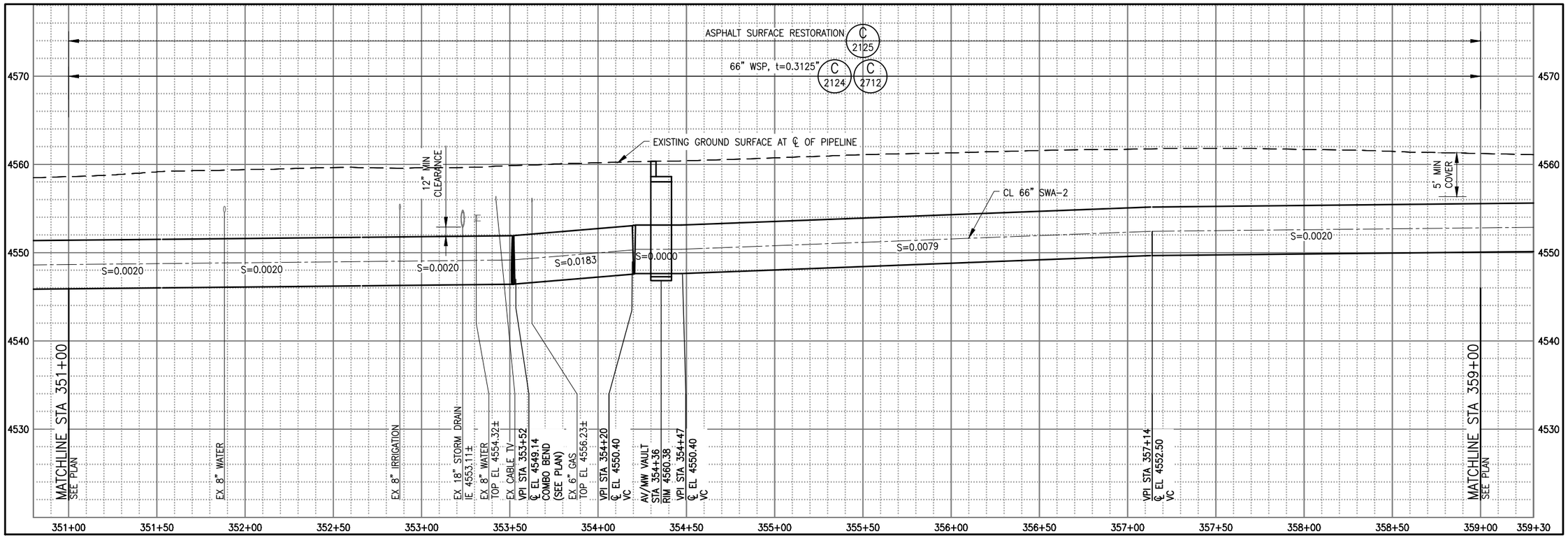
PLAN & PROFILE - 4

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
PP-04
SHEET 19 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-04.dwg Plotted: 1/15/2025 9:55 AM By: Jeremy Black





BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

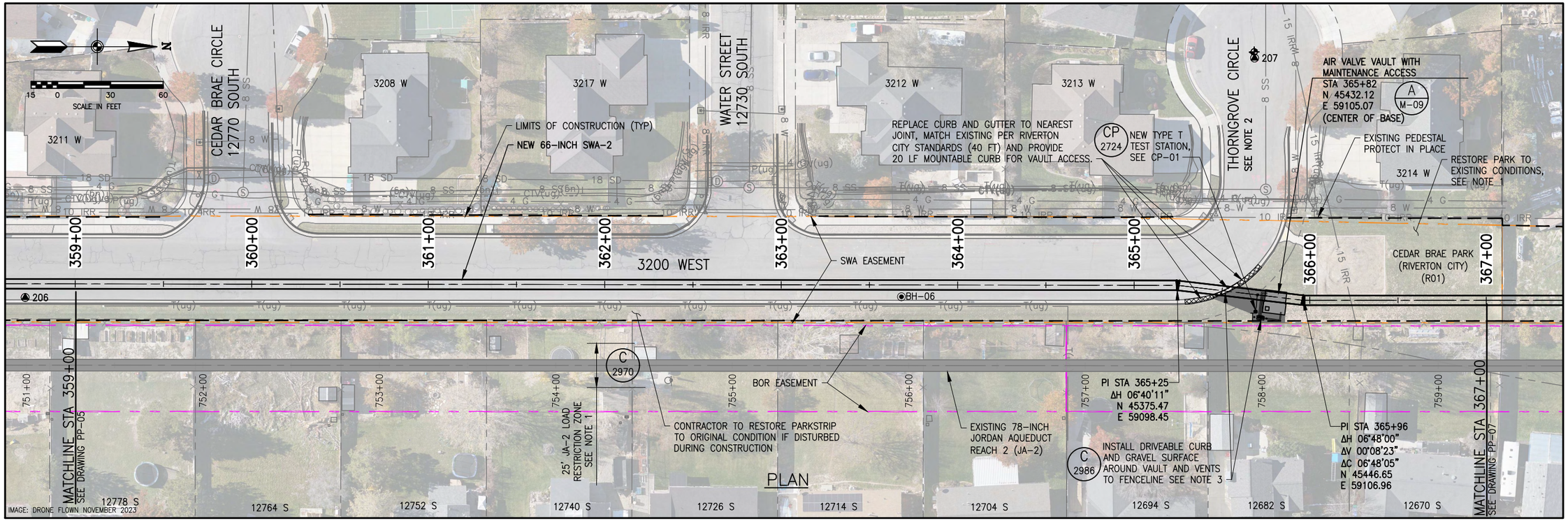
DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

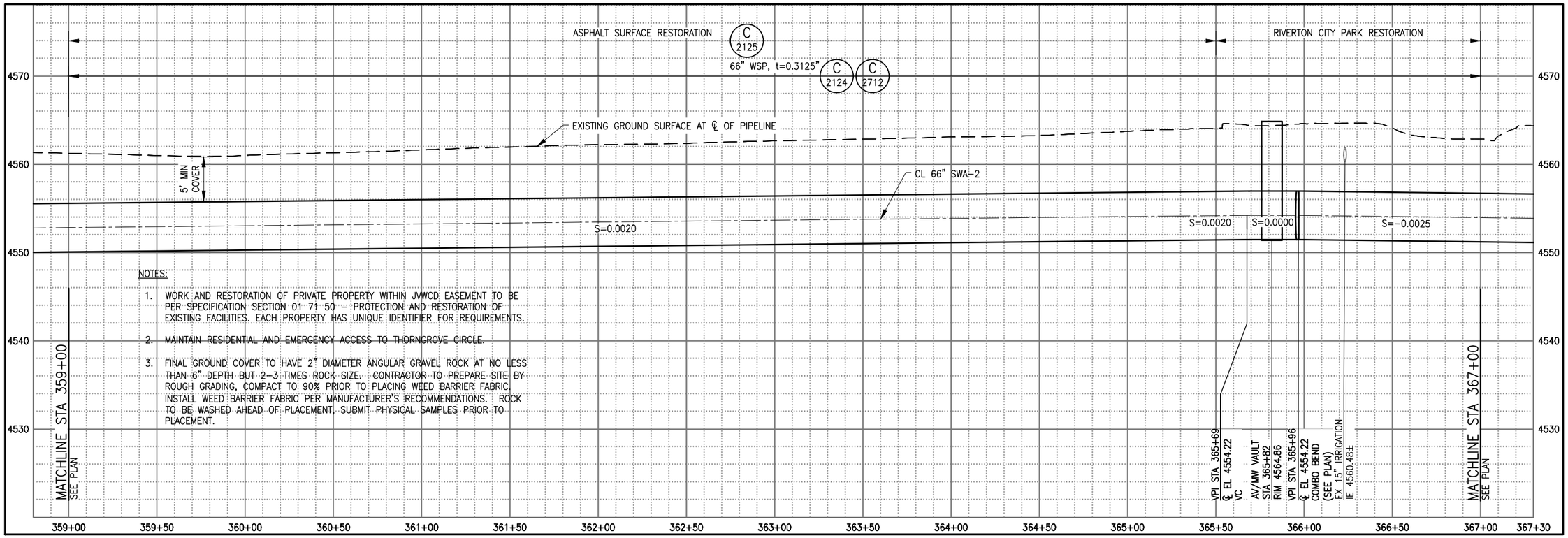
PLAN & PROFILE
PLAN & PROFILE - 5

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
PP-05
SHEET 20 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-05.dwg Plotted: 1/15/2025 9:57 AM By: Jeremy Black





NOTES:

1. WORK AND RESTORATION OF PRIVATE PROPERTY WITHIN JVWCD EASEMENT TO BE PER SPECIFICATION SECTION 01 71 50 – PROTECTION AND RESTORATION OF EXISTING FACILITIES. EACH PROPERTY HAS UNIQUE IDENTIFIER FOR REQUIREMENTS.
2. MAINTAIN RESIDENTIAL AND EMERGENCY ACCESS TO THORNGROVE CIRCLE.
3. FINAL GROUND COVER TO HAVE 2" DIAMETER ANGULAR GRAVEL ROCK AT NO LESS THAN 6" DEPTH BUT 2–3 TIMES ROCK SIZE. CONTRACTOR TO PREPARE SITE BY ROUGH GRADING, COMPACT TO 90% PRIOR TO PLACING WEED BARRIER FABRIC. INSTALL WEED BARRIER FABRIC PER MANUFACTURER'S RECOMMENDATIONS. ROCK TO BE WASHED AHEAD OF PLACEMENT. SUBMIT PHYSICAL SAMPLES PRIOR TO PLACEMENT.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT
SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK
DRAWN J. BLACK
REVIEW CHECKED T. OLSEN APPROVED J. LUETTINGER

PLAN & PROFILE
PLAN & PROFILE - 6
PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
PP-06
SHEET 21 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-06.dwg Plotted: 1/15/2025 10:00 AM By: Jeremy Black

NOTES:

1. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, SHOWN BASED ON BOR JORDAN AQUEDUCT REFERENCE PLANS. REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS OF THE JA DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
2. EXISTING TEST STATION AND CONDUITS TO BE REPLACED IF DAMAGED BY CONTRACTOR. COORDINATE WITH ENGINEER TO DETERMINE TEST STATION TYPE AND REPAIR PROCEDURE.

N

15 0 30 60
SCALE IN FEET

IMAGE: DRONE FLOWN

SAGE GLEN DRIVE

MONSTER CAR WASH
3191 W
(R02)
SEE NOTE 4

12600 SOUTH

12600 SOUTH
ENLARGED SITE PLAN
SEE DRAWING C-01

RELOCATION OF CENTURYLINK UTILITY, SEE NOTE 5

12535 S
(R05)

APPROXIMATE
BORE PIT
LOCATION

12585 S
(R03)

PI STA 372+62
ΔH 04°49'48"
ΔV 04°21'17"
ΔC 06°29'59"
N 46111.86
E 59112.16

12555 S
(R04)

LIMITS OF CONSTRUCTION
(TYP), SEE NOTE 3

AIR VALVE VAULT WITH
MAINTENANCE ACCESS
STA 372+72
N 46121.71
E 59111.92
(CENTER OF BASE)
A1
M-09

B
C-05 NEW 6" DRAIN

APPROXIMATE
BORE PIT LOCATION

PI STA 372+36
ΔH 04°42'36"
ΔV 04°17'01"
ΔC 06°21'48"
N 46086.62
E 59110.04

SWA EASEMENT

PUE (10')

3200 W

367+00 368+00 369+00 370+00 371+00 372+00 373+00 374+00 375+00

REMOVE EXISTING FENCES
TO NEAREST FENCE POLE
AND REPLACE ONCE WORK
IS COMPLETE, SEE NOTE 3

NEW 66-INCH SWA-2

SWA EASEMENT

TH-23
TH-22
TH-21
BH-07

TRENCHLESS
INSTALLATION OF
78" STEEL CASING
(130 FT)

TH-25
TH-26
TH-28
TH-27

TH-18
TH-19
TH-20

FENCING BETWEEN PRIVATE PROPERTIES
AND BOR EASEMENT TO BE REMOVED
FOR CONSTRUCTION, SEE NOTE 1

NEW TYPE C TEST
STATION, TYP OF 2,
SEE CP-01

BH-08

NEW 24" TURNOUT TO JORDAN
AQUEDUCT MAINLINE VALVE VAULT
(MLVV), SEE DRAWING C-08

BOR EASEMENT
SEE NOTE 1

BOR EASEMENT
SEE NOTE 1

C
2970

C
2970

759+00 760+00 761+00 762+00 763+00 764+00 765+00 766+00 767+00

MATCHLINE STA 367+00
SEE DRAWING PP-06

MATCHLINE STA 375+00
SEE DRAWING PP-08

12670 S

EXISTING 78-INCH
JORDAN AQUEDUCT
REACH 2 (JA-2)

EXISTING JA-2
STATIONING SHOWN
FOR REFERENCE

25' JA-2 LOAD
RESTRICTION ZONE
SEE NOTE 1

PI STA 370+14
ΔH 04°13'11"
ΔV 06°04'28"
ΔC 07°23'30"
N 45864.30
E 59106.98

PI STA 370+59
ΔH 04°17'24"
ΔV 06°17'08"
ΔC 07°36'18"
N 45908.93
E 59110.30

CP
2725

NEW TYPE A TEST
STATION, SEE CP-01

CP
2729

12658 S

12646 S

PROTECT IN PLACE
EXISTING JA-2 AIR
VALVE STRUCTURE

12630 S

PLAN

3168 W

PROTECT IN PLACE EXISTING JA-2
CATHODIC PROTECTION TEST
STATIONS, SEE NOTE 2, TYP

EXISTING MAINLINE VALVE AND
TURNOUT STRUCTURE (JA-2)
SEE DRAWING M-04

12578 S

12556 S

12534 S

25' JA-2 LOAD
RESTRICTION ZONE
SEE NOTE 1

RESTORATION AS NECESSARY
PER UDOT REQUIREMENTS

PRIVATE PROPERTY RESTORATION, SEE NOTE 3

PRIVATE PROPERTY RESTORATION, SEE NOTE 3

CENTURY LINK CABLE RELOCATION, SEE NOTE 5 C 2741 SIM

66" WSP, t=0.3125" C 2124 C 2712

78" t=0.625" MIN WSP CASING REQ'D
130 LF C 2742

EXISTING GROUND SURFACE AT ℄ OF PIPELINE

CL 66" SWA-2

5' MIN COVER

18" MIN SEPARATION

24" MIN SEPARATION

S=-0.0025

S=-0.1089

S=0.0012

S=0.0764

S=0.0000

S=-0.0025

4570
4560
4550
4540
4530

NOTES CONTINUED:

3. WORK AND RESTORATION OF PRIVATE PROPERTY WITHIN JVWCD EASEMENT TO BE PER SPECIFICATION SECTION 01 71 50 - PROTECTION AND RESTORATION OF EXISTING FACILITIES AND AS SHOWN IN COST-TO-CURE EXHIBITS PROVIDED IN APPENDIX B OF THE CONTRACT DOCUMENTS. NOTE THAT NOT ALL PRIVATE PROPERTY DEMOLITION AND RESTORATION REQUIREMENTS ARE SHOWN ON THESE PLANS. EACH PROPERTY HAS UNIQUE IDENTIFIER FOR REQUIREMENTS. SECURED PRIVACY FENCING REQUIRED BETWEEN RESIDENT AND CONSTRUCTION LIMITS.
4. CONTRACTOR TO MAINTAIN ACCESS FOR CAR WASH CUSTOMERS INTO THE CAR WASH AND THROUGH THE CAR WASH DURING OPERATING HOURS.
5. CONTRACTOR TO COORDINATE TEMPORARY RELOCATION OF EXISTING CENTURYLINK/LUMEN (CLL) OUTSIDE CONSTRUCTION LIMITS AND BE PERFORMED BY CLL PRIOR TO PIPELINE WORK. FINAL RELOCATION OF CLL LINE AND ALL SERVICE BOXES TO BE PERFORMED BY CLL WITH TRENCHING AND BACKFILLING BY CONTRACTOR.

MATCHLINE STA 367+00
SEE PLAN

VPI STA 370+14
℄ EL 4553.20
COMBO BEND
(SEE PLAN)

VPI STA 370+59
℄ EL 4548.30
COMBO BEND
(SEE PLAN)
MINOR BLOWOFF
STATION 370+64
BEGIN CASING
STA 370+75

EX 4" GAS
TOP EL 4557.43±

EX 4" GAS
TOP EL 4557.43±

EX TELEPHONE
EX CABLE TV
EX (2) 4" FIBER OPTIC
TOP EL 4557.36±

EX 30" STORM DRAIN
IE 4553.47±

EX 4" TELEPHONE
TOP EL 4557.22±

EX 2" TELEPHONE
TOP EL 4557.22±

EX 2" FIBER OPTIC
TOP EL 4556.94±

EX 2" FIBER OPTIC
TOP EL 4556.94±

EX (4) 4" TELEPHONE
TOP EL 4557.58±

EX 6" IRRIGATION
TOP EL 4558.36±

EX 4" GAS

EX 16" WATER
TOP EL 4557.00±

EX 8" WATER
TOP EL 4556.04±

EX POWER
EX 27" SANITARY SEWER IN CASING
IE 4539.62±

EX 8" WATER

EX 4" FIBER OPTIC
TOP EL 4558.57±

EX 3" FIBER OPTIC
TOP EL 4558.57±

EX UKNOWN FIBER OPTIC
TOP EL 4558.37±

EX (4) 1" FIBER OPTIC
TOP EL 4558.57±

EX 14" IRRIGATION
TOP EL 4558.33±

EX 8" WATER

EX CABLE TV

END CASING
STA 372+05

24" TURNOUT TO JA-2
STA 372+29

℄ EL 4548.51
VPI STA 372+36
℄ EL 4548.52
COMBO BEND
(SEE PLAN)
VPI STA 372+62
℄ EL 4550.50
COMBO BEND
(SEE PLAN)

AV/MV VAULT
STA 372+72
RIM 4561.34

VPI STA 372+84
℄ EL 4550.50
VC

MATCHLINE STA 375+00
SEE PLAN

367+00 367+50 368+00 368+50 369+00 369+50 370+00 370+50 371+00 371+50 372+00 372+50 373+00 373+50 374+00 374+50 375+00 375+30

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-07.dwg Plotted: 1/15/2025 10:59 AM By: Jeremy Black

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

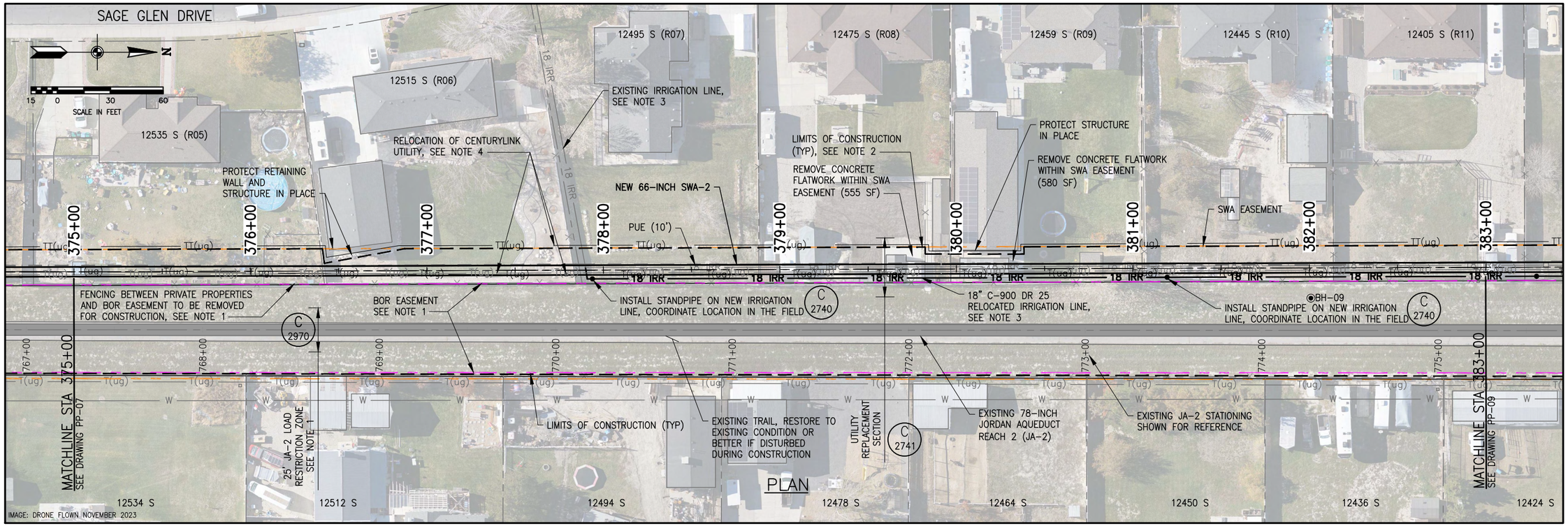
REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

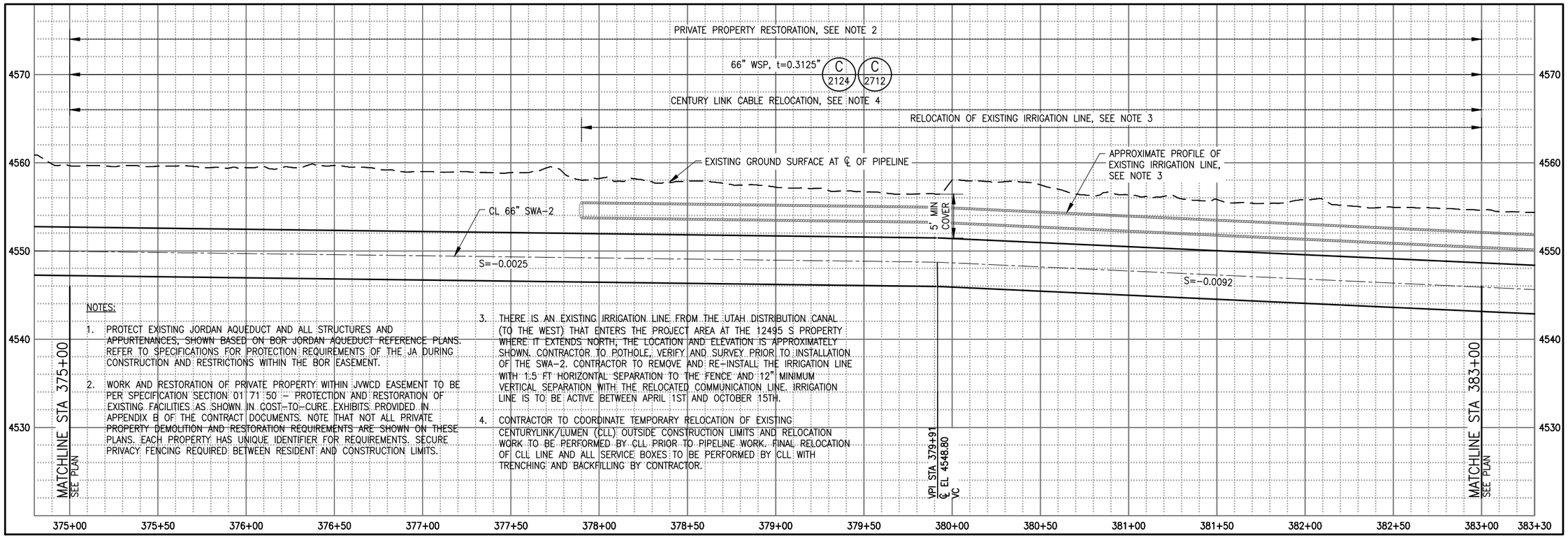
PLAN & PROFILE

PLAN & PROFILE - 7

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
PP-07
SHEET 22 OF 100





NOTES:

1. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, SHOWN BASED ON BOR JORDAN AQUEDUCT REFERENCE PLANS. REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS OF THE JA DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
2. WORK AND RESTORATION OF PRIVATE PROPERTY WITHIN JVWCD EASEMENT TO BE PER SPECIFICATION SECTION 01 71 50 – PROTECTION AND RESTORATION OF EXISTING FACILITIES AS SHOWN IN COST-TO-CURE EXHIBITS PROVIDED IN APPENDIX B OF THE CONTRACT DOCUMENTS. NOTE THAT NOT ALL PRIVATE PROPERTY DEMOLITION AND RESTORATION REQUIREMENTS ARE SHOWN ON THESE PLANS. EACH PROPERTY HAS UNIQUE IDENTIFIER FOR REQUIREMENTS. SECURE PRIVACY FENCING REQUIRED BETWEEN RESIDENT AND CONSTRUCTION LIMITS.
3. THERE IS AN EXISTING IRRIGATION LINE FROM THE UTAH DISTRIBUTION CANAL (TO THE WEST) THAT ENTERS THE PROJECT AREA AT THE 12495 S PROPERTY WHERE IT EXTENDS NORTH, THE LOCATION AND ELEVATION IS APPROXIMATELY SHOWN. CONTRACTOR TO POTHOLE, VERIFY AND SURVEY PRIOR TO INSTALLATION OF THE SWA-2. CONTRACTOR TO REMOVE AND RE-INSTALL THE IRRIGATION LINE WITH 1.5 FT HORIZONTAL SEPARATION TO THE FENCE AND 12" MINIMUM VERTICAL SEPARATION WITH THE RELOCATED COMMUNICATION LINE. IRRIGATION LINE IS TO BE ACTIVE BETWEEN APRIL 1ST AND OCTOBER 15TH.
4. CONTRACTOR TO COORDINATE TEMPORARY RELOCATION OF EXISTING CENTURYLINK/LUMEN (CLL) OUTSIDE CONSTRUCTION LIMITS AND RELOCATION WORK TO BE PERFORMED BY CLL PRIOR TO PIPELINE WORK. FINAL RELOCATION OF CLL LINE AND ALL SERVICE BOXES TO BE PERFORMED BY CLL WITH TRENCHING AND BACKFILLING BY CONTRACTOR.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

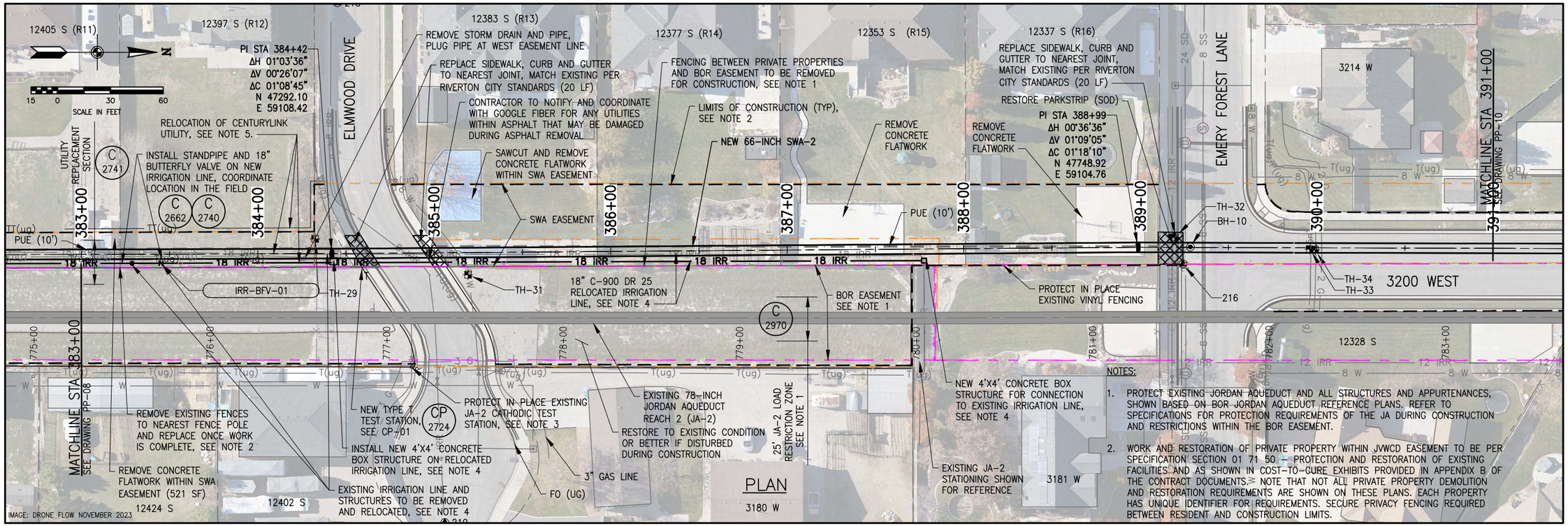
PLAN & PROFILE

PLAN & PROFILE - 8

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
PP-08
SHEET 23 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-08.dwg Plotted: 1/15/2025 11:02 AM By: Jeremy Black



NOTES:

1. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, SHOWN BASED ON BOR JORDAN AQUEDUCT REFERENCE PLANS. REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS OF THE JA DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
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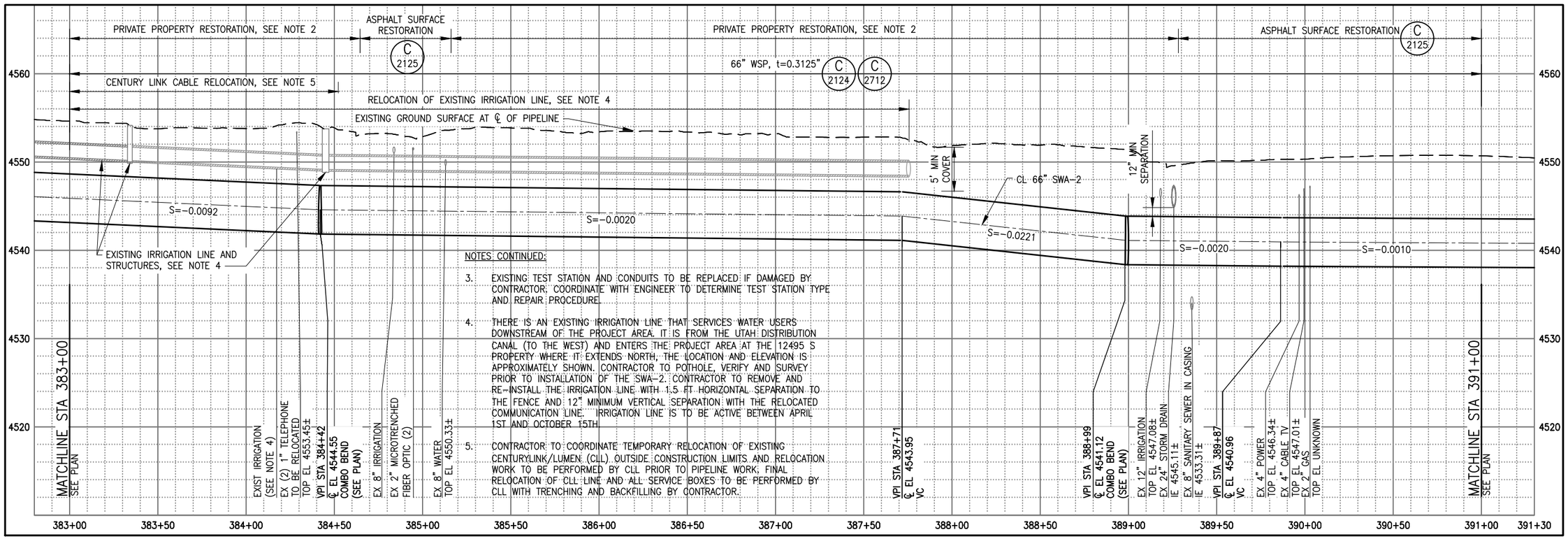


NOTES CONTINUED:

3. EXISTING TEST STATION AND CONDUITS TO BE REPLACED IF DAMAGED BY CONTRACTOR. COORDINATE WITH ENGINEER TO DETERMINE TEST STATION TYPE AND REPAIR PROCEDURE.
4. THERE IS AN EXISTING IRRIGATION LINE THAT SERVICES WATER USERS DOWNSTREAM OF THE PROJECT AREA. IT IS FROM THE UTAH DISTRIBUTION CANAL (TO THE WEST) AND ENTERS THE PROJECT AREA AT THE 12495 S PROPERTY WHERE IT EXTENDS NORTH. THE LOCATION AND ELEVATION IS APPROXIMATELY SHOWN. CONTRACTOR TO POTHOLE, VERIFY AND SURVEY PRIOR TO INSTALLATION OF THE SWA-2. CONTRACTOR TO REMOVE AND RE-INSTALL THE IRRIGATION LINE WITH 1.5 FT HORIZONTAL SEPARATION TO THE FENCE AND 12" MINIMUM VERTICAL SEPARATION WITH THE RELOCATED COMMUNICATION LINE. IRRIGATION LINE IS TO BE ACTIVE BETWEEN APRIL 1ST AND OCTOBER 15TH.
5. CONTRACTOR TO COORDINATE TEMPORARY RELOCATION OF EXISTING CENTURYLINK/LUMEN (CLL) OUTSIDE CONSTRUCTION LIMITS AND RELOCATION WORK TO BE PERFORMED BY CLL PRIOR TO PIPELINE WORK; FINAL RELOCATION OF CLL LINE AND ALL SERVICE BOXES TO BE PERFORMED BY CLL WITH TRENCHING AND BACKFILLING BY CONTRACTOR.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

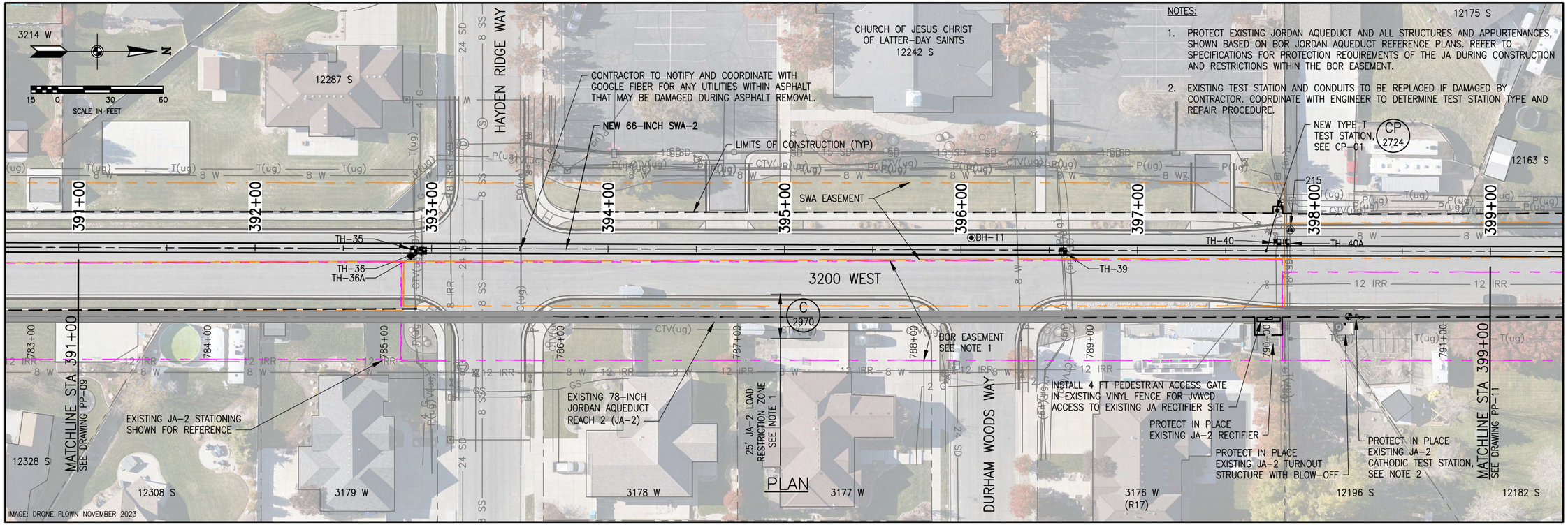
DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

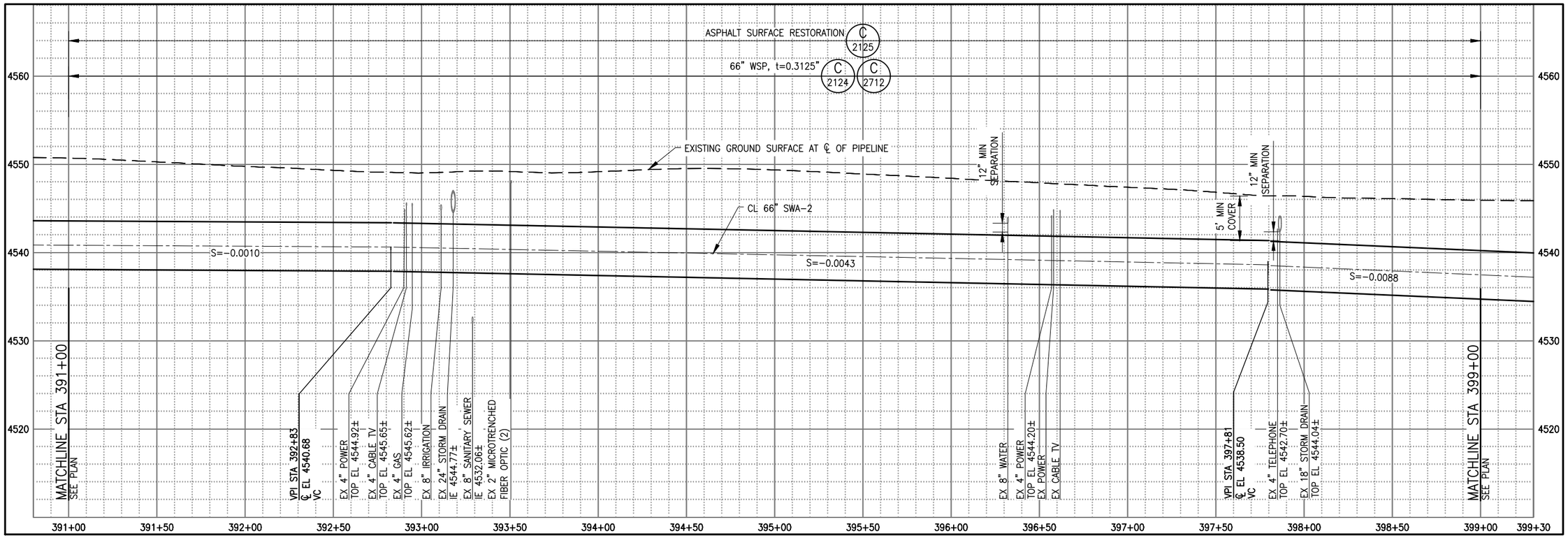
PLAN & PROFILE
PLAN & PROFILE - 9

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
PP-09
SHEET 24 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-09.dwg Plotted: 1/15/2025 11:05 AM By: Jeremy Black





BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

PLAN & PROFILE

PLAN & PROFILE - 10

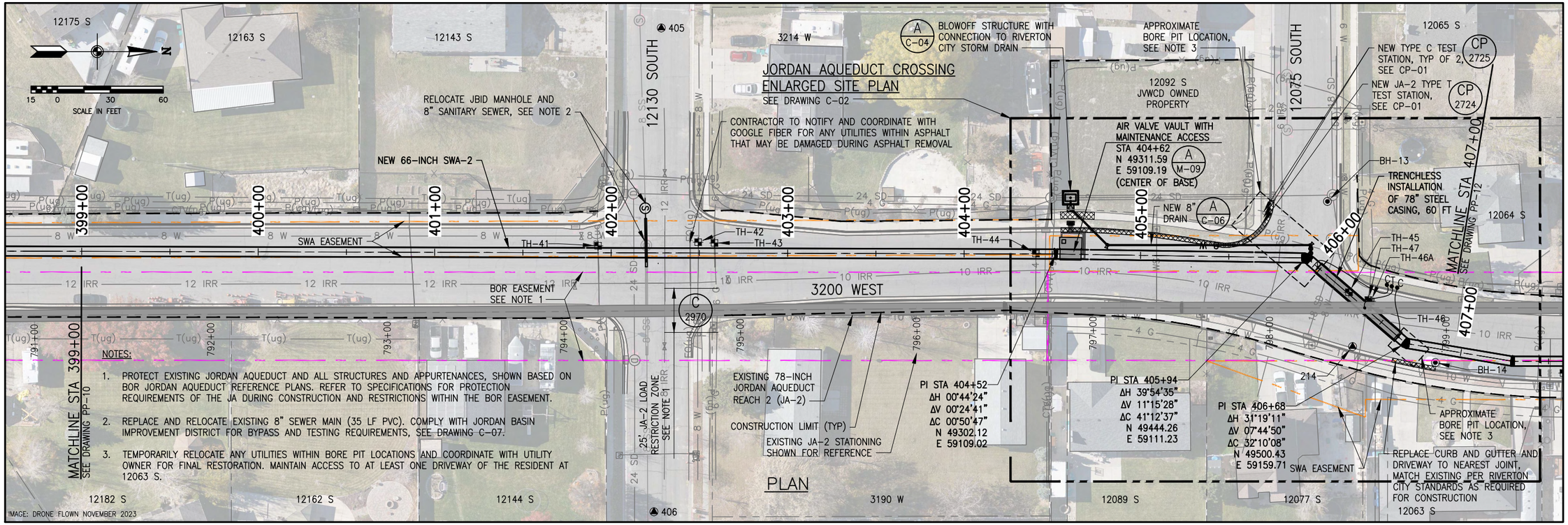
DATE: JANUARY 2025

PROJECT NUMBER 010-23-02

DRAWING NO. PP-10

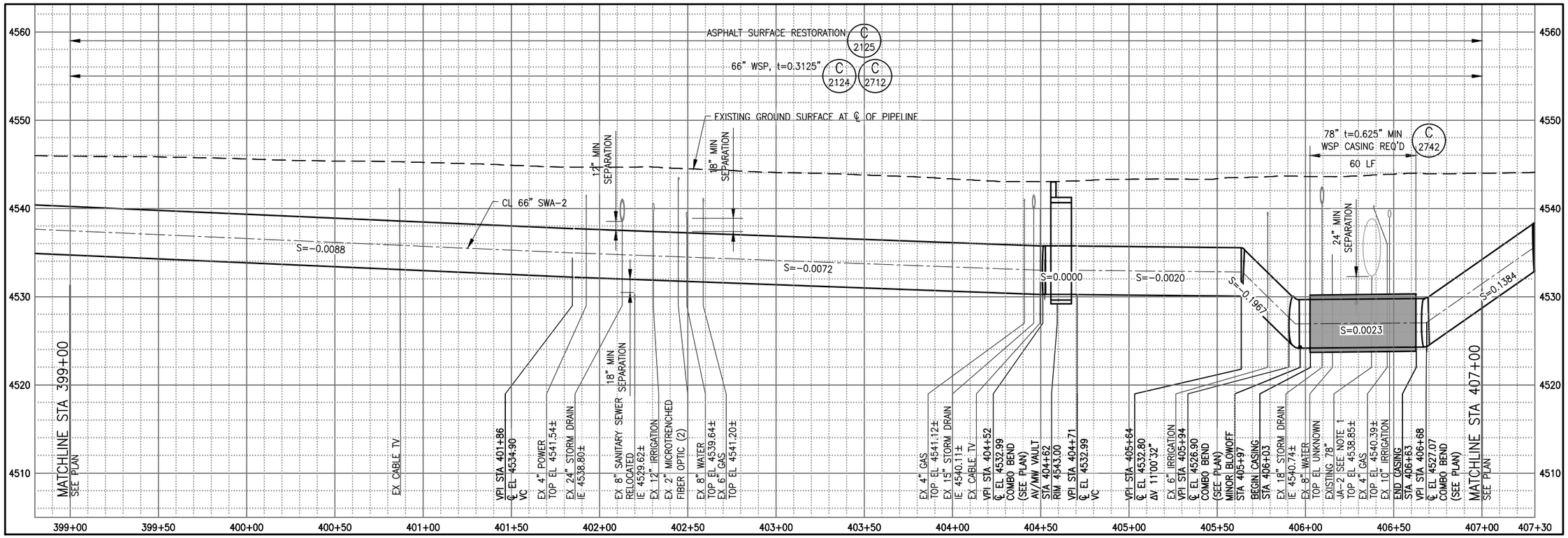
SHEET 25 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-10.dwg Plotted: 1/15/2025 10:08 AM By: Jeremy Black



NOTES:

1. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, SHOWN BASED ON BOR JORDAN AQUEDUCT REFERENCE PLANS. REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS OF THE JA DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
2. REPLACE AND RELOCATE EXISTING 8" SEWER MAIN (35 LF PVC). COMPLY WITH JORDAN BASIN IMPROVEMENT DISTRICT FOR BYPASS AND TESTING REQUIREMENTS, SEE DRAWING C-07.
3. TEMPORARILY RELOCATE ANY UTILITIES WITHIN BORE PIT LOCATIONS AND COORDINATE WITH UTILITY OWNER FOR FINAL RESTORATION. MAINTAIN ACCESS TO AT LEAST ONE DRIVEWAY OF THE RESIDENT AT 12063 S.



BOWEN COLLINS & ASSOCIATES
PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

PLAN & PROFILE

PLAN & PROFILE - 11

PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

DRAWING NO.
PP-11

SHEET 26 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-11.dwg Plotted: 1/16/2025 3:49 PM By: Jeremy Black

NOTES:

1. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, SHOWN BASED ON BOR JORDAN AQUEDUCT REFERENCE PLANS. REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS OF THE JA DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
2. EXISTING TEST STATION AND CONDUITS TO BE REPLACED IF DAMAGED BY CONTRACTOR. COORDINATE WITH ENGINEER TO DETERMINE TEST STATION TYPE AND REPAIR PROCEDURE.
3. SERVICE LATERAL LOCATIONS SHOWN ARE ESTIMATED ONLY AND BASED UPON ASSUMED LOCATION OF UTILITY. THEY ARE NOT SHOWN IN PROFILE. CONTRACTOR TO LOCATE AND COORDINATE WITH UTILITY OWNER IF RELOCATIONS ARE REQUIRED.

N

SCALE IN FEET 15 0 30 60

12604 S, 12050 S, 12034 S, 12018 S, 12002 S, 11986 S, 11974 S, 11962 S, 11950 S

25' JA-2 LOAD RESTRICTION ZONE SEE NOTE 1

EXISTING 78-INCH JORDAN AQUEDUCT REACH 2 (JA-2)

PROTECT IN PLACE EXISTING JA-2 CATHODIC TEST STATION, SEE NOTE 2

EXISTING JA-2 STATIONING SHOWN FOR REFERENCE

H-45
H-47
TH-46A
TH-46

407+00 408+00 409+00 410+00 411+00 412+00 413+00 414+00 415+00

C 2970

BOR EASEMENT SEE NOTE 1

3200 WEST

BH-14 TH-48 TH-49 TH-50

NEW 66-INCH SWA-2

SWA EASEMENT

LIMITS OF CONSTRUCTION (TYP)

NEW TYPE T TEST STATION, SEE CP-01

CP 2724

PI STA 407+30
ΔH 09°34'12"
ΔV 07°37'49"
ΔC 12°13'02"
N 49561.00
E 59169.89

REMOVE EXISTING TREES IN PARKSTRIP TO 6" BELOW GRADE AND RESTORE SOIL

12063 S, 12051 S, 12019 S, 12007 S, 11995 S, 11983 S, 11971 S, 11959 S, 11947 S

MATCHLINE STA 407+00 SEE DRAWING PP-11

12040 SOUTH

MATCHLINE STA 415+00 SEE DRAWING PP-13

IMAGE: DRONE FLOWN NOVEMBER 2023

PLAN

ASPHALT SURFACE RESTORATION C 2125

66" WSP, t=0.3125" SEE NOTE 3

C 2124 C 2712

12" MIN SEPARATION

EXISTING GROUND SURFACE AT ℄ OF PIPELINE

CL 66" SWA-2

5' MIN COVER

S=0.1384

S=0.0043

S=0.0026

4560 4550 4540 4530 4520 4510

MATCHLINE STA 407+00 SEE PLAN

VPI STA 407+30
℄ EL 4535.65
COMBO BEND
(SEE PLAN)

EX (2) 4" POWER TOP EL 4540.64±

EX 6" IRRIGATION

EX 4" POWER TOP EL 4541.73±

VPI STA 411+61
℄ EL 4537.52
VC

EX 4" POWER TOP EL 4542.92±

EX POWER

MATCHLINE STA 415+00 SEE PLAN

407+00 407+50 408+00 408+50 409+00 409+50 410+00 410+50 411+00 411+50 412+00 412+50 413+00 413+50 414+00 414+50 415+00 415+30

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-12.dwg Plotted: 1/15/2025 10:14 AM By: Jeremy Black

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

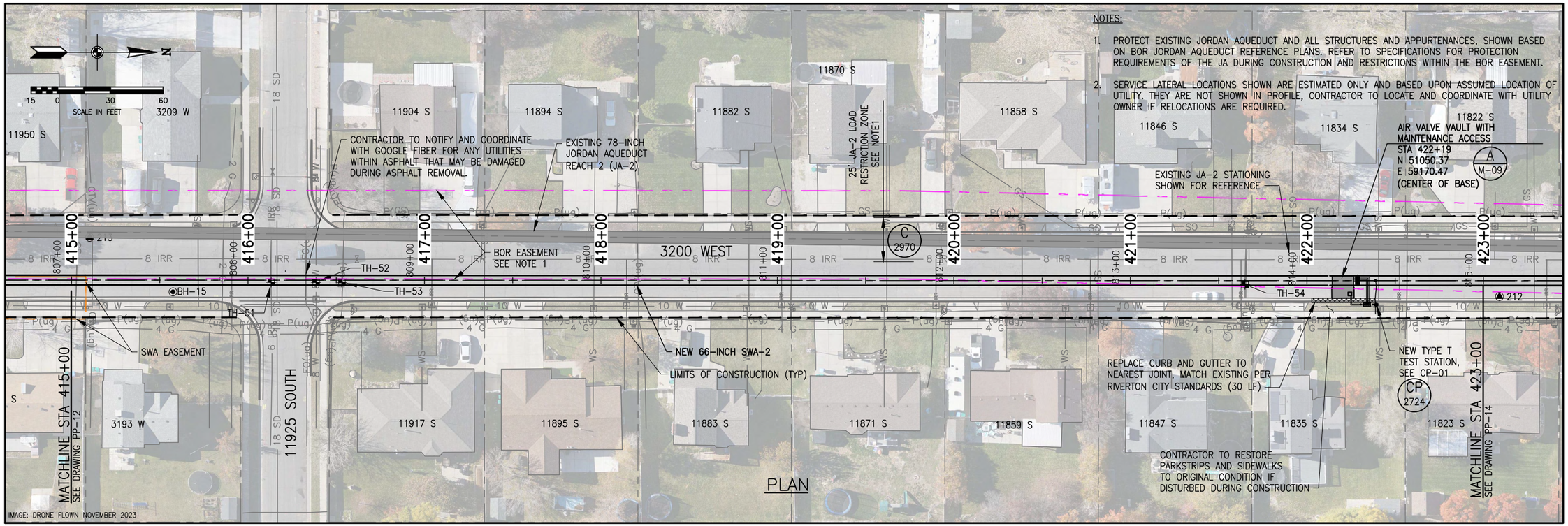
DESIGN L. MINCK
DRAWN J. BLACK
REVIEW CHECKED T. OLSEN APPROVED J. LUETTINGER

PLAN & PROFILE

PLAN & PROFILE - 12

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. PP-12
SHEET 27 OF 100



BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK
DRAWN J. BLACK
REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

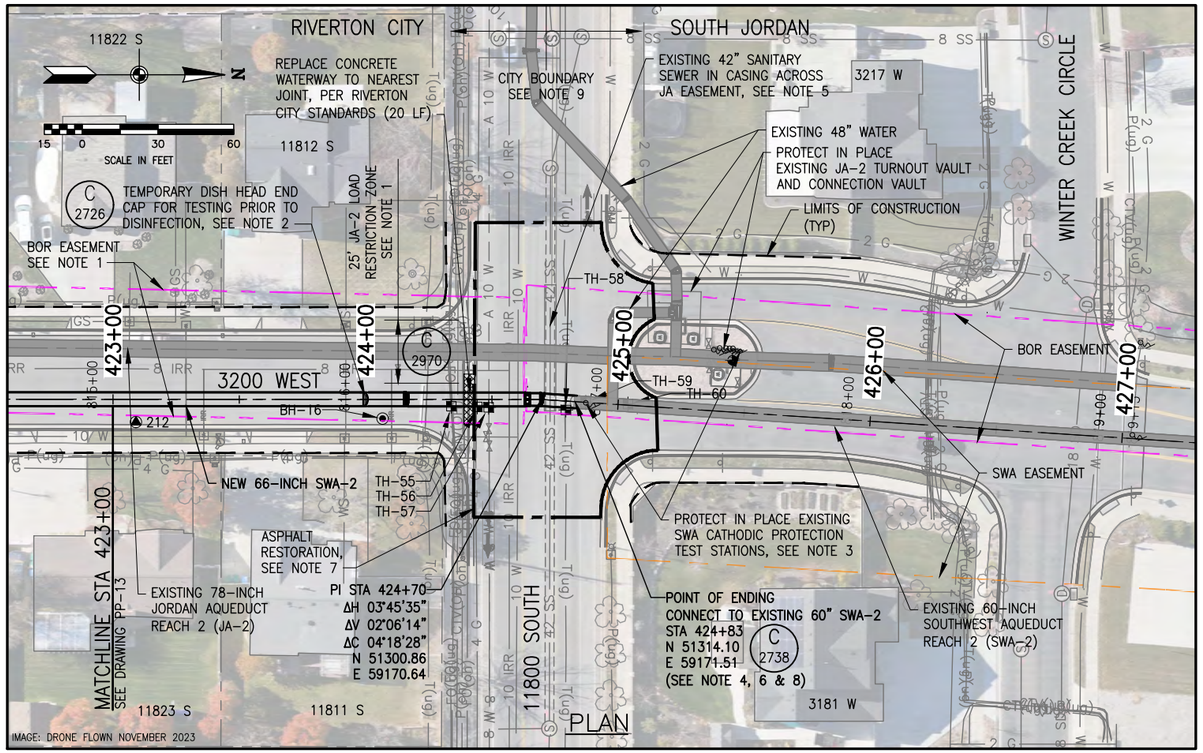
PLAN & PROFILE

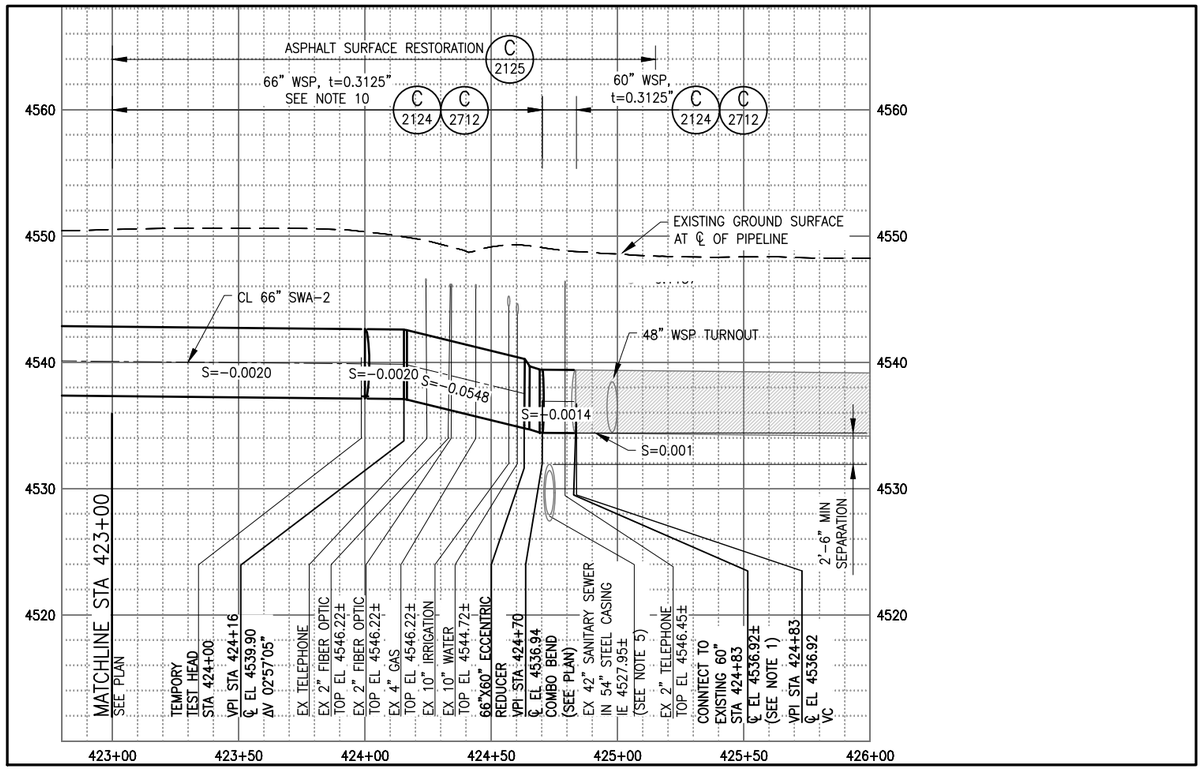
PLAN & PROFILE - 13

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
PP-13
SHEET 28 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-13.dwg Plotted: 1/15/2025 11:13 AM By: Jeremy Black





NOTES:

1. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, SHOWN BASED ON BOR JORDAN AQUEDUCT REFERENCE PLANS. REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS OF THE JA DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
2. TEMPORARY DISH HEAD TO BE REMOVED FOR PERMANENT CONNECTION BETWEEN NEW AND EXISTING PIPES, CONNECTION TO BE MADE WITH BUTTSTRAP JOINT.
3. EXISTING TEST STATION AND CONDUITS TO BE REPLACED IF DAMAGED BY CONTRACTOR. COORDINATE WITH ENGINEER TO DETERMINE TEST STATION TYPE AND REPAIR PROCEDURE.
4. CONTRACTOR TO POTHOLE AND LOCATE EXISTING SWA-2 PRIOR TO FABRICATING CONNECTION FITTINGS.
5. 54" SEWER CASING (JORDAN BASIN IMPROVEMENT DISTRICT) IS BACKFILLED WITH CLSM UP TO THE SPRINGLINE OF THE JORDAN AQUEDUCT WITHIN THE BOR EASEMENT.
6. CONNECTION WITH EXISTING PIPE TO OCCUR AFTER HYDROSTATIC TESTING AND DISINFECTION OF SWA-2. CONTRACTOR TO COORDINATE DRAINING OF EXISTING SWA WITH JVWCD, REMOVE EXISTING DISH HEAD AND MAKE FINAL CONNECTION WITH BUTTSTRAP.
7. RESTORATION OF 11800 SOUTH INTERSECTION TO INCLUDE ENTIRE WIDTH OF 11800 SOUTH FROM LIP OF CURB AND GUTTER TO LIP OF CURB AND GUTTER FOR THE LIMITS OF EXTENTS SHOWN.
8. CONTRACTOR TO MAKE REPAIRS TO COATINGS AND LININGS OF EXISTING SWA-2 AT CONNECTION. THE EXISTING PIPE COATING WAS DAMAGED DURING PREVIOUS EXCAVATIONS AND IS TO BE REPAIRED WITH REPAIR KIT. EXISTING COATING IS POLYURETHANE.
9. CENTERLINE OF 11800 SOUTH REPRESENTS THE BOUNDARY BETWEEN RIVERTON CITY AND SOUTH JORDAN CITY. COORDINATE PERMITTING CONSTRUCTION WORK, AND SURFACE RESTORATION WITH APPROPRIATE CITY AS REQ'D.
10. SERVICE LATERAL LOCATIONS SHOWN ARE ESTIMATED ONLY AND BASED UPON ASSUMED LOCATION OF UTILITY. THEY ARE NOT SHOWN IN PROFILE, CONTRACTOR TO LOCATE AND COORDINATE WITH UTILITY OWNER IF RELOCATIONS ARE REQUIRED.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

PLAN & PROFILE

PLAN & PROFILE - 14

DATE: JANUARY 2025

PROJECT NUMBER 010-23-02

DRAWING NO.
PP-14

SHEET 29 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\PP-14.dwg Plotted: 1/15/2025 10:19 AM By: Jeremy Black

MONSTER CARWASH
3191 W (R02)
SEE NOTE 1 & 3

SCALE IN FEET
5 0 10 20

EXISTING LANDSCAPING TO BE RETURNED TO ORIGINAL CONDITION, SEE NOTE 1

LIMITS OF CONSTRUCTION

C 2670 NEW 6" MINOR BLOWOFF DRAIN

C 2667 LOCKABLE VALVE BOX

SWA2-PV-02

SWA2-GV-02

B C-05 NEW 6" DRAIN

SWA EASEMENT

NEW 66-INCH SWA-2

BH-07

SEE DRAWING NO. PP-07 FOR ALIGNMENT GEOMETRY

NEW TYPE C TEST STATION, (SEE CP-01)

EXISTING 78" JA-2, SEE NOTE 4

BOR EASEMENT, SEE NOTE 4

EXISTING JA-2 STATIONING SHOWN FOR REFERENCE

763+00

RESTORE AREA DISTURBED BY CONTRACTOR TO EXISTING CONDITIONS

EXISTING FENCE WITH ACCESS GATE COORDINATE WITH JVWCD FOR ACCESS, MAINTAIN SECURE FENCING DURING CONSTRUCTION

25' JA-2 LOAD RESTRICTION ZONE SEE NOTE 1

C 2970

12630 S

APPROXIMATE TRENCHLESS CROSSING BORE PIT

TRENCHLESS CROSSING WITH NEW 78" DIA CASING C 2742

371+00

TH-18 TH-19 TH-20 TH-21 TH-22 TH-23 TH-25 TH-26

12600 SOUTH
SEE NOTE 2

BOR EASEMENT, SEE NOTE 4

764+00

EXISTING RIVERTON CITY METERING VAULT, PROTECT IN PLACE

PLAN

RESIDENTIAL PROPERTY
12585 S, (R03)
SEE NOTE 1

PROTECT EXISTING SHED IN PLACE

APPROXIMATE TRENCHLESS CROSSING BORE PIT

TEMPORARY COMMUNICATIONS LINES DURING CONSTRUCTION, SEE NOTE 6

EXISTING COMMUNICATIONS LINE TO BE RELOCATED FOR SWA CONSTRUCTION, COORDINATE WITH CENTURYLINK/LUMEN, SEE NOTE 6

NEW 24" PIPE WITH REINFORCED TURNOUT FROM SWA-2 FOR INTERCONNECTION, SEE DRAWING C-08 M 3533

372+00

TH-27 TH-28

NEW TYPE C TEST STATION, (SEE CP-01)

POWER METER RELOCATION, SEE ELECTRICAL DRAWINGS

BH-08

PUE (10')

LIMITS OF CONSTRUCTION, SEE NOTE 1

SEE DRAWING NO. PP-07 FOR ALIGNMENT GEOMETRY

AIR VALVE VAULT WITH MAINTENANCE ACCESS
STA 372+72
N 46121.71
E 59111.92
(CENTER OF BASE)
A1 M-09

RELOCATED COMMUNICATIONS LINE, PLACE OVER VAULT DECK

SWA EASEMENT

373+00

EXISTING ANTENNA TO BE RELOCATED, SEE ELECTRICAL DRAWINGS

AIR VENTS, SEE DWG M-09

BOLLARDS, TYP C 2205

FENCING BETWEEN PRIVATE PROPERTIES AND BOR EASEMENT TO BE REMOVED FOR CONSTRUCTION, SEE NOTE 1

765+00

EXISTING 78" JA-2, SEE NOTE 4 & 5

EXISTING VENTS, REMOVE AS NECESSARY FOR CONSTRUCTION AND RETURN ONCE WORK IS COMPLETE

PROTECT IN PLACE EXISTING DRAIN

C 2970

25' JA-2 LOAD RESTRICTION ZONE SEE NOTE 1

PROTECT IN PLACE EXISTING FENCE

EXISTING JA-2 MAINLINE VALVE VAULT
SEE DRAWING NO. M-04

ASPHALT RESTORATION TO MATCH 3200 WEST REQUIREMENTS C 2125

EXISTING POWER AND EQUIPMENT, SEE ELECTRICAL DRAWINGS

PROTECT IN PLACE ABOVE GROUND SHED, ACCESS FOR VAULT IS THROUGH HATCHES ONLY

EXISTING FENCE WITH ACCESS GATE. COORDINATE WITH JVWCD FOR ACCESS, MAINTAIN SECURE FENCING DURING CONSTRUCTION

EXISTING 24" PIPELINE TO RIVERTON CITY METERING VAULT, SEE NOTE 5

12578 S

NOTES:

1. CONTRACTOR TO MAINTAIN FENCING WITH PRIVACY FABRIC BETWEEN CONSTRUCTION AND PRIVATE PROPERTIES. WORK AND RESTORATION TO BE PER SPECIFICATION SECTION 01 71 50 – PROTECTION AND RESTORATION OF EXISTING FACILITIES.
2. CONTRACTOR TO OBTAIN AND ABIDE BY ALL UDOT PERMITS AND REGULATIONS WHEN WITHIN 12600 SOUTH RIGHT-OF-WAY INCLUDING TRAFFIC CONTROL AND RESTORATION REQUIREMENTS.
3. CONTRACTOR TO MAINTAIN ACCESS FOR CAR WASH CUSTOMERS AND FULL USE OF THE CAR WASH FACILITIES THROUGH THE CAR WASH DURING OPERATING HOURS.
4. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, SHOWN BASED ON BOR JORDAN AQUEDUCT REFERENCE PLANS, REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS OF THE JA DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
5. REFER TO SPECIFICATIONS FOR COORDINATION REQUIREMENTS REGARDING SHUTDOWNS AND CONNECTIONS FOR JORDAN AQUEDUCT AND RIVERTON CITY METERING VAULT.
6. CONTRACTOR TO COORDINATE TEMPORARY RELOCATION OF EXISTING CENTURYLINK/LUMEN (CLL) OUTSIDE CONSTRUCTION LIMITS AND RELOCATION WORK TO BE PERFORMED BY CLL PRIOR TO PIPELINE WORK. FINAL RELOCATION OF CLL LINE AND ALL SERVICE BOXES TO BE PERFORMED BY CLL WITH TRENCHING AND BACKFILLING BY CONTRACTOR.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

REVIEW CHECKED T. OLSEN APPROVED J. LUETTINGER

DESIGN DESIGN L. MINCK DRAWN J. BLACK

CIVIL

12600 SOUTH TURNOUT STRUCTURE SITE PLAN

DATE: JANUARY 2025 PROJECT NUMBER 010-23-02

DRAWING NO. C-01

SHEET 30 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\C-01.dwg Plotted: 1/16/2025 3:04 PM By: Jeremy Black

NOTES:

1. CONSTRUCTION WILL REQUIRE FULL CLOSURE OF 3200 WEST AND 12075 SOUTH AT THIS LOCATION, CONTRACTOR TO COORDINATE WITH RESIDENTS FOR ACCESS TO PROPERTIES AND WITH RIVERTON CITY FOR ALL PERMITS AND REQUIREMENTS.
2. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, SHOWN BASED ON BOR JORDAN AQUEDUCT REFERENCE PLANS. REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS OF THE JA DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
3. BORE PIT LOCATIONS ARE SHOWN FOR REFERENCE ONLY AND EXCAVATIONS ARE TO MAINTAIN A MINIMUM OF 8 FEET FROM THE EDGE OF THE EXISTING JORDAN AQUEDUCT AT ALL TIMES. EXISTING SURFACE FEATURES ARE IDENTIFIED FOR REPLACEMENT BUT CONTRACTOR TO REPLACE ANY ITEMS DISTURBED DURING CONSTRUCTION BASED ON ACTUAL TRENCHLESS CROSSING REQUIREMENTS.
4. POTHOLE EXISTING JA TO CONFIRM DEPTH AND LOCATION PRIOR TO FABRICATION OF SWA-2 PIPE AND CASING PIPE FOR THIS CROSSING INSTALLATION. BUTTSTRAP JOINTS REQUIRED ON SWA-2 PIPE AT BOTH SIDES OF CASING.
5. RESTORATION OF JVWCD SITE AND PARKSTRIP TO INCLUDE GRADING BACK TO ORIGINAL ELEVATIONS AND SEEDING WITH NATIVE SEED.

