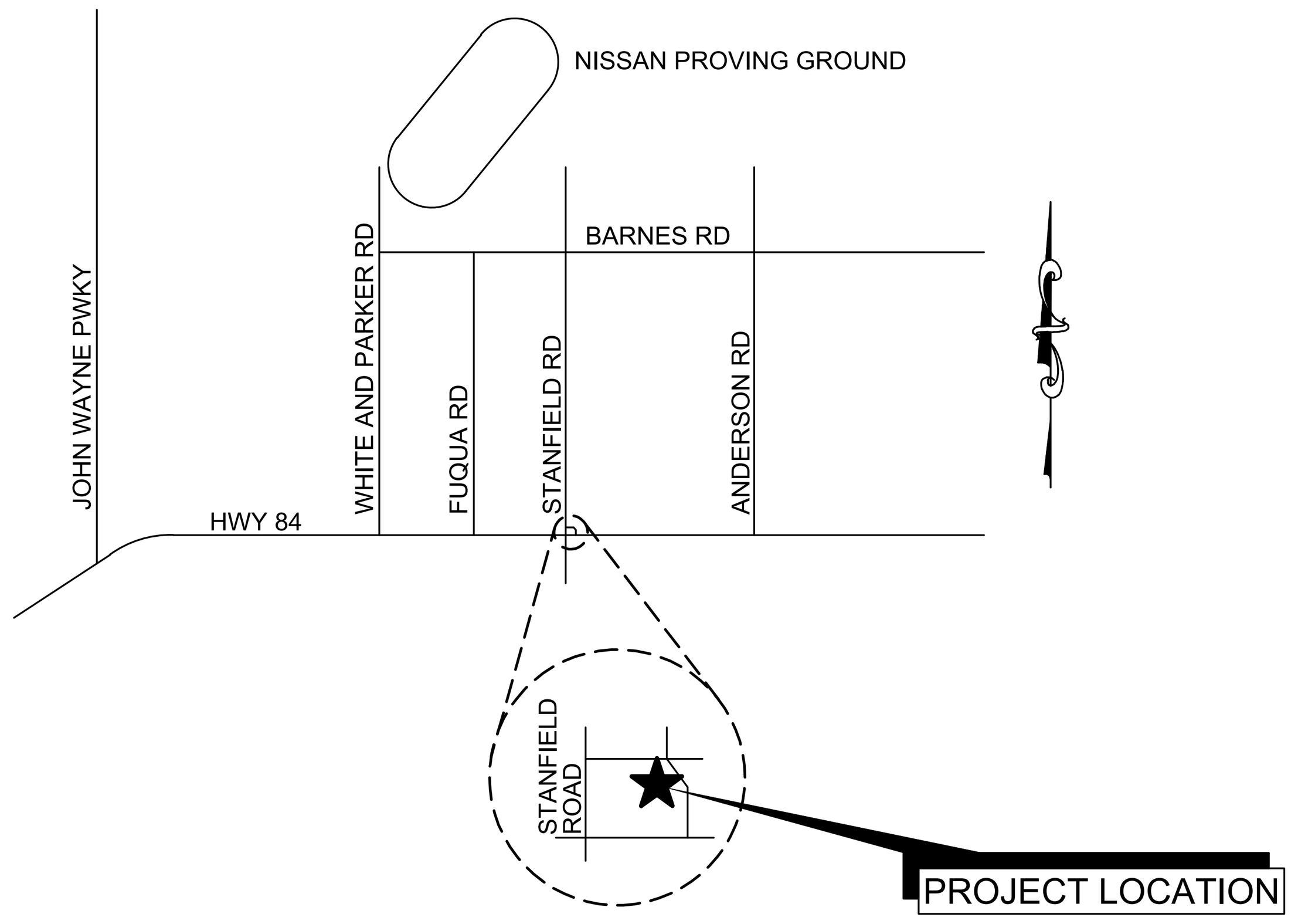
STANFIELD WELLS
NO. 1 AND NO. 3 ARSENIC AND NITRATE TREATMENT IMPROVEMENTS
SW 1/4 SEC. 20, T. 6 SOUTH., R. 4 EAST. OF THE G. & S. R. B. & M.



VICINITY MAP

N.T.S.

OWNER
ARIZONA WATER COMPANY
POST OFFICE BOX 29006
PHOENIX, AZ 85038-9006 VOICE: (602) 240-6860 FAX: (602) 294-2169 CONTACT: THERESA LAU
EMAIL: TLAU@AZWATER.COM

CIVIL AND PROCESS ENGINEER
CONSOR
2432 W. PEORIA AVE
SUITE 1246
PHOENIX, AZ 85029
PHONE: (602) 906-1901
CONTACT: FREDERICK TACK
EMAIL: FREDERICK.TACK@CONSORENG.COM

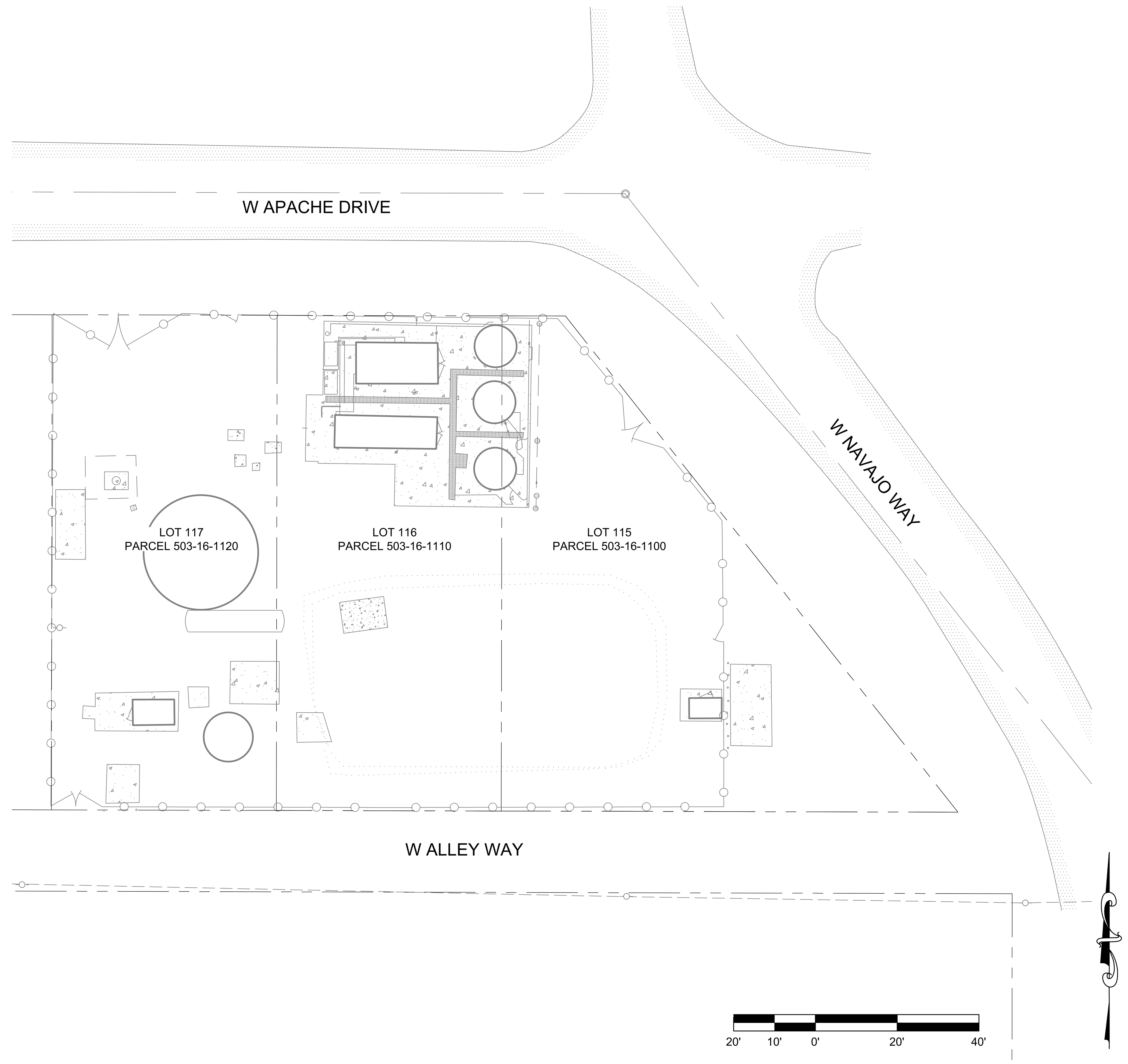
STRUCTURAL ENGINEER
GFT
3838 CENTRAL AVE
SUITE 900
PHOENIX, AZ 85012
PHONE: (602) 553-8817
CONTACT: STEPHANIE TEMPLETON
EMAIL: STEMPLETON@GFTINC.COM

ELECTRICAL ENGINEER
DARCOR
22601 N. 17TH AVE
SUITE 140
PHOENIX, AZ 85027 PHONE: (602) 795-2699
CONTACT: JORGE GERARDO
EMAIL: JGERARDO@DARCORINC.COM

PROPERTY INFORMATION
ADDRESS:
36781 W APACHE DR STANFIELD, AZ 85172

FEMA FIRM PANEL:
04021C1150E, DATED DECEMBER 4, 2007. ZONE X

PARCELS:
503-16-1120 APN (AREA=6,659.95 SF)
503-16-1110 APN (AREA=6,659.95 SF)
503-16-1100 APN (AREA=7,698.24 SF)



ADEQ APPROVAL

FILE No.

DATE

PINAL COUNTY ENGINEER APPROVAL

APPROVED BY:

PINAL COUNTY ENGINEER DATE
PINAL COUNTY, PUBLIC WORKS DEPARTMENT
APPROVAL EXPIRES: DATE

RE-APPROVED BY:

PINAL COUNTY ENGINEER DATE
PINAL COUNTY, PUBLIC WORKS DEPARTMENT
APPROVAL EXPIRES: DATE

BASIS OF BEARING
STREET MONUMENT LINE FOR APACHE DRIVE BETWEEN STANFIELD ROAD AND NAVAJO WAY, AS SHOWN IN, BOOK 06 PAGE 017 OF THE PINAL COUNTY RECORDS. SAID LINE BEARS S89°51'00"E, 445.00'.

BENCHMARK
PINAL COUNTY CONTROL POINT ID: 604191
FOUND 3" BRASS CAP IN HAND HOLE
NAVD 88' ELEVATION = 1303.68'

REFERENCE DOCUMENTS
1. BK. 6, PG. 17, PCR
2. FEE NO. 2013-004698, PCR

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

W.A. No.:
P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: COVER SHEET

consor

DWG. No.: G-001

SHEET 1 OF 80

SHEET INDEX

SHT NO	DWG NAME	DESCRIPTION
GENERAL		
1	G-000	COVER SHEET
2	G-001	SHEET INDEX, SYMBOLS, AND LEGEND
3	G-003	ABBREVIATIONS
4	G-004	ENGINEER NOTES
5	G-005	ARIZONA WATER COMPANY NOTES
6	G-006	PROCESS FLOW DIAGRAM 1
7	G-007	PROCESS FLOW DIAGRAM 2
8	G-008	HYDRAULIC PROFILE 1
9	G-009	HYDRAULIC PROFILE 2
10	G-010	PROCESS DESIGN AND OPERATIONAL CRITERIA
CIVIL		
11	C-001	CIVIL SYMBOLS AND LEGEND
12	C-010	EXISTING SITE PLAN AND SURVEY CONTROL
13	C-011	DEMOLITION AND SITE PREPARATION PLAN - EQUIPMENT
14	C-012	DEMOLITION AND SITE PREPARATION PLAN - SURFACES AND PIPES
15	C-100	OVERALL SITE PLAN
16	C-101	
17	C-110	PAVING, GRADING, AND DRAINAGE PLAN
18	C-120	HORIZONTAL CONTROL PLAN
19	C-301	SITE CROSS SECTIONS
20	C-302	SITE CROSS SECTIONS
21	C-303	SECTIONS
22	C-501	DEMOLITION AND SITE PREPARATION DETAILS
23	C-502	DETAILS
24	C-503	DETAILS
25	C-504	DETAILS
26	C-505	DETAILS
LANDSCAPE		
27	L-100	LANDSCAPE PLAN AND DETAILS
STRUCTURAL		
28	S-001	LEGEND, NOTES, DESIGN CRITERIA, AND INSPECTIONS
29	S-100	OVERALL SITE PLAN
30	S-111	CHEMICAL STORAGE PLAN
31	S-112	DEWATERING PLAN
32	S-113	SHADE CANOPY PLAN
33	S-401	ENLARGED PAD PLANS AND ELEVATIONS
34	S-402	ELEVATIONS
35	S-403	DEWATERING VAULT ELEVATIONS
36	S-501	SHADE CANOPY DETAILS
37	S-502	PAD DETAILS
38	S-503	CHEMICAL STORAGE DETAILS
39	S-504	PIPE SUPPORT DETAILS
PROCESS (PIPING)		
40	D-001	LEGEND AND NOTES
41	D-010	FLOW DIAGRAM
42	D-100	OVERALL SITE PLAN
43	D-110	WELL CONNECTION AND BY-PASS STATION PLAN
44	D-120	NITRATE TREATMENT SYSTEM PLAN
45	D-130	NITRATE TREATMENT EFFLUENT TANK AND BOOSTER PUMP STATION PLAN
46	D-140	ARSENIC TREATMENT FILTRATION SYSTEM PLAN
47	D-150	RECYCLE PUMP STATION PLAN
48	D-160	DEWATERING BIN PLAN
49	D-170	TREATMENT CHEMICAL SYSTEM PLAN
50	D-180	TANK CONNECTION PLAN
51	D-501	DETAILS
52	D-520	NITRATE TREATMENT SYSTEM DETAILS
53	D-530	NITRATE TREATMENT EFFLUENT TANK AND BOOSTER PUMP STATION DETAILS
54	D-540	ARSENIC TREATMENT FILTRATION SYSTEM DETAILS
55	D-550	RECYCLE PUMP STATION DETAILS
56	D-560	DEWATERING BIN DETAILS
57	D-570	TREATMENT CHEMICAL SYSTEM DETAILS
58	D-580	TANK CONNECTION DETAILS
59	D-900	OVERALL SITE ISOMETRIC
ELECTRICAL		
60	E-001	LEGEND, NOTES, AND ABBREVIATIONS
61	E-100	DEMOLITION PLAN
62	E-100	OVERALL SITE PLAN
63	E-110	LIGHTING PLAN - 1
64	E-111	LIGHTING PLAN - 2
65	E-201	EQUIPMENT ELEVATIONS
66	E-401	ENLARGED BUILDING PLAN
67	E-402	ENLARGED PLAN - 1
68	E-403	ENLARGED PLAN - 2
69	E-404	ENLARGED PLAN - 3
70	E-405	ENLARGED PLAN - 4
71	E-406	ENLARGED PLAN - 5
72	E-501	DETAILS
73	E-502	DETAILS
74	E-601	ONELINE DIAGRAMS
75	E-610	PANEL SCHEDULES
76	E-620	CONDUIT AND CONDUCTOR SCHEDULE - 1
77	E-621	CONDUIT AND CONDUCTOR SCHEDULE - 2
78	E-630	CONTROL SCHEMATICS - 1
79	E-631	CONTROL SCHEMATICS - 2
80	E-632	CONTROL SCHEMATICS - 3
INSTRUMENTATION		
81	I-001	LEGEND AND NOTES
82	I-501	DETAILS
83	I-601	PROCESS AND INSTRUMENTATION DIAGRAM - 1
84	I-602	PROCESS AND INSTRUMENTATION DIAGRAM - 2
85	I-603	PROCESS AND INSTRUMENTATION DIAGRAM - 3
86	I-604	PROCESS AND INSTRUMENTATION DIAGRAM - 4
87	I-605	PROCESS AND INSTRUMENTATION DIAGRAM - 5
88	I-606	PROCESS AND INSTRUMENTATION DIAGRAM - 6
89	I-607	PROCESS AND INSTRUMENTATION DIAGRAM - 7
90	I-610	BLOCK DIAGRAMS AND PANEL LAYOUT

SHEET INDEX DESIGNATIONS

A - N N N

- DISCIPLINE DESIGNATOR
- SHEET TYPE DESIGNATOR
- SHEET SEQUENCE NUMBER (2 DIGIT)

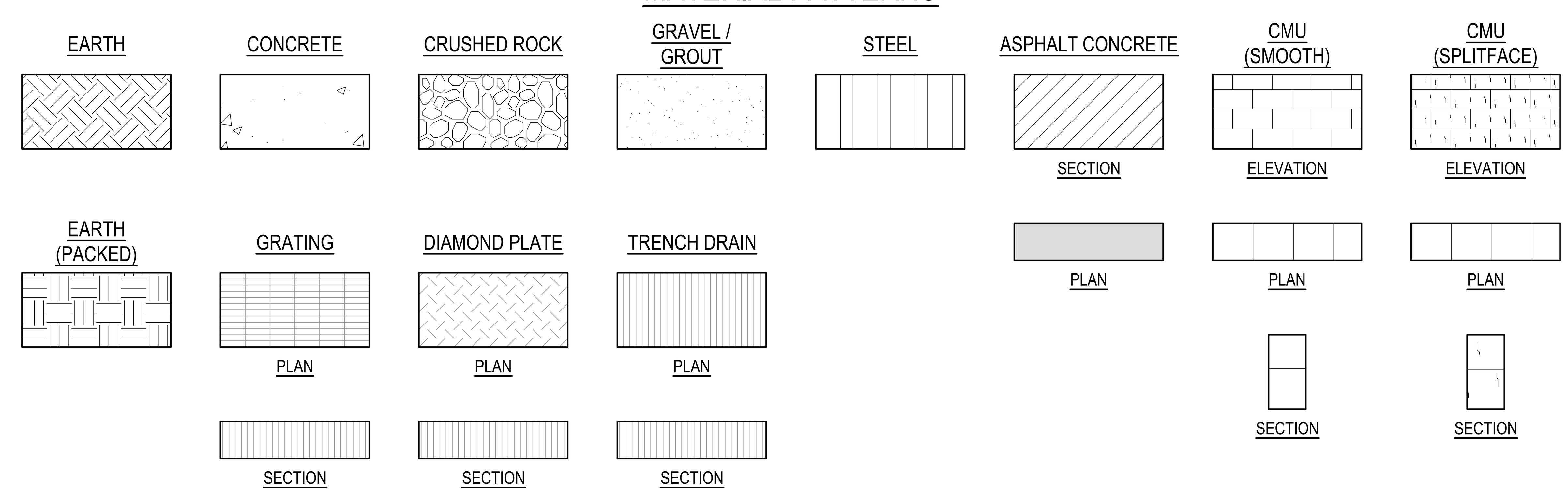
DISCIPLINE DESIGNATORS

G GENERAL
C CIVIL
L LANDSCAPE
A ARCHITECTURAL
S STRUCTURAL
D PROCESS
M MECHANICAL (HVAC)
E ELECTRICAL
I INSTRUMENTATION AND P&IDS

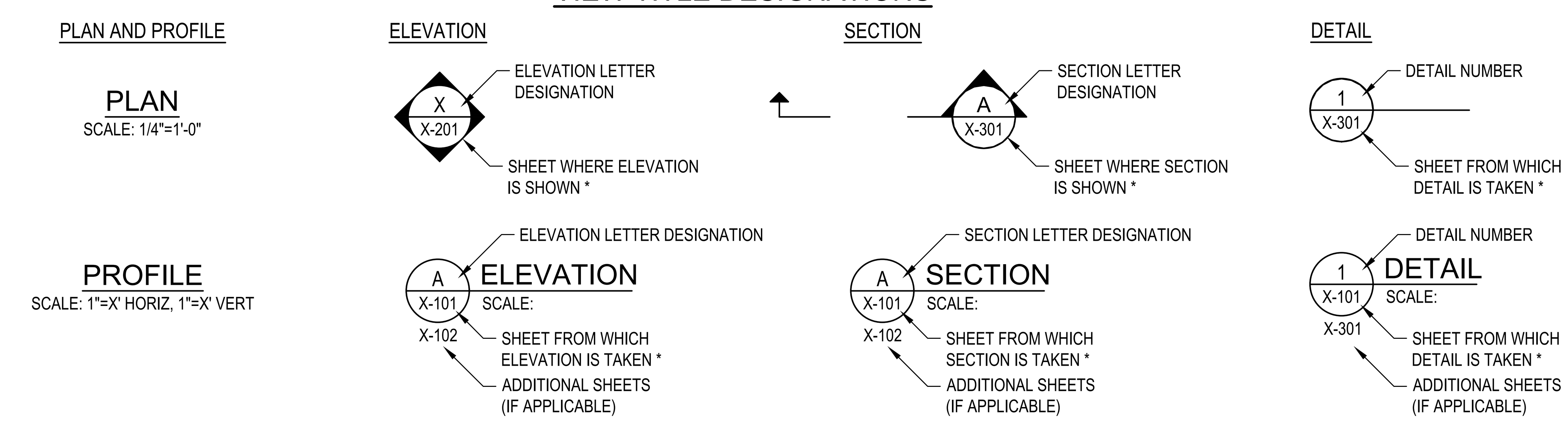
SHEET TYPE DESIGNATORS

0 GENERAL
1 PLAN VIEWS
2 ELEVATIONS
3 SECTIONS
4 LARGE SCALE VIEWS
5 DETAILS
6 SCHEDULES AND DIAGRAMS
7 USER DEFINED
8 USER DEFINED
9 3D REPRESENTATION

MATERIAL PATTERNS

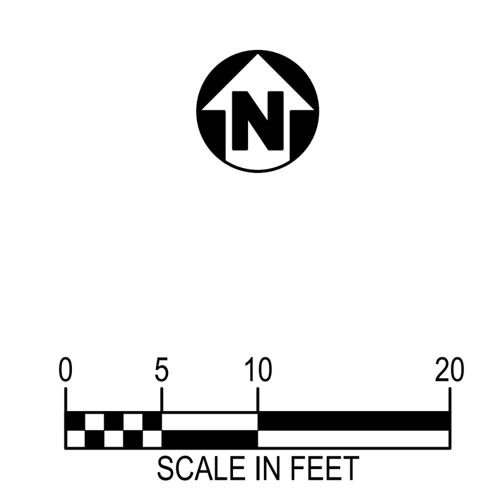


VIEW TITLE DESIGNATIONS



* NOTE: IF PLAN AND SECTION FOR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON THE SAME DRAWING, DRAWING NUMBER IS REPLACED WITH A DASH.

NORTH ARROW AND SCALE BAR



GENERAL NOTE:

1. THIS IS A STANDARD GENERAL SHEET, NOT ALL OF THE INFORMATION SHOWN MAY BE USED ON THIS PROJECT.

consor

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
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PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC.: SHEET INDEX, SYMBOLS, AND LEGENDS

DWG. No.: G-002

@	AT
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS
AB	ANCHOR BOLT
ABAN(D)	ABANDON(ED)
ABS	ACRYLONITRILE BUTADIENE STYRENE
ABV	ABOVE / ALCOHOL BY VOLUME
AC	ASPHALTIC CONCRETE
ACP	ASPHALTIC CONCRETE PAVING
ADJ	ADJUSTABLE
ADJC	ADJACENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHR	ANCHOR
AL	ALUMINUM
ALT	ALTERNATE
AMP	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
APPVD	APPROVED
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
ARCH	ARCHITECTURAL
ARV	AIR RELEASE VALVE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASR	AQUIFER STORAGE & RECOVERY
ASSN	ASSOCIATION
ASSY	ASSEMBLY
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
ATM	ATMOSPHERE
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
AVG	AVERAGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
B&S	BELL & SPIGOT
BC	BOLT CIRCLE
BD	BOARD
BETW	BETWEEN
BF	BOTH FACE
BFD	BACKFLOW PREVENTION DEVICE
BFILL	BACKFILL
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BKGD	BACKGROUND
BLDG	BUILDING
BLK	BLOCK
BLVD	BOULEVARD
BM	BENCHMARK / BEAM
BMP	BEST MANAGEMENT PRACTICES
BO	BLOW-OFF
BOC	BACK OF CURB
BS	BOTH SIDES
BSMT	BASEMENT
BTF	BOTTOM FACE
BTU	BRITISH THERMAL UNIT
BV	BALL VALVE
BW	BOTH WAYS
C	CELSIUS
C TO C	CENTER TO CENTER
CARV	COMBINATION AIR RELEASE VALVE
CATV	CABLE TELEVISION
CB	CATCH BASIN
CCP	CONCRETE CYLINDER PIPE
CCW	COUNTER CLOCKWISE
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHAN	CHANNEL
CHEM	CHEMICAL
CHFR	CHAMFER
CHKV	CHECK VALVE
CIPC	CAST IN PLACE CONCRETE
CISP	CAST IRON SOIL PIPE
CJ	CONSTRUCTION JOINT
CL OR C/L	CENTER LINE
CL2	CHLORINE
CLG	CEILING
CLJ	CONTROL JOINT
CLR	CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CND	CONDUIT
CO	CLEANOUT
COL	COLUMN
COMB	COMBINATION
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS / CONTINUATION
CONTR	CONTRACT(OR)
COORD	COORDINATE
COP	COPPER
CORP	CORPORATION
CORR	CORRUGATED
CP	CONTROL POINT
CPLG	COUPLING
CPVC	CHLORINATED POLYVINYL CHLORIDE
CR	CRUSHED ROCK
CS	COMBINED SEWER
CSP	CONCRETE SEWER PIPE
CT	COURT
CTR	CENTER
CU	CUBIC OR SEE PIPE MATERIAL LIST
CULV	CULVERT
CV	CONTROL VALVE
CW	CLOCKWISE / COLD WATER
CY	CUBIC YARDS
CYL	CYLINDER LOCK
D	DRAIN
DC	DIRECT CURRENT
DEFL	DEFLECTION
DEMO(D)	DEMOLISH(ED)
DEQ	DEPARTMENT OF ENVIRONMENTAL QUALITY
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DIR	DIRECTION
DIST	DISTANCE
DN	DOWN
DR	DRIVE
DS	DOWNSPOUT
DWG	DRAWING
DWL	DOWEL
DWV	DRAIN WASTE AND VENT
DWY	DRIVEWAY
E / ELEC	ELECTRICAL
EA	EACH
ECC	ECCENTRIC
EF	EACH FACE
EL	ELEVATION
ELB	ELBOW
ENCL	ENCLOSURE
EOP	EDGE OF PAVEMENT
EQ	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
ESMT	EASEMENT
EW	EACH WAY
EXC	EXCAVATE
EXIST	EXISTING
EXP	EXPANSION
EXP BT	EXPANSION BOLT
EXP JT	EXPANSION JOINT
EXT	EXTERIOR
F	FAHRENHEIT
F TO F	FACE TO FACE
FAB	FABRICATE
FB	FLAT BAR
FCA	FLANGED COUPLING ADAPTER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDN	FOUNDATION
FEXT	FIRE EXTINGUISHER
FF	FINISHED FLOOR / FAR FACE
FGL	FIBERGLASS
FH	FIRE HYDRANT
FIN	FINISH(ED)
FIPT	FEMALE IRON PIPE THREAD
FITG	FITTING
FL	FLOOR LINE
FLEX	FLEXIBLE
FLG	FLANGE
FLL	FLOW LINE
FLR	FLOOR
FM	FORCE MAIN
FO	FIBER OPTIC
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET / FOOT
FTG	FOOTING
FUT	FUTURE
FXTR	FIXTURE
G	GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GROOVED COUPLING
GFA	GROOVED FLANGE ADAPTER
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GJ	GRIP JOINT
GL	GLASS
GLV	GLOBE VALVE
GND	GROUND
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GPS	GALLONS PER SECOND
GR	GRADE
GR LN	GRADE LINE
GRTG	GRATING
GV	GATE VALVE
GRVL	GRAVEL
GYP	GYPSUM
HB	HOSE BIBB
HC	HOLLOW CORE
HDR	HEADER
HDWE	HARDWARE
HGR	HANGER
HGT	HEIGHT
HH	HANDHOLD
HM	HOLLOW METAL
HMAC	HOT MIX ASPHALT CONCRETE
HNDRL	HANDRAIL
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
HORIZ	HORIZONTAL
HP	HIGH PRESSURE / HORSEPOWER
HPG	HIGH PRESSURE GAS
HPT	HIGH POINT
HR	HOUR
HSB	HIGH STRENGTH BOLT
HV	HOSE VALVE
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWL	HIGH WATER LINE
HWY	HIGHWAY
HYD	HYDRANT
HYDR	HYDRAULIC
I&C	INSTRUMENTATION & CONTROL
IAW	IN ACCORDANCE WITH
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IMPVT	IMPROVEMENT
IN	INCH
INCC	INCLUDE(D)(ING)
INFL	INFLUENT
INJ	INJECTION
INSTL	INSTALLATION
INSUL	INSULATION
INTER	INTERCEPTOR
INTR	INTERIOR
INV	INVERT
IP	IRON PIPE
IPT	IRON PIPE THREAD
IR	IRON ROD
IRRIG	IRRIGATION
JT	JOINT
JUNC	JUNCTION
KPL	KICK PLATE
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWY	KEYWAY
L	LENGTH
LAB	LABORATORY
LAV	LAVATORY
LB	POUND
LF	LINEAR FOOT
LIN	LINEAL
LN	LANE
LOC	LOCATION
LONG	LONGITUDINAL
LP	LOW PRESSURE
LPT	LOW POINT
LRG	LARGE
LS	LONG SLEEVE / LUMP SUM
LT	LEFT
LVL	LEVEL
LWL	LOW WATER LINE
MAN	MANUAL
MAT	MATERIAL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCP	MASTER CONTROL PANEL
MECH	MECHANICAL
MET	METAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MIN	MINIMUM
MIPT	MALE IRON PIPE THREAD
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MON	MONUMENT / MONOLITHIC
MOT	MOTOR
MP	MILEPOST
MSL	MEAN SEAL LEVEL
MTD	MOUNTED
NA	NOT APPLICABLE
NAVD	NORTH AMERICAN VERTICAL DATUM
NC	NORMALLY CLOSED
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO / NO.	NORMALLY OPEN / NUMBER
NOM	NOMINAL
NORM	NORMAL
NRS	NON-RISING STEM
NTS	NOT TO SCALE
O TO O	OUT TO OUT
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OVERFLOW / OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
ORIG	ORIGINAL
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
OVHD	OVERHEAD
P&ID	PROCESS & INSTRUMENTATION DIAGRAM
PC	POINT OF CURVE
PCC	POINT OF COMPOUND CURVE
PCVC	POINT OF CURVATURE ON VERTICAL CURVE
PE	PLAIN END
PERF	PERFORATED
PERM	PERMANENT
PERP	PERPENDICULAR
PG	PRESSURE GAUGE
PH	PIPE HANGER
PI	POINT OF INTERSECTION
PIVC	POINT OF INTERSECTION ON VERTICAL CURVE
PL OR P/L	PROPERTY LINE / PLATE / PLASTIC
PLBG	PLUMBING
PNL	PANEL
POC	POINT OF CURVATURE
POLY	POLYETHYLENE
PP	POWER POLE / PURPLE PIPE
PRC	POINT OF REVERSE CURVATURE
PRCST	PRECAST
PREP	PREPARATION
PRESS	PRESSURE
PRKG	PARKING
PROP	PROPOSED
PRV	PRESSURE REDUCING VALVE
PS	PUMP STATION
PSIG	POUNDS PER SQUARE INCH GAUGE
PSL	PIPE SLEEVE
PSPT	PIPE SUPPORT
PT	POINT OF TANGENCY
PTVC	POINT OF TANGENCY ON VERTICAL CURVE
PTW	PUMP TO WASTE
PUE	PUBLIC UTILITY EASEMENT
PV	PLUG VALVE
PVMT	PAVEMENT
PW	POTABLE WATER
PWR	POWER
QTY	QUANTITY
RAD	RADIUS
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD / ROOF DRAIN
RDCR	REDUCER
REF	REFERENCE
REINF	REINFORCE(D)(ING)(MENT)
REQ'D	REQUIRED
RESTR	RESTRAINED
RFCA	RESTRAINED FLANGE COUPLING ADAPTER
RM	ROOM
RND	ROUND
RO	ROUGH OPENING
R/W	RIGHT-OF-WAY
RPBPD	REDUCED PRESSURE BACKFLOW PREVENTION DEVICE
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RST	REINFORCED STEEL
RT	RIGHT
SALV	SALVAGE
SAN	SANITARY
SC	SOLID CORE
SCHED	SCHEDULE
SD	STORM DRAIN
SDL	SADDLE
SDR	STANDARD DIMENSION RATIO
SECT	SECTION
SHLDR	SHOULDER
SHT	SHEET
SIM	SIMILAR
SLP	SLOPE
SLV	SLEEVE
SOLN	SOLUTION
SP	SAMPLE PORT
SPCL	SPECIAL
SPEC(S)	SPECIFICATION(S)
SPG	SPACING
SPL	SPOOL
SPRT	SUPPORT
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SQ YD	SQUARE YARD
SS	SANITARY SEWER
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STOR	STORAGE
STR	STRAIGHT
STRUCT	STRUCTURE / STRUCTURAL
SUBMG	SUBMERGED
SUCT	SUCTION
SV	SOLENOID VALVE
S/W	SIDEWALK
SWD	SIDEWATER DEPTH
SWGR	SWITCH GEAR
SYMM	SYMMETRICAL
SYS	SYSTEM
T OR TEL	TELEPHONE
T&B	TOP & BOTTOM
TAN	TANGENCY
TB	THRUST BLOCK
TBD	TO BE DETERMINED
TBM	TEMPORARY BENCHMARK
TC	TOP OF CONCRETE / TOP OF CURB
TCE	TEMPORARY CONSTRUCTION EASEMENT
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE / TEMPORARY
T&G	TONGUE & GROOVE
THK	THICK / THICKNESS
THRD	THREAD (ED)
THRU	THROUGH
TP	TEST PIT / TOP OF PAVEMENT / TURNING POINT
TRANS	TRANSITION
TSP	TRI-SODIUM PHOSPHATE
TST	TOP OF STEEL
TW	TOP OF WALL
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UN	UNION
UON	UNLESS OTHERWISE NOTED
USGS	UNITED STATES GEOLOGIC SURVEY
V	VENT / VOLT
VAC	VACUUM
VB	VACUUM BREAKER
VBOX	VALVE BOX
VC	VERTICAL CURVE
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
VCP	VITRIFIED CLAY PIPE
VTR	VENT THROUGH ROOF
W	WATER
W/	WITH
W/IN	WITHIN
W/O	WITHOUT
W/W	WALL TO WALL
WD	WOOD
WF	WIDE FLANGE
WH	WATER HEATER
WI	WROUGHT IRON
WM	WATER METER
WP	WORKING POINT / WATERPROOFING
WS	WATER SERVICE
WT	WEIGHT
WTP	WATER TREATMENT PLANT
WTRT	WATERTIGHT
WWF	WELDED WIRE FABRIC
WWTF	WASTEWATER TREATMENT FACILITY
WWTP	WASTEWATER TREATMENT PLANT
X SECT	CROSS SECTION
XFMR	TRANSFORMER
YD	YARD DRAIN / YARD
YH	YARD HYDRANT
YR	YEAR
ZN	ZINC

GENERAL NOTE:

1. THESE ARE STANDARD ABBREVIATIONS, NOT ALL OF THESE MAY BE USED ON THIS PROJECT.

WATER MAIN MATERIALS ABBREVIATION REFERENCE:

CA - CEMENT ASBESTOS

PVC - POLYVINYL CHLORIDE

CLC - CEMENT LINED AND COATED STEEL

CU - COPPER

STL - STEEL

CI - CAST IRON

DI - DUCTILE IRON

HDPE - HIGH DENSITY POLYETHYLENE

GS - GALVANIZED STEEL

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

P.E. No.: | W.A. No.: | SYSTEM: | LEGAL DESC.: | SIB No.: | TAX DIST.: | SCALE: AS SHOWN | DATE: 03/03/2026 | CHECKED BY: FHT | REVIEWED BY: SDC | DRAWN BY: JLC

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC.: ABBREVIATIONS

consor

DWG. No.: G-003

SHEET OF 80

GENERAL NOTES

1. ALL CONSTRUCTION OPERATIONS ARE TO BE ACCOMPLISHED IN ACCORDANCE WITH APPLICABLE STATE STATUES AND OSHA REGULATIONS.
2. ALL WORK SHALL COMPLY WITH THE CURRENT LOCAL AGENCY STANDARDS AND REQUIREMENTS.
3. THE CONTRACTOR SHALL SCHEDULE WORK IN SUCH A MANNER AS TO AVOID UNNECESSARY INCONVENIENCE TO THE OWNER OR THE PUBLIC.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL SURVEY MONUMENTS AND CORNER MARKERS. SURVEY MONUMENTS AND PROPERTY CORNER MARKERS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REESTABLISHED BY A REGISTERED PROFESSIONAL SURVEYOR LICENSED IN THE STATE IN WHICH THE WORK IS BEING PERFORMED.
5. CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A SAFE, NEAT, AND WORKMANLIKE MANNER AT ALL TIMES. JOB SITE SAFETY SHALL NOT BE COMPROMISED.
6. DIMENSIONS TO STRUCTURES, REFERENCED PIPING, PAVING, AND OTHER IMPROVEMENTS ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS 14 DAYS IN ADVANCE OF THE CONSTRUCTION PROGRESS.
7. STRUCTURES SUCH AS CURBS AND GUTTERS, CONCRETE AND ASPHALT DRIVES AND WALKWAYS, PAVING BRICKS, FENCING, RETAINING WALLS, SIGNS, POSTS, MARKERS, ETC., CROSSED BY A UTILITY THAT ARE NOT INDICATED IN THE PLANS SHALL BE RESTORED BY THE CONTRACTOR TO PRECONSTRUCTION CONDITIONS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS, BUILDINGS, OR OTHER STRUCTURES RESULTING FROM THE CONTRACTOR'S CONSTRUCTION ACTIVITIES. REPAIRS SHALL BE MADE TO PRECONSTRUCTION CONDITIONS.
9. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL APPLICABLE PERMITS REQUIRED TO PERFORM THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING STAGING AREAS REQUIRED TO PERFORM THE WORK.
11. THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS TO ALL ADJOINING PROPERTIES ACCESSIBLE TO THE PUBLIC AND EMERGENCY VEHICLES. DESIGNS FOR MAINTAINING ACCESS WILL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE CONTROLLING AGENCY FOR THE REVIEW AND APPROVAL.
12. CONTRACTOR SHALL COMPLY WITH THE TRENCH PLATE REQUIREMENTS OF THE GOVERNING JURISDICTION. IF TRENCH PLATE REQUIREMENTS ARE NOT SPECIFIED, THE CONTRACTOR SHALL APPLY SKID RESISTANT COATING ON THE TRENCH PLATES AND COLD MIX ASPHALT CONCRETE TO THE EDGES. THE TRENCH PLATES SHALL BE NOTCHED INTO THE ASPHALT CONCRETE OR TRAVELED SURFACE TO PREVENT SLIPPAGE AND ROCKING UNDER TRAFFIC.
13. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, COUNTY, AND LOCAL LAWS AND ORDINANCES RELATING TO THE SAFETY AND CHARACTER OF WORK, EQUIPMENT, AND PERSONNEL. THIS INCLUDES, BUT IS NOT LIMITED TO SHEETING, SHORING, BRACING, VENTILATION, CONFORMANCE WITH TRAFFIC CONTROL AND MAINTENANCE OF BARRICADES AND WARNING DEVICES.
14. CONTRACTOR SHALL KEEP COMPLETE AND ACCURATE RECORD DRAWINGS OF THE WORK, UTILITY POTHOLE DATA, AND EXISTING CONDITIONS THAT HAVE CHANGED OR ARE DIFFERENT THAN SHOWN ON THE PLANS. UPON COMPLETION OF THE WORK, THE CONTRACTORS RECORD DRAWINGS SHALL BE SUBMITTED TO THE OWNER.
15. CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND MAINTAINING ALL STORM DRAIN PIPES, STORM WATER FEATURES, OR DRAINAGE FACILITIES FROM DAMAGE DURING ALL STAGES OF CONSTRUCTION.
16. ALL EXISTING PAVEMENT MARKINGS AND SIGNAGE DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY CONTRACTOR AT NO EXPENSE TO OWNER.
17. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING THE WATER FOR ALL PROJECT-RELATED ACTIVITIES INCLUDING BUT NOT LIMITED TO CONSTRUCTION, DUST CONTROL, TESTING, AND DISINFECTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATING WITH OWNER TO TAP EXISTING MAINS AND BRINGING WATER TO THE SITE.
18. CONTRACTOR WILL BE RESPONSIBLE FOR DEVELOPMENT OF A CONSTRUCTION STORMWATER POLLUTION PREVENTION PROGRAM. CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE CONSTRUCTION PERMIT AND COMPLYING WITH ALL ASPECTS OF THE PERMIT.
19. NO POWER IS CURRENTLY AVAILABLE AT THE SITE. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL POWER NEEDED FOR CONSTRUCTION.
20. THE CONTRACTOR SHALL RESTORE THE SITE GRADING AND DRAINAGE TO PRECONSTRUCTION CONDITIONS.

GENERAL PIPELINE NOTES:

1. ALL OPEN TRENCHES, WORK AREA, AND SHAFTS SHALL BE SLOPED OR HAVE A SHORING SYSTEM IN ACCORDANCE WITH OSHA, STATE, AND LOCAL REQUIREMENTS.
2. SCHEDULE TIE-INS IN ACCORDANCE WITH THE SEQUENCING REQUIREMENTS OF THE CONTRACT. SCHEDULE AND COORDINATE TIE-INS AROUND THE OWNER'S OPERATIONAL REQUIREMENT AND LIMITATION.
3. THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING FOR REQUIRED INSPECTION. THE PRESENCE OR ABSENCE OF THE INSPECTOR WILL NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR THE PROPER PERFORMANCE OF THE WORK.

EXISTING UTILITY NOTES:

1. UTILITY LOCATIONS SHOWN ON PLANS ARE CONSIDERED APPROXIMATE ONLY. NO ELEVATIONS ARE SHOWN, AND NO INFORMATION WAS AVAILABLE DURING THE DESIGN PERIOD.
2. THE CONTRACTOR SHALL VERIFY LOCATION AND DEPTHS OF EXISTING UTILITIES BY CONTACTING ALL UTILITIES, AGENCIES, AND SUBSURFACE UTILITY LOCATING SERVICES (811). IN ADVANCE OF EXCAVATION, CONTRACTOR SHALL USE ALL EXISTING UTILITIES AND STRUCTURES ADJACENT TO THE WORK AREA, WHETHER INDICATED ON THE DRAWINGS OR NOT. SURVEY AND ACCURATELY RECORD THE LOCATIONS AND ELEVATIONS OF THE UTILITY CROSSINGS ON THE RECORD DRAWINGS. PREPARE AND SUBMIT THE UTILITY FIELD SURVEY INFORMATION TO THE OWNER FOR REVIEW ON A MONTHLY BASIS DURING THE COURSE OF CONSTRUCTION. SUBMITTAL SHALL INCLUDE UTILITIES SURVEYED THAT MONTH AND ASSOCIATED VERTICAL ELEVATIONS AND HORIZONTAL LOCATIONS (NORTHING AND EASTING COORDINATES) AND A LIST OF UTILITIES SURVEYED TO DATE. ALL COMPILED IN MICROSOFT EXCEL SPREADSHEET FORMAT. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE UTILITY AGENCY THE PROTECTION, REMOVAL, RECONSTRUCTION, AND/OR RECONNECTION OF EXISTING FACILITIES AS REQUIRED TO COMPLETE THE WORK. CONTRACTOR SHALL NOTIFY CONSTRUCTION MANAGER IMMEDIATELY OF ANY POTENTIAL UTILITY CONFLICTS.
3. SUPPORT ALL EXISTING UTILITIES AT CROSSING LOCATIONS. PROTECT EXISTING UTILITIES RUNNING PARALLEL TO CONSTRUCTED TRENCHES FROM DAMAGE CAUSED BY THE REMOVAL OF ADJACENT MATERIALS.
4. SOME UTILITY SERVICES MAY NOT BE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL TAKE NECESSARY MEASURES TO LOCATE AND PROTECT SERVICE DURING CONSTRUCTION.
5. PRIOR TO CONSTRUCTION OF ANY NEW PIPELINE THAT TIES INTO AN EXISTING UTILITY, EXPOSE AND VERIFY LOCATION AND ELEVATION OF THE TIE-IN POINT. CONFIRM THE EXISTING PIPE MATERIAL AND ANY OTHER INFORMATION REQUIRED BY THE DRAWINGS. SURVEY AND ACCURATELY RECORD THE LOCATION AND ELEVATION OF THE TIE-IN POINT ON THE RECORD DRAWINGS.
6. BEFORE CONSTRUCTION IS STARTED, CONTRACTOR SHALL COORDINATE WITH THE OWNER OF EACH UTILITY AND DEFINE THE REQUIREMENTS AND METHODS TO ACCOMMODATE THE PROTECTION, TEMPORARY SUPPORT, ADJUSTMENT, OR RELOCATION OF ANY UTILITIES AFFECTED BY THE PROPOSED WORK.
7. CONTRACTOR IS RESPONSIBLE FOR COSTS INCURRED AS A RESULT OF UTILITY RELOCATIONS PERFORMED FOR THE CONTRACTOR'S CONVENIENCE.

PINAL COUNTY GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL CONFORM TO CURRENT COUNTY HEALTH DEPARTMENT STANDARDS AND REVISIONS, ARIZONA WATER COMPANY SPECIFICATIONS AND DETAILS, MAG STANDARD SPECIFICATIONS AND DETAILS, AND ARIZONA DEPARTMENT OF HEALTH SERVICES ENGINEERING BULLETIN NO. 10.
2. DEVELOPER SHALL OBTAIN A PINAL COUNTY RIGHT OF WAY USE PERMIT PRIOR TO ANY WORK BEING PERFORMED WITHIN THE COUNTY RIGHT-OF-WAY. CONTACT PINAL COUNTY PUBLIC WORKS INSPECTION SECTION AT LEAST SEVEN (7) WORKING DAYS.
3. PRIOR TO CONSTRUCTION, THE APPROPRIATE AGENCY(IES) WILL BE NOTIFIED AS REQUIRED BY THE PERMITS.
4. ALL BACKFILL, COMPACTION, AND TESTING SHALL BE PER CURRENT COUNTY, CITY, STATE, ADOT AND ARIZONA WATER COMPANY STANDARDS AND SPECIFICATIONS.
5. ALL WATER LINES 8" AND LESS ARE TO HAVE A MINIMUM COVER OF 36 INCHES & ALL WATER LINES 12" AND GREATER ARE TO HAVE 48 INCHES OF MINIMUM COVER OVER THE TOP OF PIPE TO FINISH GRADE, UNLESS OTHERWISE SPECIFIED ON THE CONSTRUCTION DRAWINGS.
6. ALL FRAMES, COVERS, VALVE BOXES, AND MANHOLE COVERS SHALL BE ADJUSTED TO FINISH GRADE PRIOR TO COMPLETION OF CONSTRUCTION. (IF LOCATED OUTSIDE PAVEMENT SECTION, PREFER LEVEL WITH FINISHED GRADE BUT ALLOW 6" MAX ABOVE FINISHED GRADE.)
7. ALL WATER LINES SHALL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH ARIZONA WATER COMPANY'S SPECIFICATIONS.
8. ALL WATER LINES ARE TO BE DISINFECTED PER ADEQ ENGINEERING BULLETIN NO. 8.
9. AIR RELEASE VALVES ARE REQUIRED AT WATER SYSTEM HIGH POINTS PER ARIZONA WATER COMPANY STANDARD DETAILS.
10. WATER/SEWER SEPARATION SHALL BE PER CURRENT ARIZONA WATER COMPANY STANDARDS ADEQ AAC R18-5-502-C.
11. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO UNCOVER ALL EXISTING WATER LINES BEING CONNECTED TO, AND TO VERIFY THE LOCATION, DEPTH AND SIZE OF PIPE BEFORE ANY CONSTRUCTION BEGINS.
12. ANY CONSTRUCTION PERFORMED WITHOUT THE KNOWLEDGE OF THE INSPECTOR OR HIS REPRESENTATIVE IS LIABLE FOR REMOVAL AND REPLACEMENT AT THE CONTRACTORS EXPENSE.
13. IN ACCORDANCE WITH AAC R18-4-213, ALL MATERIALS ADDED AFTER JANUARY 1, 1993 WHICH MAY COME IN CONTACT WITH DRINKING WATER, SHALL CONFORM TO NATIONAL SANITATION FOUNDATION STANDARDS 60 AND 61.
14. ALL WATER SERVICES SHALL BE SET A MINIMUM OF 2 FEET ON THE CUSTOMERS PROPERTY AND NOT IN THE RIGHT-OF-WAY.
15. UNLESS OTHERWISE SPECIFIED ON THE CONSTRUCTION DRAWINGS, ALL WATER MAINS ARE TO BE INSTALLED 5 FEET FROM THE PROPERTY LINE INSIDE THE RIGHT-OF-WAY OR EASEMENT.
16. WATER VALVES SHALL BE SPACED NOT MORE THAN 500 FEET IN COMMERCIAL DISTRICTS AND NOT MORE THAN 800 FEET IN OTHER DISTRICTS. VARIATIONS MAY BE REQUIRED FOR TRANSMISSION MAINS OR SPECIAL APPLICATIONS. SUFFICIENT VALVING IS REQUIRED WHERE WATER LINES CROSS STREAMS, RAILROADS AND MAJOR HIGHWAYS.
17. CONTRACTOR IS RESPONSIBLE FOR BLUE STAKE MARKING DAILY AS CONSTRUCTION IS IN PROGRESS.
18. ALL RESIDENTS TO BE NOTIFIED IN PERSON 24 HOURS PRIOR TO DRIVEWAY CROSSING.
19. TRAFFIC CONTROL AND BARRICADING SHALL BE ACCORDING TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES OR PINAL COUNTY REQUIREMENTS. CONTRACTOR TO SUPPLY LIGHTED BARRICADE AT 50' INTERVALS WITH OPEN TRENCH SIGNAGE.
20. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO PINAL COUNTY PUBLIC WORKS INSPECTION SECTION AT LEAST THREE (3) WORKING DAYS PRIOR TO WORK FOR REVIEW AND APPROVAL.
21. ANY WORK ON ARTERIAL OR COLLECTOR ROADS SHALL REQUIRE AN OFF-DUTY PINAL COUNTY SHERIFF'S OFFICER FOR TRAFFIC CONTROL. CONTACT SHALL BE MADE THROUGH PCSO REPRESENTATIVE.
22. NO TRENCH TO BE LEFT OPEN/UNCOVERED AFTER WORKING HOURS UNLESS PROPERLY SIGNED AND BARRICADED PER THE APPROVED TRAFFIC CONTROL PLAN.
23. PLAN APPROVAL IS VALID FOR (12) MONTHS FROM THE DATE OF COUNTY APPROVAL. IF APPROVAL EXPIRES, THE PLANS MUST BE RESUBMITTED TO PINAL COUNTY PUBLIC WORKS FOR UPDATE REVIEW AND RE-APPROVAL.
24. TRENCH EXCAVATION, BACK FILLING AND COMPACTION SHALL BE PER MAG STANDARD SPECIFICATIONS SECTION 601. BEDDING SHALL BE SPECIFICALLY PER MAG STANDARD SPECIFICATIONS 601.4.2 AND 601.4.6.
25. ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THESE PLANS SHALL BE IN ACCORDANCE WITH ARIZONA WATER COMPANY SPECIFICATIONS AND MAG STANDARD SPECIFICATIONS AND DETAILS.
26. ALL COMPONENTS MUST COMPLY WITH SDWA'S "LEAD FREE" STANDARDS AND CONFORM TO AWWA OR ASTM STANDARDS.
27. BACKFLOW PREVENTION SHALL BE IN ACCORDANCE WITH R-18-4-115.
28. CONSTRUCTION MATERIALS USED IN WATER SYSTEM MUST BE LEAD FREE AS PER AAC R18-4-504 AND R18-1-101 (43).

ARIZONA WATER COMPANY CONSTRUCTION NOTES

1. CONNECT M.J. FITTINGS TO M.J. FITTINGS USING FOSTER ADAPTERS.
2. ALL MATERIALS & PIPE REMOVED UNLESS OTHERWISE INDICATED, MUST BE DISPOSED BY THE CONTRACTOR.
3. ASPHALT REPLACEMENT PER LOCAL PERMIT REQUIREMENTS.
4. ALL NEW RESTRAINED PIPE MUST BE U.S. PIPE TR FLEX, AMERICAN FLEX RING OR M.J. DUCTILE IRON PIPE WITH MEGALUG SERIES 1100, STAR GRIP SERIES 3000 OR TUF GRIP SERIES 1000 JOINT RESTRAINTS.
5. USE MEGALUG SERIES 1100, STAR GRIP SERIES 3000 OR TUF GRIP SERIES 1000 JOINT RESTRAINTS AT ALL M.J. FITTING CONNECTIONS.
6. INTERRUPTION OF WATER SERVICE FOR TIE-INS CANNOT EXCEED 4 HOURS IN DURATION FROM TIME OF SHUTDOWN TO COMPLETION OF FLUSHING.
7. COMPANY DOES NOT GUARANTEE EXISTING VALVES WILL PROVIDE A DRY SHUTDOWN.
8. ANY ADDITIONAL FITTINGS REQUIRED FOR TIE-INS BUT NOT SHOWN ON PLANS FOR PROPER ALIGNMENT SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE PIPE PRICE.
9. PROTECT ALL UTILITY CROSSINGS IN PLACE UNLESS OTHERWISE NOTED ON PLANS.
10. TRAFFIC CONTROL PER RIGHT-OF-WAY PERMIT REQUIREMENTS.
11. CONTRACTOR MUST USE NO. 1 METER BOXES WHEN INSTALLING A NEW SERVICE CONNECTION AT THE SAME LOCATION OF AN EX. SERVICE.
12. CONTRACTOR MUST MAINTAIN MIN. 3-FEET HORIZONTAL SEPARATION FROM OUTSIDE OF WATER MAIN TRENCH TO EX. POWER POLES AND PROVIDE BRACING FOR POWER POLES IF NECESSARY DURING CONSTRUCTION.
13. CONTRACTOR MUST PLUG ENDS OF ABANDONED IN PLACE WATER MAINS WITH CLASS 'C' CONCRETE MIN. 24-INCHES INTO PIPE.
14. PASSING COMPACTION TEST RESULTS ARE REQUIRED PRIOR TO PAVEMENT REPLACEMENT.
15. CONTRACTOR MUST PAY THE COST OF ALL WATER PROVIDED BY AWCo. TO THE CONTRACTOR FOR CONSTRUCTION AND TESTING OF THE WATER MAINS.
16. CONTRACTOR MUST PROVIDE AND INSTALL NEW CUSTOMER SHUTOFF VALVE AT EACH SERVICE WITH PRIOR CUSTOMER PERMISSION.
17. CONTRACTOR MUST COORDINATE MATERIAL, LOCATION, AND TIMING, OF SERVICE TIE-OVERS WITH CUSTOMER.
18. PROTECT WATER LINE TO BE ABANDONED IN PLACE UNTIL FINAL TIE-INS ARE COMPLETED.
19. CONTRACTOR HAS THE OPTION TO BORE THE ROAD WHILE MAINTAINING MINIMUM DEPTH FOR SERVICE REPLACEMENT.
20. CONTRACTOR MUST MAINTAIN ALL PAVEMENT CUTS IN A SMOOTH AND SAFE MANNER WITH FLUSH MOUNTED PLATES OR TEMPORARY ASPHALT UNTIL CONTRACTOR COMPLETES PERMANENT PAVEMENT REPLACEMENT.
21. CONTRACTOR MUST CONSTRUCT FACILITIES WITHIN RIGHT-OF-WAY WITH THE EXCEPTION OF SERVICE METER BOXES.

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: | P.E. No.: | SYSTEM: | LEGAL DESC.: | TAX DIST.: | SIB No.:

DATE: 03/03/2026 | SCALE: AS SHOWN

DRAWN BY: JLC | REVIEWED BY: SDC | CHECKED BY: FHT

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC.: ENGINEER NOTES

consor

DWG. No.: G-004

E-8-1
CONSTRUCTION SPECIFICATIONS FOR THE INSTALLATION OF WATER DISTRIBUTION SYSTEMS DUCTILE IRON

GENERAL NOTES

DEFINITIONS:

1. COMPANY. THE WORDS "COMPANY" OR "ARIZONA WATER COMPANY" MEAN ARIZONA WATER COMPANY, AND WHERE APPLICABLE, ANY DIVISION OF ARIZONA WATER COMPANY, WHOSE PRINCIPAL PLACE OF BUSINESS IS LOCATED AT 3805 NORTH BLACK CANYON HIGHWAY, PHOENIX, ARIZONA 85015-5351 (POST OFFICE BOX 29006, PHOENIX, ARIZONA 85038-9006).
2. COMPANY'S AUTHORIZED REPRESENTATIVE. THE WORDS "COMPANY'S AUTHORIZED REPRESENTATIVE" MEAN ANY OFFICER OF THE COMPANY, AND ANY OF THE COMPANY'S ENGINEERS, ANY DIVISION MANAGER OR SUPERINTENDENT OF THE COMPANY AND/OR SUCH OTHER PERSON(S) DESIGNATED IN WRITING AS THE "COMPANY'S AUTHORIZED REPRESENTATIVE" BY THE PRESIDENT OR ANY VICE PRESIDENT OF THE COMPANY.
3. CONTRACTOR. THE WORD "CONTRACTOR" MEANS EITHER AN INDIVIDUAL OR OTHER ENTITY EMPLOYED TO DO THE WORK AS SHOWN ON THE CONSTRUCTION DRAWINGS AND AS SPECIFIED HEREIN.
4. CONSTRUCTION DRAWINGS. THE WORDS "CONSTRUCTION DRAWINGS" MEAN PLANS PREPARED BY OR ON BEHALF OF ARIZONA WATER COMPANY.
5. CONTRACT. THE WORD "CONTRACT" MEANS THE WRITTEN DOCUMENT TITLED "PROPOSAL/CONTRACT" WHEN SUCH DOCUMENT HAS BEEN SIGNED BY AN OFFICER OR OTHER AUTHORIZED REPRESENTATIVE OF BOTH THE CONTRACTOR AND THE COMPANY.

GENERAL:

1. ALL WORK IS TO BE COMPLETED IN A SAFE, WORKMANLIKE MANNER AND IN ACCORDANCE WITH THESE CONSTRUCTION SPECIFICATIONS; ANY DEVIATION THEREFROM MUST BE APPROVED IN WRITING BY THE COMPANY.
2. INSTALLATIONS MUST CONFORM WITH THE REQUIREMENTS OF ALL GOVERNMENTAL REGULATING AGENCIES AND THE COST OF CONFORMING TO SUCH REGULATIONS MUST BE INCLUDED IN THE UNIT BID PRICES. EXAMPLES OF SUCH REGULATIONS, WITHOUT ATTEMPTING TO BE INCLUSIVE, ARE:
   A. SPECIAL COMPACTION AND PAVING FOR STREET CROSSING.
   B. SHORING WHEN REQUIRED BECAUSE OF THE TRENCH DEPTH.
   C. CLOSING A TRENCH IN THOSE AREAS WHERE NO OPEN TRENCH IS ALLOWED OVERNIGHT.
   D. BARRICADING AND TRAFFIC CONTROL AS REQUIRED.

LOCATION MARKING:

1. ALIGNMENT STAKES AS REQUIRED IN THE OPINION OF THE COMPANY SHALL BE FURNISHED BY THE COMPANY TO THE CONTRACTOR AND SHALL BE SET BY THE COMPANY AT AGREED UPON INTERVALS AND OFFSETS. UNDER NORMAL CIRCUMSTANCES THESE WILL REFERENCE THE PIPELINE LOCATION FIVE FEET (5') INTO THE RIGHT-OF-WAY MEASURED FROM PROPERTY PINS. GRADE STAKES WILL BE PROVIDED ONLY WHEN THE CONSTRUCTION DRAWINGS SHOW A PIPELINE DEPTH OTHER THAN COVERED IN THESE SPECIFICATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PRESERVE ALL SURVEY WORK.

TRENCH EXCAVATION:

1. THE TRENCH LOCATION IS TO BE DETERMINED BY THE CONSTRUCTION DRAWINGS.
2. FOR 8-INCH OR SMALLER PIPE: THE DEPTH OF THE TRENCH PRIOR TO PIPE LAYING SHALL BE SUCH THAT THE FINISHED PIPELINE SHALL HAVE BETWEEN THIRTY-SIX INCHES (36") AND FORTY-TWO INCHES (42") OF COVER UNLESS OTHERWISE SPECIFIED ON THE CONSTRUCTION DRAWINGS.
3. FOR 12-INCH AND LARGER PIPE: THE DEPTH OF THE TRENCH PRIOR TO PIPE LAYING SHALL BE SUCH THAT THE FINISHED PIPELINE SHALL HAVE BETWEEN FORTY-EIGHT INCHES (48") AND SIXTY INCHES (60") OF COVER UNLESS OTHERWISE SPECIFIED ON THE CONSTRUCTION DRAWINGS.
4. THE WIDTH OF THE TRENCH AT AND BELOW THE LEVEL AT THE TOP OF THE PIPE SHALL BE A MINIMUM OF TWELVE INCHES (12") PLUS THE OUTSIDE DIAMETER OF THE PIPE BARREL AND A MAXIMUM OF TWENTY-FOUR INCHES (24") PLUS THE OUTSIDE DIAMETER OF THE PIPE BARREL.
5. THE BOTTOM OF THE TRENCH SHALL BE ACCURATELY GRADED TO PROVIDE A UNIFORM BEARING FOR EACH LENGTH OF PIPE FOR THE FULL LENGTH OF THE PIPE. IF THE NATIVE MATERIAL ON THE TRENCH BOTTOM CAN BE REASONABLY DUG BY HAND, BELL HOLES SHALL BE DUG FOR THE JOINTS SO THAT THE JOINTS IN NO WAY SUPPORT THE PIPE. WHEN NATIVE MATERIALS SUCH AS ROCK ARE ENCOUNTERED DURING TRENCHING THAT WILL NOT PROVIDE A UNIFORM SUPPORT FOR THE PIPE, THE TRENCH WILL BE OVER-EXCAVATED AN ADDITIONAL SIX INCHES (6") AND SUITABLE BEDDING MATERIAL WILL BE PLACED IN THE TRENCH.
6. BEDDING MATERIAL WILL BE PLACED BY HAND IN FOUR-INCH (4") LIFTS AND COMPACTED TO ENSURE UNIFORM COMPACTION AND TO ELIMINATE ANY VOIDS UNDER THE PIPE. WHEN THE SPACE BETWEEN THE PIPE AND TRENCH BOTTOM VARIES, THIS MUST BE BACKFILLED AND COMPACTED IN FOUR-INCH (4") LIFTS TO THE MID-SECTION OF THE PIPE.
7. WHENEVER THE TRENCH IS OVER-EXCAVATED FOR WHATEVER REASON, THE TRENCH BOTTOM WILL BE BROUGHT UP TO THE CORRECT DEPTH AT THE CONTRACTOR'S EXPENSE USING EITHER METHOD (A) OR (B) AS FOLLOWS:
   A. A.B.C. MATERIAL SHALL BE USED AND COMPACTED TO A UNIFORM DENSITY OF NOT LESS THAN 80% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99 METHOD A AND T-191.
   B. NATIVE MATERIAL 100% OF WHICH WILL PASS THROUGH A ONE AND ONE-HALF INCH (1-1/2") SCREEN AND AT LEAST 20% OF WHICH WILL PASS THROUGH A NUMBER-8 SCREEN SHALL BE USED AND COMPACTED TO A UNIFORM DENSITY OF NOT LESS THAN 85% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99 METHOD A AND T-191.

MATERIALS TO BE PROVIDED BY THE CONTRACTOR:

UNLESS OTHERWISE SPECIFIED ON THE CONSTRUCTION DRAWINGS OR IN THE CONTRACT, THE CONTRACTOR WILL SUPPLY ALL OF THE NECESSARY MATERIALS WHICH WILL BECOME A PERMANENT AND INTEGRAL PART OF THE WATER DISTRIBUTION SYSTEM, INCLUDING CONCRETE BLOCKING, ANCHORS, BACKFILL MATERIAL, PAVING MATERIAL AND SUPPLIES USED DURING THE PROSECUTION OF THE WORK. ALL MATERIALS PROVIDED BY THE CONTRACTOR TO CONSTRUCT THE WATER DISTRIBUTION SYSTEM MUST BE NSF STANDARD 61 APPROVED. ALL POTABLE WATER PIPES AND FITTINGS SHALL HAVE NSF-PW SEAL. CONSTRUCTION MATERIALS USED IN THE WATER SYSTEM SHALL BE LEAD FREE AS DEFINED AT AAC R28-4-504 AND R18-1-101. THE CONTRACTOR WILL PROVIDE THE FOLLOWING MATERIALS:

1. FIRE HYDRANTS: MUELLER SUPER CENTURION 250 FIRE HYDRANT, MEETS ANSI/AWWA C502 STANDARD, MODEL NO. A-423, 5-1/4" MAIN VALVE OPENING, THREE WAY, 6" MECHANICAL JOINT SHOE, 1-1/2" PENTAGON OPERATING NUT, COLOR - YELLOW, DRAIN OPEN; OPEN DIRECTION - LEFT, 4' OR 4'-6" BURY DEPENDING ON APPLICATION. FOR PUMPER AND HOSE NOZZLE INFORMATION SEE BELOW.
   A. ONE - 4" PUMPER NOZZLE, NST AND TWO - 2-1/2" HOSE NOZZLES, NST. (THESE LOCATIONS ONLY: AJO, CASA GRANDE, COOLIDGE AND SAN MANUEL.)
   B. ONE - 4-1/2" PUMPER NOZZLE, NST AND TWO - 2-1/2" HOSE NOZZLES, NST. (THESE LOCATIONS ONLY: APACHE JUNCTION, ARIZONA CITY, LAKESIDE, ORACLE, OVERGAARD, PINEWOOD, RIMROCK, SEDONA, SIERRA VISTA, WHITE TANK AND WINKELMAN.)
   C. ONE - 4-1/2" PUMPER NOZZLE, NST AND TWO - 2-1/2" HOSE NOZZLES, NPT (BISBEE ONLY.)
   D. ONE - 3" PUMPER NOZZLE GA 6-350 (6 THREADS PER INCH, 3.50 PITCH DIAMETER) AND TWO - 2-1/2" HOSE NOZZLES, NPT (MIAMI ONLY.)
   E. ONE - 3-1/2" PUMPER NOZZLE GA 6-411 (6 THREADS PER INCH, 4.11 PITCH DIAMETER) AND TWO - 2-1/2" HOSE NOZZLE, NST (SUPERIOR ONLY.)
2. FITTINGS: MANUFACTURED BY TYLER OR UNION. CROSSES, ELBOWS, TEES, CAP, REDUCER, ADAPTER, PLUG, BLIND FLANGE AND TAPPED FLANGE; DUCTILE IRON, CLASS 350, SSB, CAST IRON CEMENT LINED.
3. FOSTER ADAPTORS FOR MJ, MADE BY INFACT CORPORATION: AVAILABLE IN SIZE 4" TO 16". PART NO. 4" = 4FA-BC, 6" = 6FA-BC, 8" = 8FA-BC, 10" = 10FA-BC, 12" = 12FA-BC, 16" = 16FA-BC.
4. DETECTOR CHECK VALVE: MUELLER/ HERSEY EDC III, IRON BODY, INCLUDING 5/8" X 3/4" TRIM KIT. TRIM KIT PART NO.: 4" = 282080, 6" = 282082, 8" = 282085, 10" = 282496.
5. GATE VALVES: MUELLER RESILIENT WEDGE GATE VALVES, MEETS AWWA C509 SPECIFICATION, 250 PSIG, NON-RISING STEM, PART NO. A-2360 SIZES 4" THROUGH 12" ; PART NO. A-2361 SIZES 14" THROUGH 36", LOW ZINC STEMS, EPOXY COATED INSIDE AND OUTSIDE TO MEET THE NSF 61 RATING. THE BONNET AND STUFFING BOX SHALL HAVE 304 STAINLESS STEEL BOLTS/NUTS.
6. TRACER WIRE AND WARNING TAPE: (1) TRACER WIRE: SHALL BE DIRECT BURY AWG #14 SOLID COPPER WIRE, COLOR: BLUE (2) WARNING TAPE: REEF INDUSTRIES, STANDARD TERRA TAPE IN 3" WIDTHS. COLOR: BLUE AND IMPRINTED 'ARIZONA WATER COMPANY'.
7. AIR RELEASE VALVE: CRISPIN MODEL AR10 WITH 1" NPT INLET AND 1/2" NPT OUTLET, CAST IRON BODY AND TOP FLANGE; WITH A 5/64" ORIFICE WITH STAINLESS STEEL VALVE SEALING FACES AND BUNA-N RUBBER.
8. PRESSURE RELIEF VALVE: WATTS 174A, MODEL M, 2" INLET, 2" OUTLET, BRONZE BODY, 30LB. TO 150LB. PRESSURE RANGE.
9. MEGALUG: MECHANICAL JOINT RESTRAINT MADE OF DUCTILE IRON CONFORMING TO ASTM 536-80, 250 PSI MADE BY EBAA IRON, INC., SERIES 1100 OR EQUAL.
10. METER BOXES: (1) CONCRETE BOX WITH A STEEL REGULAR LID, NUMBER 1: TUCSON SPECIFICATION. (2) CONCRETE BOX WITH A STEEL REGULAR LID, NUMBER 2, 3, AND 4: PHOENIX SPECIFICATION.
11. PIPE, COPPER: TYPE K SOFT COPPER IN 60 OR 100-FOOT COILS, PER ASTM B88.
12. PIPE, DUCTILE IRON: DUCTILE IRON PIPE, CEMENT LINED, PUSH-ON, CONFORM TO CURRENT ANSI/AWWA SPECIFICATION A21.51/C151, PRESSURE CLASS 350 (SIZES 4" THROUGH 12"), PRESSURE CLASS 250 (SIZES 14" THROUGH 20"), OR PRESSURE CLASS 200 FOR 24" THROUGH 36" PIPE. VENDORS: (1) PACIFIC STATES CAST IRON PIPE COMPANY (2) GRIFFIN PIPE (3) UNITED STATES PIPE AND FOUNDRY COMPANY (4) AMERICAN DUCTILE IRON PIPE (5) CLOW PIPE (MCWANE, INC.)
13. PIPE, PLASTIC: PLASTIC PIPE, C-900 PVC PER ANSI/AWWA C900, CLASS 150, SIZES 6" THROUGH 12". NSF61 APPROVED. FURNISHED IN LAYING LENGTHS OF 20'. THE BARREL SHALL CONFORM TO THE OUTSIDE DIMENSIONS OF STEEL PIPE (IPS) OR CAST IRON (CI) PIPE EQUIVALENT AND THE WALL THICKNESS OF DIMENSION-RATIO (DR) 18.
14. POLYETHYLENE ENCASEMENT (POLYWRAP): FOR ALL PIPELINE AND RELATED FITTINGS INSTALLED, EXCEPT FOR THE COOLIDGE DIVISION. MINIMUM 8 MIL. AND INSTALLED PER AWWA C105/A21.5-93 AND ASTM A-674-89. MANUFACTURED BY THE PACIFIC STATES CAST IRON PIPE COMPANY. THE WRAPPING TAPE SHALL BE MINIMUM 10 MIL. VINYL TAPE. NO DUCT TAPE SHALL BE USED.
15. COUPLING: MUELLER, STRAIGHT THREE PART UNION, TESTED TO MEET ANSI/AWWA C800, H15403, CONDUCTIVE COMPRESSION. MUELLER, H15428, STRAIGHT COUPLING, CONDUCTIVE COMPRESSION BY MALE IRON PIPE,TESTED TO MEET ANSI/AWWA C800 SPECIFICATION. SIZE: 2". MUELLER, H15451, STRAIGHT COUPLING, CONDUCTIVE COMPRESSION BY FEMALE IRON PIPE, TESTED TO MEET ANSI/AWWA C800 SPECIFICATION. SIZE: 2". VIKING JOHNSON BRAND, SOLD BY MUELLER: MAXIFIT STRAIGHT (2"-24"), MAXIFITXTRA STRAIGHT (4"-8") OR MAXISTEP TRANSITION, TESTED TO MEET AWWA/ANSI C.219-91 SPECIFICATIONS - CERTIFIED TO ISO 9001:1994 / SMITH - BLAIR QUANTUM.
16. STOP, ANGLE METER, BALL: MUELLER, VALVE, B24258, CONDUCTIVE COMPRESSION BY METER SWIVEL NUT, TESTED TO MEET ANSI/AWWA C800, SIZE 5/8 " X 3/4" X 3/4" FOR A 3/4" SERVICE OR SIZE 1" FOR A 1" SERVICE. MUELLER, VALVE, B24265, FEMALE PIPE THREAD BY METER SWIVEL NUT, TESTED TO MEET ANSI/AWWA C800, SIZE 5/8" X 3/4 " X 3/4 " FOR A 3/4" SERVICE OR SIZE 1" FOR A 1" SERVICE.
17. STOP, CORP: MUELLER, BALL VALVE, B25008, TAPER THREAD BY CONDUCTIVE COMPRESSION, TESTED TO MEET ANSI/AWWA C800 SPECIFICATION, SIZES: 3/4", 1" AND 2". MUELLER, BALL VALVE, B25028, IRON PIPE THREAD BY CONDUCTIVE COMPRESSION, TESTED TO MEET ANSI/AWWA C800 SPECIFICATION, SIZES 3/4", 1", AND 2". MUELLER, 300 BALL CURB VALVE, B-25122, TAPER THREAD BY CONDUCTIVE COMPRESSION, TESTED TO MEET ANSI/AWWA C800 SPECIFICATIONS, SIZE: 2". (2" SERVICE)
18. STOP, CURB: ORISEAL VALVE, H10291, IRON PIPE THREAD BY IRON PIPE THREAD, QUARTER TURN CHECK, BRASS, TESTED TO 300 PSI WORKING PRESSURE, TESTED TO MEET ANSI/AWWA C800 SPECIFICATION, SIZE: 2". MUELLER, B20283, MUELLER 300 BALL CURB VALVE, FEMALE IRON PIPE BY FEMALE IRON PIPE, QUARTER TURN CHECK, TESTED TO MEET ANSI/AWWA C800 SPECIFICATION. SIZE: 2". (BLOW-OFF E-9-8-1).
19. TAPPING SADDLE: SMITH BLAIR, CAST BRONZE ASTM-B584 85-5-5-5, DOUBLE STRAP, IRON PIPE THREADS, MODELS 321 AND 323. WASHERS ARE SILICON BRONZE, ASTM-B36. GASKETS ARE GRADE 60 BUNA N, OR MUELLER BRONZE DOUBLE STRAP SERVICE SADDLE, BR 2 B SERIES, CAST BRONZE, ASTM-B585, 85-5-5-5, OR H16084, 200 PSIG, MEETS ANSI/AWWA C800.
20. TAPPING SLEEVE: MUELLER H304 STAINLESS STEEL TAPPING SLEEVE, JCM 432 18 8 TYPE 304 STAINLESS STEEL TAPPING SLEEVE, ROMAC "SST" TYPE 304 STAINLESS STEEL TAPPING SLEEVE OR CASCADE-STYLE CST-EX STAINLESS STEEL PRESSURE-RATED TAPPING SLEEVE
21. TAPPING VALVE: MUELLER RESILIENT WEDGE TAPPING VALVE, CATALOG NUMBER T-2360-16. CLASS 125, SIZES 4" THROUGH 12"; T-2361-16, CLASS 125, SIZES 14" TO 36" ALL WITH TYPE 304 STAINLESS STEEL FASTENERS; BYPASS VALVES ARE REQUIRED ON 18" - 36" VALVES FLANGE BY MECHANICAL JOINT PER ANSI/AWWA C111, IRON WEDGE, NON-RISING STEM. EPOXY COATED INTERIOR/EXTERIOR PER ANSI/AWWA C550 FOR NSF 61 COMPLIANCE. 250 PSI RANGE FOR VALVES 4" TO 12". 150 PSI RANGE FOR VALVES 14" TO 36".
22. U-BRANCH: MUELLER, H15364, 1" MALE IRON PIPE BY 3/4" MALE IRON PIPE, TESTED TO MEET ANSI/AWWA C800 SPECIFICATION. SIZE: 1" X 3/4" X 13-1/2", STRAIGHT LINE.
23. VALVE BOXES: VALVE BOX WITH COVER, ADJUSTABLE, TYLER 562-A OR EQUAL, MADE OF CAST IRON.
24. VAULTS: UTILITY VAULT COMPANY, CHANDLER, AZ. (1) 4484-WA CONCRETE VAULT WITH A 3660 ALUMINUM DOUBLE TORSION DOOR WITH A RECESSED PADLOCK HASP, TWO - 18" X 24" CENTER KNOCKOUTS. (2) 575-WA CONCRETE VAULT WITH A 4874 ALUMINUM DOUBLE TORSION DOOR WITH A RECESSED PADLOCK HASP, TWO - 18" X 24" CENTER KNOCK OUTS AND ADJUSTABLE FRAME. (3) 612-SX-WA CONCRETE VAULT WITH A 4874 ALUMINUM DOUBLE TORSION DOOR WITH A RECESSED PADLOCK HASP, TWO - 18" X 24" CENTER KNOCKOUTS.
25. VALVE, METER: MUELLER, B24265-1, MUELLER 300 BALL ANGLE METER VALVE, FEMALE IRON PIPE BY METER NUT, QUARTER TURN CHECK, LOCK WING, TESTED TO MEET ANSI/AWWA C800 SPECIFICATION. SIZE: 1". MUELLER, B25170, MUELLER 300 BALL STRAIGHT VALVE, CONDUCTIVE COMPRESSION BY FEMALE IRON PIPE, QUARTER TURN CHECK, LOCK WING, TESTED TO MEET ANSI/AWWA C800 SPECIFICATION. SIZE: 1".
26. YOKES, METER: RELOCATOR TYPE COPPER METER YOKE WITH HORIZONTAL INLET AND OUTLET AND METER THREAD ENDS, B24118, WITH LOCK WING MUELLER 300 ANGLE BALL VALVE, FULL PORT, SIZES: 1" X 12", 5/8" X 3/4" X 7", 5/8 X 3/4" X 9".
27. MUELLER, 2" COPPER METER YOKE WITH HORIZONTAL INLET AND OUTLET AND FEMALE IRON PIPE THREADS, B2423-99000, WITH LOCK WING MUELLER 300 BALL ANGLE METER VALVES ON INLET AND OUTLET RISERS. RAISED 1" BY-PASS WITH LOCK WING MUELLER 300 BALL VALVE.
28. THE CONTRACTOR ALSO WILL BE REQUIRED TO PROVIDE THE FOLLOWING MATERIALS, THE COST OF WHICH WILL BE INCLUDED IN ITS UNIT BID PRICE: ALL MATERIAL AND CONCRETE FOR THRUST BLOCKS, OTHER ANCHORS, REINFORCING STEEL; ALL GRAVEL, CRUSHED STONE, A.B.C., EARTH, SAND, OR SCREENED MATERIAL WHICH MAY BE REQUIRED;
29. ALL MATERIAL FOR BRACING AND SHORING TRENCHES AND FOR CONSTRUCTION OF FORMS; ALL BARRICADES AND TRAFFIC CONTROL EQUIPMENT; ALL MATERIAL FOR PAVING REPLACEMENT AND ANY WATER USED FOR COMPACTION OF BACKFILL.

INSTALLATION OF MATERIALS:

1. ALL MATERIALS ARE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS UNLESS OTHERWISE DIRECTED BY THESE SPECIFICATIONS.
2. ALL PIPE, FITTINGS AND VALVES SHALL BE LAID TRUE TO THE LINES, GRADES AND LOCATIONS ESTABLISHED BY THE SPECIFICATIONS AND THE CONSTRUCTION DRAWINGS.
3. THE ENDS AND INSIDE OF THE PIPE SHALL BE THOROUGHLY CLEANED AND INSPECTED FOR DAMAGE. NO DAMAGED MATERIALS SHALL BE INSTALLED IN THE WATER DISTRIBUTION SYSTEM. WHENEVER THE WORK CEASES FOR ANY REASON, ALL OPEN PIPELINE ENDS SHALL BE TIGHTLY PLUGGED BY THE CONTRACTOR. PLUGS SHALL BE WATERTIGHT AND APPROVED BY THE COMPANY.
4. CONCRETE THRUST BLOCKS OF THE SIZES REQUIRED BY THE PLANS AND SPECIFICATIONS ARE TO BE PROVIDED AT ALL VALVES, CHANGES IN DIRECTION OR SIZE, OR AT ANY OTHER POINT WHERE AN UNBALANCED THRUST DUE TO WATER PRESSURE WOULD EXIST. THRUST BLOCKS ARE TO BE FORMED TO PREVENT ANY CONCRETE FROM SPILLING OVER OR INTO A JOINT.
5. TRENCH CURVES AS SHOWN ON THE CONSTRUCTION DRAWINGS MAY BE MADE WITHOUT FITTINGS WHEN USING PUSH ON JOINT PIPE UP TO TWELVE INCHES (12") IN DIAMETER, IF THE DEFLECTION OF THE PIPE DOES NOT EXCEED FIVE DEGREES (5°) OR NINETEEN INCHES (19") PER EIGHTEEN-FOOT (18') LENGTH OF PIPE. THE MINIMUM RADIUS OF SUCH CURVES WILL BE TWO HUNDRED FIVE FEET (205').
6. PRIOR TO CONSTRUCTION, THE APPROPRIATE AGENCY(IES) WILL BE NOTIFIED AS REQUIRED BY THE PERMIT(S).
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UNCOVER ALL EXISTING WATER LINES BEING CONNECTED TO, AND TO VERIFY THE LOCATION, DEPTH AND SIZE OF PIPE BEFORE ANY CONSTRUCTION BEGINS.
8. ANY CONSTRUCTION PERFORMED WITHOUT THE KNOWLEDGE OF THE DULY AUTHORIZED REPRESENTATIVE IS LIABLE FOR REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
9. ALL FIRE HYDRANTS, FRAMES, COVERS AND VALVE BOXES, ETC. SHALL BE ADJUSTED TO FINISHED GRADE PRIOR TO THE PLACING OF THE ASPHALT CONCRETE SURFACE COURSE BY THE CONTRACTOR (WHERE APPLICABLE).
10. AIR RELEASE VALVES SHALL BE INSTALLED AT WATER SYSTEM HIGH POINTS PER STANDARD DETAIL E-9-8-2/E-9-8-3.
11. ALL WATER SERVICES SHALL BE SET A MINIMUM OF TWO FEET (2') ON THE CUSTOMER'S PROPERTY, PREFERABLY WITHIN THE P.U.E. AND NOT WITHIN RIGHT-OF-WAY.
12. UNLESS OTHERWISE SPECIFIED ON THE CONSTRUCTION DRAWINGS, ALL WATER MAINS SHALL BE INSTALLED FIVE FEET (5') FROM THE PROPERTY LINE INSIDE THE RIGHT-OF-WAY OR EASEMENT.
13. WATER VALVES SHALL BE SPACED NOT MORE THAN FIVE HUNDRED FEET (500') IN COMMERCIAL DISTRICTS AND NOT MORE THAN EIGHT HUNDRED FEET (800') IN OTHER DISTRICTS. VARIATIONS MAY BE REQUIRED FOR TRANSMISSION MAINS OR SPECIAL APPLICATIONS. INSTALLATION OF WATER LINE CASING SHALL BE PER STANDARD SPECIFICATION E-9-24-1.
14. TRACER WIRE AND WARNING TAPE ARE TO BE INSTALLED ON ALL MAINS, TEES, CROSSES, ELLS AND FIRE HYDRANT LATERALS. THEY WILL NOT BE INSTALLED ON SERVICE LINES. THE TRACER WIRE WILL BE INSTALLED ON THE WATER MAIN 45 DEGREES FROM THE VERTICAL CENTERLINE OF THE PIPE AND SHALL BE TAPED TO THE FITTINGS DIRECTLY AND ON THE MAIN EVERY 10 FEET USING A MINIMUM 10 MIL VINYL TAPE. THE TRACER WIRE SHALL BE PLACED BETWEEN THE VALVE RISER AND BOX WITH A MINIMUM OF 12" OF WIRE INSIDE. THE WARNING TAPE SHALL BE INSTALLED A MINIMUM OF TWO FEET BELOW THE SURFACE, BEING MEASURED FROM FINAL GRADE, DIRECTLY OVER THE CENTER OF THE PIPE. ANY SPLICES IN THE TRACER WIRE SHALL BE JOINED USING WATERPROOF CONNECTORS. ANY SPLICES IN THE WARNING TAPE SHALL BE JOINED USING MINIMUM 10 MIL VINYL TAPE. THE TRACER WIRE SHALL BE TESTED FOR CONTINUITY AFTER BACKFILL AND COMPACTION, BUT BEFORE PAVING. ANY DETECTED DAMAGES TO THE WIRE SHALL BE REPAIRED BEFORE PAVING WILL BE ALLOWED.

BACKFILL OF WATER MAIN TRENCHES:

1. BACKFILL OF ANY EXCAVATION SHALL CONFORM TO THE REQUIREMENTS OF ANY OF THE GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE LOCATION. IF NO GOVERNMENTAL AGENCY HAVING SUCH JURISDICTION SPECIFIES BACKFILL OR COMPACTION REQUIREMENTS, AND NO SPECIAL REQUIREMENTS ARE SHOWN ON THE CONSTRUCTION DRAWINGS, THE PROCEDURE SET FORTH IN THIS SECTION WILL APPLY FOR WATER LINE TRENCHES.
2. THE BEDDING MATERIAL ABOVE THE PIPE AND BACKFILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 70% COMPACTION WITHIN A UTILITY EASEMENT AND 80% COMPACTION WITHIN A RIGHT-OF-WAY AS DETERMINED BY AASHTO T-99 METHOD A AND T-191. IF WATER SETTLING IS USED FOR COMPACTION, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PREVENT THE PIPE FROM FLOATING.
3. THE BEDDING MATERIAL SHALL BE EITHER NATIVE MATERIAL, 100% OF WHICH WILL PASS THROUGH A ONE AND ONE-HALF INCH (1-1/2") SCREEN AND AT LEAST 20% OF WHICH WILL PASS THROUGH A NUMBER-8 SCREEN, OR IMPORTED MATERIAL WHICH CONFORMS TO M.A.G. SPECIFICATIONS FOR A.B.C. OR TYPE-B SELECT MATERIALS. BEDDING MATERIAL SHALL BE USED BELOW AND AROUND THE PIPE AND A MINIMUM OF TWELVE INCHES (12") ABOVE THE PIPE. SHADE AND BEDDING MATERIAL TO BE MECHANICALLY COMPACTED PRIOR TO REMAINDER OF TRENCH BACK-FILL.
4. THE REMAINDER OF THE TRENCH SHALL BE BACKFILLED WITH NATIVE OR IMPORTED MATERIAL WHICH SHALL BE OF SOUND EARTHEN MATERIAL FREE FROM BROKEN CONCRETE, WOOD, BROKEN PAVEMENT, OR OTHER UNSUITABLE SUBSTANCES. EXCEPT AS OTHERWISE SPECIFIED, BACKFILL MAY BE MATERIAL CONTAINING NO PIECES LARGER THAN SIX INCHES (6") IN GREATEST DIMENSION.
5. WHERE SETTLEMENT OCCURS, ADDITIONAL BACKFILL MATERIAL SHALL BE PLACED AND COMPACTED AND THE TRENCH SHALL BE BROUGHT TO FINAL GRADE.

HYDROSTATIC TESTING OF COMPLETED PIPELINES:

1. HYDROSTATIC TESTING OF WATER PIPELINES WILL BE COMPLETED BEFORE THE NEW SYSTEM IS CONNECTED INTO THE EXISTING WATER SYSTEM SO THAT ALL TESTING CAN BE DONE AGAINST ALL NEW MATERIALS.
2. THE COMPLETED SECTION OF WATER PIPELINE TO BE TESTED SHALL BE SLOWLY FILLED WITH WATER WITH CARE BEING TAKEN TO EXPEL ALL AIR FROM THE PIPE. IF NECESSARY, THE PIPE WILL BE TAPPED AT HIGH POINTS TO VENT AIR.
3. THE CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND LABOR NECESSARY TO ACCOMPLISH THIS TESTING AND THE PRICE SHALL BE INCLUDED IN THE UNIT PRICES. THE CONTRACTOR SHALL NOTIFY THE COMPANY IN ADVANCE OF THE TESTING SO THAT THE COMPANY CAN SCHEDULE A DULY AUTHORIZED REPRESENTATIVE TO BE AT THE SITE DURING TESTING. THE CONTRACTOR, AT ITS OWN EXPENSE, SHALL MAKE ANY NECESSARY REPAIRS TO THE SYSTEM BEING TESTED IN ORDER TO CAUSE THE SECTION BEING TESTED TO MEET THE TEST LIMITS SET BELOW. THE CONTRACTOR MAY REQUEST AUTHORIZATION OF THE COMPANY TO CONNECT THE NEW PIPELINES TO THE EXISTING SYSTEM PRIOR TO COMPLETION OF PRESSURE TESTING WHEN, IN THE COMPANY'S SOLE OPINION AND JUDGMENT, CONDITIONS WARRANT SUCH CONNECTION.
4. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY TO COMPLETE PRESSURE TESTING TO COMPANY'S SPECIFICATIONS AFTER SUCH CONNECTION, INCLUDING, BUT NOT LIMITED TO, ISOLATION OF THE NEW PIPELINES FROM THE EXISTING SYSTEM, IF NECESSARY.
5. CONNECTIONS PRIOR TO COMPLETION OF PRESSURE TESTING SHALL NOT BE MADE UNLESS PRIOR COMPANY AUTHORIZATION HAS BEEN OBTAINED, AND ANY EXTRA EXPENSES RESULTING FROM SUCH CONNECTIONS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
6. LEAKAGE TESTS WILL BE FOR A PERIOD OF TWO HOURS AT 200 + OR - 5 PSI AT THE POINT OF LOWEST ELEVATION; LEAKAGE MAY NOT EXCEED 0.1 GALLONS PER HOUR PER ONE THOUSAND FEET (1,000') OF PIPE PER INCH OF DIAMETER. IF DRY UTILITIES ARE NOT INSTALLED, A SECOND PRESSURE TEST IS REQUIRED.

DISINFECTION AND FLUSHING OF COMPLETED WATER PIPELINES:

DISINFECTION AND FLUSHING WILL CONFORM TO RECOMMENDATIONS OF ARIZONA STATE DEPARTMENT OF HEALTH SERVICES ENGINEERING BULLETIN NUMBER 8, LATEST EDITION, OR ANY FUTURE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY BULLETINS. CONTRACTOR TO FOLLOW ALL CONDITIONS OF ANY DISCHARGE PERMIT.

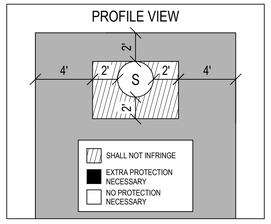
NO OTHER UTILITIES ALLOWED IN OR NEAR WATER PIPELINE TRENCHES:

NO OTHER UTILITY INSTALLATIONS WILL BE PERMITTED IN THE WATER PIPELINE TRENCH OR WITHIN FIVE FEET (5') OF THE COMPANY'S WATER PIPELINE WHEN RUNNING PARALLEL TO THE WATER PIPELINES.

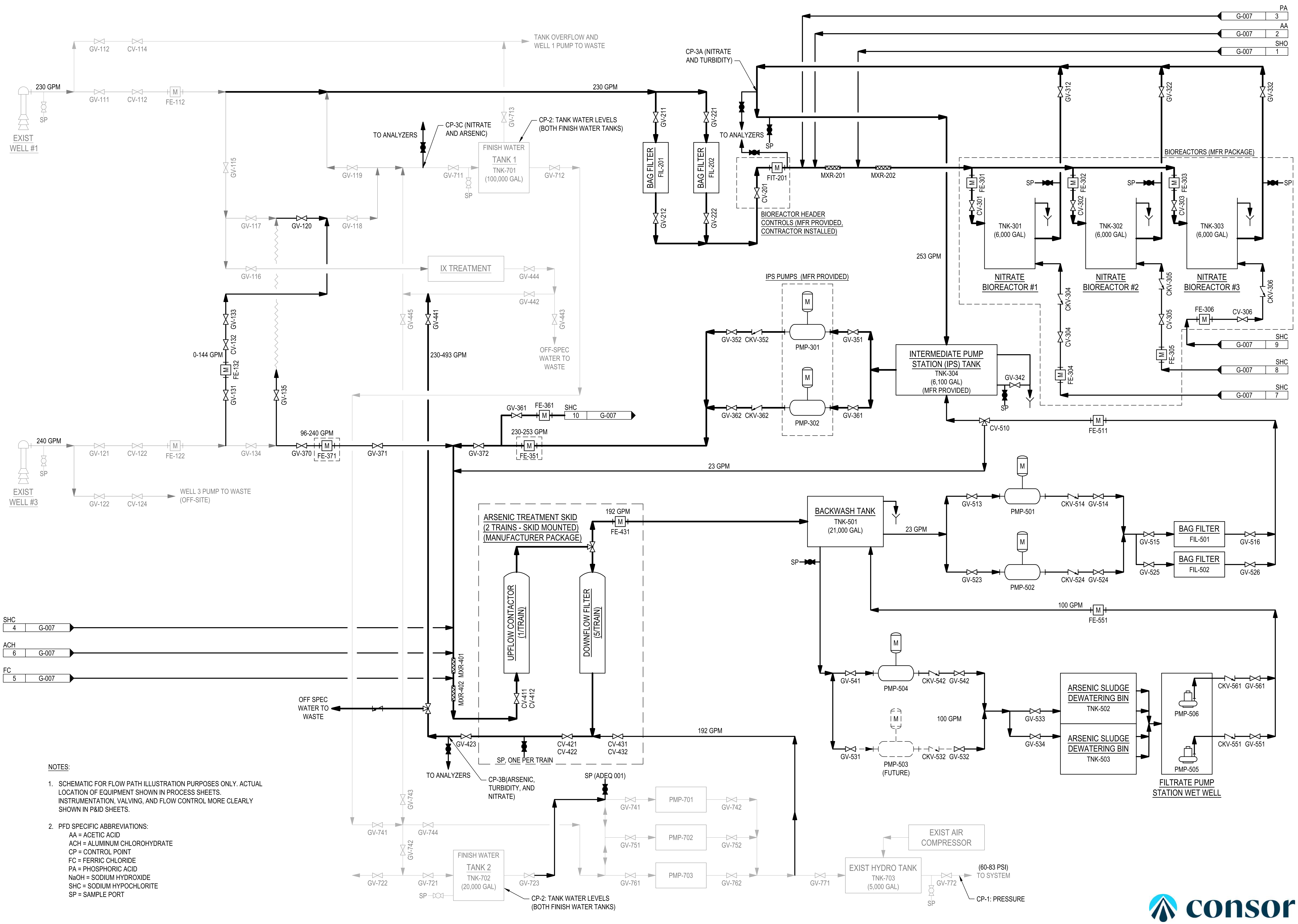
PROTECTION OF WATER MAIN NEAR SEWERS:

IN ORDER TO PROTECT WATER MAINS FROM CONTAMINATION BY SEWERS, THE INSTALLATION OF THE WATER MAINS MUST CONFORM TO THE FOLLOWING REQUIREMENTS:

1. HORIZONTAL - WHEN WATER LINES AND SEWERS ARE LAID PARALLEL WITH EACH OTHER, THE HORIZONTAL DISTANCE BETWEEN THEM SHALL NOT BE LESS THAN SIX FEET (6'). EACH LINE SHALL BE LAID ON UNDISTURBED OR BEDDED MATERIAL IN A SEPARATE TRENCH. WHERE CONDITIONS PREVENT THE MINIMUM HORIZONTAL SEPARATION SET FORTH ABOVE, EXTRA PROTECTION WILL BE REQUIRED. EXTRA PROTECTION SHALL CONSIST OF CONSTRUCTING THE SEWER MAIN WITH MECHANICAL JOINT DUCTILE IRON PIPE OR WITH SLIP-JOINT DUCTILE IRON PIPE IF JOINT RESTRAINT IS PROVIDED, OR ENCASING BOTH WATER AND SEWER MAIN IN CONCRETE. SEE AWC STANDARD DETAIL E-9-30-1 AND E-9-30-2.
   A. THE CONSTRUCTION DRAWINGS SHALL INDICATE THE INSTALLATION REQUIREMENTS. THE DRAWINGS SHOWING THESE EXCEPTIONS SHALL HAVE BEEN APPROVED BY THE APPROPRIATE STATE AND/OR COUNTY HEALTH DEPARTMENT. REFER TO THE DIAGRAM BELOW FOR CLARIFICATION.



   B. UNDER NO CIRCUMSTANCES WILL THE HORIZONTAL SEPARATION BETWEEN SEWER MAINS AND WATER MAINS BE LESS THAN TWO FEET (2'). ALL DISTANCES ARE



NOTES:

1. SCHEMATIC FOR FLOW PATH ILLUSTRATION PURPOSES ONLY. ACTUAL LOCATION OF EQUIPMENT SHOWN IN PROCESS SHEETS. INSTRUMENTATION, VALVING, AND FLOW CONTROL MORE CLEARLY SHOWN IN P&ID SHEETS.
2. PFD SPECIFIC ABBREVIATIONS:
   - AA = ACETIC ACID
   - ACH = ALUMINUM CHLOROHYDRATE
   - CP = CONTROL POINT
   - FC = FERRIC CHLORIDE
   - PA = PHOSPHORIC ACID
   - NaOH = SODIUM HYDROXIDE
   - SHC = SODIUM HYPOCHLORITE
   - SP = SAMPLE PORT

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

P.E. No.: | W.A. No.: | SYSTEM: | LEGAL DESC.: | TAX DIST.: | SB No.:

SCALE: AS SHOWN | CHECKED BY: FHT | DATE: 03/03/2026 | REVIEWED BY: SDC | DRAWN BY: JLC

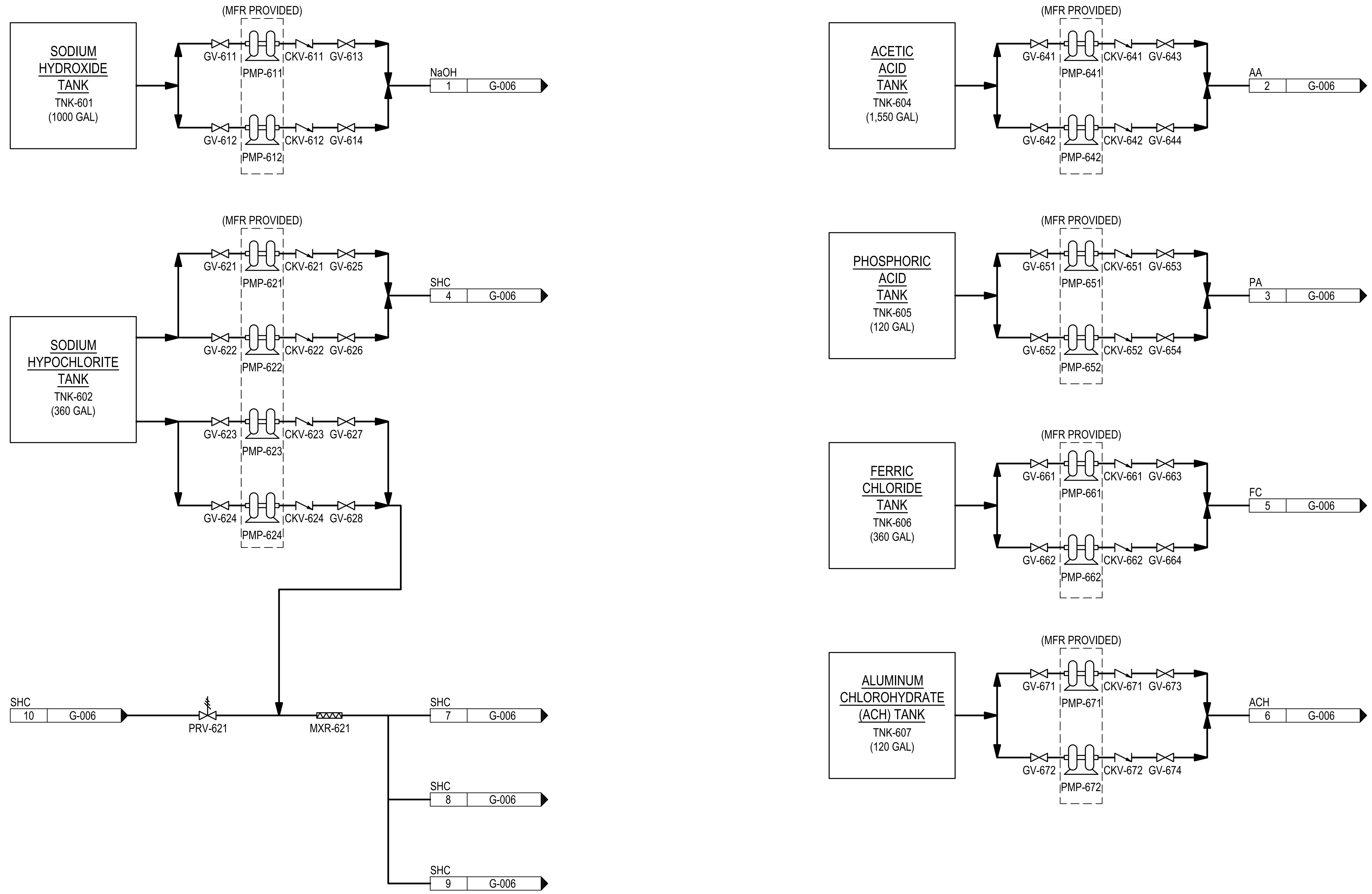
ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC.: PROCESS FLOW DIAGRAM 1

consor

DWG. No.: G-006



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The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

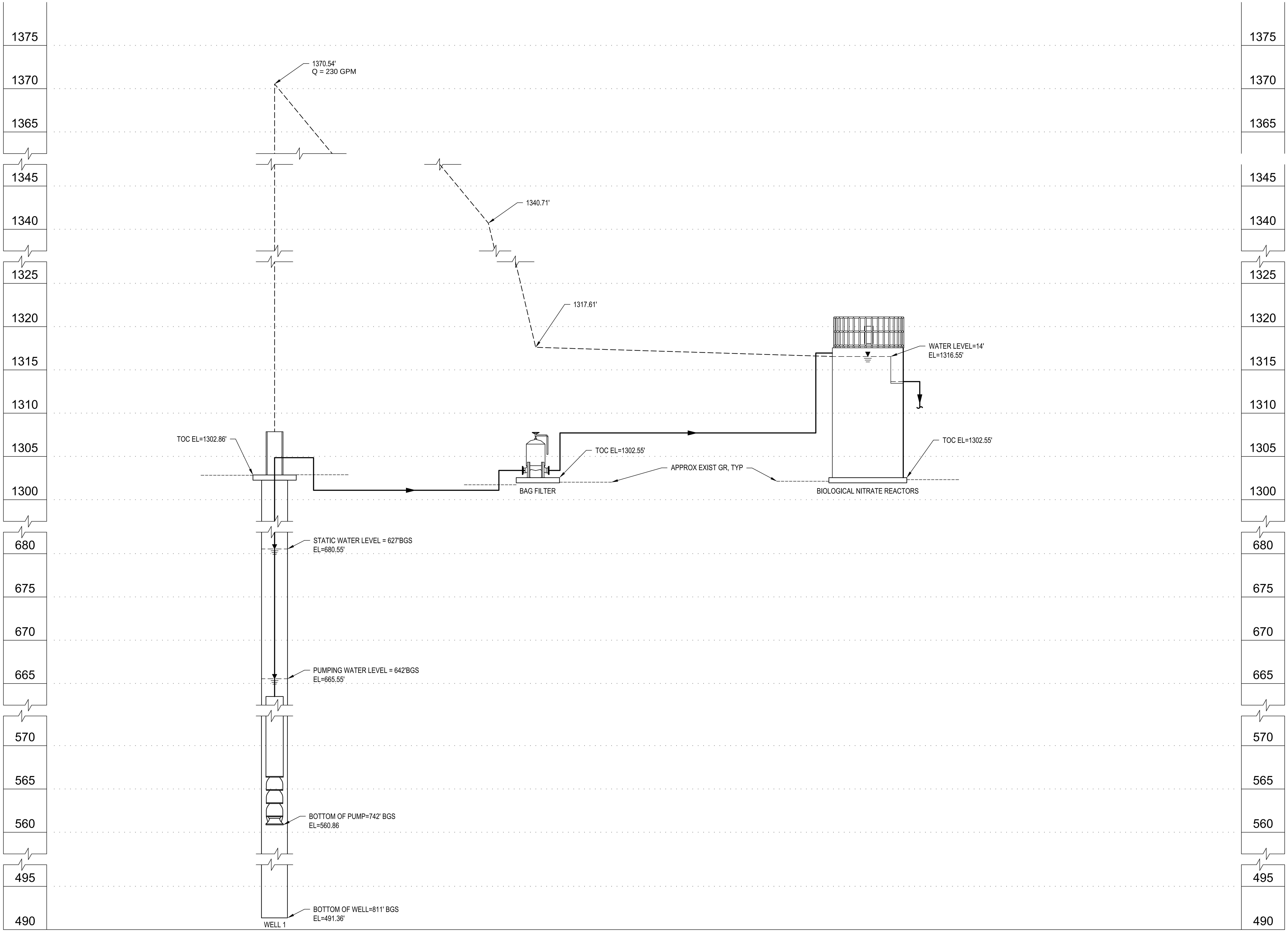
W.A. No.: P.E. No.: SYSTEM: LEGAL DESC.: TAX DIST.: SIB No.:
DATE: 03/03/2026 SCALE: AS SHOWN
DRAWN BY: JLC REVIEWED BY: SDC CHECKED BY: FHT