12092 S
JVWCD OWNED
PROPERTY
SEE NOTE 5

12075 SOUTH

3200 WEST

NEW SWA-2
BLOWOFF STRUCTURE (A / C-04)

EXISTING SIGN, REMOVE DURING CONSTRUCTION AND REPLACE AFTER WORK IS COMPLETE

PROTECT IN PLACE
EXISTING CATCH BASIN

TRENCHLESS
CROSSING BORE PIT
SEE NOTE 3

REPLACE SIDEWALK, CURB AND GUTTER TO NEAREST JOINT, MATCH EXISTING PER RIVERTON CITY STANDARDS

RELOCATE UTILITIES
TEMPORARILY DURING
TRENCHLESS CROSSING

LIMITS OF CONSTRUCTION (TYP)

SWA EASEMENT

NEW TYPE T TEST STATION, (SEE CP-01) (CP 2724)

NEW TYPE C TEST STATIONS, (SEE CP-01) (CP 2725)

AIR VALVE VAULT WITH
MAINTENANCE ACCESS
STA 404+62
N 49311.59
E 59109.19
(CENTER OF BASE)
(A / M-09)

NEW 8" DRAIN (A / C-06)

COORDINATE RELOCATION
OF EXISTING LIGHT POLE
WITH RIVERTON CITY

NEW 66-INCH
SOUTHWEST AQUEDUCT
REACH 2 (SWA-2)

EXISTING 78" JORDAN
AQUEDUCT REACH 2 (JA-
SEE NOTE 4

BOR EASEMENT,
SEE NOTE 2

SWA EASEMENT

SEE SPECIFICATIONS FOR
SHUTDOWN REQUIREMENTS
OF RIVERTON CITY PI LINE

SEE DRAWING NO. PP-11 FOR
SWA ALIGNMENT GEOMETRY

NEW 78" DIA CASING (C / 2742)

RECEIVING PIT FOR
TRENCHLESS CROSSING,
SEE NOTE 3

REPLACE CURB AND GUTTER TO
NEAREST JOINT, MATCH EXISTING
PER RIVERTON CITY STANDARDS

12089 S

12077 S
SEE NOTE 1

12063 S
SEE NOTE 1

405+00

406+00

407+00

797+00

798+00

799+00

25' LOAD
RESTRICTION
ZONE (C / 2970)

BH-13

BH-14

TH-44

TH-45

TH-46

TH-46A

TH-47

214

SCALE IN FEET: 5 0 10 20

IMAGE: DRONE FLOWN

PLAN

P:\Jordan Valley WCD\010-23-02 Southwest Aqueduct Reach 2 - 13400 S to 11800 S\2.0 Design Phase\2.9 Drawings\sht\C-02.dwg Plotted: 1/16/2025 3:49 PM By: Jeremy Black

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK
DRAWN J. BLACK
REVIEW T. OLSEN
CHECKED J. LUETTINGER
APPROVED

CIVIL

12075 SOUTH JA-2 CROSSING SITE PLAN

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. C-02
SHEET 31 OF 100

POTHOLE DATA

POINT	DATE	SIZE	TYPE	MATERIAL	OWNER	NORTHING	EASTING	GROUND ELEVATION	DEPTH (FEET)	TOP ELEVATION	SURFACE TYPE	PAVEMENT DEPTH	COMMENTS
TH-01	4/9/2024	N/A	FIBER OPTIC	N/A	GOOGLE FIBER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	FUTURE UTILITY
TH-02	4/9/2024	10"	WATER	PVC	RIVERTON CITY	41863.38	59107.31	4555.85	4.35	4551.50	ASPHALT	3"	
TH-03	4/9/2024	4"	GAS	PLASTIC	DOMINION	42204.11	59108.21	4556.17	2.35	4553.82	ASPHALT	4"	
TH-04	4/10/2024	3"	POWER	PLASTIC	ROCKY MOUNTAIN POWER	42214.80	59106.81	4556.18	2.01	4554.17	ASPHALT	5"	
TH-05	4/10/2024	8"	WATER	PVC	RIVERTON CITY	42264.81	59110.33	4555.68	4.53	4551.15	ASPHALT	4"	
TH-06	4/10/2024	4"	POWER	PLASTIC	ROCKY MOUNTAIN POWER	42286.93	59110.07	4555.43	2.42	4553.01	ASPHALT	4"	
TH-07	4/10/2024	8"	WATER	PVC	RIVERTON CITY	42660.25	59109.94	4554.11	6.37	4547.74	ASPHALT	4"	
TH-08	4/11/2024	4"	POWER	PLASTIC	ROCKY MOUNTAIN POWER	42829.64	59110.64	4554.63	3.29	4551.34	ASPHALT	4"	
TH-09	4/11/2024	8"	WATER	PVC	RIVERTON CITY	43216.24	59110.29	4554.99	3.32	4551.67	ASPHALT	5"	
TH-10	4/11/2024	2"	CABLE TV	PLASTIC	COMCAST	43243.09	59110.75	4554.75	2.56	4552.19	ASPHALT	4"	
TH-11	4/11/2024	8"	WATER	PVC	RIVERTON CITY	43546.52	59109.44	4556.30	2.67	4553.63	ASPHALT	4"	
TH-12	4/11/2024	N/A	FIBER OPTIC	N/A	GOOGLE FIBER	43867.61	59114.32	4558.18	N/A	N/A	N/A	N/A	FUTURE UTILITY
TH-13	4/17/2024	8"	WATER	PVC	RIVERTON CITY	43871.03	59114.88	4558.19	3.43	4554.76	ASPHALT	4"	
TH-14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	JVWCD RECORDS SHOW WATERLINE (OWNER UNKNOWN) – NO FIELD OR RECORD EVIDENCE
TH-15	4/15/2024	8"	WATER	PVC	RIVERTON CITY	44182.12	59097.96	4559.75	5.43	4554.32	ASPHALT	3"	
TH-16	4/15/2024	N/A	CABLE TV	N/A	COMCAST	N/A	N/A	N/A	N/A	N/A	ASPHALT	N/A	NO FIELD EVIDENCE, POTHOLE NOT PERFORMED
TH-17	4/15/2024	6"	GAS	PLASTIC	DOMINION	44213.31	59097.36	4560.03	3.80	4556.23	ASPHALT	4"	
TH-18	4/8/2024	4"	GAS	PLASTIC	DOMINION	45936.97	59117.03	4560.48	3.05	4557.43	NATURAL	N/A	
TH-19	4/8/2024	(2) 4"	FIBER OPTIC	PLASTIC	LUMEN/CENTURYLINK	45941.51	59116.40	4560.28	2.92	4557.36	NATURAL	N/A	
TH-20	4/8/2024	(2) 2"	FIBER OPTIC	PLASTIC	VERIZON (MCI)	45944.03	59116.07	4560.18	3.24	4556.94	NATURAL	N/A	
TH-21	4/8/2024	4" & 2"	TELEPHONE & FIBER OPTIC	PLASTIC	LUMEN/CENTURYLINK	45952.94	59115.14	4560.21	2.99	4557.22	ASPHALT	4"	
TH-22	4/11/2024	(4) 4" & (1) UNK	TELEPHONE	PLASTIC	LUMEN/CENTURYLINK	45960.29	59115.37	4560.34	3.58	4556.76	ASPHALT	8"	UNABLE TO OBTAIN SIZE OF CONDUIT AT THE BOTTOM OF THE BUNDLE, CONDUITS STACKED VERTICALLY, 2 ROWS TALL
									2.76	4557.58	ASPHALT	8"	
TH-23	4/16/2024	8"	IRRIGATION	PVC	RIVERTON CITY	45972.41	59115.89	4560.45	2.09	4558.36	ASPHALT	5"	
TH-24	4/16/2024	4"	GAS	STEEL	DOMINION	N/A	N/A	N/A	N/A	N/A	ASPHALT	N/A	NO FIELD EVIDENCE OF THIS LINE – POSSIBLY ABANDONED
TH-25	4/16/2024	16"	WATER	DIP	RIVERTON CITY	45987.14	59116.48	4560.82	3.82	4557.00	ASPHALT	4"	
TH-26	4/16/2024	8"	WATER	PVC	RIVERTON CITY	45995.71	59116.00	4560.79	4.75	4556.04	ASPHALT	4"	
TH-27	5/3/2024	14"	IRRIGATION	CMP	ELM MEADOWS WATER ASSOCIATION	46044.10	59122.98	4560.35	2.02	4558.33	ASPHALT	5"	
TH-28	4/8/2024	(4) 1" & (1) 2", (1) UNK & (1) 3"	FIBER OPTIC & COMM	PLASTIC	UDOT/UTOPIA SYRINGA/FIRST DIGITAL	46038.80	59113.67	4560.44	1.87	4558.57	CONCRETE	4"	UNABLE TO OBTAIN SIZE OF CONDUIT AT THE BOTTOM OF THE BUNDLE, CONDUITS STAKED VERTICALLY, 2.91' IS MEASUREMENT TO BOTTOM
									2.91	4557.53	CONCRETE	4"	
TH-29	4/17/2024	(2) 1"	TELEPHONE	CABLE	LUMEN/CENTURYLINK	47282.52	59100.03	4554.57	1.12	4553.45	NATURAL	N/A	DIRECT BURY – STACKED VERTICALLY
TH-30	4/17/2024	MICROTRENCH	FIBER OPTIC	FIBER OPTIC	GOOGLE FIBER	N/A	N/A	N/A	N/A	N/A	ASPHALT	N/A	MICROTRENCHED
TH-31	4/17/2024	8"	WATER	PVC	RIVERTON CITY	47369.20	59120.39	4553.14	2.81	4550.33	NATURAL	N/A	
TH-32	4/17/2024	12"	IRRIGATION	PVC	RIVERTON CITY	47769.71	59099.24	4549.88	2.80	4547.08	NATURAL	N/A	
TH-33	4/19/2024	4"	POWER	PLASTIC	ROCKY MOUNTAIN POWER	47846.17	59105.83	4550.29	3.95	4546.34	ASPHALT	4"	
TH-34	4/19/2024	4"	CABLE TV	PLASTIC	COMCAST	47849.11	59106.27	4550.30	3.29	4547.01	ASPHALT	4"	
TH-35	4/22/2024	4"	POWER	PLASTIC	ROCKY MOUNTAIN POWER	48140.12	59106.60	4548.97	4.05	4544.92	ASPHALT	3"	
TH-36	4/22/2024	4"	GAS	PLASTIC	DOMINION	48144.47	59107.24	4549.01	3.39	4545.62	ASPHALT	3.5"	2" GAS LINE IN 4" CASING
TH-36A	4/22/2024	4"	UNKNOWN	PLASTIC	UNKNOWN	48145.31	59107.17	4549.05	3.40	4545.65	ASPHALT	3.5"	UNKNOWN LINE FOUND WHILE DIGGING TH 36
TH-37	N/A	N/A	FIBER OPTIC	N/A	GOOGLE FIBER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	FUTURE UTILITY
TH-38	4/22/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	JVWCD RECORDS SHOW WATERLINE (OWNER UNKNOWN) – NO FIELD OR RECORD EVIDENCE
TH-39	4/22/2024	4"	POWER	PLASTIC	ROCKY MOUNTAIN POWER	48507.96	59107.56	4547.87	3.67	4544.20	ASPHALT	3.5"	
TH-40	4/29/2024	2"	CABLE TV	PLASTIC	COMCAST	48629.25	59102.85	4546.33	2.60	4543.73	ASPHALT	4"	
TH-40A	4/29/2024	4" & 18"	TELEPHONE & STORM DRAIN	PLASTIC & CMP	LUMEN & RIVERTON CITY	48634.60	59103.00	4546.33	3.63	4542.70	ASPHALT	5"	PARALLEL TO EACH OTHER
									2.29	4544.04			
TH-41	4/22/2024	4"	POWER	PLASTIC	ROCKY MOUNTAIN POWER	49042.60	59104.42	4544.65	3.11	4541.54	ASPHALT	4"	
TH-42	4/25/2024	8"	WATER	PLASTIC	RIVERTON CITY	49099.34	59102.37	4544.65	5.01	4539.64	ASPHALT	4"	
TH-43	4/25/2024	6"	GAS	PLASTIC	DOMINION	49108.57	59102.81	4544.57	3.37	4541.20	ASPHALT	3.5"	4" GAS LINE IN 6" CASING
TH-44	4/25/2024	4" & 6"	UNKNOWN (GAS)	PLASTIC	UNKNOWN	49290.73	59108.74	4543.06	1.94	4541.12	ASPHALT	4"	FIELD EVIDENCE SUGGESTS GAS IS THE 4" LINE OR ENCASED IN THE 6" LINE, THE OTHER IS UNKNOWN.
TH-45	4/25/2024	8"	WATER	N/A	RIVERTON CITY	49468.10	59130.76	4543.64	STOPPED AT 9 FT	N/A	ASPHALT	N/A	UNABLE TO LOCATE WATER LINE DUE TO HARD SOIL CONDITIONS. DRILLED TO APPROXIMATELY 9'.
TH-46	4/29/2024	78"	WATER – JORDAN AQUEDUCT	WSP	JVWCD	49478.95	59139.34	4543.80	4.95	4538.85	ASPHALT	4"	CENTER OF PIPE
TH-46A	4/29/2024	78"	WATER – JORDAN AQUEDUCT	WSP	JVWCD	49480.47	59135.94	4543.73	4.95	4538.78	ASPHALT	4"	WEST EDGE OF PIPE
TH-47	4/29/2024	4"	GAS	PLASTIC	DOMINION	49479.14	59135.20	4543.70	3.31	4540.39	ASPHALT	4"	2" GAS LINE IN 4" CASING
TH-48	4/29/2024	(2) 4"	POWER	PLASTIC	RIVERTON CITY	49589.70	59176.57	4544.12	3.48	4540.64	ASPHALT	3"	PARALLEL TO EACH OTHER
TH-49	4/29/2024	4"	POWER	PLASTIC	ROCKY MOUNTAIN POWER	49724.82	59171.96	4544.73	3.00	4541.73	ASPHALT	3"	
TH-50	4/30/2024	4"	POWER	PLASTIC	ROCKY MOUNTAIN POWER	50084.35	59173.03	4546.12	3.20	4542.92	ASPHALT	3"	
TH-51	5/2/2024	6"	IRRIGATION	PLASTIC	RIVERTON CITY	50444.30	59171.43	4547.63	4.44	4543.19	ASPHALT	3"	
TH-52	5/2/2024	8"	WATER	PLASTIC	RIVERTON CITY	50469.74	59171.49	4547.77	4.48	4543.29	ASPHALT	3"	
TH-53	5/2/2024	3"	POWER	PLASTIC	ROCKY MOUNTAIN POWER	50484.43	59171.48	4547.85	2.22	4545.63	ASPHALT	3"	
TH-54	5/1/2024	(2) 3"	POWER	PLASTIC	ROCKY MOUNTAIN POWER	50996.10	59172.69	4549.88	2.94	4546.94	ASPHALT	3"	PARALLEL TO EACH OTHER
TH-55	5/2/2024	(2) 2"	FIBER OPTIC	PLASTIC	VERIZON (MCI)	51265.08	59173.25	4549.21	2.99	4546.22	ASPHALT	4"	
TH-56	5/1/2024	4"	GAS	PLASTIC	DOMINION	51275.34	59173.51	4548.87	2.65	4546.22	ASPHALT	6"	
TH-57	5/1/2024	8"	WATER	PLASTIC	RIVERTON CITY	51279.85	59173.68	4549.11	4.39	4544.72	ASPHALT	6"	
TH-58	5/1/2024	2"	TELEPHONE	PLASTIC	LUMEN/CENTURYLINK	51310.42	59174.75	4548.87	2.42	4546.45	ASPHALT	8"	
TH-59	5/1/2024	60"	WATER – SWA	WSP	JVWCD	51318.30	59171.81	4548.83	9.34	4539.49	ASPHALT	8"	
TH-60	5/1/2024	60"	WATER – SWA	WSP	JVWCD	51335.02	59172.39	4548.63	9.49	4539.14	ASPHALT	6"	
TH-200	12/16/2024	78"	WATER – JA	WSP	JVWCD	54026.62	59287.28	4565.92	7.03	4558.89	ASPHALT	4"	
TH-201	12/16/2024	78"	WATER – JA	WSP	JVWCD	54043.14	59285.38	4566.69	7.40	4559.29	ASPHALT	3"	
TH-202	12/16/2024	78"	WATER – JA	WSP	JVWCD	54047.88	59284.82	4566.96	7.64	4559.32	ASPHALT	N/A	
TH-203	12/16/2024	24"	WATER	WSP	JVWCD	54033.72	59305.78	4566.03	9.60	4556.43	ASPHALT	4"	
TH-204	12/16/2024	36"	WATER	WSP	JVWCD	54042.65	59305.16	4566.63	9.22	4557.41	ASPHALT	4"	

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

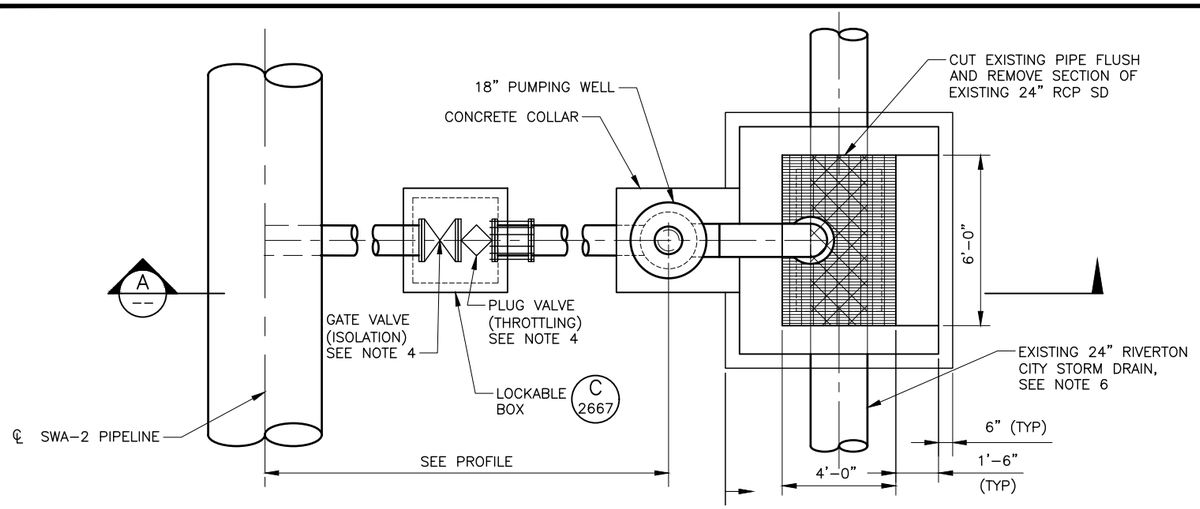
REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

CIVIL
POTHOLE DATA

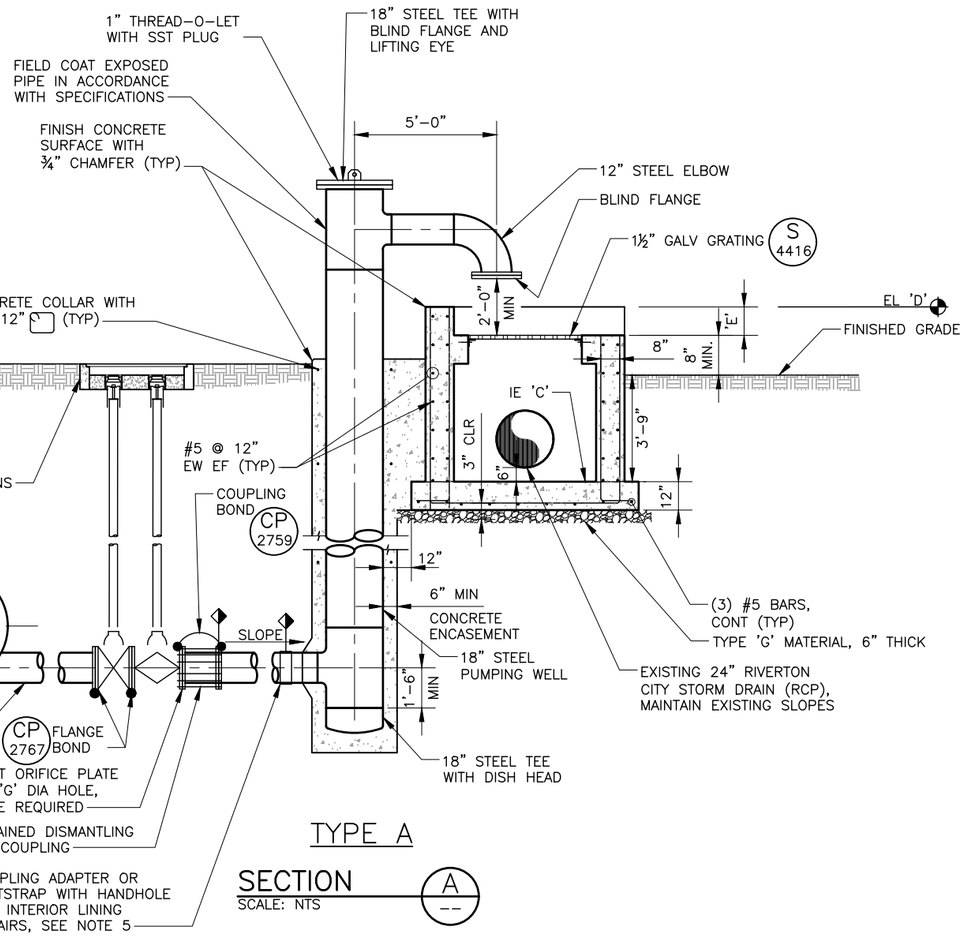
PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. C-03
SHEET 32 OF 100

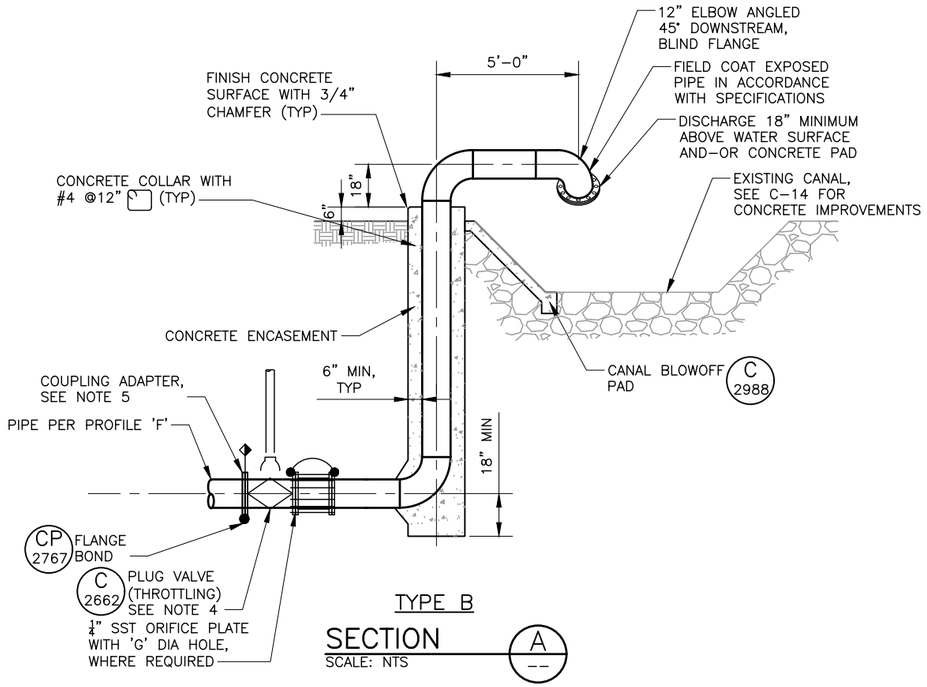


PLAN
SCALE: 3/8"=1'-0'

TABLE 1								
STATION	STRUCTURE TYPE	'A'	'B'	'C'	'D'	'E'	'F'	'G' ORIFICE DIA
SWA STA 337+45	MINOR DRAIN, CONNECT TO EXISTING PER PLAN C 2671	4540.5	4543.0	N/A	N/A	N/A	6" DIAMETER STEEL PIPE, TANGENTIAL CONNECTION A C-05	N/A
SWA STA 370+60	MINOR DRAIN C 2670	4545.8	4548.3	N/A	N/A	N/A	6" DIAMETER STEEL PIPE, TANGENTIAL CONNECTION B C-05	N/A
SWA STA 405+97	A	4524.5	4526.9	4539.5	4545	6"	8" DIAMETER STEEL PIPE, TANGENTIAL CONNECTION A C-06	6"
JA-2 STA 844+25	MINOR DRAIN, WITH TYPE B BLOWOFF TO CANAL C 2671	4552.8	4555.5	N/A	N/A	N/A	12" DIAMETER STEEL PIPE, TANGENTIAL CONNECTION A C-14	8"



TYPE A
SECTION A
SCALE: NTS



TYPE B
SECTION A
SCALE: NTS

NOTES:

1. COATED BURIED AND CONCRETE ENCASED STEEL PIPE PER SPECIFICATIONS.
2. WHERE OUTLET PIPE IS NOT SHOWN ON PLAN AND PROFILE, OUTLET PIPE IS REPLACED BY RIP RAP PAD OVER NON-WOVEN GEOTEXTILE. RIP RAP PER TYPE B DETAIL.
3. ALL STEEL TO BE STD WEIGHT.
4. FOR VALVE SCHEDULE WITH VALVE SIZE AND TYPE, SEE MECHANICAL SCHEDULE DRAWING M-03. SEE DRAIN PLAN AND PROFILE FOR VALVE LOCATIONS.
5. SEE BLOWOFF PLAN AND PROFILES FOR MATERIAL OF DRAIN PIPE BETWEEN MAINLINE AND PUMPING WELL.
6. EXISTING STORM DRAIN PIPE SHALL BE CUT FLUSH WITH THE INTERIOR OF THE BOX AND GROUTED SMOOTH AT ALL PIPE OPENINGS.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

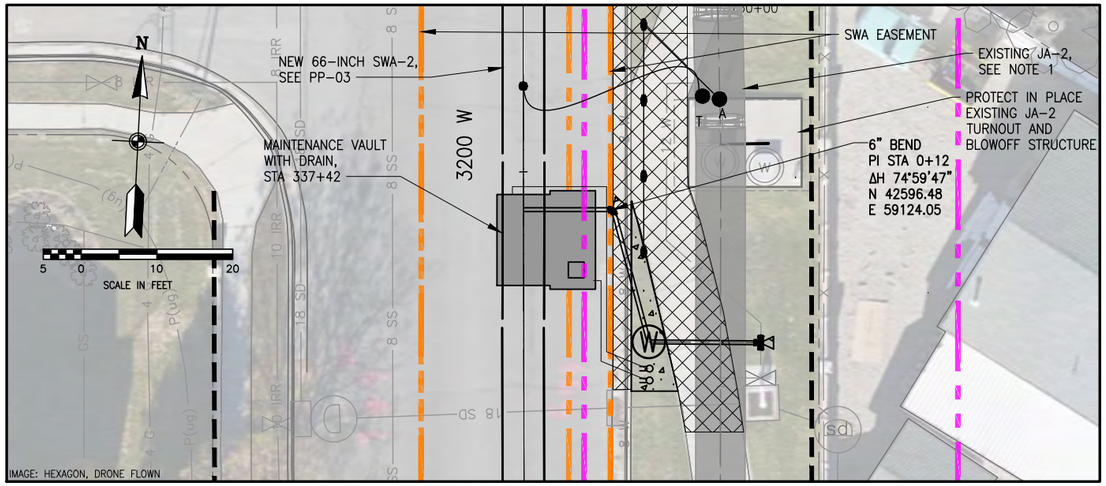
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

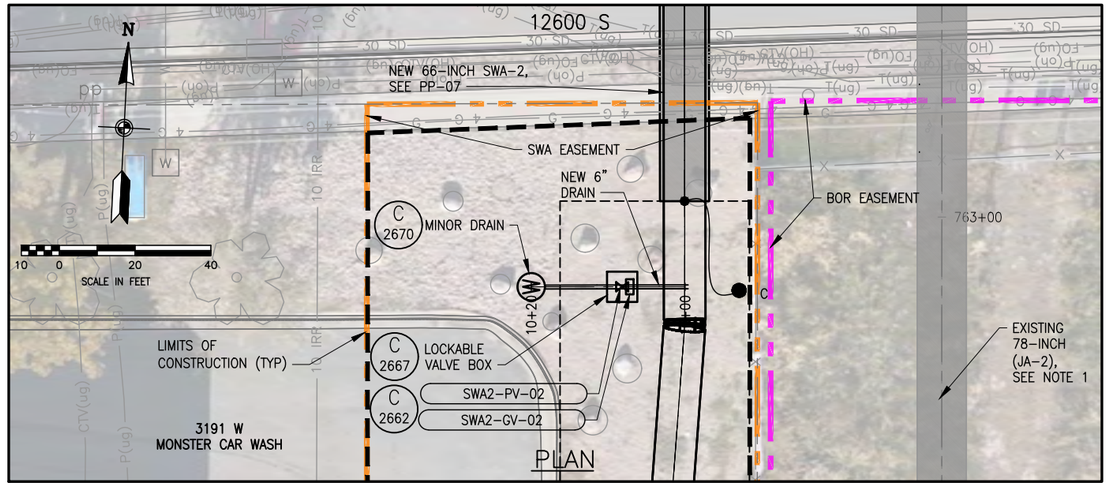
DESIGN L. MINCK
DRAWN J. BLACK
REVIEW CHECKED T. OLSEN
APPROVED J. LUETTINGER

CIVIL
DRAIN STRUCTURE DETAILS

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

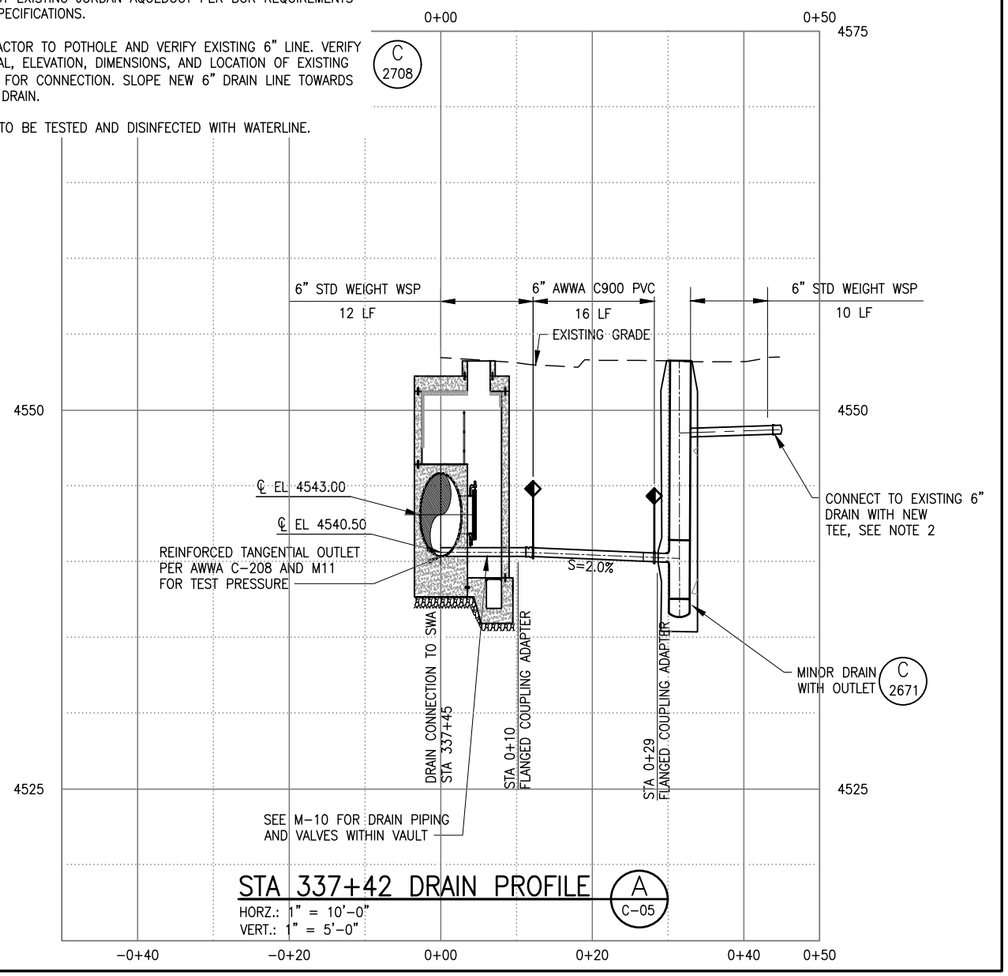
DRAWING NO. C-04
SHEET 33 OF 100





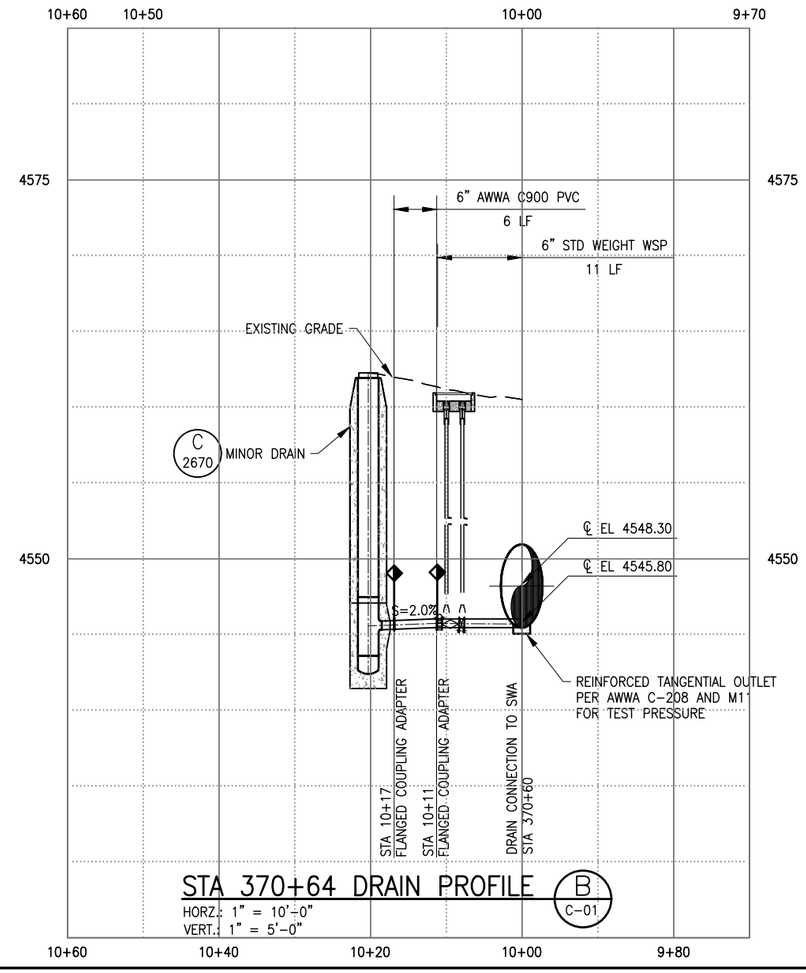
NOTES:

1. PROTECT EXISTING JORDAN AQUEDUCT PER BOR REQUIREMENTS AND SPECIFICATIONS.
2. CONTRACTOR TO POTHOLE AND VERIFY EXISTING 6" LINE. VERIFY MATERIAL, ELEVATION, DIMENSIONS, AND LOCATION OF EXISTING UTILITY FOR CONNECTION. SLOPE NEW 6" DRAIN LINE TOWARDS MINOR DRAIN.
3. DRAIN TO BE TESTED AND DISINFECTED WITH WATERLINE.



STA 337+42 DRAIN PROFILE (A) C-05

HORZ.: 1" = 10'-0"
VERT.: 1" = 5'-0"



STA 370+64 DRAIN PROFILE (B) C-01

HORZ.: 1" = 10'-0"
VERT.: 1" = 5'-0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

CIVIL

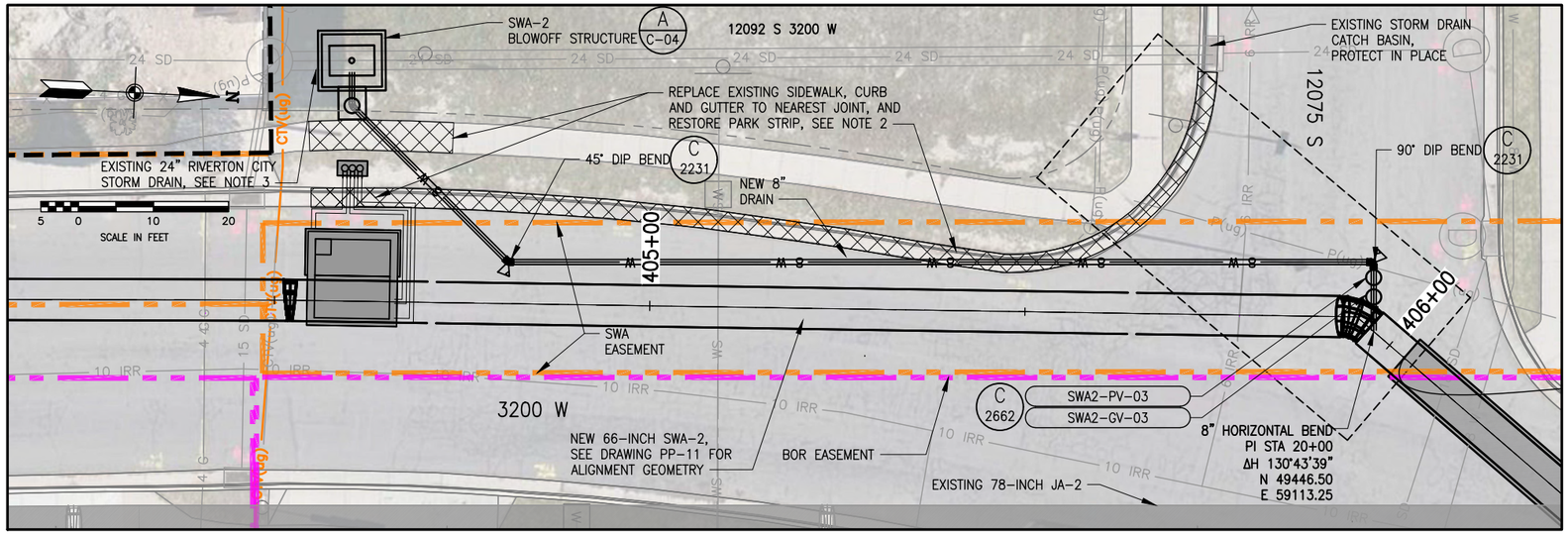
DRAIN PLAN AND PROFILE - 1

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
C-05

SHEET 34 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\C-05.dwg Plotted: 1/16/2025 3:07 PM By: Jeremy Black



NOTES:

1. BLOWOFF TO BE TESTED AND DISINFECTED WITH WATERLINE.
2. CONTRACTOR TO RESTORE SITE TO EXISTING GRADE AND SEED WITH NATIVE SEED.
3. REMOVE EXISTING 24" RIVERTON CITY STORM DRAIN AS NECESSARY FOR CONSTRUCTION OF SWA-2 BLOWOFF STRUCTURE. CONTRACTOR TO EXPOSE NEAREST EXISTING STORM DRAIN PIPE JOINT. DO NOT CUT PIPE WITHIN 18" OF JOINT. IF NECESSARY REMOVE AND REPLACE STORM DRAIN PIPE TO NEXT JOINT.

STA 405+97 DRAIN PROFILE (A C-02)

HORZ.: 1" = 10'-0"
VERT.: 1" = 5'-0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

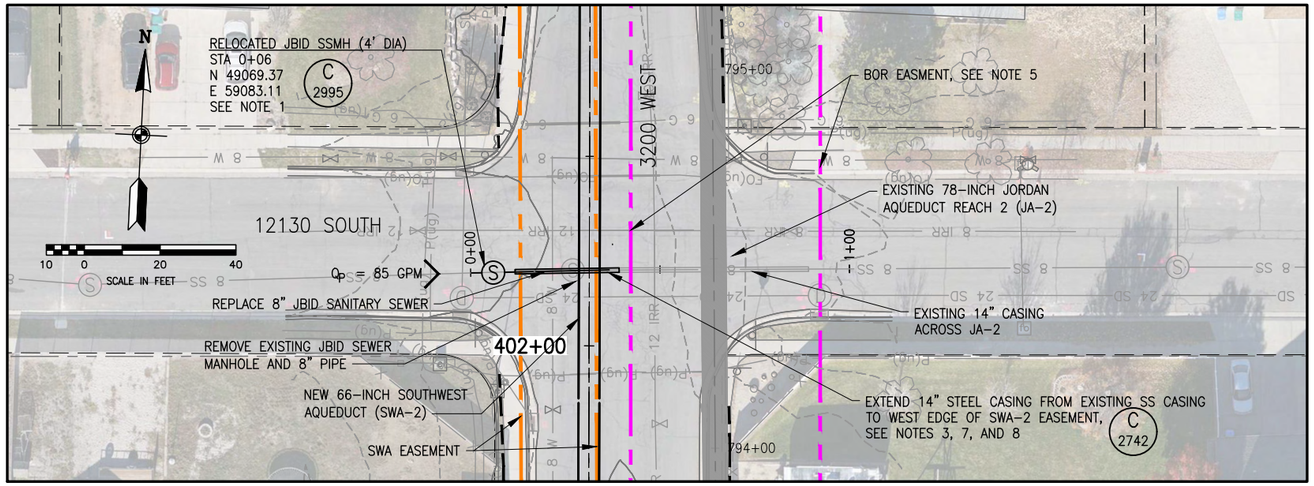
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

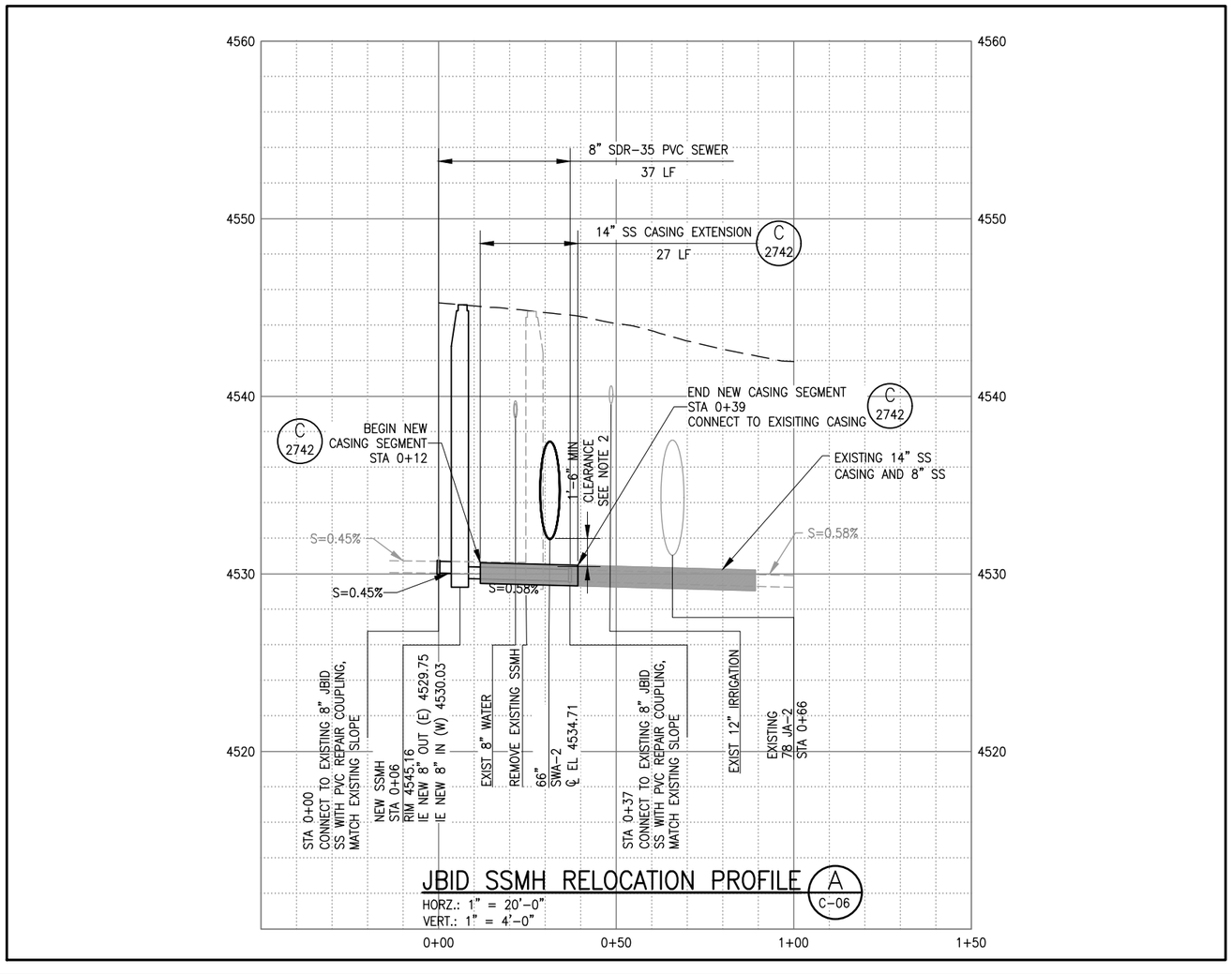
DESIGN L. MINCK
DRAWN J. BLACK
REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

CIVIL
STA 405+97 DRAIN
PLAN AND PROFILE - 2

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
C-06
SHEET 35 OF 100





JBID SSMH RELOCATION PROFILE (A C-06)

HORZ.: 1" = 20'-0"
VERT.: 1" = 4'-0"

NOTES:

1. EXISTING JBID SSMH TO BE RELOCATED OUT OF SWA EASEMENT. MANHOLE LID SHALL BE CAST WITH THE JBID LOGO.
2. 1'-6" MINIMUM SEPARATION MUST BE MAINTAINED BETWEEN NEW 66" SWA-2 AND JBID SEWER. (C 2128)
3. BACKFILL JBID SEWER AND CASING IN CLSM ACROSS BOR AND JVWCD EASEMENTS. OUTSIDE OF BOR AND JVWCD EASEMENTS BACKFILL PER JBID STANDARDS.
4. COMPLY WITH JBID BYPASS, INSPECTION, AND TESTING REQUIREMENTS. CONTRACTOR TO CCTV SEWER AFTER CONSTRUCTION.
5. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS OF THE JA DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
6. Q_P IS THE ESTIMATED PEAK SEWER FLOW.
7. CONTRACTOR TO VERIFY EXISTING CASING TYPE AND DIMENSIONS. CONNECT EXISTING CASING TO NEW CASING EXTENSION.
8. CONTRACTOR TO PROTECT PLASTIC CARRIER PIPE FROM HEAT DURING WELDING OF CASING WITH SACRIFICIAL HEAT SHIELDING.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK REGISTERED STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

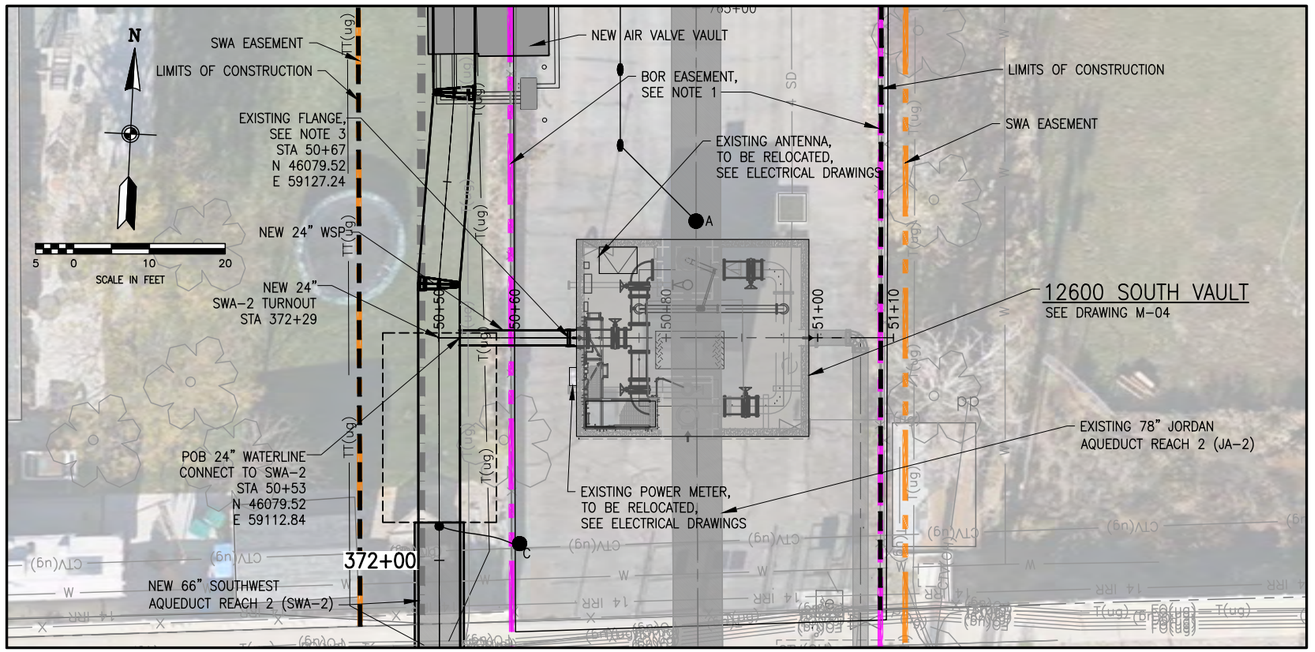
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

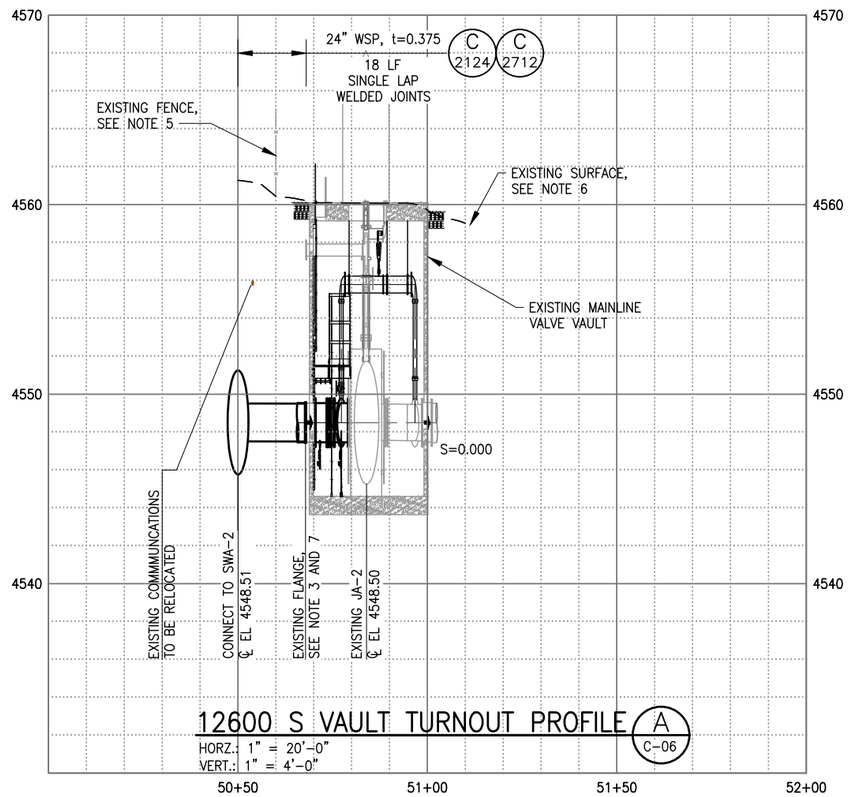
DESIGN L. MINCK
DRAWN J. BLACK
REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

CIVIL
JBID SSMH RELOCATION
DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO. C-07
SHEET 36 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\C-07.dwg Plotted: 1/14/2025 5:35 PM By: Jeremy Black





12600 S VAULT TURNOUT PROFILE (A / C-06)
HORZ.: 1" = 20'-0"
VERT.: 1" = 4'-0"

NOTES:

1. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
2. EXISTING JORDAN AQUEDUCT TO REMAIN IN SERVICE DURING PIPELINE INSTALLATION, SEE SPECIFICATIONS FOR SHUTDOWN REQUIREMENTS FOR CONNECTION TO 12600 SOUTH VAULT PIPING.
3. REMOVE EXISTING 24" BURIED FLANGE AND SPOOL THROUGH VAULT WALL AND INSTALL NEW 24" WSP THROUGH WALL, SEE M-04. SALVAGE SPOOL TO OWNER.
4. DISINFECTION AND TESTING OF 24" WATERLINE TO OCCUR WITH DISINFECTION AND TESTING OF SWA-2.
5. EXISTING FENCE TO BE REMOVED AND REPLACED FOR CONSTRUCTION, SEE SPECIFICATION SECTION 01 71 50 FOR WORK AND RESTORATION REQUIREMENTS OF PRIVATE PROPERTY.
6. RESTORE JVWCD SITE TO ORIGINAL CONDITIONS.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

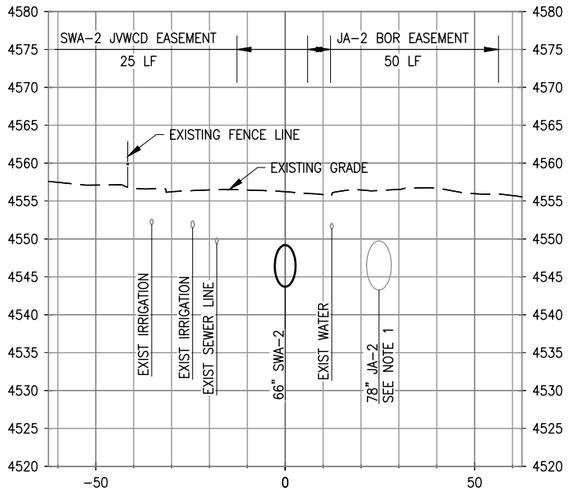
CIVIL

12600 SOUTH VAULT PLAN AND PROFILE

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO. C-08
SHEET 37 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\C-08.dwg Plotted: 1/16/2025 3:10 PM By: Jeremy Black

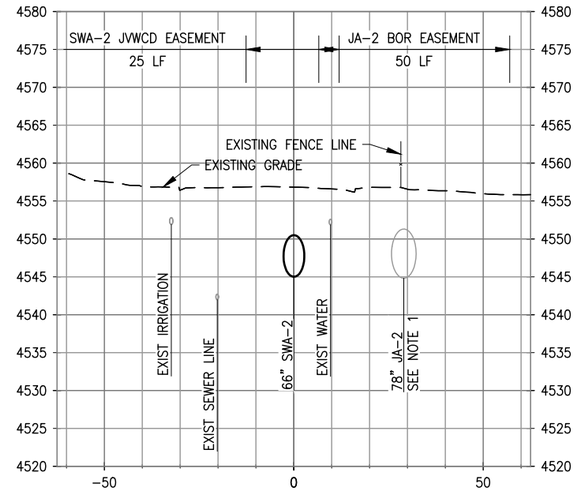


STA 333+00

CROSS SECTION 01

PP–02

HORZ.: 1" = 20'–0"
VERT.: 1" = 10'–0"

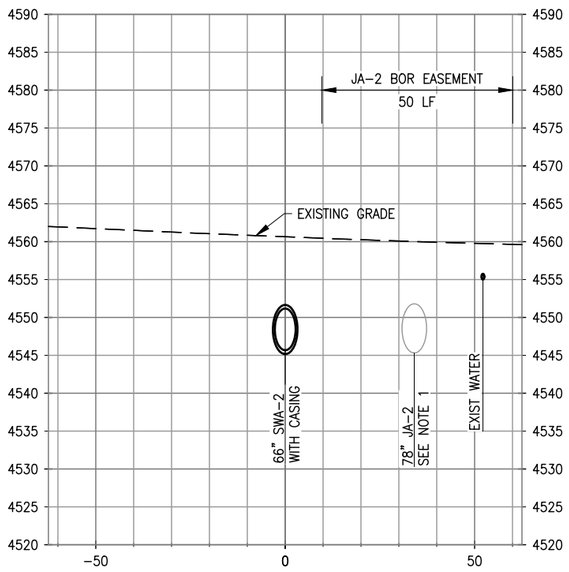


STA 348+00

CROSS SECTION 02

PP–04

HORZ.: 1" = 20'–0"
VERT.: 1" = 10'–0"



STA 371+50

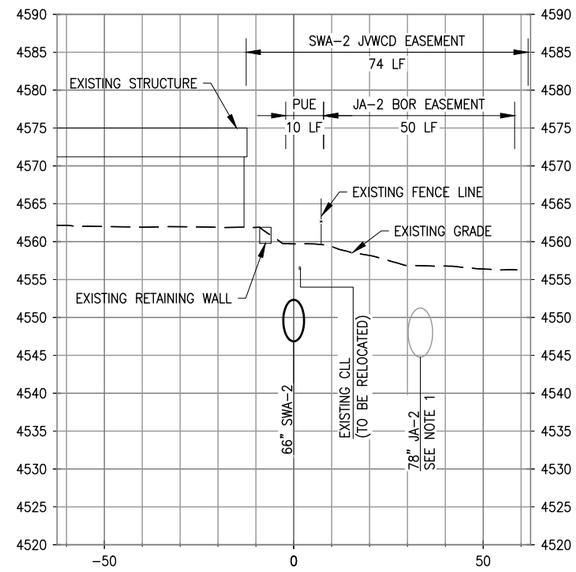
CROSS SECTION 03

PP–07

HORZ.: 1" = 20'–0"
VERT.: 1" = 10'–0"

NOTES:

1. ELEVATIONS OF JA–2 ARE APPROXIMATE AND BASED ON BOR RECORD DRAWINGS.



STA 376+50

CROSS SECTION 04

PP–08

HORZ.: 1" = 20'–0"
VERT.: 1" = 10'–0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

CIVIL

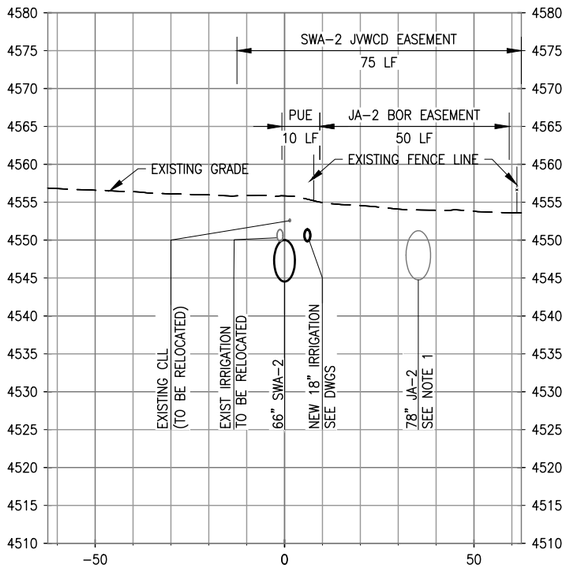
CROSS SECTION PROFILES - 1

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
C-09

SHEET 38 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\C-09.dwg Plotted: 1/14/2025 5:37 PM By: Jeremy Black

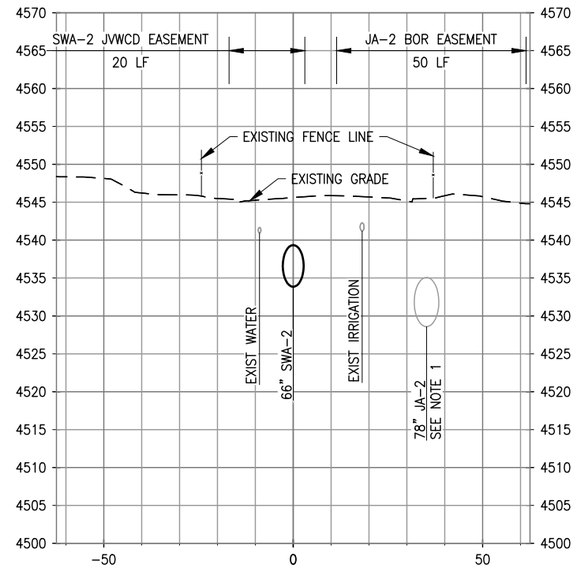


STA 381+50

CROSS SECTION 05

PP-08

HORZ.: 1" = 20'-0"
VERT.: 1" = 10'-0"

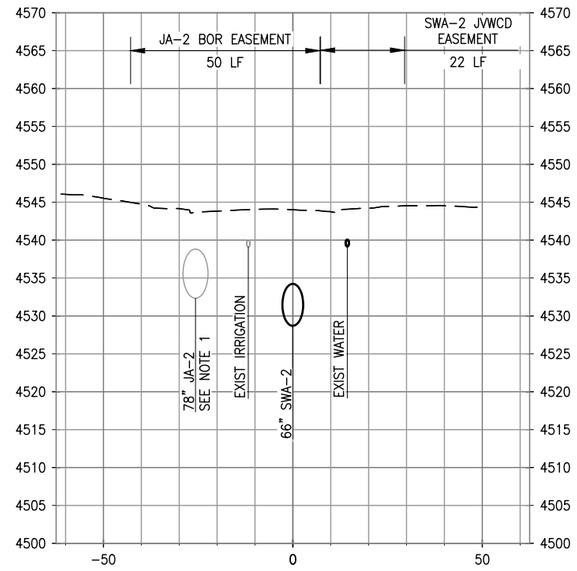


STA 400+00

CROSS SECTION 06

PP-11

HORZ.: 1" = 20'-0"
VERT.: 1" = 10'-0"

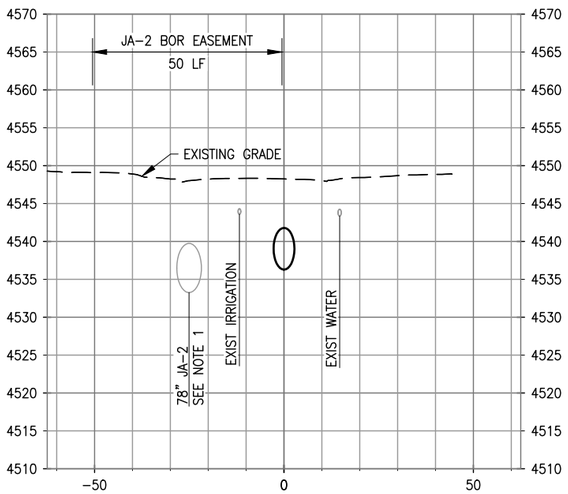


STA 407+00

CROSS SECTION 07

PP-12

HORZ.: 1" = 20'-0"
VERT.: 1" = 10'-0"



STA 417+50

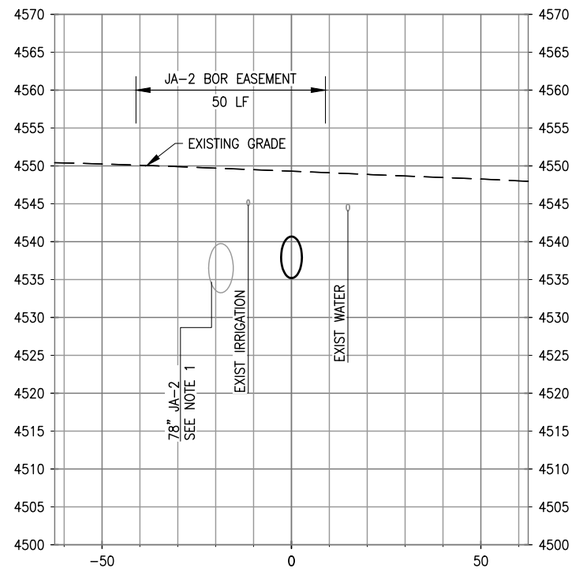
CROSS SECTION 08

PP-13

HORZ.: 1" = 20'-0"
VERT.: 1" = 10'-0"

NOTES:

1. ELEVATIONS OF JA-2 ARE APPROXIMATE AND BASED ON BOR RECORD DRAWINGS.



STA 424+55

CROSS SECTION 09

PP-14

HORZ.: 1" = 20'-0"
VERT.: 1" = 10'-0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK
DRAWN J. BLACK
REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

CIVIL

CROSS SECTION PROFILES - 2

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
C-10

SHEET 39 OF 100

N

10 0 20 40

SCALE IN FEET

3193 WEST

11386 SOUTH

11372 SOUTH

11358 SOUTH

11334 SOUTH

SOUTH JORDAN CITY PROPERTY

JVWCD EASEMENT

ENLARGED CIVIL PLAN
SEE DRAWING C-12

11400 SOUTH JA-2
MAINLINE VALVE VAULT
SEE DRAWING M-11

3185 WEST

ROCKY MOUNTAIN POWER OVERHEAD POWER LINES

11400 SOUTH

COMPLETE INTERNAL BUTTSTRAP AT 8 EXISTING JOINTS BEYOND CONNECTION, TYP (220 FEET MINIMUM OF PIPE REQUIRED TO BE RESTRAINED). C 2951

EXISTING 78" JA-2

EXISTING JA-2 DOUBLE TURNOUT STRUCTURE

JORDAN AQUEDUCT EASEMENT

UTAH LAKE DISTRIBUTING CANAL

EXISTING FLOWRATE CONTROL AND METER VAULT

EXISTING SURGE TANK VAULT

JVWCD EASEMENT

SOUTHWEST AQUEDUCT EASEMENT

EXISTING SOUTH JORDAN METER VAULT

EXISTING FLOW CONTROL VAULT

COMPLETE INTERNAL BUTTSTRAP AT 8 EXISTING JOINTS BEYOND CONNECTION, TYP (220 FEET MINIMUM OF PIPE REQUIRED TO BE RESTRAINED). C 2951

BOR EASEMENT, SEE NOTE 3

25' JA-2 LOAD RESTRICTION ZONE SEE NOTE 3

C 2970

CONSTRUCTION LIMITS

SHARED PRIVATE DRIVEWAY, SEE NOTE 2

END OF EXISTING SWA-2

FUTURE SWA-2 ALIGNMENT

SOUTHWEST AQUEDUCT EASEMENT

CONSTRUCTION LIMITS

EXISTING 60" SWA-2

COORDINATE ALL WORK WITHIN CANAL RIGHT OF WAY WITH ULDC

SEE NOTE 1, TYP ALL EXISTING FACILITIES

3180 WEST

JVWCD EASEMENT

3177 W ALPINE CREEK WAY

UTAH LAKE DISTRIBUTING CANAL

3147 W

JVWCD 11400 SOUTH PUMP STATION

3113 W UINTA PINES CIRCLE

3107 W UINTA PINES CIRCLE

EXISTING 33" 11400 SOUTH PIPELINE

NOTES:

1. PROTECT IN PLACE ALL EXISTING JVWCD FACILITIES.
2. MAINTAIN ACCESS TO HOMES. DO NOT BLOCK SHARED DRIVEWAY. DO NOT USE DRIVEWAY WITHOUT WRITTEN APPROVAL FROM ALL THREE HOMEOWNERS.
3. PROTECT EXISTING JORDAN AQUEDUCT AND ALL STRUCTURES AND APPURTENANCES, SHOWN BASED ON BOR JORDAN AQUEDUCT REFERENCE PLANS. REFER TO SPECIFICATIONS FOR PROTECTION REQUIREMENTS OF THE JA DURING CONSTRUCTION AND RESTRICTIONS WITHIN THE BOR EASEMENT.
4. COORDINATE ANY REQUIRED TRAFFIC IMPACTS ON 3180 WEST WITH SOUTH JORDAN CITY AND 11400 SOUTH WITH UDOT.

PLAN

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NO. 11932046
RYAN JAMES EGBERT
STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN R. EGBERT
DRAWN J. BLACK
REVIEW T. OLSEN
CHECKED
APPROVED J. LUETTINGER

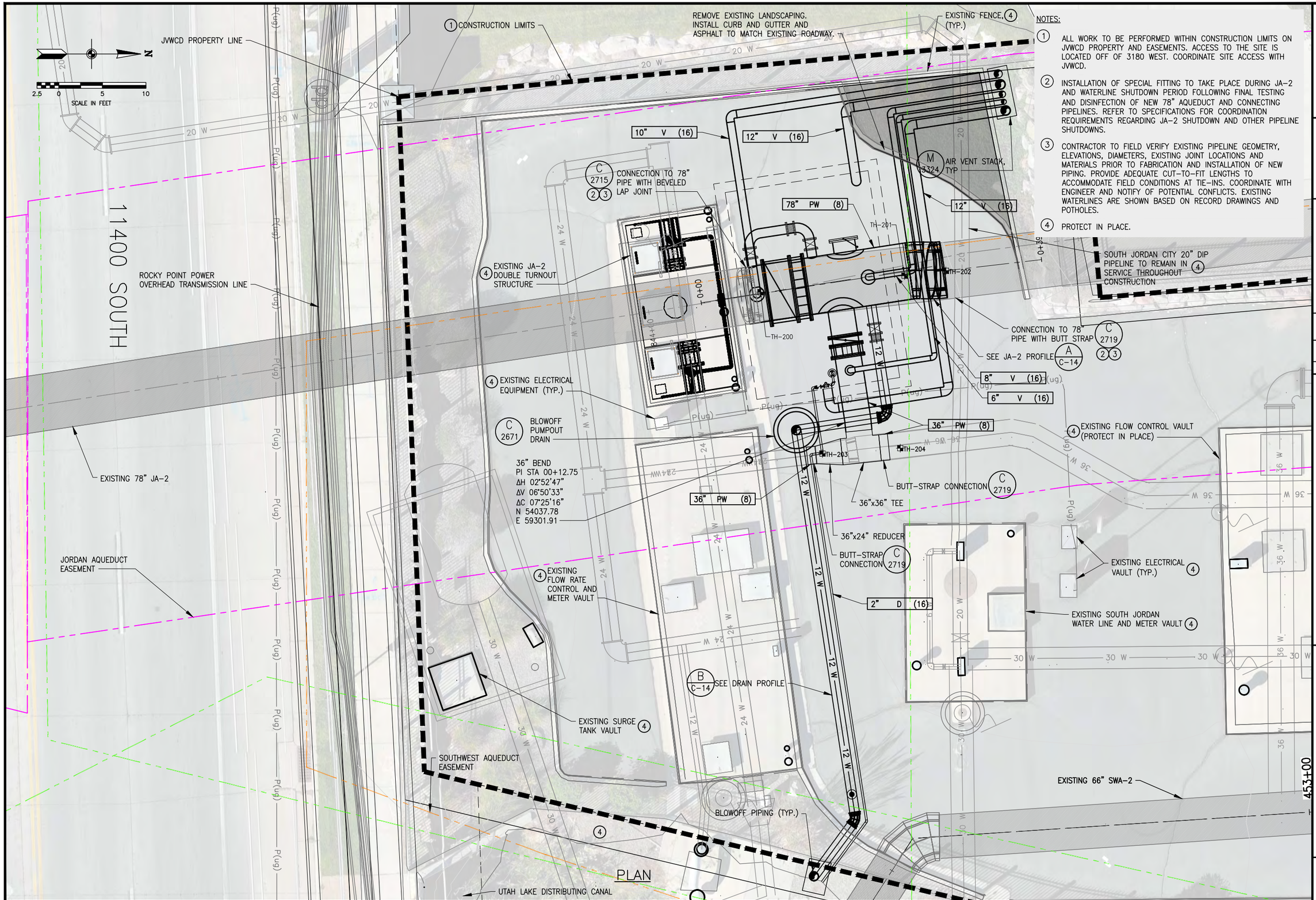
CIVIL
11400 SOUTH JA-2
MAINLINE VALVE VAULT
OVERVIEW SITE PLAN

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
C-11

SHEET 40 OF 100

P:\jordan valley wcd\010-23-02 southwest aqueduct reach 2 - 13400 s to 11800 s\2.0 design phase\2.9 drawings\sht\C-11.dwg Plotted: 1/16/2025 9:20 AM By: Alex White



NOTES:

1. ALL WORK TO BE PERFORMED WITHIN CONSTRUCTION LIMITS ON JVWCD PROPERTY AND EASEMENTS. ACCESS TO THE SITE IS LOCATED OFF OF 3180 WEST. COORDINATE SITE ACCESS WITH JVWCD.
2. INSTALLATION OF SPECIAL FITTING TO TAKE PLACE DURING JA-2 AND WATERLINE SHUTDOWN PERIOD FOLLOWING FINAL TESTING AND DISINFECTION OF NEW 78" AQUEDUCT AND CONNECTING PIPELINES. REFER TO SPECIFICATIONS FOR COORDINATION REQUIREMENTS REGARDING JA-2 SHUTDOWN AND OTHER PIPELINE SHUTDOWNS.
3. CONTRACTOR TO FIELD VERIFY EXISTING PIPELINE GEOMETRY, ELEVATIONS, DIAMETERS, EXISTING JOINT LOCATIONS AND MATERIALS PRIOR TO FABRICATION AND INSTALLATION OF NEW PIPING. PROVIDE ADEQUATE CUT-TO-FIT LENGTHS TO ACCOMMODATE FIELD CONDITIONS AT TIE-INS. COORDINATE WITH ENGINEER AND NOTIFY OF POTENTIAL CONFLICTS. EXISTING WATERLINES ARE SHOWN BASED ON RECORD DRAWINGS AND POTHOLES.
4. PROTECT IN PLACE.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NO. 11932046
RYAN JAMES EGBERT
STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN R. EGBERT
DRAWN J. BLACK
REVIEW CHECKED T. OLSEN APPROVED J. LUETTINGER

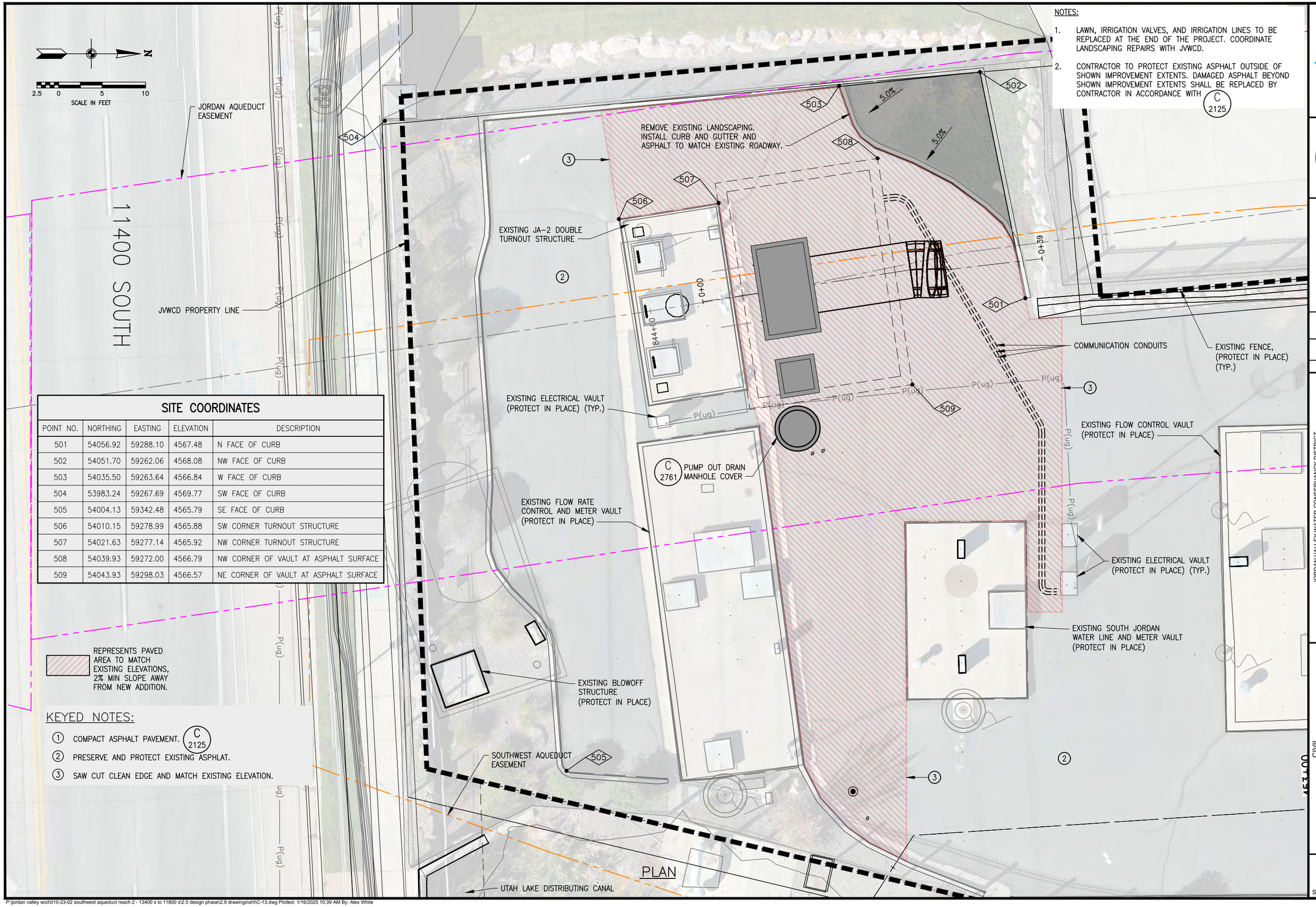
CIVIL

11400 SOUTH JA-2
MAINLINE VALVE VAULT
PIPING SITE PLAN

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
C-12
SHEET 41 OF 100

P:\jordan valley wcd\010-23-02 southwest aqueduct reach 2 - 13400 s to 11800 s\2.0 design phase\2.9 drawings\sht\C-12.dwg Plotted: 1/16/2025 12:52 PM By: Alex White



NOTES:

1. LAWN, IRRIGATION VALVES, AND IRRIGATION LINES TO BE REPLACED AT THE END OF THE PROJECT. COORDINATE LANDSCAPING REPAIRS WITH JVWCD.
2. CONTRACTOR TO PROTECT EXISTING ASPHALT OUTSIDE OF SHOWN IMPROVEMENT EXTENTS. DAMAGED ASPHALT BEYOND SHOWN IMPROVEMENT EXTENTS SHALL BE REPLACED BY CONTRACTOR IN ACCORDANCE WITH C 2125

SITE COORDINATES

POINT NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
501	54056.92	59288.10	4567.48	N FACE OF CURB
502	54051.70	59262.06	4568.08	NW FACE OF CURB
503	54035.50	59263.64	4566.84	W FACE OF CURB
504	53983.24	59267.69	4569.77	SW FACE OF CURB
505	54004.13	59342.48	4565.79	SE FACE OF CURB
506	54010.15	59278.99	4565.88	SW CORNER TURNOUT STRUCTURE
507	54021.63	59277.14	4565.92	NW CORNER TURNOUT STRUCTURE
508	54039.93	59272.00	4566.79	NW CORNER OF VAULT AT ASPHALT SURFACE
509	54043.93	59298.03	4566.57	NE CORNER OF VAULT AT ASPHALT SURFACE

REPRESENTS PAVED AREA TO MATCH EXISTING ELEVATIONS, 2% MIN SLOPE AWAY FROM NEW ADDITION.

KEYED NOTES:

1. COMPACT ASPHALT PAVEMENT. C 2125
2. PRESERVE AND PROTECT EXISTING ASPHLAT.
3. SAW CUT CLEAN EDGE AND MATCH EXISTING ELEVATION.

PLAN

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER NO. 11932046 RYAN JAMES EGBERT STATE OF UTAH

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

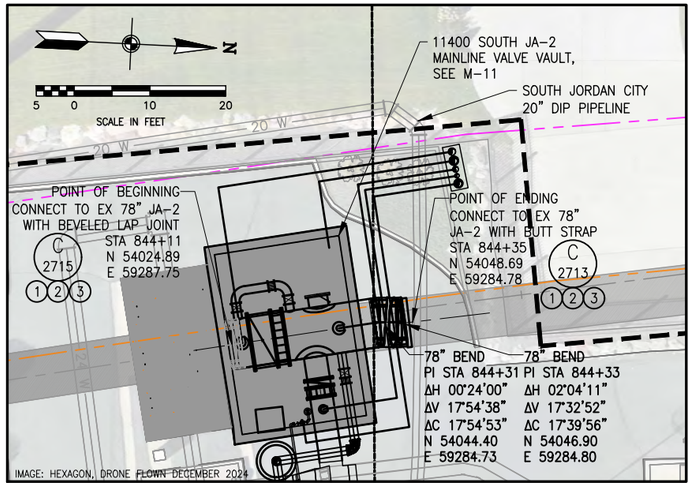
DESIGN R. EGBERT
DRAWN J. BLACK
REVIEW
CHECKED C. NELSON
APPROVED J. LUETTINGER

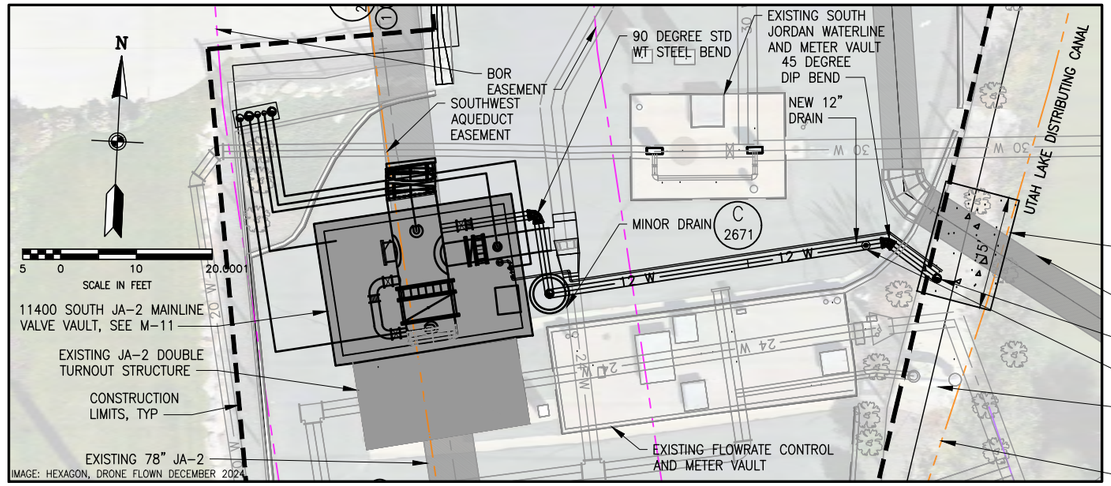
CIVIL
GRADING AND SITE RESTORATION

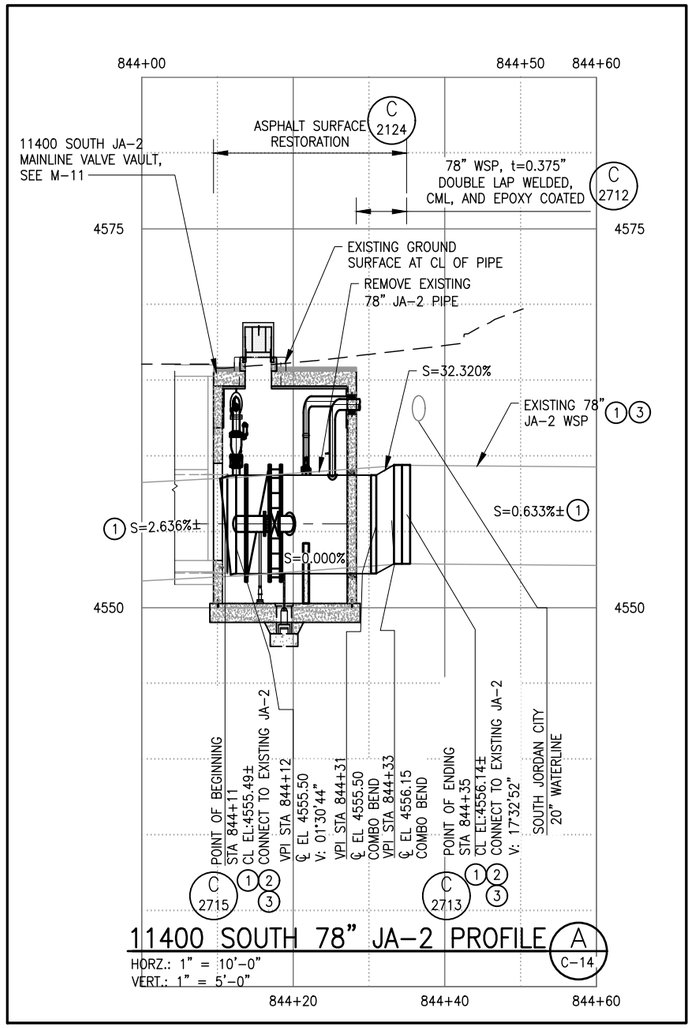
PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. C-13
SHEET 42 OF 100

P:\jordan valley wcd\010-23-02 southwest aqueduct reach 2 - 13400 s to 11800 s\2.0 design phase\2.9 drawings\sht\C-13.dwg Plotted: 1/16/2025 10:39 AM By: Alex White



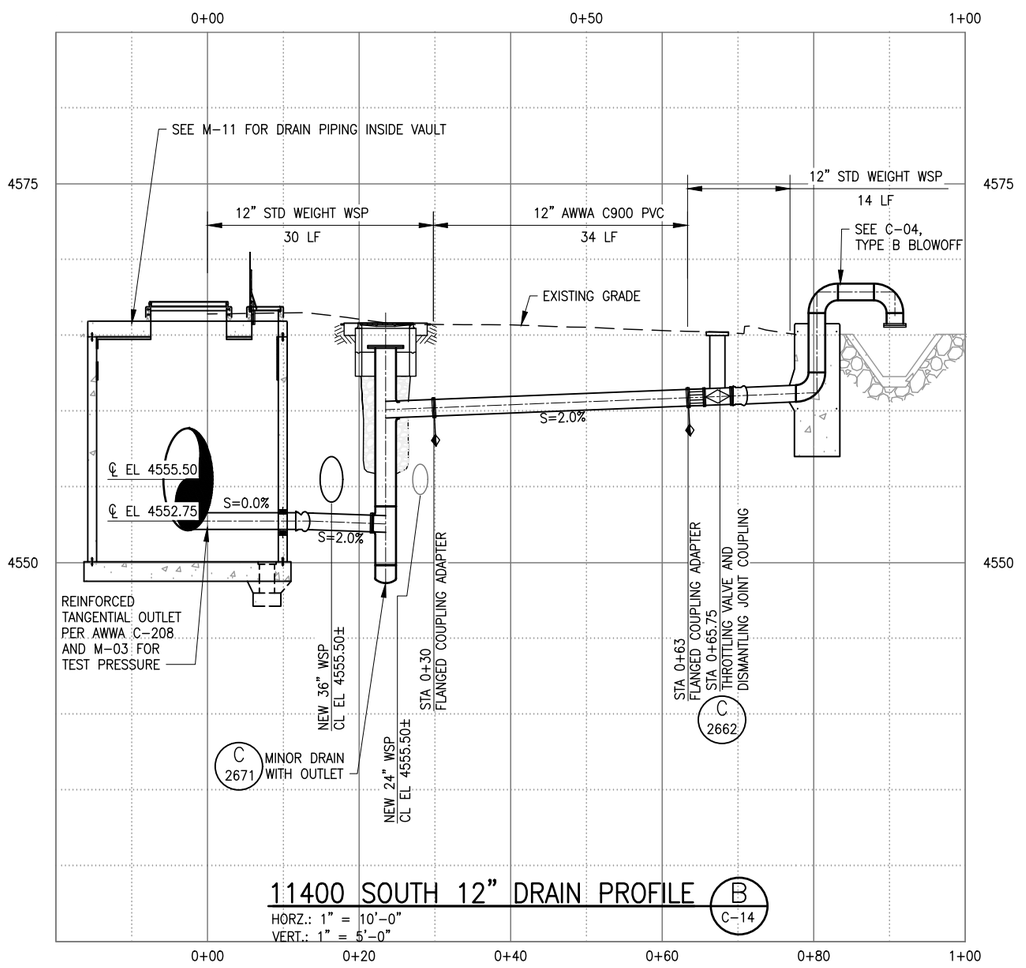




11400 SOUTH 78" JA-2 PROFILE (A)

HORZ.: 1" = 10'-0"
VERT.: 1" = 5'-0"

C-14



11400 SOUTH 12" DRAIN PROFILE (B)

HORZ.: 1" = 10'-0"
VERT.: 1" = 5'-0"

C-14

78" JA-2 NOTES: (A)

1. EXISTING WATERLINE LOCATIONS, ELEVATIONS, SLOPES, ETC. ARE SHOWN BASED ON RECORD DRAWINGS AND POTHOLES. EXPOSE EXISTING CONNECTION POINTS PRIOR TO FABRICATION OF WELDED STEEL PIPE. VERIFY LOCATION, ELEVATION, GEOMETRY, SIZE, AND MATERIAL OF EXISTING PIPING. NOTIFY ENGINEER OF ANY POTENTIAL CONFLICTS.
2. FINAL CONNECTIONS TO TAKE PLACE DURING JA-2 SHUTDOWN PERIOD FOLLOWING FINAL TESTING AND DISINFECTION.
3. PROTECT EXISTING JORDAN AQUEDUCT PER BOR REQUIREMENTS AND SPECIFICATIONS.