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC.: PROCESS FLOW DIAGRAM 2

consor

DWG. No.: G-007
SHEET 7 OF 80



HYDRAULIC PROFILE A-A: WELL 1 TO NITRATE BIOREACTORS

SCALE: NTS HORIZ, 1"=5' VERT

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

W.A. No.:
P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC.: HYDRAULIC PROFILE

consor

DWG. No.: G-008

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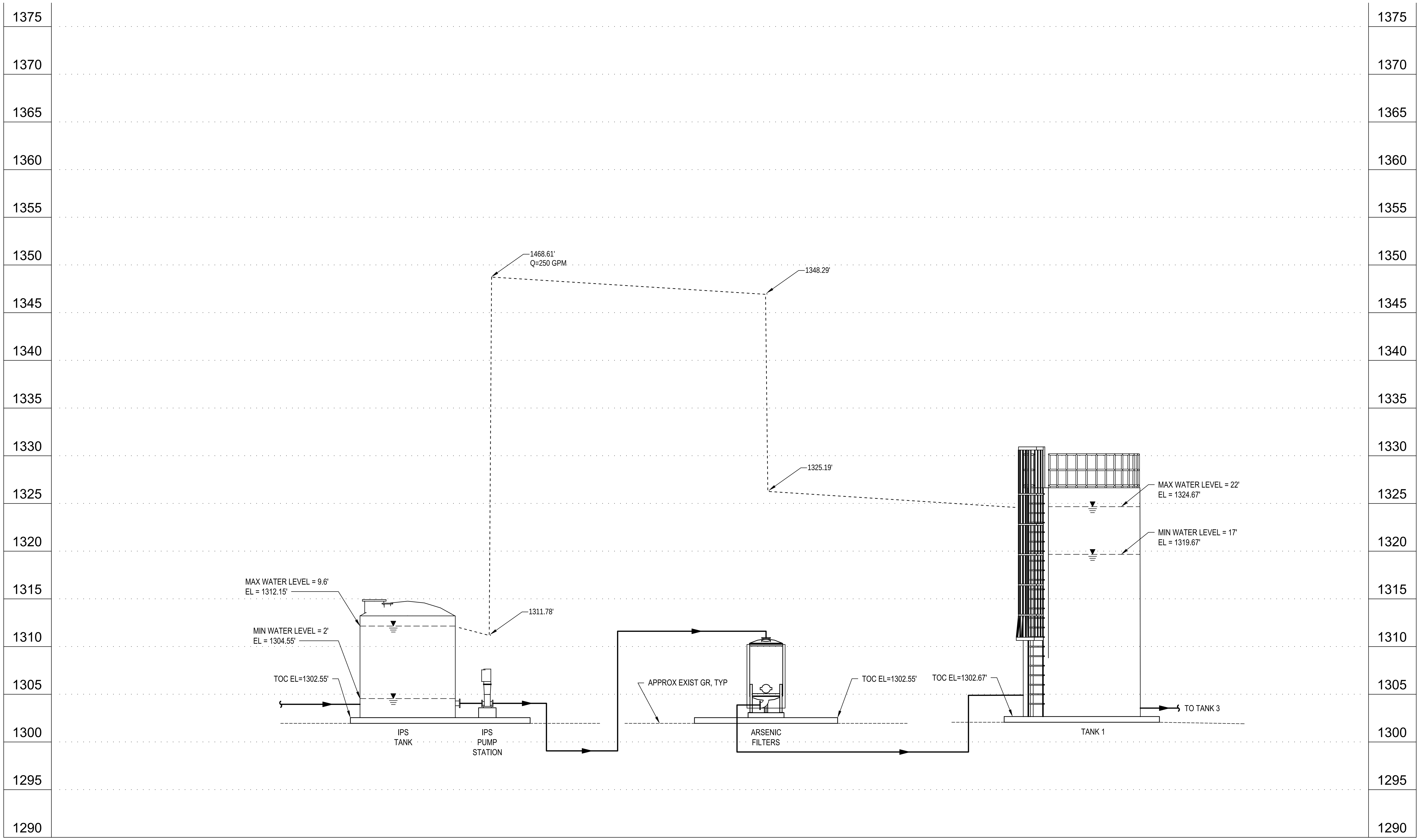

HYDRAULIC PROFILE E-E: IPS TANK TO ARSENIC FILTERS TO TANK 1

SCALE: NTS HORIZ, 1"=5' VERT

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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ARIZONA811
Call 811 or click Arizona811.com

P.E. No.:
W.A. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION

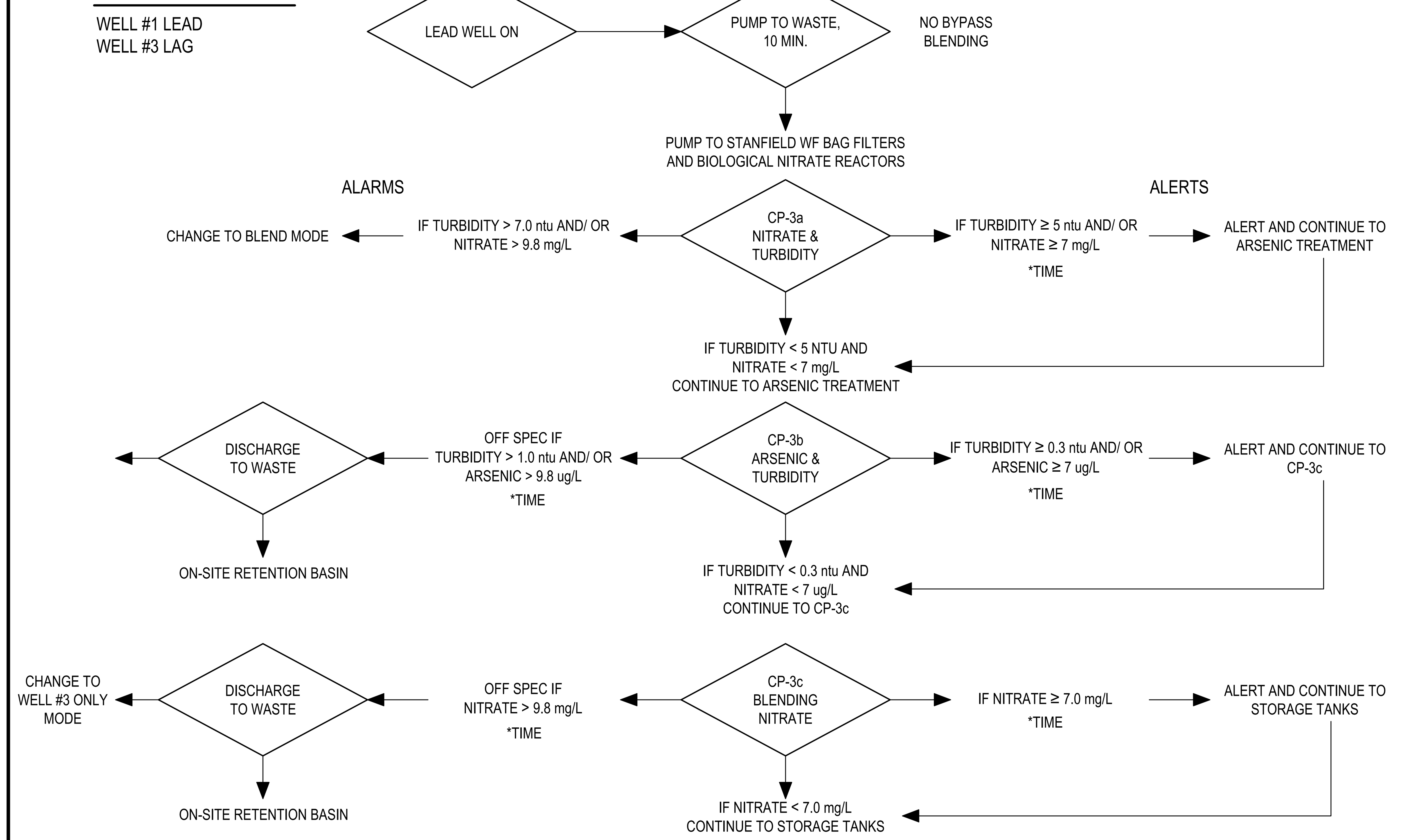
PROJECT SHEET DESC.: HYDRAULIC PROFILE

consor

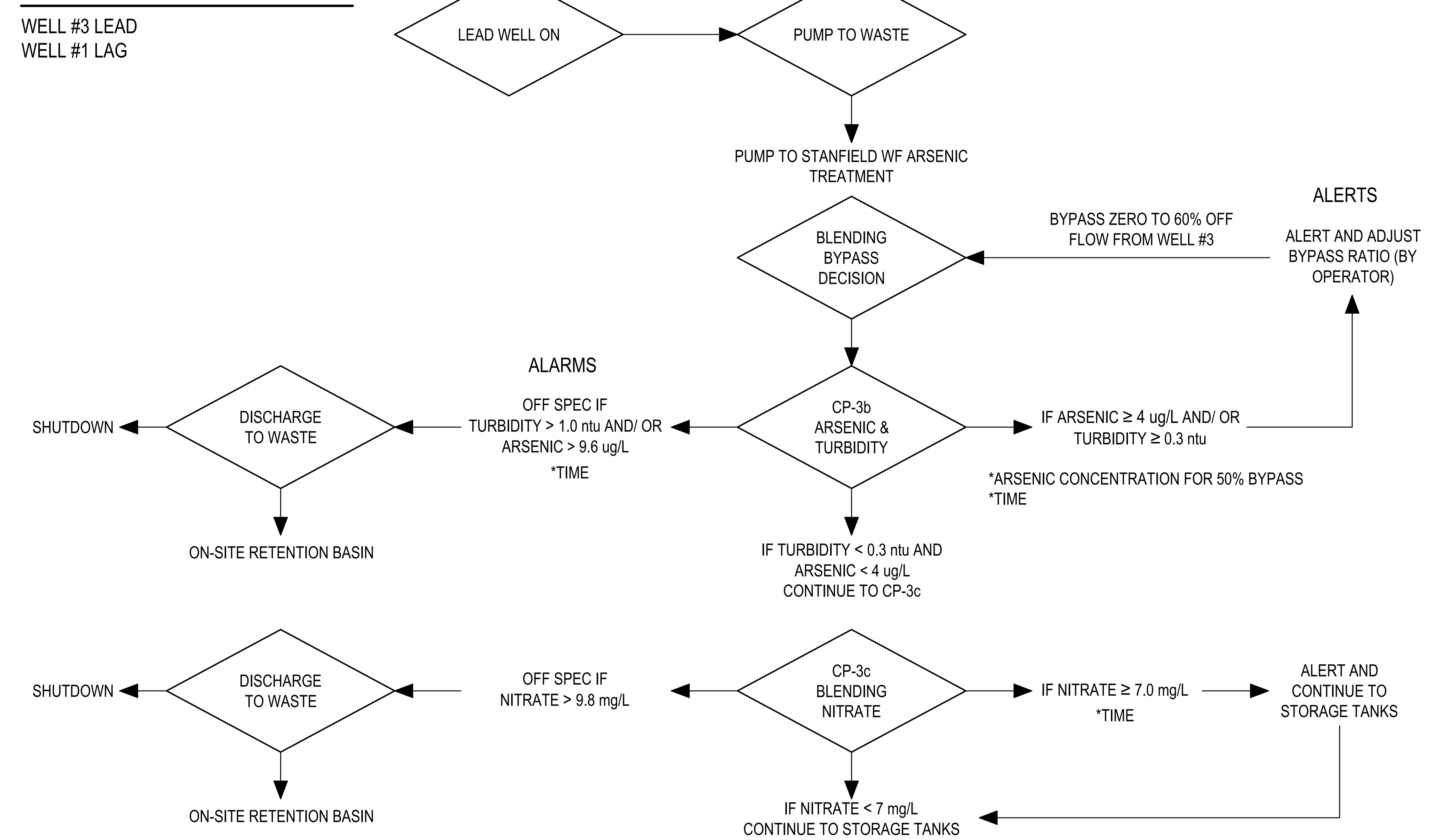
DWG. No.: G-009

SHEET 9 OF 80

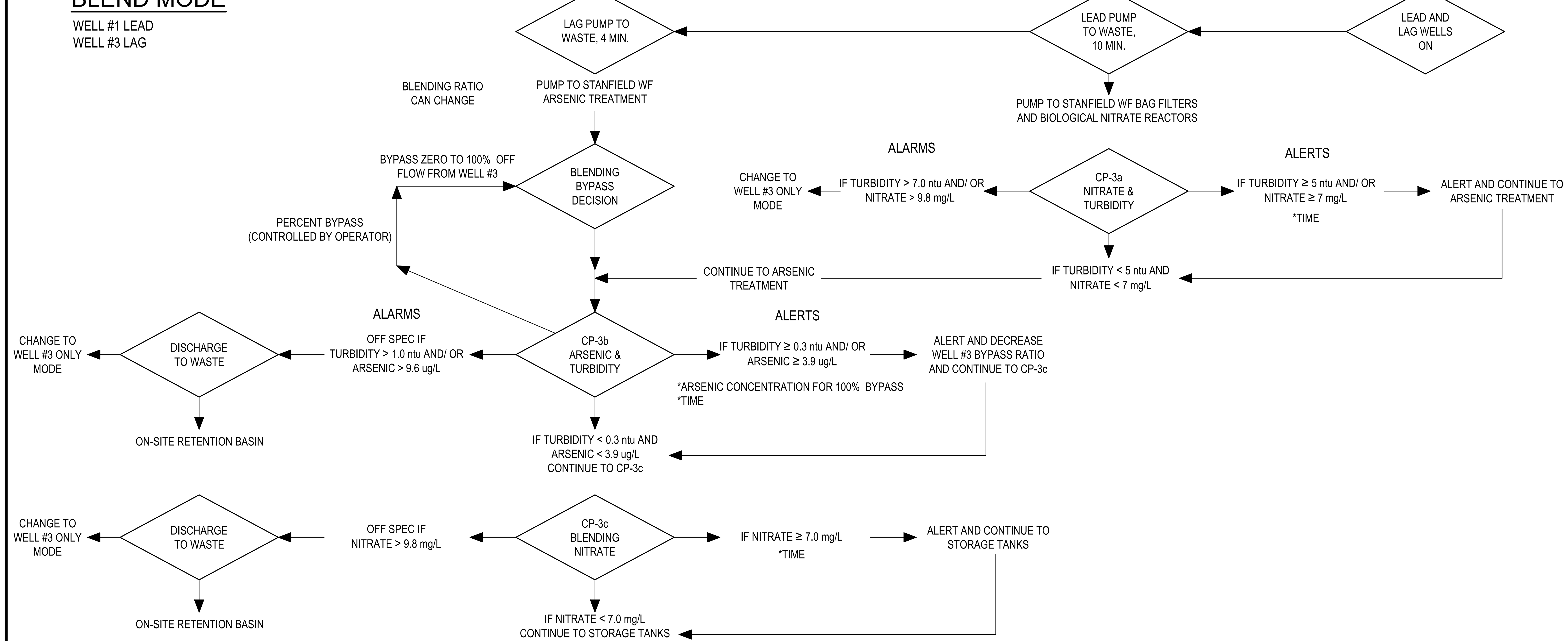
PLANT MODE



WELL 3 ONLY MODE



BLEND MODE



REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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ARIZONA811
Call 811 or click Arizona811.com

W.A. No.:
P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC.: PROCESS DESIGN AND OPERATIONAL CRITERIA

consor

DWG. No.: G-010
SHEET 10 OF 80

TOPOGRAPHIC LEGEND

	EXISTING	PROPOSED
WATERLINE	10"W	12"DI W
ELECTRICITY (UNDERGROUND)	E	E
OVERHEAD UTILITY	OVHD	OVHD
GAS	4"G	4"G
TELEPHONE/TELEMETRY	T	T
CABLE TELEVISION	CATV	CATV
COMMUNICATION	COM	COM
FIBER OPTIC	FO	FO
SANITARY SEWER LINE	8"SS	8"SS
SANITARY SEWER FORCE MAIN	6"SSFM	6"FM
STORM DRAIN	8"SD	8"SD
DRAIN	D	D
CULVERT	18"SD	18"SD
ABANDONED PIPE	10"W (ABAND)	
DEMOLISH/ REMOVE		XXXXXXXXXXXXX
DRAINAGE DITCH		
TOP OF SLOPE	TOP	TOP
TOE OF SLOPE	TOE	TOE
CUT		C
FILL		F
BARBWIRE FENCE		
CHAIN LINK FENCE		
WOOD FENCE		
TEMPORARY SILT FENCE		
GUARDRAIL		
ROCK WALL		
TREE/BUSH LINE		
WETLAND		
CENTERLINE		
RIGHT-OF-WAY	R/W	R/W
PROPERTY LINE		
EASEMENT		
EDGE OF PAVEMENT/AC		
PAVEMENT STRIPING		
EDGE OF GRAVEL		
CURB		
SIDEWALK	S/W	S/W
STRUCTURE OR FACILITY		
CONTOUR MINOR		
CONTOUR MAJOR	200	200

	EXISTING	PROPOSED
MANHOLE	SS SD W C T	SS SD W C T
CLEAN-OUT		
CATCH BASIN/FIELD INLET		
THRUST BLOCK		
VALVE		
AIR INJECTION ASSEMBLY		
BLOW-OFF ASSEMBLY (PERMANENT)		
BLOW-OFF ASSEMBLY (TEMPORARY)		
AIR RELEASE ASSEMBLY		
FIRE HYDRANT ASSEMBLY		
WATER METER		
FIRE DEPARTMENT CONNECTION		
WATER IRRIGATION VALVE	IR	IR
PULL BOX/JUNCTION BOX		
COM RISER		
UTILITY POLE		
GUY WIRE		
LIGHT POST		
STREET LIGHT		
TRANSFORMER		
ELECTRICAL METER	M	
ELECTRICAL CABINET		
GAS METER		
GAS VALVE		
MAILBOX		
SIGN		
TREE DECIDUOUS		
TREE CONIFEROUS		
TREE TO BE REMOVED		
SURFACE ELEVATION	+ 176.63	+ 176.63
WETLAND FLAG		
BENCHMARK		
IRON ROD		
MONUMENT/ CONTROL POINT		
BORE/ POTHOLE		
TEST PIT		
BOLLARD		

SCHEMATIC	
	WELDED JOINT
	FLANGED JOINT
	GROOVED END JOINT
	MECHANICAL JOINT
	PUSH-ON JOINT (RUBBER GASKET)
	FLANGED COUPLING ADAPTER
	DOUBLE BALL FLEXIBLE EXTENSION COUPLING
	FLEXIBLE COUPLING W/ THRUST RING
	90° BEND UP
	90° BEND DOWN
	TEE UP
	TEE DOWN
	LATERAL UP
	LATERAL DOWN
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	UNION
	BLIND FLANGE
	CAP/ PLUG
	LONG SLEEVE
	FLEXIBLE COUPLING
	FITTING (45°)
	SADDLE OR HOT TAP
	STRAINER
	SIGHT GLASS
M	METER
SP	SLIP-ON JOINT PIPE
R	RESTRAINED JOINT PIPE

SCHEMATIC	
	BUTTERFLY VALVE
	GATE VALVE
	GLOBE VALVE
	BALL VALVE
	BALANCING VALVE
	PLUG VALVE (TOP)
	PLUG VALVE (SIDE)
	3-WAY PLUG VALVE
	CHECK VALVE
	SWING CHECK VALVE
	DOUBLE CHECK ASSEMBLY
	BALL SWING CHECK
	SILENT CHECK VALVE
	PRESSURE REDUCING VALVE
	ALTITUDE CONTROL VALVE
	SOLENOID VALVE
	RELIEF VALVE
	NEEDLE VALVE
	HOSE VALVE
	HOSE BIBB
	REDUCED PRESSURE BACKFLOW PREVENTER W/ GATE VALVES
	PRESSURE GAUGE W/ COCK
	PRESSURE SWITCH W/ COCK

GENERAL NOTE:

1. THIS IS A STANDARD CIVIL LEGEND, NOT ALL OF THE INFORMATION SHOWN MAY BE USED ON THIS PROJECT.

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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P.E. No.:
W.A. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
SCALE: AS SHOWN
CHECKED BY: FHT
REVIEWED BY: SDC
DATE: 03/03/2026
DRAWN BY: JLC

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

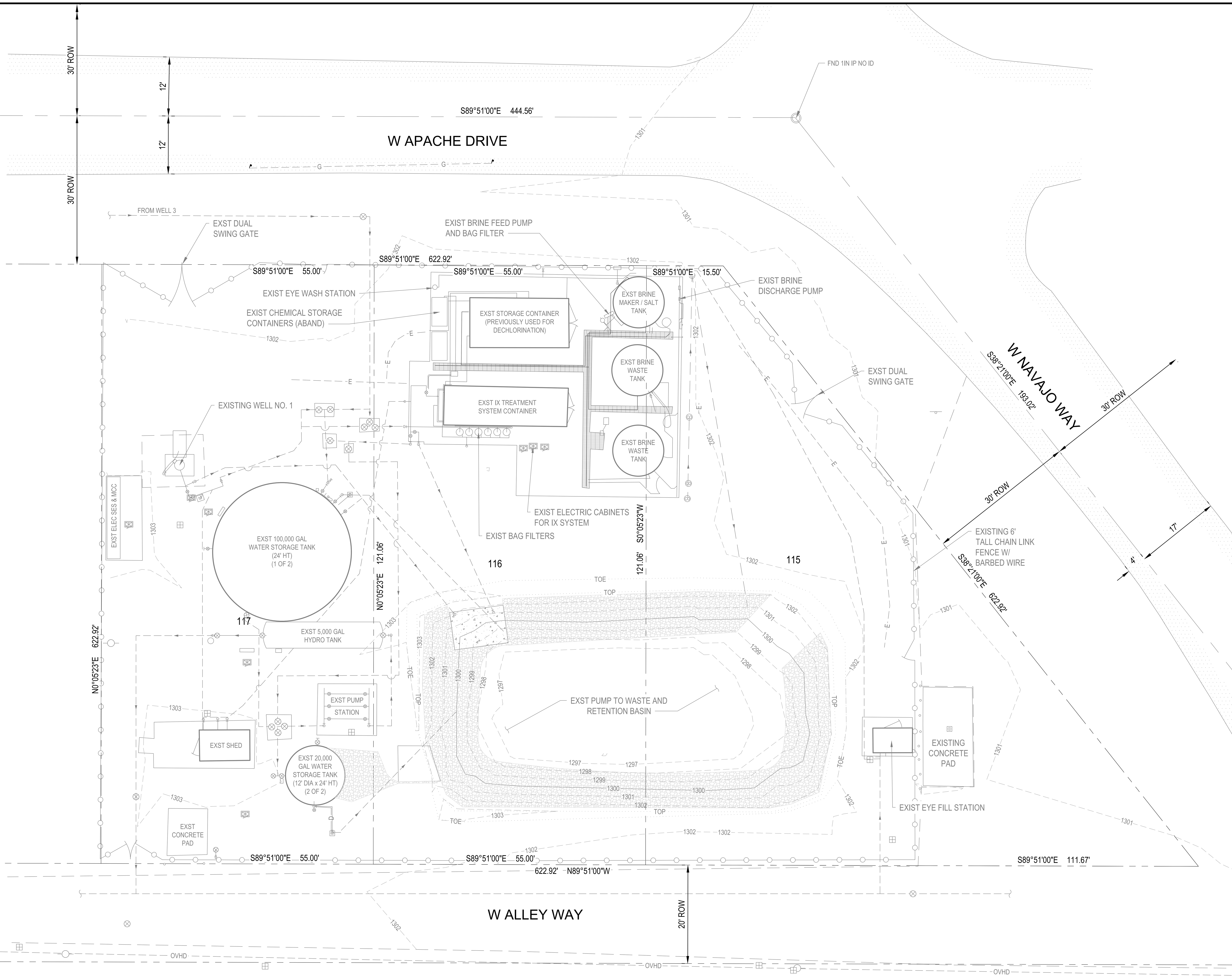
PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: CIVIL SYMBOLS AND LEGEND

consor

DWG. No.: C-001

SHEET 11 OF 80



30' ROW
12'
12'
S89°51'00"E 444.56'
W APACHE DRIVE
FND 1IN IP NO ID
FROM WELL 3
EXST DUAL SWING GATE
EXIST BRINE FEED PUMP AND BAG FILTER
S89°51'00"E 622.92'
S89°51'00"E 55.00'
S89°51'00"E 15.50'
EXIST BRINE DISCHARGE PUMP
EXIST EYE WASH STATION
EXIST CHEMICAL STORAGE CONTAINERS (ABAND)
EXIST STORAGE CONTAINER (PREVIOUSLY USED FOR DECHLORINATION)
EXIST BRINE MAKER / SALT TANK
EXIST BRINE WASTE TANK
EXIST IX TREATMENT SYSTEM CONTAINER
EXISTING WELL NO. 1
EXST DUAL SWING GATE
W NAVAJO WAY
S38°21'00"E 193.02'
30' ROW
EXIST ELECTRIC CABINETS FOR IX SYSTEM
EXIST BAG FILTERS
EXST ELEC SES & MCC
EXST 100,000 GAL WATER STORAGE TANK (24' HT) (1 OF 2)
N0°05'23"E 121.06'
S0°05'23"W 121.06'
116
115
117
EXISTING 6' TALL CHAIN LINK FENCE W/ BARBED WIRE
S38°21'00"E 622.92'
17'
4'
EXST 5,000 GAL HYDRO TANK
N0°05'23"E 622.92'
EXST PUMP STATION
EXST PUMP TO WASTE AND RETENTION BASIN
EXST SHED
EXST 20,000 GAL WATER STORAGE TANK (12' DIA x 24' HT) (2 OF 2)
EXISTING CONCRETE PAD
EXIST EYE FILL STATION
EXST CONCRETE PAD
TOE
TOP
S89°51'00"E 55.00'
S89°51'00"E 111.67'
622.92' N89°51'00"W
W ALLEY WAY
20' ROW
OVHD

PLAN
SCALE: 1"=10'

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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W.A. No.: P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.: SIB No.:
DATE: 03/03/2026 SCALE: AS SHOWN
DRAWN BY: JLC REVIEWED BY: SDC CHECKED BY: FHT

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: EXISTING SITE PLAN AND SURVEY CONTROL

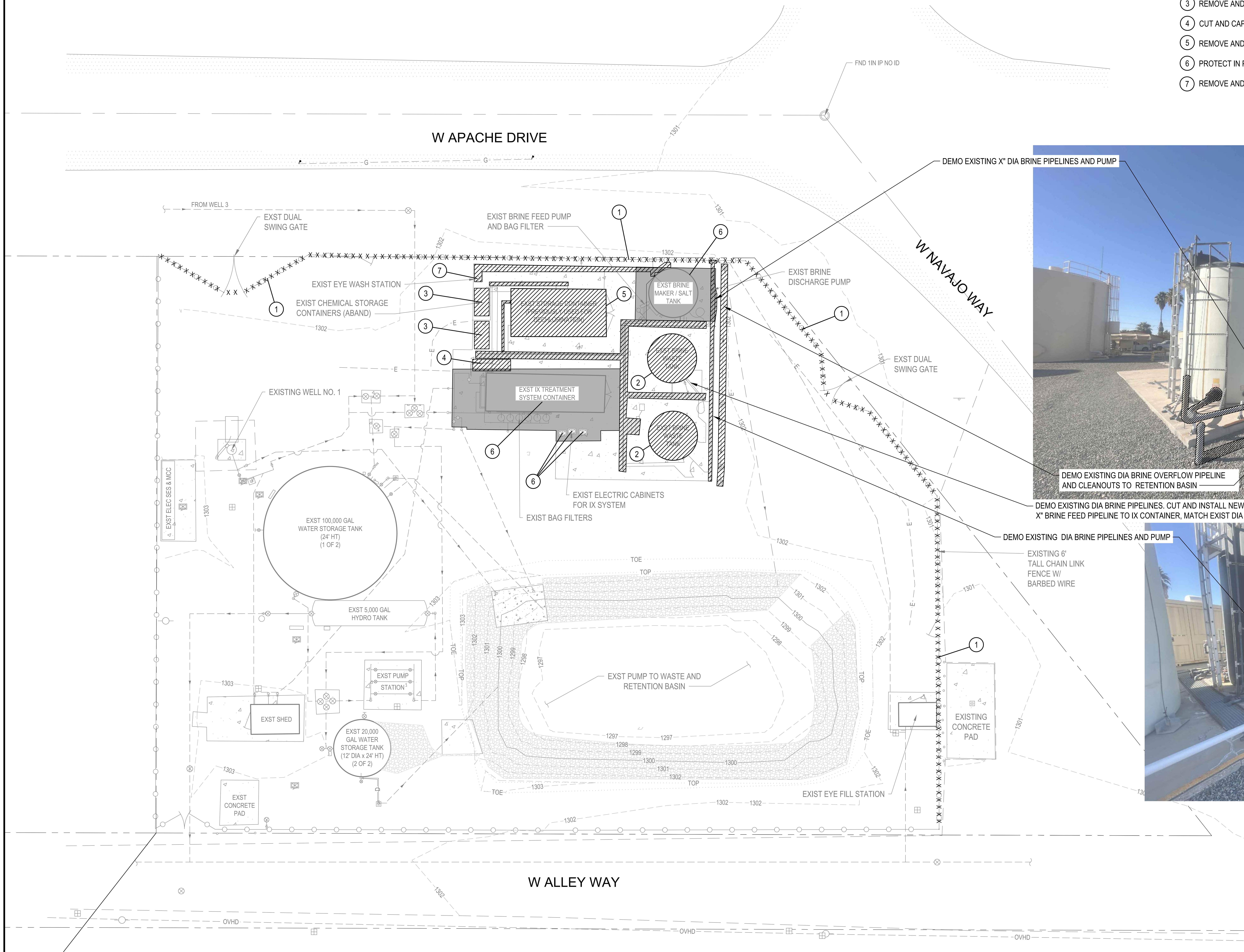
consor

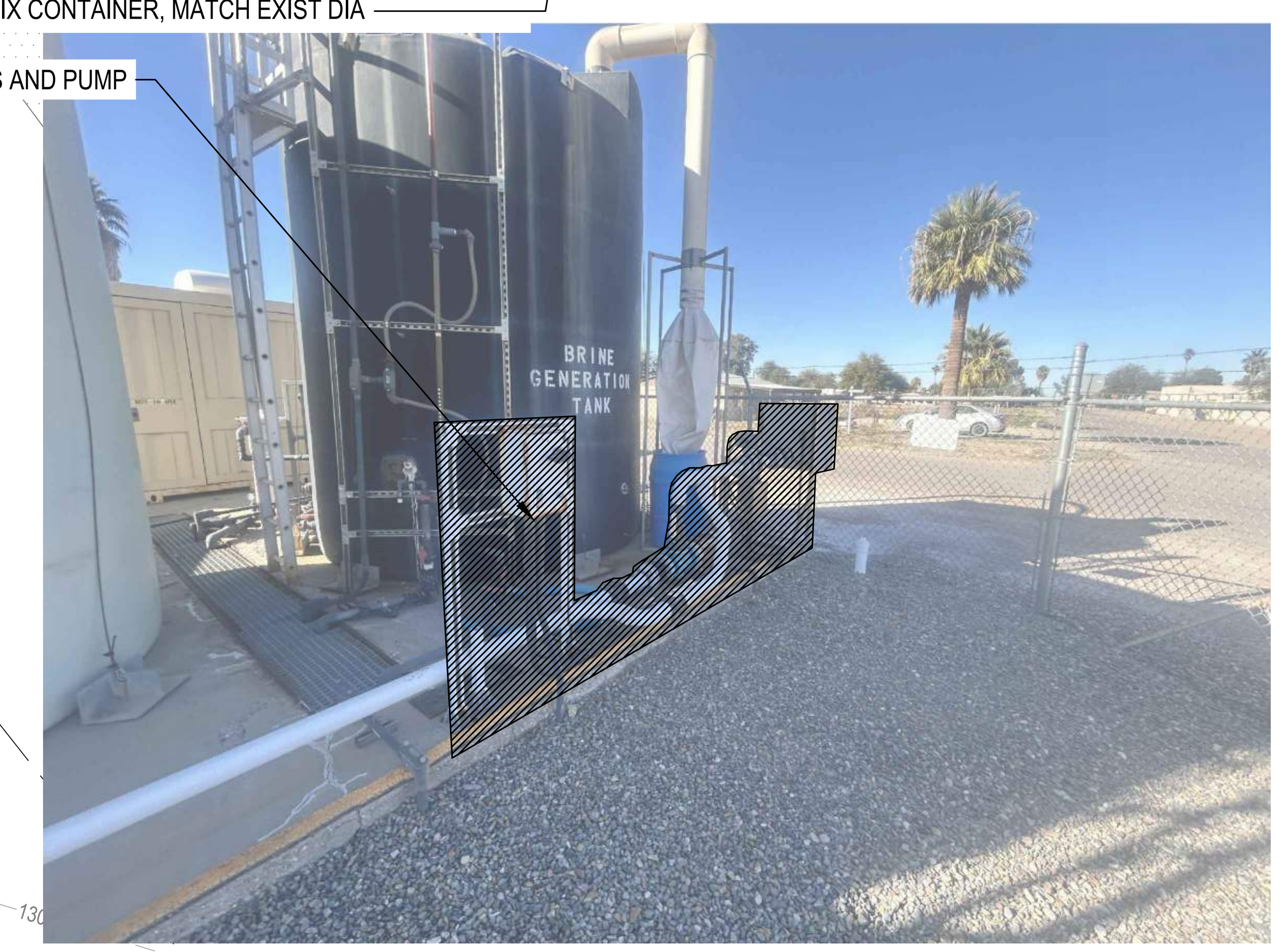
DWG. No.: C-010

SHEET 12 OF 80

KEY NOTES

1. REMOVE EXISTING CHAIN LINK FENCE AND GATES, APPROX 280 LF
2. EXISTING TANKS TO BE REMOVED AND RELOCATED, SEE C-100
3. REMOVE AND SALVAGE EXISTING ABANDONED CHEMICAL CONTAINERS
4. CUT AND CAP ALL PIPE AND CONDUIT AND REROUTE AS NEEDED
5. REMOVE AND SALVAGE EXISTING CONTAINER AND DELIVER TO OWNER IN DICATED LOCATION
6. PROTECT IN PLACE
7. REMOVE AND SALVAGE EXISTING EYE WASH AND RELOCATE TO SIDE OF EXISTING BRINE TANK





PLAN
SCALE: 1"=10'

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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W.A. No.:
P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

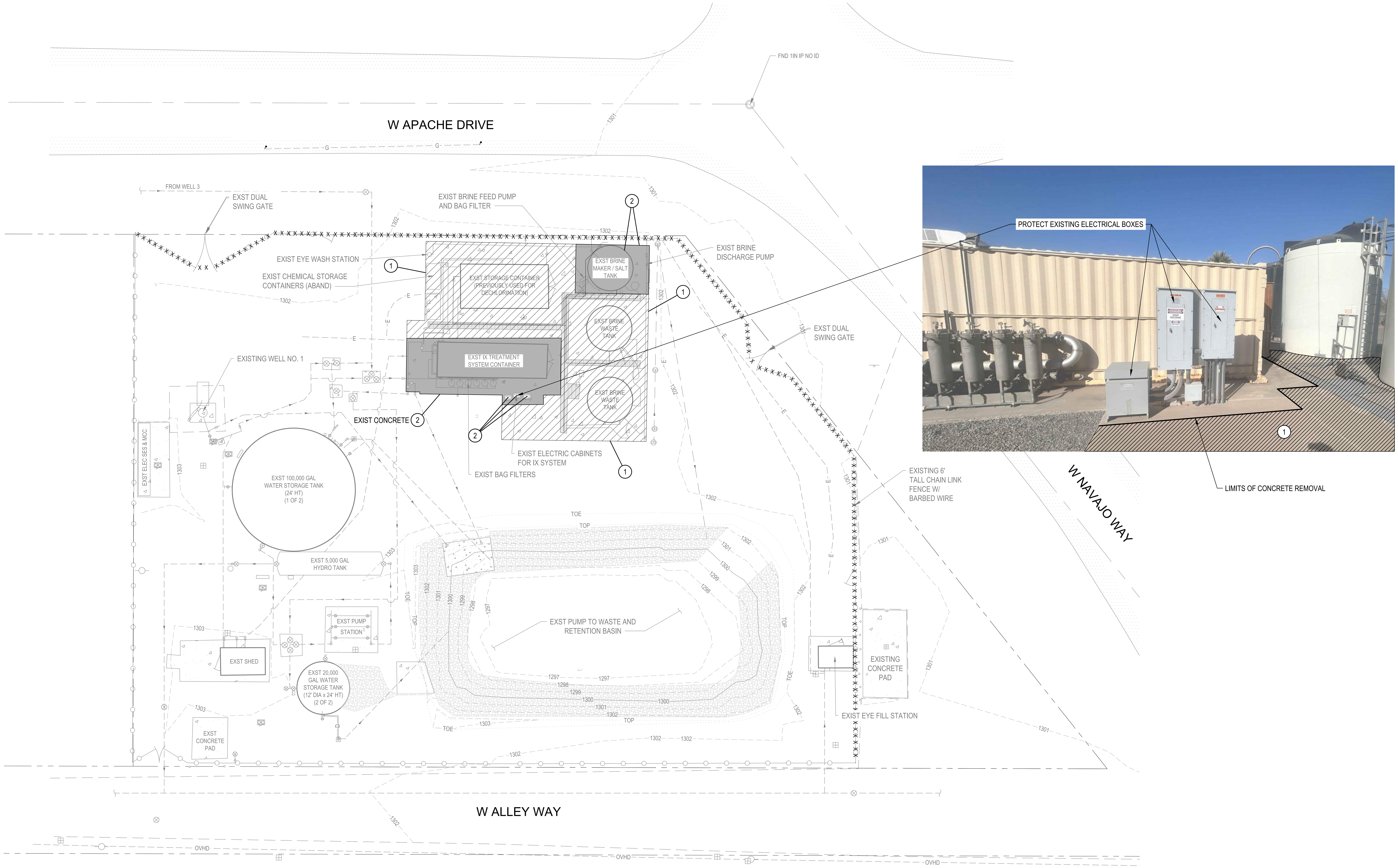
PROJECT SHEET DESC: DEMOLITION AND SITE PREPARATION PLAN - EQUIPMENT

consor

DWG. No.: C-011
SHEET 13 OF 80

KEY NOTES

1. DEMO EXISTING CONCRETE
2. PROTECT IN PLACE



PLAN
SCALE: 1"=10'

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: DEMOLITION AND SITE PREPARATION PLAN - SURFACES AND PIPES

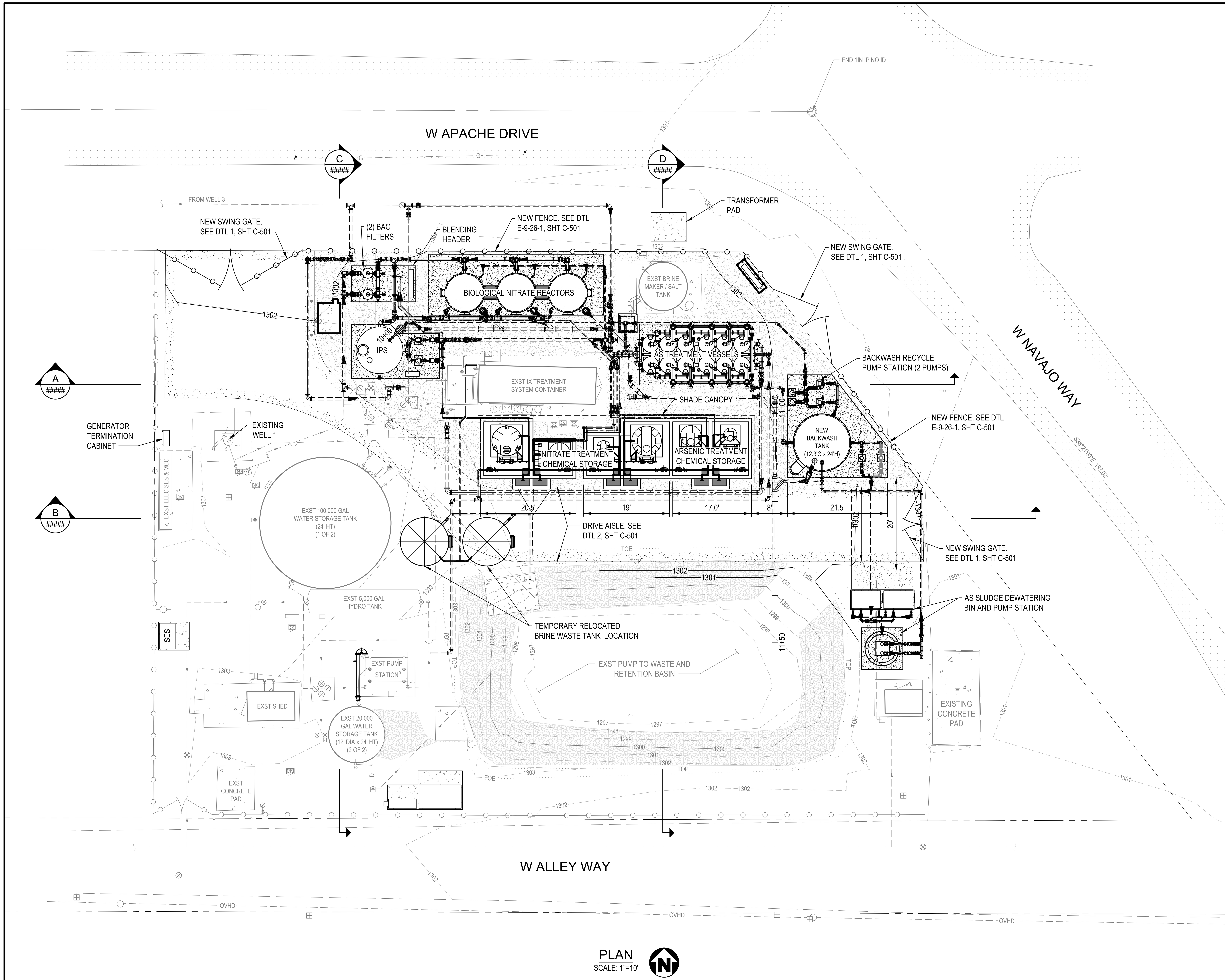
DATE: 03/03/2026 | SCALE: AS SHOWN | DRAWN BY: JLC | REVIEWED BY: SDC | CHECKED BY: FHT

consor

DWG. No.: C-012

SHEET 14 OF 80

Drawing Path and Name: C:\Users\jgoddard\DC\ACCDocs\Consor\Stanfield GWS&T USBR Grant Coordination\Project Files\1-Design\02-CIVIL\2-SHEETS\W242167AZ.00_C-011.dwg, Plotted Date: March 9, 2026 12:46 PM By: Joshua Goddard



W APACHE DRIVE
W NAVAJO WAY
W ALLEY WAY
FND 1IN IP NO ID
FROM WELL 3
NEW SWING GATE. SEE DTL 1, SHT C-501
(2) BAG FILTERS
BLENDING HEADER
NEW FENCE. SEE DTL E-9-26-1, SHT C-501
TRANSFORMER PAD
NEW SWING GATE. SEE DTL 1, SHT C-501
BIOLOGICAL NITRATE REACTORS
EXST BRINE MAKER / SALT TANK
IPS
10+00
AS TREATMENT VESSELS
BACKWASH RECYCLE PUMP STATION (2 PUMPS)
EXST IX TREATMENT SYSTEM CONTAINER
SHADE CANOPY
GENERATOR TERMINATION CABINET
EXISTING WELL 1
NITRATE TREATMENT CHEMICAL STORAGE
ARSENIC TREATMENT CHEMICAL STORAGE
NEW BACKWASH TANK (12.3'Ø x 24'H)
NEW FENCE. SEE DTL E-9-26-1, SHT C-501
EXST ELEC SES & MCC
EXST 100,000 GAL WATER STORAGE TANK (24' HT) (1 OF 2)
20.5' 19' 17.0' 8' 21.5' 20'
DRIVE AISLE. SEE DTL 2, SHT C-501
NEW SWING GATE. SEE DTL 1, SHT C-501
EXST 5,000 GAL HYDRO TANK
AS SLUDGE DEWATERING BIN AND PUMP STATION
SES
TEMPORARY RELOCATED BRINE WASTE TANK LOCATION
11+50
EXST PUMP STATION
EXST PUMP TO WASTE AND RETENTION BASIN
EXST SHED
EXISTING CONCRETE PAD
EXST 20,000 GAL WATER STORAGE TANK (12' DIA x 24' HT) (2 OF 2)
EXST CONCRETE PAD
TOE
TOP
OVHD
A
B
C
D
#####

PLAN
SCALE: 1"=10'

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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PHOENIX, ARIZONA 85038-9006
(602) 240-6860

W.A. No.: | P.E. No.: | SYSTEM: | LEGAL DESC.: | TAX DIST.: | SIB No.:

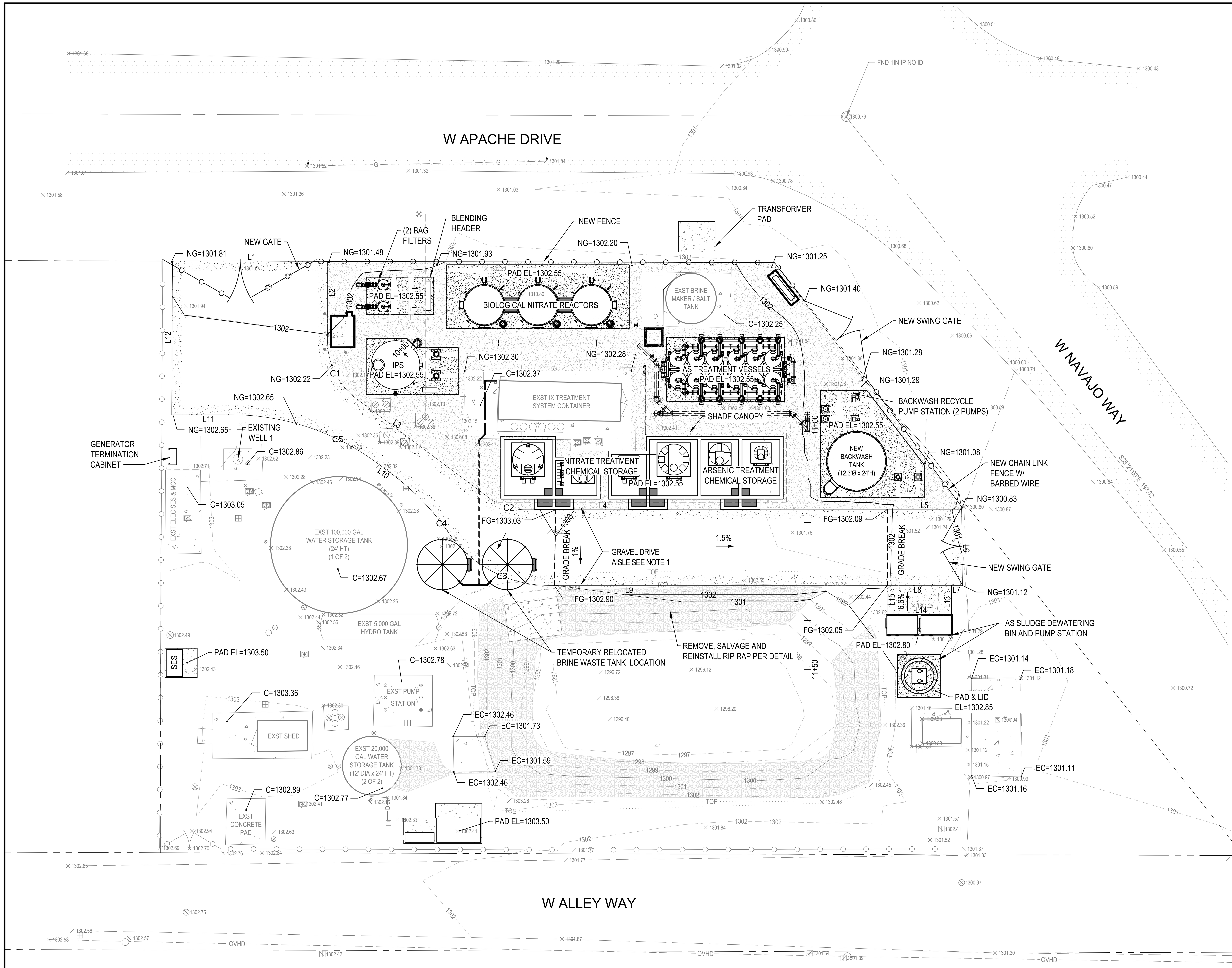
DATE: 03/03/2026 | SCALE: AS SHOWN
DRAWN BY: JLC | REVIEWED BY: SDC | CHECKED BY: FHT

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: OVERALL SITE PLAN

consor

DWG. No.: C-100
SHEET 15 OF 80

Drawing Path and Name: C:\Users\jgoddard\DC\ACCDocs\Consor\Stanfield GWS&T USBR Grant Coordination\Project Files\1-Design\02-CIVIL\2-SHEETS\W242167AZ.00_C-100.dwg, Plotted Date: March 9, 2026 12:47 PM By: Joshua Goddard



PLAN

SCALE: 1"=10'

EDGE OF GRAVEL LINE DATA TABLE					
Line #	LINE START	LINE END	LENGTH	DIRECTION	ELEVATION
L1	N684157.241 E685973.524	N684157.158 E686005.259	31.735	S89° 51' 00.00"E	1301.805 1301.470
L2	N684157.158 E686005.259	N684140.978 E686005.259	16.180	S00° 00' 00.00"E	1301.470 1302.021
L3	N684128.961 E686011.281	N684108.758 E686038.324	33.756	S53° 14' 11.78"E	1302.254 1302.818
L4	N684106.371 E686045.506	N684106.371 E686119.817	74.311	N90° 00' 00.00"E	1302.946 1302.089
L5	N684106.371 E686119.817	N684106.371 E686135.041	15.223	N89° 59' 58.92"E	1302.089 1300.834
L6	N684106.371 E686135.041	N684090.871 E686135.195	15.501	S00° 34' 11.79"E	1300.834 1301.118
L7	N684090.871 E686135.195	N684090.871 E686132.969	2.226	S89° 59' 44.36"W	1301.118 1301.253
L8	N684090.871 E686132.969	N684090.870 E686119.817	13.152	S89° 59' 44.36"W	1301.253 1302.050
L9	N684090.870 E686119.817	N684090.865 E686050.584	69.233	S89° 59' 44.36"W	1302.050 1302.913
L10	N684113.623 E686018.445	N684115.831 E686015.489	3.690	N53° 14' 11.78"W	1302.327 1302.354
L11	N684125.775 E685985.557	N684125.774 E685973.353	12.204	S89° 59' 33.28"W	1302.639 1302.660
L12	N684125.774 E685973.353	N684157.241 E685973.524	31.467	N00° 18' 40.55"E	1302.660 1301.805
L13	N684084.961 E686132.969	N684090.871 E686132.969	5.910	N00° 00' 00.00"E	1301.253 1301.642
L14	N684084.961 E686119.817	N684084.961 E686132.969	13.152	N90° 00' 00.00"E	1301.642 1301.658
L15	N684090.870 E686119.817	N684084.961 E686119.817	5.909	S00° 00' 00.00"E	1301.658 1302.050

EDGE OF GRAVEL CURVE DATA TABLE						
#	PC LOCATION	PT LOCATION	RADIUS	LENGTH	DELTA	ELEVATION
C1	N684140.98 E686005.26	N684128.96 E686011.28	15.00'	13.94'	53°14'12"	1302.021 1302.254
C2	N684108.76 E686038.32	N684106.37 E686045.51	12.00'	7.70'	36°45'49"	1302.818 1302.946
C3	N684090.86 E686050.58	N684101.61 E686030.04	25.00'	24.11'	55°14'43"	1302.913 1302.267
C4	N684101.61 E686030.04	N684113.62 E686018.45	52.00'	16.77'	18°28'39"	1302.267 1302.327
C5	N684115.83 E686015.49	N684125.78 E685985.56	50.00'	32.09'	36°46'15"	1302.354 1302.639

NOTES:

1. SEE DET X, SHT X FOR GRAVEL ACCESS AREA SURFACING SECTION AND REQUIREMENTS.
2. SITE SURFACE EXCEPT FOR GRAVEL ACCESS SHALL BE 1/4"± CRUSHED GRANITE

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
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ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

W.A. No.:

P.E. No.:

SYSTEM:

LEGAL DESC.:

TAX DIST.:

SIB No.:

DATE: 03/03/2026

SCALE: AS SHOWN

DRAWN BY: JLC

REVIEWED BY: SDC

CHECKED BY: FHT

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

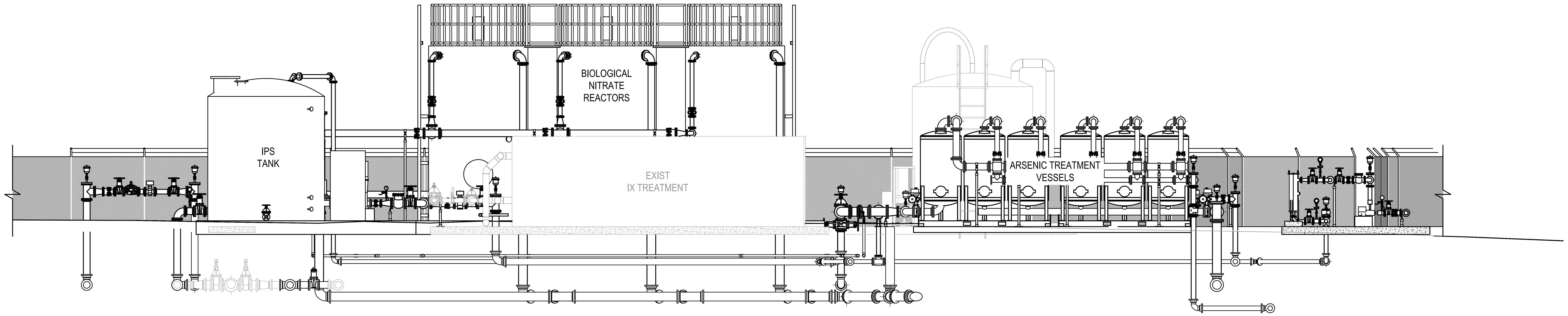
PROJECT SHEET DESC: PAVING, GRADING, AND DRAINAGE PLAN

consor

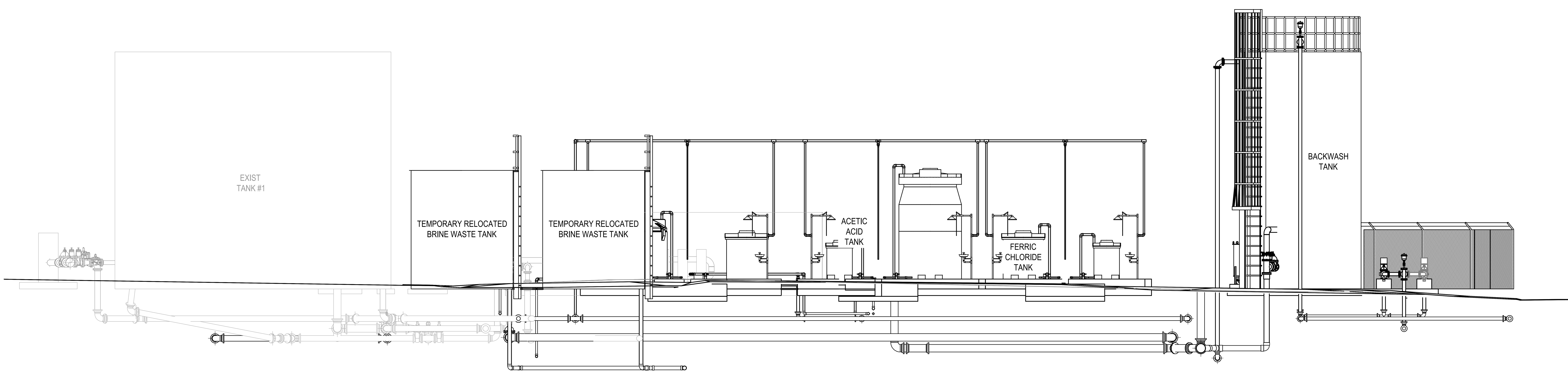
DWG. No.: C-110

SHEET 16 OF 80

Drawing Path and Name: C:\Users\jgoddard\DC\ACCDocs\Consor\Stanfield GWS&T USBR Grant Coordination\Project Files\1-Design\02-CIVIL\2-SHEETS\W242167AZ.00_C-110.dwg, Plotted Date: March 9, 2026 12:48 PM By: Joshua Goddard



A
C-100
SECTION
SCALE: 1" = 5'



B
C-100
SECTION
SCALE: 1" = 5'

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
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TAX DIST.:
SIB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

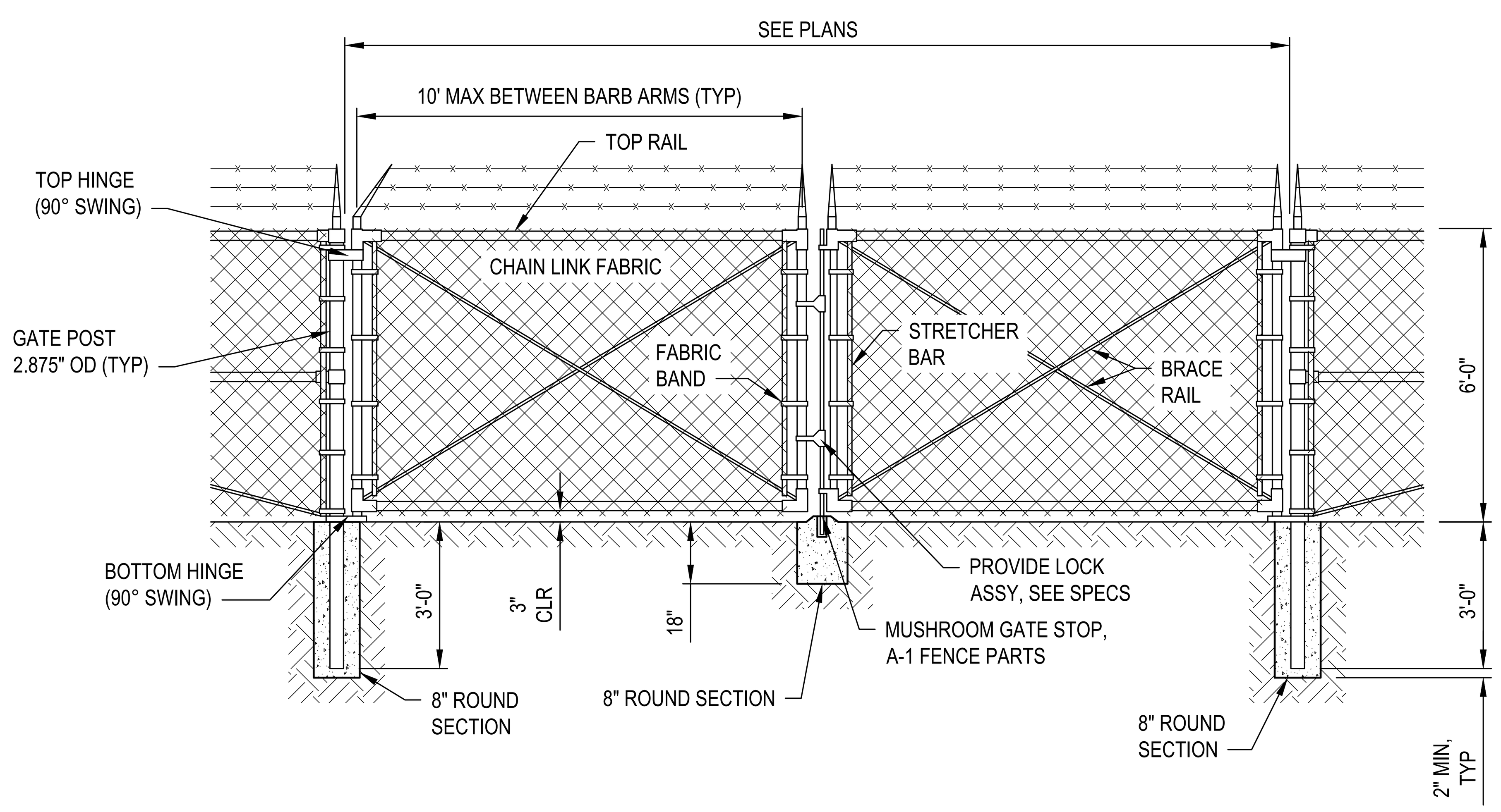
ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: SITE CROSS SECTIONS

consor

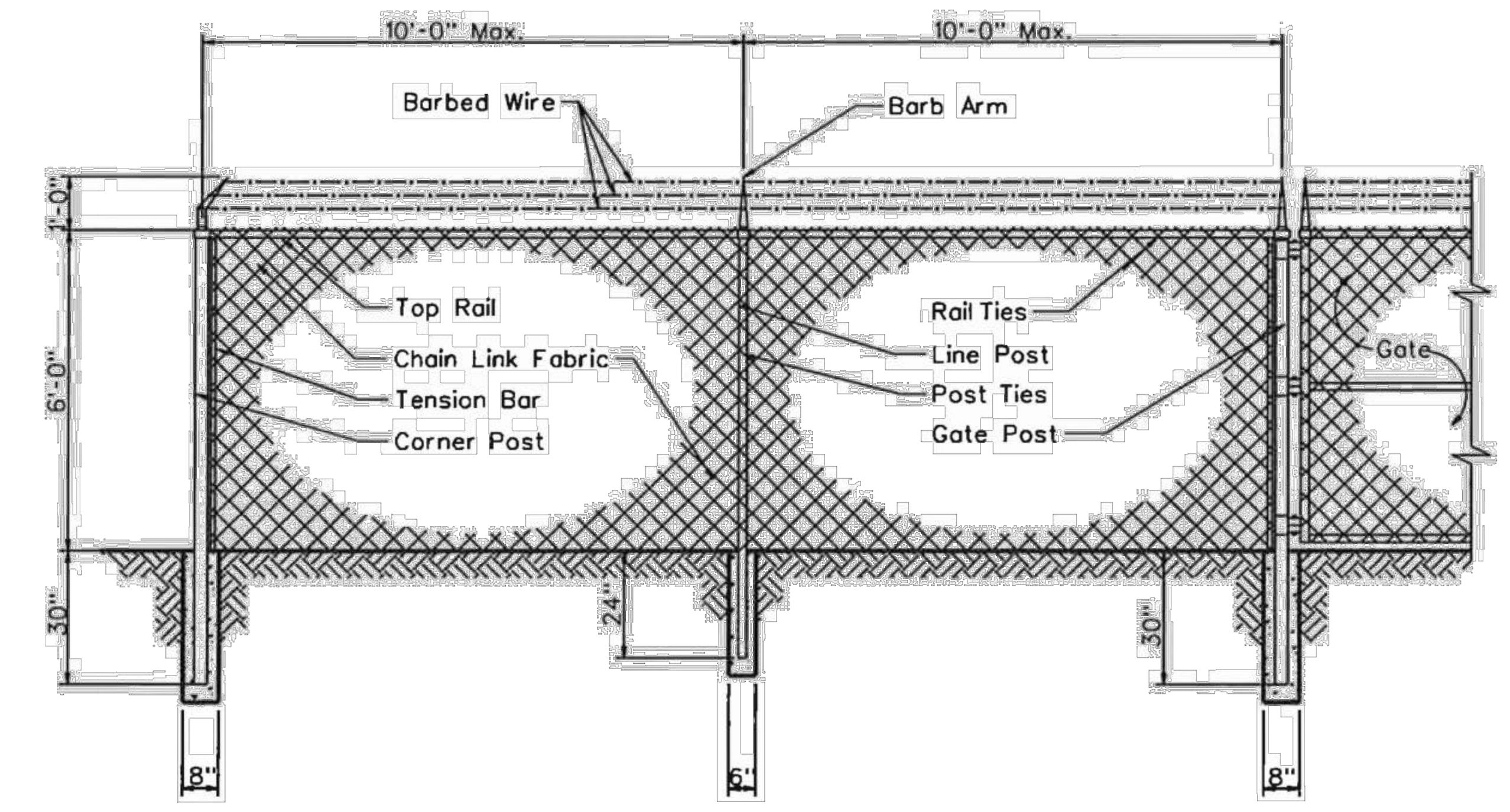
DWG. No.: C-301



NOTES:

1. PROVIDE LOCK ASSEMBLY AND GATE STOP FOR EACH GATE, SEE SPECIFICATIONS.

1 C-501 DOUBLE SWING GATE DETAIL
SCALE: NTS



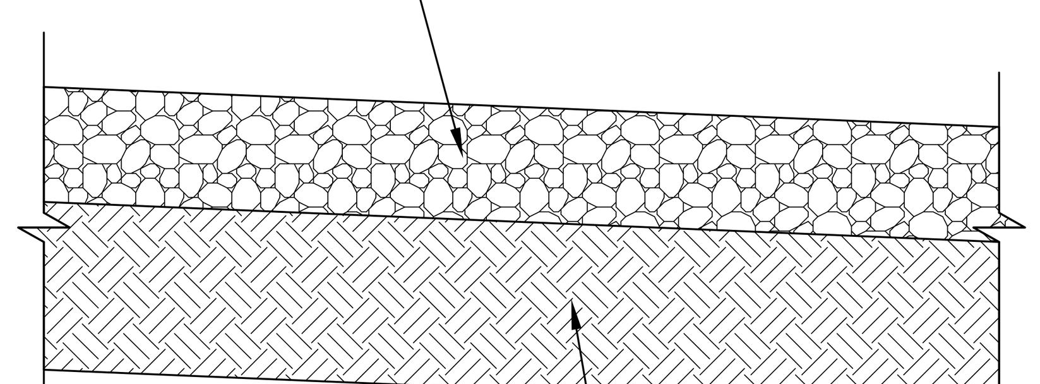
Line Post:	1-7/8" O.D.	1.74 lbs. P/L.F.	ASTM A-256
End Post:	2-7/8" O.D.	4.64 lbs. P/L.F.	ASTM A-256
Corner Post:	2-7/8" O.D.	4.64 lbs. P/L.F.	ASTM A-256
Gate Post:	2-7/8" O.D.	4.64 lbs. P/L.F.	ASTM A-256
Top Rail:	1-5/8" O.D.	4.64 lbs. P/L.F.	ASTM A-256
Chain Link Fabric:	9 Ga. 2" Mesh Galv. Before Weave		
Selvage:	Barb/Knuckle		
Fittings:	Pressed Steel		
Barb Wire:	2-1/2 Ga./2 Point		
Barb Arm:	1 Piece/45° Arm		
Tension Wire:	9 Ga./Galv.		
Line Post Set:	6"x24" In Concrete		
Terminal Post Set:	8"x30" In Concrete		

ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF

CHAIN LINK FENCE

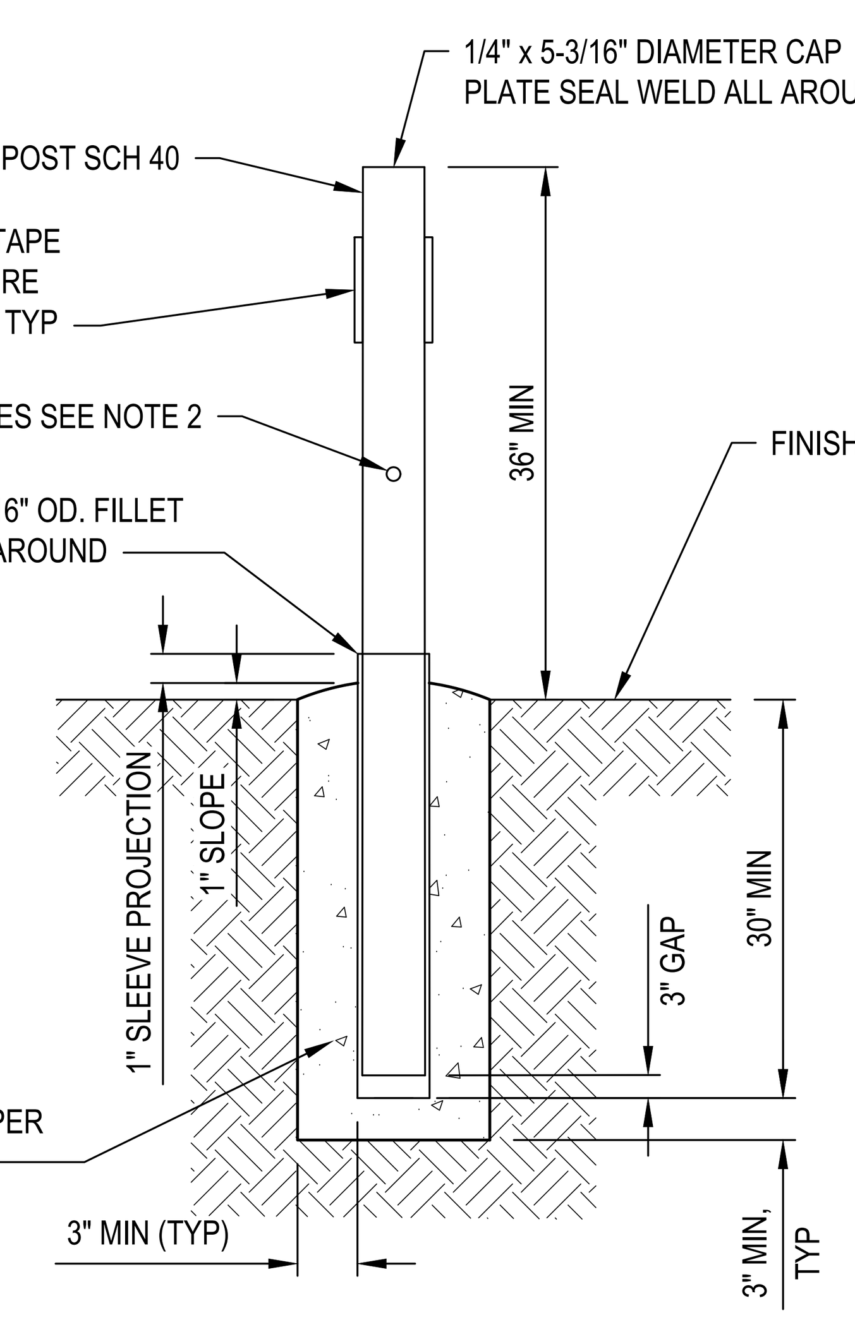
DRAWN BY: CCO | APPROVED BY: MW | DATE: 7/7/1992 | △ 2/9/2001 | E-9-26-1



NOTES:

1. ALL PREPARED SUBGRADE SHALL BE FIRM, UNDISTURBED SUBBRADE AND OBSERVED AND APPROVED BY THE GEOTECHNICAL ENGINEER.

2 C-501 GRAVEL SURFACING SECTION
SCALE: NTS



NOTES:

1. BOLLARDS SHALL HAVE A HEIGHT OF 3 FEET OR BE EQUAL TO THE HEIGHT OF THE BACK SCREEN WALL OF BIN ENCLOSURES. POSTS SHALL BE PLACED A MINIMUM OF 4" FROM THE WALL.