12" DRAIN NOTES: (B)

1. PROTECT EXISTING JORDAN AQUEDUCT PER BOR REQUIREMENTS AND SPECIFICATIONS.
2. DRAIN TO BE TESTED AND DISINFECTED WITH WATERLINE.
3. COORDINATE WITH UTAH LAKE DISTRIBUTING CANAL (ULDC) WATER MASTER FOR ALL WORK TO BE PERFORMED WITHIN CANAL ROW. WORK TO BE PERFORMED DURING CANAL OFF SEASON FROM OCTOBER 15TH TO APRIL 1ST. WORK IN ULDC REQUIRES CANAL PERMIT AND SALT LAKE COUNTY FLOOD CONTROL PERMIT.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER NO. 11932046 RYAN JAMES EGBERT

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN R. EGBERT
DRAWN J. BLACK

REVIEW
CHECKED C. NELSON
APPROVED J. LUETTINGER

CIVIL

11400 SOUTH PLAN AND PROFILES

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO. C-14
SHEET 43 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\C-14.dwg Plotted: 1/16/2025 3:14 PM By: Jeremy Black

CATHODIC PROTECTION GENERAL NOTES

TEST STATIONS:

CP 2724

1. USE POST MOUNT STYLE UNLESS OTHERWISE SPECIFIED.
2. MARK POST MOUNT STYLE STATIONS WITH UTILITY APPROVED LABEL MARKER ON POST, SEE SPECIFICATIONS.
3. PROVIDE WIRE LOOP AT BASE OF TEST STATION AND AT PIPE CONNECTIONS TO MINIMIZE SETTLEMENT STRESSES ON WIRE.
4. USE STANDARD COLOR CODE AS SHOWN ON DETAILS AND AS FOLLOWS:
   - WHITE – DISTRICT PIPELINE
   - GREEN – UNPROTECTED PIPELINE
   - BLUE – INSULATION
   - ORANGE – CASING
   - RED – FOREIGN/GAS CROSSING
   - YELLOW – REFERENCE ELECTRODE
   - BLACK – ANODES
5. ALL TEST STATION WIRES TO BE INSTALLED SPLICE FREE.
6. IN UNDEVELOPED OR CULTIVATED AREAS, BURY WIRES A MINIMUM OF 30–INCHES OR PLACE IN RIGID CONDUIT, SEE OFFSET TEST STATION DETAIL FOR CONDUIT REQUIREMENTS.
7. ALL TEST WIRE CONNECTIONS TO PIPE SHALL BE THERMITE WELDED CONNECTIONS, INDIVIDUAL WIRES SHALL BE CONNECTED TO PIPE WITH A MINIMUM OF 6–INCHES SEPARATION.
8. QUANTITY OF TERMINALS AND WIRING CONNECTIONS VARIES, SEE APPLICABLE TEST STATION TYPE.
9. ALL WIRES UNDER ROADWAY MUST BE PROTECTED BY PVC COATED STEEL CONDUIT AS SHOWN IN DETAIL, SEAL ENDS OF PIPE DUCT COMPOUND OR URETHANE FOAM, PROVIDE 2" CONDUIT FOR WIRES ONLY, DO NOT CONNECT ROADWAY CONDUIT TO TEST STATION CONDUIT.
10. CONFIRM LOCATION OF TEST STATIONS WITH OWNER AND ENGINEER IN THE FIELD PRIOR TO INSTALLATION. TEST STATIONS PLACED IN UNAPPROVED LOCATIONS WILL BE MOVED AT THE CONTRACTOR'S EXPENSE.

ELECTRICAL CONTINUITY

1. ALL BURIED OR VAULT JOINTS SHALL BE BONDED FOR ELECTRICAL CONTINUITY.
2. PROVIDE TWO BONDS, MINIMUM, ON EACH JOINT UNLESS SPECIFIED OTHERWISE FOR PIPE DIAMETER. SEE SPECIFICATIONS.
3. FLEXIBLE COUPLINGS, FLANGE COUPLING ADAPTERS, OR DEPEND–O–LOC JOINTS SHALL BE BONDED SIMILAR TO FLEXIBLE JOINT.
4. BURIED OR VAULT FLANGE JOINTS SHALL BE BONDED.

CASED CROSSINGS

1. ALL CASED CROSSINGS WITH METALLIC CASINGS SHALL BE TESTED FOR ELECTRICAL ISOLATION BETWEEN THE CARRIER PIPE AND CASING BY CATHODIC PROTECTION SPECIALIST.
2. ISOLATION TESTING SHALL BE CONDUCTED BEFORE AND AFTER BACKFILLING CASING.
3. CATHODIC PROTECTION SPECIALIST TO PERFORM TEST USING ENGINEER APPROVED TEST PROCEDURE.
4. ELECTRICAL CONTACTS BETWEEN THE PIPE AND CASING SHALL BE REMOVED BY THE CONTRACTOR.

ELECTRICAL ISOLATION:

1. PROVIDE INSULATING JOINTS IN PIPELINE WHERE INDICATED ON THE DRAWINGS.
2. TEST ALL INSULATING JOINTS FOR ELECTRICAL ISOLATION BEFORE PIPE IS BACKFILLED AS SPECIFIED.
3. ALL MISCELLANEOUS PIPING AND ELECTRICAL CONDUITS TO BE ELECTRICALLY ISOLATED FROM PIPES.
4. MAINTAIN AND VERIFY ELECTRICAL ISOLATION BETWEEN PIPING AND STEEL VAULT REINFORCEMENT.

PIPE LINE PLAN AND PROFILE TEST STATION LEGEND

- X — EXST TEST STATION, X=TYPE
- X — NEW TEST STATION, X=TYPE

ADDITIONAL CATHODIC ITEMS SCHEDULE

LOCATION	DRAWING WHERE SHOWN	DESCRIPTION OF WORK
13400 SOUTH VAULT	CP–02	NEW TYPE A TEST STATION
14400 SOUTH VAULT	CP–02	NEW TYPE A TEST STATION
JORDAN VALLEY WATER TREATMENT PLANT INTERCONNECTION VAULT	CP–06	INSTALL DIELECTRIC UNIONS
11400 S DOUBLE TURNOUT STRUCTURE	CP–07	INSTALL DIELECTRIC UNIONS

TEST STATION SCHEDULE

PIPE	STATION	STYLE	TYPE	OFFSET	COMMENTS	SHEET
78" JA–2	645+02	POST	A	EAST 20'	4 EACH 32 LB MAGNESIUM ANODES, LOCATE TS POST NEAR NE CORNER OF EXISTING JA–2 14600 S TURNOUT STRUCTURE.	CP–02
66" JA–2	709+14	POST	A	EAST 20'	4 EACH 32 LB MAGNESIUM ANODES, LOCATE TS POST NEAR SE CORNER OF EXISTING SWA–2 13400 S TURNOUT STRUCTURE.	CP–02
66" SWA–2	319+40	POST	T	EAST 30'	LOCATE TS POST NEAR NW CORNER OF EXISTING JA–2 TURNOUT STRUCTURE, ADJACENT TO EXISTING TEST STATIONS	PP–01
66" SWA–2	331+85	POST	T	EAST 40'	LOCATE TS POST ON NORTH SIDE OF EXISTING JA–2 CATHODIC PROTECTION FACILITY CONCRETE PAD	PP–02
66" SWA–2	337+60	POST	T	EAST 30'	LOCATE TS POST ON NORTH SIDE OF EXISTING JA–2 TURNOUT STRUCTURE, ADJACENT TO EXISTING TEST STATION	PP–03
78" JA–2	729+80	POST	A	EAST 5'	4 EACH 32 LB MAGNESIUM ANODES, LOCATE TS POST NEAR NE CORNER OF EXISTING JA–2 TURNOUT STRUCTURE. IN SIMILAR LOCATION TO EXISTING TS.	PP–03
66" SWA–2	345+20	POST	T	EAST 30'	LOCATE TS POST ON NORTH SIDE OF EXISTING JA–2 TURNOUT STRUCTURE, ADJACENT TO EXISTING PIPELINE MARKER POST	PP–04
66" SWA–2	352+00	POST	T	EAST 30'	LOCATE TS POST WITHIN BOR EASEMENT, AGAINST FENCELINE	PP–05
66" SWA–2	365+70	POST	T	EAST 15'	LOCATE TS POST WITHIN SWA–2 EASEMENT, ADJACENT TO NEW VAULT AND VENT PAD	PP–06
66" SWA–2	370+75	POST	C	SOUTHEAST 20'	LOCATE TS POST WITHIN SWA–2 EASEMENT, NEAR FENCELINE	PP–07 & C–01
66" SWA–2	372+05	POST	C	EAST 25'	LOCATE TS POST ON JVWCD PROPERTY NEAR WEST FENCELINE	PP–07 & C–01
78" JA–2	764+25	POST	A	WEST 10'	4 EACH 32 LB MAGNESIUM ANODES, LOCATE TS POST NEAR SW CORNER OF EXISTING JA–2 TURNOUT STRUCTURE. IN SIMILAR LOCATION TO EXISTING TS.	PP–07 & C–01
66" SWA–2	384+60	POST	T	EAST 15'	LOCATE TS POST AT FENCELINE CORNER BEHIND SIDEWALK	PP–09
66" SWA–2	397+75	POST	T	WEST 30'	LOCATE TS POST WITHIN SWA–2 EASEMENT, AT FENCELINE CORNER BEHIND SIDEWALK	PP–10
66" SWA–2	406+10	POST	C	SOUTHWEST 45'	LOCATE TS POST IN PARK STRIP, BEHIND STOP SIGN	PP–11 & C–02
78" JA–2	798+55	POST	T	SOUTHWEST 80'	LOCATE TS POST IN PARK STRIP, BEHIND STOP SIGN	PP–11 & C–02
66" SWA–2	406+65	POST	C	SOUTHWEST 100'	LOCATE TS POST IN PARK STRIP, BEHIND STOP SIGN	PP–11 & C–02
66" SWA–2	411+65	POST	T	EAST 20'	LOCATE TS POST WITHIN SWA–2 EASEMENT, ADJACENT TO EXISTING LIGHT POLE IN PARK STRIP	PP–12
66" SWA–2	422+10	POST	T	EAST 20'	LOCATE TS POST ADJACENT TO NEW VENT PAD IN PARK STRIP	PP–13

JORDAN VALLEY WATER TREATMENT PLANT SITE
NTS

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER NO. 11930045 RYAN JAMES EGBERT

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

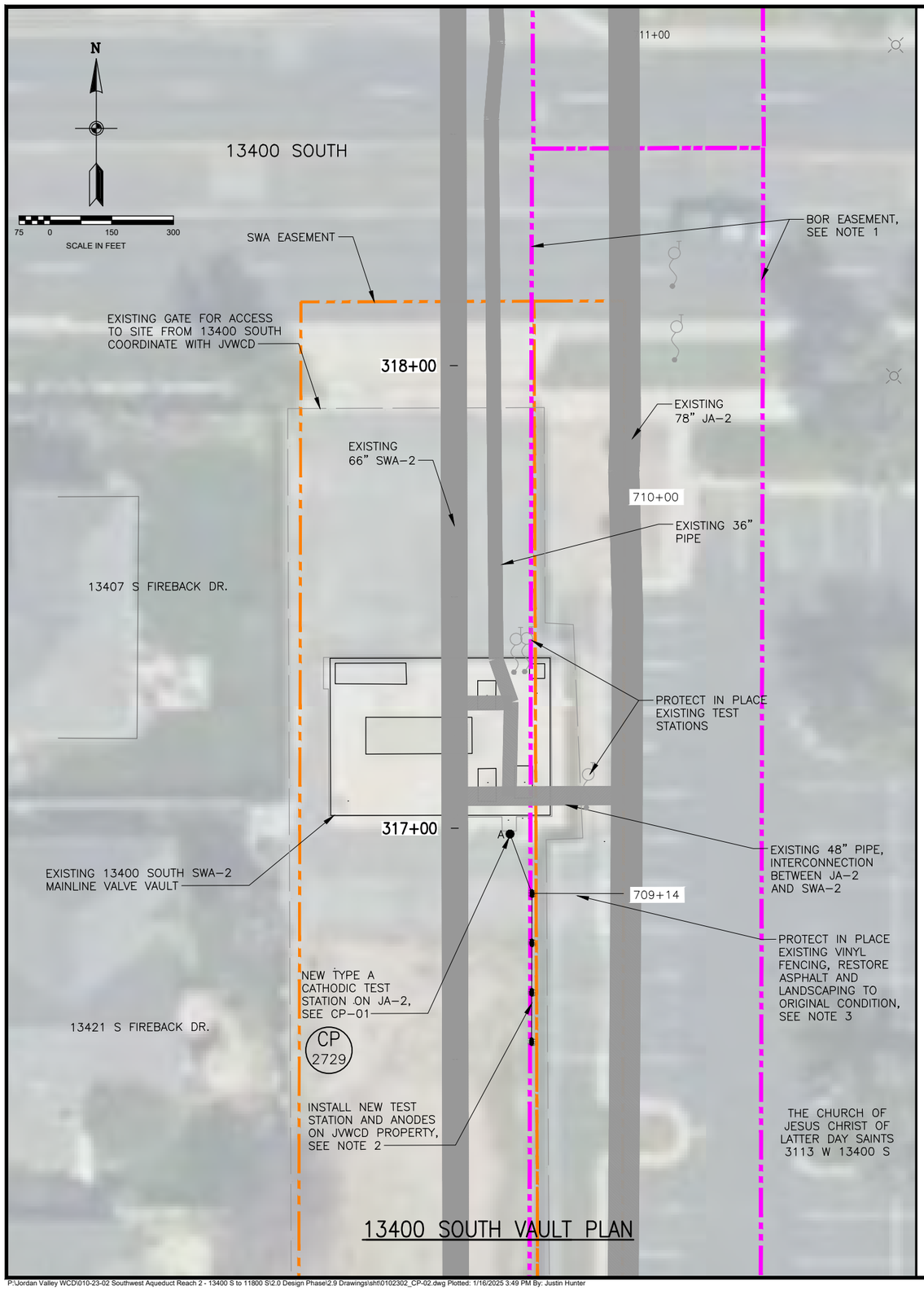
DESIGN R. EGBERT
DRAWN J. BLACK
REVIEW CHECKED C. NELSON APPROVED J. LUETTINGER

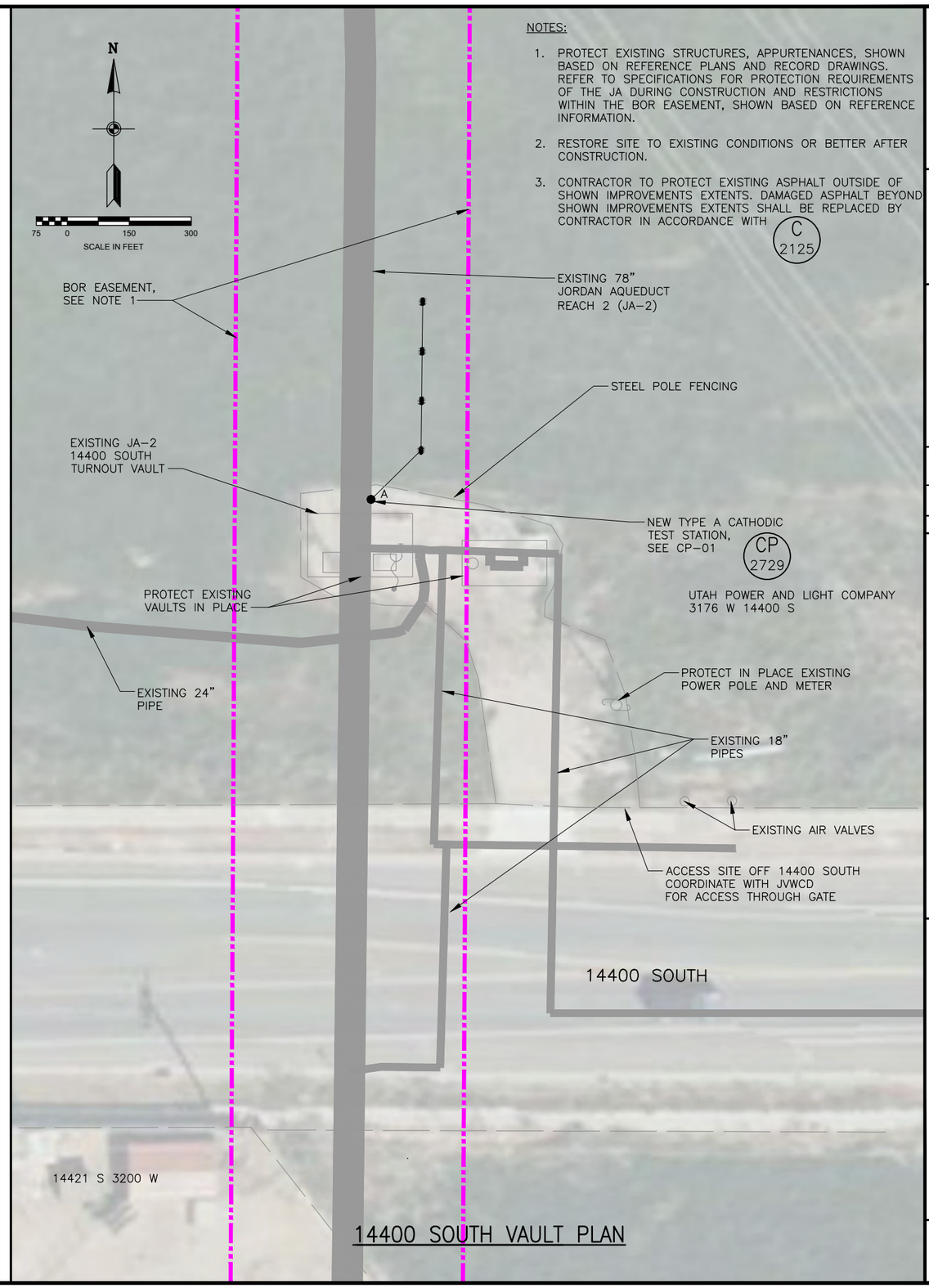
CATHODIC PROTECTION
CATHODIC SCHEDULE GENERAL NOTES AND DETAILS - 1

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO. CP-01
SHEET 44 OF 100

P:\Jordan Valley WCD\010-23-02 Southwest Aqueduct Reach 2 - 13400 S to 11800 S\2.0 Design Phase\2.9 Drawings\sht\0102302_CP-01.dwg Plotted: 1/15/2025 4:26 PM By: Jeremy Black





BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NO. 11932045
RYAN JAMES EGBERT
STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

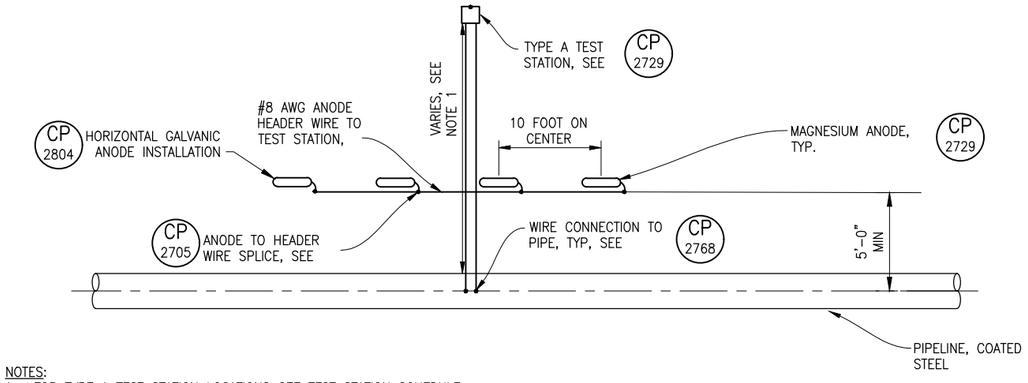
DESIGN L. MINCK
DRAWN J. BLACK
REVIEW C. NELSON
CHECKED
APPROVED J. LUETTINGER

CATHODIC PROTECTION

JA-2 TYPE A TEST STATION PLANS

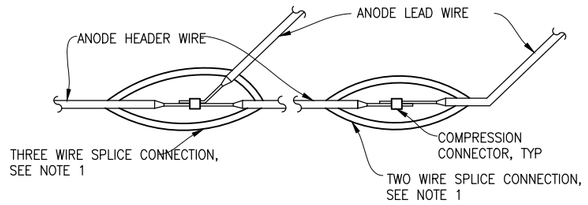
PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
CP-02
SHEET 45 OF 100



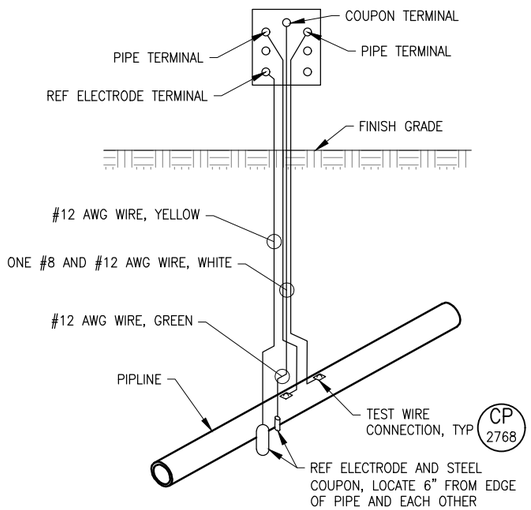
NOTES:
1. FOR TYPE A TEST STATION LOCATIONS SEE TEST STATION SCHEDULE.
2. PLACE TEST STATION OVER PIPE CENTERLINE, OFFSET ONLY IF SHOWN OTHERWISE IN TEST STATION SCHEDULE.
3. BURY HEADER WIRE 2.5-FEET DEEP MINIMUM, 36-INCHES IN CULTIVATED FIELDS.
4. WATER ANODES AFTER BACKFILLING TO 12-INCHES ABOVE ANODE

GALVANIC ANODE GROUNDBED PLAN CP 2704
NTS



NOTES:
1. FOR THREE WIRE SPLICE CONNECTION, USE 3M SCOTCHCAST WYE RESIN SPLICE KIT. FOLLOW PRODUCT MIXING AND APPLICATION PROCEDURES.
2. FOR TWO WIRE SPLICE CONNECTION, USE 3M SCOTCHCAST INLINE RESIN SPLICE KIT. FOLLOW PRODUCT MIXING AND APPLICATION PROCEDURES.
3. DETAIL SIMILAR FOR ANODE HEADER WIRE SPLICES, SIZE COMPRESSION CONNECTORS AS REQUIRED.

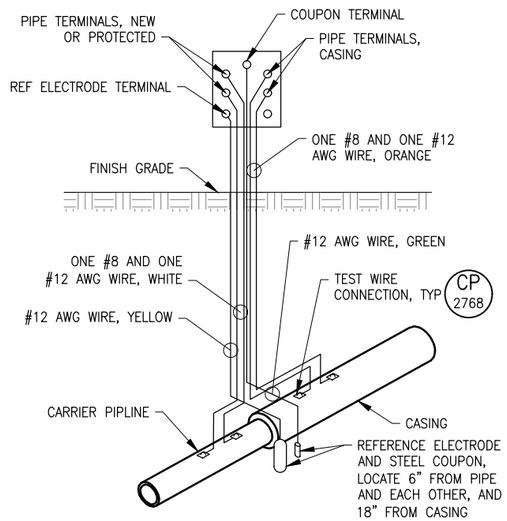
GALVANIC ANODE WIRE SPLICES CP 2705
NTS



WIRING DIAGRAM
NTS

NOTES:
1. SEE TEST STATION STYLE DETAIL AS REQUIRED BY TEST STATION SCHEDULE.
2. WHERE TEST STATION OFFSET IS REQUIRED, SEE CP 2750

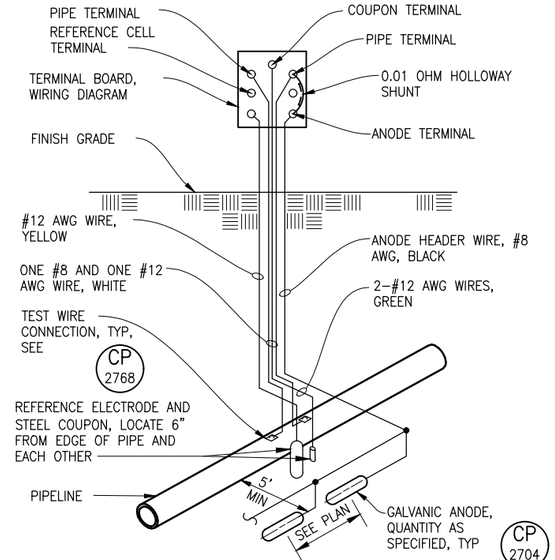
TYPE T TEST STATION CP 2724
NTS



WIRING DIAGRAM
NTS

NOTES:
1. SEE TEST STATION STYLE DETAIL AS REQUIRED BY TEST STATION SCHEDULE.
2. WHERE TEST STATION OFFSET IS REQUIRED, SEE CP 2750

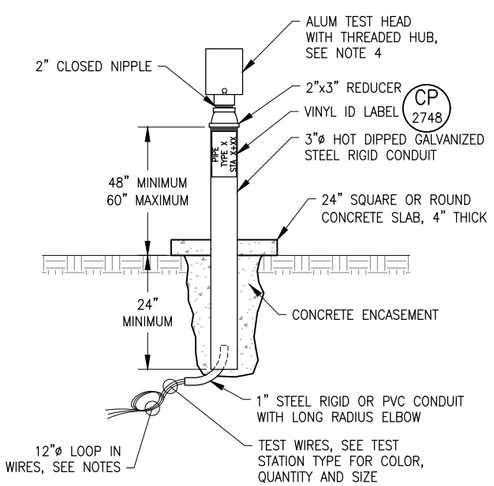
TYPE C TEST STATION CP 2725
NTS



WIRING DIAGRAM
NTS NTS

NOTES:
1. SEE TEST STATION STYLE DETAIL AS REQUIRED BY TEST STATION SCHEDULE.
2. WHERE TEST STATION OFFSET IS REQUIRED, SEE CP 2750

TYPE A TEST STATION CP 2729
NTS



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 CP 2747
NTS

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER NO. 11932045 RYAN JAMES EGBERT

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

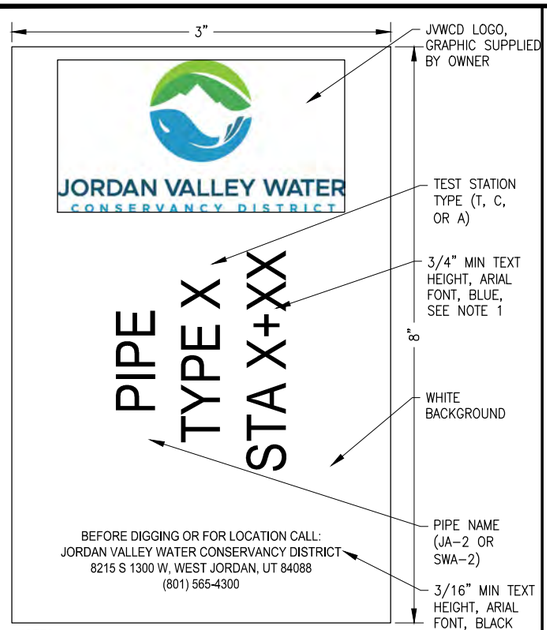
DESIGN R. EGBERT
DRAWN J. BLACK
REVIEW CHECKED C. NELSON
APPROVED J. LUETTINGER

CATHODIC PROTECTION
CATHODIC PROTECTION DETAILS - 1

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

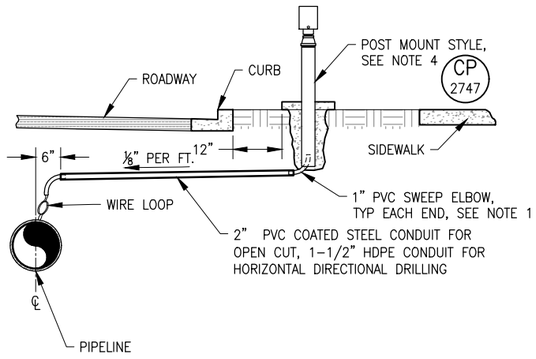
DRAWING NO. CP-03
SHEET 46 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\CP-03.dwg Plotted: 1/14/2025 4:29 PM By: Jeremy Black



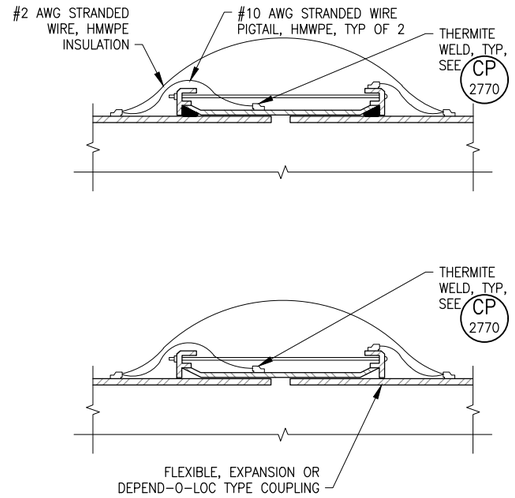
NOTES:
1. LABELS SHALL DISPLAY PIPE, TEST STATION TYPE, AND PIPE STATION OF TEST STATION CONNECTION PER TEST STATION SCHEDULE ON CP-01.

CATHODIC TEST STATION VINYL ID LABEL
NTS — CP 2748



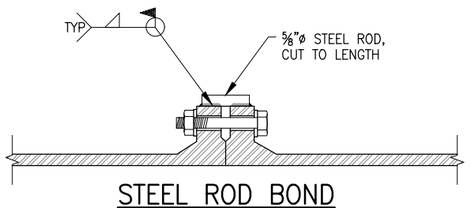
NOTES:
1. DO NOT CONNECT CONDUIT TO POST STYLE TEST STATION.
2. BURIED CONDUIT TO BE RIGID PVC COATED STEEL.
3. SEAL BOTH ENDS OF CONDUIT WITH DUCT COMPOUND OR POLYURETHANE FOAM.
4. SEE PLANS FOR LOCATIONS OF TEST STATIONS. VERIFY LOCATION WITH OWNER AND ENGINEER PRIOR TO INSTALLATION.

TEST STATION ROADWAY OFFSET
NTS — CP 2750

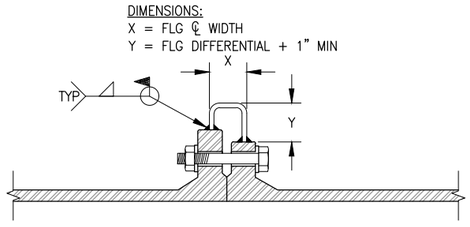


NOTES:
1. COUPLING JOINT SHOWN, SIMILAR FOR RESTRAINED JOINTS, DEPEND-O-LOC, FLANGED ADAPTERS, AND OTHER TYPE DISMANTLING JOINTS.
2. INSTALL TWO BONDS AT EACH JOINT, MINIMUM, SEE SPECS FOR QUANTITY REQUIRED FOR PIPE DIAMETER.
3. SEE THERMITE WELD DETAIL FOR COATING REQUIREMENTS.

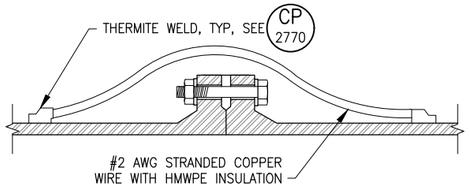
COUPLING JOINT BOND
NTS — CP 2759



STEEL ROD BOND
NTS



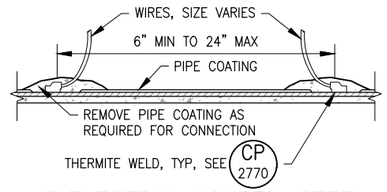
STEEL FLAT BAT BOND
NTS



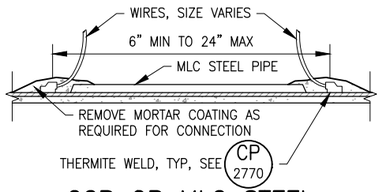
WIRE BOND
NTS

NOTES:
1. CONTRACTOR MAY INSTALL EITHER STEEL ROD, STEEL FLAT BAR, OR BOND WIRE AS SHOWN, EXCEPT WHERE ARC WELDING TO FLANGE IS NOT PERMITTED.
2. INSTALL TWO BONDS AT EACH JOINT, MINIMUM, SEE SPECS FOR QUANTITY REQUIRED FOR PIPE DIAMETER.
3. COAT STEEL ROD OR FLAT BAR AND WELDS WITH FAST CURE EPOXY (BURIED) OR WITH COATING SYSTEM TO MATCH PIPE (VAULT).
4. FOR WIRE BONDS, SEE THERMITE WELD DETAIL FOR COATING REQUIREMENTS.
5. PROVIDE SST FLAT BAR IN LIEU OF STEEL WHERE COATING CANNOT BE PROPERLY APPLIED TO INTERIOR SURFACES.

FLANGED JOINT BOND
NTS — CP 2767

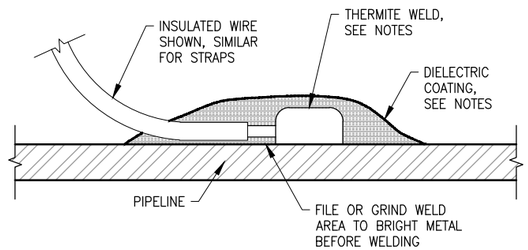


DIELECTRIC COATED STEEL
NTS



CCP OR MLC STEEL
NTS

TEST WIRE CONNECTION
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 DIELECTRIC COATING AS SPECIFIED FOR PIPELINE MATERIAL ALTERNATIVE.
5. AFTER COATING WELDS, OVERCOAT WITH CEMENT MORTAR WHEN PIPE HAS CEMENT MORTAR COATING OR OVERCOAT.

THERMITE WELD CONNECTION
NTS — CP 2770

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — NO. 11932045 — RYAN JAMES EGBERT — STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

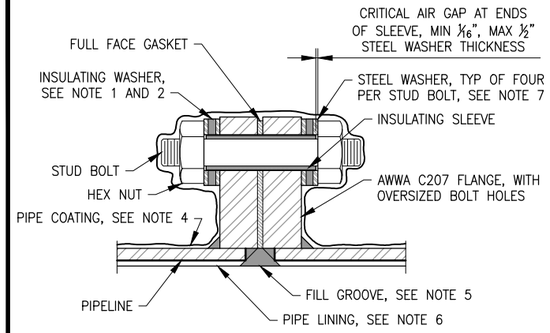
DESIGN — DESIGN R. EGBERT — DRAWN J. BLACK
REVIEW — CHECKED C. NELSON — APPROVED J. LUETTINGER

CATHODIC PROTECTION

CATHODIC PROTECTION DETAILS - 2

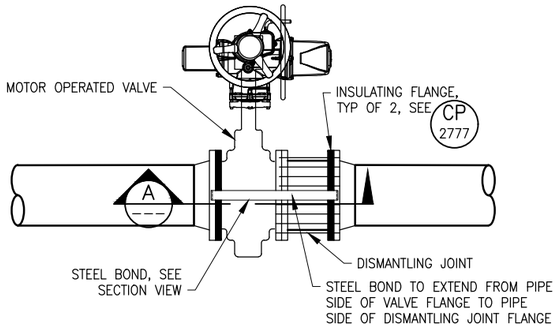
PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. CP-04
SHEET 47 OF 100

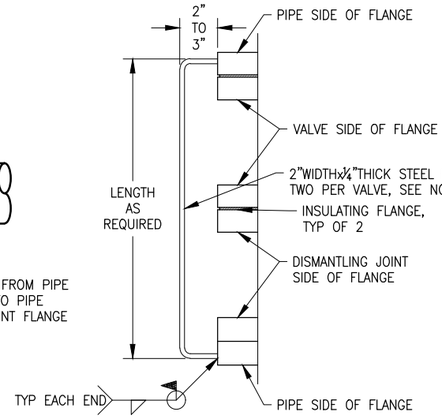


NOTES:
1. DOUBLE INSULATING WASHER SET FOR VAULT OR EXPOSED FLANGES.
2. SINGLE INSULATING WASHER SET FOR BURIED OR SUBMERGED FLANGES, PLACE INSULATORS ON UNPROTECTED SIDE OF FLANGE.
3. TEST COMPLETED JOINT FOR ELECTRICAL ISOLATION AS SPECIFIED AND REPAIR AS REQUIRED.
4. COAT BURIED OR IMMERSED INSULATING 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
NTS — CP 2777



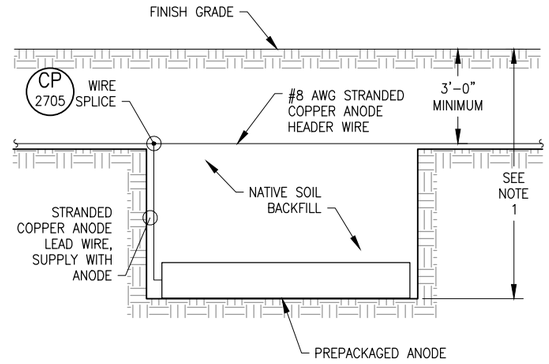
ELEVATION VIEW
NTS



SECTION A
SCALE: NTS

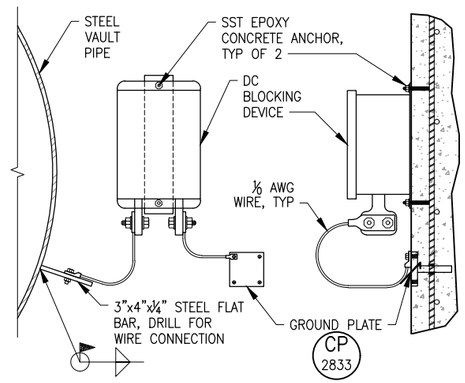
NOTES:
1. PROVIDE INSULATING FLANGE AND STEEL BOND AT ALL MOV VALVES.
2. PROVIDE TWO BONDS PER VALVE, OPPOSITE SIDES OF PIPE AT OR BELOW SPRINGLINE.
3. SURFACE PREPARE AND COAT ALL WELDS AND STEEL BONDS AS SPECIFIED FOR THE PIPE.

MOV VALVE ISOLATION
NTS — CP 2783



NOTES:
1. BURY ANODE AT SPRINGLINE OF PIPE OR LOWER, 5' MIN. DEPTH.

HORIZONTAL GALVANIC ANODE INSTALLATION
NTS — CP 2804

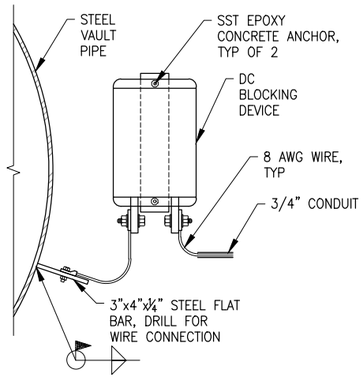


FRONT VIEW
NTS

SIDE VIEW
NTS

NOTES:
1. NEGATIVE TAB OF DC BLOCKING DEVICE TO BE CONNECTED TO PIPE.
2. INSULATED WIRE LENGTH TO BE THE MINIMUM LENGTH AS REQUIRED FOR CONNECTIONS.
3. ALL WIRE CONNECTIONS TO BE THOMAS AND BETTS OR BURNDY HIGH COMPRESSION ONE OR TWO HOLE RING TONGUE TERMINALS, AS REQUIRED, WITH 3/8" SST BOLTS AND NUTS.
4. SUPPORT BRACKETS, WHERE REQUIRED TO BE HOT–DIPPED GALVANIZED.

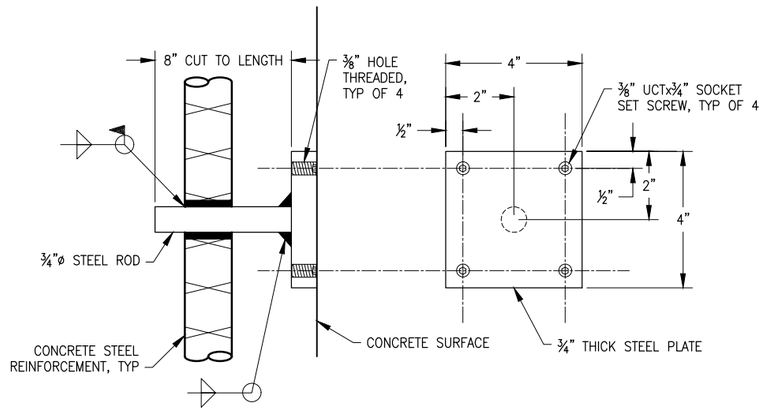
PIPE–TO–VAULT GROUND WITH DC BLOCKER
NTS — CP 2826



FRONT VIEW
NTS

NOTES:
1. NEGATIVE TAB OF DC BLOCKING DEVICE TO BE CONNECTED TO PIPE.
2. INSULATED WIRE LENGTH TO BE THE MINIMUM LENGTH AS REQUIRED FOR CONNECTIONS.
3. ALL WIRE CONNECTIONS TO BE THOMAS AND BETTS OR BURNDY HIGH COMPRESSION ONE OR TWO HOLE RING TONGUE TERMINALS, AS REQUIRED, WITH 3/8" SST BOLTS AND NUTS.
4. SUPPORT BRACKETS, WHERE REQUIRED TO BE HOT–DIPPED GALVANIZED.
5. ROUTE CONDUIT TO METER MAIN COMBINATION. SEE SHEET E–02 FOR EQUIPMENT LOCATION. CONDUIT SHALL BE GALVANIZED RIGID STEEL IN EXPOSED LOCATIONS AND SCH. 40 PVC WHERE CONCEALED.

12600 VAULT PIPE–TO–VAULT GROUND WITH DC BLOCKER
NTS — CP 2827



SIDE ELEVATION
NTS

FRONT ELEVATION
NTS

NOTES:
1. INSTALL BOTTOM GROUNDING PLATES 12 TO 16–INCHES ABOVE FINAL GRADE.
2. HOT DIP GALVANIZE AFTER FABRICATION
3. GROUND WIRE CONNECTION TO PLATE SHALL BE WITH COMPRESSION CRIMPED RING TONGUE TERMINALS AND SST BOLT AND LOCK WASHER

GROUNDING PLATE
NTS — CP 2833

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER NO. 11932045 RYAN JAMES EGBERT STATE OF UTAH

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

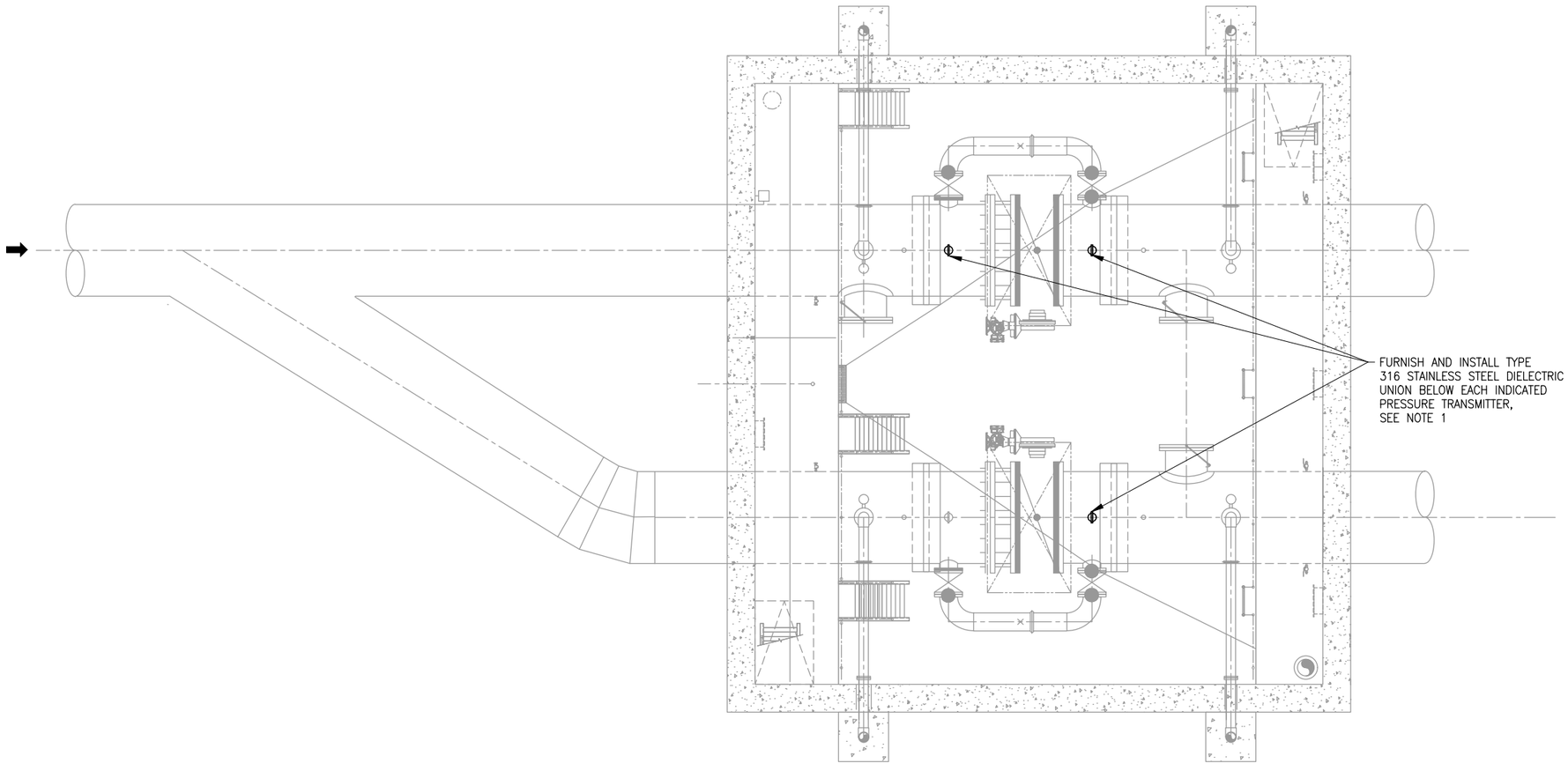
JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

DESIGN R. EGBERT
DRAWN J. BLACK
REVIEW CHECKED C. NELSON APPROVED J. LUETTINGER

CATHODIC PROTECTION
CATHODIC PROTECTION DETAILS - 3

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. CP-05
SHEET 48 OF 100



PLAN

NTS

NOTES:

1. DIELECTRIC UNIONS SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS, LOCATE UNIONS PER M 3183
2. EXISTING JVWTP INTERCONNECTION VAULT IS LOCATED ADJACENT TO JORDAN VALLEY WATER TREATMENT PLANT. COORDINATE ACCESS WITH JVWCD.
3. EXISTING RECORD DRAWING PLAN VIEW IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ACTUAL CONDITIONS IN THE FIELD.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
NO. 11932045
RYAN JAMES EGBERT
STATE OF UTAH

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

REVIEW
CHECKED C. NELSON
APPROVED J. LUETTINGER

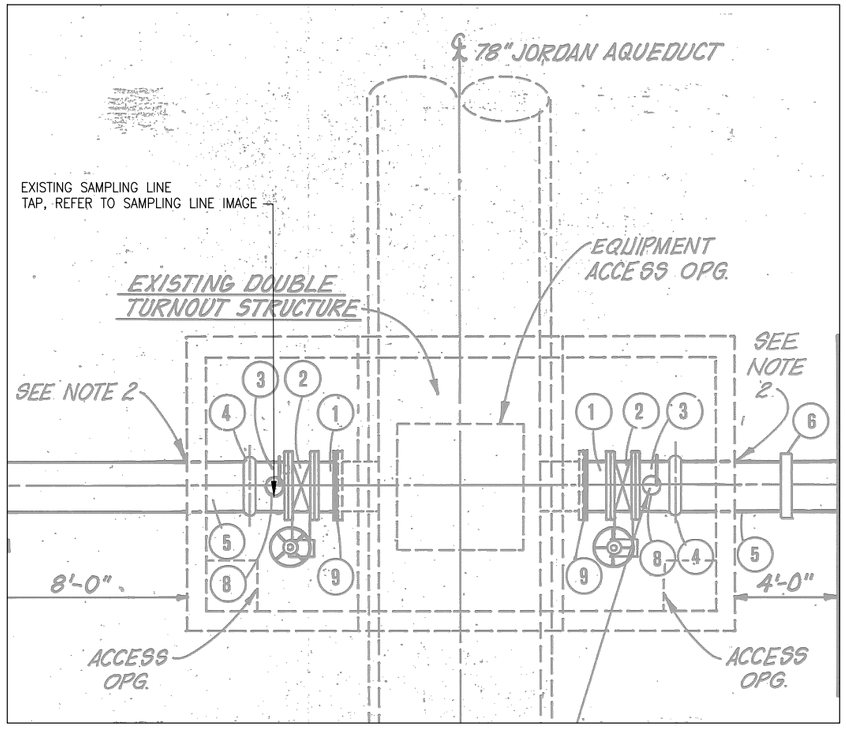
DESIGN
DESIGN R. EGBERT
DRAWN J. BLACK

CATHODIC PROTECTION
JVWTP
INTERCONNECTION VAULT
MODIFICATIONS

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
CP-06

SHEET 49 OF 100



PLAN

NTS

IMAGE OF JA-2 11400 SOUTH TURNOUT VAULT

NTS

NOTES:

1. DIELECTRIC UNIONS SHALL BE IN ACCORDANCE WITH PROJECT SPECIFICATIONS. CONTRACTOR TO VERIFY EXISTING MATERIALS.
2. EXISTING 11400 SOUTH JA-2 DOUBLE TURNOUT STRUCTURE IS LOCATED ON JVWCD PROPERTY AT 11400 SOUTH 3200 WEST. COORDINATE ACCESS WITH JVWCD.
3. EXISTING RECORD DRAWING PLAN VIEW IS SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY ACTUAL CONDITIONS IN THE FIELD.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER NO. 11932045 RYAN JAMES EGBERT

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK

DRAWN J. BLACK

REVIEW

CHECKED C. NELSON

APPROVED J. LUETTINGER

CATHODIC PROTECTION

EXISTING 11400 SOUTH JA-2 DOUBLE TURNOUT STRUCTURE MODIFICATIONS

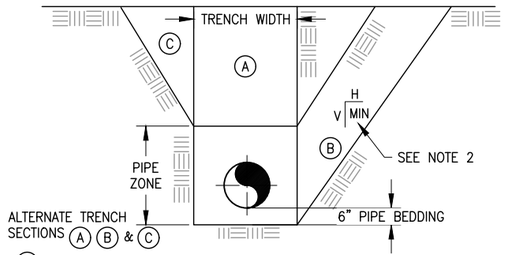
PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

DRAWING NO.

CP-07

SHEET 50 OF 100



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

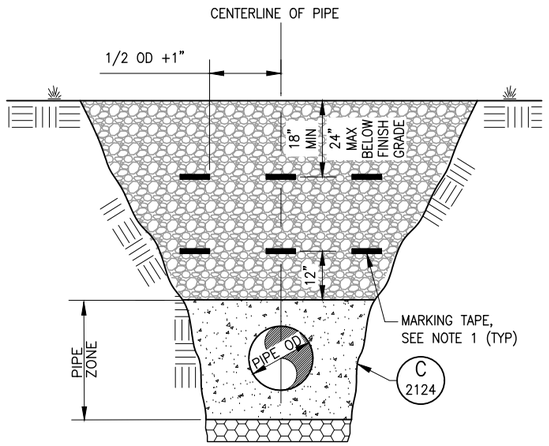
(B) SLOPING TRENCH WALL
1. NOT TO BE USED WITHOUT APPROVAL OF ENGINEER.
2. REQUIRES IMPROVED PIPE ZONE BACKFILL OR INCREASE IN PIPE CLASS.

(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.

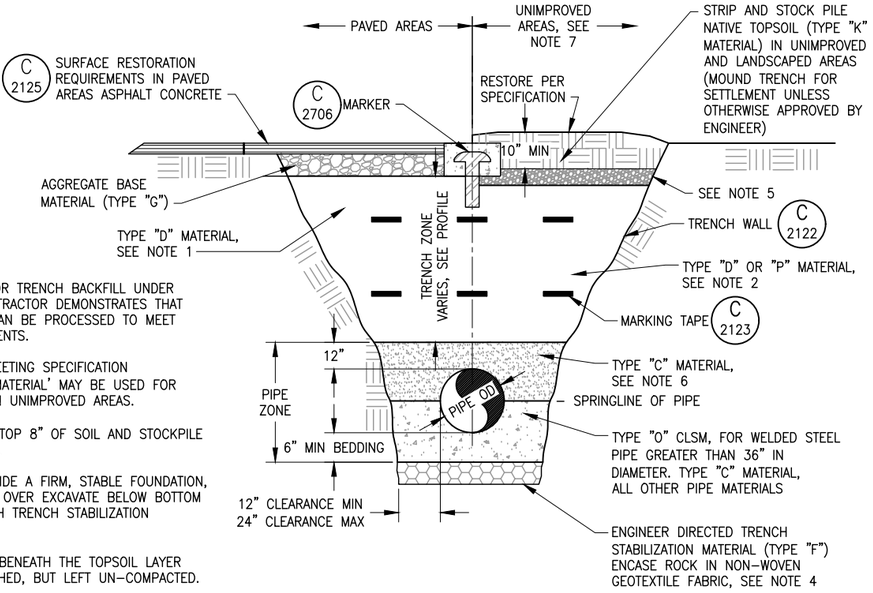
TYPICAL TRENCH EXCAVATION SECTION
NTS — C 2122



NOTES:

1. MARKING TAPE TO BE CUSTOM TO JVWCD, SEE SPECIFICATIONS.

MARKING TAPE PLACEMENT
NTS — C 2123



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 WITHIN UNIMPROVED AREAS.
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.
6. PEA GRAVEL AND "SQUEEGEE" ARE NOT ALLOWED IN ANY PART OF THE PIPE ZONE.
7. ALL AREAS OUTSIDE OF PAVEMENT OR HARDSURFACING ARE CONSIDERED UNIMPROVED, INCLUDING RESIDENTIAL PRIVATE PROPERTIES.

TYPICAL TRENCH BACKFILL SECTION
NTS — C 2124

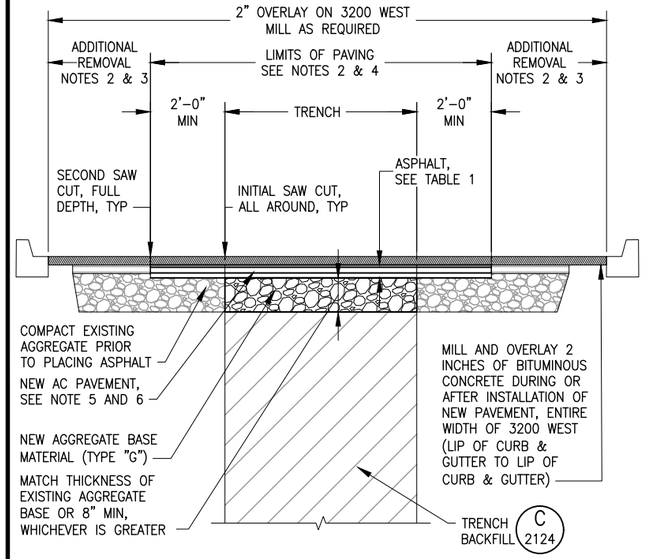
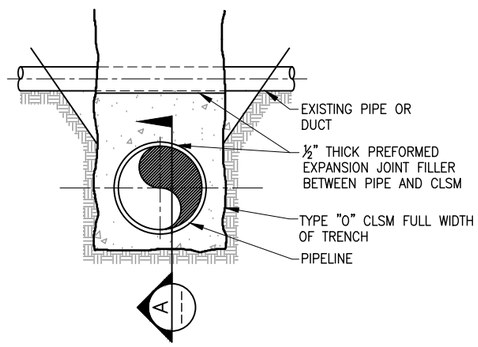


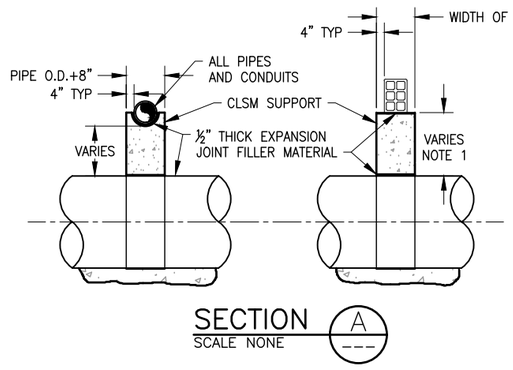
TABLE 1		
LOCATION	TOTAL PAVEMENT THICKNESS	ASPHALT TYPE
3200 WEST – FROM 13400 SOUTH TO 11800 SOUTH	4" MIN – MATCH EXISTING	PG 58-28 DM 1/2"
11800 SOUTH	6" MIN – MATCH EXISTING	PG 64-24 DM 3/4"
11400 SOUTH	4" MIN – MATCH EXISTING	PG 58-28 DM 1/2"

NOTES:

1. CONTRACTOR SHALL PERMANENTLY REPLACE ALL PAVEMENT SURFACES, STRIPING, AND TRAFFIC CONTROLS IN ACCORDANCE WITH STANDARDS FOR INDIVIDUAL JURISDICTIONS 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 SHALL BE PER THE GOVERNING AGENCIES REQUIREMENTS.
   a. RIVERTON CITY: ASPHALT PLACED BETWEEN OCTOBER 15 AND MARCH 1 WILL BE CONSIDERED TEMPORARY ONLY, AND MUST BE REPLACED ACCORDING TO APWA STANDARDS AND SPECIFICATIONS BETWEEN THE FOLLOWING APRIL 1 AND JUNE 1.
   b. SOUTH JORDAN CITY: ASPHALT PLACEMENT BETWEEN OCTOBER 15 AND APRIL 15 MUST HAVE CITY ENGINEER'S APPROVAL.
   c. UDOT: PLACE ASPHALT MIX FROM APRIL 15 THROUGH OCTOBER 15, WHEN THE AIR TEMPERATURE IN THE SHADE AND THE ROADWAY SURFACE ARE ABOVE 50 DEGREES F.
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.
7. SURVEY MONUMENTS MUST HAVE PERMIT THROUGH SALT LAKE COUNTY SURVEYOR PRIOR TO DISTURBANCE OR INSTALLATION OF ANY MONUMENT.

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





SECTION A
SCALE NONE

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
NTS — C 2128

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — 10859954 — LINDSAY K. MINCK — STATE OF UTAH — REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

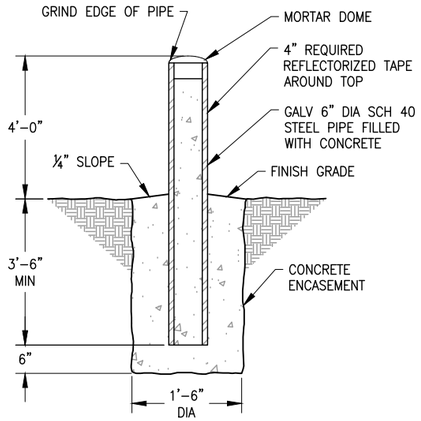
GENERAL CIVIL DETAILS

GENERAL CIVIL DETAILS - 1

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
GC-01
SHEET 51 OF 100

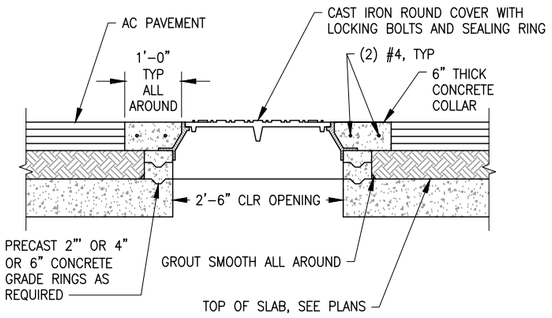
P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\GC-01.dwg Plotted: 1/14/2025 4:30 PM By: Jeremy Black



BOLLARD

NTS

C 2205



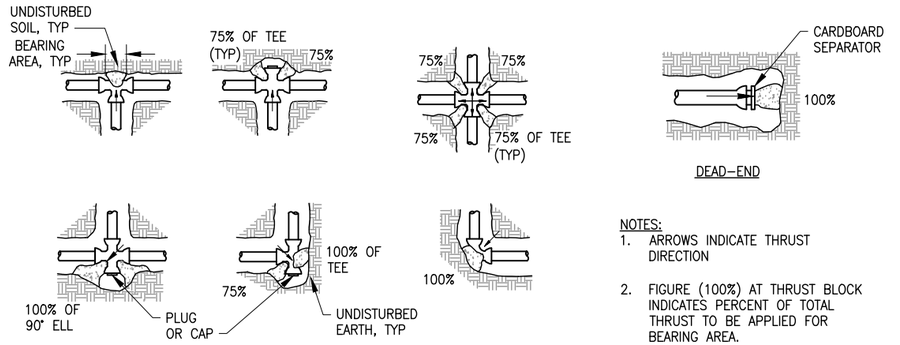
NOTES:

1. SET MANHOLE COVER AND CONCRETE COLLAR ⅛" BELOW GRADE IN PAVED AREAS AND FLUSH WITH FINISH GRADE ELSEWHERE.
2. MANHOLE TO INCLUDE "CLIENT" NAME CAST INTO COVER.

MANHOLE COVER AND GRADE RINGS

NTS NTS

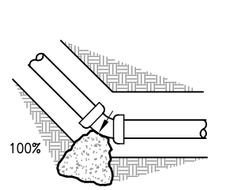
C 2206



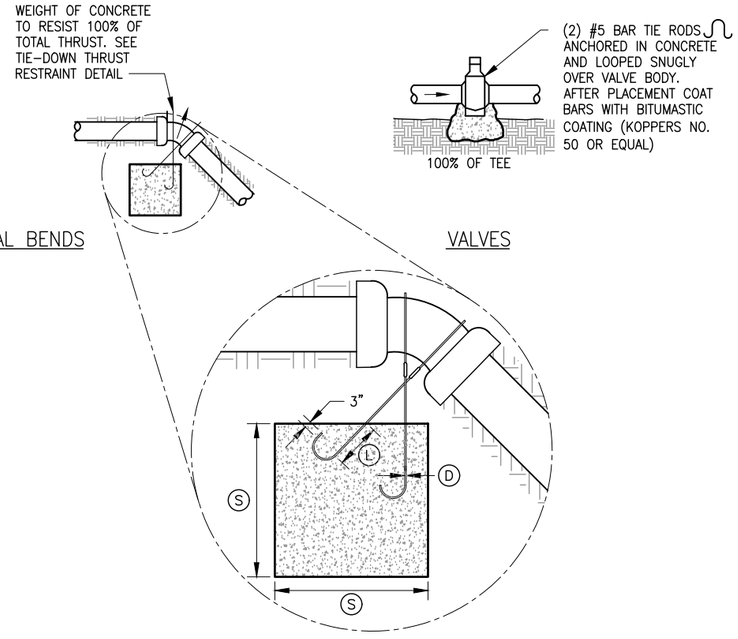
HORIZONTAL FITTINGS

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

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

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

REVIEW CHECKED T. OLSEN APPROVED J. LUETTINGER

DESIGN DESIGN L. MINCK DRAWN J. BLACK

GENERAL CIVIL DETAILS

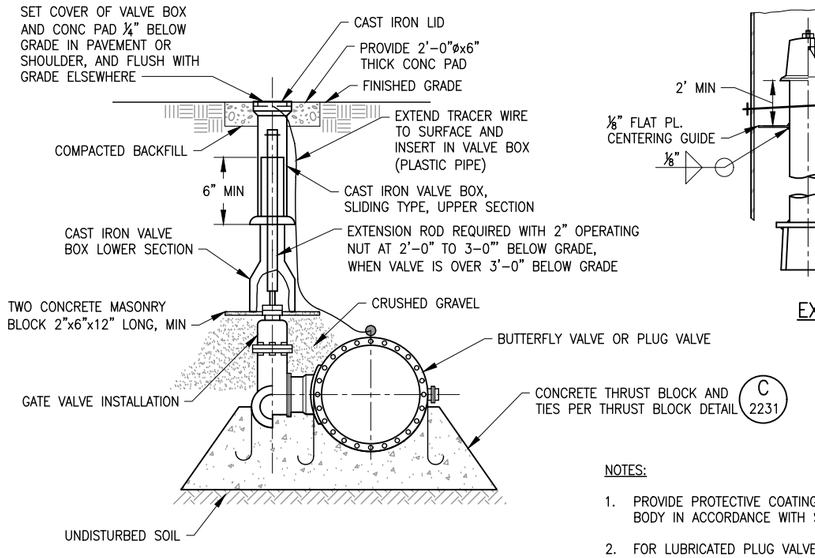
GENERAL CIVIL DETAILS - 2

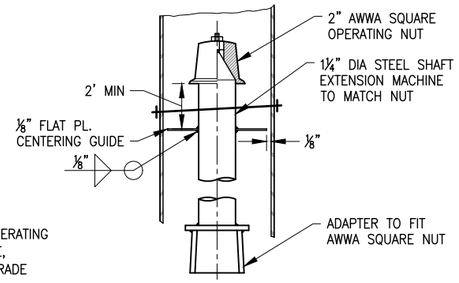
PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

DRAWING NO. GC-02

SHEET 52 OF 100





EXTENSION STEM

NOTES:

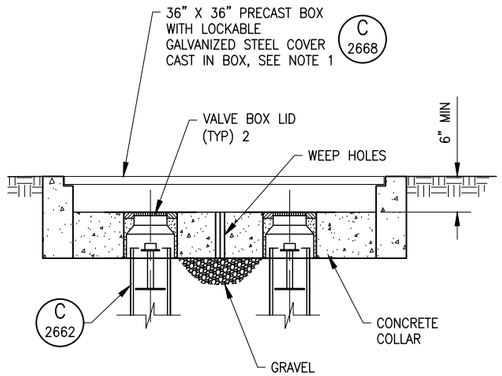
1. PROVIDE PROTECTIVE COATING TO EXTERIOR SURFACE OF VALVE BODY IN ACCORDANCE WITH SPECS.
2. FOR LUBRICATED PLUG VALVE, EXTEND LUBRICATION LINE TO GRADE PER MANUFACTURES INSTRUCTIONS.
3. LOCK VALVE EXTENSION STEM TO NUT.
4. ALL BOLTS AND OTHER HARDWARE SHALL BE STAINLESS STEEL.

BURIED VALVE INSTALLATION

NTS — C 2662

NOTES:

1. LID TO READ "JVWCD THROTTLE AND ISOLATION VALVES".
2. NOT TO BE LOCATED IN ROADWAYS OR WHERE TRAFFIC RATING IS REQUIRED.

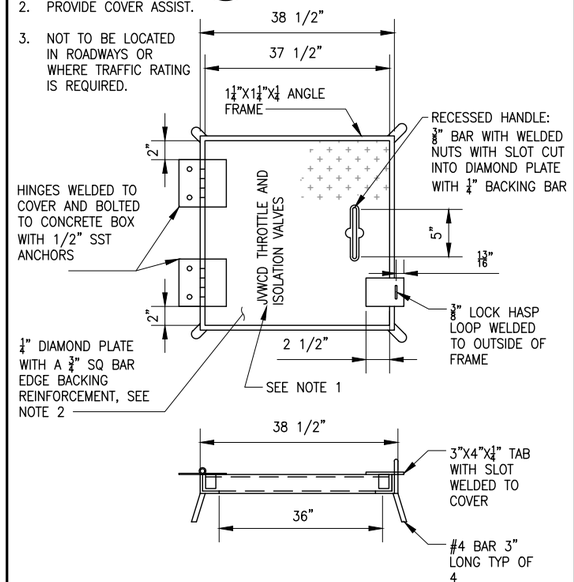


LOCKABLE BOX

NTS — C 2667

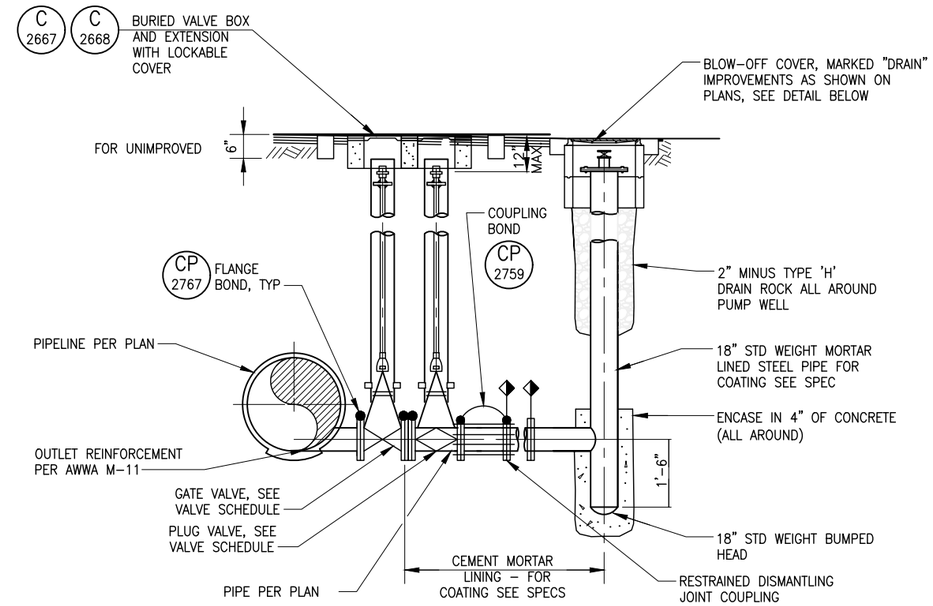
NOTES:

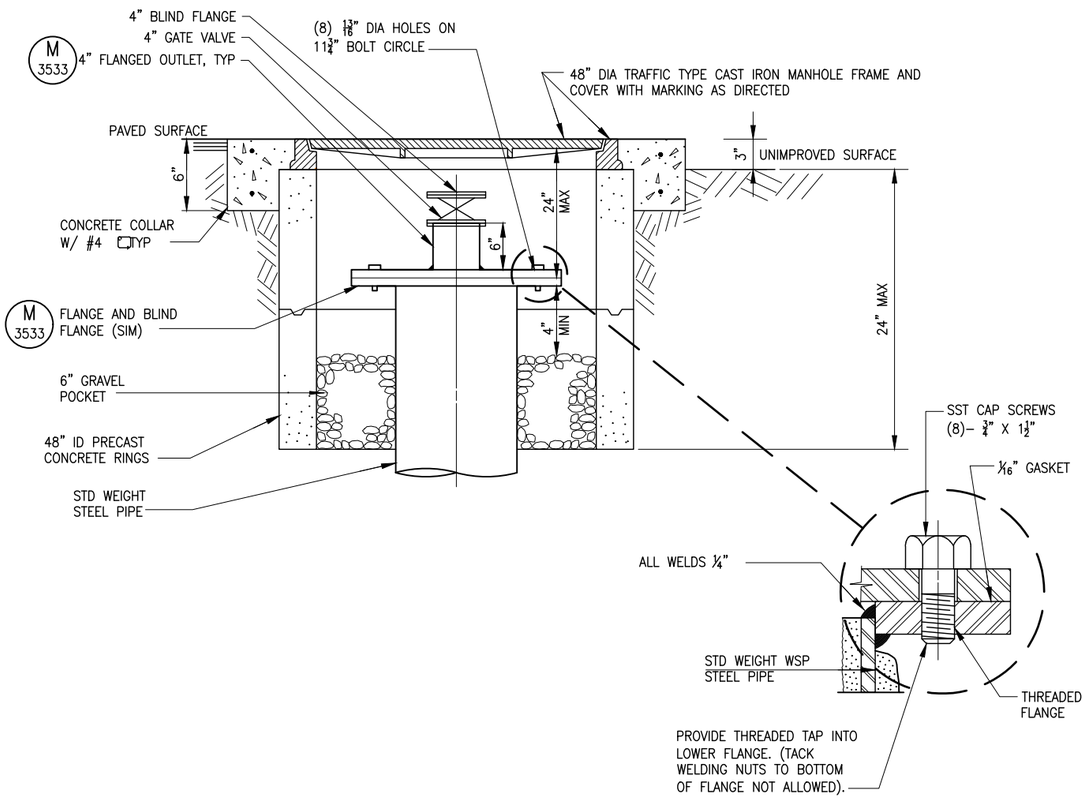
1. LID TO READ PER PLAN. C 2667
2. PROVIDE COVER ASSIST.
3. NOT TO BE LOCATED IN ROADWAYS OR WHERE TRAFFIC RATING IS REQUIRED.



LOCKABLE STEEL COVER

NTS — C 2668





MINOR BLOW-OFF DRAIN

NTS — C 2670

BOWEN COLLINS & ASSOCIATES

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REVISIONS

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JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED T. OLSEN — APPROVED J. LUETTINGER

DESIGN — DESIGN L. MINCK — DRAWN J. BLACK

GENERAL CIVIL DETAILS

GENERAL CIVIL DETAILS - 3

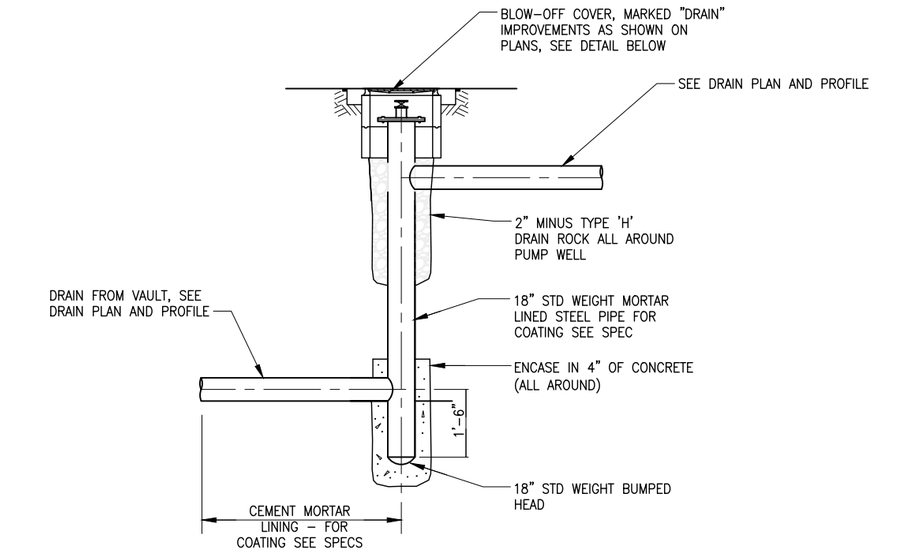
PROJECT NUMBER 010-23-02

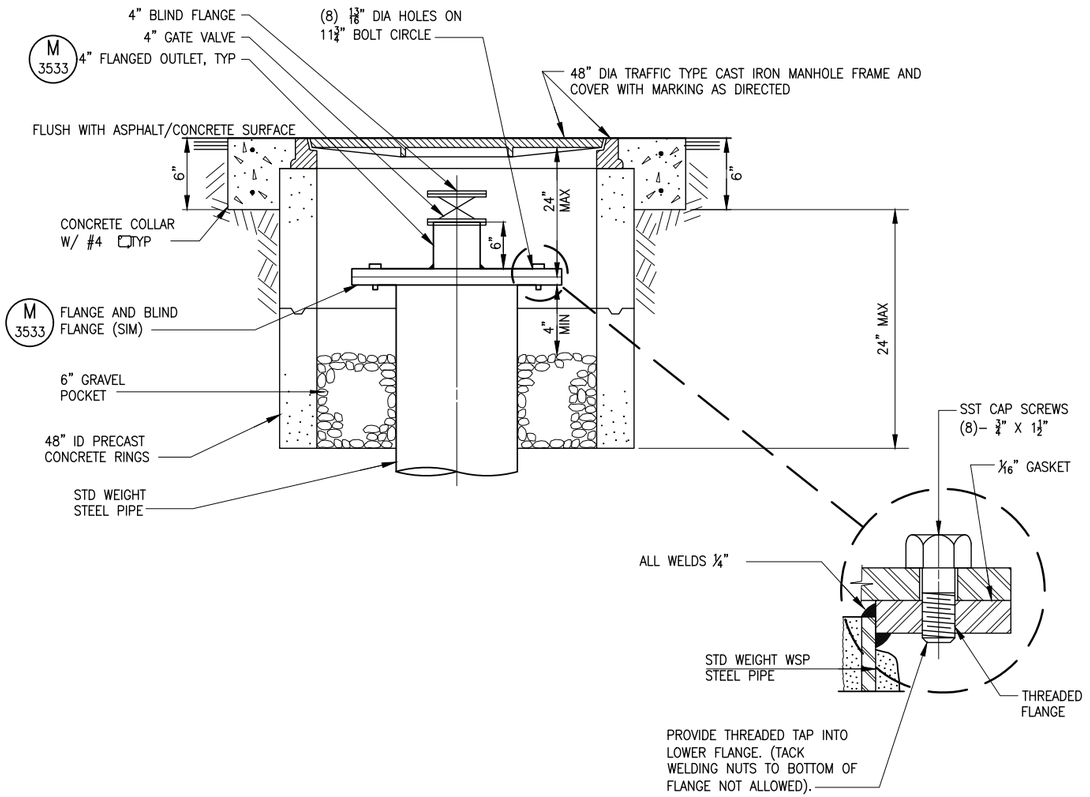
DATE: JANUARY 2025

DRAWING NO. GC-03

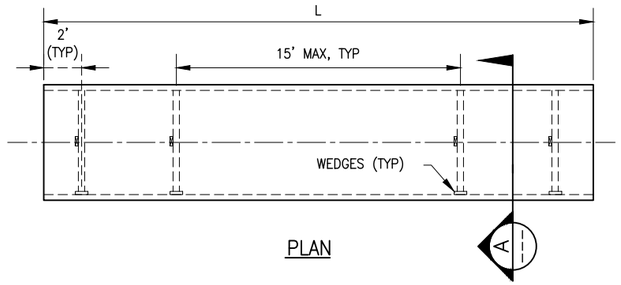
SHEET 53 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\GC-03.dwg Plotted: 1/14/2025 4:31 PM By: Jeremy Black





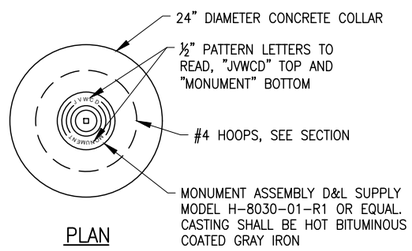
MINOR BLOW-OFF WITH OUTLET
NTS
C 2671

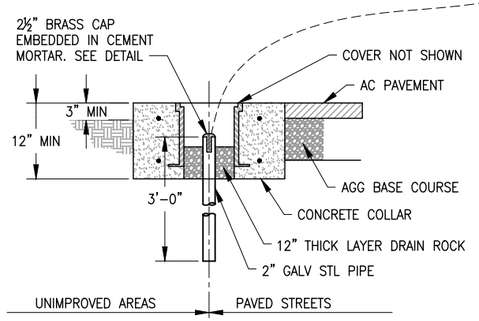


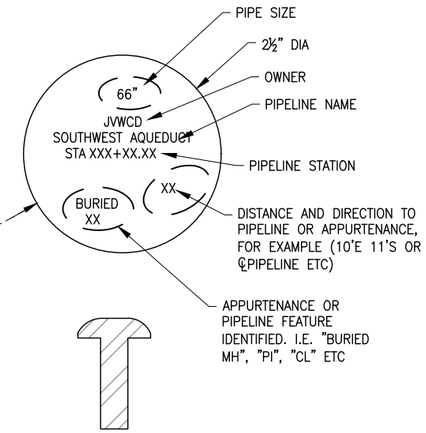
NOTES:

1. STULLING IS DESIGNED FOR HAULING PURPOSE ONLY. PERFORMANCE OF PIPE BRACING USED DURING INSTALLATION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

WSP TEMPORARY BRACING LOCATIONS
NTS
C 2702







NOTES:

1. ENGRAVE OR STAMP THE INFORMATION REQUIRED IN THE HEAD OF THE BRASS CAP, (0.05" MIN DEPTH).
2. MONUMENTS SHALL BE PLACED AT ALL PI'S, BENDS, MAJOR INTERSECTIONS, AND AS NOTED IN SPECIFICATIONS.
3. TOP OF BRASS CAP SHALL NOT BE PLACED LESS THAN 3" IN DEPTH FROM FINISHED GRADE.