2. REMOVABLE POSTS SHALL HAVE 1" DIA HOLES DRILLED THROUGH AT A DISTANCE 1/3 THE OVERALL POST LENGTH FROM TOP

3. REMOVABLE POST - GRIND SMOOTH ALL SHARP EDGES PRIOR TO GALVANIZATION. GALVANIZE PER ASTM A54 AFTER FABRICATION

3 C-501 6" REMOVABLE BOLLARD
SCALE: NTS

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

W.A. No.: | P.E. No.:
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ARIZONA WATER COMPANY
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(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

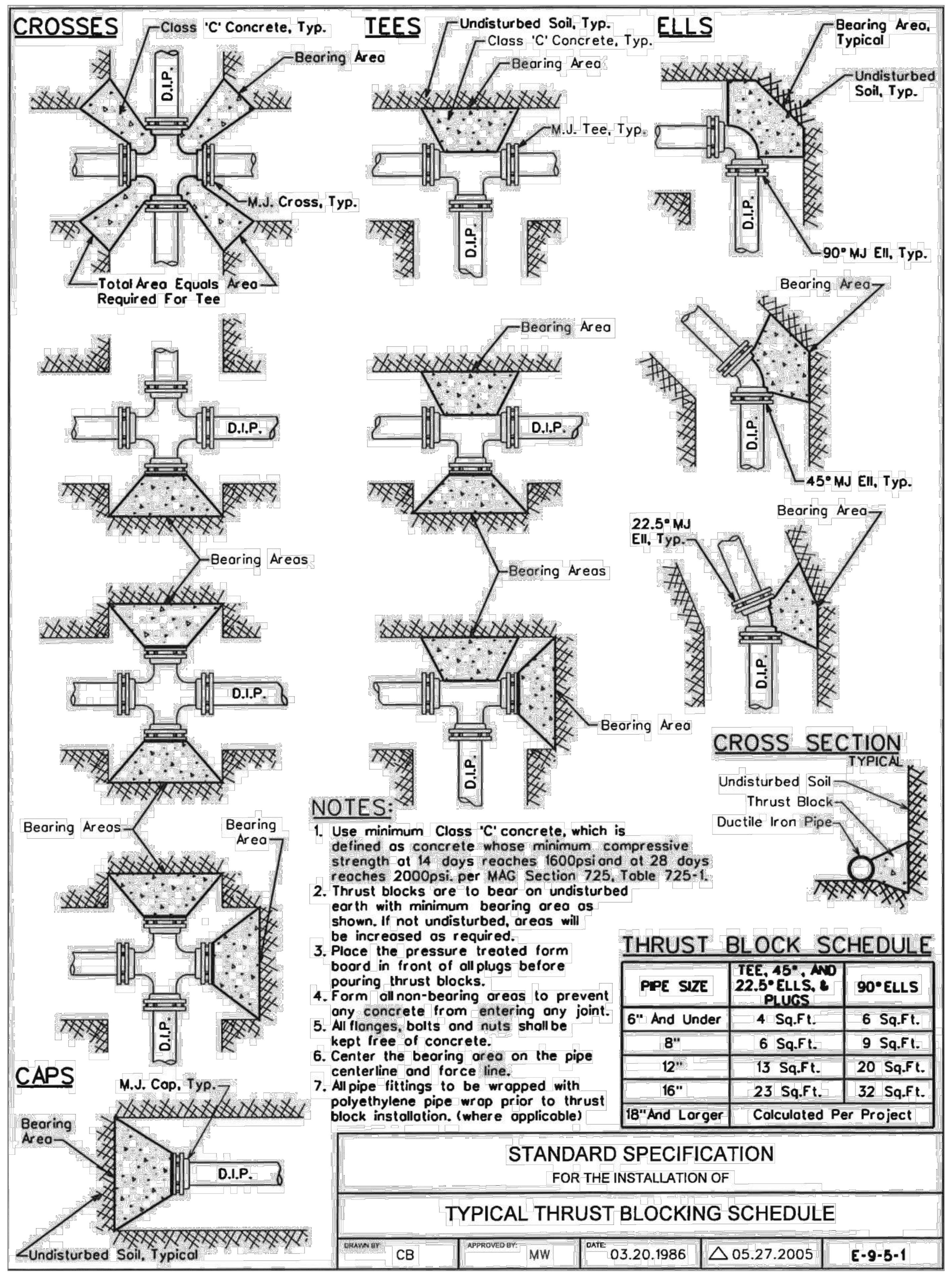
PROJECT SHEET DESC: CIVIL DETAILS -1

consor

DWG. No.: C-501

SHEET 19 OF 80

Drawing Path and Name: C:\Users\jgoddard\DC\ACCDocs\Consor\Stanfield GWS&T USBR Grant Coordination\Project Files\1-Design\02-CIVIL\2-SHEETS\W242167AZ.00_C-501_502.dwg, Plotted Date: March 9, 2026 12:49 PM By: Joshua Goddard



NOTES:

1. Use minimum Class 'C' concrete, which is defined as concrete whose minimum compressive strength at 14 days reaches 1600psi and at 28 days reaches 2000psi. per MAG Section 725, Table 725-1.
2. Thrust blocks are to bear on undisturbed earth with minimum bearing area as shown. If not undisturbed, areas will be increased as required.
3. Place the pressure treated form board in front of all plugs before pouring thrust blocks.
4. Form all non-bearing areas to prevent any concrete from entering any joint.
5. All flanges, bolts and nuts shall be kept free of concrete.
6. Center the bearing area on the pipe centerline and force line.
7. All pipe fittings to be wrapped with polyethylene pipe wrap prior to thrust block installation. (where applicable)

THRUST BLOCK SCHEDULE

PIPE SIZE	TEE, 45°, AND 22.5° ELLS, & PLUGS	90° ELLS
6" And Under	4 Sq.Ft.	6 Sq.Ft.
8"	6 Sq.Ft.	9 Sq.Ft.
12"	13 Sq.Ft.	20 Sq.Ft.
16"	23 Sq.Ft.	32 Sq.Ft.
18" And Larger	Calculated Per Project	

STANDARD SPECIFICATION
FOR THE INSTALLATION OF
TYPICAL THRUST BLOCKING SCHEDULE

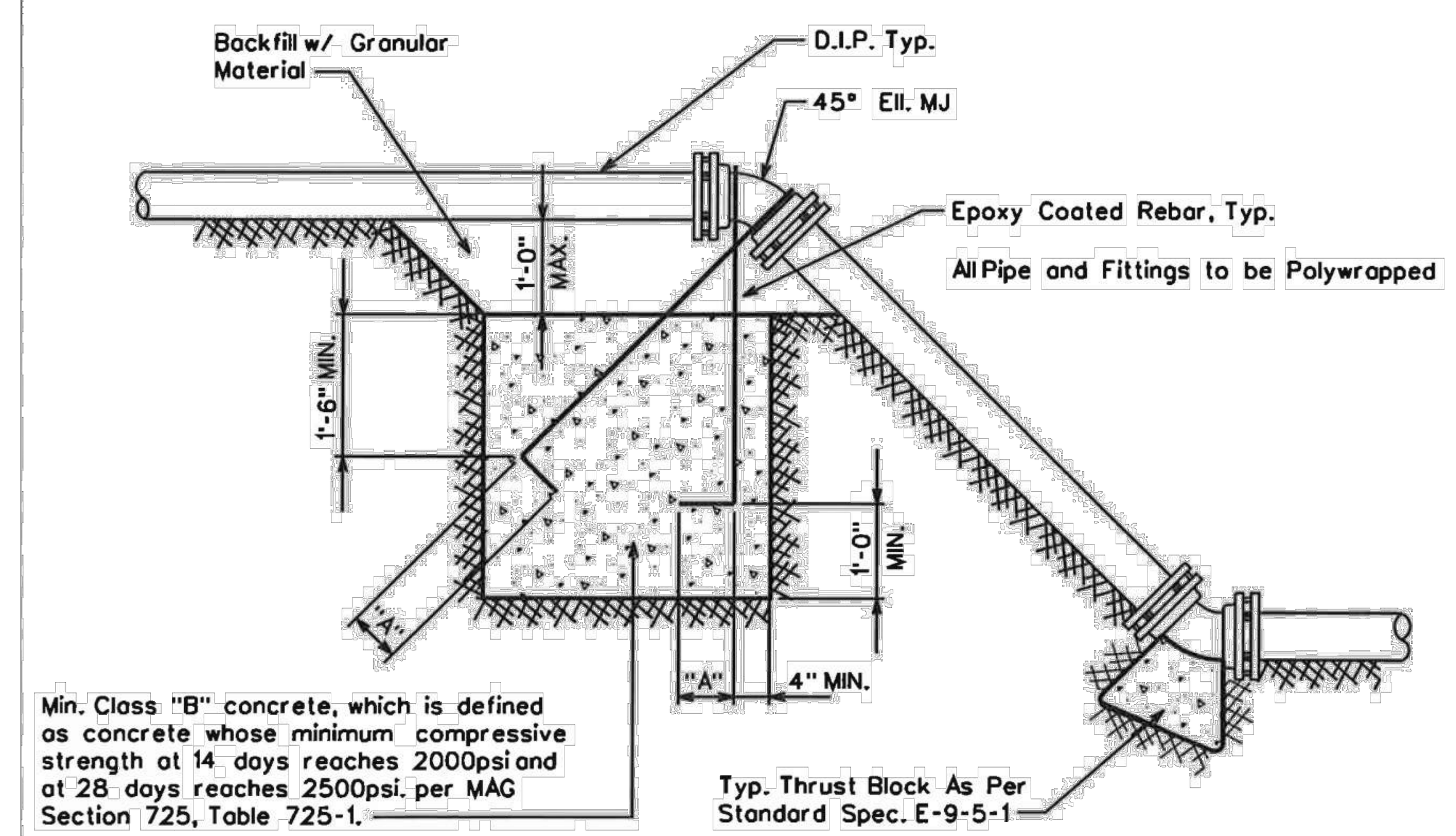
DRAWN BY: CB | APPROVED BY: MW | DATE: 03.20.1986 | △ 05.27.2005 | E-9-5-1

NOTES

1. Bars In Conc. Thrust Block To Be Coated w/ 2 Coats Coal Tar Epoxy or by Other Approved Method.
2. Bars To Have 90° Hook @ Their Ends, As Per Table Below.

Pipe Size	Min. Bar Size	"A" Dimension (Hook)	* Min. Block Dimension (WxHxL)
6"	#6	6"	3'x3'x3'
8"	#6	9"	4'x3'x4'
12"	#8	9"	5'x4'x5'
16"	#9	12"	7'x6'x7'

* For 125 P.S.I. Working Pressure

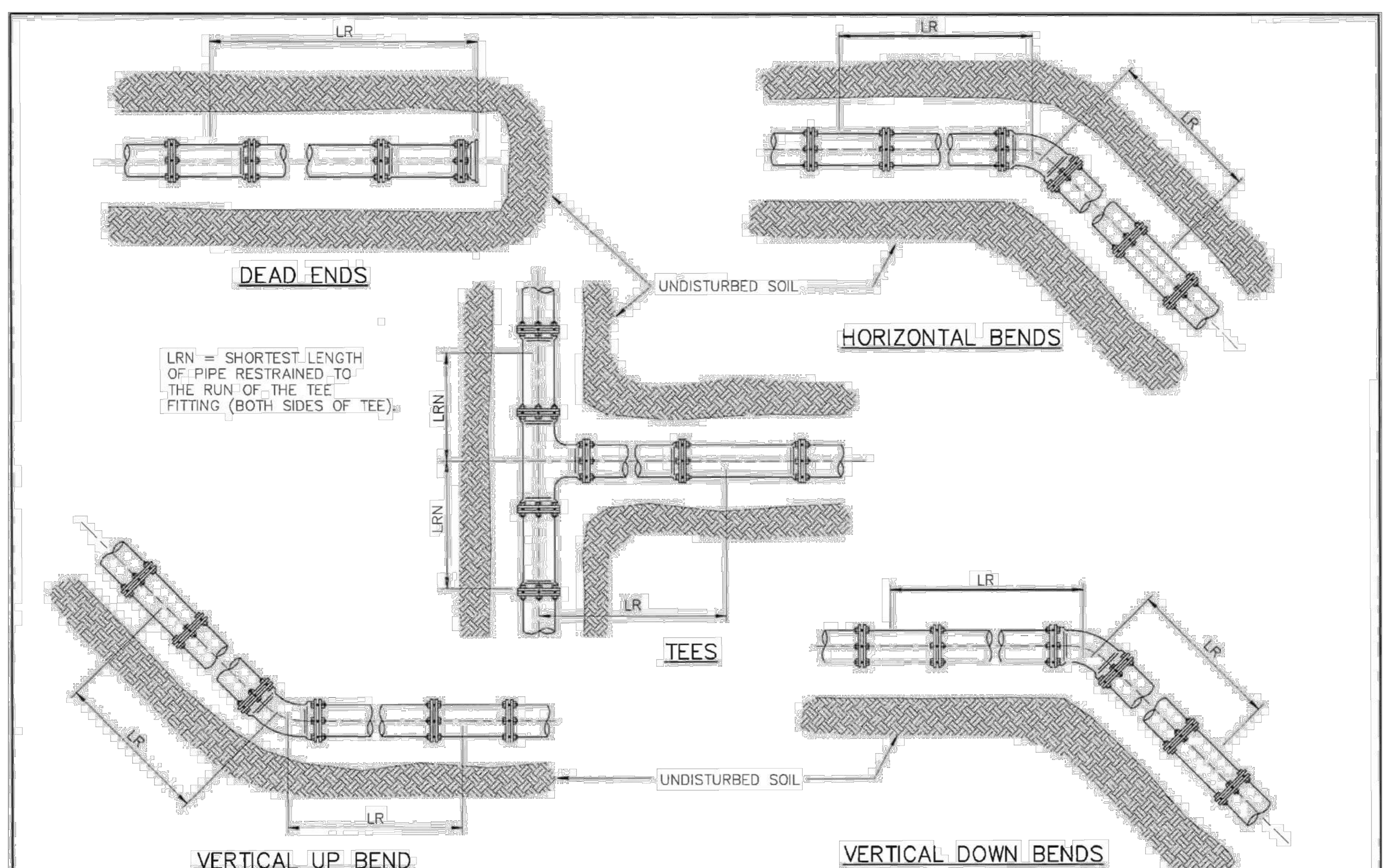


Min. Class "B" concrete, which is defined as concrete whose minimum compressive strength at 14 days reaches 2000psi and at 28 days reaches 2500psi. per MAG Section 725, Table 725-1.

ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF
THRUST BLOCK FOR VERTICAL BENDS

DRAWN BY: JPK | APPROVED BY: MJW | DATE: 7-5-96 | △ 01.16.2007 | E-9-5-2



ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF
JOINT RESTRAINT FOR NEW DUCTILE IRON AND C-900 PVC MAINS

DRAWN BY: CB | APPROVED BY: MW | DATE: 01.16.2007 | △ | E-9-5-3-1

RESTRAINED LENGTHS, LR, FOR DUCTILE IRON PIPE

NOMINAL PIPE SIZE INCHES	HORIZONTAL BENDS			TEES		VERTICAL OFFSETS						DEAD ENDS
						90° BEND FITTINGS		45° BEND FITTINGS		22-1/2° BEND FITTINGS		
	90°	45°	22-1/2°	LRN=0'	LRN=10'	DOWN BEND	UP BEND	DOWN BEND	UP BEND	DOWN BEND	UP BEND	
4	18	7	4	30	8	31	18	13	7	6	3	31
6	25	10	5	43	20	44	25	18	10	9	5	44
8	32	13	6	56	34	58	32	24	13	11	6	58
10	38	16	8	68	45	69	38	29	16	14	8	69
12	45	19	9	80	57	81	45	34	19	16	9	81
14	51	21	10	91	68	92	51	38	21	18	10	92
16	57	24	11	103	79	104	57	43	24	21	11	104
18	62	26	12	113	90	115	62	48	26	23	12	115
20	68	28	14	125	100	126	68	52	28	25	14	126
24	79	33	16	145	121	147	79	61	33	29	16	147

RESTRAINED LENGTHS, LR, FOR DUCTILE IRON PIPE WITH POLYETHYLENE WRAP

NOMINAL PIPE SIZE INCHES	HORIZONTAL BENDS			TEES		VERTICAL OFFSETS						DEAD ENDS
						90° BEND FITTINGS		45° BEND FITTINGS		22-1/2° BEND FITTINGS		
	90°	45°	22-1/2°	LRN=0'	LRN=10'	DOWN BEND	UP BEND	DOWN BEND	UP BEND	DOWN BEND	UP BEND	
4	26	11	5	69	18	72	26	30	11	14	5	72
6	36	15	7	99	47	102	36	42	15	20	7	102
8	47	19	9	130	78	133	47	55	19	26	9	133
10	56	23	11	157	103	159	56	66	23	32	11	159
12	65	27	13	185	131	187	65	77	27	37	13	187
14	74	31	15	211	156	214	74	89	31	42	15	214
16	82	34	16	238	183	241	82	100	34	48	16	241
18	90	37	18	263	207	266	90	110	38	53	18	266
20	98	41	20	289	233	292	98	121	41	58	20	292
24	113	47	22	337	280	340	113	141	47	68	22	340

NOTES:

1. ALL JOINTS WITHIN THE SPECIFIED LENGTH LR MUST BE RESTRAINED. ALL LENGTHS ARE GIVEN IN FEET.
2. THE MAXIMUM TEST PRESSURE SHALL NOT EXCEED 200 PSI
3. THE MINIMUM DEPTH OF BURY SHALL BE 3' TO TOP OF PIPE.
4. RESTRAINED LENGTHS MAY BE REDUCED WHEN SUPPORTED BY ENGINEERING CALCULATIONS.

ARIZONA WATER COMPANY

STANDARD SPECIFICATION
FOR THE INSTALLATION OF
JOINT RESTRAINT FOR NEW DUCTILE IRON AND C-900 PVC MAINS

DRAWN BY: CB | APPROVED BY: MW | DATE: 01.16.2007 | △ | E-9-5-3-2

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: CIVIL DETAILS - 2

consor

DWG. No.: C-502
SHEET 20 OF 80

GENERAL STRUCTURAL NOTES

1.01 GENERAL
A. THE STRUCTURAL DRAWINGS SHOW THE COMPLETED PROJECT. THEY DO NOT INCLUDE COMPONENTS THAT MAY BE NECESSARY FOR CONSTRUCTION SAFETY. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY IN AND AROUND THE JOB SITE DURING CONSTRUCTION.
B. GENERAL NOTES, SECTIONS AND TYPICAL DETAILS APPLY EVEN THOUGH NOT SPECIFICALLY REFERENCED ON STRUCTURAL DRAWINGS.

1.02 COORDINATION
A. VERIFY ALL SITE DIMENSIONS, ELEVATIONS, AND SLOPES WITH CIVIL DRAWINGS. STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO MECHANICAL OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
B. ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL AND SIGNATURE OF AN INSURED PROFESSIONAL STRUCTURAL OR CIVIL ENGINEER REGISTERED IN THE STATE IN WHICH THE SUBMITTED ITEMS WILL BE INSTALLED WHO IS A RECOGNIZED EXPERT IN THE TYPE OF WORK SHOWN AND SPECIFIED.
C. ANY CHANGES PROPOSED BY THE CONTRACTOR TO THE DESIGN OF THE STRUCTURE DURING CONSTRUCTION SHALL BE SUBMITTED FOR REVIEW TO THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF STRUCTURAL AND NON-STRUCTURAL ELEMENTS AFFECTED BY PROPOSED CHANGES. THE COST OF DESIGN EFFORT NECESSITATED BY PROPOSED CHANGES SHALL BE BORNE BY THE CONTRACTOR.
D. THE COST OF DESIGN EFFORT RESULTING FROM ERRORS OR OMISSIONS IN CONSTRUCTION SHALL BE BORNE BY THE CONTRACTOR.
E. IN CASE OF CONFLICTS, THE MORE COSTLY REQUIREMENTS GOVERN. SUBMIT CLARIFICATION REQUEST PRIOR TO PROCEEDING WITH WORK.
F. VERIFY NEW AND EXISTING DIMENSIONS AND CONDITIONS PRIOR TO STARTING WORK. NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES.

2.01 FIELD EXECUTION
A. STRUCTURES HAVE BEEN DESIGNED FOR OPERATIONAL LOADS ON THE COMPLETED STRUCTURES. THE CONTRACTOR SHALL PROVIDE TEMPORARY BRACING, SHORING, GUYING AND OTHER MEANS TO AVOID EXCESSIVE STRESSES AND HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION.
B. CONTRACTOR SHALL EXERCISE EXTREME CARE TO AVOID DAMAGE TO EXISTING STRUCTURES. CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS REQUIRED TO FACILITATE CONSTRUCTION OF THE WORK AND FOR ENSURING THE SAFETY, STABILITY AND INTEGRITY OF ADJACENT STRUCTURES AND FACILITIES.
C. WHEN ANCHORING, SHOOTING, DRILLING, CHIPPING OR CORING INTO CONCRETE, THE AREA SHALL BE SCANNED USING GROUND PENETRATING RADAR (GPR) PRIOR TO START OF WORK. DO NOT CUT OR NICK EXISTING REINFORCING.

STRUCTURAL DESIGN PARAMETERS

1.01 GENERAL
A. CONSTRUCTION SHALL COMPLY WITH THE BUILDING CODE AND OTHER APPLICABLE CODES AND STANDARDS.
B. BUILDING CODE: INTERNATIONAL BUILDING CODE (IBC 2018) AS ADOPTED AND AMENDED BY PINAL COUNTY.
C. STANDARD FOR WELDED STEEL TANKS: AWWA D100 (LATEST EDITION).

2.01 DESIGN CRITERIA
A. REFERENCE STANDARDS: MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES, ASCE 7-16.
B. SUPERIMPOSED DEAD LOADS
1. CANOPY ROOF FRAMING = 10 PSF
C. LIVE LOADS
1. ROOF LIVE LOAD = 20 PSF, REDUCIBLE
2. FLOOR LIVE LOADS:
a. SLAB ON GRADE UNIFORM DISTRIBUTED LOAD = 300 PSF
D. WIND LOAD PARAMETERS
1. EXPOSURE CATEGORY = C
2. STRUCTURAL RISK CATEGORY = IV
3. BASIC WIND SPEED = 113 MPH
4. ALLOWABLE STRESS DESIGN WIND SPEED VASD = 88 MPH
5. INTERNAL PRESSURE COEFFICIENT: GC(pi) = +0.18, -0.18
E. SEISMIC LOAD PARAMETERS
1. STRUCTURAL RISK CATEGORY = IV
2. SITE CLASS D
3. SEISMIC DESIGN CATEGORY = B
4. S(DS) = 0.178g
5. S(D1) = 0.105g
6. S(1) = 0.066g
7. S(s) = 0.167g
8. I(e)= 1.5
9. I(p) = 1.5
10. RESPONSE MODIFICATION FACTOR: R = 3
11. CANOPY BSFR-SYSTEM = STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE, EXCLUDING CANTILEVER COLUMN SYSTEMS
12. ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE PROCEDURE

SUBMITTALS

1.01 GENERAL
A. THE STRUCTURAL ENGINEER WILL REVIEW SUBMITTALS FOR COMPLIANCE WITH THE GENERAL DESIGN INTENT OF THE STRUCTURE AND REQUIREMENTS OF THE CONTRACT DOCUMENTS.
B. IF A SUBMITTAL CONTAINS VARIATIONS FROM THE CONTRACT DRAWINGS, NOTIFY THE STRUCTURAL ENGINEER IN WRITING DESCRIBING THE EXTENT AND REASON FOR THE VARIATION, AND CLEARLY IDENTIFY ALL ITEMS INVOLVED.
C. RE-SUBMITTED SHEETS SHALL CLEARLY IDENTIFY ADDED OR CORRECTED INFORMATION AND THE ITEMS INVOLVED BY CLOUDING AROUND ADDED OR CHANGED INFORMATION.
D. BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW, THE CONTRACTOR SHALL REVIEW, APPROVE, AND SO STAMP EACH SUBMISSION FOR CONFORMANCE WITH MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATIONS OF CONSTRUCTION, AND WITH SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO, ALL OF WHICH ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
E. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK SHOP DRAWINGS, AND COORDINATE SUBMITTAL INFORMATION AND CONTRACT INTERFACES PRIOR TO SUBMITTING FOR REVIEW.
F. SUBMITTALS WILL BE RETURNED WITHOUT REVIEW IF CURSORY EXAMINATION REVEALS MAJOR ERRORS WHICH SHOULD HAVE BEEN FOUND BY THE CONTRACTOR'S CHECKING. MATERIAL NOT CALLED FOR OR WHICH HAS NOT BEEN APPROVED BY THE CONTRACTOR AND BEAR THEIR STAMP WILL BE RETURNED WITHOUT REVIEW.
G. WORK DONE PRIOR TO OR WITHOUT SUBMITTAL REVIEW AND APPROVAL BY THE ENGINEER IS PERFORMED AT THE CONTRACTOR'S OWN RISK AND RESPONSIBILITY.
H. ENGINEERING SUBMITTED FOR REVIEW SHALL BE APPROPRIATELY SEALED. FULL RESPONSIBILITY FOR SUCH ENGINEERING RESTS WITH THE PERSON SEALING THE DESIGN.

DEFERRED SUBMITTALS

1.01 GENERAL
A. DEFERRED SUBMITTALS ARE THOSE PORTIONS OF THE DESIGN THAT ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION BUT WILL BE SUBMITTED TO THE BUILDING OFFICIAL WITHIN A SPECIFIC TIME. DEFERRAL OF ANY SUBMITTAL ITEMS IS SUBJECT TO APPROVAL BY THE BUILDING OFFICIAL.
B. THE CONTRACTOR SHALL INCLUDE IN THEIR COST ALL TIME AND EFFORT REQUIRED TO OBTAIN A BUILDING DEPARTMENT REVIEW AND SHALL ALSO INCLUDE ALL TIME AND EFFORT TO SECURE CALCULATIONS AND DRAWINGS APPROPRIATELY SEALED BY AN ENGINEER FOR DEFERRED ITEMS REQUIRING DESIGN.
C. DOCUMENTS FOR DEFERRED SUBMITTALS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO BEING FORWARDED TO THE BUILDING OFFICIAL. THE ENGINEER WILL REVIEW THE SUBMITTAL DOCUMENTS FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT FOR THE STRUCTURE.
D. SUBMITTALS OF ENGINEERING DESIGN PROVIDED BY OTHERS SHALL HAVE DRAWINGS AND CALCULATIONS APPROPRIATELY SIGNED AND SEALED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE OF ARIZONA IN WHICH THE SUBMITTED ITEMS WILL BE INSTALLED.
E. STRUCTURAL COMPONENTS SHALL BE DESIGNED AND MANUFACTURED BY A FABRICATOR APPROVED BY THE GOVERNING AUTHORITY HAVING JURISDICTION.
F. SUBMITTALS SHALL INCLUDE KEY PLANS, SECTIONS, AND DETAILS NECESSARY FOR CONSTRUCTION.
G. THE FOLLOWING ITEMS ARE DEFERRED SUBMITTAL ITEMS.
1. STEEL TANKS AND TANK ANCHORAGE
2. EQUIPMENT ANCHORAGE

2.01 FIELD EXECUTION
A. FIELD INSTALLATION OF DEFERRED STRUCTURAL ITEMS IS SUBJECT TO SPECIAL STRUCTURAL INSPECTION.
B. SHOP FABRICATION OF DEFERRED STRUCTURAL ITEMS MAY ALSO BE SUBJECT TO SPECIAL STRUCTURAL INSPECTION, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION

1.01 GENERAL
A. THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE SPECIAL STRUCTURAL INSPECTORS IN ACCORDANCE WITH THE APPLICABLE BUILDING CODE.

1.02 CONTRACTOR AND STRUCTURAL INSPECTOR RESPONSIBILITIES
A. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SELF-INSPECT THE STRUCTURAL WORK FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS. PRIOR TO REQUESTING ANY SPECIAL INSPECTION, STRUCTURAL INSPECTION PROVIDED BY OTHERS DOES NOT RELIEVE THE CONTRACTOR OF THIS RESPONSIBILITY. STRUCTURAL DEVIATIONS FROM THE CONTRACT DOCUMENTS THAT ARE FOUND AT A LATER DATE AND ARE DECLARED TO BE SIGNIFICANT BY THE STRUCTURAL ENGINEER OF RECORD SHALL BE CORRECTED BY THE CONTRACTOR WITH ALL DISPATCH.
B. THE STRUCTURAL INSPECTOR IS NOT AUTHORIZED TO STOP OR DELAY THE WORK. IF THE CONTRACTOR ELECTS TO CONTINUE WITH CERTAIN WORK AFTER BEING NOTIFIED BY THE STRUCTURAL INSPECTOR THAT SUCH WORK IS UNACCEPTABLE, THE CONTRACTOR DOES SO AT THEIR OWN RESPONSIBILITY AND RISKS CORRECTING THE WORK AT A LESS OPPORTUNE TIME.
C. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE FACILITIES FOR THE STRUCTURAL INSPECTOR TO INSPECT THE WORK SAFELY AND EFFICIENTLY. TWENTY-FOUR (24) HOUR NOTICE IS REQUIRED PRIOR TO INSPECTION.
D. WORK TO BE INSPECTED MUST BE COMPLETED PRIOR TO TIME OF INSPECTION. CONTRACTOR SHALL BEAR THE EXPENSE OF ADDITIONAL INSPECTIONS THAT MAY OCCUR BECAUSE OF INCOMPLETE OR INCORRECT WORK.
E. INSPECTION OF WORK PROVIDED BY THE CONTRACTOR SUCH AS TEMPORARY SHORING OR JACKING SYSTEMS SHALL BE PROVIDED BY THE CONTRACTOR'S DESIGN ENGINEER FOR THOSE SYSTEMS. THE CONTRACTOR/ENGINEER SHALL PROVIDE A LETTER/REPORT TO BOTH THE OWNER AND ENGINEER OF RECORD THAT THESE INSPECTIONS HAVE BEEN COMPLETED BEFORE EACH PHASE OF SUCH WORK CAN PROCEED.
F. THE STRUCTURAL INSPECTOR IS NOT RESPONSIBLE FOR OSHA COMPLIANCE OR FOR TEMPORARY CONSTRUCTION, SUCH AS BRACING.
G. THE STRUCTURAL INSPECTOR IS NOT AUTHORIZED TO DIRECT OR APPROVE CHANGES FROM THE CONTRACT DOCUMENTS. IF THE CONTRACTOR WISHES TO QUESTION THE STRUCTURAL INSPECTOR'S INTERPRETATION OF THE CONTRACT DOCUMENTS, THEY MAY DO SO DIRECTLY WITH THE STRUCTURAL ENGINEER OF RECORD.

2.01 SHOP FABRICATIONS
A. SHOP FABRICATION WORK IS SUBJECT TO SPECIAL STRUCTURAL INSPECTION UNLESS THE FABRICATOR IS REGISTERED AND APPROVED BY THE BUILDING OFFICIAL TO PERFORM WORK WITHOUT SPECIAL INSPECTION.
B. FABRICATOR SHALL SUBMIT CERTIFICATE OF COMPLIANCE STATING WORK PERFORMED IS IN ACCORDANCE WITH APPROVED CONSTRUCTION DOCUMENTS.

3.01 NOTES APPLICABLE FOR SPECIAL INSPECTION TABLES BELOW
A. "PERIODIC" SPECIAL INSPECTION: THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF WORK. 2018 IBC 1702.1.
B. "CONTINUOUS" SPECIAL INSPECTION: THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED. 2018 IBC 1702.1
C. ITEMS NOT SHOWN MAY REQUIRE CONTINUOUS OR PERIODIC SPECIAL STRUCTURAL INSPECTION AT THE DISCRETION OF THE ENGINEER OF RECORD. ITEMS LISTED MAY REQUIRE ALTERNATE FREQUENCIES OF INSPECTION OTHER THAN SHOWN, UNDER THE DIRECTION OF THE ENGINEER OF RECORD.
D. VERIFY SOILS INSPECTION REQUIREMENTS WITH PROJECT SOILS ENGINEER/CONSULTANT AS OUTLINED IN SOILS REPORT AND PROJECT SPECIFICATIONS.
E. "OBSERVED" IN STEEL CONSTRUCTION SPECIAL INSPECTION: THE INSPECTOR SHALL OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS
F. "PERFORM" IN STEEL CONSTRUCTION SPECIAL INSPECTION: THESE TASKS SHALL BE PERFORMED FOR EACH BOLTED CONNECTION AND WELDED JOINT OR MEMBER.

3.02 REQUIRED VERIFICATION AND SPECIAL INSPECTIONS

REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS (IBC 2018, TABLE 1705.6)

TYPE AND FREQUENCY OF INSPECTION

1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.
CONTINUOUS ___ PERIODIC √

2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.
CONTINUOUS ___ PERIODIC √

3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.
CONTINUOUS ___ PERIODIC √

4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.
CONTINUOUS √ PERIODIC ___

5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.
CONTINUOUS ___ PERIODIC √

INSPECTION OF CONCRETE CONSTRUCTION (RE: 2018 IBC 1705.3)

TYPE AND FREQUENCY OF INSPECTION

1. INSPECT REINFORCEMENT AND VERIFY PLACEMENT.
CONTINUOUS ___ PERIODIC √

2. INSPECT ANCHORS CAST IN CONCRETE.
CONTINUOUS ___ PERIODIC √

3. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.
a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.
CONTINUOUS √ PERIODIC ___

b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.
CONTINUOUS ___ PERIODIC √

4. VERIFY USE OF REQUIRED DESIGN MIX.
CONTINUOUS ___ PERIODIC √

5. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.
CONTINUOUS √ PERIODIC ___

6. INSPECT CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.
CONTINUOUS √ PERIODIC ___

7. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.
CONTINUOUS ___ PERIODIC √

8. VERIFY IN SITU CONCRETE STRENGTH PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.
CONTINUOUS ___ PERIODIC √

9. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.
CONTINUOUS ___ PERIODIC √

INSPECTION OF STEEL BOLTING (RE: AISC360-16 TABLES N5.6-1, N5.6-2, & N5.6-3)

INSPECTION TASKS PRIOR TO BOLTING

1. THE FOLLOWING TASKS SHALL BE **OBSERVED**.
A. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS.
B. CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE,TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM SHEAR PLANE).
C. CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL.
D. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS.
E. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED.
F. PROTECTED STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS.