PIPELINE MARKERS
NTS
C 2706

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

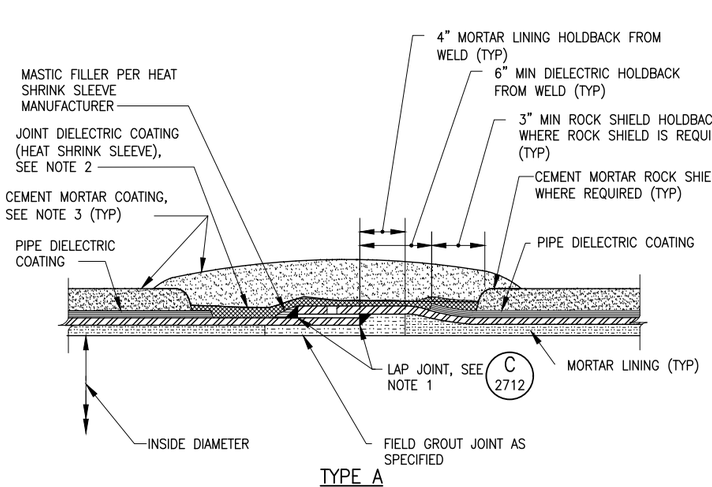
DESIGN L. MINCK
DRAWN J. BLACK
REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

GENERAL CIVIL DETAILS

GENERAL CIVIL DETAILS - 4

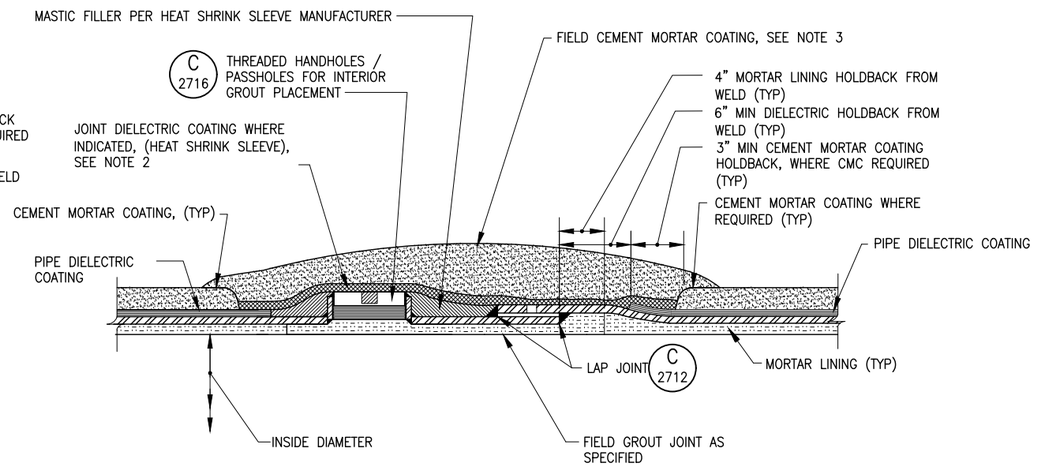
PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
GC-04
SHEET 54 OF 100



TYPE A

(USED FOR PIPE > 24" IN DIAMETER)



TYPE B

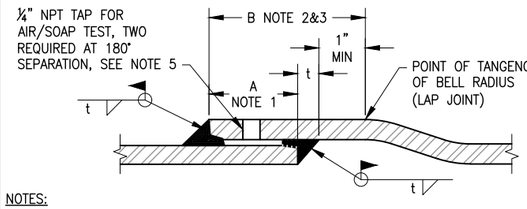
(USED FOR PIPE WHERE INTERIOR GROUT LINING PLACED VIA HANDHOLES)
SEE NOTE 4

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. GROUT DIAPERS NOT REQUIRED ON DIELECTRICALLY COATED PIPE LESS THAN 48" DIAMETER, UNLESS OTHERWISE NOTED ON PLANS.
4. JOINTS ONLY FOR PIPE WITH LESS THAN 24" DIAMETER TO BE TYPE B TO ALLOW CONTRACTOR DIFFERENT METHODS OF INTERIOR LINING GROUT REPLACEMENT.

LAP WELDED STEEL PIPE JOINT

NTS — C 2708

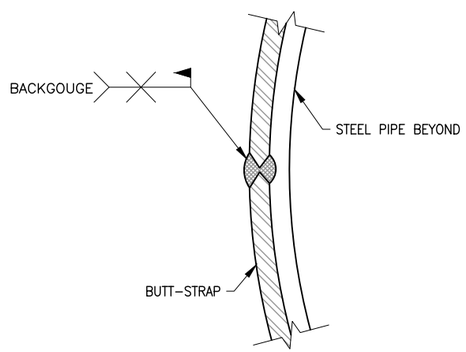


NOTES:

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 DOUBLE LAP, UNLESS NOTED OTHERWISE. SINGLE LAP JOINTS SHALL BE INSIDE OR OUTSIDE AT CONTRACTORS OPTION. REFER TO SPECIFICATIONS FOR SPECIAL REQUIREMENTS.

LAP JOINT WELD

NTS — C 2712

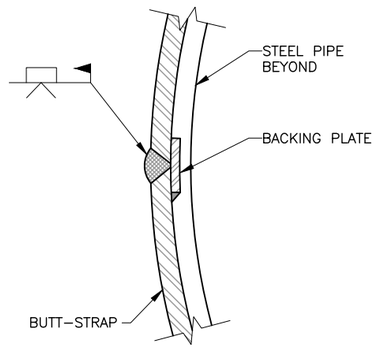


NOTES:

1. LININGS AND COATINGS ARE NOT SHOWN FOR CLARITY.

TYPE A

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



NOTES:

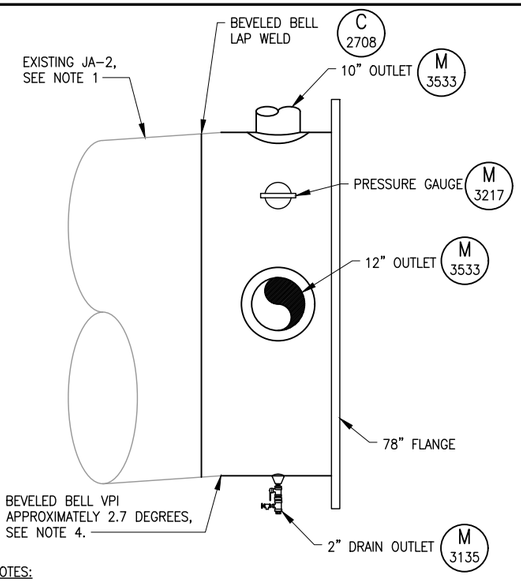
1. LININGS AND COATINGS ARE NOT SHOWN FOR CLARITY.

TYPE B

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

BUTT-STRAP WELD

NTS — C 2714



NOTES:

1. REMOVE CEMENT MORTAR COATING AS NECESSARY TO PERFORM BUTT WELD.
2. AFTER COMPLETION OF WELD, CLEAN UP CMC WITH A STRAIGHT LINE EDGE CIRCUMFERENTIALLY AROUND PIPE.
3. ALL BARE STEEL TO RECEIVE SURFACE PREPARATION AND COATING PER SPECIFICATIONS.
4. FIELD VERIFY GEOMETRY, ELEVATIONS, AND SLOPES. DO NOT FABRICATE UNTIL APPROVED BY ENGINEER.

JA-2 PE X FL CONNECTION

NTS — C 2715

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — 10859954 — LINDSAY K. MINCK — STATE OF UTAH — REGISTERED

REVISIONS

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VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

REVIEW — CHECKED T. OLSEN — APPROVED J. LUETTINGER

DESIGN — DESIGN L. MINCK — DRAWN J. BLACK

GENERAL CIVIL DETAILS

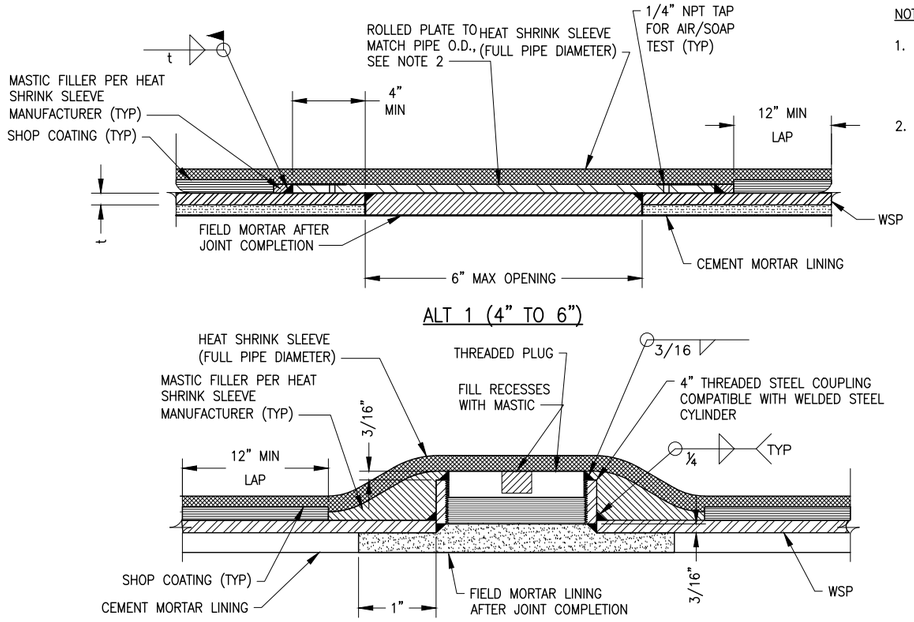
GENERAL CIVIL DETAILS - 5

PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

DRAWING NO. GC-05

SHEET 55 OF 100



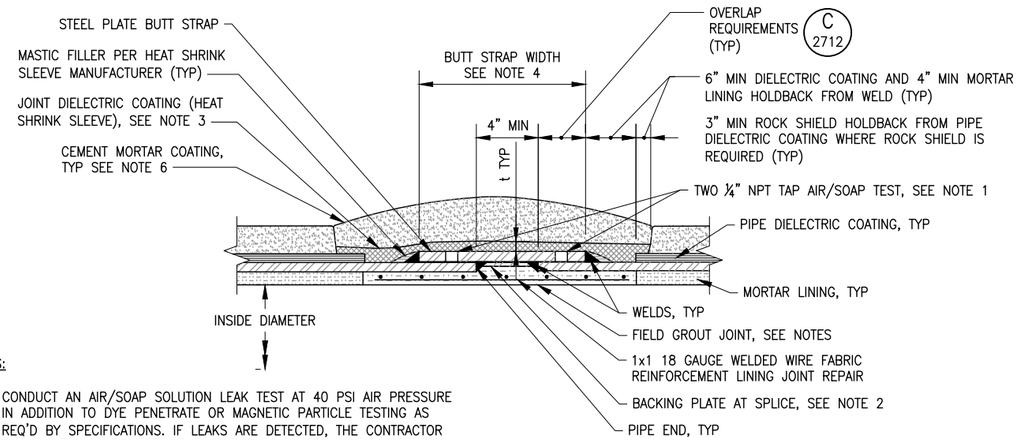
NOTES:

1. PASS THROUGH FOR WELD LEEDS MAY BE SPACED NO CLOSER THAN 500' FROM ACCESS MANWAY OUTLETS.
2. ROLLED PLATE THICKNESS SHALL BE MINIMUM OF 1/2" THICK OR EQUAL TO PIPE WALL THICKNESS. WHICHEVER IS GREATER.

PASSHOLE FOR WELD LEEDS

NTS

C 2716



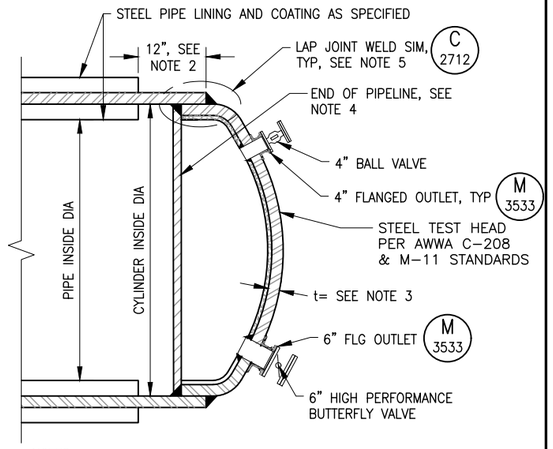
NOTES:

1. CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 40 PSI AIR PRESSURE IN ADDITION TO DYE PENETRATE OR MAGNETIC PARTICLE TESTING AS REQ'D 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 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 2714
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.
5. GROUT FOR JOINT LINING SHALL BE ONE PART CEMENT TO TWO PARTS SAND AND SUFFICIENT WATER FOR DRY-PACK CONSISTENCY.
6. CEMENT MORTAR COATING (GROUT DIAPERS) NOT REQUIRED ON DIELECTRICALLY COATED PIPE. UNLESS OTHERWISE NOTED ON PLANS.

EXTERIOR BUTT-STRAP JOINT

NTS

C 2719



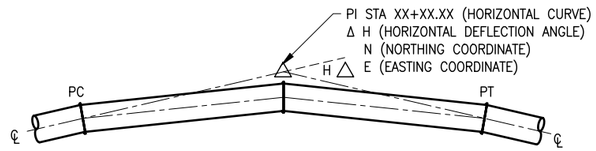
NOTES:

1. COAT TEMPORARY TEST HEAD AND PLAIN END WITH 3 MILS MIN RUST INHIBITING PRIMER. LINE AND COAT IN ACCORDANCE WITH SPECIFICATIONS WHERE PERMANENT END CAP IS SHOWN ON PLANS.
2. MINIMUM 8" HOLDBACK REQUIRED AFTER TEST HEAD IS CUT OFF.
3. WALL THICKNESS SHALL BE THE SAME AS THE ADJOINING PIPE.
4. FOR STATION AND LOCATION OF PIPELINE ENDS, SEE DRAWINGS.
5. BUTT STRAP CONNECTION, OR FULL PENETRATION BUTT WELDS MAY BE SUBSTITUTED FOR LAP JOINT SHOWN.

DISH HEAD END CAP

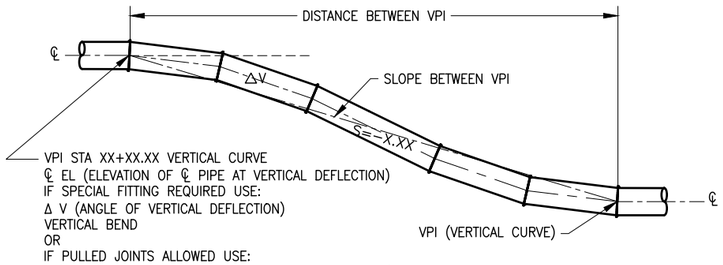
NTS

C 2726



HORIZONTAL CURVES

NTS



VERTICAL CURVES

NTS

NOTES:

1. ALL HORIZONTAL AND VERTICAL CURVES ARE CIRCULAR.
2. HORIZONTAL AND VERTICAL CURVES SHALL BE MADE USING BEVELED JOINTS AND/OR DEFLECTED JOINTS. DO NOT USE COMBINED BEVELED AND DEFLECTED JOINTS.
3. THE MAXIMUM BEVEL ANGLE FOR BEVELED PIPE ENDS SHALL BE 5 DEGREES. SEE SPECIFICATIONS FOR MAXIMUM (NON-BEVELED) JOINT DEFLECTIONS.
4. ALL BEVEL OR DEFLECTION ANGLES SHALL BE EQUALLY DIVIDED THROUGHOUT THE CURVE.
5. FOR COMBINATION VERTICAL AND HORIZONTAL CURVES THE REQUIREMENTS FOR BOTH CONDITIONS SHALL BE COMBINED.
6. REFER TO PLAN AND PROFILE DRAWINGS FOR VERTICAL AND HORIZONTAL CURVE LOCATIONS.
7. 50' PIPE LENGTHS WERE ASSUMED TO DEVELOP VERTICAL CURVE DATA SHOWN ON PLANS. COORDINATE WITH ENGINEER IF DIFFERENT.
8. ALL PROFILE ELEVATIONS ARE SHOWN TO CENTERLINE OF PIPE.
9. REDUCED PIPE SEGMENTS LENGTHS MAY BE USED IN LIEU OF BEVELED OR MITERED JOINTS THROUGH CURVES. COORDINATE SHOP DRAWINGS WITH ENGINEER.

PIPELINE CURVES

NTS

C 2728

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

REVISIONS

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JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK

DRAWN J. BLACK

REVIEW

CHECKED T. OLSEN

APPROVED J. LUETTINGER

GENERAL CIVIL DETAILS

GENERAL CIVIL DETAILS - 6

PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

DRAWING NO. GC-06

SHEET 56 OF 100

NOTES:

1. SEQUENCE FOR TESTING NEW CONNECTIONS TO THE EXISTING AQUEDUCT:

   A) INSTALL TEST HEAD ON NEW PIPE.

   B) TEST AND DISINFECT NEW PIPE IN ACCORDANCE WITH SPECIFICATIONS.

   C) COORDINATE WITH JVWCD FOR SHUTDOWN REQUIREMENTS. DEWATER EXISTING AQUEDUCT AND REMOVE EXISTING DISHHEAD AT CONNECTION LOCATIONS WHERE REQUIRED BY PLAN. SEE SPECIFICATIONS.

   D) CONNECT THE EXISTING PIPE TO THE NEW PIPE USING CLOSURE SECTIONS AS SHOWN, PER PLAN.

   E) TEST JOINTS AS REQUIRED.

   F) INSTALL FIELD APPLIED LININGS AND COATINGS AT THE CLOSURE SECTION JOINTS.

   G) DISINFECT CONNECTION FITTING AND SURROUNDING AQUEDUCT. COORDINATE WITH JVWCD TO RETURN AQUEDUCT TO SERVICE.

   H) CONCRETE ANCHOR BLOCK TO CURE MINIMUM 48 HRS PRIOR TO RETURNING AQUEDUCT TO SERVICE

2. FIELD VERIFY OUTSIDE DIAMETER, GEOMETRY, MATERIAL, ALIGNMENT OF EXISTING PIPE AND FIELD VERIFY DIMENSIONS AND ANGLES OF FITTING PRIOR TO FABRICATION OF NEW CONNECTION FITTINGS.

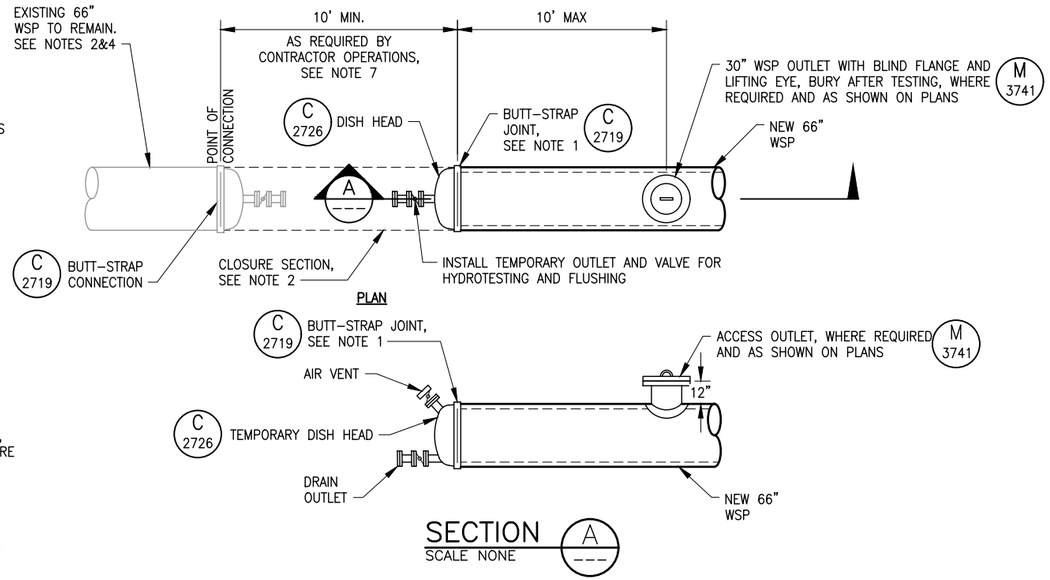
3. FIELD LOCATION AND CONNECTION DETAILS SHALL BE INCLUDED WITH THE SHOP DRAWINGS SUBMITTALS. FOLLOWING THE INSTALLATION OF THE CLOSURE SECTION, THE CONTRACTOR SHALL BACKFILL THE NEW AND EXISTING PIPELINE AND RESTORE THE GROUND SURFACE.

4. SOUTH AQUEDUCT CONNECTION SHOWN. SIMILAR FOR NORTH AQUEDUCT CONNECTION.

5. REFER TO SPECIFICATIONS FOR SCHEDULE CONSTRAINTS REGARDING CONNECTION TO EXISTING PIPELINE.

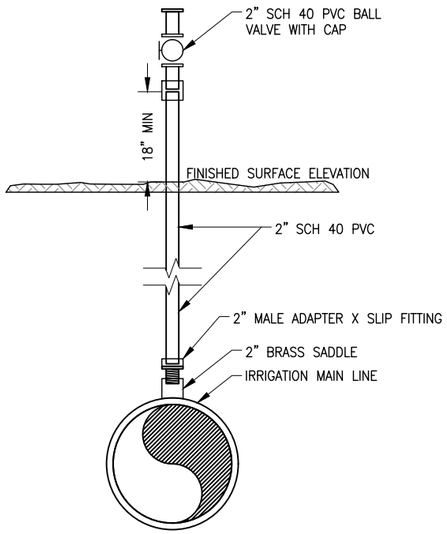
6. REINFORCE CONNECTION PER AWWA C-208 & M-11.

7. INSTALL DISH HEAD A MINIMUM OF 10 FT AWAY FROM EXISTING AQUEDUCT FOR TESTING.



FINAL TIE-IN CONNECTION TO EXISTING AQUEDUCT C 2738

NTS

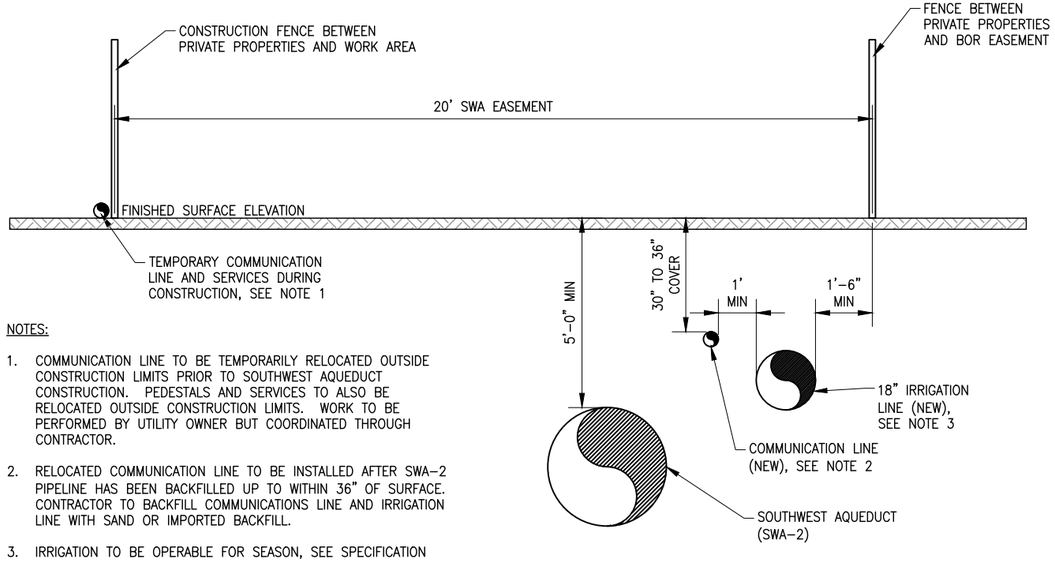


NOTES:

1. AFTER INSTALLATION AND FINAL SURFACE REPAIRED, VERIFY ALL DEBRIS HAS BEEN REMOVED FROM STAND PIPE.

IRRIGATION SERVICE STANDPIPE C 2740

NTS



NOTES:

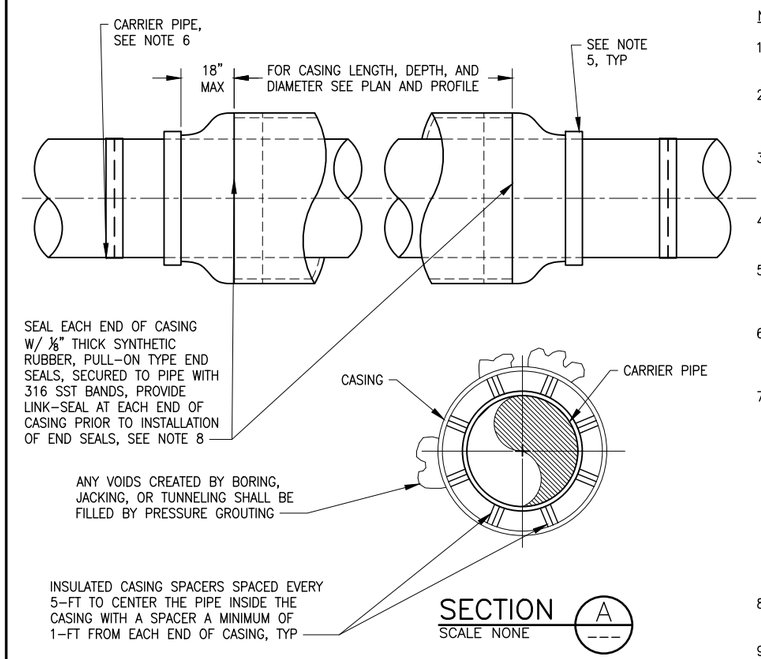
1. COMMUNICATION LINE TO BE TEMPORARILY RELOCATED OUTSIDE CONSTRUCTION LIMITS PRIOR TO SOUTHWEST AQUEDUCT CONSTRUCTION. PEDESTALS AND SERVICES TO ALSO BE RELOCATED OUTSIDE CONSTRUCTION LIMITS. WORK TO BE PERFORMED BY UTILITY OWNER BUT COORDINATED THROUGH CONTRACTOR.

2. RELOCATED COMMUNICATION LINE TO BE INSTALLED AFTER SWA-2 PIPELINE HAS BEEN BACKFILLED UP TO WITHIN 36" OF SURFACE. CONTRACTOR TO BACKFILL COMMUNICATIONS LINE AND IRRIGATION LINE WITH SAND OR IMPORTED BACKFILL.

3. IRRIGATION TO BE OPERABLE FOR SEASON, SEE SPECIFICATION SECTION 01 14 40 – CONSTRUCTION AND SCHEDULE RESTRAINTS.

IRRIGATION AND COMMUNICATIONS LINES TYPICAL REPLACEMENT SECTION C 2741

NTS



STEEL CASING PIPE C 2742

NTS

NOTES:

1. ALL JOINTS OF PRESSURIZED CARRIER PIPES WITHIN CASING SHALL BE RESTRAINED.

2. METALLIC CARRIER PIPES SHALL BE TESTED FOR CATHODIC ISOLATION BEFORE SEALING ENDS OF CASING.

3. CASING SHALL BE SMOOTH STEEL PIPE, JOINTS AND WELDS ARE TO BE GROUND SMOOTH AND BE FREE OF ALL BURRS.

4. SPACERS SHALL BE SECURELY ATTACHED TO CARRIER PIPE PER MANUFACTURER'S REQUIREMENTS.

5. PROVIDE BUTTSTRAP JOINTS ON STEEL CARRIER PIPES OUTSIDE OF THE CASING AT BOTH ENDS OF THE CASING.

6. INSULATED CASING SPACERS THROUGHOUT THE LENGTH OF THE CASING, PIPE SHALL BE AT A CONTINUOUS GRADE AS INDICATED ON THE DRAWINGS.

7. CASING PIPE SHALL BE WELDED STEEL AS INDICATED BELOW FOR THE CARRIER PIPES INDICATED:

CARRIER PIPE	CASING PIPE
66" SWA-2	78" WELDED STEEL, ASTM A53, 42,000 PSI MIN YIELD STRESS, MIN WALL THICKNESS 0.625"
8" JBID SDR-35 PVC SS	14" WELDED STEEL, ASTM A36, 36,000 PSI MIN YIELD STRESS, MIN WALL THICKNESS 0.312"

8. INSTALL 4" NON-SHRINK GROUT INSIDE OF LINK SEAL AT ENDS OF CASING FOR PRESSURIZED UTILITIES.

9. SPACERS SHALL BE ROUNDED OR BEVELED ON LEADING EDGE AND LUBRICATED PER SPECIFICATIONS BEFORE INSTALLATION.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

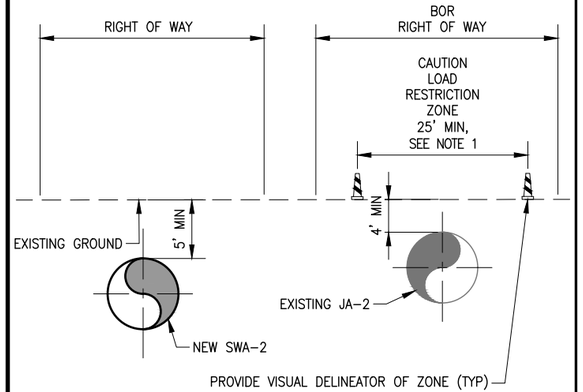
REVIEW CHECKED T. OLSEN APPROVED J. LUETTINGER
DESIGN DESIGN L. MINCK DRAWN J. BLACK

GENERAL CIVIL DETAILS

GENERAL CIVIL DETAILS - 7

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. GC-07
SHEET 57 OF 100



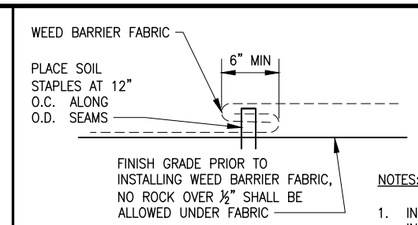
NOTES:

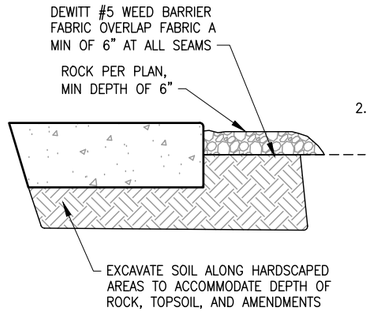
1. JA-2 CONSTRUCTION LOAD RESTRICTION ZONE, SEE SPECIFICATIONS.
2. JORDAN AQUEDUCT IS SUBJECT TO BOR RIGHT OF WAY, LOAD RESTRICTION REQUIREMENTS, AND VIBRATION AND SETTLEMENT CONTROL AND MONITORING, SEE SPECIFICATIONS.

LOAD RESTRICTION ZONE

NTS

C 2970





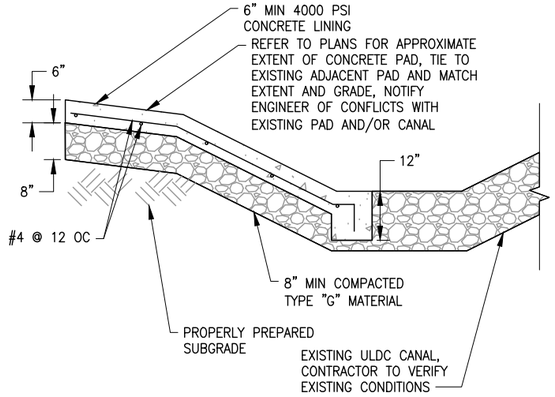
NOTES:

1. INSTALL 6" SOIL STAPLE IN WEED BARRIER FABRIC AT 5' O.C. TRIANGULAR SPACING. INSTALL 6" SOIL STAPLE AT 12" O.C. ALONG ALL WEED BARRIER FABRIC SEAMS. OVERLAP FABRIC MINIMUM 6" AT ALL SEAMS.
2. BEFORE PLACING WEED BARRIER FABRIC AND ROCK, APPLY A PRE-EMERGENT HERBICIDE TO SOIL. AFTER PLACING WEED BARRIER FABRIC AND ROCK, RAKE LEVEL AND WET TO ENTIRE DEPTH. ALLOW TO DRY, THEN APPLY A SECONDARY APPLICATION OF PRE-EMERGENT HERBICIDE TO TOP. KEEP TOP OF ROCK 1" BELOW ADJACENT WALKS AND CURBS. INSTALL ROCK AFTER INSTALLATION OF WEED BARRIER FABRIC.

COBBLE ROCK AND WEED BARRIER FABRIC DETAIL

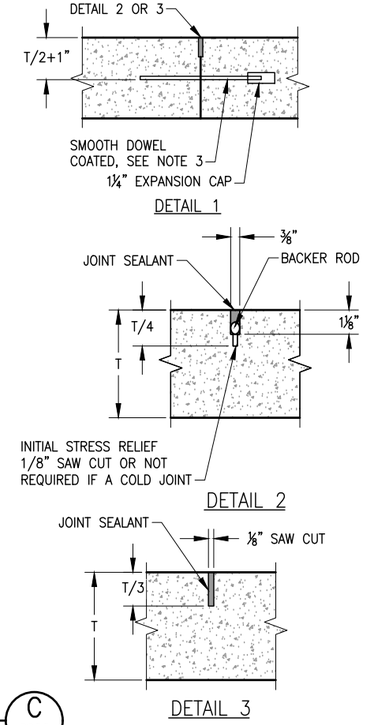
NTS

C 2986



NOTES:

1. CONTRACTION JOINTS SHALL BE PLACED 10' SPACING MINIMUM.
2. TIE NEW BLOWOFF PAD TO EXISTING ADJACENT BLOWOFF PAD, SEE DETAIL 1.



CANAL BLOWOFF PAD

NTS

C 2988

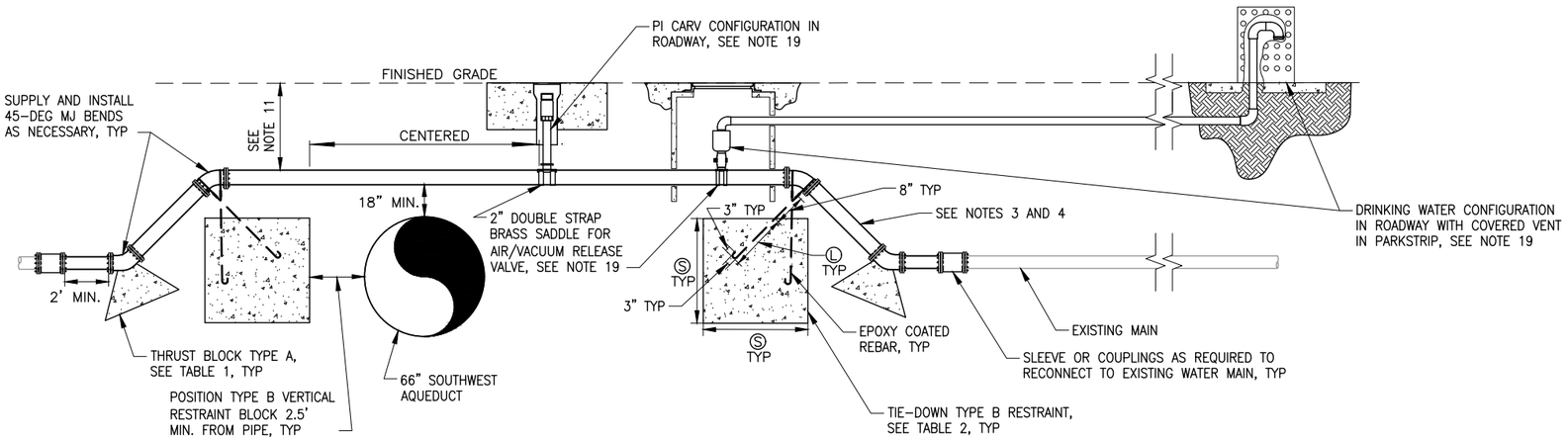


TABLE 1-THRUST BLOCK MINIMUM BEARING AREA	
NOM. DIA (IN)	45° BEND (SQ. FT)
6	6
8	10
12	21.5
16	36.5

TYPE A
(FOR 45° VERTICAL BENDS)

TABLE 2 - TIE-DOWN THRUST RESTRAINTS (4 RODS)				
NOMINAL DIA (IN)	CONCRETE BLOCK (CU YD)	SIDE OF CUBE (FT) (S)	DEPTH OF ROD IN CONCRETE (FT) (L)	DIA. OF ROD (IN)
6	2.5	4.1	2.5	5/8
8	4	4.8	3	5/8
12	9.5	6.4	4	5/8
16	17.5	7.8	4	3/4

TYPE B RESTRAINT
(FOR 45° VERTICAL BENDS)

RIVERTON CITY IRRIGATION/WATER MAIN LOOP OVER SWA

NTS

C 2992

NOTES:

1. ALL BENDS, COUPLINGS OR FITTINGS TO BE RATED BETTER THAN OR EQUAL TO AWWA-C110 AND AWWA-C111 STANDARDS @ A MIN PRESSURE RATING OF 250 PSI FOR DUCTILE IRON.
2. ALL MATERIALS WHICH MAY CONTACT DRINKING WATER, INCLUDING PLASTIC PIPES, GASKETS, LUBRICANTS AND O-RINGS SHALL BE CERTIFIED AS NSF STANDARD 61 AND STAMPED WITH THE NSF LOGO.
3. WATERLINES LARGER THAN 10" SHALL BE DUCTILE IRON CLASS-52. WATERLINES 10" AND SMALLER SHALL BE BLUE DR18 C900 PVC PIPE.
4. PRESSURIZED IRRIGATION LINES SHALL BE PURPLE DR18 C900 PVC PIPE.
5. ALL PIPE, FITTINGS, COUPLINGS, THRUST RESTRAINTS AND BLOCKING ARE TO BE IN ACCORDANCE WITH AWWA SPECIFICATIONS AND APWA REQUIREMENTS UNLESS OTHERWISE SPECIFIED.
6. ALL BURIED REBAR, FITTINGS, COUPLINGS, VALVES AND MECHANICAL JOINT NUTS AND BOLTS ARE TO BE COATED WITH NON OXIDE GREASE CHEVRON FM 1 OR APPROVED EQUAL, COVERED WITH 8 MIL MIN POLYETHYLENE SHEETING, AND TAPE WRAPPED WITH AWWA C209 OR 214, 70 MIL MIN THICKNESS.
7. ALL DRINKING WATER CROSSINGS OR LOOPS UNDER OR OVER OTHER UTILITIES ARE TO BE INSTALLED IN ACCORDANCE WITH THE UTAH PUBLIC DRINKING WATER REGULATIONS, CURRENT REVISIONS.
8. RIVERTON CITY MUST BE GIVEN 24 HOUR MINIMUM NOTICE PRIOR TO LOOPING ANY WATERLINE. MATERIALS TO BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION AND IN ACCORDANCE WITH SPECIFICATIONS AND RIVERTON CITY STANDARDS.
9. ALL BENDS AND FITTINGS SHALL REMAIN EXPOSED UNTIL ENGINEER OR OWNER HAS COMPLETED ALL REQUIRED MEASUREMENTS OF THE INSTALLED LOOP. LOOPS BURIED PRIOR TO MEASUREMENT WILL BE REQUIRED TO BE COMPLETELY EXCAVATED AND RE-BACKFILLED AT THE CONTRACTOR'S EXPENSE.
10. DRAWING IS INTENDED FOR REFERENCE ONLY. CONTRACTOR TO PROVIDE ALL FIELD MODIFICATIONS REQUIRED TO COMPLETE THE INSTALLATION AS REQUIRED BY ENGINEER.
11. 3' MIN COVER FOR RIVERTON CITY PRESSURIZED IRRIGATION AND 4' MIN COVER FOR RIVERTON CITY CULINARY WATER. IF THE MINIMUM COVER CANNOT BE MET, NOTIFY ENGINEER AND COORDINATE FOR INSTALLATION.
12. BLOCK VOLUMES BASED ON TEST PRESSURE OF 200 PSI.
13. UNIT WEIGHT OF CONCRETE 155 PCF MINIMUM.
14. BEARING SURFACE SHOULD, WHERE POSSIBLE, BE PLACED AGAINST UNDISTURBED SOIL. WHERE NOT POSSIBLE, FILL BETWEEN THE BEARING SURFACE AND UNDISTURBED SOIL SHOULD BE COMPACTED TO 95% STD. PROCTOR DENSITY, MINIMUM.
15. BLOCK WIDTH SHOULD BE BETWEEN ONE AND TWO TIMES THE BLOCK HEIGHT.
16. COORDINATE WITH RIVERTON CITY FOR SHUT DOWN OF WATERLINE. PROVIDE 30 DAY MINIMUM NOTIFICATION. COORDINATE WITH RIVERTON CITY TO OPERATE VALVES AND FOR DISINFECTION, TESTING REQUIREMENTS AND REQUIREMENTS FOR RETURNING WATERLINE TO SERVICE.
17. IF THE LOOPING UTILITY'S DIAMETER IS NOT SHOWN ON DETAIL, USE THE NEXT LARGEST SIZE AVAILABLE. I.E. FOR A 10" DIAMETER UTILITY, SIZE THRUST BLOCKS USING 12" DIAMETER VALUES. COORDINATE WITH ENGINEER FOR UTILITIES LARGER THAN 16" IN DIAMETER.
18. SEE RIVERTON CITY STD DETAIL DW-1 FOR WATERLINE TRENCH CROSS-SECTION, BACKFILL AND TRACER WIRE REQUIREMENTS, ETC.
19. AIR VALVE LOCATION TO BE COORDINATE IN THE FIELD AND BE PER RIVERTON CITY STD DETAIL PI-5 FOR PRESSURIZED IRRIGATION AND RIVERTON CITY STD DETAIL DW-3 FOR DRINKING WATER.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED T. OLSEN
APPROVED J. LUETTINGER

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

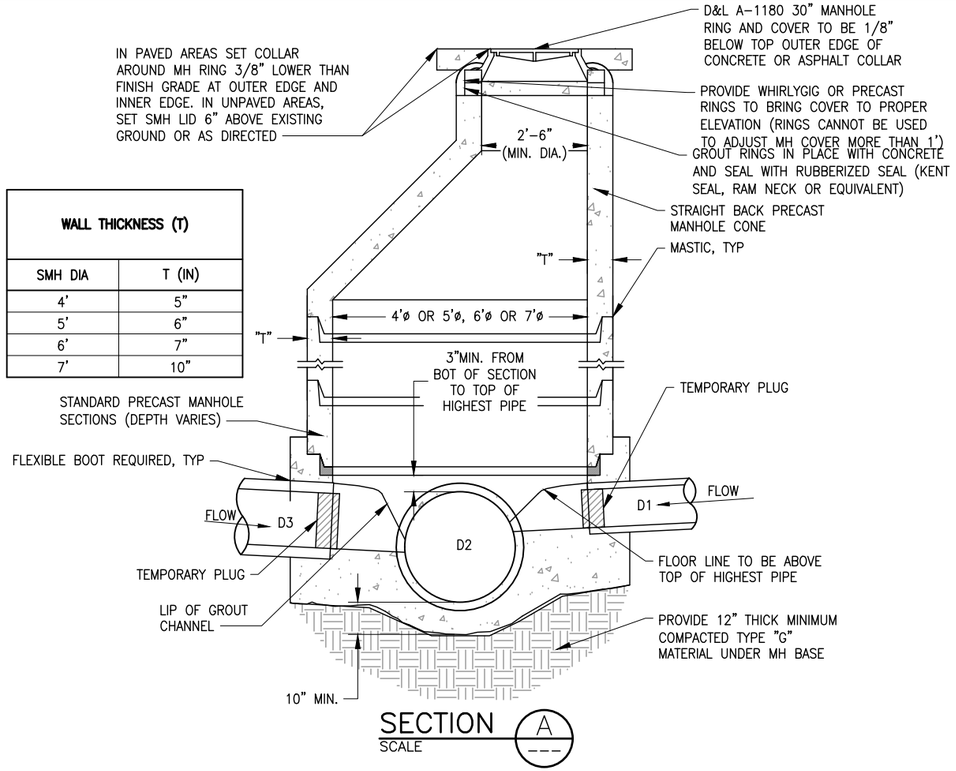
GENERAL CIVIL DETAILS

GENERAL CIVIL DETAILS - 8

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
GC-08

SHEET 58 OF 100



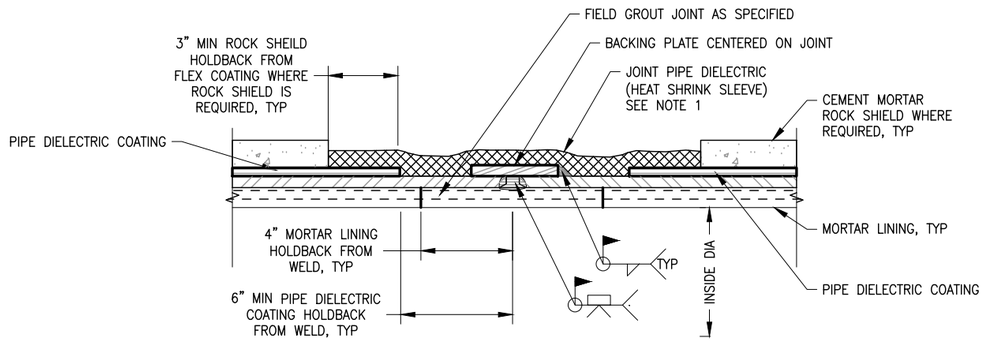
WALL THICKNESS (T)	
SMH DIA	T (IN)
4'	5"
5'	6"
6'	7"
7'	10"

SECTION A
SCALE

NOTES:

1. INVERTS D1, D2 AND D3 SHALL MATCH THOSE SHOWN IN PLANS.
2. AFTER ALL GRADING AROUND MANHOLE HAS BEEN COMPLETED AND FINAL SURFACING IS IN PLACE, REMOVE DEBRIS AND TEMPORARY PLUGS OR PLYWOOD FROM INSIDE OF MANHOLES.
3. SET MANHOLE FRAME AND COVER TO 1/8" BELOW FINISH GRADE AFTER FINAL STREET GRADING IS COMPLETE.
4. CONE AND WALL SECTIONS TO CONFORM TO ASTM C-478.
5. PLUG OUTLET OF DOWNSTREAM MANHOLE UNTIL CONSTRUCTION IS COMPLETE.
6. PRECAST MANUFACTURER SHALL DESIGN THE STRUCTURE TO RESIST ALL UPLIFT FORCES ASSOCIATED WITH A WATERTABLE AT 2' BELOW EXISTING GRADE.
7. SET MANHOLE ON FIRM, STABLE, DRY BASE. ENSURE GROUNDWATER IS REMOVED TO A MINIMUM DEPTH OF 12" BELOW THE BOTTOM OF EXCAVATION.
8. IF NATIVE SOILS AT BOTTOM OF EXCAVATION AREA ARE SOFT, DISTURBED OR OTHERWISE UNSUITABLE, OVER EXCAVATE TO A DEPTH OF 12" AND BACKFILL WITH STABILIZATION GRAVEL, TYPE F.

JBID STANDARD MANHOLE
NTS NTS
C 2995



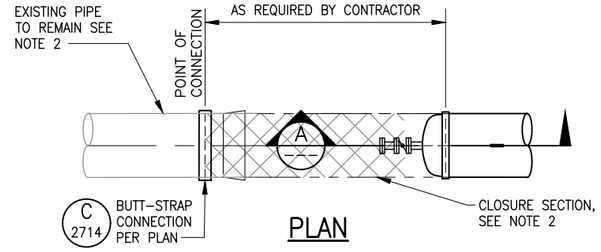
NOTES:

1. CONTRACTOR HAS THE OPTION TO INSTALL THE BACKING PLATE, AS SHOWN, OR ON THE INSIDE OF THE PIPE AND PERFORM THE BUTT WELDING FROM THE OUTSIDE.
2. WELDING AFTER BACKFILL IS NOT ALLOWED.
3. AFTER INSTALLATION OF PLASTIC TAPE, COMPLETE A HOLIDAY TEST AS SPECIFIED.

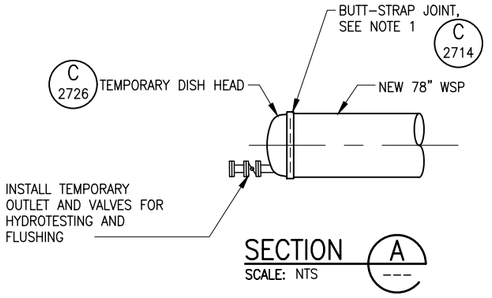
BUTT WELD
NTS (WSP-FLEXIBLE/DIELECTRIC COATING SYSTEM)
C 2996

NOTES:

1. SEQUENCE FOR TESTING NEW CONNECTIONS TO THE EXISTING AQUEDUCT:
   A) INSTALL TEST HEAD ON NEW PIPE.
   B) TEST NEW PIPE IN ACCORDANCE WITH SPECIFICATIONS.
   C) COORDINATE WITH JVWCD TO REMOVE EXISTING AQUEDUCT FROM SERVICE. DEWATER EXISTING AQUEDUCT REMOVE EXISTING PIPE AT CONNECTION LOCATIONS WHERE REQUIRED PER PLAN. SEE SPECIFICATIONS.
   D) CONNECT THE EXISTING PIPE TO THE NEW PIPE USING CLOSURE SECTIONS AS SHOWN, PER PLAN.
   E) TEST JOINTS AS REQUIRED.
   F) INSTALL FIELD APPLIED LININGS AND COATINGS AT THE CLOSURE SECTION JOINTS.
   G) COORDINATE WITH JVWCD TO RETURN AQUEDUCT TO SERVICE.
   H) CONCRETE THRUST COLLAR, WHERE REQUIRED, TO CURE MINIMUM 48 HRS PRIOR TO RETURNING AQUEDUCT TO SERVICE
2. FIELD VERIFY OUTSIDE DIAMETER, GEOMETRY, MATERIAL AND ALIGNMENT OF EXISTING PIPE, FIELD VERIFY DIMENSIONS AND ANGLES OF FITTING PRIOR TO FABRICATION OF NEW CONNECTION FITTINGS.
3. FIELD LOCATION AND CONNECTION DETAILS SHALL BE INCLUDED WITH THE SHOP DRAWINGS SUBMITTALS. FOLLOWING THE INSTALLATION OF THE CLOSURE SECTION, THE CONTRACTOR SHALL BACKFILL THE NEW AND EXISTING PIPELINE AND RESTORE THE GROUND SURFACE.
4. REFER TO SPECIFICATIONS FOR SCHEDULE CONSTRAINTS REGARDING CONNECTION TO EXISTING PIPELINES.
5. REINFORCEMENT CONNECTION PER AWWA C-208 & M-11.



PLAN



SECTION A
SCALE: NTS

TIE-IN CONNECTION TO EXISTING JORDAN AQUEDUCT
NTS
C 2997

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

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JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

REVIEW
CHECKED C. NELSON
APPROVED J. LUETTINGER

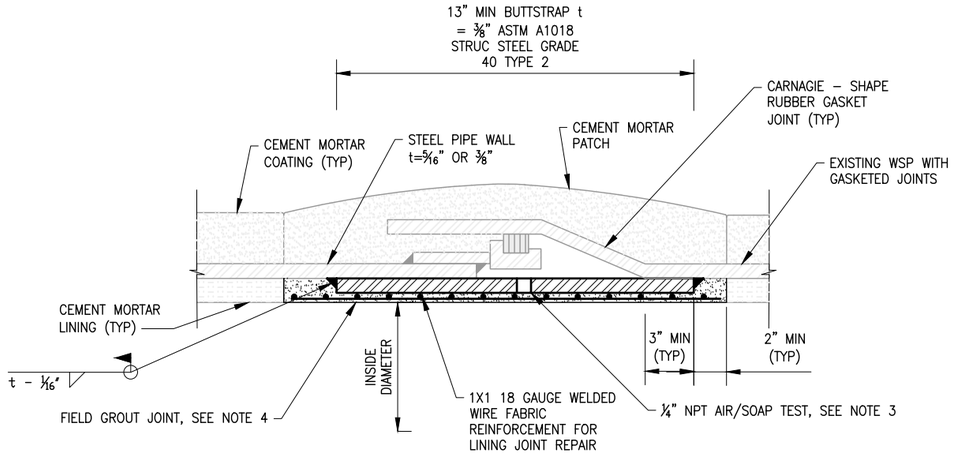
DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

GENERAL CIVIL DETAILS

GENERAL CIVIL DETAILS - 9

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
GC-09
SHEET 59 OF 100



NOTES:

1. DETAIL REQ'D ONLY WHERE EXISTING JOINTS ARE DAMAGED BY CONSTRUCTION WORK OR WHERE REQUIRED PER PLAN.
2. REMOVE CEMENT MORTAR LINING TO A NEAT LINE AND GRIND AND REPAIR ANY DAMAGE ON PIPE WALL, AND CLEAN AND PREPARE JOINT PRIOR TO INSTALLING BUTT STRAP.
3. CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 40 PSI AIR PRESSURE IN ADDITION TO DYE PENETRATE OR MAGNETIC PARTICLE TESTING AS REQ'D 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. PROVIDE TWO TAP HOLES AT 180°.
4. GROUT FOR JOINT LINING SHALL BE ONE PART CEMENT TO TWO PARTS SAND AND SUFFICIENT WATER FOR DRY-PACK CONSISTENCY.

INTERIOR BUTTSTRAP JOINT FOR STEEL PIPE

NTS

C
2951

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

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DESIGN L. MINCK
DRAWN J. BLACK

REVIEW
CHECKED C. NELSON
APPROVED J. LUETTINGER

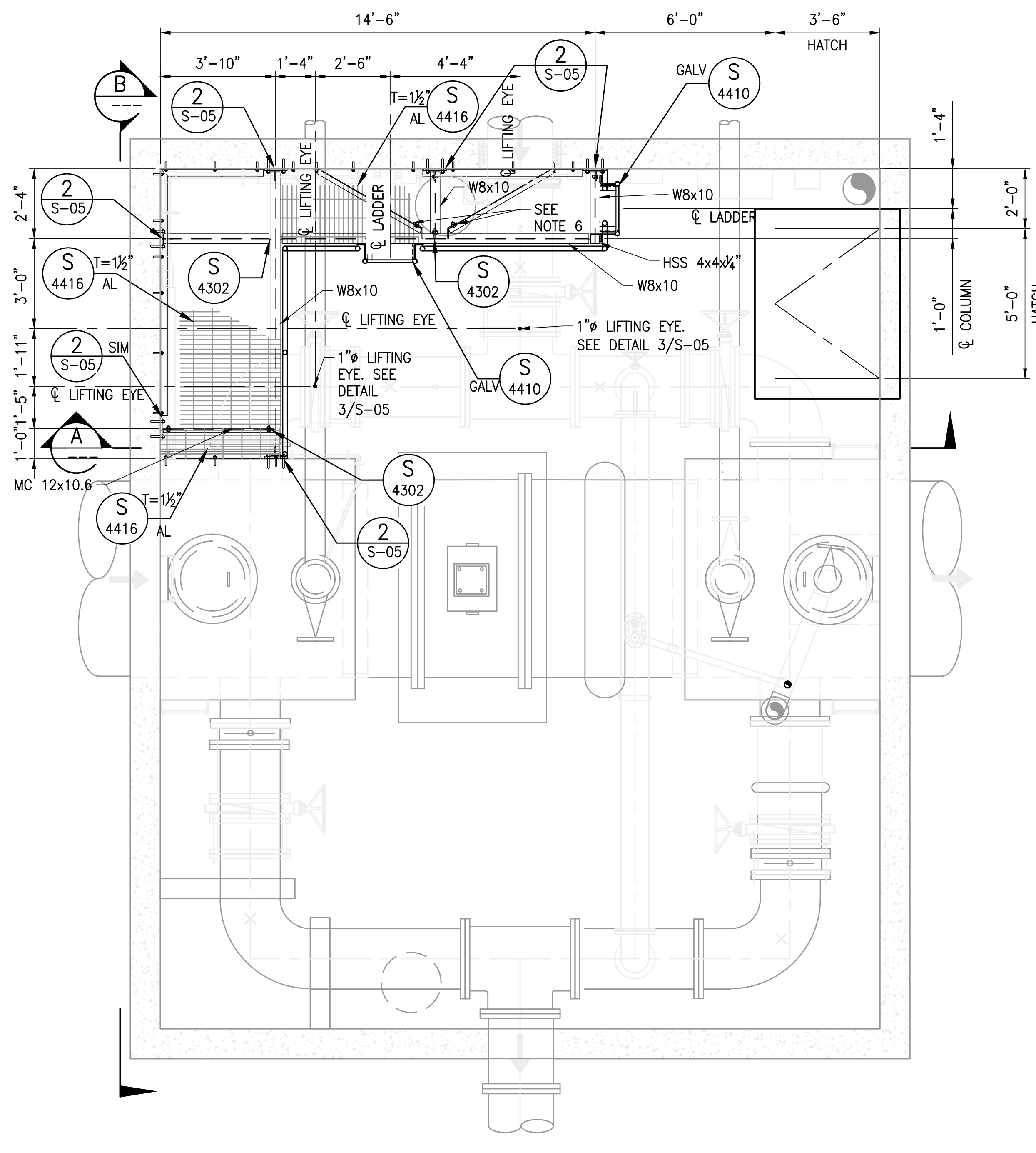
GENERAL CIVIL DETAILS

GENERAL CIVIL DETAILS - 10

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

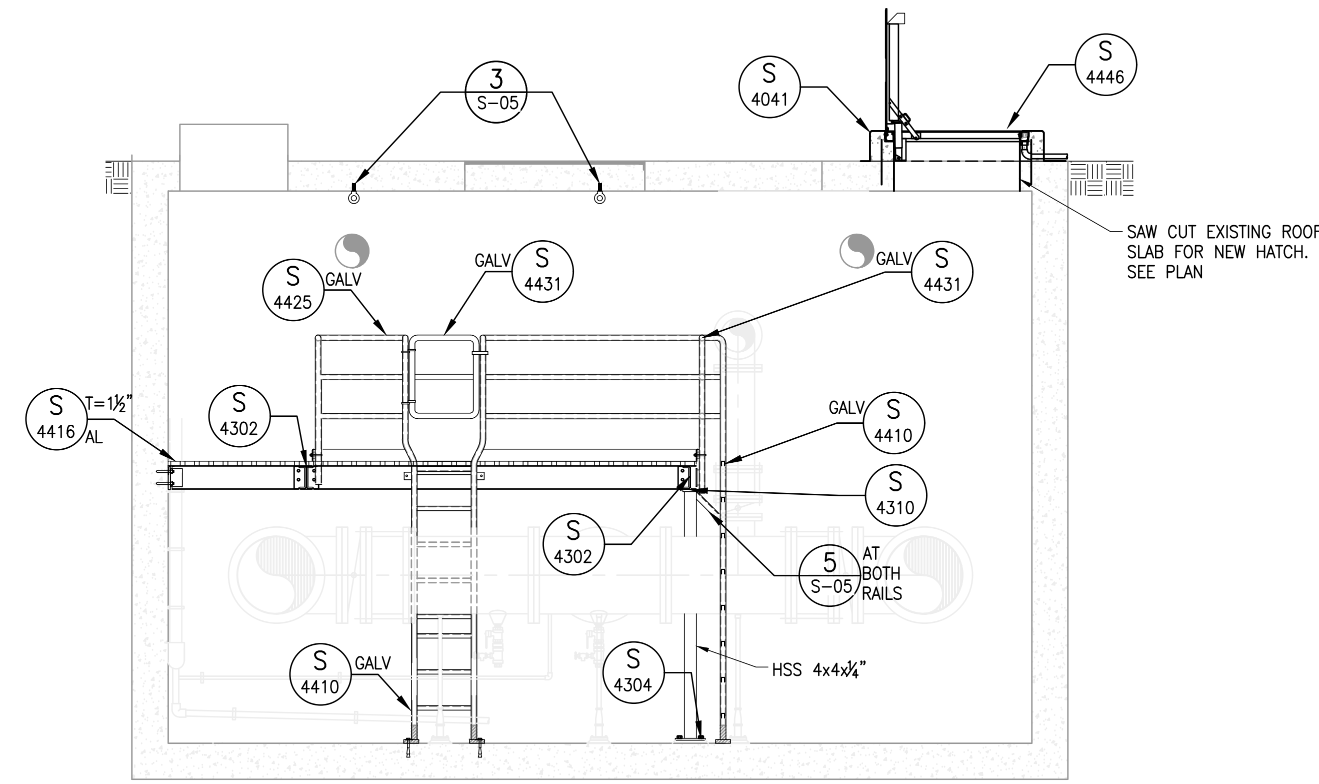
DRAWING NO.
GC-10

SHEET 60 OF 100

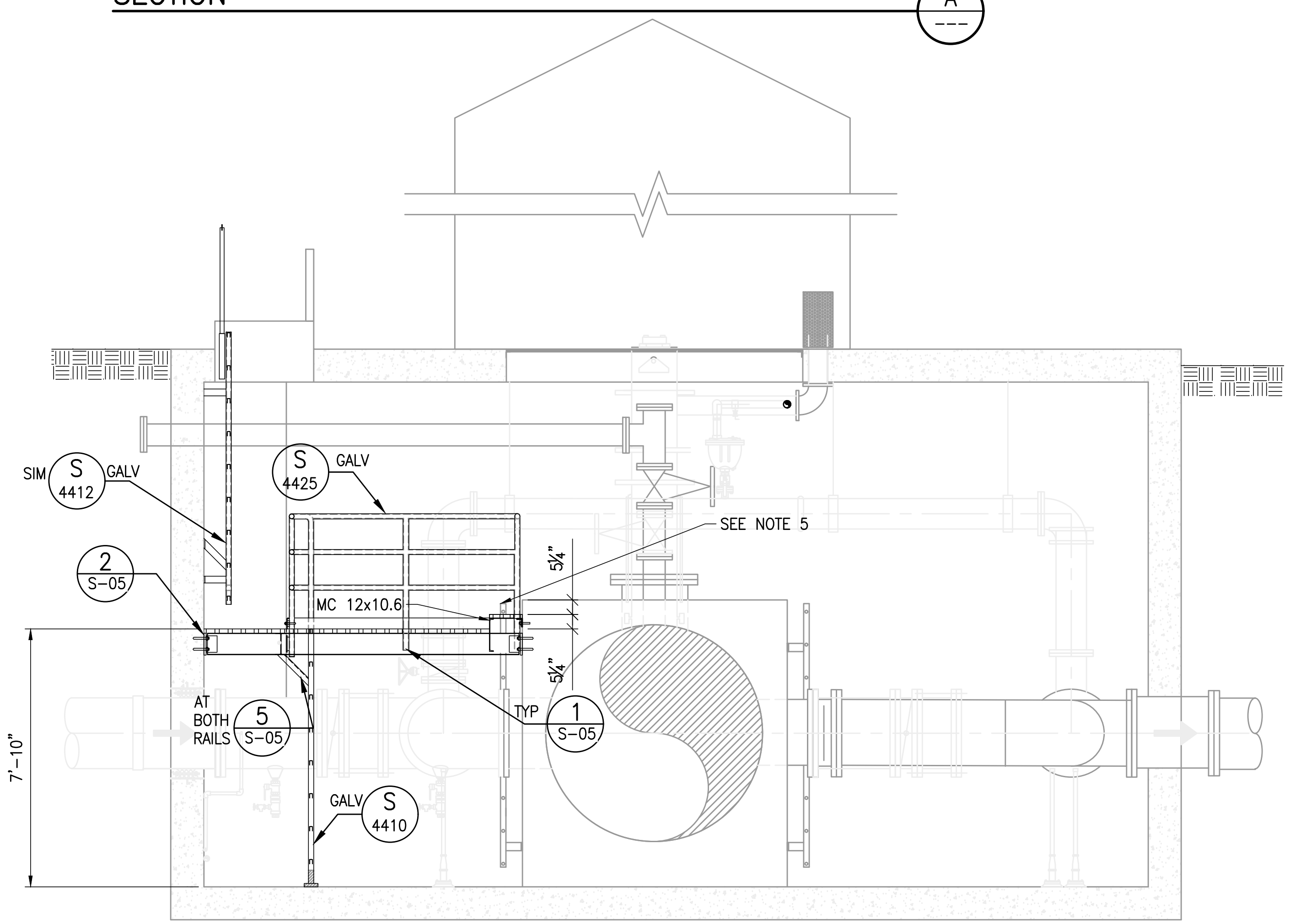


PLAN VIEW

SCALE: 3/8"=1'-0"



SECTION A



SECTION B

NOTES:

1. FOR GENERAL STRUCTURAL NOTES, REFER TO DRAWINGS GS-01.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER CONTRACT DOCUMENTS. STRUCTURAL DRAWINGS DO NOT ATTEMPT TO SHOW ALL MECHANICAL AND ELECTRICAL PENETRATIONS AND ROUTINGS.
3. UNLESS SPECIFICALLY NOTED OTHERWISE, MISCELLANEOUS METAL ITEMS WITHIN THIS STRUCTURE ARE TO BE GALVANIZED STEEL.
4. NEW HATCH SHALL HAVE A CONCEALED RECESSED PADLOCK HASP.
5. REMOVE AND SALVAGE EXISTING LADDER.
6. DIAGONAL BRACING L2x2x¼. SEE DETAIL 4/S-05

BOWEN COLLINS & ASSOCIATES

STEPHEN D. COHEN — PROFESSIONAL STRUCTURAL ENGINEER — STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

REVIEW: CHECKED S. COHEN; APPROVED S. COHEN

DESIGN: DESIGN S. PUGH; DRAWN S. PUGH

STRUCTURAL

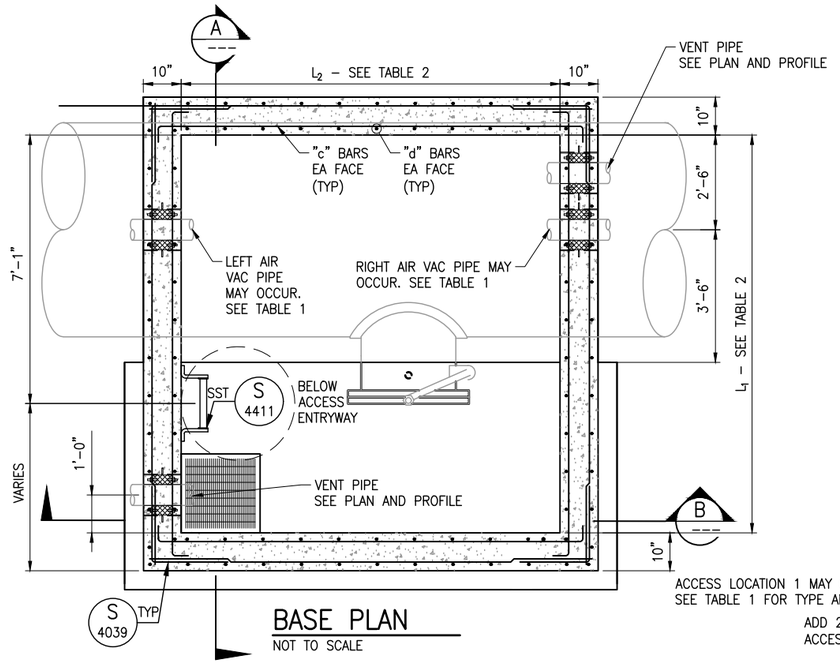
12600 SOUTH VAULT MODIFICATIONS

PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

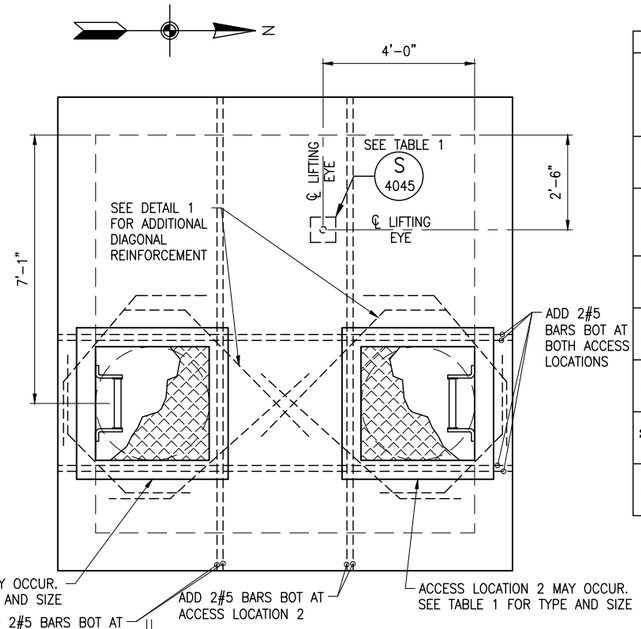
DRAWING NO. S-01

SHEET 61 OF 100



BASE PLAN

NOT TO SCALE



ROOF PLAN

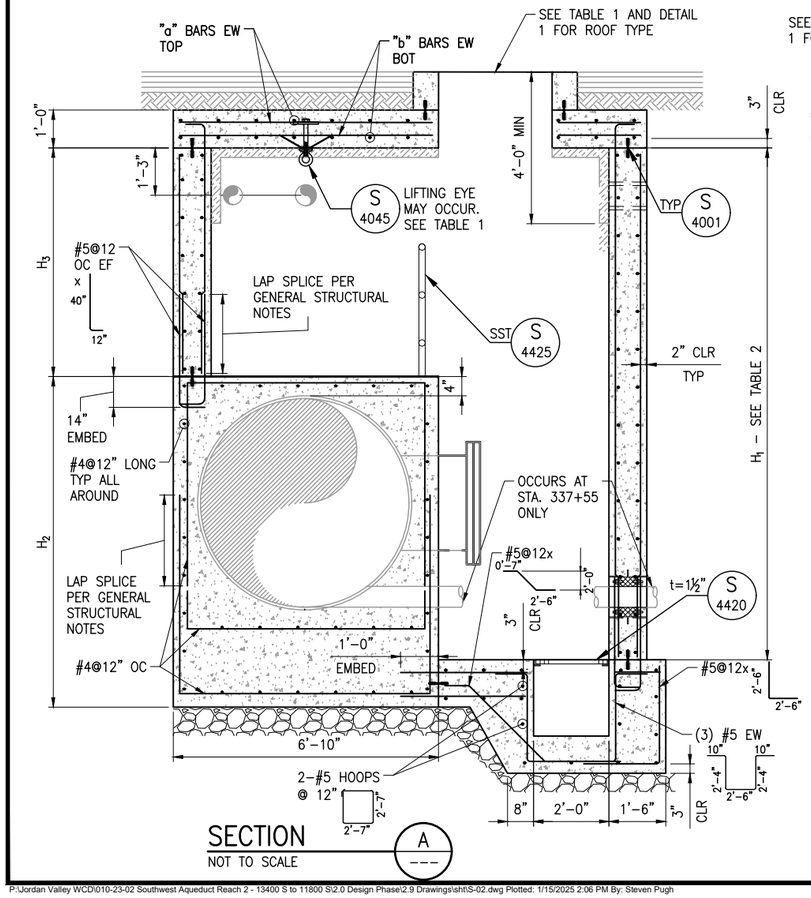
NOT TO SCALE

TABLE 1 – MAINLINE VAULT SCHEDULE									
SWA–2 STATION	STRUCTURE TYPE	PP SHEET REFERENCE	M SHEET REFERENCE	[1]COVER TYPE	TOP OF FLOOR SLAB	CL PIPE EL	HATCH/ MANHOLE LOCATION	AIR VALVE PIPE LOCATION	LIFTING EYE ABOVE AIR VALVE
320+87	AIR VALVE VAULT W/ MAINTENANCE ACCESS	PP–01	M–09	30" MANHOLE	4546.6	4549.9	2	RIGHT	YES
337+42	MAINTENANCE ACCESS AND DRAIN	PP–03	M–10	30" MANHOLE	4539.1	4543.0	1	N/A	NO
354+36	AIR VALVE VAULT W/ MAINTENANCE ACCESS	PP–05	M–09	30" MANHOLE	4547.1	4550.4	1	LEFT	YES
365+82	AIR VALVE VAULT W/ MAINTENANCE ACCESS	PP–06	M–09	3'x3' HATCH	4550.9	4554.2	1	LEFT	YES
372+72	AIR VALVE VAULT W/ MAINTENANCE ACCESS	PP–07	M–09	3'x3' HATCH	4547.2	4550.5	2	LEFT	YES
[2]405+23	AIR VALVE VAULT W/ MAINTENANCE ACCESS	PP–11	M–09	30" MANHOLE	4529.7	4533.0	2	LEFT	YES
422+19	AIR VALVE VAULT W/ MAINTENANCE ACCESS	PP–13	M–09	30" MANHOLE	4536.9	4540.3	2	RIGHT	YES

NOTES:

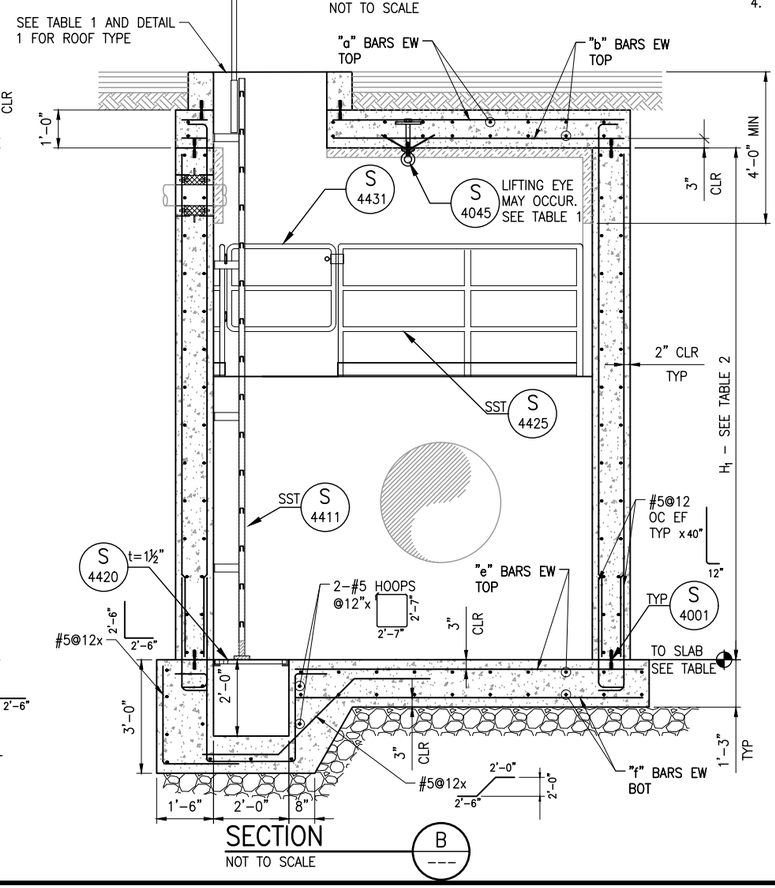
1. SEE PLAN AND PROFILE FOR RIM EL.
2. VAULT IS 180° OF WHAT IS SHOWN. ROTATE VAULT 180° ACCORDINGLY. APPLIES TO THIS VAULT ONLY.
3. SEE PLAN AND PROFILE SHEETS FOR ADDITIONAL INFORMATION ABOUT LAYOUT AND LOCATIONS OF HATCHES AND PIPES.
4. SEE NOTES ON S–04 FOR ADDITIONAL INFORMATION.