2. THE FOLLOWING TASKS SHALL BE **PERFORMED**.
A. MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS.

INSPECTION TASKS DURING BOLTING

1. THE FOLLOWING TASKS SHALL BE **OBSERVED**.
A. FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS AND NUTS ARE POSITIONED AS REQUIRED.
B. JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION.
C. FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING.
D. FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARDS THE FREE EDGES.

2. THE FOLLOWING TASKS SHALL BE **PERFORMED**.
A. (N/A)

INSPECTION TASKS AFTER BOLTING

1. THE FOLLOWING TASKS SHALL BE **OBSERVED**.
A. (N/A)

2. THE FOLLOWING TASKS SHALL BE **PERFORMED**.
A. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS.

REVISIONS: NO	DATE	BY	DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: X-XXXX | P.E. No.: XXXX | SYSTEM: XXXX | LEGAL DESC.: XX 1/4 SEC. XX, T. XX X., R. XX X. | TAX DIST.: XXXX | SB No.: XX-XX | DATE: 03/09/2026 | SCALE: AS SHOWN | DRAWN BY: MWK | REVIEWED BY: SMT | CHECKED BY: ACK

ARIZONA WATER COMPANY
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PHOENIX, ARIZONA 85038-9006
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PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC.: GENERAL STRUCTURAL NOTES 1

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DWG NO.: S-001
OF 17

90% SUBMITTAL

INSPECTION OF STEEL WELDING (RE: AISC360-16 TABLES N5.4-1, N5.4-2, & N5.4-3)

INSPECTION TASKS PRIOR TO WELDING

1. THE FOLLOWING TASK(S) SHALL BE **OBSERVED**.
   A. WELDER QUALIFICATION RECORDS AND CONTINUITY RECORDS.
   B. MATERIAL IDENTIFICATION (TYPE/GRADE).
   C. WELDER IDENTIFICATION SYSTEM.
   D. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY, JOINT PREPARATIONS, DIMENSIONS, CLEANLINESS, TACKING, AND BACKING).
   E. FIT-UP OF CJP GROOVE WELDS AT HSS T-, Y- AND K- JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY, JOINT PREPARATIONS, DIMENSIONS, CLEANLINESS, AND TACKING).
   F. CONFIGURATION AND FINISH OF ACCESS HOLES.
   G. FIT-UP OF FILLET WELDS (INCLUDING DIMENSIONS, CLEANLINESS, AND TACKING).

2. THE FOLLOWING TASKS SHALL BE **PERFORMED**.
   A. WPS AVAILABLE.
   B. MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE.

INSPECTION TASKS DURING WELDING

1. THE FOLLOWING TASK(S) SHALL BE **OBSERVED**.
   A. CONTROL AND HANDLING OF WELDING CONSUMABLES (INCLUDING PACKAGING AND EXPOSURE CONTROL).
   B. NO WELDING OVER CRACKED TACK WELDS.
   C. ENVIRONMENTAL CONDITIONS (INCLUDING WIND SPEED WITHIN LIMITS, PRECIPITATION, AND TEMPERATURE).
   D. WPS FOLLOWED (INCLUDING SETTINGS ON WELDING EQUIPMENT, TRAVEL SPEED, SELECTED WELDING MATERIALS, SHIELDING GAS TYPE/FLOW RATE, PREHEAT APPLIED, INTERPASS TEMPERATURE MAINTAINED (MIN/MAX), AND PROPER POSITION (F, V, H, OH)).
   E. WELDER IDENTIFICATION SYSTEM (INCLUDING INTERPASS AND FINAL CLEANING, EACH PASS WITHIN PROFILE LIMITATIONS, AND EACH PASS MEETS QUALITY REQUIREMENTS).

2. THE FOLLOWING TASK(S) SHALL BE **PERFORMED**.
   A. PLACEMENT AND INSTALLATION OF STEEL HEADED STUD ANCHORS.

INSPECTION TASKS AFTER WELDING

1. THE FOLLOWING TASK(S) SHALL BE **OBSERVED**.
   A. WELDS CLEANED.
   B. NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR.

2. THE FOLLOWING TASK(S) SHALL BE **PERFORMED**.
   A. SIZE, LENGTH, AND LOCATION OF WELDS.
   B. WELDS MEET VISUAL ACCEPTANCE CRITERIA (INCLUDING CRACK PROHIBITION, WELD/BASE-METAL FUSION, CRATER CROSS SECTION, CRACK PROHIBITION, WELD PROFILES, WELD SIZE, UNDERCUT, AND POROSITY).
   C. ARC STRIKES.
   D. K-AREA.
   E. WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES.
   F. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED).
   G. REPAIR ACTIVITIES.
   H. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER.

INSPECTION OF COLD-FORMED STEEL DECK (RE: SDI QA/QC REQUIREMENTS)

INSPECTION ITEM AND FREQUENCY OF INSPECTION

1. MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK
   a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.
   CONTINUOUS ___ PERIODIC _√_

   b. MANUFACTURER'S CERTIFIED TEST REPORTS.
   CONTINUOUS ___ PERIODIC _√_

2. INSPECTION OF WELDING COLD FORMED STEEL DECK
   a. ROOF DECK WELDS.
   CONTINUOUS ___ PERIODIC _√_

INSPECTION OF POST-INSTALLED ANCHORS AND DOWELS (RE: PRODUCT ICC-ES EVALUATION REPORT)

INSPECTION ITEM AND FREQUENCY OF INSPECTION

1. ADHESIVE ANCHORS AND REINFORCEMENT DOWELS
   - THE FOLLOWING TASKS SHALL BE PERFORMED **CONTINUOUSLY**.
     A. VERIFY DRILL BIT TYPE AND SIZE.
     B. HOLE DEPTH AND CLEANING PROCEDURE.
     C. PRODUCT DESCRIPTION INCLUDING NAME, ROD TYPE, DIAMETER, AND LENGTH.
     D. ADHESIVE EXPIRATION DATE.
     E. PROPER INSTALLATION TECHNIQUE FOR ADHESIVE ANCHORS.

2. MECHANICAL ANCHORS
   - THE FOLLOWING TASKS SHALL BE PERFORMED **CONTINUOUSLY**.
     A. VERIFY DRILL BIT TYPE AND SIZE.
     B. HOLE DEPTH AND CLEANING PROCEDURE.
     C. PRODUCT DESCRIPTION INCLUDING NAME, ANCHOR TYPE, DIAMETER, AND LENGTH.
     D. PROPER INSTALLATION TECHNIQUE FOR MECHANICAL ANCHORS AND TIGHTENING TORQUE.

FOUNDATIONS

1.01 GENERAL
   A. PERFORM WORK IN ACCORDANCE WITH THE GEOTECHNICAL REPORT BY NINYO AND MOORE, DATED 6/13/2025 (NINYO AND MOORE PROJECT NO. 608956001).
   B. FOUNDATION DESIGN IS BASED ON THE FOLLOWING SOIL PROPERTIES.
      1. SOIL CLASSIFICATION = CLASS D
      2. VERTICAL (GRAVITY) NET BEARING PRESSURE = 1500 PSF AT 2'-0" FT BELOW NATURAL GRADE BEARING ON ENGINEERED FILL
      3. FOR MAT FOUNDATIONS MORE THAN FIVE FEET IN WIDTH THE AVERAGE BEARING PRESSURE SHOULD NOT EXCEED AN ALLOWABLE EQUIVALENT UNIFORM BEARING PRESSURE OF 3000 PSF.
      4. LATERAL AT-REST PRESSURES = 60 PSF/FT
      5. LATERAL ACTIVE PRESSURES = 45 PSF/FT
      6. LATERAL PASSIVE PRESSURES = 200 PSF/FT
      7. BASE FRICTION COEFFICIENT = 0.30
   C. PROVIDE CONCRETE ENCASEMENT FOR ALL UNDERGROUND PIPES BENEATH BUILDING FOUNDATIONS.
   D. FOR SHORING REQUIRED TO PROTECT EXISTING STRUCTURES, CONTRACTOR SHALL SUBMIT SHORING SHOP DRAWINGS AND CALCULATIONS TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS AND CALCULATIONS SHALL BEAR THE SEAL OF A GEOTECHNICAL ENGINEER REGISTERED IN THE STATE IN WHICH CONSTRUCTION WILL BE DONE.

2.01 CONTROLLED LOW STRENGTH MATERIAL (CLSM)
   A. CLSM SHALL BE USED AS AN UNREINFORCED FILL MATERIAL TO REPLACE EXCAVATED SOIL UNDER STRUCTURE FOUNDATIONS AND AS SHOWN ON DRAWINGS.
   B. PROPORTIONS: CEMENT CONTENT = 94 LBS/CU YD (+/- 5%); SLUMP = 7 INCHES (+/- 1 INCH); COMPRESSIVE STRENGTH AT 28 DAYS= 150 PSI (+/-50 PSI).

3.01 PLACEMENT
   A. PLACE FOUNDATION CONCRETE ONLY ON CLEAN, FIRM ENGINEERED FILL AT LEAST 1'-6" BELOW THE LOWEST ADJACENT FINISH OR NATURAL GRADE, WHICHEVER IS LOWER. VERIFY THE SUITABILITY OF THE BEARING MATERIAL WITH THE GEOTECHNICAL ENGINEER BEFORE PLACING FOUNDATIONS.
   B. PLACE DOWELS AND ANCHORS BEFORE PLACING CONCRETE. USE TEMPLATES TO ENSURE PROPER PLACEMENT.
   C. CENTER FOUNDATIONS UNDER COLUMNS AND WALLS UNLESS NOTED OTHERWISE. GROUT ALL COLUMN BASE PLATES BEFORE INSTALLING FRAMING ABOVE.

CONCRETE

1.01 DESCRIPTION
   A. THIS SECTION INCLUDES THE REQUIREMENTS FOR MATERIALS, PROPORTIONING, AND INSTALLATION OF CONCRETE (RE: ACI 301-**14**, ACI 318-14, ACI 350-06). PROVIDE NORMAL WEIGHT CONCRETE (144PCF WET) .

1.02 COORDINATION
   A. INSTALL JOINTS, WATERSTOPS, AND SEALANTS IN CONCRETE WHERE APPLICABLE IN ACCORDANCE WITH OTHER SECTIONS OF THE GENERAL STRUCTURAL NOTES, PLANS, AND PROJECT SPECIFICATIONS.
   B. PATCHING OF CONCRETE SHALL BE CONSIDERED STRUCTURAL. CONTACT THE STRUCTURAL ENGINEER FOR PATCHING REPAIR PROCEDURES ON A CASE BY CASE BASIS.
   C. MECHANICAL AND ELECTRICAL SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DRAWINGS SHALL BE PROVIDED PRIOR TO PLACING CONCRETE.

1.03 SUBMITTALS
   A. SUBMIT THE FOLLOWING TO THE ENGINEER FOR REVIEW PRIOR TO PLACEMENT OF CONCRETE. INDICATE FOR EACH MIX DESIGN THE LOCATION ON THE PROJECT WHERE IT WILL BE USED. PREPARE OR CERTIFY SUBMITTALS TO CONFORM TO ACI CODES BY AN INDEPENDENT TESTING LABORATORY PRIOR TO SUBMITTING TO ENGINEER.
      1. CONCRETE MIX PROPORTIONS AND CHARACTERISTICS.
      2. COMPRESSIVE STRENGTH TESTING DATA.
      3. MATERIAL DATA FOR CEMENTITIOUS MATERIALS, AGGREGATES, ADMIXTURES, AND WATER AND ICE.
      4. JOINT LOCATIONS IF DIFFERENT THAN SHOWN ON DRAWINGS.

1.04 QUALITY ASSURANCE
   A. PRODUCE AND DELIVER CONCRETE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS IN ACI 301 AND TOLERANCES OF ACI 117. PLACE CONCRETE IN ACCORDANCE WITH ACI 304. CONDUCT HOT WEATHER AND COLD WEATHER CONCRETING IN ACCORDANCE WITH ACI 305 AND ACI 306 RESPECTIVELY.

2.01 MIX WATER
   A. USE POTABLE WATER FREE FROM MATERIALS THAT ARE DELETERIOUS TO CONCRETE OR STEEL (ASTM C1602).

2.02 CEMENTITIOUS MATERIALS
   A. PORTLAND CEMENT: CONFORM TO ASTM C 150, TYPE II, EXCEPT FOR MASS CONCRETE PROVIDE TYPE IV CEMENT OR ADDITIVES OR OTHER PROVISIONS TO REDUCE THE HEAT OF HYDRATION.
   B. FLY ASH: ACCEPTABLE FOR USE IN MIX DESIGN IF COMPLIANT WITH REQUIREMENTS OF CONTRACT DOCUMENTS AND THE MAX RATIO OF FLY ASH TO TOTAL CEMENT AND FLY ASH DOES NOT EXCEED 20 PERCENT BY WEIGHT. CONFORM TO ASTM C 618, TYPE F. DO NOT USE FLY ASH IN COLORED CONCRETE WITHOUT WRITTEN APPROVAL.

2.03 AGGREGATE
   A. PROVIDE A SINGLE SIZE OR A GRADATION OF AGGREGATE WITH THE MAXIMUM SIZE AS SHOWN ON THE MIX DESIGN PROPORTIONS BELOW. DO NOT USE AGGREGATES CONTAINING SOLUBLE SALTS OR OTHER SUBSTANCES SUCH AS IRON SULFIDES, PYRITE, MARCASITE, OCHRE, OR OTHER MATERIALS THAT MAY CAUSE STAINS ON EXPOSED CONCRETE SURFACES.
   B. UNLESS NOTED OTHERWISE, AGGREGATE SHALL BE NORMAL WEIGHT CONFORMING TO ASTM C33.

2.04 ADMIXTURES
   A. SUBMIT ADMIXTURES TO THE ENGINEER FOR REVIEW. DO NOT USE ADMIXTURES CONTAINING CALCIUM CHLORIDE. ADMIXTURES AND COMBINATIONS OF ADMIXTURES SHALL BE THE SAME AS THOSE USED IN THE FIELD OR TRIAL TEST DATA SUBMITTED.
   B. SUPERPLASTICIZERS (HIGH RANGE WATER REDUCERS) AND WATER REDUCERS: COMPLY WITH ASTM C494 TYPE A AND TYPE F. FOR PLANT-ADDED SUPERPLASTICIZERS, BATCHES ARRIVING ON SITE WITH A SLUMP OF 5" OR LESS WILL NOT BE ACCEPTED. FOR SITE-ADDED SUPERPLASTICIZERS, THE MIX SHALL BE SLUMPED AT THE JOB SITE PRIOR TO THE ADDITION OF SUPERPLASTICIZERS. PROVIDE COMPUTER BATCH RECORDS IF SUPERPLASTICIZERS ARE USED. DO NOT ADD ADDITIONAL SUPERPLASTICIZERS ON SITE.

2.05 SLUMP
   A. TOLERANCE FOR SPECIFIED SLUMP IS +/- 1 INCH BEFORE THE ADDITION OF SUPERPLASTICIZERS/WATER REDUCERS PER ACI 117. MAXIMUM SLUMP WITH SUPERPLASTICIZERS IS 8 INCHES. WATER MAY BE ADDED ON SITE FOR SLUMP ADJUSTMENT IF THE TOTAL AMOUNT ADDED IS WITHIN THE WATER/CEMENTITIOUS RATIO AND SLUMP LIMITS SPECIFIED. DO NOT ADD WATER IF SUPERPLASTICIZERS ARE USED.

2.06 MIX DESIGN PROPORTIONS (NORMAL WT CONCRETE U.N.O.)

   A. PROVIDE COMPUTERIZED BATCH RECORDS WITH ALL LOAD LOCATION.

LOCATION	MIN 28 DAY COMPRESSIVE STRENGTH (PSI)	MAX W/CM RATIO	SLUMP (IN)	% AIR	MAX AGGREGATE SIZE (IN)
STRUCTURAL CONCRETE	4000	0.42	4	1.5	1"
PIPE ENCASMENT CONCRETE	3000	0.50	4	4.5	1

2.07 NON-SHRINK GROUT
   A. USE PLASTIC OR STIFF (DRY PACK), NON-METALLIC, NON-SHRINK GROUT WITH MINIMUM 7,000 PSI COMPRESSIVE STRENGTH AT 28 DAYS. CONFORM TO THE REQUIREMENTS OF CRD-C 621 CORPS OF ENGINEERS FOR NON-SHRINK GROUT.
   B. SATURATE THE AREA WITH POTABLE WATER FOR 24 HOURS IMMEDIATELY PRIOR TO APPLICATION OF THE GROUT PER THE MANUFACTURER'S RECOMMENDATIONS. WET CURE AND APPLY CURING COMPOUNDS TO EXPOSED GROUT SURFACES.
   C. USE BASF CONSTRUCTION GROUT, EUCO DRY PACK GROUT, OR EQUAL.

2.08 NON-SHRINK EPOXY GROUT
   A. USE POURABLE, NON-SHRINK, 100% SOLIDS FORMULA WITH MINIMUM 5000 PSI COMPRESSIVE STRENGTH AT 24 HOURS.
   B. ROUGHEN CONCRETE SURFACE AND EXPOSE AGGREGATE. APPLY TO CLEAN, DRY SURFACE PER MANUFACTURER'S RECOMMENDATIONS.
   C. USE BASF MASTERFLOW 648 CP, EUCO E3-F OR EQUAL.

3.01 CONCRETE PLACING
   A. DO NOT PLACE CONCRETE IN CONTACT WITH ALUMINUM.
   B. DO NOT ADD WATER ON SITE OR AFTER SUPERPLASTICIZERS HAVE BEEN ADDED.
   C. THE MAXIMUM FREE DROP OF CONCRETE IS 6'-0" WITHOUT A TREMIE PIPE TO PREVENT SEGREGATION. DEPOSIT CONCRETE AS NEAR AS POSSIBLE TO ITS FINAL POSITION. DO NOT EMPLOY ANY PRACTICES CAUSING SEGREGATION SUCH AS VIBRATING CONCRETE TO SPEED CONVEYANCE.
   D. MECHANICALLY VIBRATE CONCRETE, EXCEPT SLABS ON GRADE NEED BE VIBRATED ONLY AROUND UNDER-FLOOR DUCTS AND OTHER ITEMS EMBEDDED IN THE SLAB. REVIBRATE TOPS OF COLUMNS, CAISSONS (DRILLED PIERS), AND THE TOP 5 FEET OF WALLS (OVER 10 FEET IN HEIGHT).
   E. WAIT 28 DAYS MINIMUM AFTER CONCRETE HAS BEEN PLACED BEFORE SAND BLASTING, WATER BLASTING OR OTHER SURFACE TREATMENT.
   F. DO NOT PLACE CONCRETE IN STANDING WATER.

3.02 FINISHING
   A. PROVIDE FINISHES ON FORMED SURFACES PER ACI 301 AND FORMED SURFACE IRREGULARITIES PER ACI 117 AS FOLLOWS.
      1. ROUGH FORM FINISH: SURFACES NOT EXPOSED TO PUBLIC VIEW. PATCH TIE HOLES, LEAVE TEXTURE IMPARTED BY FORM, REMOVE FINS GREATER THAN 1/2 INCH IN HEIGHT.
      2. SMOOTH FORM FINISH: SURFACES EXPOSED TO PUBLIC VIEW. REMOVE FINS GREATER THAN 1/8 INCH IN HEIGHT.
      3. SURFACES EXPOSED TO VIEW: CLASS B SURFACE WITH ABRUPT IRREGULARITIES LESS THAN 1/4 INCH.
   B. THE USE OF WATER OR "SPRINKLING" AS AN AID TO FINISHING UNFORMED SURFACES IS PROHIBITED.
   C. PROVIDE 3/4" X 3/4" CHAMFERS AT ALL EXPOSED CORNERS OF SLABS, WALLS, COLUMNS AND BEAMS.

3.03 CURING
   A. CURE CONCRETE PER ACI 318 AND ACI 301 FOR 7 DAYS AFTER PLACEMENT. CURING COMPOUNDS SHALL HAVE A FUGITIVE DYE. CURING COMPOUNDS SHALL BE COMPATIBLE WITH FUTURE TOPPINGS, PAINT, WATERPROOFING AND FINISHES. APPLY TWO HEAVY COATS OF CURING COMPOUND USING A HIGH PRESSURE AIRLESS SPRAYER. APPLY THE SECOND COAT 90 DEGREES TO THE FIRST. CLEAN NOZZLES AFTER EACH USE.
   B. CONCRETE SURFACES IN CONTACT WITH POTABLE WATER OR WATER UNDER TREATMENT TO BECOME POTABLE SHALL BE CONTINUOUSLY MOIST CURED UNLESS ANSI/NSF-61 CERTIFIED CURING COMPOUND IS USED.
   C. OTHER CONCRETE SURFACES CURING COMPOUND SHALL MEET THE MOISTURE RETENTION REQUIREMENTS OF ASTM C-309, TYPE 1-D AT COVERAGE RATE SPECIFIED, AND PASS VOC REQUIREMENTS.
   D. COLUMNS, WALLS, GRADE BEAMS, AND FOUNDATIONS: START CURING IMMEDIATELY UPON THE REMOVAL OF FORMS AND THE COMPLETION OF FINISHING WORK. THE TOPS OF SPREAD FOUNDATIONS REQUIRE CURING COMPOUND.
   E. SLAB AND CAST-IN-PLACE FINISHED CONCRETE: START CURING IMMEDIATELY AFTER THE CONCRETE HAS SET ENOUGH TO WALK ON WITHOUT HARMING THE FINISH.

REINFORCING STEEL

1.01 DESCRIPTION
   A. THIS SECTION INCLUDES REQUIREMENTS FOR MATERIALS, DETAILING, AND INSTALLATION OF REINFORCING STEEL (RE: ACI 301-14, ACI 318-14, ACI 350-06).
   B. PLACE REINFORCEMENT IN CONFORMANCE WITH CONTRACT DRAWINGS AND ACI DETAILING MANUAL SP-66.

1.02 COORDINATION
   A. DO NOT DAMAGE OR DISRUPT REINFORCING BARS, STEEL EMBEDS, OR CONNECTORS FROM THEIR PROPER LOCATION BY THE PLACEMENT OF EMBEDDED PIPING OR CONDUIT. PROVIDE REQUIRED CLEARANCE BETWEEN REINFORCEMENT AND EMBEDDED PIPING AND CONDUIT.

1.03 SUBMITTALS
   A. SUBMIT PLACING DRAWINGS PER ACI DETAILING MANUAL, ACI SP-66, FOR ENGINEER'S REVIEW. INCLUDE ELEVATIONS SHOWING REINFORCING AT CONCRETE FOUNDATIONS, WALLS AND BEAMS.

1.04 QUALITY ASSURANCE
   A. TOLERANCES FOR FABRICATION, PLACEMENT, BAR BENDS, STANDARD HOOKS AND LAP SPLICES FOR REINFORCEMENT SHALL CONFORM TO ACI 117, SECTION 2 AND CRSI STANDARDS.

2.01 REINFORCEMENT MATERIALS
   A. REINFORCING STEEL SHALL BE DEFORMED.
   B. REINFORCING STEEL SHALL CONFORM TO THE FOLLOWING STANDARDS.
      1. ALL REINFORCING STEEL- ASTM A 615, GRADE 60

3.01 PLACEMENT
   A. SECURELY TIE REINFORCING AND EMBEDDED ITEMS IN POSITION BEFORE PLACING CONCRETE OR GROUT. DO NOT STAB OR SHOVE INTO FRESHLY PLACED CONCRETE.
   B. BAR SUPPORTS AND SPACERS SHALL BE PROVIDED IN ACCORDANCE WITH ACI 301 REINFORCING SHOWN ON THE DRAWINGS SHALL NOT BE BURIED ABOVE OR BELOW ITS REQUIRED POSITION AND LAYER. ADDITIONAL BARS MAY BE USED AS BURIED BAR SUPPORTS, BUT ONLY IF THEY ARE IN CONFORMANCE WITH CONCRETE COVER REQUIREMENTS.

3.02 COVER
   A. CONCRETE COVER FOR REINFORCING BARS (TO FACE OF BAR INCLUDING PRIMARY REINFORCEMENT, STIRRUPS, TIES, AND SPIRALS) UNLESS NOTED OTHERWISE ON DRAWINGS.
   B. CAST-IN-PLACE CONCRETE ACI 350 (NON-PRESTRESSED)
      1. CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH
         - ALL BARS - 3"
      2. CONCRETE CAST AGAINST FORMS AND PERMANENTLY EXPOSED TO EARTH, LIQUID, WEATHER, OR BEARING ON A WORK MAT
         - ALL REINFORCING STEEL - 2 1/2"
      3. CONCRETE NOT EXPOSED TO EARTH, LIQUID, OR WEATHER
         - ALL REINFORCING STEEL - 2"

3.03 SPLICES
   A. REINFORCEMENT SHALL BE CONTINUOUS WITH FULL TENSION LAPS AND TERMINATED WITH A 90 DEGREE STANDARD HOOK, UNLESS NOTED OTHERWISE.
   B. WALL REINFORCEMENT AT CORNERS, INTERSECTIONS, AND JUNCTIONS SHALL BE CONTINUOUS AND LAPPED OR TERMINATED IN A 90 DEGREESTANDARD HOOK.
   C. RADIAL WALLS SHALL HAVE STAGGERED SPLICES WITH NO MORE THAN 1/3 OF THE REINFORCEMENT SPLICED AT ANY LOCATION.
   D. SPLICE REINFORCING BARS ONLY AT APPROVED LOCATIONS. SPLICE BOTTOM BARS OVER SUPPORTS AND TOP BARS AT MID-SPAN ONLY, UNLESS NOTED OTHERWISE ON DRAWINGS.
   E. DOWEL VERTICAL REINFORCEMENT TO FOUNDATIONS, UNLESS NOTED OTHERWISE ON DRAWINGS. ALL DOWELS SHALL BE THE SAME SIZE AND SPACING AS THE REINFORCEMENT THAT IT IS SPLICED WITH, UNLESS NOTED OTHERWISE ON DRAWINGS.
   F. STAGGER END LAP SPLICES OF WELDED WIRE FABRIC AS REQUIRED FOR MAXIMUM 3 LAYERS OF FABRIC AT ANY LOCATION.
   G. PROVIDE THE SAME MINIMUM FIRE RATED COVER TO MECHANICAL SPLICE COUPLERS AS REQUIRED FOR BOTH PRIMARY AND REGULAR REINFORCEMENT. ADJUST STIRRUPS AND TIES AS NOTED IN SPECIAL DETAILS.
   H. DRAWINGS DO NOT INDICATE ALL REQUIRED BAR SPLICES. SUBMIT SPLICE LAYOUT AS A PART OF REINFORCING BAR SHOP DRAWINGS, INCLUDING SPLICES ADDED TO IMPLEMENT CONTRACTORS MEANS AND METHODS.

3.04 WELDING
   A. DO NOT WELD REINFORCING STEEL.

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REVISIONS:

NO	DATE	BY	DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Contact Arizona 811 at least two full working days before you begin excavation. ARIZONA811. Call 811 or click Arizona811.com

W.A. No.: X-XXXX | P.E. No.: XXXX
SYSTEM: XXXX
LEGAL DESC.: XX 1/4 SEC. XX, T. XX X., R. XX X.
TAX DIST.: XXXX | SIB No.: XX-XX
DATE: 03/09/2026 | SCALE: AS SHOWN
DRAWN BY: MWK | REVIEWED BY: SMT | CHECKED BY: ACK

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PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: **GENERAL STRUCTURAL NOTES 2**

DWG NO.: S-002

OF 17

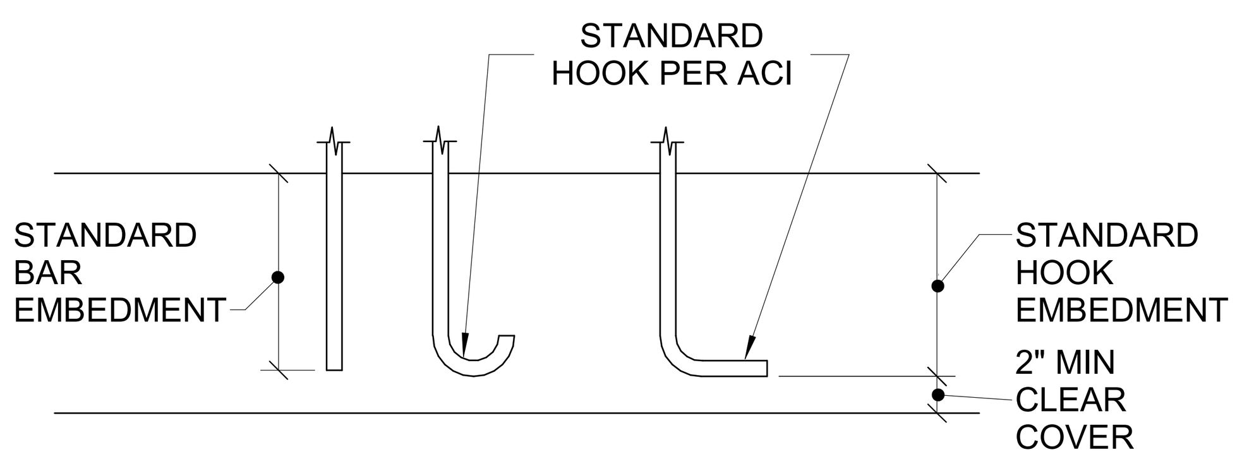
REINFORCING STEEL (CONTINUED)

3.05 LAP SPLICE LENGTHS
A. TOP BARS ARE HORIZONTAL BARS LOCATED WHERE 12 INCHES OR MORE OF FRESH CONCRETE WILL BE PLACED BELOW THE BAR.
B. LAP WELDED WIRE FABRIC TWO FULL SQUARES.
C. LAP SPLICES ARE CLASS 'B' SPLICES, UNLESS NOTED OTHERWISE.
D. MINIMUM LAP SPLICE AND EMBEDMENT LENGTHS FOR CLASS 'B' LAPS AND FOR BARS WITH CONCRETE COVER OF AT LEAST ONE BAR DIAMETER ARE GIVEN IN THE FOLLOWING SCHEDULE, UNLESS NOTED OTHERWISE. PROVIDE STANDARD HOOK PER ACI STANDARD BAR HOOK EMBEDMENT.

REINFORCEMENT LAP SPLICE AND EMBEDMENT LENGTH (*f'c ≥ 4000 psi*)

BAR SIZE	METRIC BAR SIZE (SOFT)	BAR SPACING CENTER TO CENTER	MIN LAP LENGTH (IN)		MIN EMBEDMENT LENGTH (IN)		
			TOP BARS	OTHER BARS	STRAIGHT BARS		WITH STANDARD HOOK
			CLASS B	CLASS B	TOP BARS	OTHER BARS	
REQUIREMENTS FOR SLABS AND WALLS**							
#3	#10	≥ 3db **	24	19	19	15	7
#4	#13		32	25	25	19	10
#5	#16		40	31	31	24	12
#6	#19		48	37	37	29	15
#7	#22		70	54	54	42	17
#8	#25		80	62	62	48	19

** FOR BAR SPACING LESS THAN 3 BAR DIAMETER, ADD 50% TO LAP AND STRAIGHT EMBEDMENT LENGTHS.



POST-INSTALLED ANCHORS AND DOWELS

1.01 DESCRIPTION
A. THIS SECTION COVERS THE REQUIREMENTS FOR MATERIALS AND INSTALLATION OF POST-INSTALLED ADHESIVE ANCHORS, DOWELS AND MECHANICAL ANCHORS IN CONCRETE AND MASONRY CONSTRUCTION.
B. POST INSTALLED ANCHORS AND DOWELS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM THE ENGINEER OF RECORD PRIOR TO INSTALLING ANY STRUCTURAL POST INSTALLED ANCHORS OR DOWELS THAT MAY BE USED TO REPLACE MISSING OR MISPLACED CAST-IN-PLACE ANCHORS OR DOWELS.

1.02 QUALITY ASSURANCE
A. PROVIDE SPECIAL INSPECTION IN ACCORDANCE WITH THE APPLICABLE ICC-ES REPORT, THE BUILDING CODE, AND THE GENERAL STRUCTURAL NOTES.
B. INSTALL ALL ADHESIVE ANCHORS, DOWELS AND MECHANICAL ANCHORS PER ADHESIVE MANUFACTURER'S REQUIREMENTS.

1.03 ANCHOR SUBSTITUTION
A. SUBSTITUTION REQUESTS FOR POST-INSTALLED CONCRETE ANCHORS OTHER THAN THOSE SPECIFIED ON DRAWINGS SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER OF RECORD ALONG WITH CALCULATIONS THAT ARE PREPARED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE CALCULATIONS SHALL DEMONSTRATE THAT THE SUBSTITUTE PRODUCT IS CAPABLE OF ACHIEVING THE PERTINENT EQUIVALENT PERFORMANCE VALUES OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND OR STANDARDS AS REQUIRED BY THE BUILDING CODE. SUBSTITUTE MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI-355.2 AND ICC-ES AC193 FOR CRACKED CONCRETE. SUBSTITUTED ADHESIVE ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI-355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE.
B. ENGINEER RESERVE THE RIGHT TO REJECT ALL REQUESTS. DO NOT ORDER MATERIAL UNTIL REQUEST IS APPROVED.

2.01 ANCHORS RODS, BOLTS, AND SLEEVES
A. SUBMERGED, EXTERIOR, OR BURIED CONDITIONS: PROVIDE ASTM F593 AISI TYPE 316 STAINLESS STEEL ANCHOR BOLTS WITH ASTM F594 STAINLESS STEEL NUTS.
B. INTERIOR CONDITIONS: PROVIDE ASTM A307 CARBON STEEL ANCHOR RODS (U.N.O.).

2.02 MECHANICAL ANCHORS FOR CONCRETE
A. KWIK BOLT TZ 2 EXPANSION ANCHOR BY HILTI (ICC-ES REPORT #ESR-4266) (USE STAINLESS STEEL ANCHORS FOR EXTERIOR OR DAMP EXPOSURE) U.N.O.
B. STRONG-BOLT 2 WEDGE ANCHOR BY SIMPSON (ICC-ES REPORT #ESR-3037) (USE STAINLESS STEEL ANCHORS FOR EXTERIOR OR DAMP EXPOSURE) U.N.O.
C. OR APPROVED EQUAL.

2.03 ADHESIVES FOR ANCHORS AND DOWELS IN CONCRETE
A. HIT-RE 500 V3 BY HILTI (ICC-ES REPORT #ESR-3814).
B. SET-3G BY SIMPSON (ICC-ES REPORT #ESR-4057).
C. OR APPROVED EQUAL.

3.01 FIELD INSTALLATION
A. INSTALL ANCHORS ONLY AFTER CONCRETE HAS REACHED ITS MINIMUM SPECIFIED STRENGTH.
B. LOCATE ANCHORS TO AVOID DAMAGE TO REINFORCEMENT. USE GROUND PENETRATING RADAR (GPR) TO LOCATE THE EXISTING REINFORCING. MARK REINFORCING LOCATIONS ON THE CONCRETE SURFACE. COORDINATE LOCATIONS OF HOLES TO BE DRILLED WITH MARKS TO CLEAR THE EXISTING REINFORCING.
C. INSTALL ANCHORS IN ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS. SEE SPECIAL INSPECTION REQUIREMENTS AND PRODUCT ICC-ES REPORT FOR INSPECTION REQUIREMENTS.
D. CLEAN DRILLED HOLES USING WIRE BRUSH AND COMPRESSED AIR AS REQUIRED TO REMOVE PARTICULATE DEBRIS AND TO ACHIEVE A DUST FREE SURFACE.
E. TORQUE ADHESIVE ANCHORS UPON INSTALLING BASE MATERIAL, BUT ONLY AFTER ADHESIVE IS FULLY CURED AND LOAD TEST HAVE BEEN PERFORMED.