TABLE 2 – MAINLINE VAULT DIMENSIONS AND REBAR SCHEDULE											
SWA–2 STATION	L_1	L_2	H_1	H_2	H_3	"a" BARS	"b" BARS	"c" BARS	"d" BARS	"e" BARS	"f" BARS
320+87	10'–6"	10'–0"	11'–5"	7'–8"	5'–0"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"
337+42	10'–6"	10'–0"	12'–3"	8'–4"	5'–2"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"
354+36	10'–6"	10'–0"	11'–7"	7'–8"	5'–2"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"
365+82	10'–6"	10'–0"	12'–6"	7'–8"	6'–1"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"
372+72	13'–0"	10'–0"	11'–7"	7'–8"	5'–2"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"
405+23	10'–6"	10'–0"	11'–7"	7'–8"	5'–2"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"
422+19	10'–6"	10'–0"	11'–7"	7'–8"	5'–2"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"	#5@12"



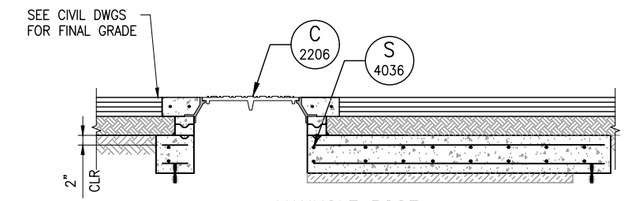
SECTION A

NOT TO SCALE

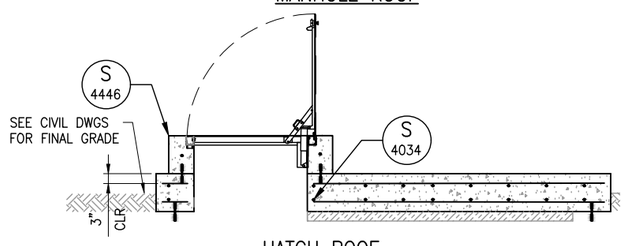


SECTION B

NOT TO SCALE



MANHOLE ROOF



HATCH ROOF

VAULT ROOF DETAILS 1

NOT TO SCALE

BOWEN COLLINS & ASSOCIATES

STRUCTURAL ENGINEER STEPHEN D. COHEN # 178588 PROFESSIONAL STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. COHEN
APPROVED S. COHEN

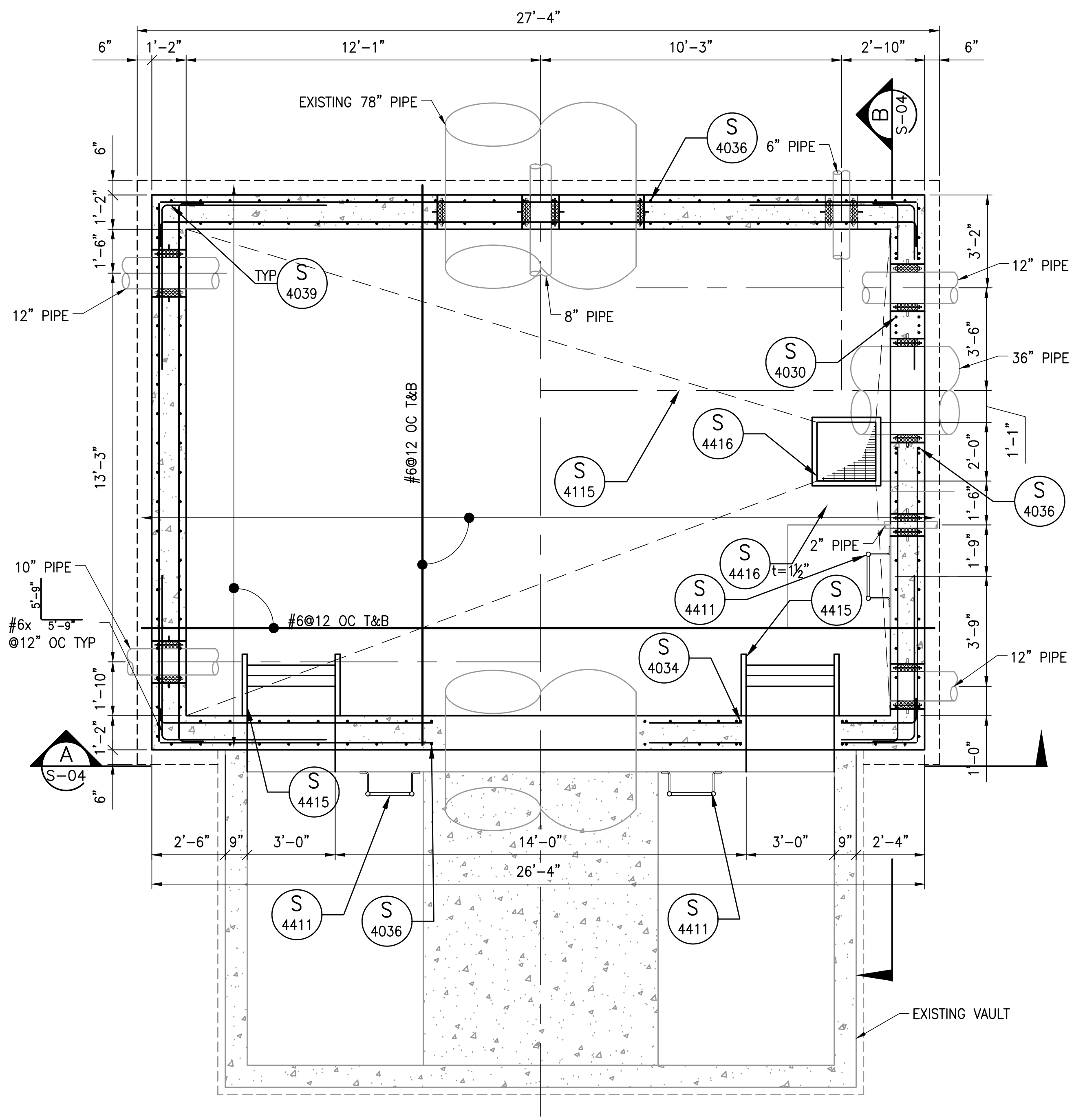
DESIGN
DESIGN S. PUGH
DRAWN S. PUGH

STRUCTURAL

VAULT STRUCTURAL PLAN AND SECTIONS

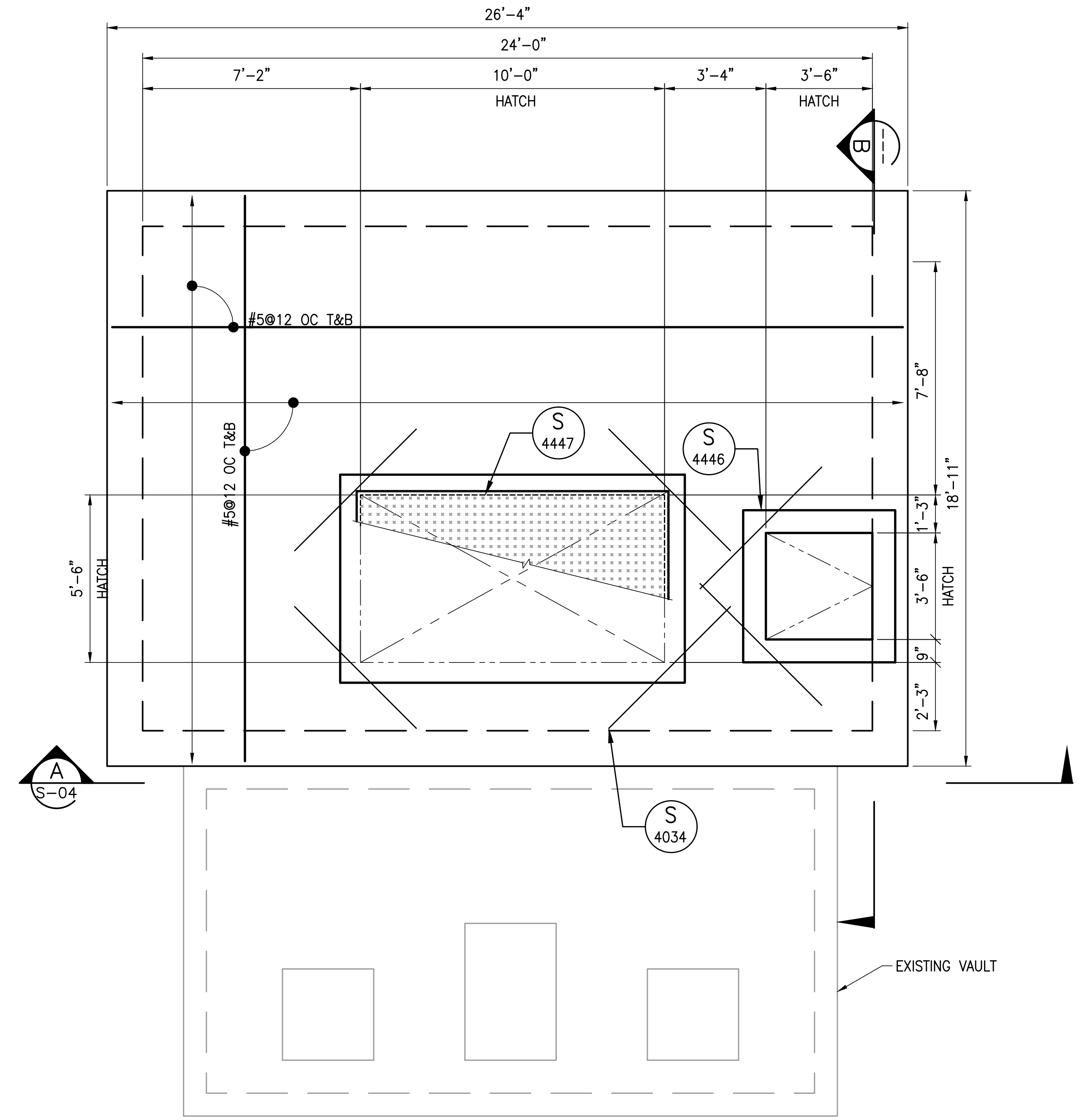
PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. S-02
SHEET 62 OF 100



BASE PLAN

SCALE: 3/8"=1'-0"



ROOF PLAN

SCALE: 3/8"=1'-0"

DRAWING NOTES

1. FOR GENERAL STRUCTURAL NOTES, REFER TO DRAWING GS-01.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER CONTRACT DOCUMENTS. STRUCTURAL DRAWINGS DO NOT ATTEMPT TO SHOW ALL MECHANICAL AND ELECTRICAL PENETRATIONS AND ROUTINGS.
3. OVER EXCAVATE BENEATH BASE SLAB AND PLACE 1'-0" MINIMUM COMPACTED THICKNESS OF GRANULAR STRUCTURAL FILL. EXTEND A MINIMUM OF 2' BEYOND THE EDGE OF THE BASE SLAB.
4. THE EXPOSED INTERIOR FACES OF THE CONCRETE WALLS AND TOP SLAB SHALL BE GIVEN A RUBBED FINISH. TOP SURFACE OF BOTH SLABS SHALL BE GIVEN A FLOATED SURFACE FINISH CONSISTENT WITH REQUIREMENTS FOR A PAINTED COATING.
5. APPLY FLUID-APPLIED WATERPROOFING TO ALL EXTERIOR BURIED CONCRETE SURFACES OF THE VAULT.
6. UNLESS SPECIFICALLY NOTED OTHERWISE, MISCELLANEOUS METAL ITEMS WITHIN THIS STRUCTURE ARE TO BE STAINLESS STEEL.
7. UNO, HATCH SHALL HAVE A CONCEALED RECESSED PADLOCK HASP AND SHALL BE INSULATED IWTH RIGID FOAM BOARD.
8. WALLS AND ROOF SLAB SHALL BE INSULATED WITH RIGID FOAM BOARD.

BOWEN COLLINS & ASSOCIATES

STEPHEN D. COHEN — PROFESSIONAL STRUCTURAL ENGINEER — STATE OF UTAH

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

REVIEW: CHECKED S. COHEN; APPROVED S. COHEN

DESIGN: DESIGN S. PUGH; DRAWN S. PUGH

STRUCTURAL

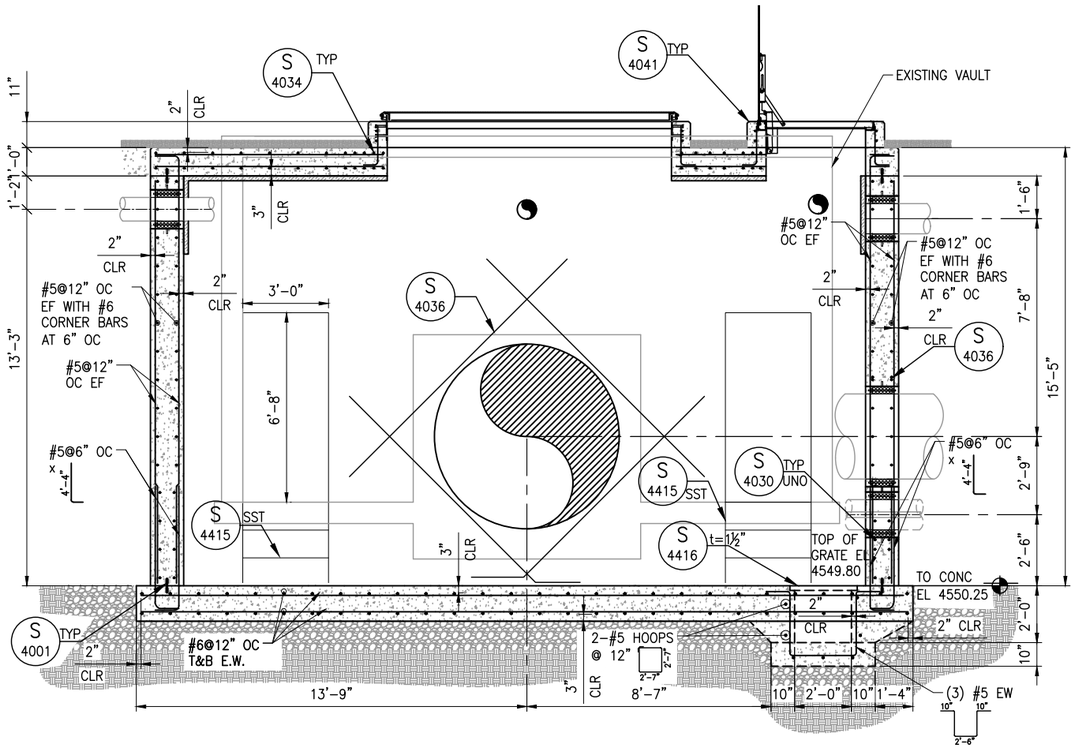
11400 SOUTH VAULT STRUCTURAL MODIFICATIONS - 01

DATE: JANUARY 2025

PROJECT NUMBER 010-23-02

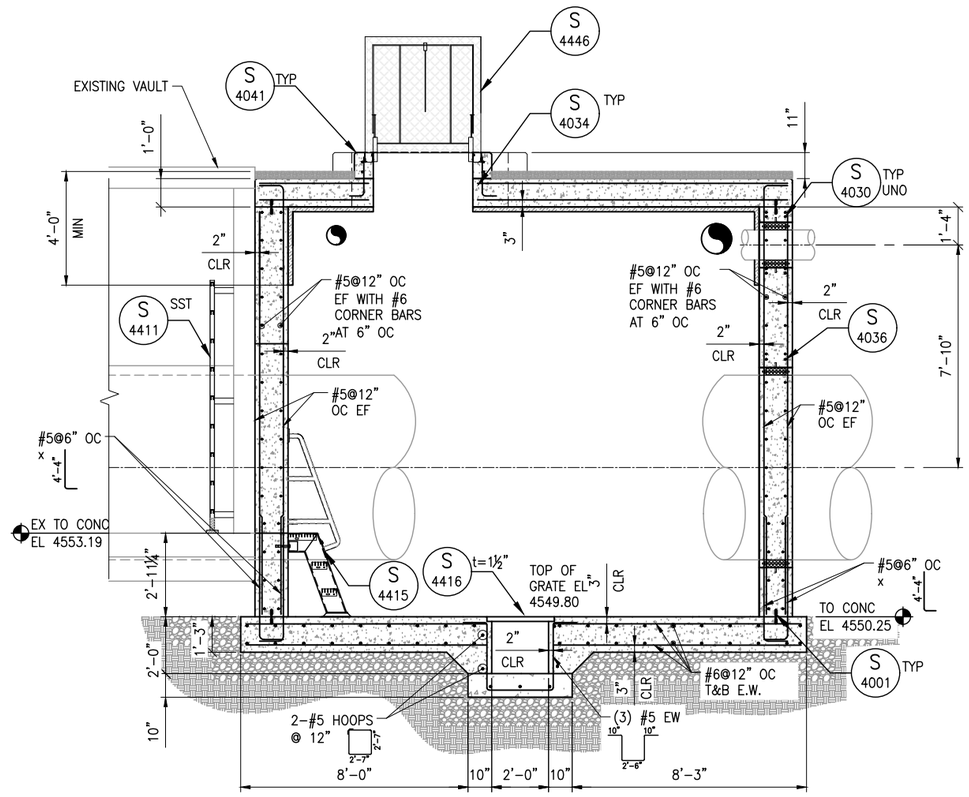
DRAWING NO. S-03

SHEET 63 OF 100



SECTION A

SCALE: 3/8"=1'-0"



SECTION B

SCALE: 3/8"=1'-0"

DRAWING NOTES

1. FOR GENERAL STRUCTURAL NOTES, REFER TO DRAWING GS-01.
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE STRUCTURAL DRAWINGS WITH ALL OTHER CONTRACT DOCUMENTS. STRUCTURAL DRAWINGS DO NOT ATTEMPT TO SHOW ALL MECHANICAL AND ELECTRICAL PENETRATIONS AND ROUTINGS.
3. OVER EXCAVATE BENEATH BASE SLAB AND PLACE 1'-0" MINIMUM COMPACTED THICKNESS OF GRANULAR STRUCTURAL FILL. EXTEND A MINIMUM OF 2' BEYOND THE EDGE OF THE BASE SLAB.
4. THE EXPOSED INTERIOR FACES OF THE CONCRETE WALLS AND TOP SLAB SHALL BE GIVEN A RUBBED FINISH. TOP SURFACE OF BOTH SLABS SHALL BE GIVEN A FLOATED SURFACE FINISH CONSISTENT WITH REQUIREMENTS FOR A PAINTED COATING.
5. APPLY FLUID-APPLIED WATERPROOFING TO ALL EXTERIOR BURIED CONCRETE SURFACES OF THE VAULT.
6. UNLESS SPECIFICALLY NOTED OTHERWISE, MISCELLANEOUS METAL ITEMS WITHIN THIS STRUCTURE ARE TO BE STAINLESS STEEL.
7. UNO, HATCH SHALL HAVE A CONCEALED RECESSED PADLOCK HASP AND SHALL BE INSULATED IWTH RIGID FOAM BOARD.
8. WALLS AND ROOF SLAB SHALL BE INSULATED WITH RIGID FOAM BOARD.

BOWEN COLLINS & ASSOCIATES

STRUCTURAL ENGINEER STEPHEN D. COHEN 178588 STATE OF UTAH PROFESSIONAL ENGINEER

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

REVIEW CHECKED S. COHEN APPROVED S. COHEN

DESIGN S. PUGH DRAWN S. PUGH

STRUCTURAL

11400 SOUTH VAULT STRUCTURAL MODIFICATIONS - 02

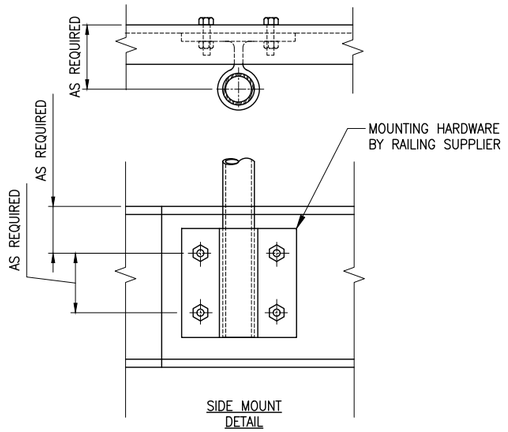
PROJECT NUMBER 010-23-02

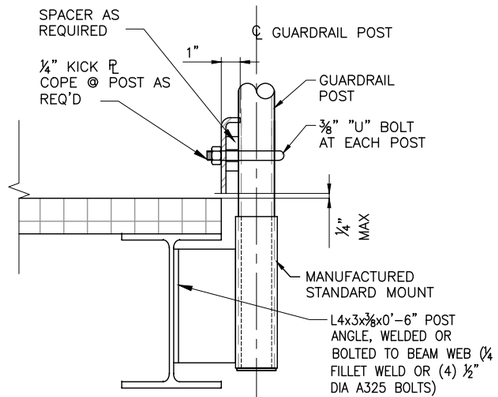
DATE: JANUARY 2025

DRAWING NO. S-04

SHEET 64 OF 100

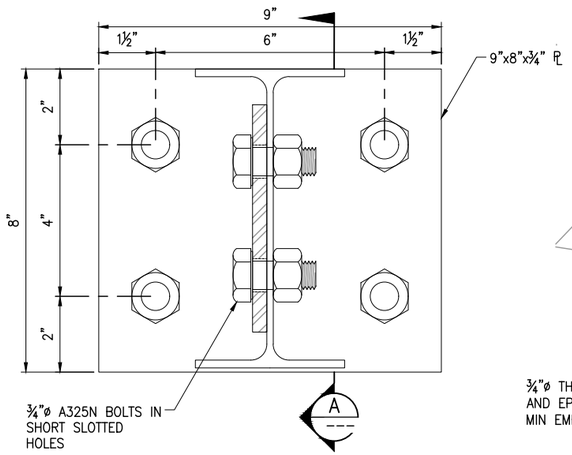
P:\Jordan Valley WCD\010-23-02 Southwest Aqueduct Reach 2 - 13400 S to 11800 S\2.0 Design Phase\2.9 Drawings\sht\S-04.dwg Plotted: 1/16/2025 2:06 PM By: Steven Pugh



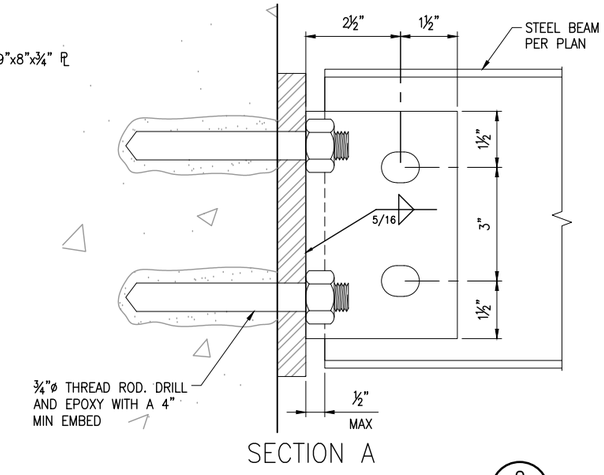


NOTES:
1. MANUFACTURER'S STANDARD 4" KICK PLATE MAY BE SUBSTITUTED.
2. PLATE MATERIAL TO MATCH RAIL MATERIAL.

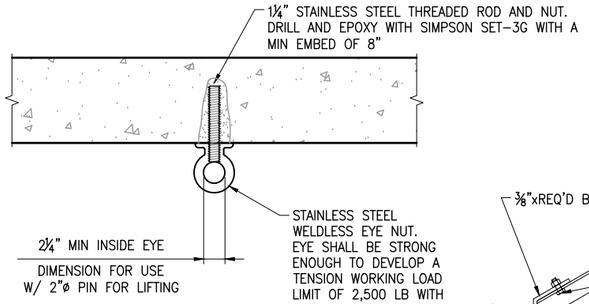
GUARDRAIL AND POST
NOT TO SCALE — 1 / S-01



BEAM CONNECTION
NOT TO SCALE — 2 / S-01

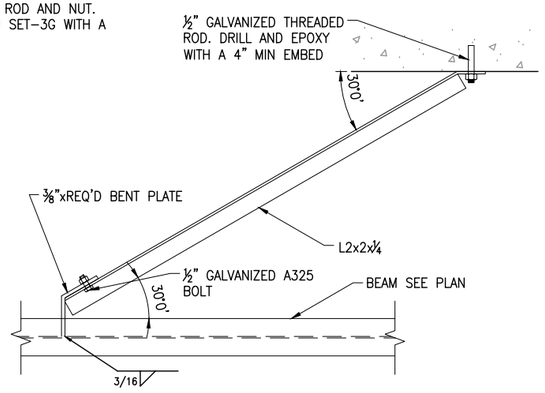


SECTION A

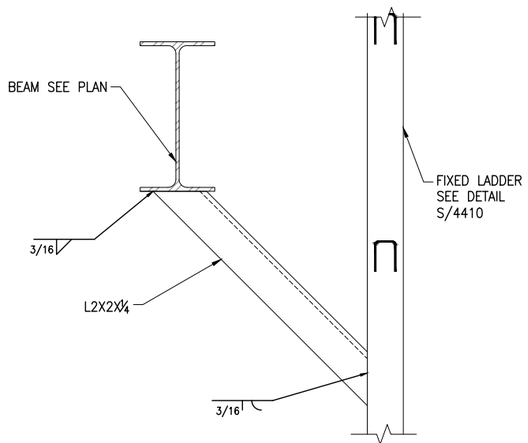


DETAIL NOTES:
1. MAXIMUM LOAD RATING FOR LIFTING EYE IS 2,500 LBS.
2. SUBMIT DATA ON EYE BOLT WITH SHOP DRAWINGS.

ANCHOR BOLT DETAIL
NOT TO SCALE — 3 / S-01



DIAGONAL BRACING DETAIL
NOT TO SCALE — 4 / S-01



DIAGONAL BRACING DETAIL
NOT TO SCALE — 5 / S-01

BOWEN COLLINS & ASSOCIATES

STRUCTURAL ENGINEER — STEPHEN D. COHEN — 178588 — STATE OF UTAH — PROFESSIONAL ENGINEER

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN S. PUGH — DRAWN S. PUGH — CHECKED S. COHEN — APPROVED S. COHEN — REVIEW

STRUCTURAL

STRUCTURAL DETAILS

DATE: JANUARY 2025 — PROJECT NUMBER 010-23-02

DRAWING NO. S-05

SHEET 65 OF 100

GENERAL STRUCTURAL NOTES

GENERAL

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]

SITE PREPARATION NOTES

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]

FORMWORK, SHORING, AND BRACING

1. [illegible]
2. [illegible]
3. [illegible]

FOOTINGS

1. NO FOOTINGS SHALL BE PLACED IN WATER OR ON FROZEN GROUND.

CONCRETE

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]
7. [illegible]
8. [illegible]
9. [illegible]
10. [illegible]
11. [illegible]

REINFORCEMENT STEEL

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

1. UNLESS OTHERWISE INDICATED, CONTRACTOR MAY SPLICE CONTINUOUS SLAB OR LONGITUDINAL BEAM BARS AT LOCATIONS OF HIS CHOOSING, EXCEPT THAT TOP BAR SPLICES ARE TO BE LOCATED AT MIDSPAN AND BOTTOM BAR SPLICES ARE TO BE LOCATED AT SUPPORTS. MINIMUM LAP REQUIREMENTS ARE AS FOLLOWS UNLESS OTHERWISE INDICATED.

LAP LENGTHS* – CONCRETE								
BAR SIZE	#4	#5	#6	#7	#8	#9	#10	#11
CONCRETE DESIGN STRENGTH = 4500 PSI								
LAP LENGTH	1'-7"	2'-0"	2'-4"	3'-4"	3'-9"	4'-10"	5'-9"	7'-0"

*ASSUMES 2" MINIMUM CLEARANCE TO SURFACE

STRUCTURAL STEEL

1. UNLESS NOTED OTHERWISE, PROVIDE STRUCTURAL STEEL CONFORMING TO ASTM A36. ROLLED WIDE FLANGE SHAPES TO CONFORM TO ASTM A992. PIPE TO CONFORM TO ASTM A53, TYPE E OR S, GRADE B. STRUCTURAL TUBING TO CONFORM TO ASTM A1085. FABRICATE AND ERECT ALL STRUCTURAL STEEL IN CONFORMANCE WITH AISC SPECIFICATIONS.
2. USE A325 OR F1852 BOLTS FOR STEEL TO STEEL CONNECTIONS, F1554 GR36 FOR ANCHOR BOLTS, AND A307 BOLTS FOR ALL OTHER CONNECTIONS (UNLESS SPECIFIED OTHERWISE ON DRAWINGS). USE 3/4" DIAMETER MINIMUM.
3. ALL HIGH-STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS." THE TURN-OF-NUT METHOD MAY BE USED. PROVIDE CARBONIZED WASHERS UNDER THE TURNED ELEMENT.
4. USE ONLY CERTIFIED WELDERS FOR ALL WELDING WORK. USE FILLER METAL HAVING A MINIMUM TENSILE STRENGTH OF 70 KSI AND PERFORM ALL WORK IN ACCORDANCE WITH THE CURRENT STRUCTURAL WELDING CODE (AWS D1.1).
5. UNLESS OTHERWISE NOTED, COAT ALL STRUCTURAL STEEL COMPONENTS WITH PAINT OR OTHER PROTECTIVE COATINGS AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
6. MINIMUM THICKNESS FOR GUSSET PLATES IS 3/8 INCH.
7. STRUCTURAL STEEL, WHICH IS TO BE EMBEDDED INTO CONCRETE TO BE CLEAN AND FREE OF PAINT, OIL, OR DIRT.

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. HILTI HIT-HY 70 FOR MASONRY
   C. ITW RED HEAD C6+, A7+ OR G5
   D. SIMPSON AT, SET OR SET-3G
1. ANCHOR RODS SHALL BE ASTM A193 GRADE B7, DIAMETER AS INDICATED ON DRAWINGS, THREADED AND GALVANIZED.

LOADING CRITERIA

1. BUILDING RISK CATEGORY — IV
2. DEAD LOAD — CALCULATED FROM UNIT WEIGHT
3. LIVE LOADS:
   - STAIRS / PLATFORMS — 100 PSF
   - VAULT ROOF SLABS — 150 PSF
4. LATERAL EARTH PRESSURE (EFP)
   - NON SATURATED — 62.5 PCF
   - TRAFFIC SURCHARGE — 2 FT OF EARTH
   - HYDROSTATIC FLUID PRESSURE — 62.4 PCF
5. SEISMIC LOAD:
   - SITE CLASS: — D
   - IMPORTANCE FACTOR: — 1.25
   - SEISMIC DESIGN CATEGORY: — D
   - SPECTRAL RESPONSE ACCELERATIONS:
     - S_S — 1.42g
     - S_1 — 1.47g
   - SPECTRAL RESPONSE COEF:
     - S_{DS} — 0.97g
     - S_{D1} — 0.70g
6. FROST DEPTH: — 30 INCHES
7. ALLOWABLE SOIL BEARING CAPACITY — 1,500 PSF

SPECIAL INSPECTIONS

1. SPECIAL INSPECTION IN ACCORDANCE WITH APPROPRIATE SECTIONS OF IBC 2021, CHAPTER 17 IS REQUIRED FOR THE PROJECT.
2. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE, TO THE BUILDING OFFICIAL AND THE ENGINEER.
3. AN APPLICATION FOR OFF-SITE FABRICATION SHALL BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO FABRICATION.
4. A CERTIFICATE OF COMPLIANCE FOR OFF-SITE FABRICATION SHALL BE COMPLETED AND SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO ERECTION OF PREFABRICATED COMPONENTS. SPECIAL INSPECTION REQUIRED PER IBC SECTION 1704.2.
5. SPECIAL INSPECTION ITEMS REQUIRED PER LIST BELOW. CONTINUOUS OR PERIODIC INSPECTIONS IS DESIGNATED WITH A (C) OR (P).

CONCRETE: (TABLE 1705.3, 2021 IBC)
- A. PLACING REINFORCEMENT STEEL — P
- B. WELDING REINFORCEMENT STEEL (IF APPROVED BY ENGINEER). — C
- C. PLACING ANCHOR BOLTS AND EMBEDDED PLATES. — P
- D. VERIFY APPLICABLE CONCRETE MIX BEING USED. — P
- E. SAMPLING CONCRETE FOR STRENGTH TESTS — C
- F. CURING TECHNIQUES AND APPLICATION — P

STEEL: (CHAPTER N, AISC 360-16)
- A. VERIFICATION OF HIGH STRENGTH BOLTS, NUTS, AND WASHERS, INCLUDING IDENTIFICATION MARKINGS TO CONFIRM ASTM REQUIREMENTS SPECIFIED IN APPROVED CONSTRUCTION DOCUMENTS. — P
- B. MANUFACTURERS' CERTIFIED MILL TEST REPORTS. — P
- C. FIELD WELDED CONNECTIONS.
  - FILLET WELDS — P
  - COMPLETE AND PARTIAL PENETRATION GROOVE WELDS — C
- D. INSTALLATION OF HIGH-STRENGTH BOLTED CONNECTIONS.
  - SNUG-TIGHT BOLTS — P
  - SLIP CRITICAL BOLTS — C

SOILS: (IBC TABLE 1705.6)
- A. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE FOR FOOTING SUPPORT — P
- B. VERIFY EXCAVATIONS ARE TO PROPER DEPTH. — P
- C. VERIFY PROPERTIES OF COMPACTED FILL PRIOR TO PLACEMENT MEET REQUIREMENTS OF PROJECT. — P
- D. PRIOR TO PLACEMENT OF COMPACTED FILL OBSERVE SUBGRADE AND VERIFY THAT THE SITE HAS BEEN PREPARED PROPERLY — P
- E. VERIFY PROPER USE OF COMPACTED FILL INCLUDING PROPER MATERIALS, COMPACTION DENSITIES AND LIFT THICKNESS. — C

STRUCTURAL OBSERVATION

BOWEN COLLINS & ASSOCIATES SHALL BE NOTIFIED BY THE CONTRACTOR 5 BUSINESS DAYS BEFORE THE COMPLETION OF THE ITEMS LISTED IN THIS SECTION SO THAT STRUCTURAL OBSERVATION MAY BE PERFORMED IN ACCORDANCE WITH IBC SECTION 1704.5. THE OBSERVATIONS WILL BE PERFORMED AT THE DISCRETION OF BOWEN COLLINS & ASSOCIATES. COMPLETED OBSERVATION REPORTS WILL BE SUBMITTED TO THE BUILDING OFFICIAL.

REBAR PRIOR TO PLACEMENT OF CONCRETE

BOWEN COLLINS & ASSOCIATES

STEPHEN D. COHEN — STRUCTURAL ENGINEER — STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

REVIEW: CHECKED S. COHEN; APPROVED S. COHEN
DESIGN: DESIGN S. PUGH; DRAWN S. PUGH

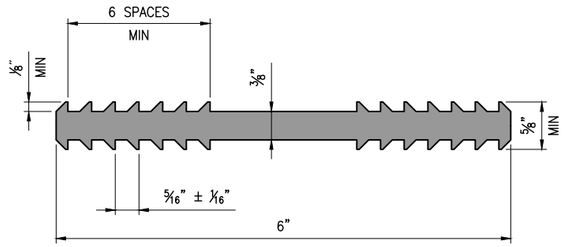
GENERAL STRUCTURAL DETAILS
GENERAL STRUCTURAL NOTES

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. GS-01

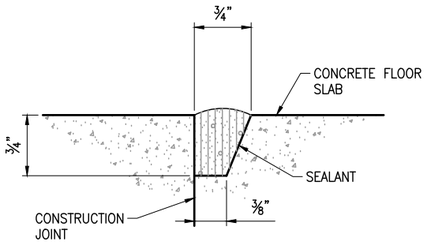
SHEET 66 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\GS-01.dwg Plotted: 1/14/2025 4:33 PM By: Jeremy Black



WATERSTOP
NOT TO SCALE

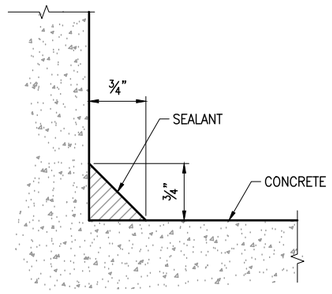
S 4001



NOTE:
1. AT CONTRACTOR'S OPTION, SEALANT GROOVES MAY CONTINUE STRAIGHT ACROSS CONSTRUCTION JOINT INTERSECTION OR BE STAGGERED UPON APPROVAL OF THE ENGINEER.
2. NO BOND BREAKER WHERE SEALANT GROVE IS CONSTRUCTED.

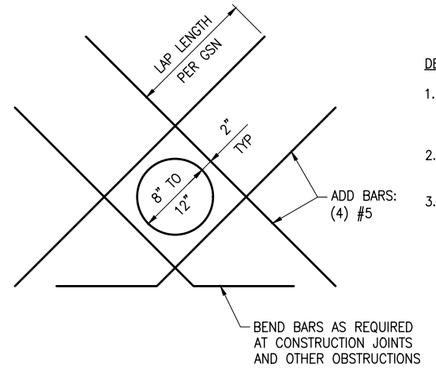
SEALANT
NOT TO SCALE

S 4007



SEALANT
NOT TO SCALE

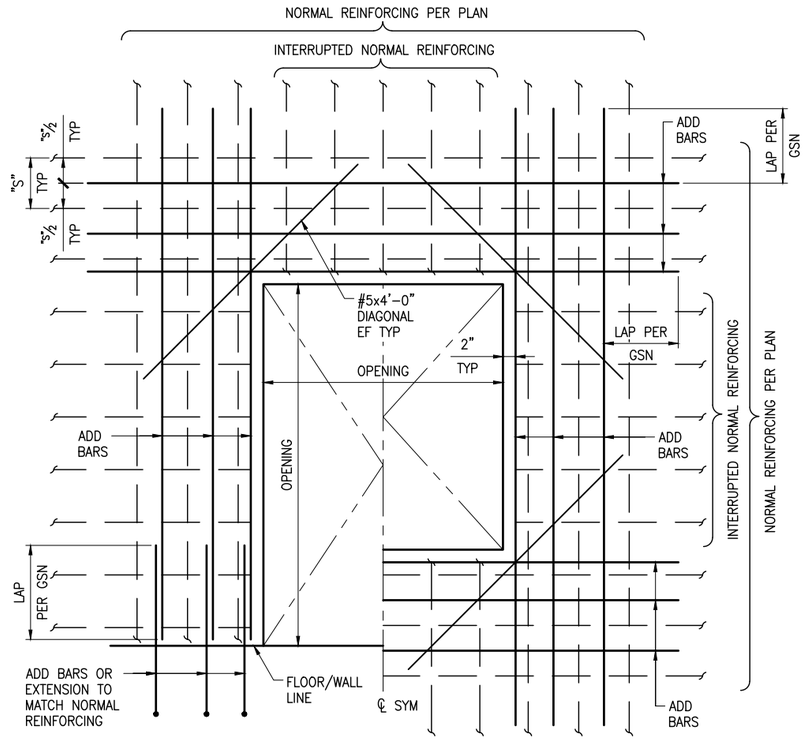
S 4009



DETAIL NOTES:
1. THIS DETAIL TO BE USED WHEN CALLED FOR ON THE DRAWINGS OR WHEN NO OTHER DETAIL IS SPECIFIED.
2. CUT NORMAL REINFORCING 2" CLEAR OF OPENING.
3. DIAGONAL BARS TO BE PLACED:
   - AT CENTERLINE OF WALL OR SLAB WHERE SINGLE MAT OF REINFORCEMENT IS PROVIDED.
   - AT EACH FACE OF WALL OR SLAB WHERE TWO MATS OF REINFORCEMENT ARE PROVIDED.
   - NO ADDITIONAL REINFORCING REQUIRED FOR OPENINGS SMALLER THAN 8".

DIAGONAL REINFORCEMENT AT CIRCULAR OPENINGS
NOT TO SCALE

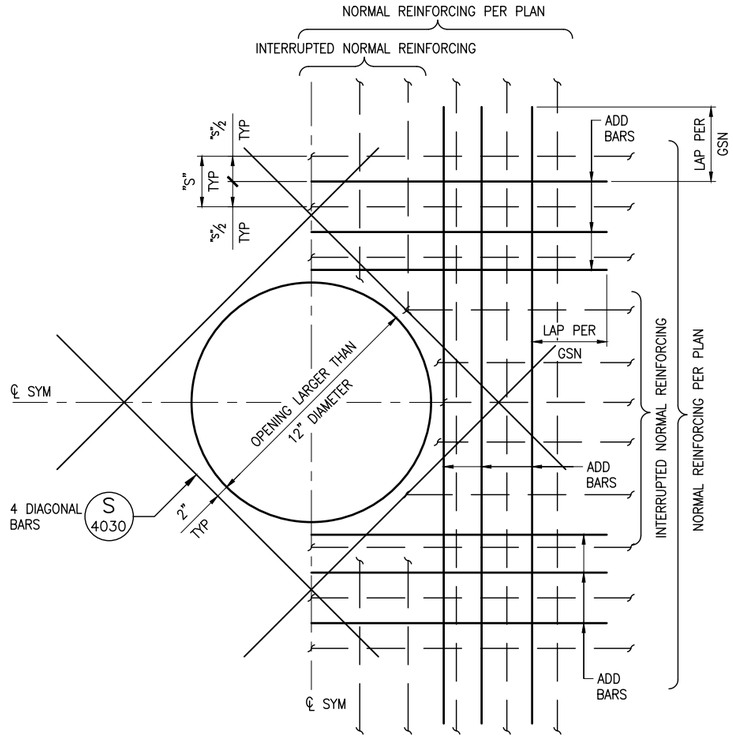
S 4030



DETAIL NOTES:
1. THIS DETAIL TO BE USED WHEN CALLED FOR ON THE DRAWINGS OR WHEN NO OTHER ADDITIONAL REINFORCING IS SPECIFIED.
2. AREA OF ADD BARS AT EACH EDGE OF OPENING IN EACH DIRECTION SHALL MATCH ½ THE CROSS SECTIONAL AREA OF THE INTERRUPTED BARS. BARS UP TO TWO BAR SIZES LARGER THAN NORMAL REINFORCING MAY BE USED. FIT ADD BARS WITHIN A DISTANCE OF 2X WALL/SLAB THICKNESS FROM EDGE OF OPENING.
3. CUT NORMAL REINFORCING 2" CLEAR OF OPENING.
4. PROVIDE STANDARD ACI HOOKS ON BARS/DOWELS IF STRAIGHT EXTENSION PAST THE OPENING CANNOT BE ACHIEVED.
5. PLACE ADD BARS IN SAME PLANES AS NORMAL REINFORCING INDICATED.
6. PLACE #5 ADD DIAGONAL CORNER BARS UNDER NORMAL REINFORCING INDICATED.
7. NO ADDITIONAL REINFORCING REQUIRED FOR OPENINGS SMALLER THAN 12" SQUARE.
8. WHEN AN INTERSECTING SLAB OR WALL OCCURS WITHIN ONE WALL/SLAB THICKNESS OF THE EDGE OF OPENING, NO ADD BARS ARE REQUIRED ON THAT SIDE.

ADDITIONAL REINFORCING AT RECTANGULAR OPENINGS IN WALLS/SLABS
NOT TO SCALE

S 4034



DETAIL NOTES:
1. THIS DETAIL TO BE USED FOR OPENINGS LARGER THAN 12"ø AND WHEN CALLED FOR ON THE DRAWINGS OR WHEN NO OTHER ADDITIONAL REINFORCING IS SPECIFIED. FOR OPENINGS SMALLER THAN 12"ø, USE DETAIL S/4030.
2. AREA OF ADD BARS AT EACH EDGE OF OPENING IN EACH DIRECTION SHALL MATCH ½ THE CROSS SECTIONAL AREA OF THE INTERRUPTED BARS. BARS UP TO TWO BAR SIZES LARGER THAN NORMAL REINFORCING MAY BE USED. FIT ADD BARS WITHIN A DISTANCE OF 2X WALL/SLAB THICKNESS FROM EDGE OF OPENING.
3. CUT NORMAL REINFORCING 2" CLEAR OF OPENING.
4. PROVIDE STANDARD ACI HOOKS ON BARS/DOWELS IF STRAIGHT EXTENSION PAST THE OPENING CANNOT BE ACHIEVED.
5. PLACE ADD BARS IN SAME PLANES AS NORMAL REINFORCING INDICATED.
6. PLACE #5 ADD DIAGONAL CORNER BARS UNDER NORMAL REINFORCING INDICATED.
7. WHEN AN INTERSECTING SLAB OR WALL OCCURS WITHIN ONE WALL/SLAB THICKNESS OF THE EDGE OF OPENING, NO ADD BARS ARE REQUIRED ON THAT SIDE.

ADDITIONAL REINFORCING AT CIRCULAR OPENINGS IN WALLS/SLABS
NOT TO SCALE

S 4036

BOWEN COLLINS & ASSOCIATES

STRUCTURAL ENGINEER — STEPHEN D. COHEN — 178588 — PROFESSIONAL ENGINEER — STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN S. PUGH
DRAWN S. PUGH
REVIEW
CHECKED S. COHEN
APPROVED S. COHEN

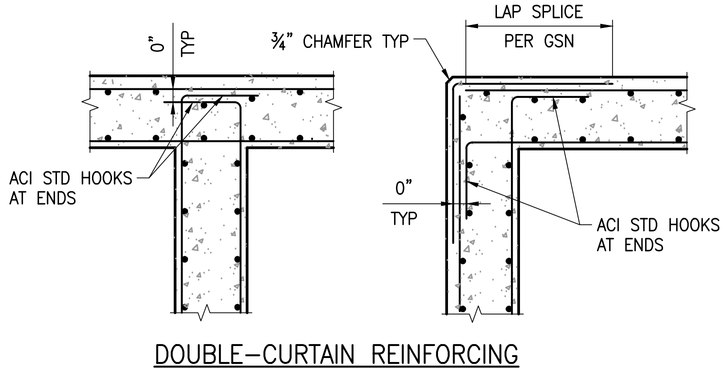
GENERAL STRUCTURAL DETAILS

GENERAL STRUCTURAL DETAILS - 1

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
GS-02

SHEET 67 OF 100



DOUBLE–CURTAIN REINFORCING

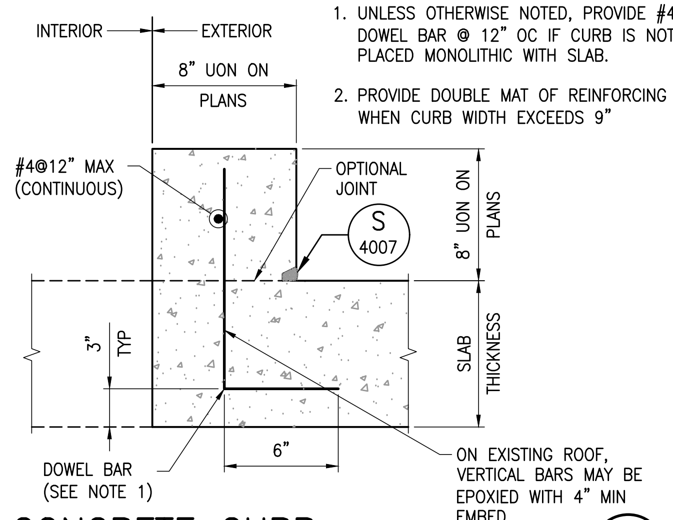
REINFORCING NOTES:
1. SEE INDIVIDUAL STRUCTURE FOR REINFORCING.
2. DETAIL IS TYPICAL AT ALL CONCRETE CORNERS AND INTERSECTIONS UNLESS SHOWN OTHERWISE.

WALL REINFORCING AT CORNERS AND JUNCTIONS

S 4039

NOT TO SCALE

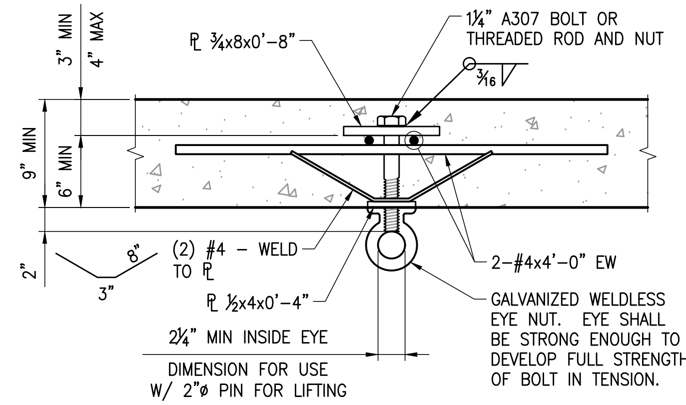
DETAIL NOTES:
1. UNLESS OTHERWISE NOTED, PROVIDE #4 DOWEL BAR @ 12" OC IF CURB IS NOT PLACED MONOLITHIC WITH SLAB.
2. PROVIDE DOUBLE MAT OF REINFORCING WHEN CURB WIDTH EXCEEDS 9"



CONCRETE CURB

S 4041

NOT TO SCALE

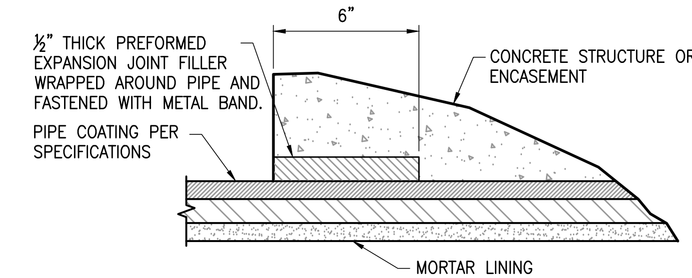


DETAIL NOTES:
1. MAXIMUM LOAD RATING FOR LIFTING EYE IS 7,000 LBS.
2. SUBMIT DATA ON EYE BOLT WITH SHOP DRAWINGS.

LIFTING EYE

S 4045

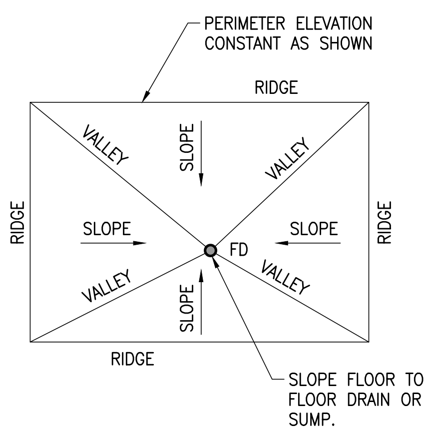
NOT TO SCALE



PIPE ENCASEMENT END

S 4108

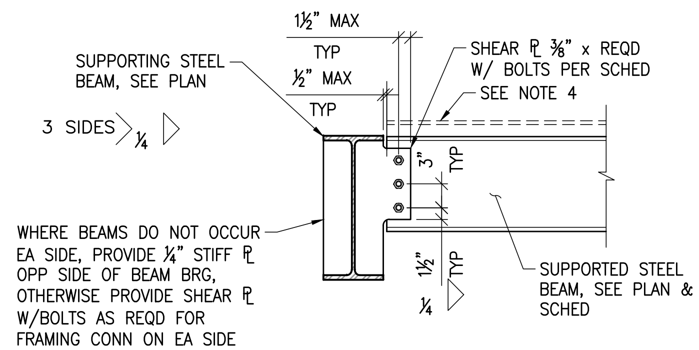
NOT TO SCALE



FLOOR SLOPE

S 4115

NOT TO SCALE

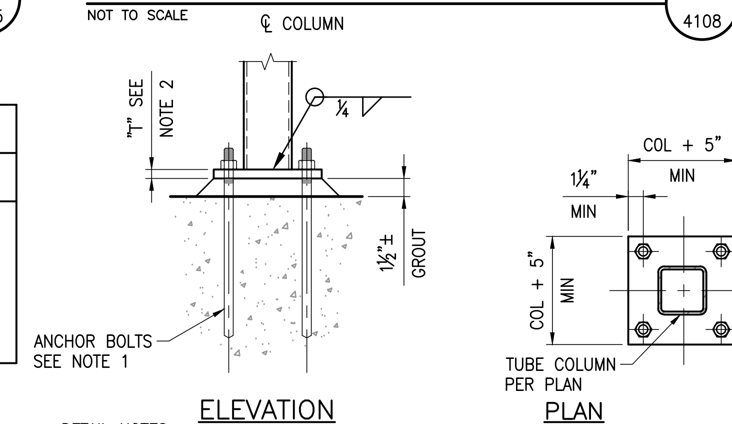


BOLT SCHEDULE		
W8, W10	(2) ¾"ø	1. SEE FRAMING PLANS FOR BEAM SIZES. 2. ALL BOLTS SHALL BE A325–N, UNO. 3. STEEL DECK & JOISTS NOT SHOWN. 4. BEAM MAY OCCUR HIGHER FOR DECK BEARING, COORD W/PLAN.
W12, W14	(3) ¾"ø	
W16, W18	(4) ¾"ø	
W21, W24	(5) ¾"ø	
W27	(6) ¾"ø	

SINGLE–PLATE BEAM CONNECTION

S 4302

NOT TO SCALE



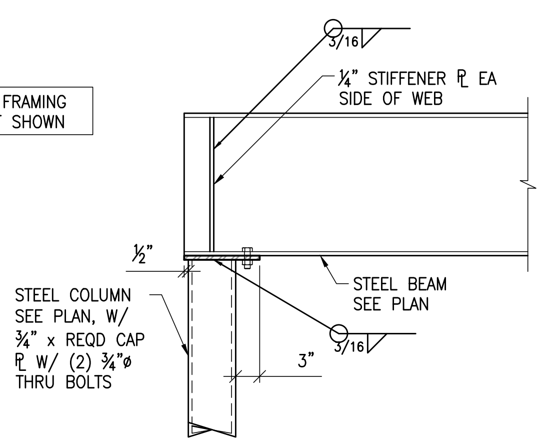
DETAIL NOTES
1. ANCHOR BOLTS SHALL BE ¾"ø W/ LEVELING NUTS AND WASHERS UNLESS OTHERWISE NOTED. ANCHOR BOLTS SHALL BE DRILLED AND EPOXIED WITH A MIN EMBED OF 8". EPOXY SHALL BE SIMPSON SET–3G OR APPROVED EQUIVALENT.
2. BASE PLATE TO BE ¾" THICK UNLESS OTHERWISE NOTED.
3. GROUT SHALL BE NONSHRINK AND FLOWABLE AS PER SPECIFICATIONS.

COLUMN BASE

S 4304

NOT TO SCALE

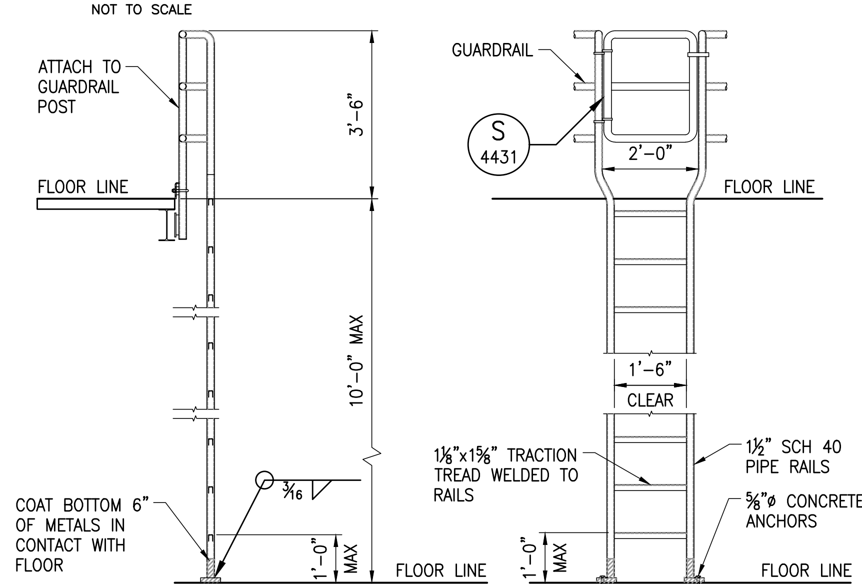
NOTE: OTHER FRAMING MEMBERS NOT SHOWN

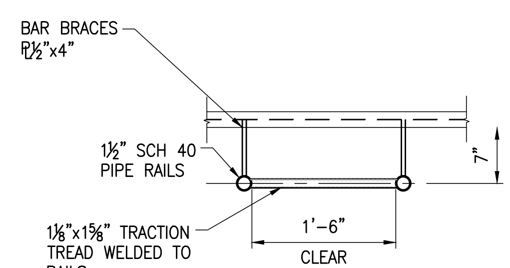


COLUMN CONNECTION

S 4310

NOT TO SCALE





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

FIXED LADDER

S 4410

NOT TO SCALE

BOWEN COLLINS & ASSOCIATES

STEPHEN D. COHEN

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

REVIEW: CHECKED S. COHEN; APPROVED S. COHEN
DESIGN: DESIGN S. PUGH; DRAWN S. PUGH

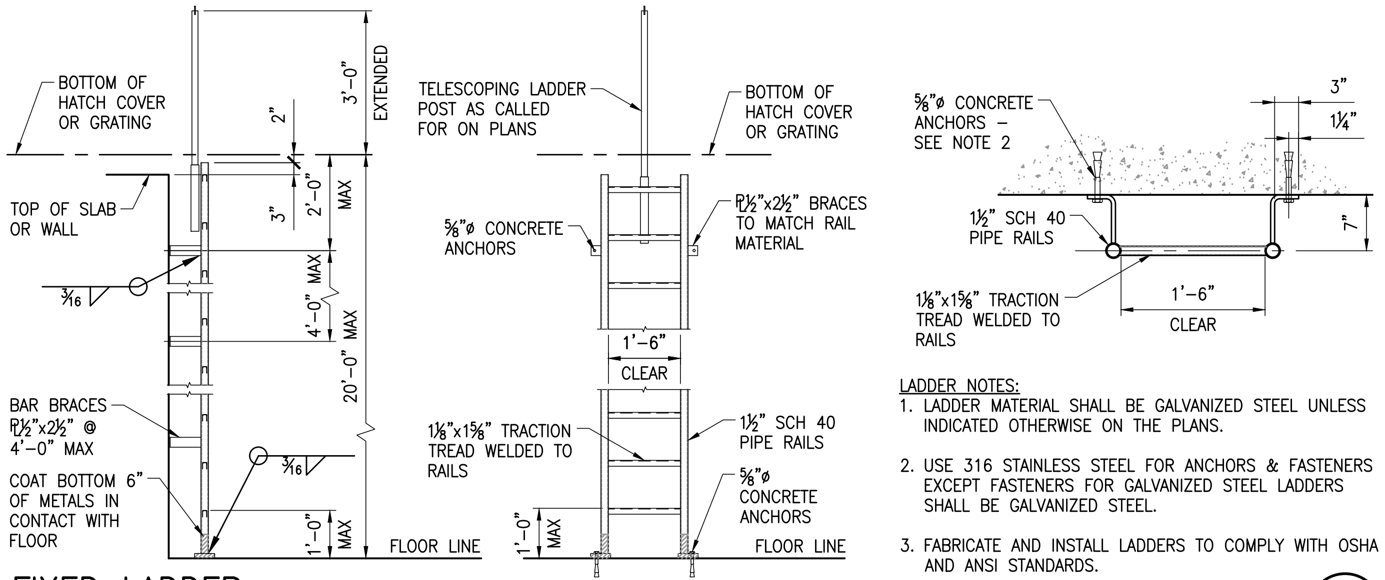
GENERAL STRUCTURAL DETAILS
GENERAL STRUCTURAL DETAILS - 2

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. GS-03

SHEET 68 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\GS-03.dwg Plotted: 1/14/2025 4:34 PM By: Jeremy Black



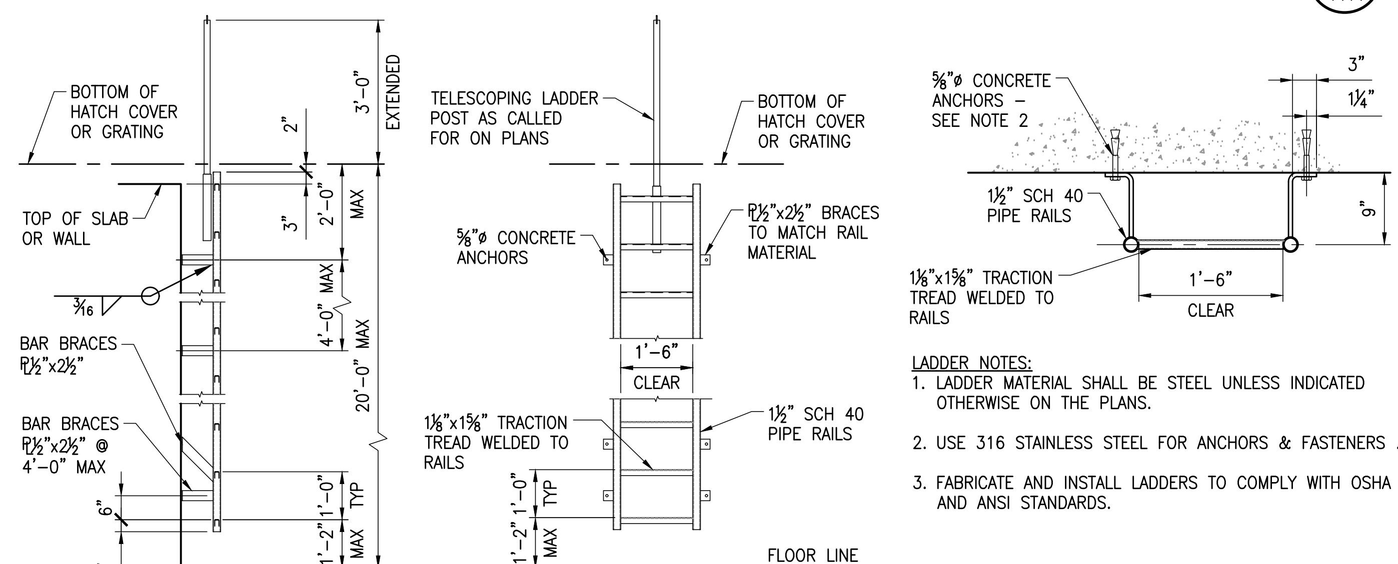
LADDER NOTES:

1. LADDER MATERIAL SHALL BE GALVANIZED STEEL UNLESS INDICATED OTHERWISE ON THE PLANS.
2. USE 316 STAINLESS STEEL FOR ANCHORS & FASTENERS EXCEPT FASTENERS FOR GALVANIZED STEEL LADDERS SHALL BE GALVANIZED STEEL.
3. FABRICATE AND INSTALL LADDERS TO COMPLY WITH OSHA AND ANSI STANDARDS.

FIXED LADDER

NOT TO SCALE

S 4411



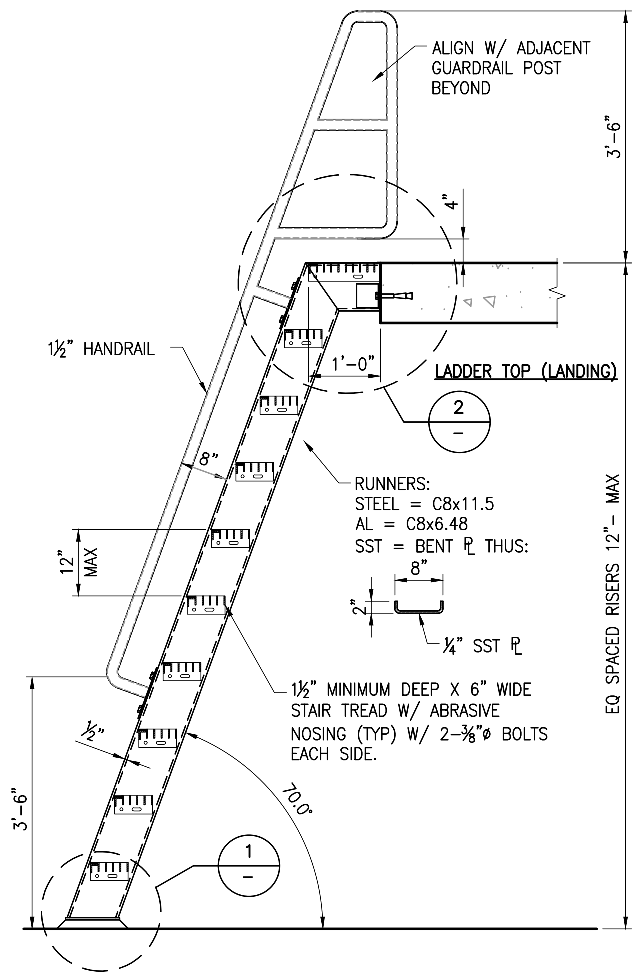
LADDER NOTES:

1. LADDER MATERIAL SHALL BE STEEL UNLESS INDICATED OTHERWISE ON THE PLANS.
2. USE 316 STAINLESS STEEL FOR ANCHORS & FASTENERS .
3. FABRICATE AND INSTALL LADDERS TO COMPLY WITH OSHA AND ANSI STANDARDS.

FIXED LADDER

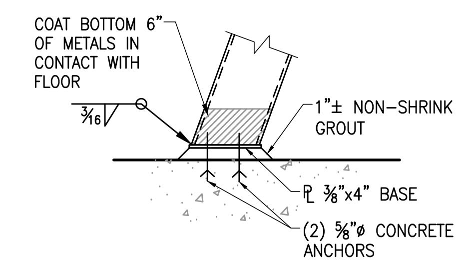
NOT TO SCALE

S 4412

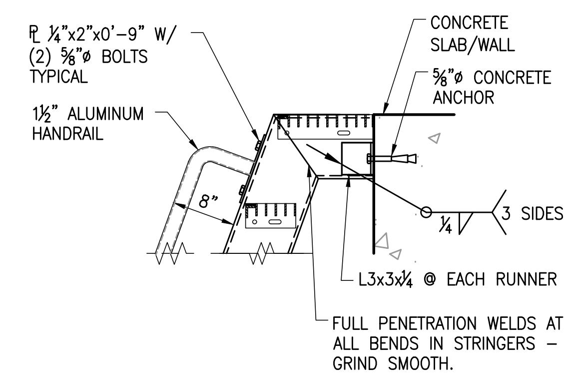


NOTES:

1. STAIR WIDTH IS 2'-0" BACK TO BACK OF RUNNERS.
2. FASTENERS ARE STAINLESS STEEL FOR ALUMINUM AND STAINLESS STEEL LADDERS. FASTENERS FOR GALVANIZED STEEL LADDERS ARE HOT-DIP GALVANIZED.
3. COAT ALUMINUM SURFACES IN CONTACT WITH CONCRETE.



DETAIL 1

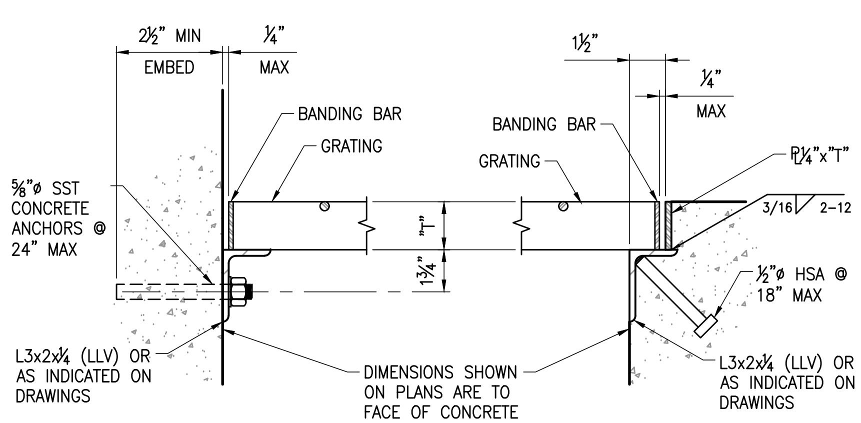


DETAIL 2

SHIP LADDER

NOT TO SCALE

S 4415



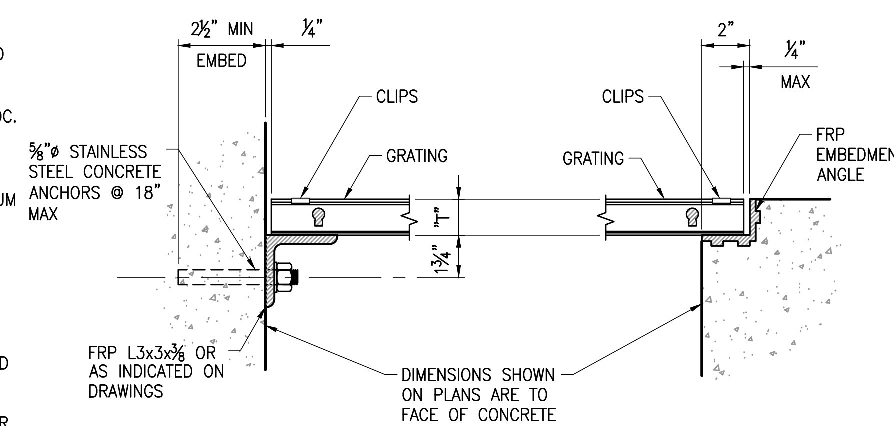
DETAIL NOTES:

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 3'-0".
6. COAT ALL SURFACES OF ALUMINUM IN CONTACT WITH CONCRETE IN ACCORDANCE WITH SPECIFICATIONS. PLACE NEOPRENE MEMBRANE BETWEEN ALUMINUM AND STEEL.
7. 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. UNLESS OTHERWISE NOTED ON THE DRAWINGS, ALL GRATING IS FIBERGLASS.
2. GRATING DEPTH "T" AS NOTED ON DRAWINGS.
3. WEIGHT OF INDIVIDUAL GRATING SECTION SHALL NOT EXCEED 80 LBS.
4. BEARING BARS ARE "I" BARS TO BE DEPTH "T"x0.6" @ 1½" OC. TIE BARS ARE TO BE AT 6" OC MAXIMUM.
5. PROVIDE A MINIMUM OR 4 CLIPS PER GRATING PANEL AND LOCATE APPROXIMATELY 4" FROM PANEL CORNERS. MAXIMUM SPACING OF CLIPS IS 3'-0".
6. MATERIALS:
   FRP GRATING – USE PULTRUDED FRP GRATING WITH FRP ANGLE SUPPORTS AND CLIPS AND STAINLESS STEEL BOLTS.

FIBERGLASS GRATING

NOT TO SCALE

S 4420

BOWEN COLLINS & ASSOCIATES

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN S. PUGH | DRAWN S. PUGH | CHECKED S. COHEN | APPROVED S. COHEN

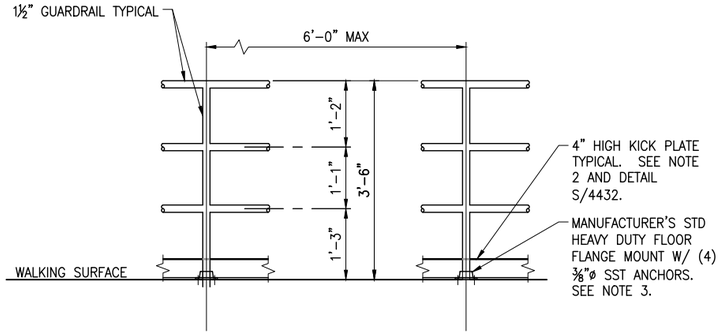
NO. | DATE | REV. BY | DESCRIPTION — REVISIONS

GENERAL STRUCTURAL DETAILS
GENERAL STRUCTURAL DETAILS - 3

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. GS-04

SHEET 69 OF 100

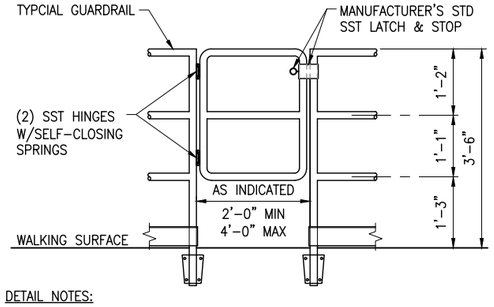


DETAIL NOTES:

1. PLACE CENTER OF FLOOR FLANGE MOUNTED POSTS 4" FROM EDGE OF CONCRETE OR 6" FROM STAIR NOSINGS UNLESS OTHERWISE NOTED ON DRAWINGS.
2. 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. FOR SIDE MOUNTED HANDRAIL, PROVIDE STANDARD SPACER BLOCK BETWEEN POST AND KICKPLATE TO MAINTAIN ¼" MAXIMUM CLEAR SPACING. 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. KICKPLATE MAY BE OMITTED WHERE RAILING IS MOUNTED ON MINIMUM 4" HIGH CURB.
3. PLACE RAIL POSTS OPPOSITE EACH OTHER WHEN POSSIBLE AND WHERE GUARDRAILS ARE PARALLEL.
4. COAT ALL SURFACES OF ALUMINUM IN CONTACT WITH CONCRETE IN ACCORDANCE WITH SPECIFICATIONS. PLACE NEOPRENE GASKET BETWEEN ALUMINUM AND STEEL.
5. ALL GUARDRAILS ARE FIXED UNLESS OTHERWISE NOTED ON DRAWINGS.
6. ALL JOINTS IN STAINLESS STEEL RAIL SHALL BE COPED, WELDED, AND GROUND SMOOTH.
7. FOR RAIL POSTS MOUNTED TO BEAM, PROVIDE MANUFACTURER'S STANDARD REINFORCED CONNECTION FROM POST TO PLATE. BOTH THE PLATE AND REINFORCED INSERT TO BE ALUMINUM OR STAINLESS STEEL.
8. SEE DRAWINGS AND SPECIFICATIONS FOR GUARDRAIL MATERIALS.

THREE-RAIL GUARDRAIL

NOT TO SCALE — S/4425



DETAIL NOTES:

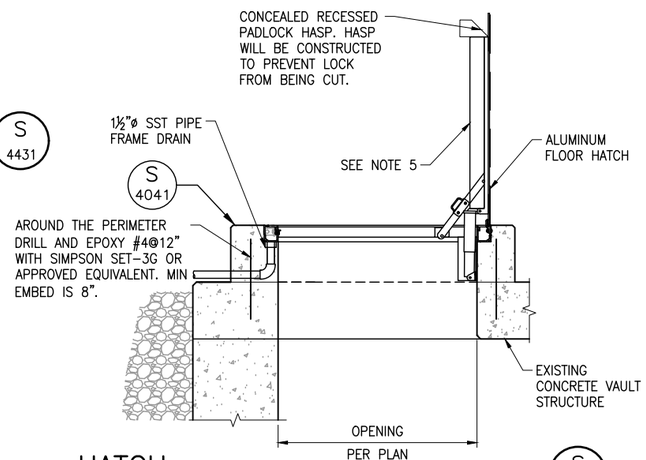
1. GATE MATERIAL AND FINISH TO MATCH ADJACENT GUARDRAIL.
2. GATE TO OPEN TOWARD WALKWAY AND AWAY FROM LADDER.

GUARDRAIL GATE

NOT TO SCALE — S/4431

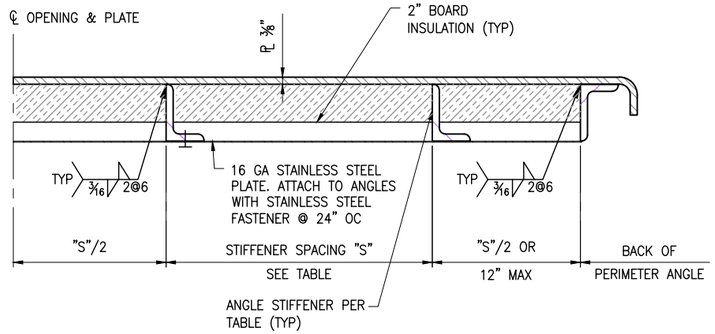
DETAIL NOTES:

1. FLOOR HATCH TO BE RATED AT MININUM 300 PSF UNLESS NOTED OTHERWISE.
2. PRE-WIRE HATCHES AT FACTORY FOR INTRUSION ALARMS.
3. HATCH TO BE SUPPLIED WITH MANUFACTURER'S STANDARD FALL PROTECTION GRATING, MEETING THE REQUIREMENTS OF OSHA STANDARD 29 CFR 1910.23.
4. HARDWARE SHALL BE TYPE 316 STAINLESS STEEL
5. PREMANUFACTURED LID SHALL BE INSULATED WITH RIGID POLYSTYRENE INSULATION BOARD AND SHALL BE FULLY PROTECTED BY A COVERED LINER. INSULATION SHALL BE INSTALLED BY THE MANUFACTURER AT THE TIME OF FABRICATION.



HATCH

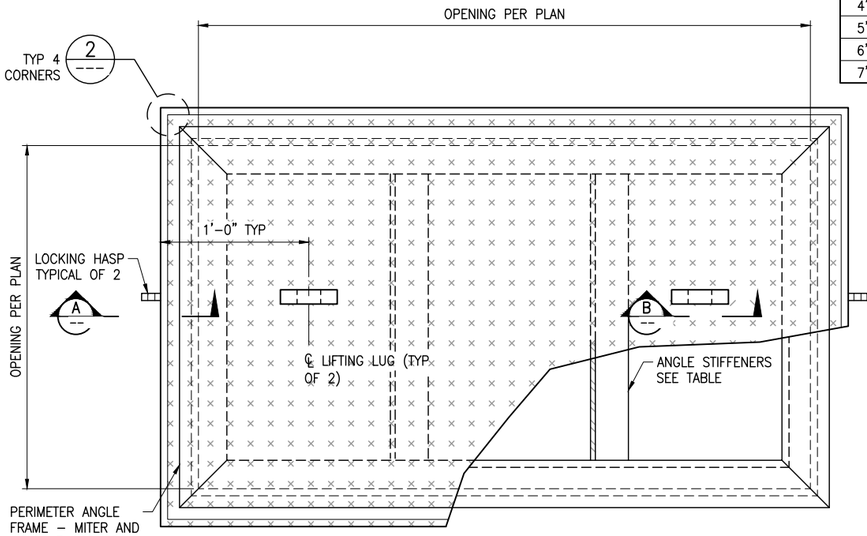
NOT TO SCALE — S/4446



DETAIL NOTES:

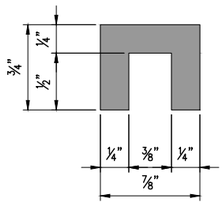
1. ALL MATERIALS ARE EITHER 304 OR 316 STAINLESS STEEL.
2. UNEQUAL LEG STIFFENERS TO BE PLACED WITH LONG LEG VERTICAL.
3. IN ALL CASES, STIFFENERS TO BE PARALLEL TO SHORT DIMENSION OF OPENING.
4. MAXIMUM DESIGN LOAD 300 PSF.
5. INSULATION BOARD TO BE ASTM C578, TYPE IV, RIDID, CLOSED CELL TYPE. PROVIDE DOW CHEMICAL CO. STYFOFOAM DECKMATE PLUS OR ENGINEER APPROVED EQUAL.

PLATE STIFFENER TABLE		
SHORT SPAN	STIFFENER SIZE	MAX SPACING "S"
2'-0"	L 2x2x¼	1'-6"
3'-0"	L 2½x2x¼	1'-6"
4'-0"	L 3x2x¼	1'-6"
5'-0"	L 3x2x¼	1'-6"
6'-0"	L 3x2x¼	1'-6"
7'-0"	L 3x2x¼	1'-4"



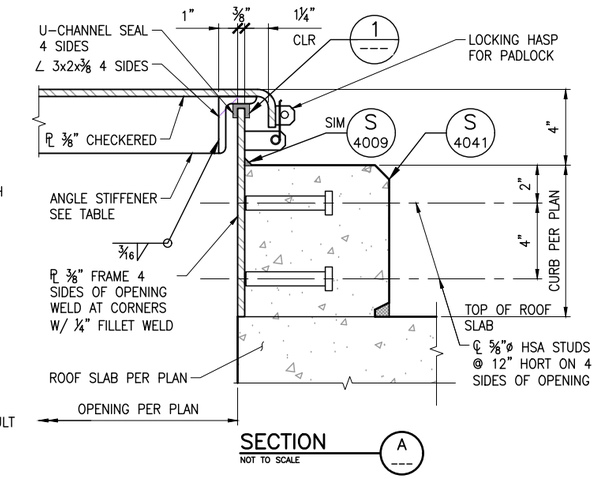
DETAIL

NOT TO SCALE — 1



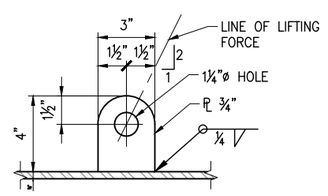
DETAIL NOTE:

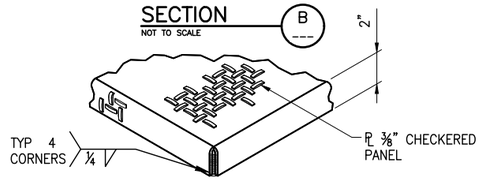
1. U-CHANNEL SEAL MATERIAL IS TO BE SANTOPRENE TPV WITH A 40± DUROMETER HARDNESS.



SECTION

NOT TO SCALE — A





DETAIL

NOT TO SCALE — 2

ROOF COVER PLATE

NOT TO SCALE — S/4447

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\GS-05.dwg Plotted: 1/14/2025 4:34 PM By: Jeremy Black

BOWEN COLLINS & ASSOCIATES

STRUCTURAL ENGINEER — STEPHEN D. COHEN — 178588 — PROFESSIONAL ENGINEER — STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN S. PUGH — DRAWN S. PUGH — CHECKED S. COHEN — APPROVED S. COHEN

GENERAL STRUCTURAL DETAILS

GENERAL STRUCTCTAL DETAILS - 4

PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

DRAWING NO. GS-05

SHEET 70 OF 100

FLUID ABBREVIATION	FUNCTION (SEE NOTE 5)	PIPING MATERIAL (SEE SCHEDULE AT RIGHT)				FIELD TEST REQUIRMENTS (SEE NOTE 3 AND NOTE 4)		
		EXPOSED PIPING (SEE NOTE 14)		BURIED PIPING (SEE NOTE 13)		MIN TEST PRESSURE PSI	TEST MEDIUM	LEAKAGE ALLOWANCE (SEE NOTE 2)
		2" DIA & SMALLER	2 1/2 " DIA & LARGER	2" DIA & SMALLER	2 1/2 " DIA & LARGER			
AD	ACID DRAIN	16	16	16	16	NOTE 6	WATER	A, E
AF	ANTI-FREEZE	47	--	--	--	3	3	A, 3
ATF	AUTOMATIC TRANSMISSION FLUID	47	--	--	--	3	3	A, 3
AV	AIR VENT	2, 16, 24, 29	2, 16, 24, 29	16, 24, 29	16, 24, 29	NOTE 7	--	--
BPF	BELT PRESS FEED	--	11	--	11	125	WATER	A
BWW	BELT WASH WATER	2	2	2	2	125	WATER	A
CTA	CITRIC ACID	16	16	16	16	125	WATER	A
CLS	CHLORINE SOLUTION	16	--	16	--	125	WATER	A
D	DRAIN	27, 11	11, 12, 27	27	11, 12, 27	NOTE 6	WATER	A, E
FA	FOUL AIR	--	18, 37	--	18, 37			
FE	FINAL EFFLUENT	--	--	--	11, 22	15	WATER	A
FOR	FUEL OIL RETURN	9	9	--	--	3	3	A
FOS	FUEL OIL SUPPLY	9	9	--	--	3	3	A
FOV	FUEL OIL VENT	9	9	--	--	3	3	A
FSP	FIRE FLOW PROTECTION	NOTE 10	NOTE 10	NOTE 10	NOTE 10	NOTES 3, 9	WATER	--
FW	FIRE WATER	52	52	51	51, 11	NOTE 9	WATER	A
GHA	GASEOUS HYDROCHLORIC ACID	41	--	--	--	125	AIR	A
GS	GRIT SLURRY	--	11	--	11	125	WATER	A
HF	HYDRAULIC FLUID	48	48	--	--	3	3	A
HW	HOT WATER	24, 50	50	24	2, 24	3	3	A
HWC	HOT WATER CIRC	50	50	24	24			
LO	LUBE OIL	47	47	--	--	3	3	A, D
ML	MIXED LIQUOR	--	11	--	11	125	WATER	A
MLR	MIXED LIQUOR RECYCLE	--	11	--	--	125	WATER	A
MO	MOTOR OIL	47	47	--	--	3	3	A
NG	NATURAL GAS	9	9	--	--	3	3	A
ORD	OVERFLOW ROOF DRAIN	12	12		12	3	3	A
PA	PROCESS AIR	--	5, 39, 40	--	5, 39, 40	125	AIR	A
PDR	PLANT DRAIN RETURN	--	22	--	22	NOTE 6	WATER	C
PLS	POLYMER SOLUTION	16	16	16	16	125	WATER	A
PW	POTABLE WATER	2, 16, 24	2, 16, 24,	8, 16, 24	8, 16, 24	150	WATER	A
PWP	PRESSURE WASH PIPE	47	47	--	--	3	3	A
RAS	RETURN ACTIVATED SLUDGE	--	11	--	11	125	WATER	A
RD	ROOF DRAIN	12	12	--	12	3	3	A
RI	RAW INFLUENT	--	11	--	11, 22	12	WATER	A
RW	RAW WATER	2, 16, 24	2, 16, 24	16, 24	8, 16	AS NOTED	WATER	A
SD	STORM DRAIN	4, 12	4, 12	12	22	NOTE 7	--	--
SE	SECONDARY EFFLUENT	--	11	--	11	125	WATER	A
SMP	SAMPLE	15, 16, 18, 24	--	15, 16, 18, 24	--	125	WATER	A
SPD	SUMP PUMP DISCHARGE	2, 16	16, 26	2, 16	16, 26	50	WATER	A
SS	SANITARY SEWER	11,12	11, 12	--	12,22,27	NOTE 18	AIR	--
SV	SANITARY VENT	11, 27	11, 12, 27	27	11, 12, 27	NOTE 6	WATER	A
SSC	SECONDARY SCUM	--	11	--	11	125	WATER	A
ST	SEPTAGE	--	11	--	11	125	WATER	A
SW	SEAL WATER	24	--	24	--	25	WATER	A
TW	TEMPERED WATER	50	50	24	24	3	3	
UD	UNDER DRAIN	--	--	--	27, 33	--	--	--
UW	UTILITY WATER	2, 16, 24	2, 11, 16	2, 16, 24	2, 11, 16	125	WATER	--
V	VENT	16, 24, 29	2, 16, 29	16, 24, 29	2, 16, 29	15 IN HG	NOTE 7	A, E
WAS	WASTE ACTIVATED SLUDGE	--	11	--	11	125	WATER	A
WO	WASTE OIL	47	47	--	--	3	3	A
WWF	WINDSHIELD WIPER FLUID	47	47	--	--	3	3	A

PIPE MATERIAL SCHEDULE (SEE NOTE 4)

GROUP NO.	PIPE	FITTINGS	VALVES
1	STEEL, ASTM 53 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, GLOBE, CHECK, STEEL LUBRICATED PLUG, ECCENTRIC PLUG.
2	STEEL, ASTM 53 SCHEDULE 40, 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, 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.
4	STEEL, ASTM 53 SCHEDULE 40, BLACK WELDED.	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.
7	STEEL, ASTM 53 SCHEDULE 40, GALVANIZED.	MALLEABLE IRON, ANSI B16.3, THREADED, BANDED, GALVANIZED, 300 PSI.	BRONZE, THREADED GLOBE, BALL, CHECK.
8	WELDED STEEL, AWWA C200.	WELDED, STEEL, AWWA C200, FABRICATED.	AS INDICATED ON DRAWINGS.
9	STEEL, ASTM 53 SCHEDULE 40, BLACK WELDED GRADE B, WALL THICKNESS OF WROUGHT STEEL PIPE.	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, SEE SPECIFICATIONS FOR VALVES USED IN FUEL SYSTEM.
10	STEEL, ASTM A106 OR A53, SCHEDULE 80, SEAMLESS, BLACK.	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), CLASS 51 (350 PSI), BELL AND SPIGOT, MECHANICAL JOINTS, MECHANICAL COUPLINGS (AWWA C111), OR 125 PSI FLANGED (TYPICAL SERVICE - WATER LINES) PER SPECIFICATION SECTION 02565.	DUCTILE IRON OR CAST IRON, ANSI A21.10 OR AWWA C110, BELL AND SPIGOT, MECHANICAL COUPLINGS, FLANGED OR MECHANICAL JOINTS (AWWA C111), 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 C900, 'O' RING SEALS, MECHANICAL JOINT ENDS, BUTTERFLY C-504.
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, TYPE 316, ASTM A312, SCHEDULE 40S.	STAINLESS STEEL, TYPE 316 ANSI B16.3, SCREWED, 150 PSI, ANSI B16.9, BUTT-WELDED, SCHEDULE 40S, OR 150 PSI FLANGED.	STAINLESS STEEL, BALL, FLANGED, CHECK, LADISH, AS SHOWN ON DRAWINGS.
15	STAINLESS STEEL, TYPE 316, ASTM A312, SCHEDULE 40S.	STAINLESS STEEL, TYPE 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.
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.	GATE, AWWA C500, 'O' RING SEALS, MECHANICAL JOINT ENDS, BUTTERFLY, AWWA C504, ECCENTRIC PLUG, BALL.
20	NOT USED.	NOT USED.	NOT USED.
21	NOT USED.	NOT USED.	NOT USED.
22	REINFORCED CONCRETE, ASTM C76, GASKETED.	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, TYPE 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, CHECK, GATE, SEE SPECIFICATIONS.
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 AND SEWAGE LINES).	DUCTILE IRON OR CAST IRON, ANSI A21.10 OR AWWA C110, BELL AND SPIGOT, MECHANICAL COUPLINGS, FLANGED OR MECHANICAL JOINTS (AWWA C111), 250 PSI (PRESSURE RATING) 12-INCHES AND SMALLER, 150 PSI (PRESSURE RATING) 14-INCHES AND LARGER, WITH 125 PSI ANSI B16.1 FLANGES.	SEE VALVE SCHEDULE AND SPECIFICATIONS.
27	POLYVINYL CHLORIDE GRAVITY SEWER PIPE, SDR 35 ASTM D3034, BELL AND SPIGOT.	POLYVINYL CHLORIDE, ANSI/ASTM D3034 & F679, BELL AND/OR SPIGOT, DRAIN, WASTE, AND VENT.	--------
28	REINFORCED CONCRETE, AWWA C302, CLASS- SEE DRAWINGS. (TYPICAL SERVICE - PRESSURE PIPELINES).	SAME AS GROUP NO. 8.	AS INDICATED ON DRAWINGS.
29	STEEL, ASTM 53 SCHEDULE 40, BLACK WELDED.	2-INCH AND SMALLER, MALLEABLE IRON, ANSI B16.3, THREADED, BANDED, BLACK, 150 PSI, 2-1/2 INCH AND LARGER, STEEL ANSI B16.9, BUTT-WELDED.	SAME AS GROUP NO. 1, EXCEPT LUBRICATED PLUG SEE SPECIFICATIONS.
30	SAME AS GROUP NO. 11, GLASS-LINED OR STEEL ASTM A120, SCHEDULE 40, GLASS-LINED.	SAME AS GROUP NO. 11, GLASS-LINED OR STEEL, ANSI B16.9, SCHEDULE 40, GROOVED WITH MECHANICAL COUPLINGS, GLASS-LINED.	SEE SPECIFICATIONS.
31	2-1/2 INCH AND SMALLER, STEEL, ASTM A106 OR A53, SCHEDULE 80, SEAMLESS, BLACK. 3-INCH AND LARGER DUCTILE IRON, ANSI A21.51 (AWWA C151) OR CAST IRON ANSI A21.56 OR A21.8 MECHANICAL COUPLINGS OR 125 PSI FLANGED.	2-1/2 INCH AND SMALLER, FORGED STEEL, ANSI B16.11, SOCKET-WELDED OR THREADED, BLACK, 2000 PSI, OR STEEL, ANSI B16.9, BUTT-WELDED SCHEDULE 80. 3-INCH AND LARGER, DUCTILE IRON OR CAST IRON, ANSI A21.10 OR AWWA C110, MECHANICAL COUPLING OR 125 PSI FLANGED.	CAST IRON, LUBRICATED PLUG.

PIPE MATERIAL SCHEDULE 1 OF 2

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK

DRAWN J. BLACK

CHECKED C. NELSON

APPROVED J. LUETTINGER

REVIEW

MECHANICAL

PIPING SCHEDULE - 1

PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

DRAWING NO. M-01

SHEET 71 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\M-01.dwg Plotted: 1/14/2025 4:34 PM By: Jeremy Black

PIPE MATERIAL SCHEDULE (SEE NOTE 4)

GROUP NO.	PIPE	FITTINGS	VALVES
28	REINFORCED CONCRETE, AWWA C302, CLASS– SEE DRAWINGS. (TYPICAL SERVICE – PRESSURE PIPELINES).	SAME AS GROUP NO. 8.	AS INDICATED ON DRAWINGS.
29	STEEL, ASTM 53 SCHEDULE 40, BLACK WELDED.	2–INCH AND SMALLER, MALLEABLE IRON, ANSI B16.3, THREADED, BANDED, BLACK, 150 PSI, 2–1/2 INCH AND LARGER, STEEL ANSI B16.9, BUTT–WELDED.	SAME AS GROUP NO. 1, EXCEPT LUBRICATED PLUG SHALL BE ROCKWELL FIG. 114 OR 115, OR POWELL FIG. 2202 OR 2203.
30	SAME AS GROUP NO. 11, GLASS–LINED OR STEEL ASTM A120, SCHEDULE 40, GLASS–LINED.	SAME AS GROUP NO. 11, GLASS–LINED OR STEEL, ANSI B16.9, SCHEDULE 40, GROOVED WITH MECHANICAL COUPLINGS, GLASS–LINED.	SEE SPECIFICATIONS.
31	2–1/2 INCH AND SMALLER, STEEL, ASTM A106 OR A53, SCHEDULE 80, SEAMLESS, BLACK. 3–INCH AND LARGER DUCTILE IRON, ANSI A21.51 (AWWA C151) OR CAST IRON ANSI A21.56 OR A21.8 MECHANICAL COUPLINGS OR 125 PSI FLANGED.	2–1/2 INCH AND SMALLER, FORGED STEEL, ANSI B16.11, SOCKET–WELDED OR THREADED, BLACK, 2000 PSI, OR STEEL, ANSI B16.9, BUTT–WELDED SCHEDULE 80. 3–INCH AND LARGER, DUCTILE IRON OR CAST IRON, ANSI A21.10 OR AWWA C110, MECHANICAL COUPLING OR 125 PSI FLANGED.	CAST IRON, LUBRICATED PLUG, ROCKWELL FIG. 142 OR 143, OR POWELL FIG. 2200 OR 2201.
32	PVC TYPE 1, GRADE 1, 18 ASTM D–1784 AWWA C–905.	SHORT BODY CAST IRON OR DUCTILE IRON AWWA C110.	GATE, AWWA C–500, 'O' RING SEALS, MECHANICAL JOINT ENDS, BUTTERFLY C–504, ECCENTRIC PLUG.
33	CORRUGATED HDPE SLOTTED, SPLIT COUPLING JOINTS.	FABRICATED OR MOLDED.	––––––
34	FIBERGLASS DOUBLE CONTAINMENT (FOR USE WITH FLAMMABLE LIQUIDS) SEE SPECS.	FIBERGLASS.	AS PER MANUFACTURER'S RECOMMENDATIONS.
35	CENTRIFUGALLY CAST FIBERGLASS REINFORCED POLYMER MORTAR PIPE, SN–46, PER ASTM D3262 WITH FILAMENT WOUND SLEEVE COUPLINGS WITH ELASTOMERIC MEMBRANE GASKET JOINTS PER ASTM D–4161.	SAME MATERIAL, CONSTRUCTION AND JOINT DESIGN AS THE MAIN SEWER PIPE.	––––––
36	HIGH DENSITY POLYETHYLENE WATER PIPE PER AWWA C–901, 2 INCHES AND SMALLER, DR–7, 200 PSI, MEETING ASTM PE3406–3408, TABLE 6.	BRASS COMPRESSION OR PACK–JOINT FITTINGS MEETING AWWA C800. USE BRASS DOUBLE STRAP SERVICE SADDLES WITH CC THREAD.	BRASS CORPORATION STOPS, CURB STOPS PER AWWA C–800.
37	HIGH DENSITY POLYETHYLENE PIPE PER AWWA PE 4710, C–906, SDR–11 MEETING ASTM D3350, ASTM F–714. JOINTS SHALL BE BUTT FUSION PER ASTM D2657 AND MANUFACTURER'S RECOMMENDATIONS, TO PROVIDE HEAT WELD AS STRONG AS PIPE WALL.	SAME MATERIAL, CONSTRUCTION AND JOINT DESIGN AS THE MAIN PIPE.	––––––
38	POLYVINYL CHLORIDE, DR–PER PLAN, AWWA C–900, MADE TO DUCTILE IRON O.D. FOR "PUSH–ON" JOINTS. JOINTS SHALL BE BELL AND SPIGOT WITH ELASTOMERIC GASKET MEETING REQUIREMENTS OF ASTM D3139.	DUCTILE IRON, CLASS 250, MEETING AWWA C–110 WITH CEMENT LINING PER AWWA C–104 AND 1–MIL BITUMINOUS TAR COATING. JOINTS SHALL BE MECHANICAL JOINTS MEETING AWWA C–111. DUCTILE IRON FITTINGS SHALL BE WRAPPED IN POLYETHYLENE ENCASEMENT PER AWWA C–105.	SEE SPECIFICATIONS.
39	STAINLESS STEEL, TYPE 304L, ASTM A774, SCH 105, 6–INCH AND SMALLER.	STAINLESS STEEL, TYPE 304L, ANSI B16.9 BUTTWELDED, SCH 105 OR 150 PSI FLANGED.	STAINLESS STEEL, AS INDICATED ON DRAWINGS.
40	STAINLESS STEEL, TYPE 304L ASTM A774, SCH 5S, 8–INCH AND LARGER.	STAINLESS STEEL, TYPE 304L, ANSI B16.9 BUTTWELDED, SCH 5S OR 150 PSI FLANGED.	STAINLESS STEEL, AS INDICATED ON DRAWINGS.
41	MONEL TUBING, SERIES 400.	MONEL COPRESSION FITTINGS.	STAINLESS STEEL, TYPE 316, BALL VALVES.
42	STEEL, ASTM A 53/A 53M, TYPE E OR S, GRADE B, SCHEDULE 40, BLACK. WALL THICKNESS OF WROUGHT–STEEL PIPE SHALL COMPLY WITH ASME B36.10M.	1. MALLEABLE–IRON THREADED FITTINGS: ASME B16.3, CLASS 150, STANDARD PATTERN, WITH THREADED ENDS ACCORDING TO ASME B1.20.1. 2. STEEL THREADED FITTINGS: ASME B16.11, FORGED STEEL WITH THREADED ENDS ACCORDING TO ASME B1.20.1. 3. UNIONS: ASME B16.39, CLASS 150, MALLEABLE IRON WITH BRASS–TO–IRON SEAT, GROUND JOINT, AND THREADED ENDS ACCORDING TO ASME B1.20.1. 4. GASKET MATERIAL: THICKNESSS, MATERIAL, AND TYPE SUITABLE FOR FUEL OIL.	SEE SPECIFICATIONS.
43	FLEXIBLE UL 971 COMPLIANT, DOUBLE–CONTAINMENT PIPING. CARRIER PIPE PVDF COMPLYING WITH ASTM D 3222. CONTAINMENT PIPE PE ASTM D 4976.	PLASTIC TO STEEL PIPE TRANSITION FITTINGS: FACTORY–FABRICATED FITTINGS WITH PLASTIC END MATCHING OR COMPATIBLE WITH CARRIER PIPING, AND STEEL PIPE END COMPLYING WITH ASTM A 53/A 53M, BLACK STEEL, SCHEDULE 40, TYPE E OR S, GRADE B.	SEE SPECIFICATIONS.
44	PVC SOLID WALL PIPE, ASTM D 2665. DRAIN, WASTE, AND VENT.	PVC SOCKET FITTINGS: ASTM D 2665, SOCKET TYPE, MADE TO ASTM D 3311, DRAIN, WASTE, AND VENT PATTERNS.	SEE SPECIFICATIONS.
45	STAINLESS STEEL PIPE, ASTM A312, TYPE 304/304L, FULL FINISHED ANNEALED AND CERTIFIED FOR USE WITH THE VIC–PRESS 304 PIPING SYSTEM. 1. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: 1.1. VICTAULIC COMPANY, VIC–PRESS 304. 1.2. OR EQUAL.	PRESSURE FIT FITTINGS AND CONNECTION FOR PIPING SYSTEMS 2–INCH AND SMALLER, FITTINGS SHALL BE PRECISION, COLD DRAWN, AUSTENITIC STAINLESS STEEL WITH ELASTOMERIC O–RING SEALS, AND PRESSURE–SEALED ENDS.	SEE SPECIFICATIONS.
46	HARD COPPER, ASTM B88, TYPE L AND ASTM B 88, TYPE M DRAWN TEMPER.	1. CAST–COPPER SOLDER–JOINT FITTINGS: ASME B16.18, PRESSURE FITTINGS. 2. WROUGHT–COPPER SOLDER–JOINT FITTINGS: ASME B16.22, WROUGHT–COPPER PRESSURE FITTINGS. 3. BRONZE FLANGES: ASME B16.24, CLASS 150, WITH SOLDER–JOINT ENDS. 4. COPPER UNIONS: MSS SP–123, CAST–COPPER–ALLOY, HEXAGONAL–STOCK BODY, WITH BALL–AND–SOCKET, METAL–TO–METAL SEATING SURFACES, AND SOLDER–JOINT OR THREADED ENDS. 5. COPPER PRESSURE–SEAL–JOINT FITTINGS: a. MANUFACTURES: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING: 1) ELKHART PRODUCTS CORPORATION; INDUSTRIAL DIVISION. 2) NIBCO INC. 3) VIEGA; PLUMBING AND HEATING SYSTEMS. b. NPS 2 AND SMALLER: WROUGHT–COPPER FITTING WITH EPDM–RUBBER O–RING SEAL IN EACH END. c. NPS 2–1/2 TO NPS 4: CAST–BRONZE OR WROUGHT–COPPER FITTING W/ EPDM–RUBBER O–RING SEAL IN EACH END.	SEE SPECIFICATIONS.
47	CARBON STEEL PIPE, FULLY ANNEALED, SEAMLESS C 1010 CARBON STEEL HYDRAULIC TUBING. ABOVEGROUND PIPING SIZE / WALL THICKNESS / PSI WORKING 5/8" 0.058 2550 3/4" 0.065 2350 7/8" 0.072 2200 1" 0.083 2250 1 1/4" 0.109 2350 1 1/2" 0.134 2450	FEROLUK "BITE TYPE" COMPRESSION FITTINGS RATED AT MINIMUM 6,000 PSI WORKING PRESSURE MANUFACTURED BY PARKER HANNIFAN CORP OR APPROVED EQUAL.	SEE SPECIFICATIONS.
48	DOUBLE PASS WELDED CARBON STEEL, ASTM A106 GRADE B SEAMLESS. PIPE SHALL BE KEPT METICULOUSLY CLEAN. WELDING SHALL BE DONE WITH LOW HYDROGEN ROD 7018.	SOCKET WELD FORGED STEEL FITTINGS. SYSTEM SHALL BE INSTALLED WITH SAE 4 BOLT FLANGES AND SAE WELD ADAPTORS WITH ABSOLUTE MINIMUM OF NPT CONNECTIONS.	––––––

PIPE MATERIAL SCHEDULE (SEE NOTE 4)

GROUP NO.	PIPE	FITTINGS	VALVES
49	STEEL PIPE SHALL CONFORM TO ASTM A53/A 53M, TYPE E OR S, GRADE B, BLACK OR HOT–DIPPED ZINC COATED WITH ENDS THREADED ACCORDING TO ASME B1.20.1. 1. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: 1.1. ANVIL INTERNATIONAL, INC. 1.2. STAR PIPE PRODUCTS	GROVED–END FITTINGS: ASTM A 47/A 47M, MALLEABLE–IRON CASTINGS OR ASTM A536 DUCTILE IRON CASTING; WITH GROOVES ACCORDING TO AWWA C606 AND DIMENSIONS MATCHING STEEL PIPE. COUPLINGS: AWWA C606 OR UL 213, FOR STEEL PIPE DIMENSIONS AND RATED FOR 300 PSIG MINIMUM WORKING PRESSURE. INCLUDE FERROUS HOUSING SECTIONS, GASKET SUITABLE FOR COMPRESSED AIR, AND BOLTS, AND NUTS. PROVIDE EPDM GASKETS FOR OIL FREE COMPRESSED AIR. PROVIDE NBR GASKETS IF COMPRESSED AIR CONTAINS OIL OR OIL VAPOR.	SEE SPECIFICATIONS.
50	COPPER TUBE SHALL CONFORM TO ASTM B 88, TYPE L SEAMLESS, DRAWN–TEMPER. 1. COPPER UNIONS: ASME B16.24, OR MSS SP–123 2. PRESS–TYPE FITTINGS, NPS 2 AND SMALLER: WROUGHT–COPPER FITTING WITH EPDM O–RING SEAL IN EACH END. 3. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: 3.1. VICTAULIC TRANSITION COUPLINGS FOR METAL PIPING: MEAL COUPLING OR OTHER MANUFACTURED FITTING SAME SIZE AS, WITH PRESSURE RATING AT LEAST EQUAL TO AND ENDS COMPATIBLE WITH, PIPING TO BE JOINED.		SEE SPECIFICATIONS.
51	CLASS 51 CEMENT LINED DUCTILE IRON PIPE.	MECHANICAL JOINT TYPE FITTINGS.	SEE SPECIFICATIONS.
52	SCHEDULE 40 GALVANIZED PIPING WITH INTERIOR ANTIBACTERIAL COATING.	GALVANIZED CAST IRON THREADED FITTINGS JOINED WITH TEFLON TAPE THREAD SEALING COMPOUND. FITTINGS FOR GROOVED END PIPE SHALL BE IN ACCORDANCE WITH NFPA 13.	SEE SPECIFICATIONS.

GENERAL NOTES:

1. 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 SPECIFICATION SHALL BE USED. THE CONTRACTOR DOES NOT HAVE THE OPTION TO USE A DIFFERENT MATERIAL.

TYPICAL PIPE DESIGNATION:

PIPE SIZE
FLUID ABBREVIATION
PIPE MATERIAL
2" PW (2) — PIPE CALLOUT (SEE PIPING SCHEDULE THIS SHEET)

MATERIAL SCHEDULE:

1. PROPRIETARY NAMES HAVE BEEN QUOTED FOR IDENTIFICATION PURPOSES ONLY. SUBSTITUTIONS WILL BE PERMITTED SUBJECT TO REQUIREMENTS OF THE SPECIFICATIONS.
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 0.002 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 OR MORE THAN 4 INCHES MERCURY COLUMN.
3. FOR FIELD TEST PROCEDURES AND ADDITIONAL TEST REQUIREMENTS, SEE PIPING SECTION OF SPECIFICATIONS.
4. ANY DEVIATION FROM THE PIPING MATERIALS OR FIELD TEST REQUIREMENTS SHOWN WILL BE NOTED IN THE SPECIFICATIONS OR ON THE DRAWINGS.
5. PIPING GROUP NUMBER SHOWN THUS * SHALL BE INSULATED, SEE PIPING SECTION OF SPECIFICATIONS FOR INSULATING MATERIALS.
6. STATIC WATER TEST WITH SURFACE 5 FEET ABOVE HIGH POINT OF PIPE.
7. INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE PLUMBING CODE.
8. NO APPARENT LEAKS UNDER NORMAL OPERATING CONDITIONS.
9. INSPECTION AND TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.
10. PIPING MATERIALS SHALL BE IN ACCORDANCE WITH NATIONAL FIRE PROTECTION ASSOCIATION STANDARDS.
11. FOR VALVES 4 INCHES AND LARGER SEE VALVE SCHEDULE. FOR SPECIAL VALVES SEE SPECIFICATIONS.
12. CHANGE IN PIPING MATERIAL GROUP NUMBER IS INDICATED, THUS: ◆——
13. FOR PIPE LINING AND COATING, SEE SPECIFICATIONS.
14. EXPOSED PIPING SHALL BE PAINTED IN ACCORDANCE WITH SPECIFICATIONS. COLORS TO BE SELECTED BY ENGINEER.
15. PIPING MATERIAL SHALL BE NON–ABRASIVE FLEXIBLE RUBBER HOSE AND QUICK CONNECTION COUPLINGS WITH GROUP NO. 1 AT EQUIPMENT.
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.
17. NO PVC PIPE FOR DRAIN OR SANITARY SEWER PLUMBING PIPE MAY BE USED ABOVE GROUND OR BELOW GROUND FOR PLUMBING PURPOSES.
18. FOR COMPRESSED AIR PIPING ON PLUMBING DRAWINGS, SEE SPECIFICATIONS.

PIPE MATERIAL SCHEDULE 2 OF 2

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — 10859954 — LINDSAY K. MINCK — STATE OF UTAH — REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK
DRAWN J. BLACK
REVIEW
CHECKED C. NELSON
APPROVED J. LUETTINGER

MECHANICAL
PIPING SCHEDULE - 2

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. M-02
SHEET 72 OF 100

AIR VALVE SCHEDULE

VALVE NO.	STATION/LOCATION	DRAWING NO.	SCHEDULE	ELEVATION	WORKING PRESSURE (PSI)	TEST PRESSURE (PSI)	AIR VALVE SIZE (INCH)	AIR VALVE TYPE	AIR VALVE VENT PIPE & ISOLATION VALVE DIA (INCH)	NOTES
SWA2-AV-01	STA 320+87	PP-01	A	4553.50	85	159	6	CARV	6 BFV, DOUBLE OFFSET	FLOW REQ'D (3790 SCFM @ 2.5 PSI)
SWA2-AV-02	STA 354+36	PP-05	A	4554.00	85	159	6	CARV	6 BFV, DOUBLE OFFSET	FLOW REQ'D (4250 SCFM @ 3 PSI)
SWA2-AV-03	STA 365+82	PP-06	A	4557.50	85	159	6	CARV	6 BFV, DOUBLE OFFSET	FLOW REQ'D (4370 SCFM @ 3.5 PSI)
SWA2-AV-04	STA 372+72	PP-07	A	4554.00	85	159	8	CARV	8 BFV, DOUBLE OFFSET	FLOW REQ'D (4990 SCFM @ 1.5 PSI)
SWA2-AV-05	STA 404+62	PP-11	A	4536.50	85	159	8	CARV	8 BFV, DOUBLE OFFSET	FLOW REQ'D (5780 SCFM @ 1.5 PSI)
SWA2-AV-06	STA 422+19	PP-13	A	4543.50	85	159	6	CARV	6 BFV, DOUBLE OFFSET	FLOW REQ'D (4670 SCFM @ 4 PSI)
126S-AV-01	12600 S INTERCONNECTION VAULT	M-04	A	4556.50	85	159	2	CARV	2 BALL VALVE	CONNECT VENT PIPING TO EXISTING VENT PIPING, SINGLE BODY VALVE, FLOW REQ'D (555 SCFM @ 5 PSI)
114S-AV-01	11400 S VAULT ADDITION	M-11	B	4560.00	80	150	8	CARV	8 BFV, DOUBLE OFFSET	FLOW REQ'D (5420 SCFM @ 1.5 PSI)
114S-AV-02	11400 S VAULT ADDITION	M-11	B	4560.00	80	150	10	CARV	10 BFV, DOUBLE OFFSET	FLOW REQ'D (9390 SCFM @ 2 PSI)
114S-AV-03	11400 S VAULT ADDITION	M-11	B	4558.00	80	150	6	CARV	6 BFV, DOUBLE OFFSET	FLOW REQ'D (3800 SCFM @ 2.5 PSI)

NOTES:
1. AIR VALVES SHALL BE RATED TO ACCOMMODATE THE SPECIFIED WORKING AND TEST PRESSURES SHOWN AT EACH LOCATION.
CARV= COMBINATION AIR/RELEASE & AIR/VAC VALVE

VALVE SCHEDULE

VALVE NO.	LOCATION	DRAWING NO.	SCHEDULE	TYPE	SIZE (INCH)	WORKING PRESSURE (PSI)	TEST PRESSURE (PSI)	OPERATOR	VOLTAGE	PHASE	ACTUATOR TYPE
SWA2-GV-01	STA 337+42 MAINTENANCE ACCESS WITH DRAIN	M-10	A	GATE	6	85	159	MANUAL	N/A	N/A	HANDWHEEL
SWA2-PV-01	STA 337+42 MAINTENANCE ACCESS WITH DRAIN	M-10	A	PLUG	6	85	159	MANUAL	N/A	N/A	HANDWHEEL
SWA2-GV-02	STA 370+64 12600 S CROSSING DRAIN	C-05	A	GATE	6	85	159	MANUAL (BURIED)	N/A	N/A	HAND – BRING OPERATING NUT TO SURFACE WITH EXTENSION STEM
SWA2-PV-02	STA 370+64 12600 S CROSSING DRAIN	C-05	A	PLUG	6	85	159	MANUAL (BURIED)	N/A	N/A	HAND – BRING OPERATING NUT TO SURFACE WITH EXTENSION STEM
SWA2-GV-03	STA 405+97 JA CROSSING DRAIN	C-06	A	GATE	8	85	159	MANUAL (BURIED)	N/A	N/A	HAND – BRING OPERATING NUT TO SURFACE WITH EXTENSION STEM
SWA2-PV-03	STA 405+97 JA CROSSING DRAIN	C-06	A	PLUG	8	85	159	MANUAL (BURIED)	N/A	N/A	HAND – BRING OPERATING NUT TO SURFACE WITH EXTENSION STEM
126S-BFV-01	12600 S INTERCONNECTION VAULT	M-04	A	BUTTERFLY, DOUBLE OFFSET	24	85	159	MANUAL	N/A	N/A	HANDWHEEL
126S-BFV-02	12600 S INTERCONNECTION VAULT	M-04	A	BUTTERFLY, DOUBLE OFFSET	24	85	159	MANUAL	N/A	N/A	HANDWHEEL
126S-BFV-03	12600 S INTERCONNECTION VAULT	M-04	A	BUTTERFLY, DOUBLE OFFSET	24	85	159	MANUAL	N/A	N/A	HANDWHEEL
126S-BFV-04	12600 S INTERCONNECTION VAULT–RIVERTON CONNECTION	M-04	A	BUTTERFLY, DOUBLE OFFSET	10	85	159	MANUAL	N/A	N/A	HANDWHEEL
126S-BFV-05	12600 S INTERCONNECTION VAULT–EAST SIDE	M-04	A	BUTTERFLY, DOUBLE OFFSET	24	85	159	MANUAL	N/A	N/A	HANDWHEEL
126S-BFV-06	12600 S INTERCONNECTION VAULT–EAST SIDE	M-04	A	BUTTERFLY, DOUBLE OFFSET	24	85	159	MANUAL	N/A	N/A	HANDWHEEL
114S-BFV-01	11400 S VAULT	M-11	B	BUTTERFLY, DOUBLE OFFSET	78	80	150	ELECTRIC	480	3	OPEN/CLOSE
114S-BFV-02	11400 S VAULT	M-11	B	BUTTERFLY, DOUBLE OFFSET	36	80	150	ELECTRIC	120	1	OPEN/CLOSE
114S-GV-01	11400 S VAULT – BYPASS LINE	M-11	B	GATE	12	80	150	MANUAL	N/A	N/A	HANDWHEEL
114S-GV-02	11400 S VAULT – BYPASS LINE	M-11	B	GATE	12	80	150	MANUAL	N/A	N/A	HANDWHEEL
114S-GV-03	11400 S VAULT – DRAIN	M-11	B	GATE	12	80	150	MANUAL	N/A	N/A	HANDWHEEL
114S-PV-01	11400 S VAULT – DRAIN	C-14	B	PLUG	12	80	150	MANUAL (BURIED)	N/A	N/A	HAND – BRING OPERATING NUT TO SURFACE WITH EXTENSION STEM
IRR-BFV-01	NEAR SWA-2 STA 383+20 ON 18" IRRIGATION LINE	PP-09	A	BUTTERFLY	18	10	20	MANUAL (BURIED)	N/A	N/A	HAND – BRING OPERATING NUT TO SURFACE WITH EXTENSION STEM

EXHAUST FAN SCHEDULE

FAN NO.	LOCATION	DRAWING NO.	SCHEDULE	AIRFLOW (ACFM) AT 5,000 FT	ESP INCHES WC	DRIVE	HP	VOLTAGE	PHASE	COOK FAN MODEL (OR EQUAL)
114S-EF-01	11400 S VAULT	M-11	B	1,538	0.25	DIRECT	1/3	120	1	12CV17D

PUMP SCHEDULE

PUMP NO.	LOCATION	DRAWING NO.	SERVICE	TYPE	DISCHARGE SIZE (IN)	MAX FLOW (GPM)	MAX HEAD (FT)	VOLTAGE	PHASE	HP (MIN)	REMARKS
114S-P-01	11400 S VAULT	M-11	RAW WATER/DRAIN	SUMP	2	60	25	120	1	0.5	TSURUM PUMP MODEL NO. HSZ2.4S-62 OR ENGINEER APPROVED EQUAL.

NOTES:

1. VALVE SCHEDULE IS PROVIDED FOR VALVES LARGER THAN 4".
2. ISOLATION VALVES FOR AIR VALVE ASSEMBLIES ARE ONLY SHOWN IN AIR VALVE SCHEDULE.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED C. NELSON
APPROVED J. LUETTINGER

DESIGN
DESIGN L. MINCK
DRAWN J. BLACK

MECHANICAL
EQUIPMENT AND VALVE SCHEDULES

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
M-03
SHEET 73 OF 100

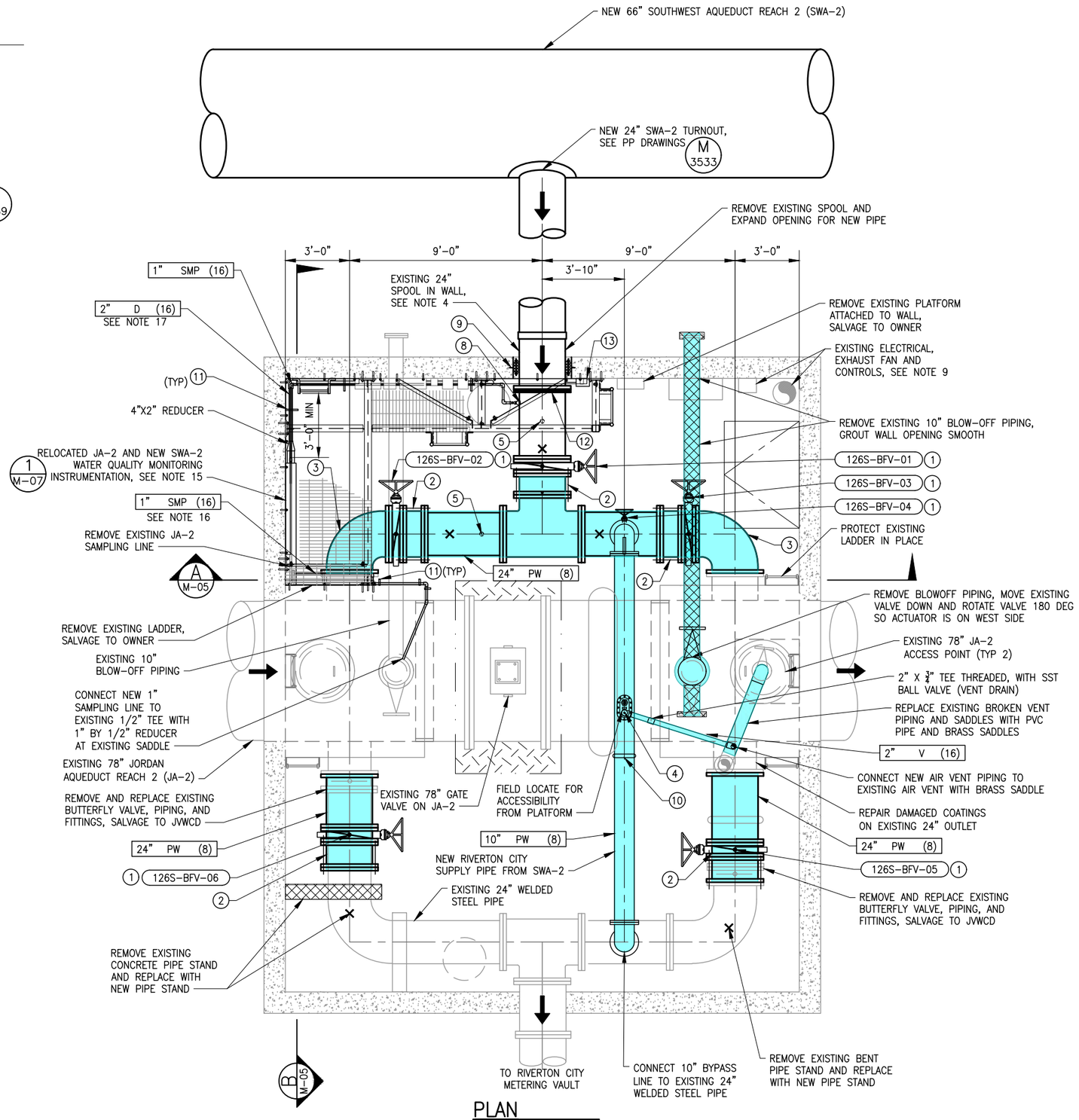
MATERIAL SCHEDULE

1. BUTTERFLY VALVE
2. RESTRAINED DISMANTLING JOINT COUPLING
3. 24" SHORT RADIUS ELBOW
4. COMBINATION AIR VALVE, SEE AIR VALVE SCHEDULE (M 3146)
5. 2" DRAIN WITH BALL VALVE (M 3135)
6. PIPE HANGER, TYP (M 3353)
7. ✕ DENOTES ADJUSTABLE PIPE SUPPORT WITH U BOLT (M 3389)
8. 1" SAMPLING LINE CONNECTION (M 3167)
9. SLEEVED PIPE OPENING, TYPE 'A' (M 3307)
10. GROOVED MECHANICAL COUPLING
11. PIPE SUPPORT (M 3367)
12. INSULATING FLANGE (CP 2777)
13. DC BLOCKER, INSTALL PER (CP 2827)

SHADED ITEMS, SEE NOTE 19

NOTES:

1. (XX-XX-XX) DENOTES EQUIPMENT TAG FOR MECHANICAL EQUIPMENT SCHEDULE, SEE DRAWING M-03.
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. COORDINATE ORIENTATION OF VALVE ACTUATORS PRIOR TO MANUFACTURING. ACTUATORS ORIENTED INCORRECTLY WILL BE ROTATED IN THE FIELD AT NO EXPENSE TO THE OWNER.
4. REMOVE EXISTING SPOOL AND BURIED WOODEN BULKHEAD. SALVAGE BULKHEAD TO OWNER. REMOVE SPOOL AND EXPAND OPENING, GRIND SMOOTH FOR INSTALLATION OF NEW PIPE AND PIPE OPENING FITTINGS. ENSURE VAULT METAL REINFORCEMENT IS NOT TOUCHING NEW PIPE.
5. EPOXY LINE ALL PIPE IN VAULT WITH SYSTEM NO. 1 AND COAT ALL EXPOSED PIPE AFTER INSTALLATION WITH SYSTEM NO. 4. COAT BURIED AND CONCRETE ENCASED STEEL PIPES IN ACCORDANCE WITH SPECIFICATIONS.
6. ALL PIPING, NUTS, BOLTS AND HARDWARE TO BE CARBON STEEL, ZINC PLATED AND FIELD COATED TO MATCH STEEL PIPE AFTER INSTALLATION, UNO.
7. ALL PIPING AND VALVES TO HAVE 150 PSI PRESSURE CLASS, BE NSF 61 CERTIFIED AND BE FULLY LINED AND COATED PER SPECIFICATIONS.
8. ALL STEEL SHALL BE STD WEIGHT WITH FITTING REINFORCEMENT PER AWWA M-11 MANUAL, FOR TEST PRESSURE.
9. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL RELOCATIONS.
10. REFER TO STRUCTURAL DRAWINGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION AND STRUCTURAL WORK.
11. EXISTING HATCH AND NEW LARGER HATCH TO BE USED FOR INSTALLATION OF NEW EQUIPMENT INTO THE EXISTING VAULT, SEE STRUCTURAL DRAWINGS FOR NEW HATCH, COORDINATE ALL SHOP DRAWINGS WITH HATCH OPENINGS.
12. BACKGROUND DRAWINGS DEPICTING EXISTING VAULT ARE BASED ON RECORD DRAWINGS. CONTRACTOR TO VERIFY ALL DIMENSIONS, CONFIGURATIONS, ORIENTATIONS AND ELEVATIONS PRIOR TO ORDERING EQUIPMENT AND COMMENCING WORK. NOTIFY ENGINEER OF ANY DISCREPANCIES OR UNDISCLOSED CONDITIONS BEFORE BEGINNING WORK.
13. CONTRACTOR TO REPAIR DAMAGE CAUSED BY CONSTRUCTION TO THE EXISTING LININGS AND COATINGS OF THE EXISTING PIPE AND APPURTENANCES PER SPECIFICATIONS DIVISION 09.
14. ALL ITEMS NOT IDENTIFIED FOR REMOVAL ARE TO BE PROTECTED IN PLACE.
15. EXISTING JA-2 WATER QUALITY MONITORING INSTRUMENTATION TO BE RELOCATED TO MEZZANINE LEVEL WITH NEW SWA-2 INSTRUMENTATION. NOTIFY ENGINEER OF CONFLICTS IMMEDIATELY.
16. EXISTING JA-2 SAMPLING LINE TO BE REMOVED AND REPLACED WITH NEW 1" SAMPLING LINE, SECURE NEW SAMPLING LINE TO MEZZANINE LEVEL GRATING WITH SST BANDS AND ROUTE TO RELOCATED INSTRUMENTATION ON MEZZANINE LEVEL.
17. DRAIN PIPING FROM WATER QUALITY MONITORING INSTRUMENTATION TO BE ROUTED TO EXISTING SUMP ON WEST SIDE OF VAULT. ROUTE BELOW ALL EXISTING WALL MOUNTED ELECTRICAL EQUIPMENT, SLOPE AT 2% MIN AND NOTIFY ENGINEER OF ANY CONFLICTS IMMEDIATELY.
18. SALVAGE BLIND FLANGES, EXISTING LADDERS AND OTHER EQUIPMENT TO JVWCD.
19. ITEMS WITH SHADING ARE PART OF SCHEDULE A WITH INSTALLATION RESTRICTED BY JA SHUTDOWN REQUIREMENTS AND THESE ITEMS ARE TO BE INSTALLED BASED UPON SPECIFICATION SECTION 01 14 40 – CONSTRUCTION AND SCHEDULE RESTRAINTS WITH A SINGLE SHUTDOWN OF THE JA.



PLAN

SCALE: 3/8" = 1'-0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — 10859954 — LINDSAY K. MINCK — STATE OF UTAH — REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK
DRAWN J. BLACK
REVIEW CHECKED C. NELSON APPROVED J. LUETTINGER

MECHANICAL

12600 SOUTH JA-2 MAINLINE VALVE VAULT MODIFICATIONS - 1

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO. M-04

SHEET 74 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\M-04.dwg Plotted: 1/14/2025 4:35 PM By: Jeremy Black

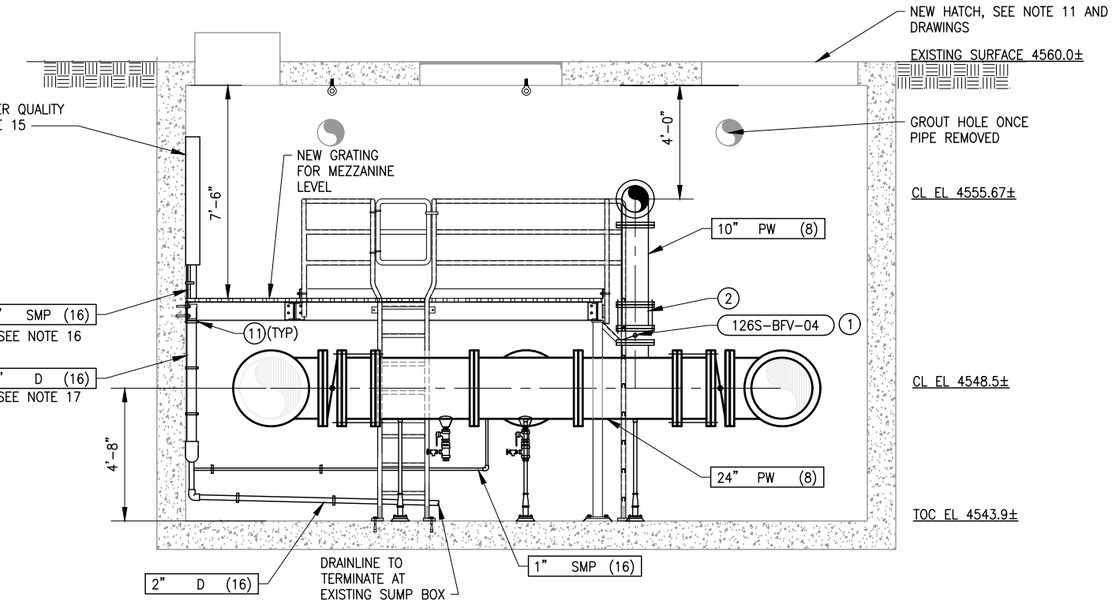
N

MATERIAL SCHEDULE

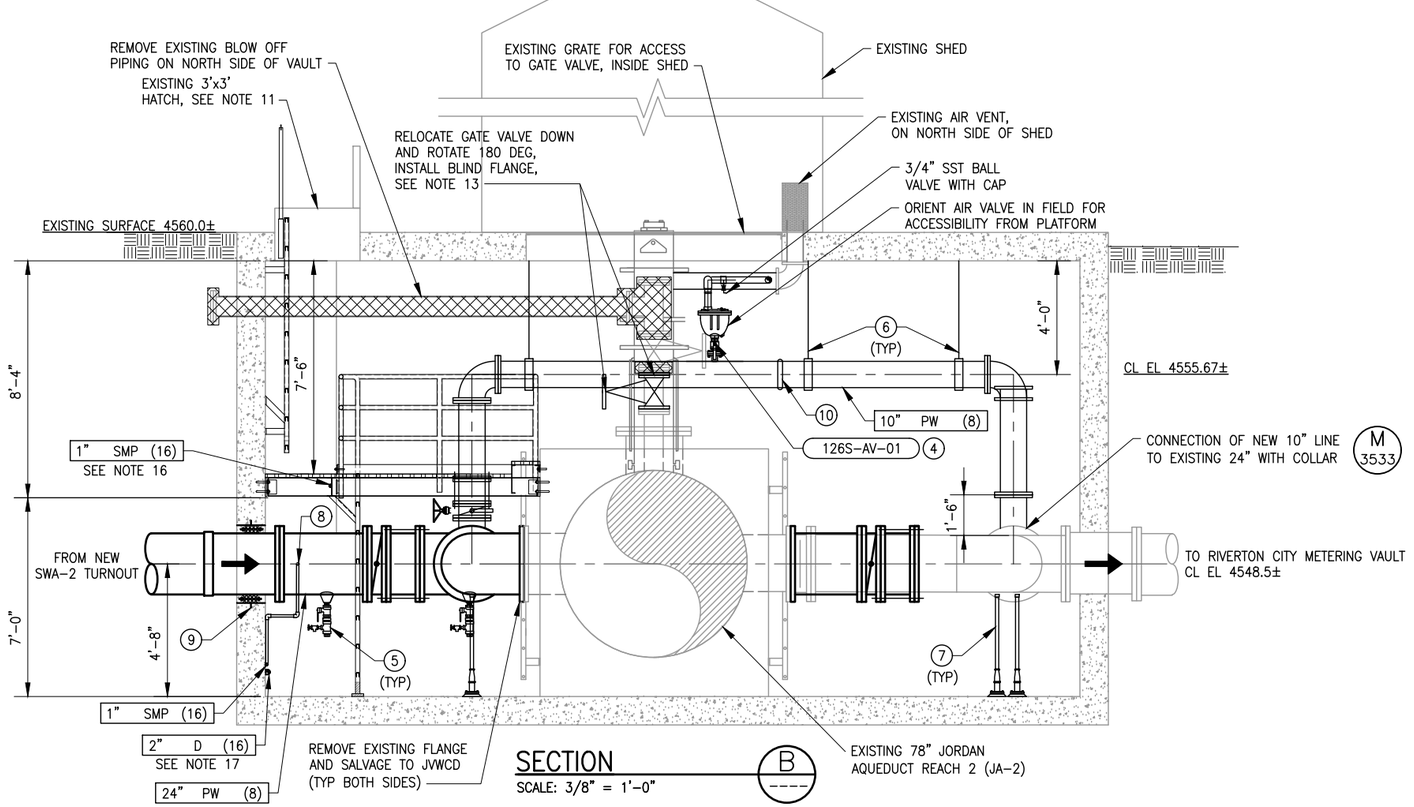
1. BUTTERFLY VALVE
2. RESTRAINED DISMANTLING JOINT COUPLING
3. 24" SHORT RADIUS ELBOW
4. COMBINATION AIR VALVE, SEE AIR VALVE SCHEDULE (M 3146)
5. 2" DRAIN WITH BALL VALVE (M 3135)
6. PIPE HANGER, TYP (M 3353)
7. ✕ DENOTES ADJUSTABLE PIPE SUPPORT WITH U BOLT (M 3389)
8. 1" SAMPLING LINE CONNECTION (M 3167)
9. SLEEVED PIPE OPENING, TYPE 'A' (M 3307)
10. GROOVED MECHANICAL COUPLING
11. PIPE SUPPORT (M 3367)

NOTES:

1. (XX-XX-XX) DENOTES EQUIPMENT TAG FOR MECHANICAL EQUIPMENT SCHEDULE, SEE DRAWING M-03.
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. COORDINATE ORIENTATION OF VALVE ACTUATORS PRIOR TO MANUFACTURING. ACTUATORS ORIENTED INCORRECTLY WILL BE ROTATED IN THE FIELD AT NO EXPENSE TO THE OWNER.
4. REMOVE EXISTING SPOOL AND BURIED WOODEN BULKHEAD. SALVAGE BULKHEAD TO OWNER. REMOVE SPPOL AND EXPAND OPENING, GRIND SMOOTH FOR INSTALLATION OF NEW PIPE AND PIPE OPENING FITTINGS. ENSURE VAULT METAL REINFORCEMENT IS NOT TOUCHING NEW PIPE.
5. EPOXY LINE ALL PIPE IN VAULT WITH SYSTEM NO. 1 AND COAT ALL EXPOSED PIPE AFTER INSTALLATION WITH SYSTEM NO. 4. COAT BURIED AND CONCRETE ENCASED STEEL PIPES IN ACCORDANCE WITH SPECIFICATIONS.
6. ALL PIPING, NUTS, BOLTS AND HARDWARE TO BE CARBON STEEL, ZINC PLATED AND FIELD COATED TO MATCH STEEL PIPE AFTER INSTALLATION, UNLESS OTHERWISE NOTED.
7. ALL PIPING AND VALVES TO HAVE 150 PSI PRESSURE CLASS, BE NSF 61 CERTIFIED AND BE FULLY LINED AND COATED PER SPECIFICATIONS.
8. ALL STEEL SHALL BE STANDARD WEIGHT WITH FITTING REINFORCEMENT PER AWWA M-11 MANUAL, FOR TEST PRESSURE.
9. REFER TO ELECTRICAL DRAWINGS FOR ELECTRICAL RELOCATIONS.
10. REFER TO STRUCTURAL DRAWINGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION AND STRUCTURAL WORK.
11. EXISTING HATCH AND NEW LARGER HATCH ON THE NORTH SIDE TO BE USED AS ACCESS LOCATION FOR INSTALLATION OF NEW EQUIPMENT INTO THE EXISTING VAULT, SEE STRUCTURAL DRAWINGS FOR NEW HATCH, COORDINATE ALL SHOP DRAWINGS WITH HATCH OPENINGS.
12. BACKGROUND DRAWINGS DEPICTING EXISTING VAULT ARE BASED ON RECORD DRAWINGS. CONTRACTOR TO VERIFY ALL DIMENSIONS, CONFIGURATIONS, ORIENTATIONS AND ELEVATIONS PRIOR TO ORDERING EQUIPMENT AND COMMENCING WORK. NOTIFY ENGINEER OF ANY DISCREPANCIES OR UNDISCLOSED CONDITIONS BEFORE BEGINNING WORK.
13. CONTRACTOR TO REPAIR DAMAGE CAUSED BY CONSTRUCTION TO THE EXISTING LININGS AND COATINGS OF THE EXISTING PIPE AND APPURTENANCES PER SPECIFICATIONS DIVISION 09.
14. ALL ITEMS NOT IDENTIFIED FOR REMOVAL ARE TO BE PROTECTED IN PLACE.
15. EXISTING JA-2 WATER QUALITY MONITORING INSTRUMENTATION TO BE RELOCATED TO MEZZANINE LEVEL WITH NEW SWA-2 INSTRUMENTATION.
16. EXISTING JA-2 SAMPLING LINE TO BE REMOVED AND REPLACED WITH NEW 1" SAMPLING LINE, SECURE NEW SAMPLING LINE TO MEZZANINE LEVEL GRATING WITH SST BANDS AND ROUTE TO RELOCATED INSTRUMENTATION ON MEZZANINE LEVEL.
17. DRAIN PIPING FROM WATER QUALITY MONITORING INSTRUMENTATION TO BE ROUTED TO EXISTING SUMP ON WEST SIDE OF VAULT. ROUTE BELOW ALL EXISTING WALL MOUNTED ELECTRICAL EQUIPMENT, SLOPE AT 2% MIN AND NOTIFY ENGINEER OF ANY CONFLICTS IMMEDIATELY.
18. SALVAGE BLIND FLANGES, EXISTING LADDERS AND OTHER EQUIPMENT TO JVWCD.



SECTION (A)
SCALE: 3/8" = 1'-0"



SECTION (B)
SCALE: 3/8" = 1'-0"

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — 10859954 — LINDSAY K. MINCK — STATE OF UTAH — REGISTERED

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

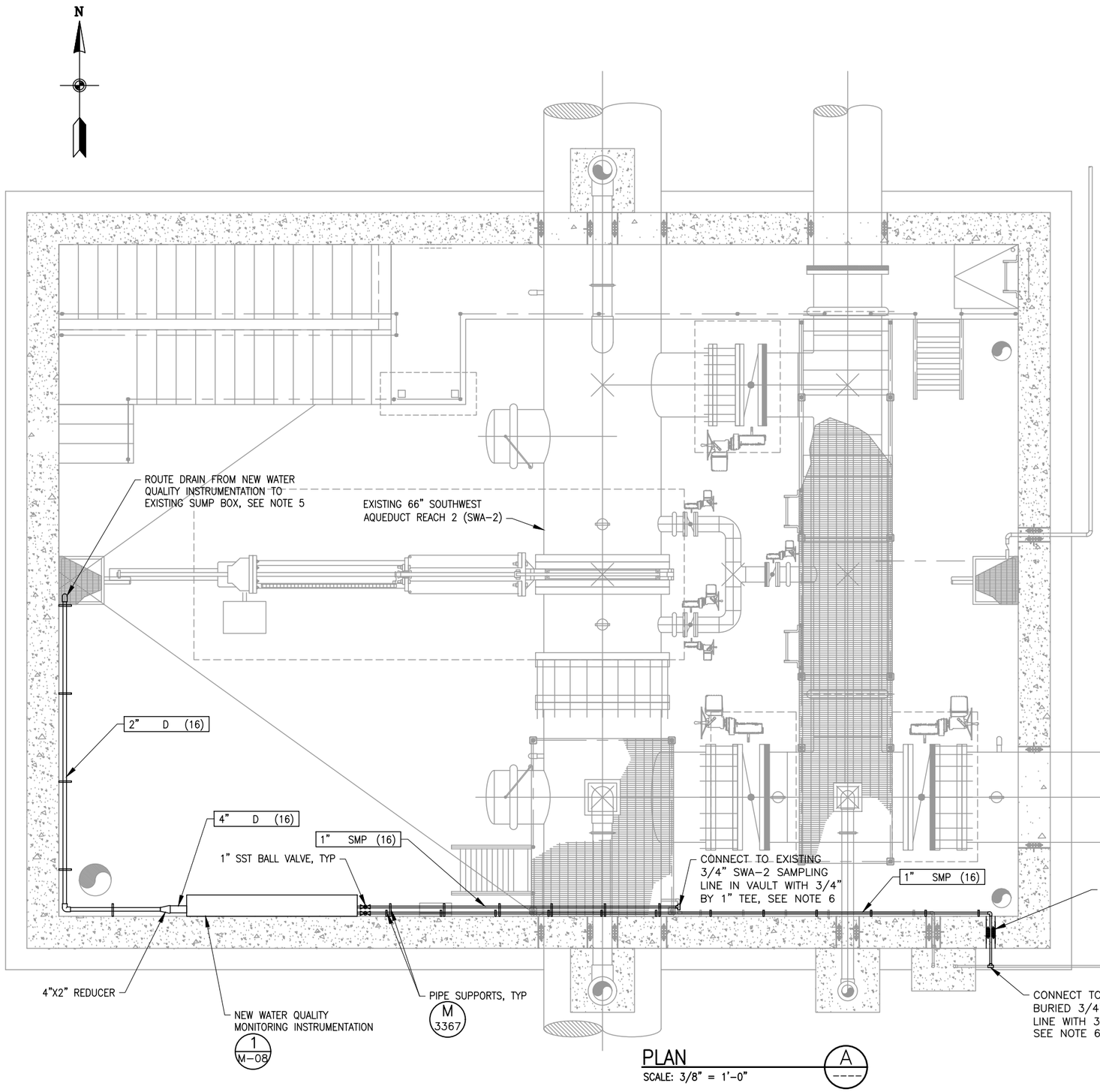
DESIGN L. MINCK
DRAWN J. BLACK
REVIEW CHECKED C. NELSON APPROVED J. LUETTINGER

MECHANICAL
12600 SOUTH
JA-2 MAINLINE VALVE
VAULT MODIFICATION - 2

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO. M-05
SHEET 75 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\M-05.dwg Plotted: 1/14/2025 4:35 PM By: Jeremy Black



PLAN A

SCALE: 3/8" = 1'-0"

NOTES:

1. ALL PIPING AND VALVES TO HAVE 150 PSI PRESSURE CLASS, BE NSF 61 CERTIFIED AND BE FULLY LINED AND COATED PER SPECIFICATIONS.
2. BACKGROUND DRAWINGS DEPICTING EXISTING VAULT ARE BASED ON RECORD DRAWINGS. CONTRACTOR TO VERIFY ALL DIMENSIONS, CONFIGURATIONS, ORIENTATIONS AND ELEVATIONS PRIOR TO ORDERING EQUIPMENT AND COMMENCING WORK. NOTIFY ENGINEER OF ANY DISCREPANCIES OR UNDISCLOSED CONDITIONS BEFORE BEGINNING WORK.
3. CONTRACTOR TO REPAIR DAMAGE CAUSED BY CONSTRUCTION TO THE EXISTING LININGS AND COATINGS OF THE EXISTING PIPE AND APPURTENANCES PER SPECIFICATIONS DIVISION 09.
4. ALL ITEMS NOT SPECIFICALLY REFERRED TO ARE TO BE PROTECTED IN PLACE.
5. MAINTAIN 2% MIN SLOPE TOWARD DISCHARGE OVER EXISTING SUMP BOX. ROUTE DRAIN BELOW ALL EXISTING ELECTRICAL EQUIPMENT. NOTIFY ENGINEER IMMEDIATELY IF A CONFLICT ARISES.
6. FREEZE THE 3/4" LINE FROM JA-2/SWA-2 TO INSTALL TEE FOR NEW CONNECTION OF SAMPLING LINE.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK
DRAWN J. BLACK
REVIEW
CHECKED C. NELSON
APPROVED J. LUETTINGER

MECHANICAL

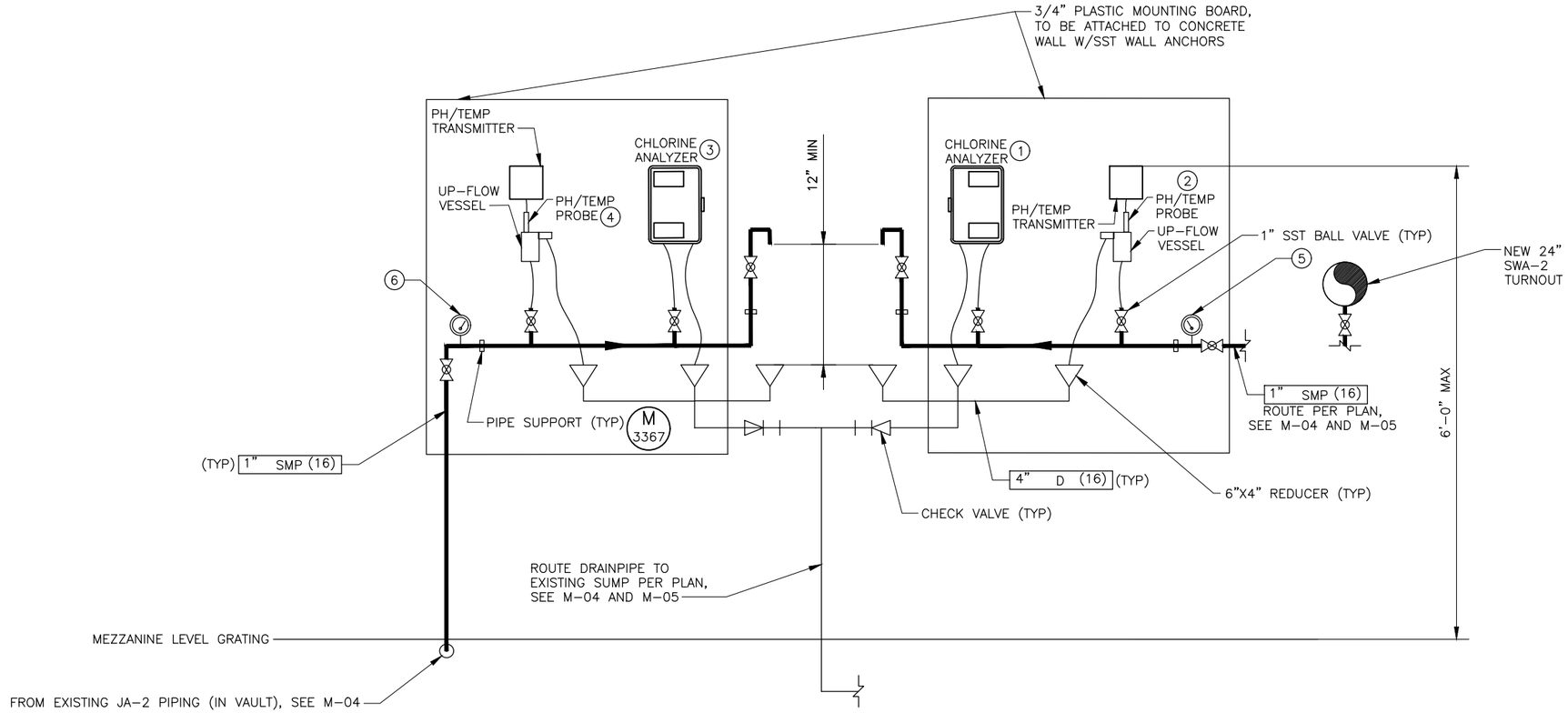
13400 SOUTH SWA-2 MAINLINE VALVE VAULT MODIFICATIONS

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO. M-06

SHEET 76 OF 100

P:\Jordan Valley WCD\010-23-02 Southwest Aqueduct Reach 2 - 13400 S to 11800 S\2.0 Design Phase\2.9 Drawings\sht\M-06.dwg Plotted: 1/15/2025 11:10 AM By: Jeremy Black



WATER QUALITY INSTRUMENTATION AT 12600 SOUTH

NOT TO SCALE

1 / M-04

GENERAL NOTES:

1. SAMPLE SUPPLY LINES AND DRAIN LINES SHALL NOT BE INSTALLED ABOVE ELECTRICAL PANELS.
2. ANY CHANGES TO LOCATION OF PROBES, ANALYZER, TRANSMITTERS, VALVES, ETC. MUST BE APPROVED BY THE ENGINEER.
3. DISCHARGE FROM INSTRUMENTS TO FREE FALL 12" MINIMUM TO COMPLY WITH DRINKING WATER STANDARDS.
4. SEE SPECIFICATIONS FOR DESCRIPTIONS OF NEW INSTRUMENTATION.
5. PROTECT EXISTING WALL MOUNTED EQUIPMENT, CONDUIT, AND PIPING IN PLACE. NOTIFY ENGINEER IMMEDIATELY IF A CONFLICT ARISES WHICH REQUIRES RELOCATION OF ADDITIONAL EXISTING ITEMS.
6. CONTRACTOR SHALL REPLACE EXISTING JA-2 WATER QUALITY MONITORING EQUIPMENT IF DAMAGED DURING RELOCATION.

12600 S INSTRUMENTATION SCHEDULE

	DRAWING	AQUEDUCT	ITEM	TAG NO.
1	M-04	SWA-2	CHLORINE ANALYZER	126-SW-CL
2	M-04	SWA-2	PH/TEMP PROBE	126-SW-PH
3	M-04	JA-2	CHLORINE ANALYZER (RELOCATED)	126-JA-CL
4	M-04	JA-2	PH/TEMP PROBE (RELOCATED)	126-JA-PH
5	M-04	SWA-2	PRESSURE GAUGE	126-SW-PG
6	M-04	JA-2	PRESSURE GAUGE	126-JA-PG

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW CHECKED C. NELSON APPROVED J. LUETTINGER

DESIGN DESIGN L. MINCK DRAWN J. BLACK

MECHANICAL

WATER QUALITY MONITORING AT 12600 SOUTH

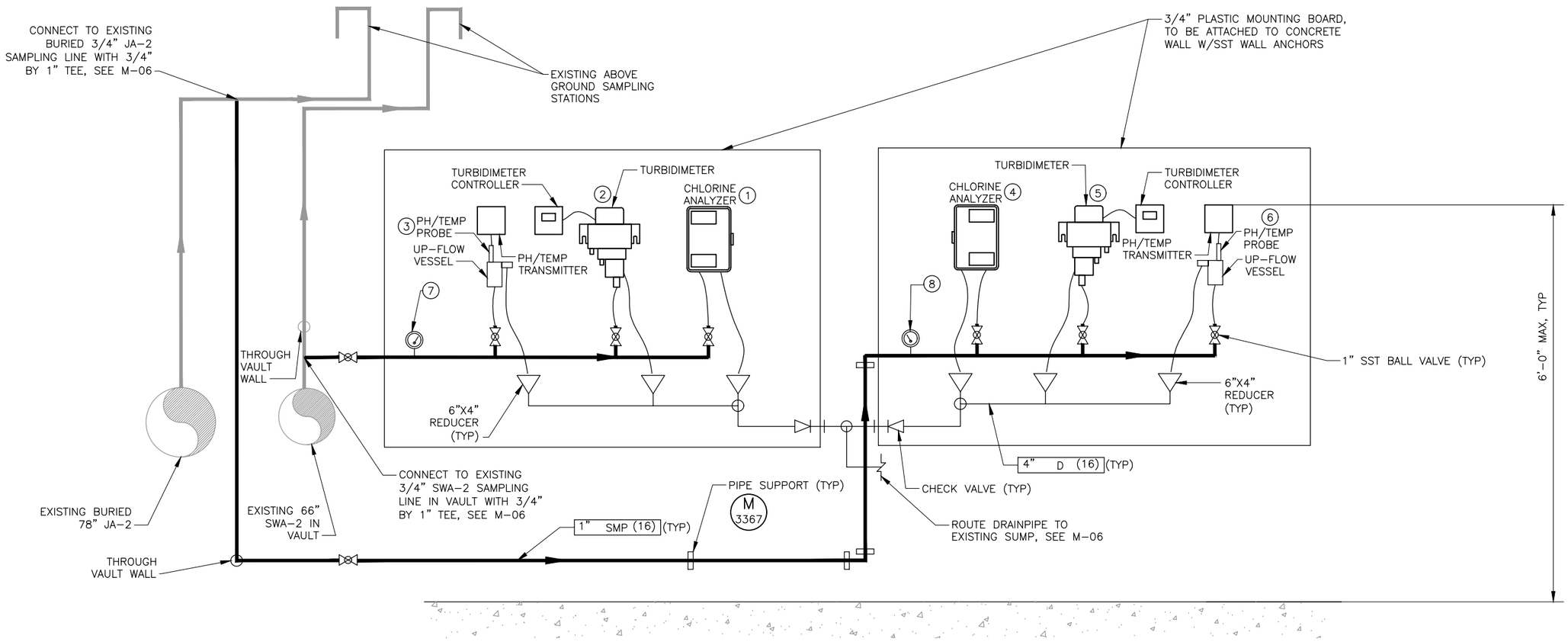
PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

DRAWING NO. M-07

SHEET 77 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\M-07.dwg Plotted: 1/14/2025 4:35 PM By: Jeremy Black



WATER QUALITY INSTRUMENTATION AT 13400 SOUTH

NOT TO SCALE

1 / M–06

GENERAL NOTES:

1. SAMPLE SUPPLY LINES AND DRAIN LINES SHALL NOT BE INSTALLED ABOVE ELECTRICAL PANELS.
2. ANY CHANGES TO LOCATION OF PROBES, ANALYZER, TRANSMITTERS, VALVES, ETC. MUST BE APPROVED BY THE ENGINEER.
3. DISCHARGE FROM INSTRUMENTS TO FREE FALL 12" MINIMUM TO COMPLY WITH DRINKING WATER STANDARDS.
4. SEE SPECIFICATIONS FOR DESCRIPTIONS OF NEW INSTRUMENTATION.
5. PROTECT EXISTING WALL MOUNTED EQUIPMENT, CONDUIT, AND PIPING IN PLACE. NOTIFY ENGINEER IMMEDIATELY IF A CONFLICT ARISES WHICH REQUIRES RELOCATION OF EXISTING ITEMS.

13400 S INSTRUMENTATION SCHEDULE

	DRAWING	AQUEDUCT	ITEM	TAG NO.
(1)	M–06	SWA–2	CHLORINE ANALYZER	134–SW–CL
(2)	M–06	SWA–2	TURBIDIMETER	134–SW–TB
(3)	M–06	SWA–2	PH/TEMP PROBE	134–SW–PH
(4)	M–06	JA–2	CHLORINE ANALYZER	134–JA–CL
(5)	M–06	JA–2	TURBIDIMETER	134–JA–TB
(6)	M–06	JA–2	PH/TEMP PROBE	134–JA–PH
(7)	M–06	SWA–2	PRESSURE GAUGE	134–SW–PG
(8)	M–06	JA–2	PRESSURE GAUGE	134–JA–PG

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — 10859954 — LINDSAY K. MINCK — STATE OF UTAH — REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN — DESIGN L. MINCK — DRAWN J. BLACK

REVIEW — CHECKED C. NELSON — APPROVED J. LUETTINGER

MECHANICAL

WATER QUALITY MONITORING AT 13400 SOUTH

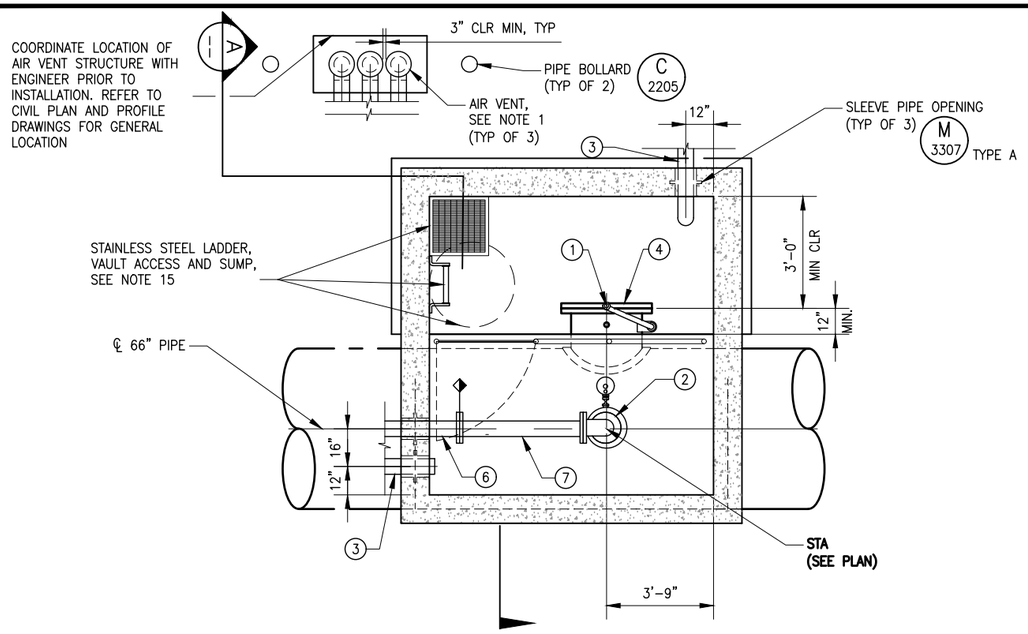
DATE: JANUARY 2025

PROJECT NUMBER 010-23-02

DRAWING NO. M-08

SHEET 78 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\M-08.dwg Plotted: 1/14/2025 4:35 PM By: Jeremy Black



FLOOR PLAN
NTS

TABLE 1	
AIR VALVE SIZE [1.]	DIM 'A' (MIN) [2.]
4"	5'-0"
6"	5'-0"
8"	5'-2"
10"	5'-6"
12"	6'-2"

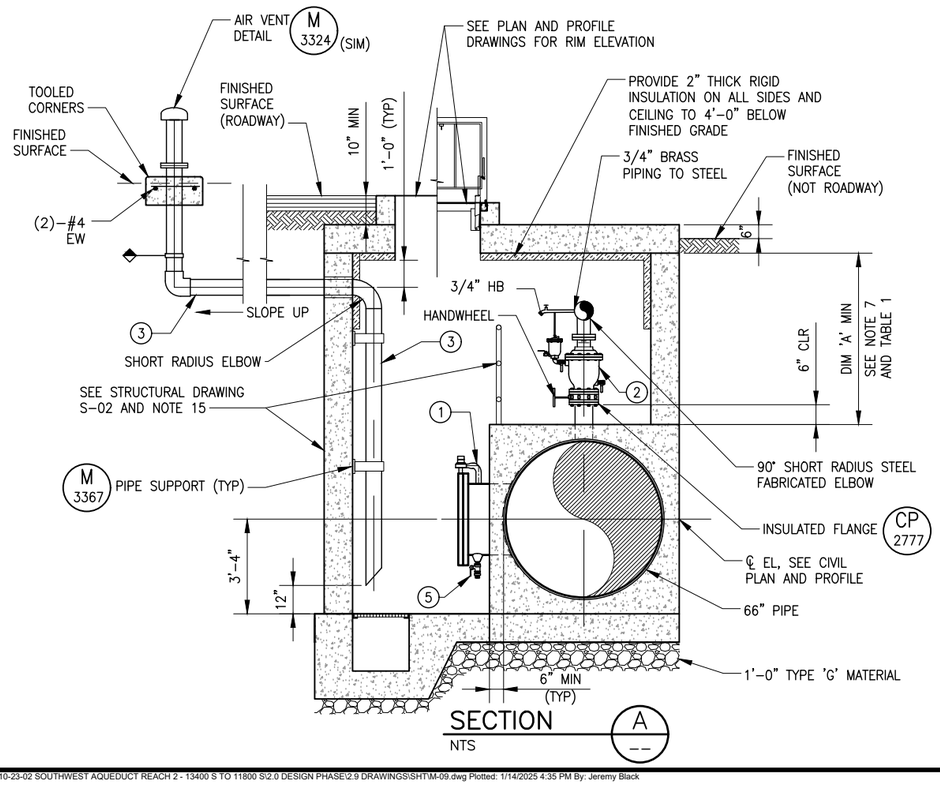
1. FOR AIR VALVE SIZE BY VAULT LOCATION SEE AIR VALVE SCHEDULE.
2. DIMENSION 'A' IS A MINIMUM DIMENSION ONLY. ACTUAL VAULT HEIGHTS VARY BY LOCATION, SEE PLAN AND PROFILE DRAWINGS. VAULT HEIGHTS FOR EACH VAULT TO BE THE GREATER OF MINIMUM DIMENSION 'A' OR THE HEIGHT NECESSARY TO RAISE VAULT ABOVE FINISH GRADES SHOWN ON PLAN AND PROFILE DRAWINGS.

MATERIAL SCHEDULE

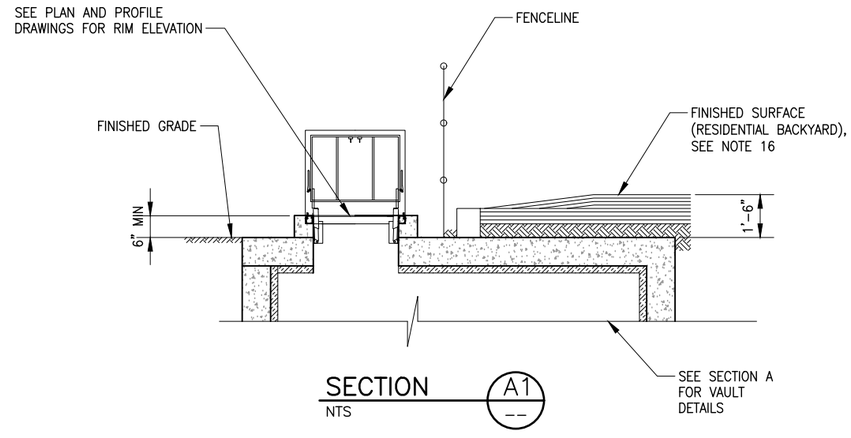
1. 30" DIA OUTLET HINGED ACCESS MANWAY M 3532
2. COMBINATION AIR VALVE WITH INTEGRAL LOW PROFILE BUTTERFLY ISOLATION, SEE NOTE 10 M 3146
3. SCH 80 PVC VENT PIPE
4. 30" BLIND FLANGE
5. 2" DRAIN M 3135
6. SCH 80 VENT PIPE SIZED TO MATCH AIR VALVE
7. STD WEIGHT STEEL PIPE SIZED TO MATCH AIR VALVE

NOTES:

1. XX-XX-XX DENOTES EQUIPMENT TAG FOR MECHANICAL EQUIPMENT SCHEDULE, SEE DRAWING M-03.
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. COORDINATE ORIENTATION OF VALVE ACTUATORS PRIOR TO MANUFACTURING. ACTUATORS ORIENTED INCORRECTLY WILL BE ROTATED IN THE FIELD AT NO EXPENSE TO THE OWNER.
4. LENGTH AND CONFIGURATION FOR VENT PIPING PER DETAILS SHOWN ON CIVIL PLAN AND PROFILE DRAWINGS. CONTRACTOR TO PROVIDE PIPING AND FITTINGS AS REQUIRED TO INSTALL VENT PIPING WHERE SHOWN ON PLANS.
5. CONFINED SPACE ENTRY WARNING BARRIER NOT REQUIRED.
6. PROVIDE 3'-0" MINIMUM CLEARANCE BEYOND EDGE OF ACCESS MANWAY. ADJUST WIDTH OF VAULT IF NECESSARY BASED UPON FIELD LOCATION OF PIPE.
7. NOTIFY ENGINEER IMMEDIATELY IF DIMENSIONAL CONFLICT ARISES BETWEEN VAULT AND CONTRACTOR SUPPLIED CARV. ADJUSTMENT WILL BE MADE DURING SHOP DRAWING REVIEW IF NECESSARY.
8. THE AIR VALVE MANWAY VAULT IS CLASSIFIED AS A HIGHLY-CORROSIVE ENVIRONMENT. ALL METAL FABRICATIONS AND HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 05 50 00 – METAL FABRICATIONS. ALL PROTECTIVE COATINGS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 09 90 00 – PROTECTIVE COATINGS AND LININGS.
9. ALL FLANGE HARDWARE, INCLUDING BOLTS, NUTS, AND WASHERS, SHALL BE CARBON STEEL, ASTM A307 GRADE A AND COATED IN ACCORDANCE WITH THE SPECIFICATIONS.
10. FOR AIR VALVE SCHEDULE WITH AIR VALVE SIZE AND TYPE, SEE MECHANICAL SCHEDULE, DRAWING M-03. AIR VALVE VENT PIPING SHALL TRANSITION TO PVC PIPING OUTSIDE THE VAULT. THE MATERIAL TRANSITION IS TO BE A FLANGED CONNECTION.
11. A MOBILE SUMP PUMP WILL BE USED TO DRAIN THE VAULT IN THE EVENT IT BECOMES FLOODED.
12. ALL PIPING AND VALVES TO HAVE WORKING PRESSURE RATING OF 100 PSI, TEST PRESSURE OF 150 PSI, AND BE NSF 61 CERTIFIED.
13. AIR INTAKE PIPE TO BE FLUSH WITH VAULT WALL AT CEILING, AIR EXHAUST PIPE TO BE CUT AT 45 DEG ANGLE, 12" ABOVE FLOOR.
14. ALL STEEL SHALL BE STD WEIGHT WITH FITTING REINFORCEMENT PER AWWA M-11 MANUAL, FOR TEST PRESSURE.
15. REFER TO STRUCTURAL DRAWINGS FOR INDIVIDUAL VAULT DIMENSIONS, REBAR, AND COVER INFORMATION.
16. SECTION A1 PERTAINS TO STA 372+72 AIR VALVE VAULT WITH MAINTENANCE ACCESS. VAULT IS PARTIALLY BURIED IN RESIDENTIAL BACKYARD. SEE SPECIFICATION SECTION 01 71 50 FOR RESTORATION.



SECTION A
NTS



SECTION A1
NTS

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER 10859954 LINDSAY K. MINCK STATE OF UTAH REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

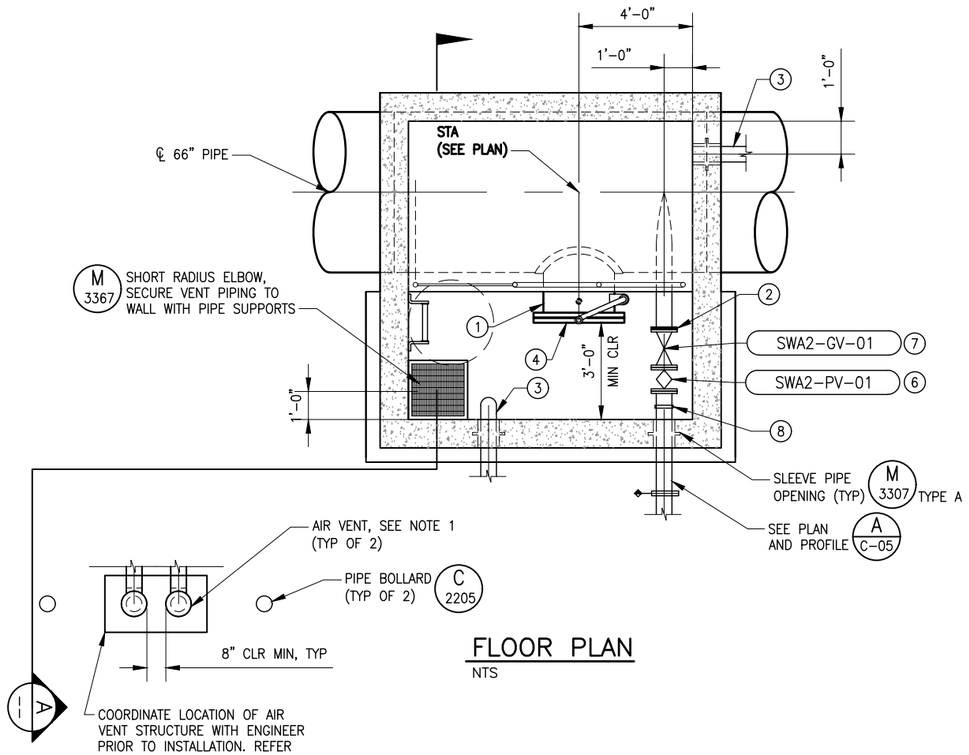
DESIGN L. MINCK
DRAWN J. BLACK
CHECKED C. NELSON
APPROVED J. LUETTINGER
REVIEW

MECHANICAL

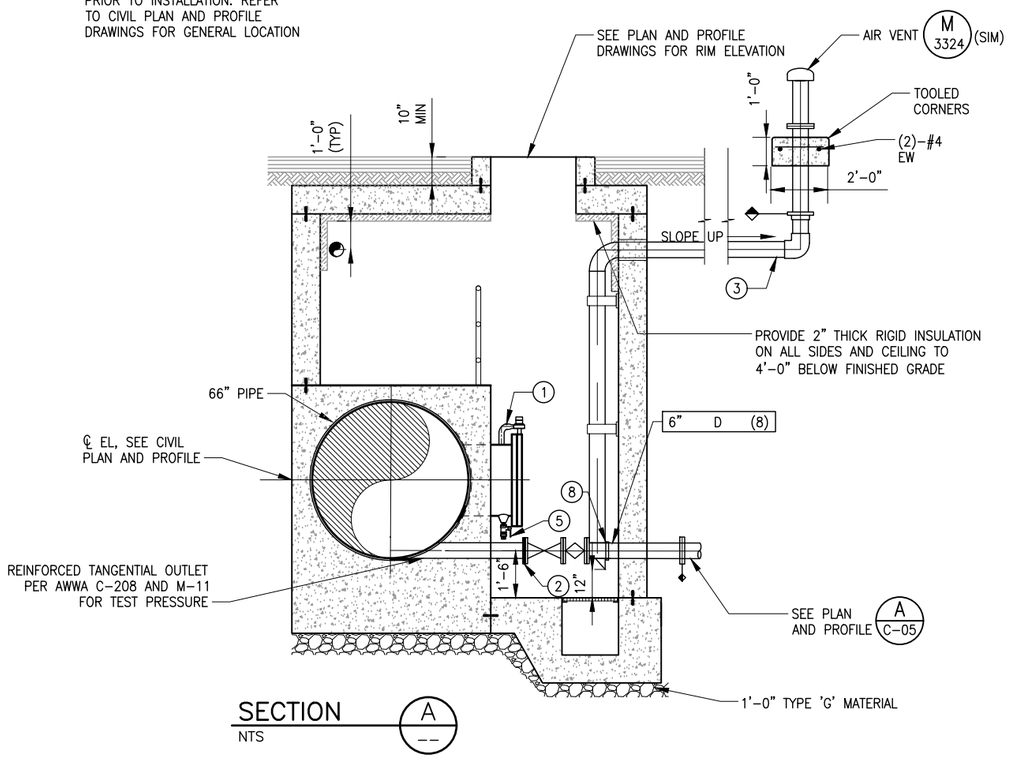
TYPICAL AIR VALVE/MANWAY VAULT

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. M-09
SHEET 79 OF 100



FLOOR PLAN
NTS



SECTION A
NTS

MATERIAL SCHEDULE

1. 30" DIA OUTLET HINGED ACCESS MANWAY M 3532
2. INSULATING FLANGE CP 2777
3. 6" SCH 80 PVC VENT PIPE, SEE NOTE 4
4. 30" BLIND FLANGE
5. 2" DRAIN M 3135
6. PLUG VALVE, SEE NOTE 10
7. GATE VALVE, SEE NOTE 10
8. GROOVED MECHANICAL COUPLING

NOTES:

1. XX-XX-XX DENOTES EQUIPMENT TAG FOR MECHANICAL EQUIPMENT SCHEDULE, SEE DRAWING M-03.
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. COORDINATE ORIENTATION OF VALVE ACTUATORS PRIOR TO MANUFACTURING. ACTUATORS ORIENTED INCORRECTLY WILL BE ROTATED IN THE FIELD AT NO EXPENSE TO THE OWNER.
4. LENGTH AND CONFIGURATION FOR VENT PIPING PER DETAILS SHOWN ON CIVIL PLAN AND PROFILE DRAWINGS. CONTRACTOR TO PROVIDE PIPING AND FITTINGS AS REQUIRED TO INSTALL VENT PIPING WHERE SHOWN ON PLANS.
5. CONFINED SPACE ENTRY WARNING BARRIER NOT REQUIRED.
6. PROVIDE 3'-0" MINIMUM CLEARANCE BEYOND EDGE OF ACCESS MANWAY. ADJUST WIDTH OF VAULT IF NECESSARY BASED UPON FIELD LOCATION OF PIPE.
7. NOTIFY ENGINEER IMMEDIATELY IF DIMENSIONAL CONFLICT ARISES BETWEEN VAULT AND CONTRACTOR SUPPLIED VALVES. ADJUSTMENT WILL BE MADE DURING SHOP DRAWING REVIEW IF NECESSARY.
8. THE MAINTENANCE ACCESS VAULT WITH DRAIN IS CLASSIFIED AS A HIGHLY-CORROSIVE ENVIRONMENT. ALL METAL FABRICATIONS AND HARDWARE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 05 50 00 – METAL FABRICATIONS. ALL PROTECTIVE COATINGS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 09 90 00 – PROTECTIVE COATINGS AND LININGS.
9. ALL FLANGE HARDWARE, INCLUDING BOLTS, NUTS, AND WASHERS, SHALL BE CARBON STEEL, ASTM A307 GRADE A AND COATED IN ACCORDANCE WITH THE SPECIFICATIONS.
10. FOR VALVE SCHEDULE WITH VALVE SIZE AND TYPE, SEE MECHANICAL SCHEDULE DRAWING M-03.
11. A MOBILE SUMP PUMP WILL BE USED TO DRAIN THE VAULT IN THE EVENT IT BECOMES FLOODED.
12. DRAIN PIPE SHALL TRANSITION TO C900 PVC OUTSIDE THE VAULT, SEE DRAIN PLAN AND PROFILE.
13. ALL PIPING AND VALVES TO HAVE WORKING PRESSURE RATING OF 100 PSI, TEST PRESSURE OF 150 PSI, AND BE NSF 61 CERTIFIED.
14. AIR INTAKE PIPE TO BE FLUSH WITH VAULT WALL AT CEILING, AIR EXHAUST PIPE TO BE CUT AT 45 DEG ANGLE, 12" ABOVE FLOOR. SECURE VENT PIPING TO WALL PER MECHANICAL DETAIL M-3367.
15. ALL STEEL SHALL BE STD WEIGHT WITH FITTING REINFORCEMENT PER AWWA M-11 MANUAL, FOR TEST PRESSURE.
16. REFER TO STRUCTURAL DRAWINGS FOR INDIVIDUAL VAULT DIMENSIONS, REBAR, AND COVER INFORMATION.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER
10859954
LINDSAY K. MINCK
STATE OF UTAH
REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN L. MINCK
DRAWN J. BLACK
REVIEW
CHECKED C. NELSON
APPROVED J. LUETTINGER

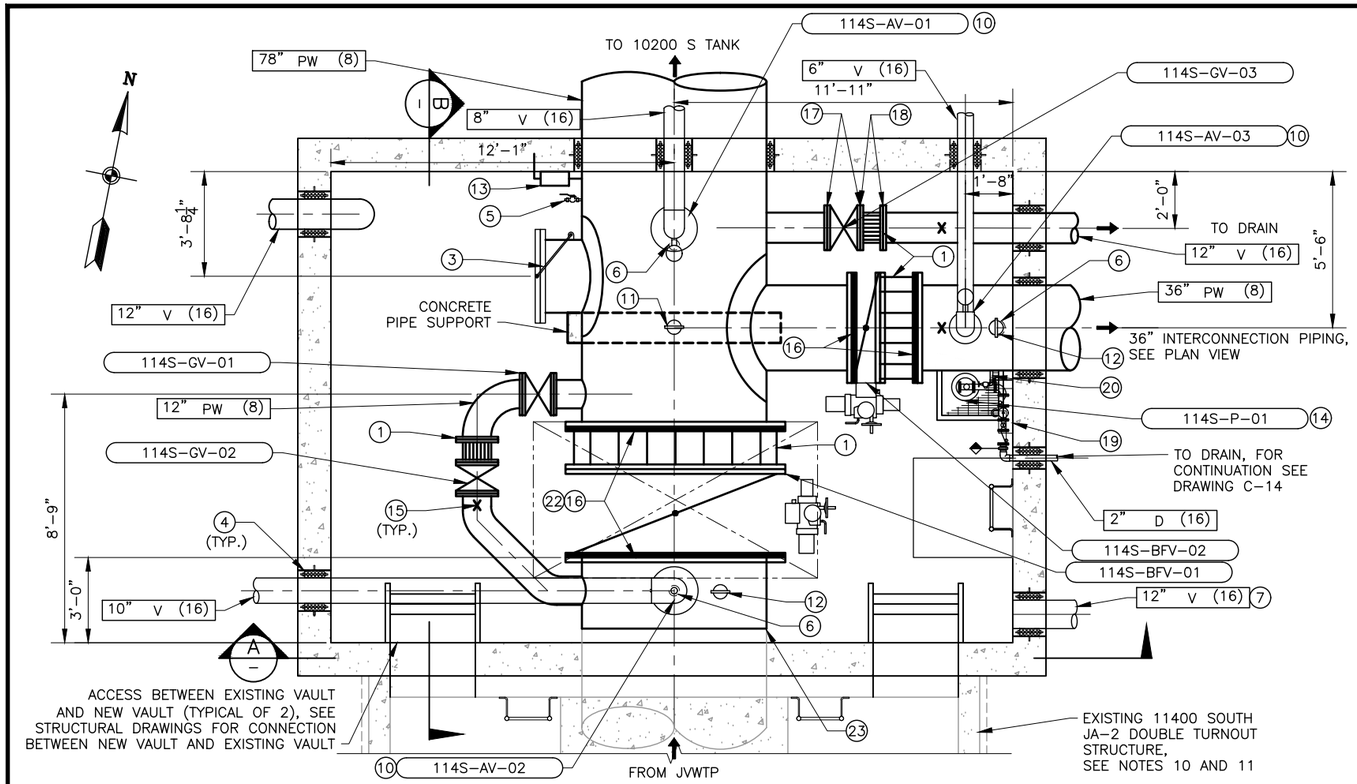
MECHANICAL

MAINTENANCE ACCESS VAULT WITH DRAIN

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

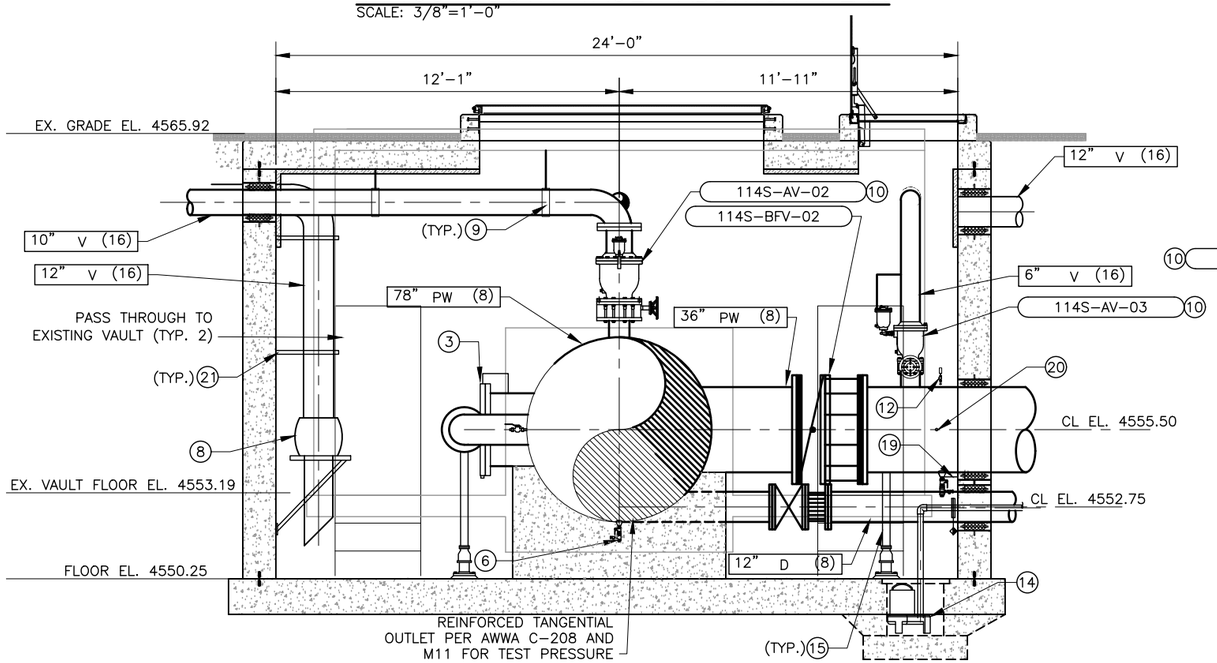
DRAWING NO.
M-10
SHEET 80 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\M-10.dwg Plotted: 1/14/2025 4:35 PM By: Jeremy Black



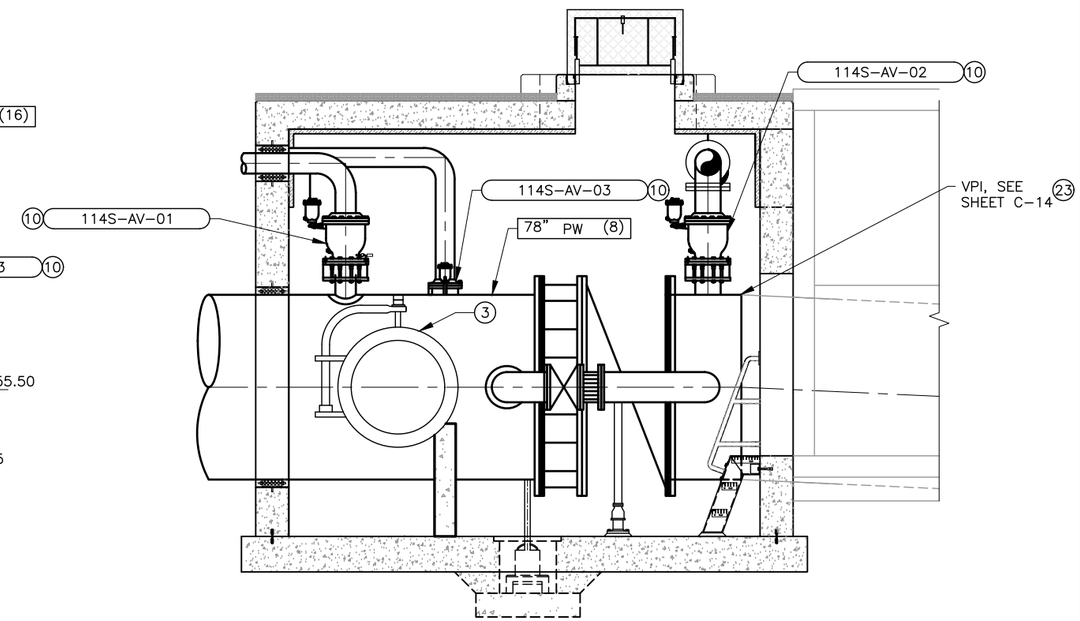
11400 SOUTH VAULT ADDITION PLAN

SCALE: 3/8"=1'-0"



11400 SOUTH VAULT ADDITION PROFILE A

SCALE: 3/8"=1'-0"



11400 SOUTH VAULT ADDITION PROFILE B

SCALE: 3/8"=1'-0"

NOTES:

1. XX-XX-XX MECHANICAL EQUIPMENT SCHEDULE, SEE DRAWING M-03.
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 INTERIOR FLOOR OF VAULT AND CONCRETE STAIRS WITH PROTECTIVE COATING IN ACCORDANCE WITH SPECIFICATIONS. EXTEND COATING ON WALLS TO AN ELEVATION OF 1'-6" ABOVE FLOOR.
4. REFER TO ELECTRICAL DRAWINGS FOR LIGHTING PLAN AND POWER AND CONTROL PLANS FOR VAULT.
5. REFER TO STRUCTURAL DRAWINGS FOR DETAILS RELATED TO MISCELLANEOUS METALS FABRICATION.
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. COAT ALL EXPOSE PIPE PER SPECIFICATIONS. COAT BURIED AND CONCRETE ENCASED STEEL PIPES PER SPECIFICATIONS.
8. PROVIDE AND INSTALL FLUID APPLIED WATERPROOFING MEMBRANE FOR THE EXTERIOR CONCRETE WALLS.
9. REPAIR LININGS AND COATINGS OF EXISTING AQUEDUCT AT CONNECTION, PER SPECIFICATION DIVISION 09.
10. SEE CP-05 FOR EXISTING 11400 SOUTH JA-2 DOUBLE TURNOUT STRUCTURE CATHODIC PROTECTION IMPROVMENTS.
11. EXISTING JA-2 DOUBLE TURNOUT STRUCTURE RECORD DRAWINGS ARE SHOWN FOR REFERENCE. CONTRACTOR TO VERIFY ACTUAL CONDITIONS IN THE FIELD.

MATERIAL SCHEDULE

1. RESTRAIN DISMANTLING JOINT COUPLING
2. NOT USED
3. 30" DIA MANWAY ACCESS M 3532
4. SLEEVED PIPE OPENING METHOD 'B' M 3307
5. SMOOTH SAMPLE TAP M 3115
6. 2" DRAIN ASSEMBLY M 3135
7. AIR VENT PIPE M 3326
8. WALL MOUNTED INTERIOR EXHAUST FAN M 3329
9. PIPE HANGER, TYP M 3353
10. COMBINATION AIR RELEASE VALVE SEE AIR VALVE SCHEDULE M 3146
11. PRESSURE GAUGE AND PRESSURE INDICATING TRANSMITTER ASSEMBLY M 3183
12. PRESSURE GAUGE M 3217
13. DC BLOCKER CP 2826 CP 2833
14. SUMP PUMP M 3202
15. X DENOTES ADJUSTABLE PIPE SUPPORT WITH U BOLT M 3389
16. INSULATING FLANGE CP 2777
17. FLANGE BOND CP 2767
18. COUPLING BOND CP 2759
19. WALL MOUNTED HOSE RACK M 3116
20. HOSE BIBB H/B-7 M 3115
21. PIPE SUPPORTS AND PIPE CLAMPS @ 4' MAX M 3367 M 3371
22. MOV VALVE ISOLATION. CP 2783
23. 78" BEVELED BELL LAP JOINT CONNECTION. C 2715

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER NO. 11932046 RYAN JAMES EGBERT STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN R. EGBERT
DRAWN J. BLACK
REVIEW
CHECKED C. NELSON
APPROVED J. LUETTINGER

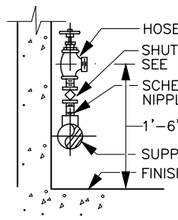
INSTRUMENTATION
11400 SOUTH JA-2
MAINLINE VALVE VAULT
MECHANICAL PLAN

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

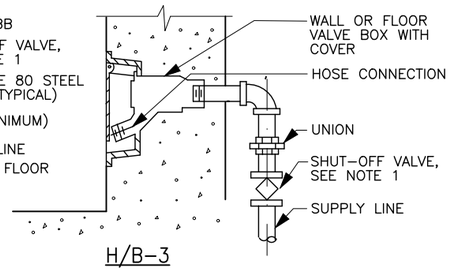
DRAWING NO. M-11
SHEET 81 OF 100

NOTES:

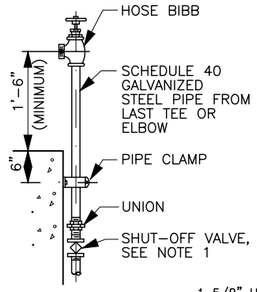
1. ALL HOSE BIBBS TO BE CONTROLLED BY INDIVIDUAL SHUT–OFF VALVES EXCEPT WHERE INDIVIDUALLY CONTROLLED BRANCH MAIN SERVES HOSE VALVES ONLY.
2. SEE DRAWINGS FOR SIZE AND LOCATION. HOSE BIBB SIZE TO MATCH BRANCH LINE SIZE.
3. PROVIDE WARNING SIGN WHEN USED FOR NON–POTABLE WATER.
4. PIPE SUPPORT TYPE AND MATERIAL AS SHOWN ON DRAWING.
5. ALL COMPONENTS TO BE NSF 61 CERTIFIED FOR DRINKING WATER USE, WHERE CONNECTED TO POTABLE WATER MAIN.
6. ALL THREADED HOSE BIBBS SHALL HAVE VACUUM BREAKERS.



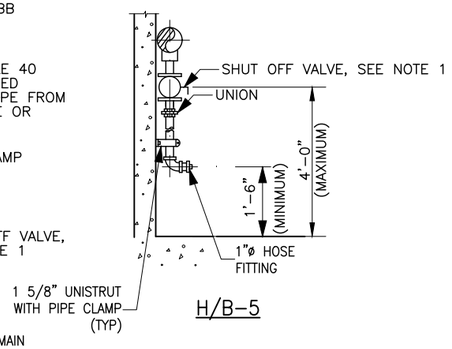
H/B–1



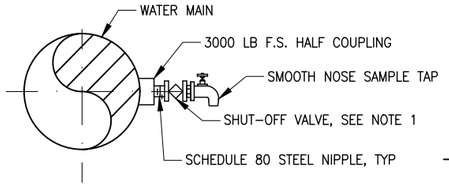
H/B–3
(H/B–2, NON FREEZE)



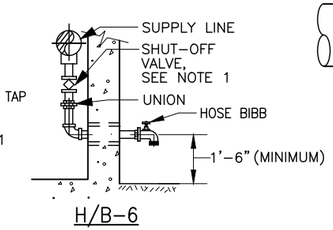
H/B–4



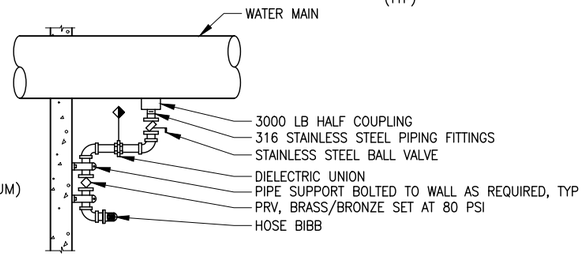
H/B–5



SAMPLE TAP



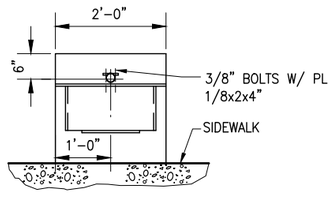
H/B–6



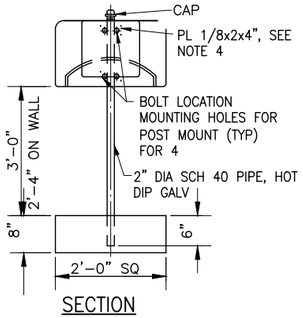
PLAN H/B–7

HOSE BIBB
NTS

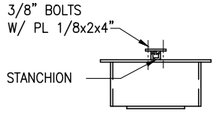
M 3115



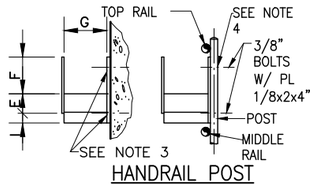
PLAN–POST MOUNT



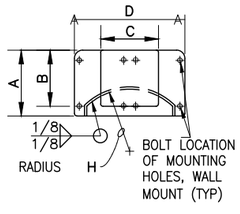
SECTION



STANCHION MOUNTED



HANDRAIL POST MOUNTED



WALL MOUNTED

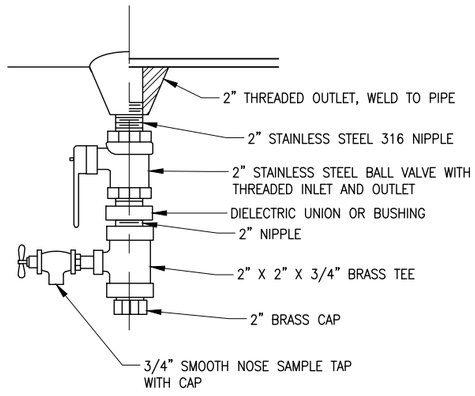
RACK TYPE	DIMENSION IN INCHES								
	A	B	C	D	E	F	G	H	I
TYPE A – ¾" & 1" HOSE	10½	9	9	18	3	6	7½	9¾	1½
TYPE B – 1½" HOSE	14	12	12	24	4	8	10	13	2

NOTES:

1. INTERIOR UNITS SHALL BE FABRICATED FROM 1/8" A–36 STEEL PLATE AND ENTIRE UNIT SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
2. EXTERIOR UNITS SHALL BE FABRICATED FROM 3/16" 6061–T6 ALUMINUM ALLOY PLATE.
3. ATTACH TO CONCRETE WALL WITH (4)–1/4" STAINLESS STEEL STUD TYPE WEDGE ANCHORS.
4. ATTACH TO VERTICAL HANDRAIL OR INDIVIDUAL POST WITH PLATES AND (4)–1/4" STAINLESS STEEL BOLTS.
5. ATTACH TO STEEL COLUMN WITH (4)–1/4" ROUND HEAD BOLTS, ONE IN EACH CORNER. INSERT DOUBLE SPACER NUTS BETWEEN COLUMN AND HOSE RACK.
6. CONTRACTOR TO PROVIDE AND INSTALL 50FT OF HOSE.

HOSE RACK DETAILS
NTS

M 3116



NOTES:

1. ALL THREADED HOSE BIBS OR SAMPLE TAPS SHALL HAVE VACUUM BREAKERS.
2. ALL BRASS AND BRONZE PIPING AND FITTINGS TO BE CERTIFIED FOR POTABLE WATER.

2" DRAIN ASSEMBLY
NTS

M 3135

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — 10859954 — LINDSAY K. MINCK — STATE OF UTAH — REGISTERED

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED C. NELSON — APPROVED J. LUETTINGER

DESIGN — DESIGN L. MINCK — DRAWN J. BLACK

GENERAL MECHANICAL DETAILS

GENERAL MECHANICAL DETAILS - 1

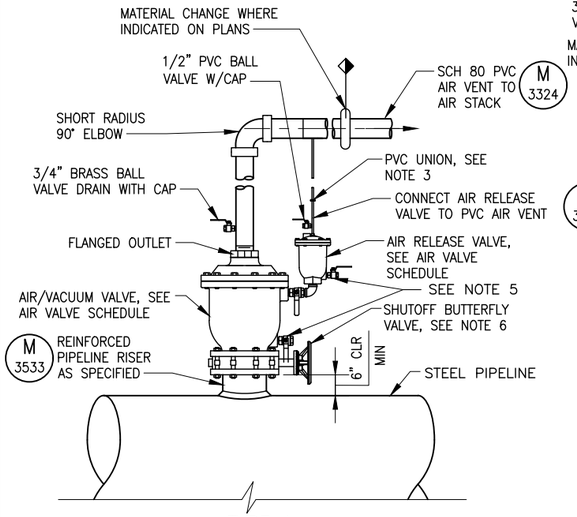
PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. GM-01

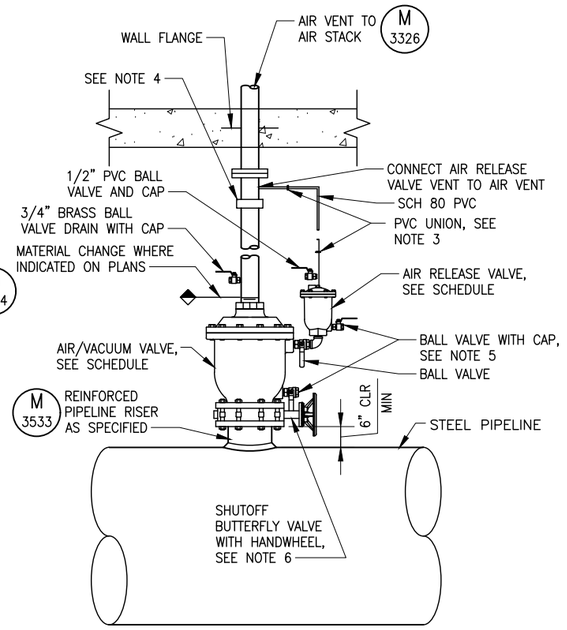
SHEET 82 OF 100

NOTES:

1. SIZE OF ALL VALVES AND PIPING TO MATCH AIR VALVE.
2. PIPE MATERIAL AS SHOWN ON PLANS, TYPE PER PLAN.
3. USE PVC UNION FOR SMALL DIAMETERS 4" AND LESS. PROVIDE GROOVED MECHANICAL COUPLING ON PIPE DIAMETERS 6" AND LARGER FOR DISASSEMBLY.
4. GROOVE END COUPLING WHERE REQUIRED.
5. INSTALL STAINLESS STEEL 316 BALL VALVES WITH CAPS TO DRAIN, BODY OF AIR VALVES, TYP.
6. SUBSTITUTE SST BALL VALVE FOR 3" AND SMALLER.



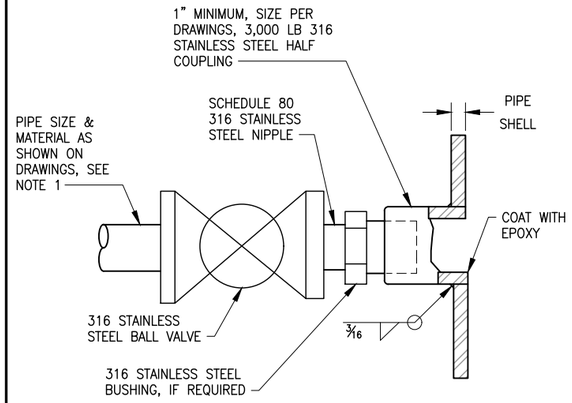
TYPE A



TYPE B

COMBINATION AIR VALVE DETAIL M 3146

NTS

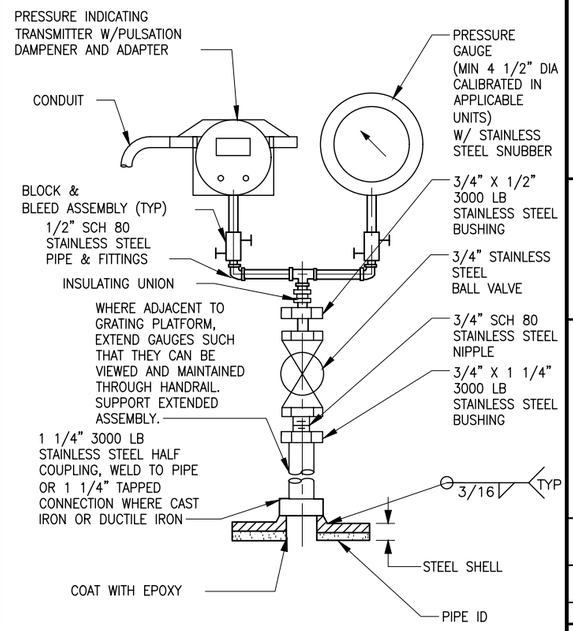


NOTE:

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

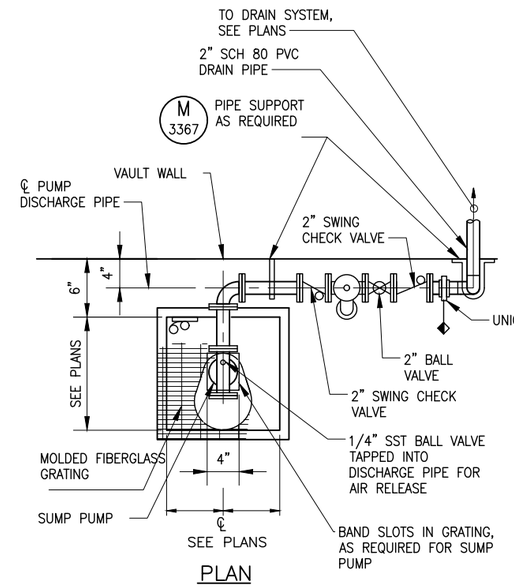
PIPE CONNECTION 2 1/2" AND SMALLER M 3167

NTS

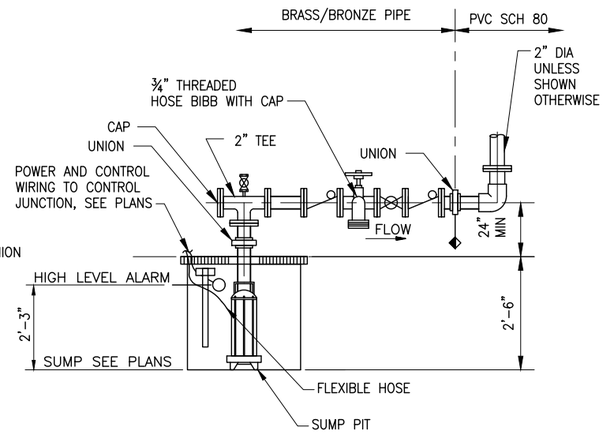


PRESSURE GAUGE AND PRESSURE INDICATING TRANSMITTER M 3183

NTS



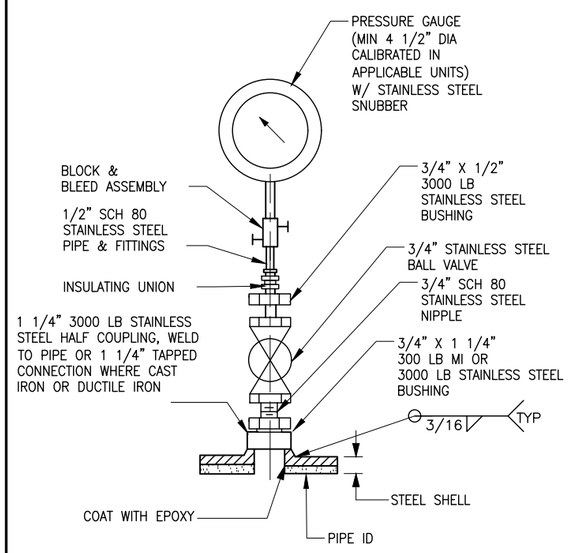
PLAN



SECTION

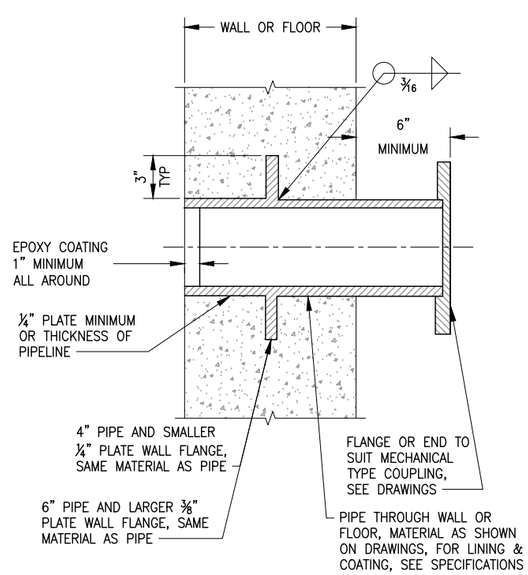
SUMP PUMP DETAILS M 3202

NTS



PRESSURE GAUGE M 3217

NTS



FABRICATED PIPE THIMBLE M 3302

NTS

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — 10859954 — LINDSAY K. MINCK — STATE OF UTAH — REGISTERED

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN — DESIGN L. MINCK — DRAWN J. BLACK

REVIEW — CHECKED C. NELSON — APPROVED J. LUETTINGER

GENERAL MECHANICAL DETAILS

GENERAL MECHANICAL DETAILS - 2

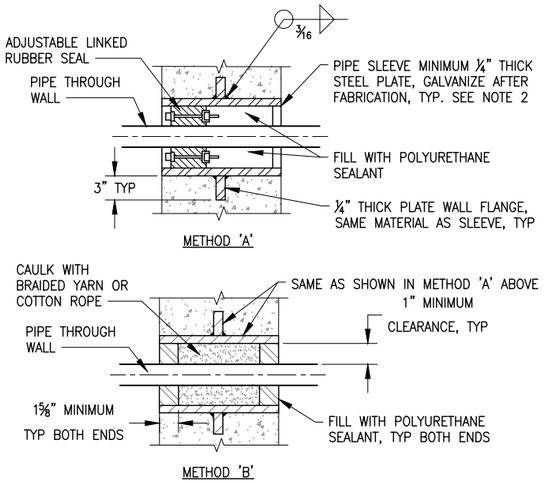
PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

DRAWING NO. GM-02

SHEET 83 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\GM-02.dwg Plotted: 1/14/2025 5:12 PM By: Jeremy Black



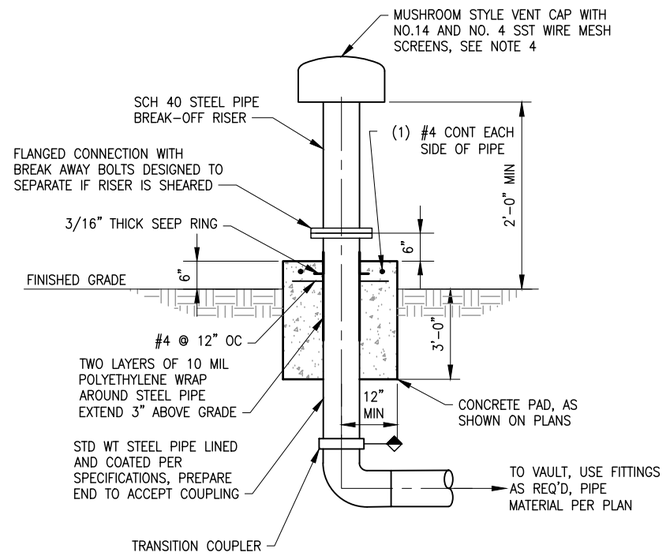
NOTES:

1. FOR WATER BEARING WALLS, USE METHOD 'A' WITH ADJUSTABLE LINKED RUBBER SEAL AT BOTH ENDS.
2. SLEEVES ARE NOT REQUIRED IN CORE DRILLED WALLS, PENETRATIONS THROUGH EXISTING WALLS, OR FLOORS

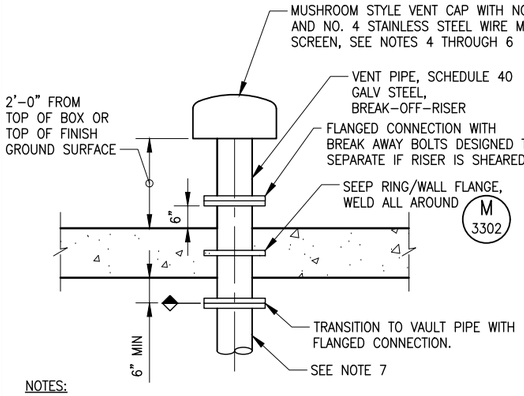
SLEEVED PIPE OPENING
NTS — M 3307

NOTES:

1. SIZE OF PIPING, SEE VAULT DETAILS AND AIR VALVE SCHEDULE.
2. WELD ALL STEEL FITTINGS.
3. ALL ABOVE GRADE STEEL PIPING SHALL BE HOT DIP GALVANIZED.
4. VENT CAP FOR PIPELINE AIR VALVES MUST MEET STATE DRINKING WATER STANDARDS. ENGINEER MAY REQUIRE SUBSTITUTION WITH STANDARD GOOSENECK STYLE VENT IF SUPPLIER DOES NOT MEET STATE REQUIREMENTS.
5. VENT PIPE MATERIAL AS SHOWN ON PLANS.
6. WHERE MULTIPLE VENT STACKS ARE ADJACENT TO EACH OTHER, LOCATE VENTS A MINIMUM OF 16" APART.



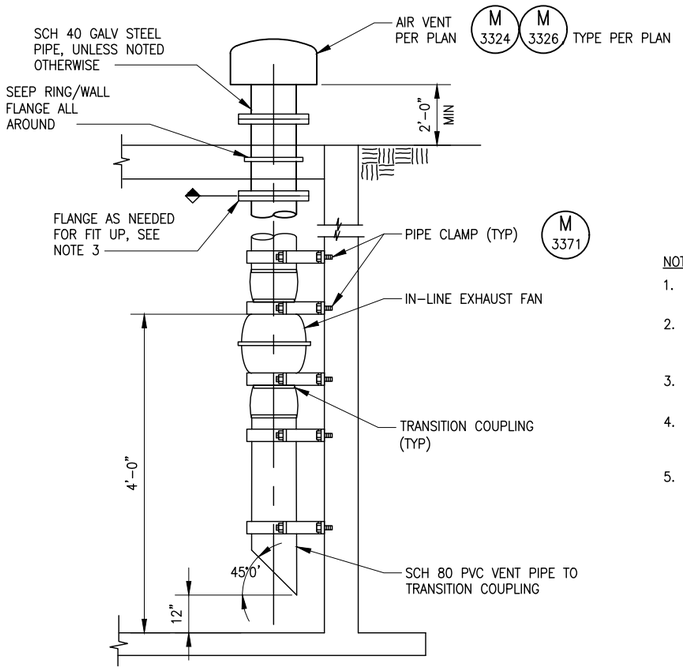
VENT STACK
NTS — M 3324



NOTES:

1. SIZE OF PIPING, SEE VAULT DETAILS, AND AIR VALVE SCHEDULE.
2. WELD ALL STEEL FITTINGS.
3. ALL ABOVE GRADE STEEL PIPING SHALL BE HOT DIP GALVANIZED.
4. VENT CAP FOR PIPELINE AIR VALVES MUST MEET STATE DRINKING WATER STANDARDS. ENGINEER MAY REQUIRE SUBSTITUTION WITH STANDARD GOOSENECK STYLE VENT IF SUPPLIER DOES NOT MEET STATE REQUIREMENTS.
5. AREA OF SPACE BETWEEN RISER AND MUSHROOM CAP MUST EXCEED AIR FLOW AREA OF RISER PIPE.
6. PROVIDE RUBBER GASKETS ABOVE AND BELOW SCREEN.
7. VENT PIPE MATERIAL AS SHOWN ON PLANS.

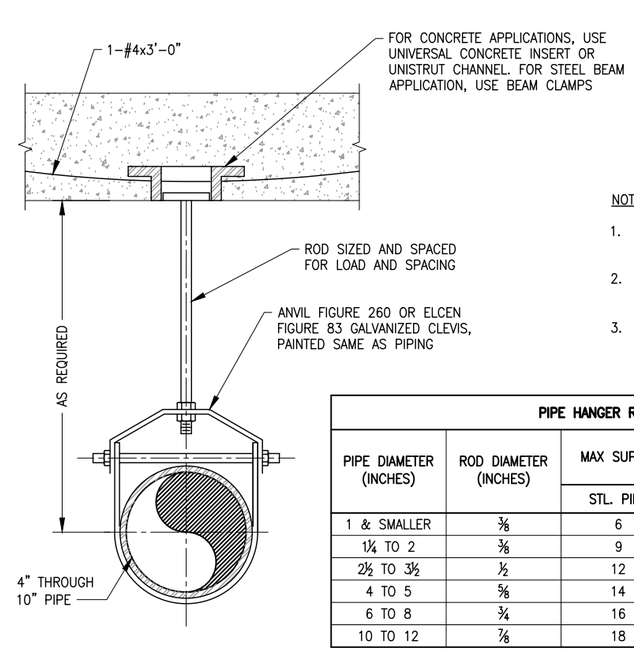
AIR VENT/VENT STACK DETAIL
NTS — M 3326



NOTES:

1. ALL ABOVE GROUND PIPING SHALL BE HOT DIP GALVANIZED.
2. VENT PIPING SHALL MATCH FAN DIAMETER PER PLAN (UNLESS OTHERWISE NOTED), SEE MECHANICAL DRAWINGS FOR ACTUAL SIZES.
3. PROVIDE FLANGED CONNECTIONS FOR VENTS LARGER THAN 6" OR LONGER THAN 10 FEET.
4. PROVIDE FLEXIBLE FERNCO CONNECTOR WITH SPACE FILLER AROUND FAN CUT FROM ANOTHER RUBBER CONNECTOR.
5. INSTALL PIPE CLAMPS ON EACH SIDE OF FAN AND AT BOTTOM OF PIPE INTAKE. INSTALL ADDITIONAL CLAMPS AS NEEDED TO SUPPORT PIPING.

EXHAUST VENT DETAIL
NTS — M 3329



NOTES:

1. FOR INSULATED PIPES. USE ANVIL FIG. 167 OR ELCEN FIGURE 219 INSULATION PROTECTION SHIELD.
2. TOTAL LOADING ON EACH CONCRETE INSERT OR OTHER TYPE HANGER ROD ANCHOR SHALL NOT EXCEED MFR'S RECOMMENDED LOADINGS.
3. PIPE SUPPORT AND HARDWARE SHALL BE STAINLESS STEEL.

PIPE HANGER RODS AND SUPPORT SPACING

PIPE DIAMETER (INCHES)	ROD DIAMETER (INCHES)	MAX SUPPORT SPACING (FEET)		WEIGHT LIMIT (POUNDS)	
		STL. PIPE	C.I. PIPE	TYPE 'A'	TYPE 'B'
1 & SMALLER	⅜	6	5	610	1700
1¼ TO 2	⅜	9	5	610	1700
2½ TO 3½	½	12	5	1130	3200
4 TO 5	⅝	14	5	1430	3800
6 TO 8	¾	16	5	1430	3800
10 TO 12	⅞	18	–	1430	3800

PIPE HANGER
NTS — M 3353

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — 10859954 — LINDSAY K. MINCK — STATE OF UTAH — REGISTERED

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

REVIEW — CHECKED C. NELSON — APPROVED J. LUETTINGER

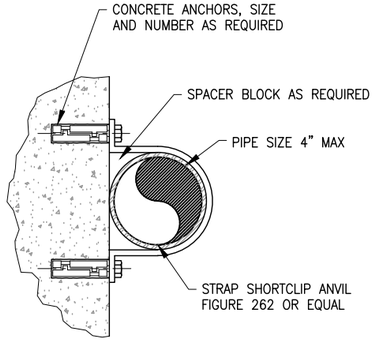
DESIGN — DESIGN L. MINCK — DRAWN J. BLACK

GENERAL MECHANICAL DETAILS

GENERAL MECHANICAL DETAILS - 3

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

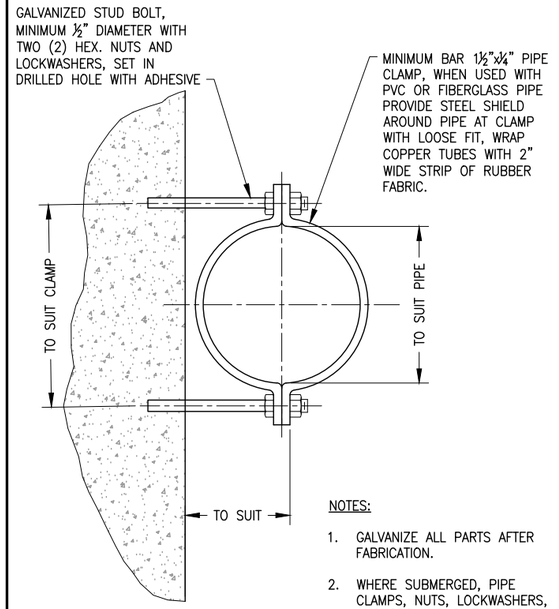
DRAWING NO. GM-03
SHEET 84 OF 100



NOTES:

1. ALL HARDWARE SHALL BE STAINLESS STEEL.

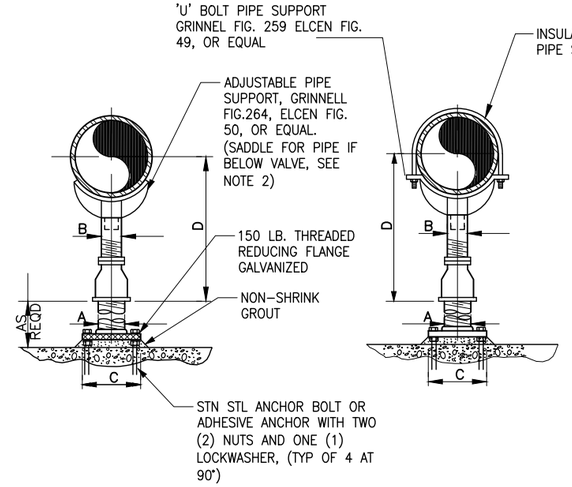
PIPE SUPPORT
NTS — M 3367



NOTES:

1. GALVANIZE ALL PARTS AFTER FABRICATION.
2. WHERE SUBMERGED, PIPE CLAMPS, NUTS, LOCKWASHERS, ANCHORS AND SHIELDS TO BE TYPE 316 STAINLESS STEEL.

PIPE CLAMP
NTS — M 3371

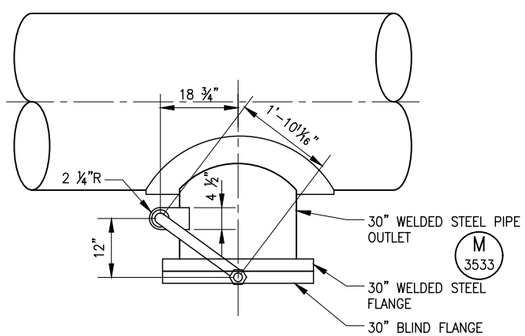


DIMENSION TABLE					
PIPE SIZE	A	B	C	D	
				MIN	MAX
2 ½"	2 ½"	1 ½"	9"	8"	11 ½"
3"	2 ½"	1 ½"	9"	8 ¼"	11 ¾"
3 ½"	2 ½"	1 ½"	9"	8 ½"	12"
4"	3"	2 ½"	9"	10 ¼"	14"
6"	3"	2 ½"	9"	11 ⅝"	15 ¼"
8"	3"	2 ½"	9"	13 ⅜"	16 ½"
10"	3"	2 ½"	9"	14 ⅝"	18 ¼"
12"	3"	2 ½"	9"	15 ⅝"	19 ¾"
14"	4"	3"	11"	18 ⅞"	20 ¾"
16"	4"	3"	11"	19 ⅞"	22 ¼"
18"	6"	3 ½"	13 ½"	21 ¼"	24"
20"	6"	3 ½"	13 ½"	23 ¼"	25 ½"
24"	6"	4"	13 ½"	26 ½"	28 ¼"
30"	6"	4"	13 ½"	29 ⅝"	31 ½"
32"	6"	4"	13 ½"	30 ⅝"	32 ¾"
36"	6"	4"	13 ½"	32 ⅜"	34 ¾"

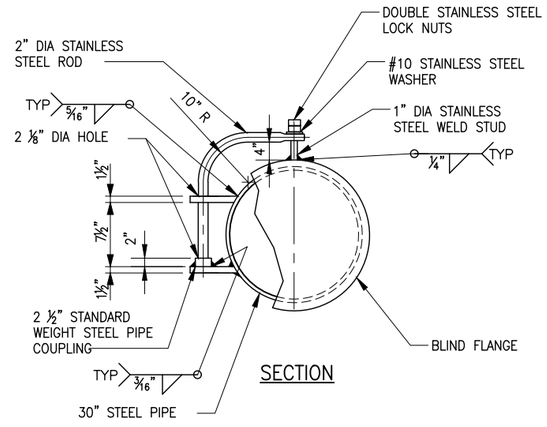
NOTES:

1. ENTIRE UNIT SHALL BE GALVANIZED AFTER FABRICATION.
2. WHERE PIPE SUPPORT IS SHOWN BELOW A VALVE, PROVIDE ADJUSTABLE PIPE SUPPORT WITH A FLAT TOP (8"X8"X1/2") PLATE.

ADJUSTABLE PIPE SUPPORT WITH OR WITHOUT U-BOLT
NTS — M 3389



PLAN

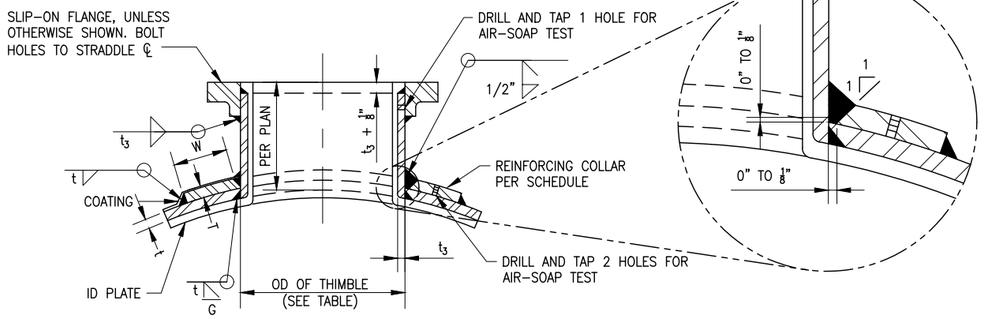


SECTION

NOTES:

1. EPOXY PAINT ALL NON-SST EXPOSED METAL WITH APPROPRIATE PIPE COATING SYSTEM PER SPECIFICATIONS.

30" DIA HINGED ACCESS MANWAY
NTS — M 3532



NOTES:

1. ALL PIPING AND FITTINGS ARE TO BE CEMENT MORTAR LINED AND COATED PER SPECIFICATIONS, UNO.
2. COLLAR THICKNESS AND WIDTH ARE MINIMUM TO BE PROVIDED.
3. OUTLET REINFORCEMENT TO BE THE GREATER OF WHAT IS SHOWN IN THIS DETAIL OR PER AWWA C-208 AND M-11 FOR WORKING AND TEST PRESSURE REQUIREMENTS.

OUTLET / RISER REINFORCING COLLAR DATA					
NORMAL SIZE	SCHEDULE PIPE	MINIMUM t3 WALL THICKNESS (IN)	O.D. THIMBLE (IN)	COLLAR DIMENSIONS	
				W (IN)	T (IN)
4	SCH 80	0.337	4 1/2	2 1/4	0.50
6	SCH 80*	0.375	6 5/8	3 5/16	0.50
8	SCH 60*	0.375	8 5/8	4 5/16	0.50
12	STD	0.375	12 3/4	6 3/8	0.50
16	STD	0.375	16	8	0.50
24	STD	0.375	24	12	0.50
30	STD	0.375	30	15	0.50

*MATCH SCHEDULE OR MINIMUM THICKNESS

OUTLET DETAIL
NTS — M 3533

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — 10859954 — LINDSAY K. MINCK — STATE OF UTAH — REGISTERED

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW — CHECKED C. NELSON — APPROVED J. LUETTINGER

DESIGN — DESIGN L. MINCK — DRAWN J. BLACK

GENERAL MECHANICAL DETAILS

GENERAL MECHANICAL DETAILS - 4

DATE: JANUARY 2025 — PROJECT NUMBER 010-23-02

DRAWING NO. GM-04

SHEET 85 OF 100

LEGEND

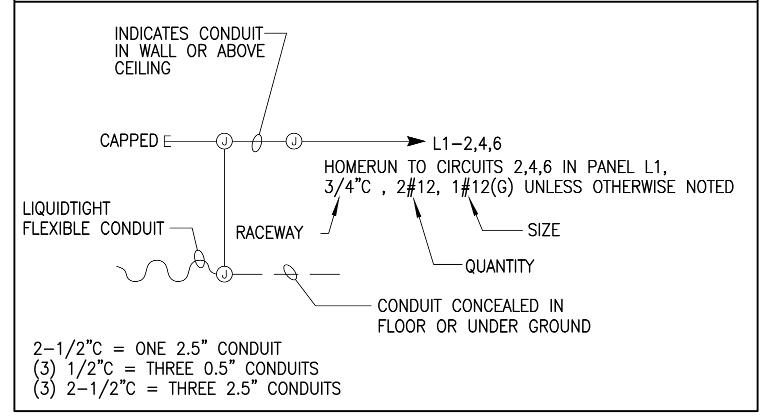
SYMBOL	LIGHTING
	RECESSED TROFFER
	WALL MOUNTED LINEAR FIXTURE
	SURFACE MOUNTED LINEAR FIXTURE
	SUSPENDED LINEAR FIXTURE
	SHADED FIXTURE INDICATES EMERGENCY BALLAST
	RECESSED DOWNLIGHT
	WALL MOUNTED FIXTURE
	POLE MOUNTED AREA LIGHT
	WALL MOUNT EXIT LIGHT (W/ DIRECTIONAL ARROWS)
	SURFACE MOUNTED DOWNLIGHT
	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-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
PP	POWER POLE
	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
	TRANSFORMER, DRY-TYPE
	TRANSFORMER, PAD MOUNTED

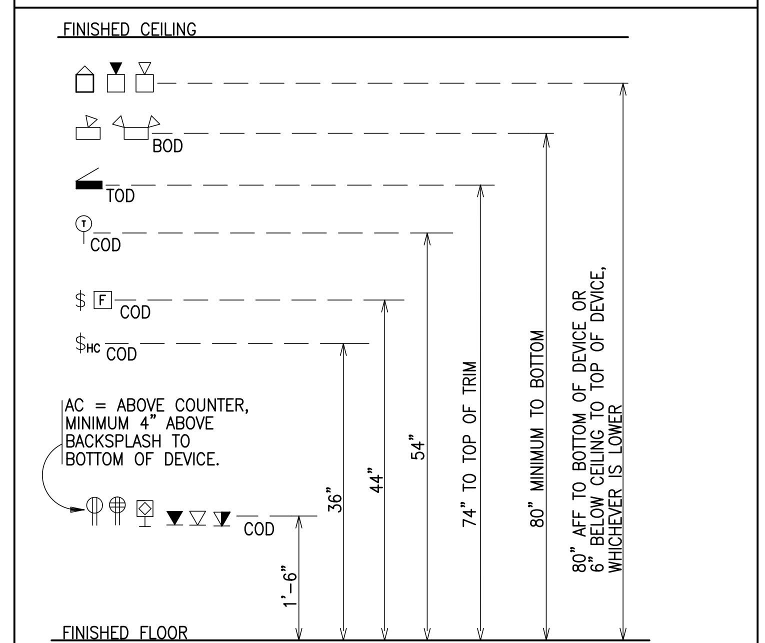
SYMBOL	GROUNDING
	GROUND ROD
	GROUND ROD WITH GROUND TEST WELL
	GROUND RISER FROM REBAR
	MECHANICALLY CRIMPED OR WELDED GROUND CONNECTIONS
	GROUND CABLE: EMBEDDED IN CONCRETE BURIED IN EARTH EXPOSED

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
	GENERATOR
	PORTABLE GENERATOR CONNECTION
	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



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
E	EXISTING
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. 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. (E 5011)
5. ALL PENETRATIONS OF FLOORS, WALLS AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL. (E 5012)
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. THE ELECTRICAL INSTALLATION SHALL COMPLY WITH THE CURRENT VERSION OF THE NEC, LOCAL, AND STATE CODES.

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER No. 8852860-2202 SHANE CURTIS CAVANAUGH STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

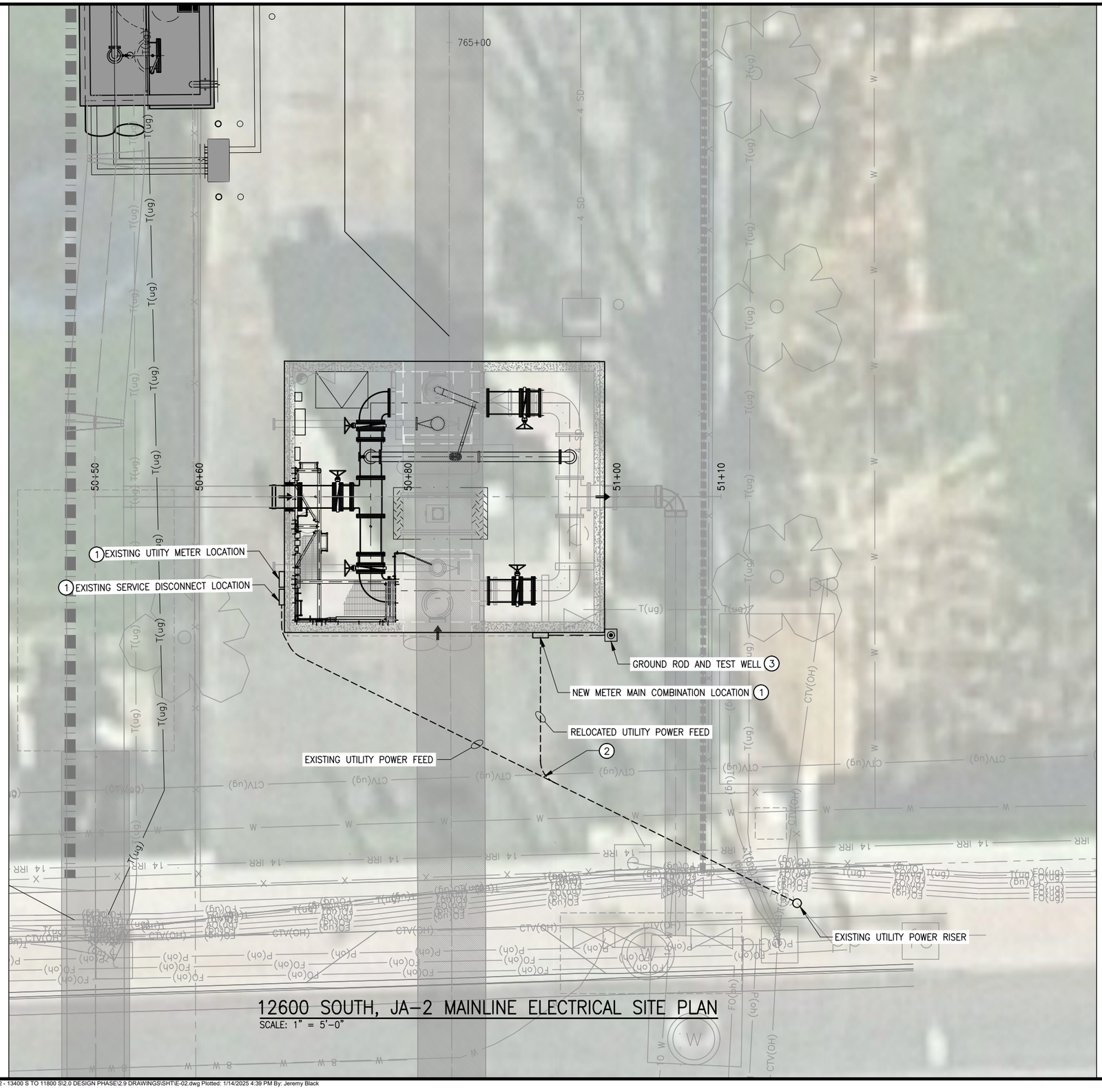
JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

DESIGN: DESIGN C. WASDEN; DRAWN C. WASDEN
REVIEW: CHECKED S. CAVANAUGH; APPROVED S. CAVANAUGH
VERIFY SCALE — BAR IS ONE INCH ON ORIGINAL DRAWING

ELECTRICAL
LEGENDS, SYMBOLS, AND NOTES

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO. E-01
SHEET 86 OF 100



12600 SOUTH, JA-2 MAINLINE ELECTRICAL SITE PLAN

SCALE: 1" = 5'-0"

N

2.5 0 5 10

SCALE IN FEET

GENERAL NOTES:

A. CONTRACTOR TO COORDINATE SERVICE CONDUIT AND TRENCHING WITH ROCKY MOUNTAIN POWER.

KEY NOTES: (#)

1. REMOVE AND DISPOSE OF EXISTING METER, EXISTING SERVICE DISCONNECT, AND EXISTING MOUNTING RACK. RELOCATE UTILITY POWER FEED TO NEW METER MAIN COMBINATION LOCATION. PRESERVE AND PROTECT ANY GROUND ELECTRODE CONDUCTORS FOR RECONNECTION. FURNISH AND INSTALL NEW UNISTRUT RACK FOR NEW METER MAIN COMBINATION MOUNTING.
2. APPROXIMATE LOCATION OF SERVICE CONDUIT INTERCEPT, SEE ONE-LINE DIAGRAM ON E-06.
3. FURNISH AND INSTALL GROUND ROD AND TEST WELL. SEE SHEET E-06 FOR MORE INFORMATION.

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER
No. 8852804-2202
SHANE CURTIS CAVANAUGH
STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

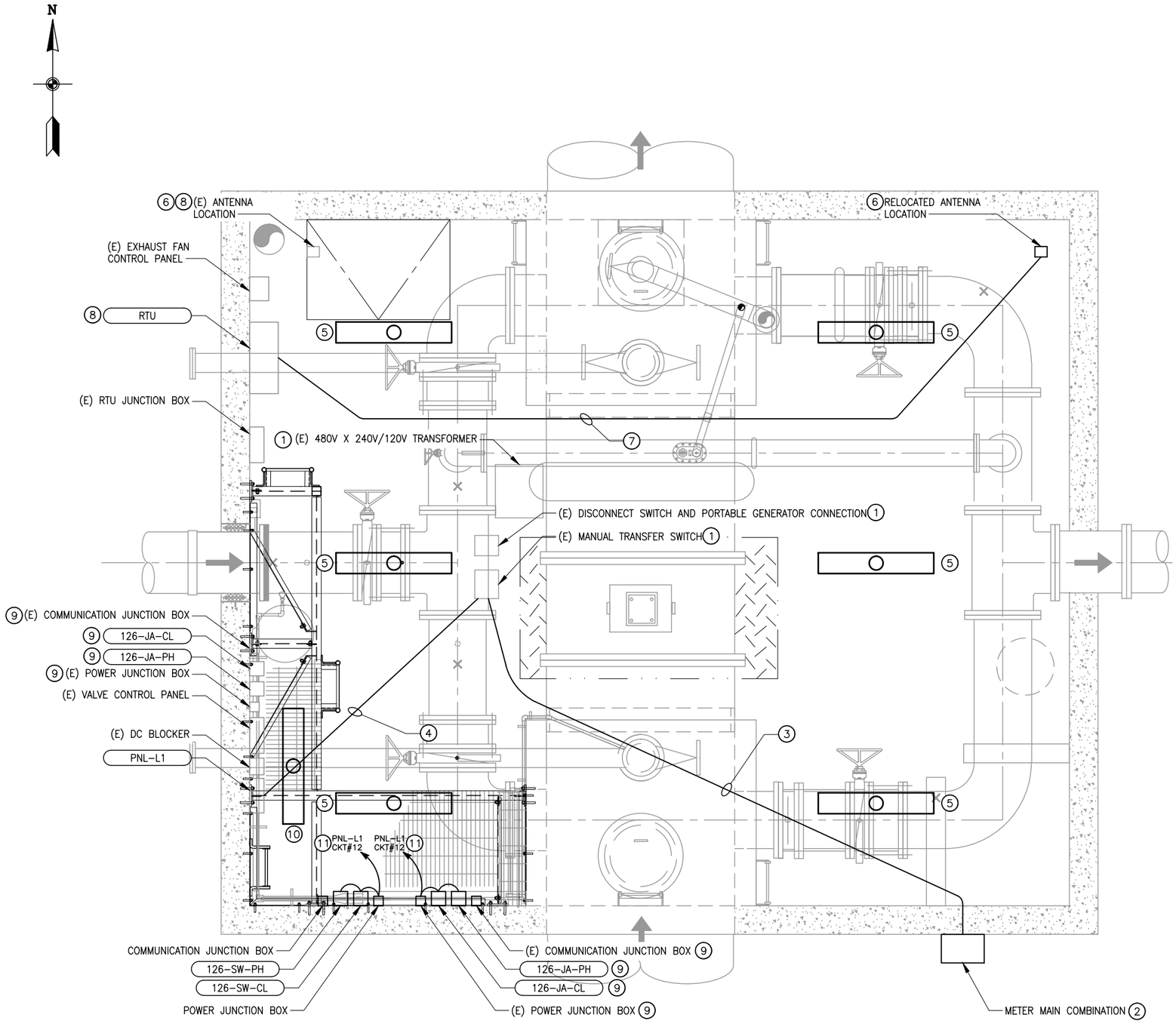
DESIGN C. WASDEN
DRAWN C. WASDEN
REVIEW
CHECKED S. CAVANAUGH
APPROVED S. CAVANAUGH

ELECTRICAL

12600 SOUTH, JA-2 MAINLINE, ELECTRICAL SITE PLAN

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
E-02
SHEET 87 OF 100



12600 SOUTH, JA-2 MAINLINE, VALVE VAULT ELECTRICAL PLAN

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

GENERAL NOTES:

A. SUPPORT ELECTRICAL CONDUITS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NO BE ALLOWED.

B. ALL EXPOSED CONDUIT, BOXES, AND FITTINGS IN THE VAULT SHALL BE GALVANIZED RIGID STEEL SUPPORTED ON ZINC COATED STRUT. SEALTITE (NOT TO EXCEED 24") MAY BE USED WHERE REQUIRED.

C. GROUT ALL CONDUIT PENETRATIONS THROUGH VAULT WALL AND CEILING. (E 5012)

D. REFER TO POWER ONE-LINE DIAGRAM AND CONTROL BLOCK DIAGRAM ON DRAWING E-06 FOR CONDUIT AND CONDUCTOR SIZES AND QUANTITIES.

E. ELEVATION VIEWS OF EXISTING AND NEW EQUIPMENT ARE SHOWN FOR THE WEST WALL ON SHEET E-04 AND FOR THE SOUTH WALL ON SHEET E-05.

KEY NOTES: (#)

1. EQUIPMENT LOCATED IN SHED ABOVE VAULT.
2. LOCATION OF NEW METER MAIN COMBINATION, SEE SITE PLAN ON E-02.
3. ROUTE NEW CONDUIT ALONG VAULT WALL UNDERGROUND AND CORE VAULT WALL AT CEILING USING A PVC COATED RIGID CONDUIT AND LB FITTING. ROUTE CONDUIT ALONG CEILING TO BELOW MANUAL TRANSFER SWITCH. CORE THROUGH CEILING AND ROUTE CONDUIT TO MANUAL TRANSFER SWITCH.
4. CORE THROUGH VAULT CEILING BELOW MANUAL TRANSFER SWITCH. ROUTE NEW CONDUIT ALONG CEILING TO WALL AND APPROXIMATELY 8' DOWN WALL AND CONNECT TO EXISTING GRS CONDUIT TO PANELBOARD.
5. EXISTING CEILING MOUNTED FIXTURE TO BE REMOVED AND REPLACED. REPLACE WITH SURFACE MOUNTED FIXTURE LITHONIA CSVT L48 5000LM MVOLT 40K 80CRI OR EQUAL. CONTRACTOR TO UTILIZE EXISTING WIRING.
6. RELOCATE EXISTING ANTENNA AND ANTENNA MAST. ANCHOR TO VAULT CONCRETE LID. PATCH AND REPAIR HOLE IN LID AT EXISTING ANTENNA LOCATION.
7. CORE THROUGH VAULT TO CEILING FOR NEW ANTENNA CONDUIT, ROUTE NEW 1" CONDUIT FROM EXISTING RTU TO NEW ANTENNA LOCATION. NO CONDUIT BODIES OR JUNCTION BOXES PERMITTED IN CONDUIT RUN FOR ANTENNA. NEW ANTENNA CABLING FURNISHED AND INSTALLED BY OWNER.
8. REMOVE AND DISPOSE OF EXISTING ANTENNA CONDUIT BETWEEN RTU AND EXISTING ANTENNA LOCATION.
9. RELOCATE EXISTING WATER QUALITY INSTRUMENTATION FROM VAULT WEST WALL TO LOCATION SHOWN ON SOUTH WALL. SEE CONTROL BLOCK DIAGRAM ON SHEET E-06 FOR ADDITIONAL INFORMATION REGARDING CONDUIT AND CONDUCTORS AND SHEET E-05 FOR ELEVATION VIEW.
10. FURNISH AND INSTALL NEW LIGHT FIXTURE MOUNTED UNDERNEATH METAL GRATING. FIXTURE SHALL BE LITHONIA CSVT L48 3000LM MVOLT 40K 80CRI OR EQUAL. FIXTURE SHALL BE CONNECTED TO EXISTING OVERHEAD LIGHTING CIRCUIT. FURNISH AND INSTALL 2#12 CONDUCTORS WITH 1#12G AND 3/4" GRS CONDUIT AS REQUIRED.
11. FURNISH AND INSTALL 2#12 CONDUCTORS WITH 1#12G IN 3/4" GRS CONDUIT BETWEEN PNL-L1 AND WATER QUALITY INSTRUMENTATION.

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER No. 8852804-2202 SHANE CURTIS CAVANAUGH STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S.CAVANAUGH
APPROVED S.CAVANAUGH

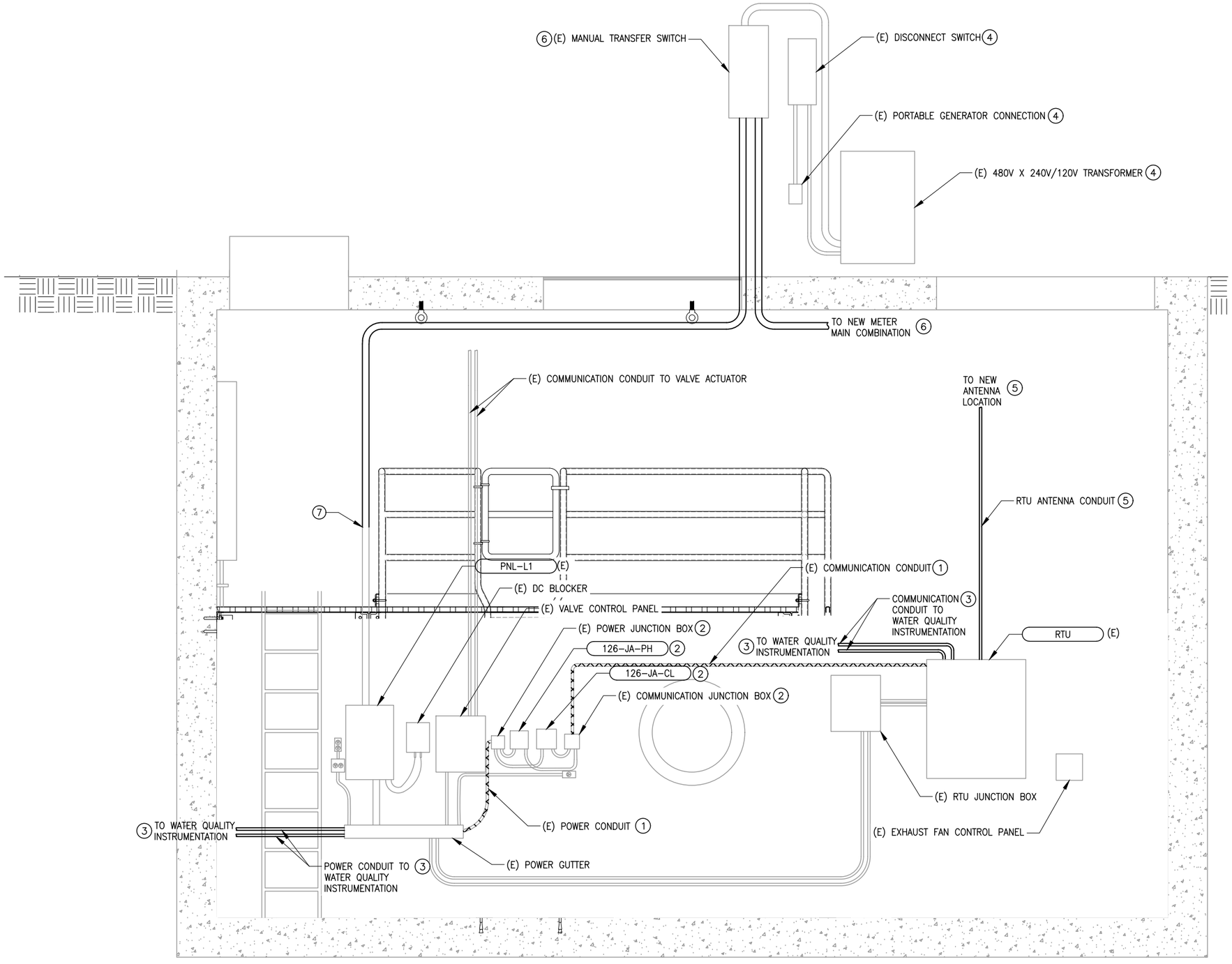
DESIGN
DESIGN C.WASDEN
DRAWN C.WASDEN

ELECTRICAL
12600 SOUTH, JA-2 MAINLINE, VALVE VAULT ELECTRICAL PLAN

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
E-03

SHEET 88 OF 100



GENERAL NOTES:

A. SUPPORT ELECTRICAL CONDUITS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NO BE ALLOWED.

B. ALL EXPOSED CONDUIT, BOXES, AND FITTINGS IN THE VAULT SHALL BE GALVANIZED RIGID STEEL SUPPORTED ON ZINC COATED STRUT OR BACKSTRAP CLAMPS. SEALTITE (NOT TO EXCEED 24") MAY BE USED WHERE REQUIRED.

C. REFER TO POWER ONE-LINE DIAGRAM AND CONTROL BLOCK DIAGRAM ON DRAWING E-06 FOR CONDUIT AND CONDUCTOR SIZES AND QUANTITIES.

KEY NOTES: (#)

1. DEMOLISH AND DISPOSE OF EXISTING POWER CONDUIT AND CONDUCTORS FEEDING EXISTING POWER JUNCTION BOX AS WELL AS CONDUIT AND CONDUCTORS BETWEEN EXISTING COMMUNICATION JUNCTION BOX AND RTU. PATCH HOLES IN RTU AND GUTTER.
2. RELOCATE EXISTING POWER JUNCTION BOX, PH ANALYZER, CHLORINE ANALYZER, AND COMMUNICATIONS JUNCTION BOX TO LOCATION SHOWN ON SHEET E-03.
3. CONDUIT AND CONDUCTORS TO NEW AND RELOCATED WATER QUALITY INSTRUMENTATION. SEE SHEETS E-03 AND E-05 FOR EQUIPMENT LOCATION. INSTRUMENTATION INFORMATION, AND CONDUIT AND CONDUCTOR INFORMATION CAN BE FOUND ON THE MECHANICAL SHEETS AND ON SHEET E-06.
4. TRANSFORMER, MANUAL TRANSFER SWITCH, DISCONNECT, AND PORTABLE GENERATOR CONNECTION ARE LOCATED IN SHED ABOVE VAULT. SEE POWER ONE-LINE DIAGRAM ON SHEET E-06 FOR MORE INFORMATION.
5. SEE SHEET E-03 FOR INFORMATION REGARDING NEW AND EXISTING RTU ANTENNA AND CONDUIT.
6. FOR NEW METER MAIN LOCATION, AS WELL AS CONDUIT AND CONDUCTOR INFORMATION, SEE SHEETS E-02, E-03, AND E-06.
7. INTERCEPT EXISTING CONDUIT.

12600 SOUTH, JA-2 MAINLINE, VALVE VAULT WEST WALL ELEVATION

SCALE: 3/4" = 1'-0"

LEGEND

DEMOLISH

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER
No. 8852804-2202
SHANE CURTIS CAVANAUGH
STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN C. WASDEN
DRAWN C. WASDEN
CHECKED S. CAVANAUGH
APPROVED S. CAVANAUGH
REVIEW

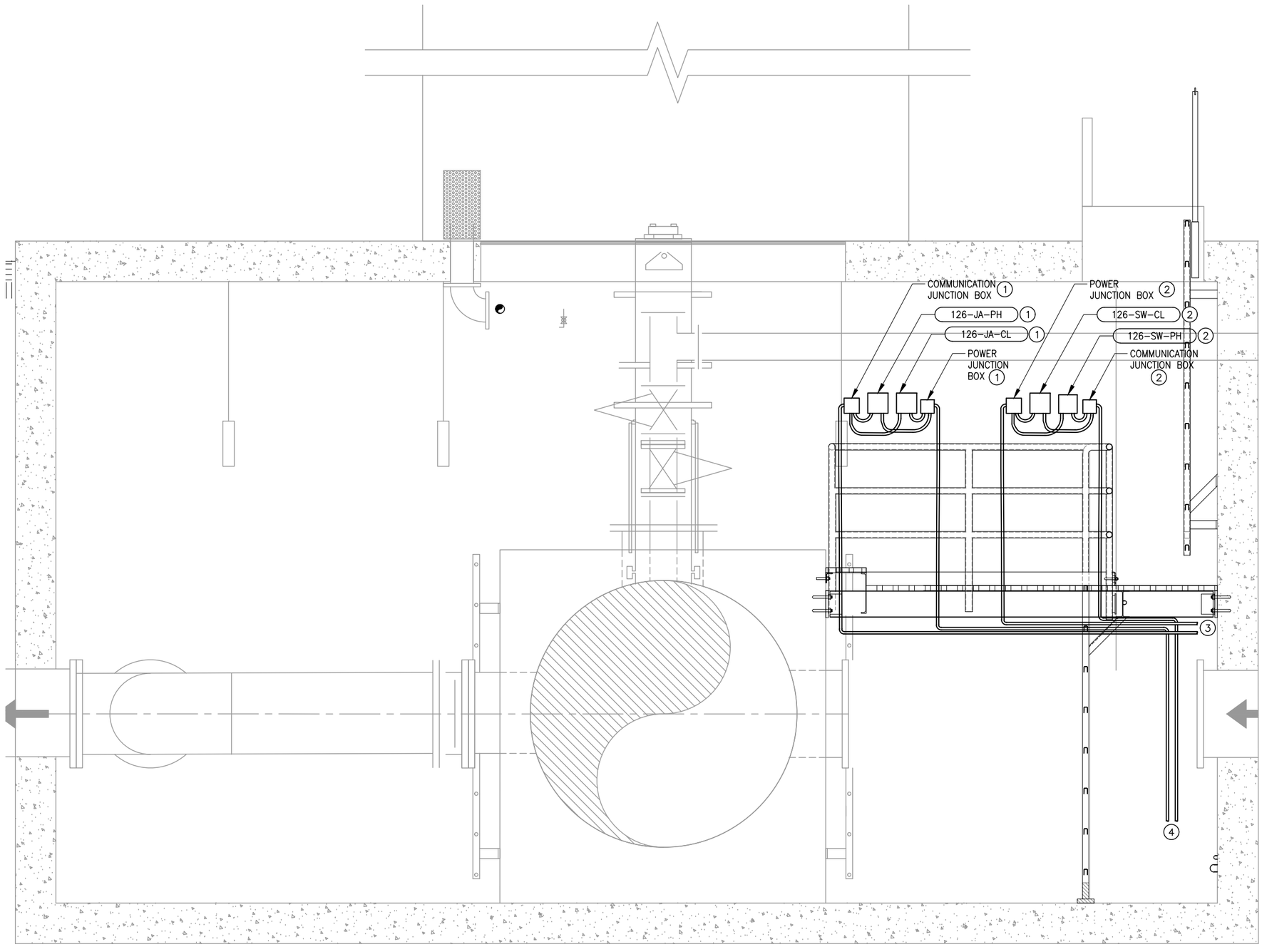
ELECTRICAL

12600 SOUTH, JA-2 MAINLINE, VALVE VAULT WEST WALL ELEVATION

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
E-04

SHEET 89 OF 100



GENERAL NOTES:

A. SUPPORT ELECTRICAL CONDUITS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NO BE ALLOWED.

B. ALL EXPOSED CONDUIT, BOXES, AND FITTINGS IN THE VAULT SHALL BE GALVANIZED RIGID STEEL SUPPORTED ON ZINC COATED STRUT OR BACKSTRAP CLAMPS. SEALTITE (NOT TO EXCEED 24") MAY BE USED WHERE REQUIRED.

C. REFER TO POWER ONE-LINE DIAGRAM AND CONTROL BLOCK DIAGRAM ON DRAWING E-06 FOR CONDUIT AND CONDUCTOR SIZES AND QUANTITIES.

KEY NOTES: (#)

1. RELOCATED WATER QUALITY INSTRUMENTATION. SEE MECHANICAL SHEETS AND CONTROL ONE-LINE DIAGRAM ON SHEET E-06 FOR ADDITIONAL INFORMATION REGARDING COMPONENTS AND CONDUIT AND CONDUCTOR INFORMATION. SEE ELECTRICAL PLAN ON E-03 AND WEST WALL ELEVATION ON E-04 FOR LOCATION INFORMATION.
2. NEW WATER QUALITY INSTRUMENTATION. SEE MECHANICAL SHEETS AND CONTROL BLOCK DIAGRAM ON SHEET E-06 FOR ADDITIONAL INFORMATION REGARDING COMPONENTS AND CONDUIT AND CONDUCTOR INFORMATION. SEE ELECTRICAL PLAN ON E-03 FOR ADDITIONAL LOCATION INFORMATION.
3. INSTRUMENTATION CONDUIT TO RTU. SEE DRAWING E-04.
4. POWER CONDUIT TO PNL-L1. SEE DRAWING E-04.

12600 SOUTH, JA-2 MAINLINE, VALVE VAULT SOUTH WALL ELEVATION

SCALE: 3/4" = 1'-0"

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER No. 8852860-2202 SHANE CURTIS CAVANAUGH STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN C. WASDEN
DRAWN C. WASDEN

REVIEW
CHECKED S. CAVANAUGH
APPROVED S. CAVANAUGH

ELECTRICAL

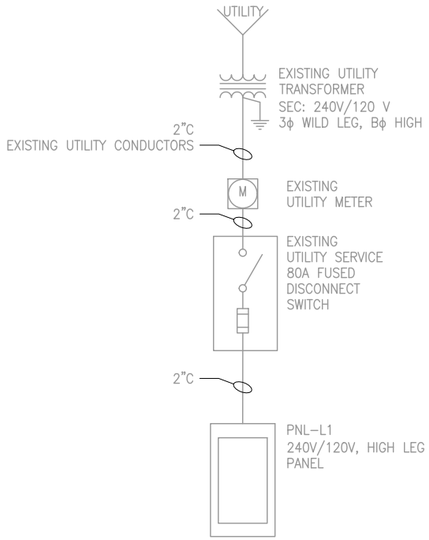
12600 SOUTH, JA-2MAINLINE, VALVE VAULT SOUTH WALL ELEVATION

DATE: JANUARY 2025

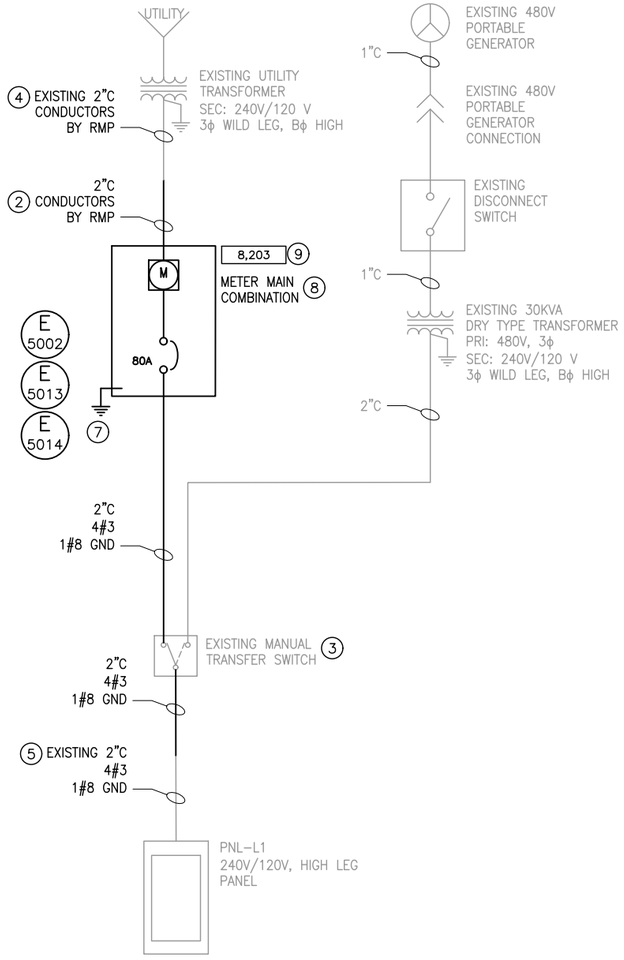
PROJECT NUMBER 010-23-02

DRAWING NO. E-05

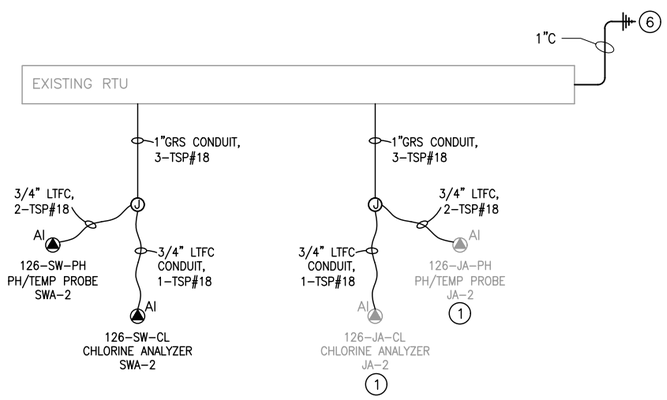
SHEET 90 OF 100



EXISTING POWER ONE–LINE DIAGRAM



NEW POWER ONE–LINE DIAGRAM



CONTROL ONE–LINE DIAGRAM

GENERAL NOTES:

A. CONTRACTOR SHALL PROVIDE AND INSTALL ALL JUNCTION BOXES, CONDUIT, AND CONDUCTORS FOR NEW EQUIPMENT (DARK). LIGHT COLORED EQUIPMENT IS EXISTING EQUIPMENT IN THE VAULT. CONTRACTOR SHALL LABEL ENDS OF ALL CONDUCTORS AND CABLING AND TERMINATE THE CONDUCTORS AT THE INSTRUMENTS AND EQUIPMENT. THE OWNER SHALL TERMINATE ALL CONDUCTORS AND CABLES IN THE RTU. OWNER WILL PROVIDE ANY REQUIRED RTU HARDWARE, PROGRAMMING, AND INTEGRATION.

B. NEW ELECTRIC WORK SHALL MATCH PHASE ROTATION AND HIGH LEG LOCATION AT EXISTING PANEL.

SHEET NOTES: (#)

1. EXISTING WATER QUALITY INSTRUMENTATION BEING RELOCATED. SEE ELECTRICAL PLAN ON SHEET E–03 FOR OLD AND NEW LOCATIONS. FURNISH AND INSTALL NEW CONDUIT AND CONDUCTOR BETWEEN RELOCATED DEVICE AND PLC.
2. CONTRACTOR TO LOCATE EXISTING UNDERGROUND SERVICE CONDUIT AND INTERCEPT FOR CONNECTION TO NEW METER LOCATION. EXTEND CONDUIT AS REQUIRED. DEMOLISH AND DISPOSE OF EXISTING CONDUIT BETWEEN INTERCEPT LOCATION AND OLD METER LOCATION. ROCKY MOUNTAIN POWER TO PROVIDE NEW CONDUCTORS FROM UTILITY TRANSFORMER TO METER. SEE SITE PLAN ON E–02 FOR APPROXIMATE ROUTING.
3. OWNER WILL CONNECT EXISTING PORTABLE GENERATOR TO CHECK GENERATOR WIRING PHASE ROTATION. MAKE ANY CORRECTIONS TO TERMINATIONS AS REQUIRED.
4. EXISTING SERVICE CONDUIT TO BE INTERCEPTED, SEE SHEET E–02.
5. INTERCEPT EXISTING CONDUIT, SEE SHEETS E–03 AND E–04.
6. RELOCATE ANTENNA AND MAST, SEE SHEET E–03.
7. CONTRACTOR TO PRESERVE AND PROTECT ANY GROUND ELECTRODE CONDUCTOR PRESENT AT VAULT. CONNECT NEW SERVICE TO EXISTING GROUND CONDUCTOR ELECTRODE. FURNISH AND INSTALL (1) 8–FOOT LONG, 3/4" DIA. COPPER CLAD STEEL GROUND ROD AND CONNECT WITH #8 BARE COPPER GROUND CABLE.
8. FURNISH AND INSTALL METER MAIN COMBINATION IN ACCORDANCE WITH ROCKY MOUNTAIN POWER REQUIREMENTS. FURNISH AND INSTALL 80A SERVICE ENTRANCE RATED MAIN CIRCUIT BREAKER.
9. APPROXIMATE AVAILABLE FAULT CURRENT. CONTRACTOR IS RESPONSIBLE TO PERFORM AVAILABLE FAULT CURRENT STUDY AND LABEL ENCLOSURE IN ACCORDANCE WITH NEC 110.24 (A). CONTRACTOR SHALL ALSO LABEL ENCLOSURE WITH IDENTIFICATION OF HIGH LEG IN ACCORDANCE WITH NEC 110.15.

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — LICENSED — No. 8852804-2202 — SHANE CURTIS CAVANAUGH — STATE OF UTAH

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN C. WASDEN
DRAWN C. WASDEN
CHECKED S. CAVANAUGH
APPROVED S. CAVANAUGH
REVIEW

ELECTRICAL

12600 SOUTH, JA-2 MAINLINE, VALVE VAULT ONE-LINE DIAGRAMS

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
E-06
SHEET 91 OF 100

GENERAL NOTES:

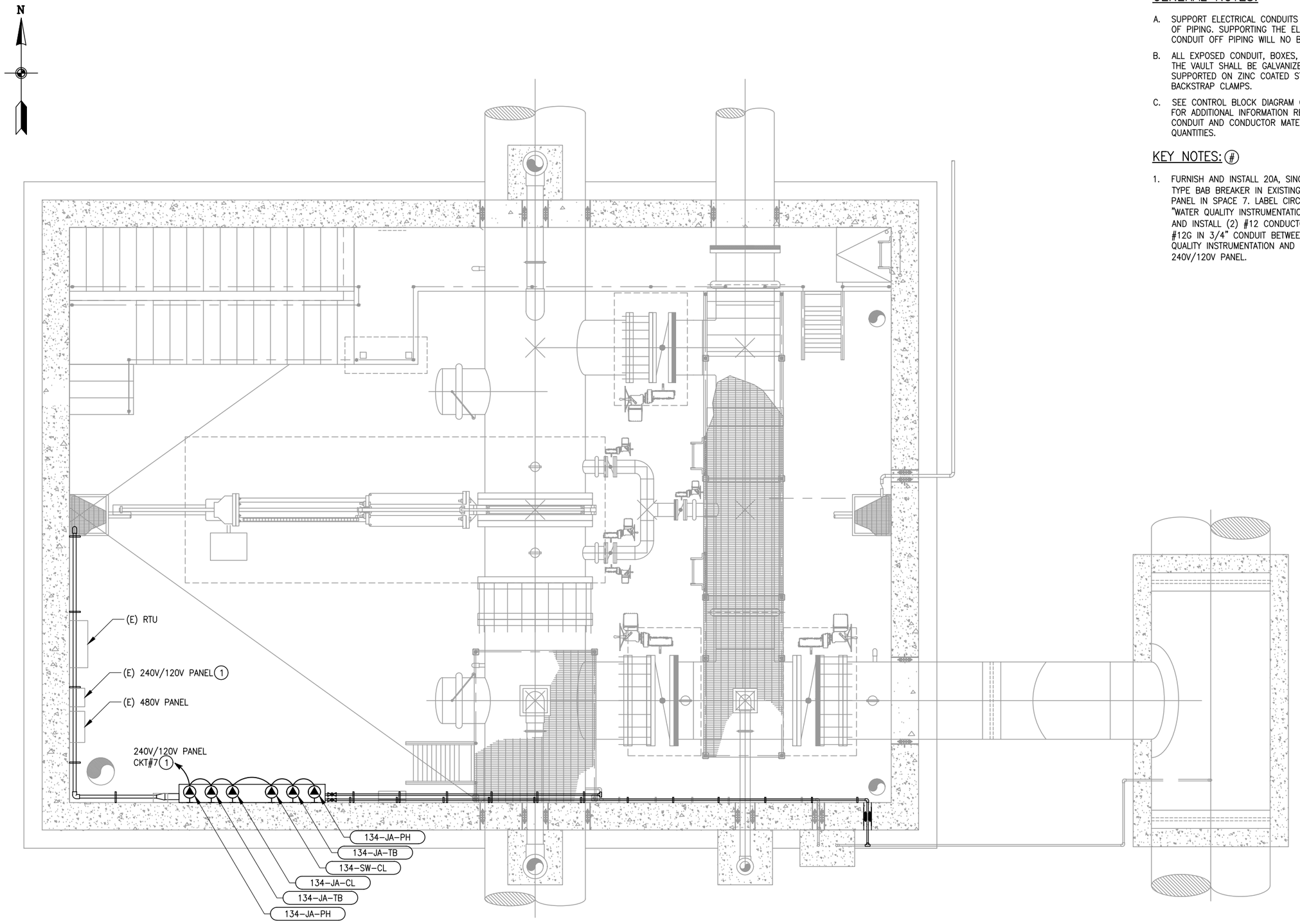
A. SUPPORT ELECTRICAL CONDUITS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NO BE ALLOWED.

B. ALL EXPOSED CONDUIT, BOXES, AND FITTINGS IN THE VAULT SHALL BE GALVANIZED RIGID STEEL SUPPORTED ON ZINC COATED STRUT OR BACKSTRAP CLAMPS.

C. SEE CONTROL BLOCK DIAGRAM ON SHEET E-08 FOR ADDITIONAL INFORMATION REGARDING CONDUIT AND CONDUCTOR MATERIAL, SIZES, AND QUANTITIES.

KEY NOTES: (#)

1. FURNISH AND INSTALL 20A, SINGLE POLE EATON TYPE BAB BREAKER IN EXISTING 240V/120V PANEL IN SPACE 7. LABEL CIRCUIT BREAKER "WATER QUALITY INSTRUMENTATION". FURNISH AND INSTALL (2) #12 CONDUCTORS WITH (1) #12G IN 3/4" CONDUIT BETWEEN WATER QUALITY INSTRUMENTATION AND EXISTING 240V/120V PANEL.



13400 SOUTH, JA-2 MAINLINE, VALVE VAULT ELECTRICAL PLAN

SCALE: 3/8" = 1'-0"

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER No. 8852860-2202 SHANE CURTIS CAVANAUGH STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN C. WASDEN
DRAWN C. WASDEN
CHECKED S. CAVANAUGH
APPROVED S. CAVANAUGH
REVIEW

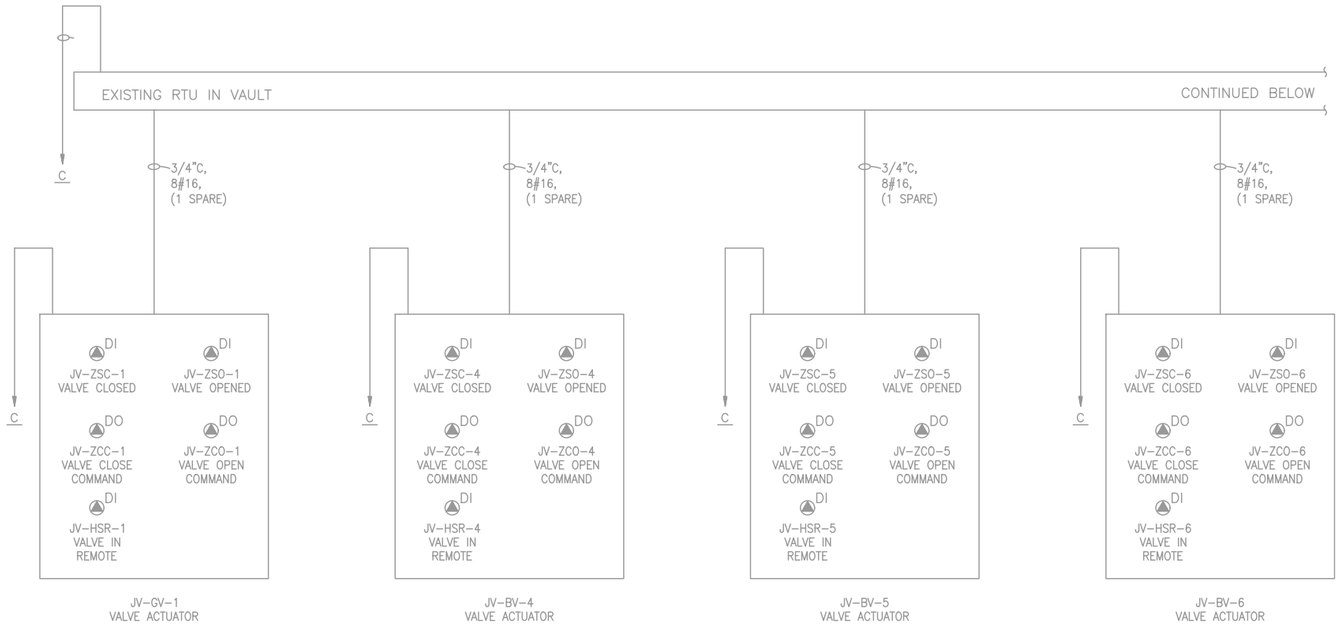
ELECTRICAL

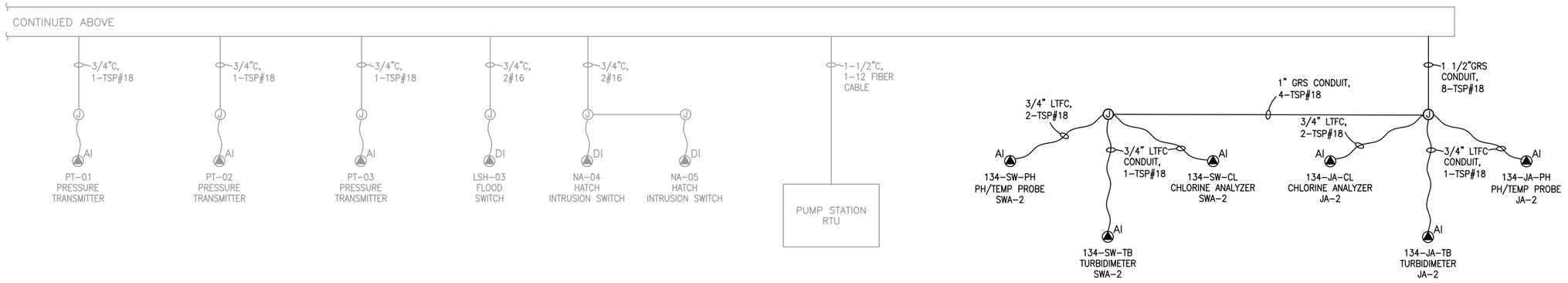
13400 SOUTH, JA-2 MAINLINE, VALVE VAULT ELECTRICAL PLAN

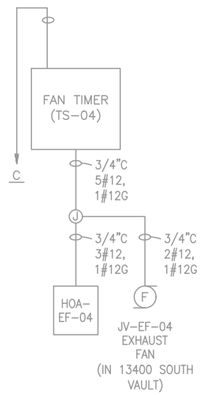
DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO. E-07

SHEET 92 OF 100







CONTROL ONE-LINE DIAGRAM

GENERAL NOTES:

A. CONTRACTOR SHALL PROVIDE AND INSTALL ALL JUNCTION BOXES, CONDUIT, AND CONDUCTORS FOR NEW EQUIPMENT (DARK). LIGHT COLORED EQUIPMENT IS EXISTING EQUIPMENT IN THE VAULT. CONTRACTOR SHALL LABEL ENDS OF ALL CONDUCTORS AND CABLING AND TERMINATE THE CONDUCTORS AT THE INSTRUMENTS AND EQUIPMENT. THE OWNER SHALL TERMINATE ALL CONDUCTORS AND CABLES IN THE RTU. OWNER WILL PROVIDE ANY REQUIRED RTU HARDWARE, PROGRAMMING, AND INTEGRATION.

B. SEE ELECTRICAL PLAN ON SHEET E-07 FOR EQUIPMENT LOCATIONS.

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER No. 8852860-2202 SHANE CURTIS CAVANAUGH STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

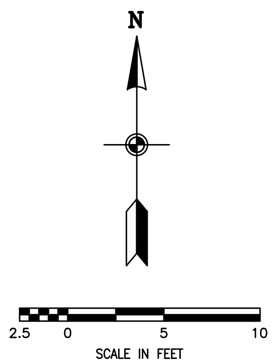
JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

DESIGN C. WASDEN
DRAWN C. WASDEN
REVIEW
CHECKED S. CAVANAUGH
APPROVED S. CAVANAUGH

ELECTRICAL
13400 SOUTH, JA-2 MAINLINE, VALVE VAULT ONE-LINE DIAGRAMS

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. E-08
SHEET 93 OF 100



11400 SOUTH JA–2 VAULT MODIFICATIONS ELECTRICAL SITE PLAN

SCALE: 1" = 5'–0"

GENERAL NOTES:

A. SEE VAULT ELECTRICAL PLAN ON SHEET E–10 AND LIGHTING PLAN ON SHEET E–11 FOR INFORMATION REGARDING EQUIPMENT IN THE VAULT.

B. SEE POWER AND CONTROL ONE–LINE DIAGRAMS ON SHEET E–12 FOR CONDUIT AND CONDUCTOR QUANTITY AND SIZES.

C. LIGHT LINEWORK INDICATES EXISTING EQUIPMENT. DARK LINEWORK INDICATES NEW EQUIPMENT, CONDUIT, AND CONDUCTORS TO BE INSTALLED BY CONTRACTOR.

KEY NOTES:

1. REPLACE EXISTING POWER PEDESTAL. SEE SHEET E–12 FOR ADDITIONAL INFORMATION.
2. PRESERVE AND PROTECT EXISTING BRANCH CIRCUIT CONDUIT AND CONDUCTORS. CONTRACTOR SHALL RELOCATE EXISTING CONDUITS AS REQUIRED SHOULD NEW CONSTRUCTION CONFLICT WITH EXISTING CONDUIT LOCATION.
3. COMMUNICATION CONDUIT BETWEEN COMMUNICATION JUNCTION BOX AND EXISTING JORDAN VALLEY PLC CABINET. SEE DRAWING E–12 FOR ADDITIONAL INFORMATION.
4. POWER CONDUITS TO POWER JUNCTION BOX. SEE DRAWINGS E–10 AND E–12 FOR ADDITIONAL INFORMATION.
5. FURNISH AND INSTALL GROUND ROD AND TEST WELL. SEE SHEET E–12 FOR MORE INFORMATION.
6. FURNISH AND INSTALL #8 AWG BARE COPPER GROUND BETWEEN GROUND RISER FROM REBAR AND GROUND ROD.

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER No. 8852860-2202 SHANE CURTIS CAVANAUGH STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

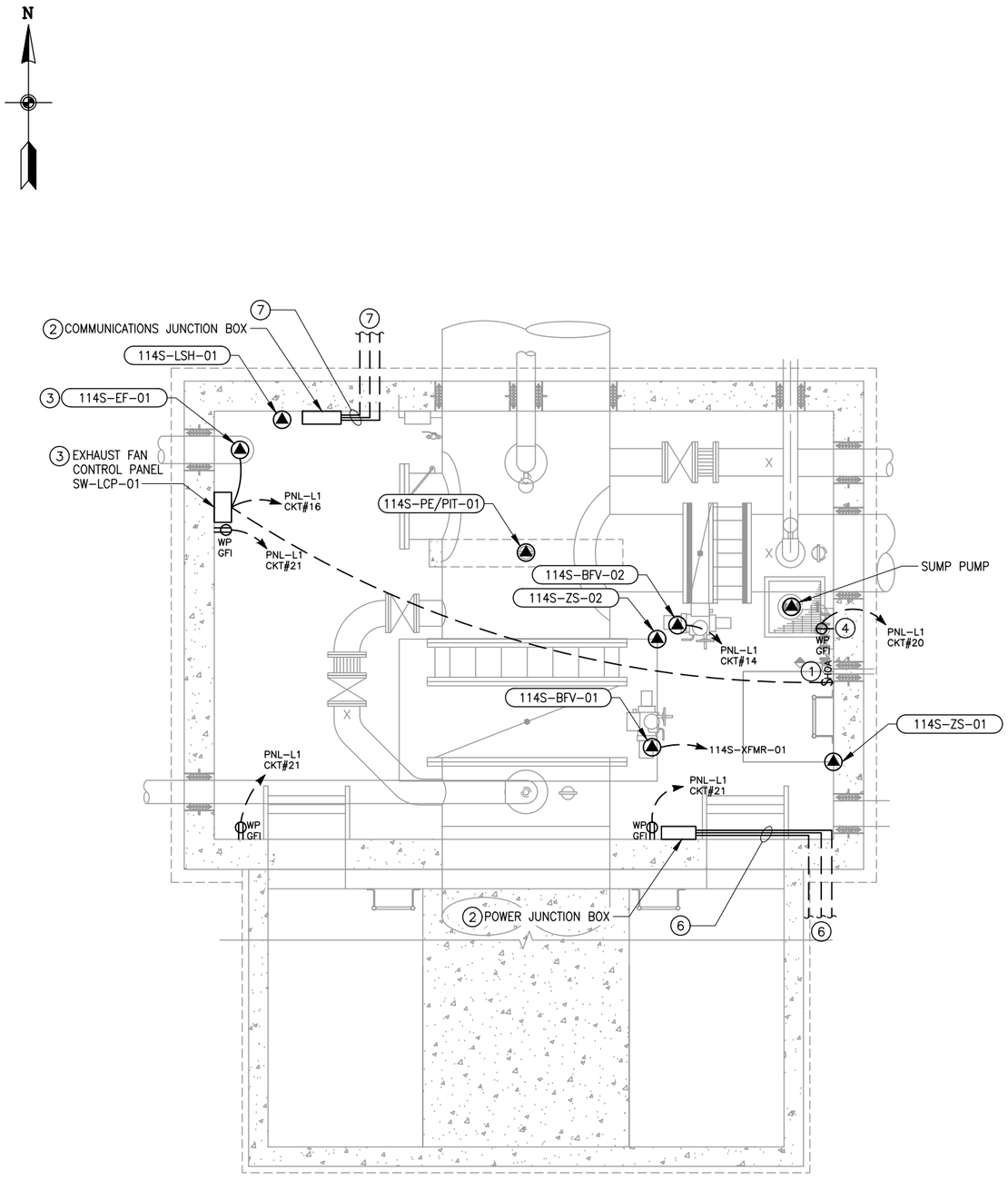
JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

DESIGN: DESIGN C. WASDEN; DRAWN C. WASDEN
REVIEW: CHECKED S. CAVANAUGH; APPROVED S. CAVANAUGH

ELECTRICAL
11400 SOUTH JA-2 VAULT MODIFICATIONS ELECTRICAL SITE PLAN

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO. E-09
SHEET 94 OF 100



11400 SOUTH VAULT ADDITION ELECTRICAL PLAN

SCALE: 3/8" = 1'-0"

GENERAL NOTES:

A. SUPPORT ELECTRICAL CONDUITS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NO BE ALLOWED.

B. ALL EXPOSED CONDUIT, BOXES, AND FITTINGS IN THE VAULT SHALL BE GALVANIZED RIGID STEEL SUPPORTED ON ZINC COATED STRUT. SEALTITE (NOT TO EXCEED 24") MAY BE USED WHERE REQUIRED. CONDUIT EMBEDDED IN CONCRETE SHALL BE PVC CONDUIT, TRANSITIONS FROM EMBEDDED CONDUIT TO EXPOSED CONDUIT SHALL BE MADE WITH PVC COATED GALVANIZED RIGID STEEL CONDUIT.

C. GROUT ALL CONDUIT PENETRATIONS THROUGH VAULT WALL AND CEILING. (E 5012)

D. CONCEAL CONDUIT IN WALLS AND FLOOR TO EXTENT POSSIBLE. NO HORIZONTAL RUNS OF EXPOSED CONDUIT ALLOWED.

E. ALL RECEPTACLES IN VAULT SHALL BE WEATHERPROOF, GFCI, AND MOUNTED AT 48" ABOVE FINISHED FLOOR.

F. CONDUIT BODIES AND BOXES FOR WIRING DEVICES SHALL BE CAST MALLEABLE IRON. BOXES ARE TYPE FS OR FD.

G. REFER TO POWER ONE-LINE DIAGRAM AND CONTROL BLOCK DIAGRAM ON DRAWING E-12 FOR CONDUIT AND CONDUCTOR SIZES.

KEY NOTES:(#)

1. EXHAUST FAN HOA SWITCH. MOUNT JUST BELOW VAULT ACCESS HATCH SO THAT FAN CAN BE TURNED ON BEFORE ENTERING VAULT. SEE DETAIL (E 5008).
2. COMMUNICATION JUNCTION BOX. SEE CONTROL ONE-LINE DIAGRAM ON SHEET E-12 FOR MORE INFORMATION. MOUNT PER DETAIL (E 5001). CONDUIT PENETRATIONS PER DETAIL (E 5009).
3. EXHAUST FAN. REFER TO PANEL SCHEDULE AND CONTROL ONE-LINE DIAGRAM ON SHEET E-12 AND EQUIPMENT SCHEDULE ON SHEET M-03 FOR MORE INFORMATION.
4. SUMP PUMP RECEPTACLE SHALL BE A WEATHERPROOF, GFCI, SIMPLEX RECEPTACLE MOUNTED AT 48" ABOVE FINISHED FLOOR.
5. POWER JUNCTION BOX. SEE POWER ONE-LINE DIAGRAM ON SHEET E-12 FOR MORE INFORMATION. MOUNT PER DETAIL (E 5001). CONDUIT PENETRATIONS PER DETAIL (E 5009).
6. POWER CONDUIT BETWEEN POWER JUNCTION BOX AND OUTSIDE EQUIPMENT. ROUTE EXPOSED CONDUIT UNDERNEATH STAIRS. SEE SHEET E-12 FOR CONDUIT SIZES AND QUANTITIES. SEE SHEET E-09 FOR CONTINUATION OF CONDUIT ROUTING. INSTALL PER DETAIL (E 5009).
7. COMMUNICATION CONDUIT BETWEEN COMMUNICATION JUNCTION BOX AND RTU. SEE SHEET E-12 FOR CONDUIT SIZES AND QUANTITIES. SEE SHEET E-09 FOR CONTINUATION OF CONDUIT ROUTING. INSTALL PER DETAIL (E 5009).

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER No. 8852804-2202 SHANE CURTIS CAVANAUGH STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION
			REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT
RIVERTON AND SOUTH JORDAN, UT

SOUTHWEST AQUEDUCT REACH 2

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN C. WASDEN
DRAWN C. WASDEN
REVIEW
CHECKED S. CAVANAUGH
APPROVED S. CAVANAUGH

ELECTRICAL

11400 SOUTH JA-2 VAULT MODIFICATIONS ELECTRICAL PLAN

PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

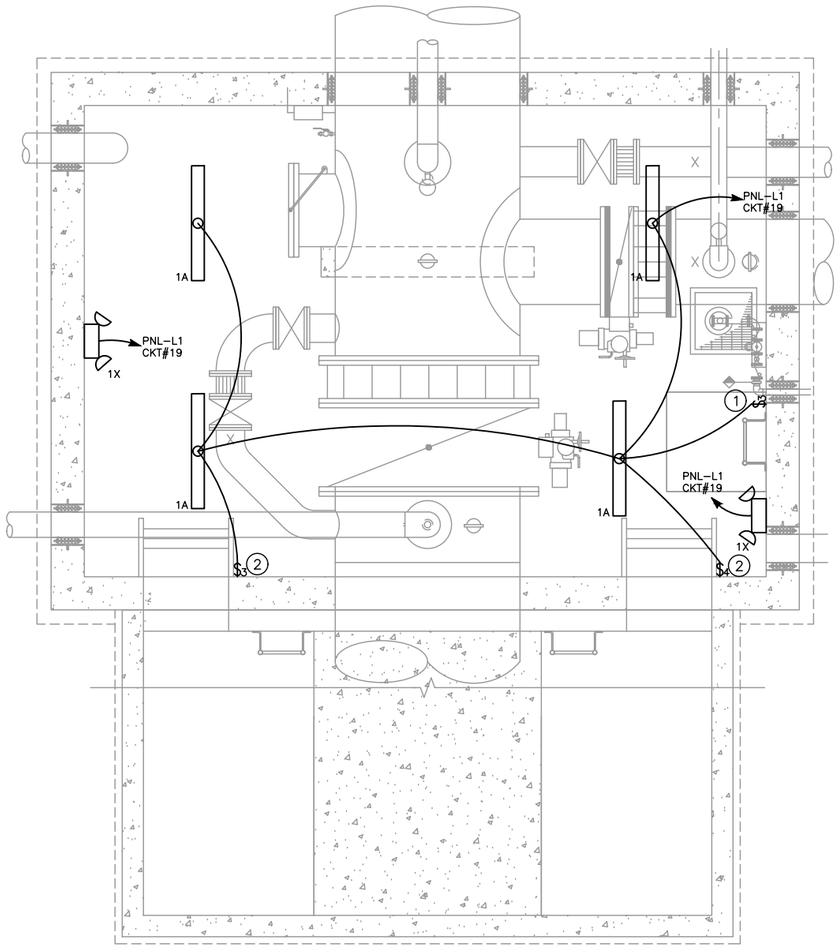
DRAWING NO. E-10

SHEET 95 OF 100

N

FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER	CATALOG NO.	VA	LAMP	MOUNTING	NOTES
1A	VAPOR TIGHT LED STRIP LIGHT, GASKETED WITH POLYCARBONATE HOUSING, 120 VAC	LITHONIA	CVST-L48-5000LM-MVOLT-40K-80CRI	42	LED	CEILING	
1X	EMERGENCY LIGHT WITH TWO HEADS, 90 MIN BATTERY POWER, WET LOCATION, 120 VAC	HOLOPHANE	DM30-WL-LED	8	LED	WALL	MOUNT AT 8'-0" AFF



11400 SOUTH VAULT ADDITION LIGHTING PLAN
SCALE: 3/8" = 1'-0"

GENERAL NOTES:

A. SUPPORT ELECTRICAL CONDUITS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NO BE ALLOWED.

B. ALL EXPOSED CONDUIT, BOXES, AND FITTINGS IN THE VAULT SHALL BE GALVANIZED RIGID STEEL SUPPORTED ON ZINC COATED STRUT. SEALTITE (NOT TO EXCEED 24") MAY BE USED WHERE REQUIRED. CONDUIT EMBEDDED IN CONCRETE SHALL BE PVC CONDUIT, TRANSITIONS FROM EMBEDDED CONDUIT TO EXPOSED CONDUIT SHALL BE MADE WITH PVC COATED GALVANIZED RIGID STEEL CONDUIT.

C. CONCEAL CONDUIT IN WALLS AND FLOOR TO EXTENT POSSIBLE. NO HORIZONTAL RUNS OF EXPOSED CONDUIT ALLOWED.

D. CONDUIT BODIES AND BOXES FOR WIRING DEVICES SHALL BE CAST MALLEABLE IRON. BOXES ARE TYPE FS OR FD.

E. REFER TO POWER ONE-LINE DIAGRAM AND CONTROL BLOCK DIAGRAM ON DRAWING E-12 FOR CONDUIT AND CONDUCTOR SIZES.

KEY NOTES:(#)

1. MOUNT LIGHT SWITCH JUST BELOW VAULT ACCESS HATCH SO THAT LIGHTS CAN BE TURNED ON BEFORE ENTERING VAULT.
2. MOUNT LIGHT SWITCH AT 68" ABOVE FINISHED FLOOR.

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER
No. 8852860-2202
SHANE CURTIS CAVANAUGH
STATE OF UTAH

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. CAVANAUGH
APPROVED S. CAVANAUGH

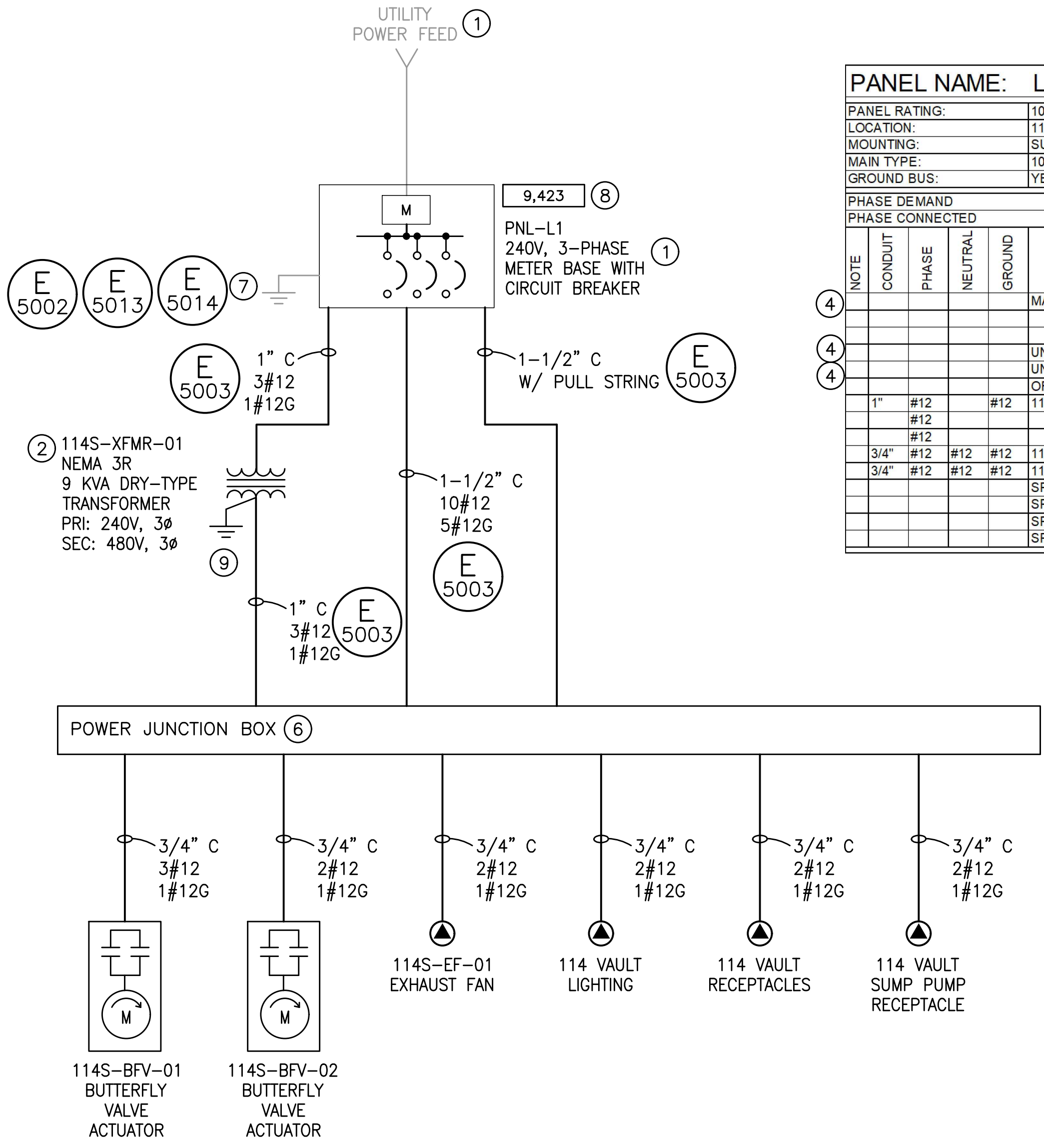
DESIGN
DESIGN C. WASDEN
DRAWN C. WASDEN

ELECTRICAL
11400 SOUTH VAULT ADDITION LIGHTING PLAN

DATE: JANUARY 2025
PROJECT NUMBER 010-23-02

DRAWING NO.
E-11

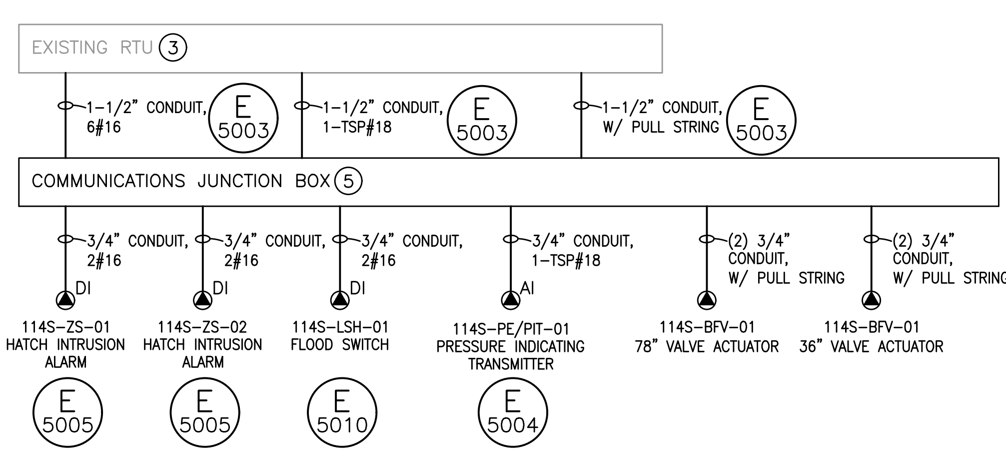
SHEET 96 OF 100

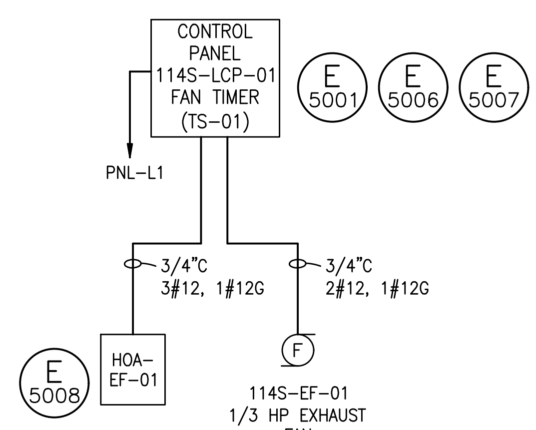


POWER ONE-LINE DIAGRAM

NOTE	CONDUIT	PHASE	NEUTRAL	GROUND	CIRCUIT DESCRIPTION	POLE	RATING	NUMBER	A		B		C		NUMBER	RATING	POLE	CIRCUIT DESCRIPTION	CONDUIT	PHASE	NEUTRAL	GROUND	NOTE
PANEL NAME: L1																							
PANEL RATING:					100 A				UPDATED:		1/7/25		NEMA:	1	NOTES:			1.					
LOCATION:					11400S JVWCD COMPLEX				TOTAL AMPS:		17		PHASE:	3				2.					
MOUNTING:					SURFACE				TOTAL VOLT-AMPS:		7.07 kVA		WIRE:	4				3.					
MAIN TYPE:					100 A MCB				VOLTAGE L-L:		240 V							4.					
GROUND BUS:					YES				VOLTAGE L-N:		120 V							5.					
PHASE DEMAND									3145		2837.5		1082.5										
PHASE CONNECTED									2516		2270		866										
(4)					MAIN	3	100	1	0	0					2	20	1	UNKNOWN					(4)
						*	**	3			0	0			4	20	1	UNKNOWN					(4)
						*	**	5					0	0	6	20	1	OFF (HIGH LEG)					
(4)					UNKNOWN	1	20	7	0	0					8	60	3	PUMP SKID					(4)
(4)					UNKNOWN	1	20	9			0	0			10	**	*						
					OFF (HIGH LEG)	1	20	11					0	0	12	**	*						
	1"	#12		#12	114S-BFV-01 XFMR	3	20	13	866	300					14	15	1	114S-BFV-02	3/4"	#12	#12	#12	
		#12				*	**	15			866	864			16	20	1	114S-EF-01	3/4"	#12	#12	#12	
		#12				*	**	17					866	0	18	**	*	SPACE					
	3/4"	#12	#12	#12	114 VAULT LIGHTING	1	20	19	174	1,176					20	20	1	SUMP PUMP RECEPTACLE	3/4"	#12	#12	#12	
	3/4"	#12	#12	#12	114 VAULT RECEPTACLES	1	20	21			540	0			22	20	1	SPARE					
					SPACE	*	**	23					0	0	24	**	*	SPACE					
					SPARE	1	20	25	0	0					26	20	1	SPARE					
					SPARE	1	20	27			0	0			28	20	1	SPARE					
					SPACE	*	**	29					0	0	30	**	*	SPACE					

PANEL SCHEDULE PNL-L1





CONTROL ONE-LINE DIAGRAM

GENERAL NOTES:

A. SEE ELECTRICAL SITE PLAN ON SHEET E-09, ELECTRICAL PLAN ON SHEET E-10, AND LIGHTING PLAN ON SHEET E-11 FOR EQUIPMENT LOCATIONS.

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

C. LIGHT LINEWORK INDICATES EXISTING EQUIPMENT. DARK LINEWORK INDICATES NEW EQUIPMENT, CONDUIT, AND CONDUCTORS TO BE INSTALLED BY CONTRACTOR.

SHEET NOTES: (#)

1. FURNISH AND INSTALL 240V DELTA, 30 CIRCUIT POWER PEDESTAL APPROVED BY ROCKY MOUNTAIN POWER. CONTRACTOR SHALL PROVIDE MILBANK 3P3B B-STYLE TYPE 3R ENCLOSURE WITH 200A 7 JAW RING TYPE SOCKET OR ENGINEER-APPROVED EQUAL. REMOVE AND DISPOSE OF EXISTING POWER PEDESTAL. PRESERVE AND PROTECT ANY GROUND ELECTRODE CONDUCTORS AND BRANCH CIRCUIT CONDUCTORS FOR RECONNECTION. CONTRACTOR RESPONSIBLE FOR DISCONNECT AND RECONNECT REQUESTS WITH ROCKY MOUNTAIN POWER. CONTRACTOR IS RESPONSIBLE TO RETERMINATE EXISTING CONDUCTORS AND GROUND ELECTRODE CONDUCTORS IN NEW POWER PEDESTAL. ENCLOSURE SHALL BE BONDED AND GROUNDED IN ACCORDANCE WITH NEC GUIDELINES. SEE DETAIL E 5002. SEE SHEET E-09 FOR EQUIPMENT LOCATION.
2. FURNISH AND INSTALL NEMA 3R, 240V DELTA PRIMARY, 480V THREE PHASE SECONDARY DRY-TYPE TRANSFORMER. EATON MODEL V24G48T09CU WITH WEATHER SHIELD OR ENGINEER-APPROVED EQUAL.
3. CONTRACTOR RESPONSIBLE FOR FURNISHING AND INSTALLING CABLING AND CONDUCTORS, AS WELL AS FIELD TERMINATIONS. CONTRACTOR SHALL LABEL BOTH ENDS OF CONDUCTORS AND LEAVE AMPLE CABLING IN RTU FOR OWNER TERMINATION. OWNER SHALL PROVIDE ANY REQUIRED RTU HARDWARE, PROGRAMMING, AND INTEGRATION.
4. EXISTING CIRCUIT. DISCONNECT FROM EXISTING POWER PEDESTAL AND RECONNECT IN NEW. SEE DRAWING E-09 FOR MORE INFORMATION.
5. FURNISH AND INSTALL NEMA 4X, 316 STAINLESS STEEL JUNCTION BOX FOR CONTROL AND SIGNAL CONDUITS. MINIMUM SIZE SHALL BE 12"H X 18"W X 6"D.
6. FURNISH AND INSTALL NEMA 4X, 316 STAINLESS STEEL JUNCTION BOX FOR POWER CONDUITS. MINIMUM SIZE SHALL BE 12"H X 16"W X 6"D.
7. CONTRACTOR SHALL PRESERVE AND PROTECT ANY EXISTING GROUND CONDUCTOR ELECTRODE PRESENT AT THE VAULT. CONNECT EXISTING GROUND ELECTRODE CONDUCTORS TO NEW POWER PEDESTAL. FURNISH AND INSTALL (1) 8-FOOT LONG, 3/4" DIA. COPPER CLAD STEEL GROUND ROD AND CONNECT WITH #8 BARE COPPER GROUND CABLE.
8. APPROXIMATE AVAILABLE FAULT CURRENT. CONTRACTOR IS RESPONSIBLE TO PERFORM AVAILABLE FAULT CURRENT STUDY AND LABEL ENCLOSURE IN ACCORDANCE WITH NEC 110.24 (A). CONTRACTOR SHALL ALSO LABEL ENCLOSURE WITH IDENTIFICATION OF HIGH LEG IN ACCORDANCE WITH NEC 110.15.
9. CONNECT TRANSFORMER TO GROUNDING ELECTRODE CONDUCTOR WITH #8 BARE COPPER WIRE.

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER
No. 8882860-2202
SHANE CURTIS CAVANAUGH
STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW
CHECKED S. CAVANAUGH
APPROVED S. CAVANAUGH

DESIGN
DESIGN C. WASDEN
DRAWN C. WASDEN

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

ELECTRICAL
11400 SOUTH
VAULT ADDITION
ONE-LINE DIAGRAMS

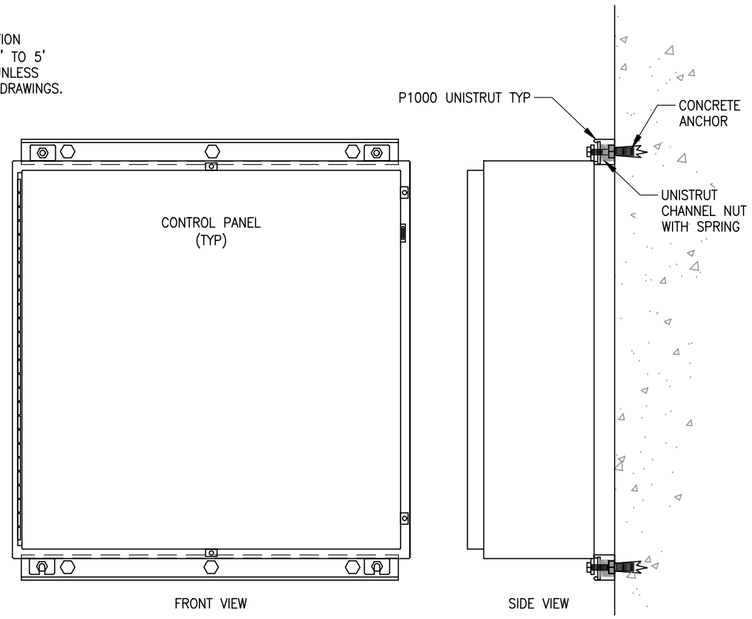
PROJECT NUMBER 010-23-02
DATE: JANUARY 2025

DRAWING NO.
E-12

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\E-12.dwg Plotted: 1/14/2025 4:41 PM By: Jeremy Black

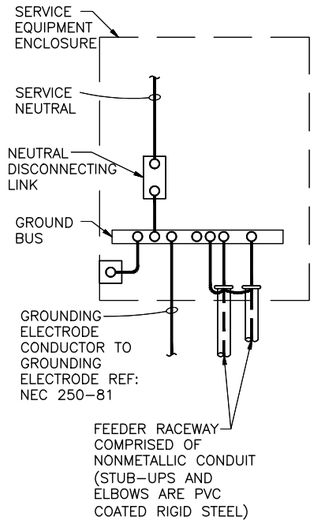
NOTES:

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



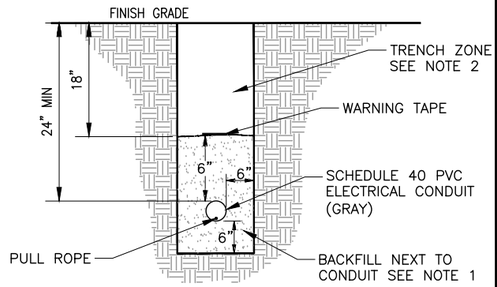
TYPICAL PANEL MOUNTING DETAIL ON WALL
SCALE: NTS

E 5001



SERVICE AND EQUIPMENT GROUNDING DETAIL
SCALE: NTS

E 5002

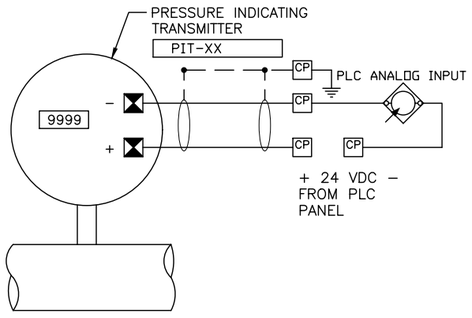


NOTES:

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 POWER ONE-LINE DIAGRAM FOR CONDUIT SIZES.

CONDUIT TRENCH DETAIL
SCALE: NTS

E 5003



NOTES:

1. GROUND SHIELD AT CONTROL PANEL ONLY.
2. PROVIDE AND INSTALL INSULATED UNION AT CONDUIT CONNECTION.

LEGEND:

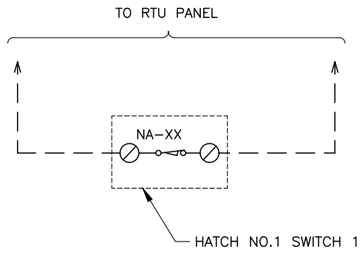
XX – TAG NUMBER

CP – CONTROL PANEL TERMINALS

– PRESSURE TRANSMITTER TERMINALS

PRESSURE INDICATING TRANSMITTER SCHEMATIC
SCALE: NTS

E 5004



NOTES:

1. SWITCH CONTACT CLOSED WHEN HATCH IS CLOSED.
2. ALL HATCH SWITCHES ARE WIRED IN PARALLEL TO RTU.
3. THE HATCH INTRUSION SWITCHES SHALL BE HEAVY DUTY LIMIT SWITCHES WITH A ROTATING LEVER ARM, SCHNEIDER ELECTRIC CLASS 9007 OR EQUAL.

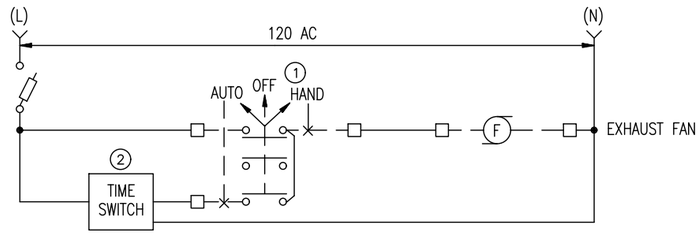
TYPICAL HATCH INTRUSION SWITCHES DIAGRAM
SCALE: NTS

E 5005

NOTES:

(1) PROVIDE A HEAVY DUTY WATERTIGHT "HOA" SELECTOR SWITCH IN A NEMA 4 ENCLOSURE, NEAR THE VAULT ENTRANCE.

(2) OPERATE FAN FOR 30 MINUTES EVERY 6 HOURS. LOCATE TIME SWITCH IN A NEMA 4 ENCLOSURE.



TYPICAL VAULT EXHAUST FAN CONTROL SCHEMATIC
SCALE: NTS

E 5006

BOWEN COLLINS & ASSOCIATES

PROFESSIONAL ENGINEER — No. 8852804-2202 — SHANE CURTIS CAVANAUGH — STATE OF UTAH — LICENSED

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

JORDAN VALLEY WATER CONSERVANCY DISTRICT
SOUTHWEST AQUEDUCT REACH 2
RIVERTON AND SOUTH JORDAN, UT

REVIEW — CHECKED S. CAVANAUGH — APPROVED S. CAVANAUGH

DESIGN — DESIGN C. WASDEN — DRAWN C. WASDEN

ELECTRICAL

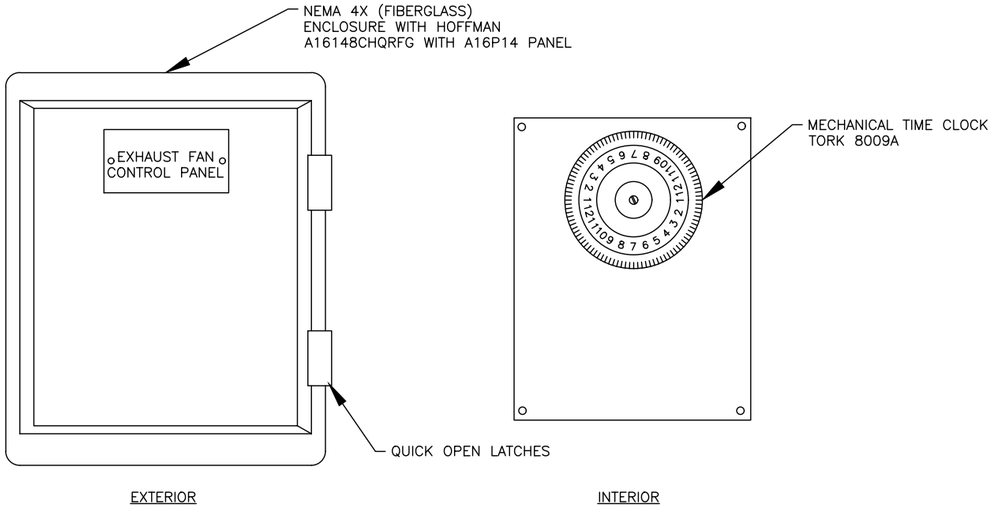
GENERAL ELECTRICAL DETAILS - 1

PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

DRAWING NO.
GE-01

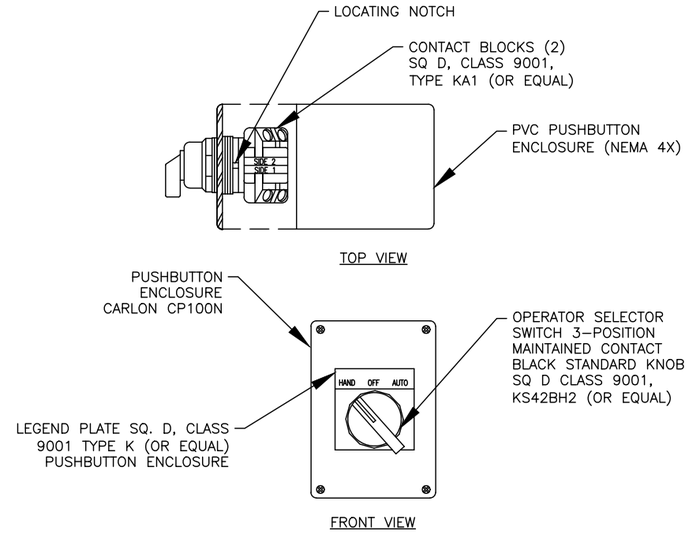
SHEET 98 OF 100



VAULT EXHAUST FAN CONTROL PANEL

E 5007

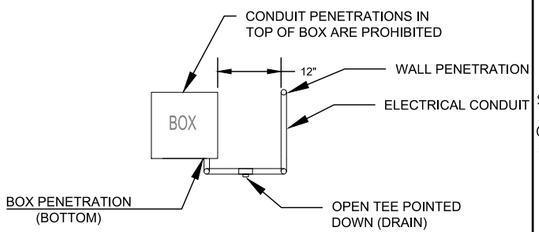
SCALE: NTS



EXHAUST FAN HAND–OFF–AUTO SWITCH

E 5008

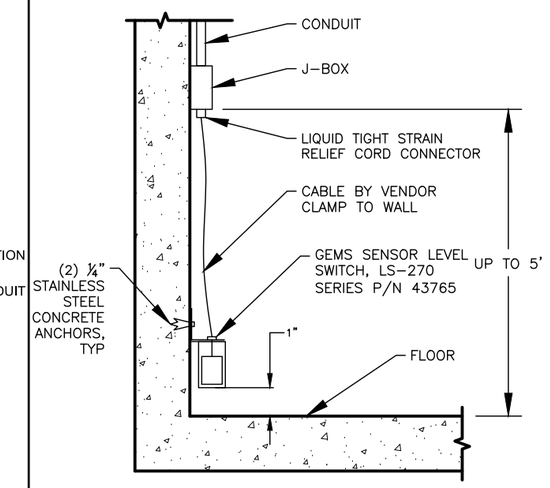
SCALE: NTS



CONDUIT INTO JUNCTION BOX TYP.

E 5009

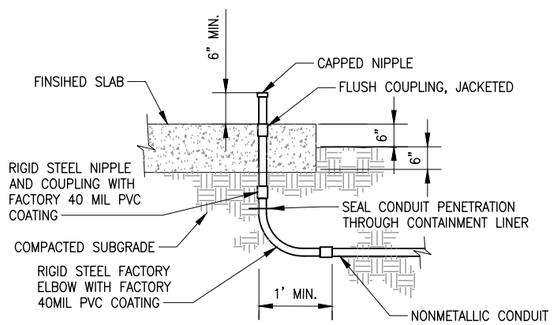
SCALE: NTS



FLOOD SWITCH INSTALLATION DETAIL

E 5010

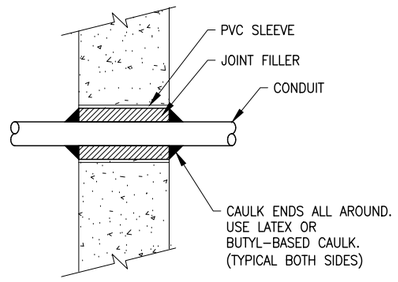
SCALE: NTS



THRU SLAB CONDUIT PLACEMENT DETAIL

E 5011

SCALE: NTS



CONDUIT PENETRATION THRU WALL OR CEILING

E 5012

SCALE: NTS

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER
No. 8852860-2202
SHANE CURTIS CAVANAUGH
STATE OF UTAH

REVISIONS

NO.	DATE	REV. BY	DESCRIPTION

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN	REVIEW
DESIGN C. WASDEN	CHECKED S. CAVANAUGH
DRAWN C. WASDEN	APPROVED S. CAVANAUGH

ELECTRICAL

GENERAL ELECTRICAL DETAILS - 2

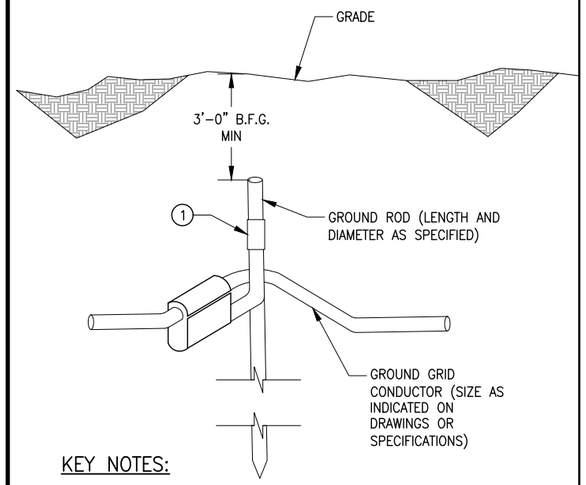
PROJECT NUMBER 010-23-02

DATE: JANUARY 2025

DRAWING NO. GE-02

SHEET 99 OF 100

P:\JORDAN VALLEY WCD\010-23-02 SOUTHWEST AQUEDUCT REACH 2 - 13400 S TO 11800 S\2.0 DESIGN PHASE\2.9 DRAWINGS\SHT\GE-02.dwg Plotted: 1/14/2025 4:41 PM By: Jeremy Black



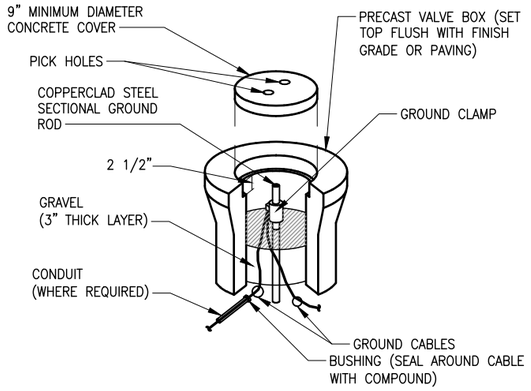
KEY NOTES:

1. GROUND ROD TO GROUND GRID CROSS CONNECTOR. SIZE FOR ROD AND CABLE PER MANUFACTURERS GUIDELINES.

GROUND ROD COMPRESSION INSTALLATION

SCALE: NTS

E 5013



GROUND ROD AND WELL

SCALE: NTS

E 5014

NOT USED

SCALE: NTS

E 5XXX

NOT USED

SCALE: NTS

E 5XXX

NOT USED

SCALE: NTS

E 5XXX

NOT USED

SCALE: NTS

E 5XXX

NOT USED

SCALE: NTS

E 5XXX

NOT USED

SCALE: NTS

E 5XXX

NOT USED

SCALE: NTS

E 5XXX

BOWEN COLLINS & ASSOCIATES

LICENSED PROFESSIONAL ENGINEER
No. 8852860-2202
SHANE CURTIS CAVANAUGH
STATE OF UTAH

NO.	DATE	REV. BY	DESCRIPTION

REVISIONS

JORDAN VALLEY WATER CONSERVANCY DISTRICT

SOUTHWEST AQUEDUCT REACH 2

RIVERTON AND SOUTH JORDAN, UT

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN
DESIGN C. WASDEN
DRAWN C. WASDEN

REVIEW
CHECKED S. CAVANAUGH
APPROVED S. CAVANAUGH

ELECTRICAL

GENERAL ELECTRICAL DETAILS - 3

DATE: JANUARY 2025

PROJECT NUMBER 010-23-02

DRAWING NO.
GE-03

SHEET 100 OF 100