CONSTRUCTION JOINTS

1.01 DESCRIPTION
A. LOCATION OF ALL CONSTRUCTION JOINTS SHALL BE AS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER. SUBMIT CONSTRUCTION JOINT LOCATIONS NOT SHOWN ON THE STRUCTURAL DRAWINGS TO THE ENGINEER FOR REVIEW.
B. UNLESS NOTED OTHERWISE ON DRAWINGS CONSTRUCTION JOINTS FOR CONCRETE GRADE BEAMS, BEAMS AND SLABS SHALL BE IN THE MIDDLE THIRD OF THE SPAN.

1.02 COORDINATION
A. PROVIDE AND INSTALL POLYVINYLCHLORIDE (PVC) AND HYDROPHILIC VINYLESTER WATERSTOPS WHERE SHOWN ON DRAWINGS AND AT ALL CONSTRUCTION JOINTS IN WATERBEARING, AND PARTIALLY AND FULLY UNDERGROUND SLABS AND WALLS (INCLUDING ELEVATOR AND ESCALATOR PITS, AND CHEMICAL CONTAINMENT AREAS). WATERSTOPS ARE NOT REQUIRED IN WALLS AND SLABS WHEN THERE IS WATER ON BOTH SIDES UNLESS NOTED OTHERWISE.

1.03 SUBMITTALS
A. SUBMIT THE FOLLOWING PRIOR TO START OF WORK.
1. LAYOUT OF CONSTRUCTION AND EXPANSION JOINTS.
2. MANUFACTURER'S PRODUCT SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR WATERSTOPS AND JOINT FILLER MATERIAL AND ACCESSORIES.

2.01 MATERIALS
A. PROVIDE WATERSTOPS AND JOINT SEALANT SUITABLE FOR THEIR CONDITION OF USE SUCH AS MOVEMENT AND/OR CHEMICAL ATTACK, FOR EXAMPLE, WATER CONTAMINATED WITH SOLVENTS AND HYDROCARBONS.
B. PROVIDE PREFORMED JOINT FILLER IN ACCORDANCE WITH ASTM D 1752 TYPE I (FOAM RUBBER) OR TYPE II (CORK) AT INTERIOR EXPANSION JOINTS AND AS NOTED ON DRAWINGS. PROVIDE PREFORMED BITUMINOUS JOINT FILLER IN ACCORDANCE WITH ASTM D 1751 FOR EXTERIOR ISOLATION JOINTS AND AS NOTED ON DRAWINGS.

3.01 PLACEMENT
A. ALL CONSTRUCTION JOINTS SHALL BE THOROUGHLY CLEANED FOR BOND. CAULK AND SEAL JOINTS PER JOB SPECIFICATIONS AND WHERE NOTED ON DRAWINGS.
B. SEE TYPICAL DETAILS FOR INSTALLATION OF CONSTRUCTION JOINTS AND WATERSTOPS IN NEW CONSTRUCTION AND BETWEEN EXISTING AND NEW CONSTRUCTION.
C. FOR NON-WATERBEARING SLABS-ON-GRADE, PLACE JOINTS IN 12" SLAB ON GRADE AT 20'-0" MAXIMUM OR IN RATIOS NOT TO EXCEED 2:1. TIMING OF JOINT SAWING IS CRITICAL. JOINTS SHOULD BE SAWN AS SOON AS THE CONCRETE IS HARD ENOUGH THAT THE SAWING DOES NOT RAVEL JOINT EDGES OR DISLODGE COURSE AGGREGATE PARTICLES. PROVIDE SAWCUTS IN A RECTANGULAR PATTERN AS SHOWN ON PLANS. WHERE A PATTERN IS NOT SHOWN, SAWCUT ON COLUMN LINES, AT EQUAL SPACES BETWEEN COLUMNS LINES TO PRODUCE THE MAXIMUM SPACING, AND AT ALL RE-ENTRANT CORNERS AND SLAB CHANGES. PROVIDE ISOLATION JOINTS IN A DIAMOND PATTERN AROUND COLUMNS. SUBMIT JOINT LAYOUT PLAN PRIOR TO STARTING WORK.

STRUCTURAL STEEL

1.01 DESCRIPTION
A. THIS SECTION COVERS THE REQUIREMENTS FOR MATERIALS AND INSTALLATION OF STRUCTURAL STEEL.

1.02 SUBMITTALS
A. SUBMIT SHOP DRAWINGS FOR ENGINEER'S REVIEW. FABRICATE ONLY FROM REVIEWED DRAWINGS.

1.03 QUALITY ASSURANCE
A. STEEL CONSTRUCTION SHALL CONFORM TO THE SPECIFICATIONS AND STANDARDS AS CONTAINED IN THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL, INCLUDING THE COMMENTARY AND SUPPLEMENTS.
B. ALL STEEL FABRICATION WORK SHALL BE PREFORMED BY A FABRICATOR APPROVED BY THE OWNER.
C. DO NOT USE "JET" WELDING RODS (E8024) FOR ANY STRUCTURAL WELDING.

1.04 STRUCTURAL STEEL FABRICATOR'S QUALIFICATIONS
A. STRUCTURAL STEEL FABRICATOR MUST BE ON THE CITY'S PRE-APPROVED LIST OR PARTICIPATE IN THE AISC CERTIFICATION PROGRAM DESCRIBED IN AISC 201, AND BE DESIGNATED AN AISC CERTIFIED PLANT, CATEGORY STANDARD.

2.01 MATERIALS

CATEGORY	ASTM	GRADE, FY (KSI)
PLATES FOR W-SHAPE MEMBERS AND STRUCTURAL TUBES	A572	GR 50
OTHER ROLLED SECTIONS (ANGLES, CHANNELS, PLATES, ETC.)	A36	FY=36
WHERE NOTED "50 KSI" ON DRAWINGS	A572	FY=50
STRUCTURAL TUBES (HSS)	A500	GR C, FY=50
STRUCTURAL BOLTS (U.N.O.) (TYPE N CONNECTION)	F3125	A325
ANCHOR RODS/BOLTS	F1554	GR 36
WELDING RODS (LOW HYDROGEN)	--	E-70XX SERIES

2.02 ANCHOR RODS
A. PROVIDE HEADED OR THREADED AND NUTTED ANCHOR RODS. HOOKED ANCHOR RODS ARE NOT ACCEPTABLE.
B. FOR THREADED ANCHOR RODS, PROVIDE A SINGLE HEAVY HEX NUT. TACK WELD THE BOTTOM OF THE NUT TO THE ROD AT THE EMBEDDED END, UNLESS NOTED OTHERWISE. THE TOP OF THE EMBEDDED HEAD OR NUT IS THE BASIS FOR MEASUREMENT OF EMBEDMENT. PROVIDE A RIGID TEMPORARY STEEL TEMPLATE TO LOCATE ANCHOR RODS DURING CONCRETE PLACEMENT.
C. DO NOT HEAT OR BEND ANCHOR RODS.

3.01 FIELD WELDING
A. FIELD WELDING, CUTTING AND GRINDING OF STEEL INSIDE THE PUBLIC OCCUPIED BUILDING SHALL NOT BE ALLOWED WITHOUT OWNERS APPROVAL. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND THE STEEL ERECTOR THE LOCATIONS, THE TIME OF DAY, SMOKE-FIRE ALARM SYSTEMS CONTROLS AND OTHER FIELD CONDITIONS UNDER WHICH WORK MAY OCCUR INSIDE THE PUBLIC OCCUPIED BUILDING DURING ALL PHASED CONSTRUCTION WORK.
B. PROVIDE HOT WORK PERMITS. HOT WORK IS ANY WORK INVOLVING WELDING, TORCH CUTTING, GRINDING, OPEN-FLAME SOLDERING, BRAZING OR SIMILAR OPERATIONS CAPABLE OF INITIATING FIRES OR EXPLOSIONS.
C. WELDING SHALL CONFORM TO THE FOLLOWING AMERICAN WELDING SOCIETY (AWS) STRUCTURAL WELDING CODES AS APPLICABLE.
1. AWS D1.1 STRUCTURAL WELDING CODE-STEEL. .
D. WELDERS SHALL HOLD VALID CERTIFICATES ISSUED BY AN ACCEPTED TESTING AGENCY WITHIN THE LAST 12 MONTHS. IF ANY CERTIFICATE IS MORE THAN 12 MONTHS OLD, SUBMIT DETAILS OF COMPANY QUALITY CONTROL.
E. WELDERS SHALL SUBMIT WELDER QUALIFICATIONS AND WELDING PROCEDURE SPECIFICATIONS (WPS) TO THE ENGINEER FOR REVIEW PRIOR TO THE START OF WORK. QUALIFICATIONS AND WPS SHALL BE AVAILABLE ON SITE FOR REVIEW.
F. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS. SPLICES OF STEEL MEMBERS NOT SHOWN ON THE DRAWINGS SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE START OF WORK.
G. GRIND SMOOTH ALL EXPOSED WELDS AND CUT EDGES. FINAL APPROVAL IS BY THE ARCHITECT.
H. WELDING SHALL BE BY EITHER THE SHIELDED METAL ARC WELDING (SMAW) METHOD OR SHALL CONFORM TO AWS CODE FOR ARC AND GAS WELDING CONSTRUCTION.
1. MECHANICAL PROPERTIES FOR THE IN-PLACE WELD (FILLER MATERIAL) SHALL HAVE CHARPY V-NOTCH IMPACT TOUGHNESS OF AT LEAST 20 FOOT-POUNDS AT 0 DEGREES.
2. FIELD WELDS MAY NOT BE APPLIED OVER SHOP WELDS UNLESS A MANUFACTURER APPROVED COMPATIBLE ELECTRODE IS USED IN BOTH THE SHOP AND FIELD.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATION AND WELDING PROCEDURES, BUT NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES, AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.
I. PROVIDE MINIMUM WELD SIZES PER AISC SPECIFICATIONS FOR GENERAL PROVISIONS FOR CONNECTIONS, JOINTS AND FASTENERS UNLESS SHOWN OTHERWISE ON DRAWINGS.
J. FILLER MATERIAL OF LOW HYDROGEN CLASSIFICATION(S) SHALL BE STORED IN ACCORDANCE WITH AWS REQUIREMENTS AND PARAMETERS. LOW HYDROGEN ELECTRODES SHALL BE USED WITHIN 4 HOURS OF OPENING THEIR THERMETICALLY SEALED CONTAINERS. ELECTRODES THAT HAVE BEEN WET SHALL NOT BE USED AND SHALL BE REMOVED FROM THE SITE.

3.02 BOLTING
A. MANUFACTURER CERTIFICATIONS OF BOLTING FOR FASTENER COMPONENTS USED IN THE FASTENER ASSEMBLIES SHALL BE MADE AVAILABLE TO THE ENGINEER OF RECORD AND INSPECTOR PRIOR TO ASSEMBLY OR ERECTION OF STRUCTURAL STEEL.
B. HIGH STRENGTH BOLTS SHALL BE INSTALLED, TIGHTENED AND INSPECTED IN ACCORDANCE WITH THE AISC SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
C. THE USE OF FULL TENSION TORQUE CONTROL BOLT ASSEMBLIES IN SNUG TIGHT BEARING CONNECTIONS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
D. BOLTING SHALL BE TESTED AND REQUIRED VERIFICATIONS PERFORMED IN ACCORDANCE TO AISC SPECIFICATIONS PRIOR TO INSTALLATION.
E. FASTENER COMPONENTS SHALL BE STORED ON SITE IN ACCORDANCE WITH AISC SPECIFICATIONS.
F. PROVIDE WASHERS IN ACCORDANCE WITH AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS," SECTION 6. PROVIDE PLATE WASHERS WHEN OVERSIZED OR LONG SLOTTED HOLES ARE IN THE OUTER PLY OF A CONNECTION.

METAL DECK

1.01 DESCRIPTION
A. THIS SECTION DESCRIBES STEEL DECKING AS SHOWN ON THE DRAWINGS. SEE DRAWINGS FOR EXTENT, ORIENTATION, TYPE AND THICKNESS OF DECK REQUIRED.

1.02 SUBMITTALS
A. SHOP DRAWINGS SHALL SHOW THE ERECTION PROCEDURE AND DETAILS, THE ICC-EVALUATION SERVICE REPORT NUMBER, SECTION PROPERTIES, AND DIAPHRAGM SHEAR FURNISHED AND SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION.

2.01 TYPE "N" ROOF DECK
A. ALL SHEETS TO BE 20 GAGE, 3" DEEP, AND 24" WIDE PER ICC-ES REPORT #ESR-1735P OR EQUAL. NARROWER CLOSURE STRIPS SHALL NOT BE LESS THAN 1'-6" WIDE AND SHALL BE FASTENED TO ADJACENT FULL SHEET WITH TYPICAL SIDE SEAM ATTACHMENT.
B. PROVIDE STEEL DECK CONFORMING TO ASTM A 653, SS GRADE 33 (MIN) WITH GALVANIZED COATING DESIGNATION G60.
C. MINIMUM DECK PROPERTIES ARE AS FOLLOWS
1. YIELD STRENGTH, Fy = 50 KSI
2. POSITIVE BENDING EFFECTIVE SECTION MODULUS (DECK TOP IN COMPR)
a. +Sx = 0.443 IN^3/FT
3. NEGATIVE BENDING EFFECTIVE SECTION MODULUS (DECK BOTTOM IN COMPR)
a. -Sx = 0.531 IN^3/FT
4. DEFLECTION
a. Id = 0.907 IN^4/FT
A. FASTEN TO STRUCTURAL FRAMING WITH HILTI X-EDN19-THQ12 AT
1. ALL FLUTES AT TRANSVERSE SUPPORTS
2. ALL STEEL MEMBERS PARALLEL TO FLUTES @ 12"o.c.
3. TO EACH FLUTE AND AT 6" ON CENTERS AT OPENING EDGES
4. STANDING SEAM SIDE LAPS 1-1/2" LONG TOP SEAM WELD OR BUTTON PUNCH AT 12" o.c.

2.02 SCREWS
A. PROVIDE #12-24X1 1/4 HWH #5 SELF-DRILLING TAPPING SCREWS WHERE SCREWS ARE NOTED ON DRAWINGS FOR FASTENING DECK TO MEMBERS OTHER THAN PRIMARY ROOF FRAMING
B. MANUFACTURES
1. HILTI KWIK-PRO SELF-DRILLING TAPPING SCREWS
a. ICC-ES REPORT NO. ESR-2196
2. ITW BUILDEX TEKS SELF-DRILLING TAPPING SCREWS
a. ICC-ES REPORT NO. ESR-1976
3. INSTALL SCREWS AS FOLLOWS
a. MINIMUM SPACING = 3/4 INCH o.c.
b. MINIMUM EDGE DISTANCE = 1/2 INCHES

3.01 INSTALLATION
A. INSTALL ROOF DECK UNITS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHOP DRAWINGS.
B. PLACE UNITS ON STRUCTURAL STEEL FRAMING WITH 2 1/2" MIN BEARING LENGTH, EXCEPT 4 INCH MIN BEARING FOR LONG SPAN METAL DECK UNITS.
C. PLACE UNITS IN LENGTHS TO SPAN 3 OR MORE SUPPORTS WITH 2 1/2 END LAPS. INTERLOCK SIDE LAPS TO ALLOW FOR SIDE SEAM FASTENING. WHERE SIMPLE SPANS ARE REQUIRED (TO MEET ROOF SLOPES, ETC) USE NEXT HEAVIER GAGE.
D. INSTALL DECK WITH CORRUGATION EDGES UP.
E. PROVIDE MINIMUM EDGE DISTANCE AT ENDS OF DECK PER DECK MANUFACTURES REQUIREMENTS FOR TYPE OF FASTENERS BEING USED.

3.02 HANGER ATTACHMENT
A. ALL OTHER STEEL DECK
1. PROVIDE SECONDARY SUPPORT FOR LIGHTING, PLUMBING, HVAC, CABLE TRAYS, SIGNAGE, OR SIMILAR ITEMS FROM STRUCTURAL BEAMS, GIRDERS, OR COLUMNS ONLY. DO NOT SUPPORT THESE ITEMS FROM METAL DECK WITHOUT SPECIFIC APPROVAL FROM THE PROGRAM/PROJECT MANAGER.

GFT consor
3838 Central Avenue • Suite 1900
Phoenix • AZ • 85012
t 602 • 553 • 8817

REVISIONS:			
NO	DATE	BY	DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Contact Arizona 811 at least two full working days before you begin excavation. ARIZONA811. Call 811 or click Arizona811.com

W.A. No.: X-XXXX	P.E. No.: XXXX
SYSTEM: XXXX	
LEGAL DESC.: XX 1/4 SEC. XX, T. XX X., R. XX X.	
TAX DIST.: XXXX	SIB No.: XX-XX
DATE: 03/09/2026	SCALE: AS SHOWN
DRAWN BY: MWK	REVIEWED BY: SMT · CHECKED BY: ACK

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC.: **GENERAL STRUCTURAL NOTES 3**

DWG NO.: S-003

90% SUBMITTAL

GRATING

1.01 GENERAL

A. PROVIDE AND INSTALL GRATING SYSTEMS WHERE NOTED ON STRUCTURAL, PROCESS, OR MECHANICAL DRAWINGS COMPLETE WITH COVER PANELS AS NOTED ON DRAWINGS AND ALL NECESSARY ACCESSORIES INCLUDING, BUT NOT LIMITED TO, EMBEDDED EDGE ANGLES, MID-SUPPORT CLIPS, AND ANCHORAGES AT SUPPORTS. PROVIDE REQUIRED SEPARATION (BEARING PADS, ETC.) BETWEEN NON-COMPATIBLE MATERIALS. COORDINATE CUTOUTS AS REQUIRED FOR PIPING AND EQUIPMENT PER MECHANICAL DRAWINGS.

1.02 SUBMITTALS

A. SUBMIT SHOP DRAWINGS AND CALCULATIONS FOR THE GRATING AND THEIR RESPECTIVE ATTACHMENTS TO THE ENGINEER FOR REVIEW. THE DRAWINGS AND CALCULATIONS SUBMITTED FOR REVIEW SHALL BEAR THE SEAL AND SIGNATURE OF A PROFESSIONAL STRUCTURAL/CIVIL ENGINEER REGISTERED IN THE STATE IN WHICH THE SUBMITTED ITEMS WILL BE INSTALLED.

1.03 QUALITY ASSURANCE

A. PROVIDE SIZES, ANCHORING DETAILS, FABRICATION TOLERANCES IN ACCORDANCE WITH THE LATEST EDITION OF NAAMM METAL BAR GRATING MANUAL (ANSI/NAAMM MBG 531).

B. PROVIDE NON-SKID WALKING SURFACE AS FOLLOWS: BAR GRATING - SERRATED; NON-BAR GRATING - GROOVED; OR PERMANENTLY BONDED SURFACE COATING CONFORMING TO ANSI A326.3. EXTERIOR APPLICATIONS SHALL BE UV RESISTANT.

C. LIMIT THE WEIGHT OF INDIVIDUAL GRATING AND COVER PANEL UNITS DESIGNATED AS REMOVABLE TO 75 POUNDS.

D. USE ANCHORAGE DEVICES AND FASTENERS TO SECURE ALL GRATING TO SUPPORT ELEMENTS OR PREPARED OPENINGS, AS RECOMMENDED BY THE MANUFACTURER.

2.01 STEEL MATERIAL

A. STEEL GRATING SHALL BE GALVANIZED CARBON STEEL BEARING BARS AND CROSS BARS WELDED TOGETHER. CROSS BARS MAY BE ROUND OR TWISTED. PROVIDE LOAD TYPE BANDING (WELD EACH BEARING BAR TO BAND BAR) CONTINUOUS ALONG EDGES AND CUTOUTS.
   1. GRATING BEARING BARS, CROSS BARS, AND BAND BARS SHALL CONFORM TO ASTM A1011 COMMERCIAL STEEL, TYPE 2.
   2. HOT-DIP GALVANIZE GRATING AFTER FABRICATION IN CONFORMANCE WITH ASTM A123 GRADE 45 (COATING NOT LESS THAN 1.8OZ/SQFT).

2.02 ALUMINUM MATERIAL

A. PROVIDE ALLOY 6061-T6 OR ALLOY 6063-T6 CONFORMING TO ASTM B221. PROVIDE SWAGE-LOCKED CROSS BARS.

B. WHERE ALUMINUM IS IN CONTACT WITH CONCRETE SURFACES, CONTACT SURFACES SHALL BE COATED WITH HEAVY ALKALI-RESISTANT BITUMINOUS PAINT.

2.03 GRATING PERFORMANCE CRITERIA

A. DESIGN FOR THE FOLLOWING MINIMUM LOADING REQUIREMENTS IN ACCORDANCE WITH THE BUILDING CODE. THE FOLLOWING LOADING CONDITIONS NEED NOT BE APPLIED SIMULTANEOUSLY
   a. UNIFORMLY DISTRIBUTED LIVE LOAD - 300 PSF (WITH NO LIMIT ON DEFLECTION).
   b. CONCENTRATED LIVE LOAD - 3000 LBS ON 2.5FT X 2.5FT AREA (WITH NO LIMIT ON DEFLECTION).
   c. MAXIMUM DEFLECTION UNDER UNIFORMLY DISTRIBUTED LIVE LOAD OF 100 PSF OR CONCENTRATED LIVE LOAD OF 1000 LBS ON 1.0FT X 1.0FT AREA: 1/4" MAX OR SPAN/240, WHICHEVER IS LESS.

3.01 FIELD EXECUTION

A. ALL GRATING SHALL BE PERMANENTLY INSTALLED BY FIELD WELDING TO ALL END BEARING AND INTERMEDIATE SUPPORTS UNLESS NOTED OTHERWISE AS REMOVABLE ON DRAWINGS. SECURE REMOVABLE GRATING TO END BEARING AND INTERMEDIATE SUPPORTS USING REMOVABLE DEVICES AND FASTENERS AS RECOMMENDED BY THE MANUFACTURER.

ABBREVIATIONS

AB	ANCHOR BOLT(S)
ACI	AMERICAN CONCRETE INSTITUTE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ASTM	AMERICAN SOCIETY OF TESTING MATERIAL
AWS	AMERICAN WELDING SOCIETY
BLK	BLOCK
BM	BEAM
BOTT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
C/C	CENTER TO CENTER
CIP	CAST IN PLACE
CJ	CONTROL JOINT OR CONSTRUCTION JOINT
CL	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUE OR CONTINUOUS
DEMO	DEMOLITION
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DL	DEAD LOAD
DN	DOWN
DP	DEEP OR DEPTH
DTL	DETAIL
DWG(S)	DRAWING(S)
DWL(S)	DOWEL(S)
E (PSI)	MODULES OF ELASTICITY
EA	EACH
EF	EACH FACE
EL	ELEVATION
EMBED	EMBEDMENT
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
ES	EACH SIDE
EW	EACH WAY
FDN	FOUNDATION
FT	FOOT, FEET
FTG	FOOTING
FY	YIELD STRESS OF STEEL
GA	GAGE OR GAUGE
GALV	GALVANIZED
GSN	GENERAL STRUCTURAL NOTES
HAS	HEADED ANCHOR STUD
HDG	HOT DIPPED GALVANIZED
HK	HOOK
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
I (IN4)	MOMENT OF INERTIA
I.F.	INSIDE FACE
ICC	INTERNATIONAL CODE COUNCIL
IN	INCH
INFO	INFORMATION
INT	INTERIOR
JT	JOINT
K	KIP = 1,000 LBS

LBS	POUNDS
LG	LONG
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MAINT	MAINTENANCE
MATL	MATERIAL
MAX	MAXIMUM
MFR	MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
NF	NEAR FACE
NO, #	NUMBER
NTS	NOT TO SCALE
o.c.	ON CENTER (LOWERCASE)
OH	OVERHANG
OPP	OPPOSITE
OPP HD	OPPOSITE HAND
PCF	POUNDS PER CUBIC FOOT
PEN	PENETRATION
PERP	PERPENDICULAR
PL	PLATE OR PROPERTY LINE
PLF	POUNDS PER LINEAR FOOT
PRELIM	PRELIMINARY
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
R/W	REINFORCED WITH
REINF	REINFORCED OR REINFORCING
REQ'D	REQUIRED
SHT	SHEET
SIM	SIMILAR
SJI	STEEL JOIST INSTITUTE
SOG	SLAB ON GRADE
SPA	SPACES
SPEC	SPECIFICATION
SQ	SQUARE
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRUC	STRUCTURE OR STRUCTURAL
SYMM	SYMMETRICAL
T&B	TOP AND BOTTOM
THK	THICK OR THICKNESS
TOC	TOP OF CONCRETE
TOG	TOP OF GROUT
TOS	TOF OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
w/	WITH (LOWERCASE)
w/o	WITHOUT (LOWERCASE)
WF	WIDE FLANGE
WP	WORK POINT
#	NUMBER
%	PERCENT
&	AND
@	AT

REVISIONS: NO | DATE | BY | DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: X-XXXX | P.E. No.: XXXX | SYSTEM: XXXX | LEGAL DESC: XX 1/4 SEC. XX, T. XX X., R. XX X. | TAX DIST.: XXXX | SB No.: XX-XX | DATE: 03/09/2026 | SCALE: AS SHOWN | DRAWN BY: MWK | REVIEWED BY: SMT | CHECKED BY: ACK

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: **GENERAL STRUCTURAL NOTES 4**

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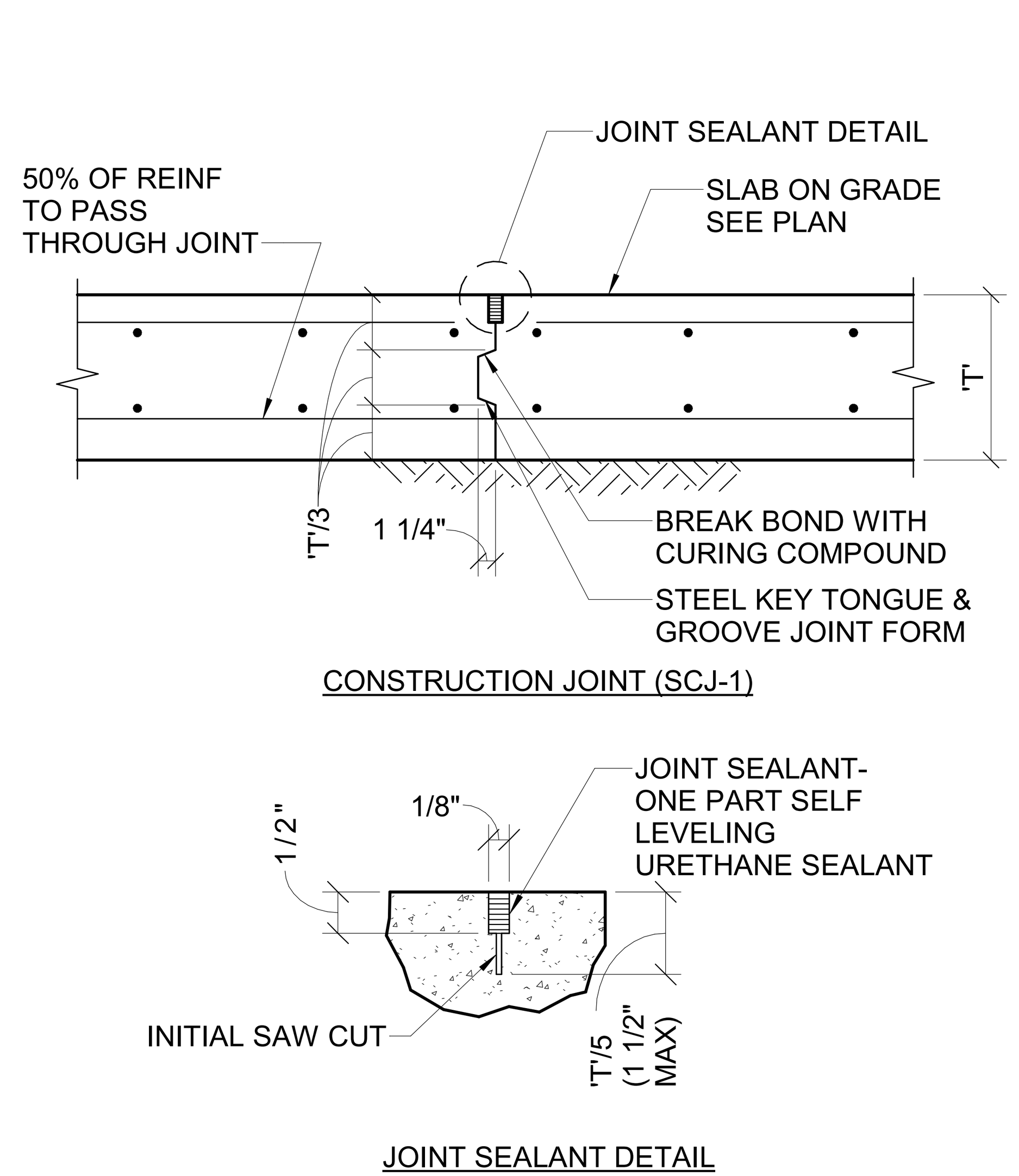
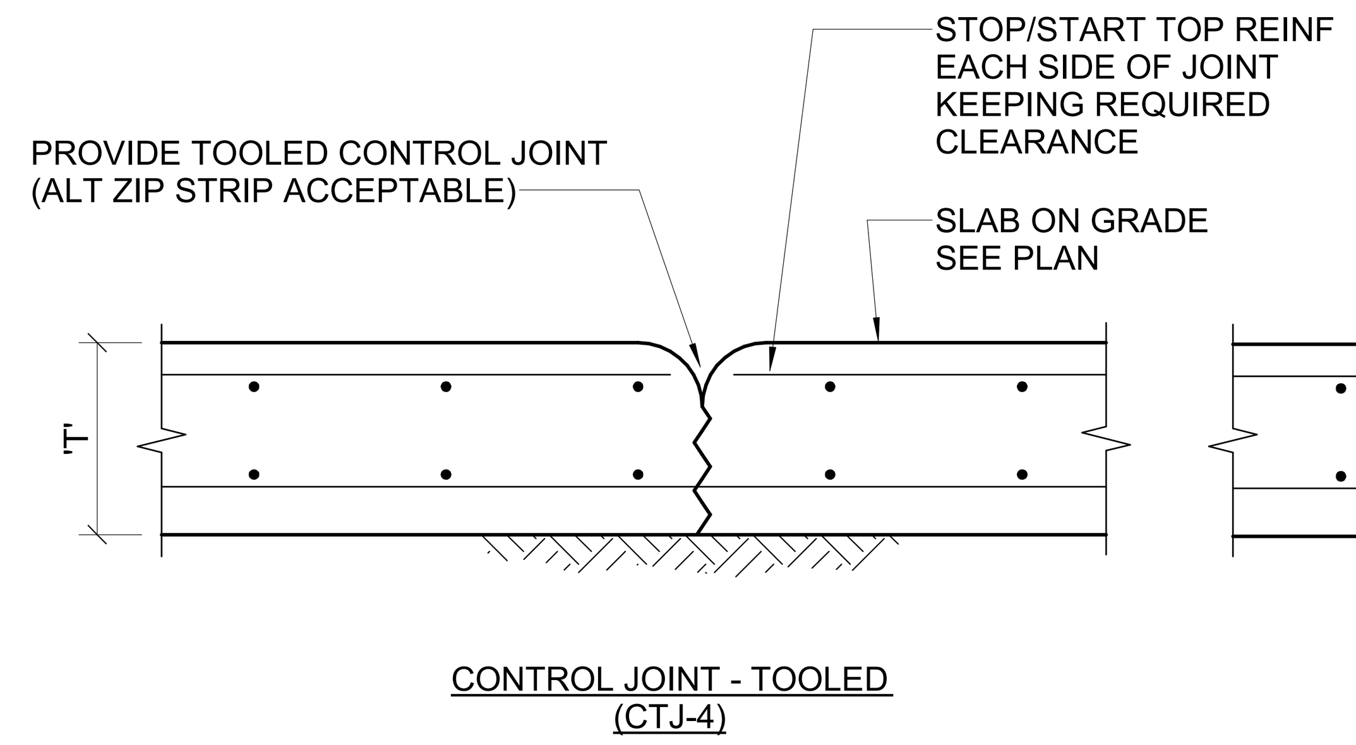
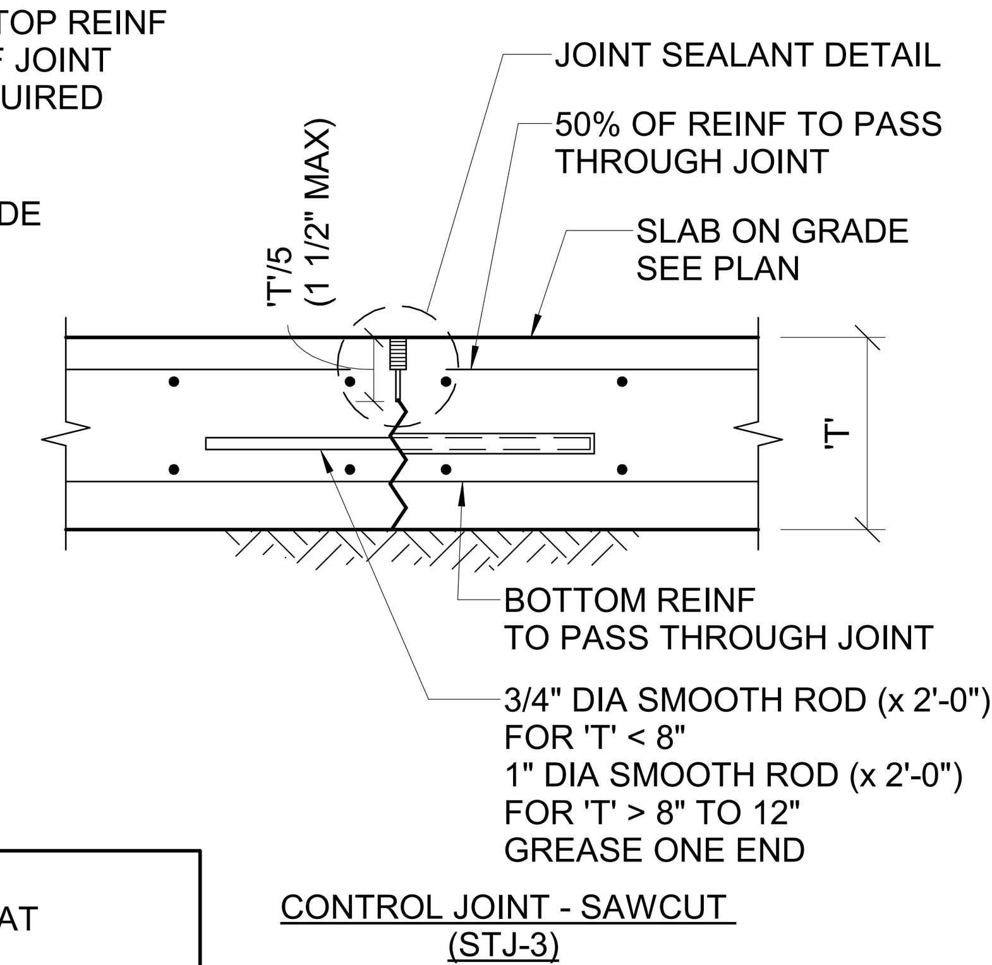
DWG NO.: S-004

OF 17



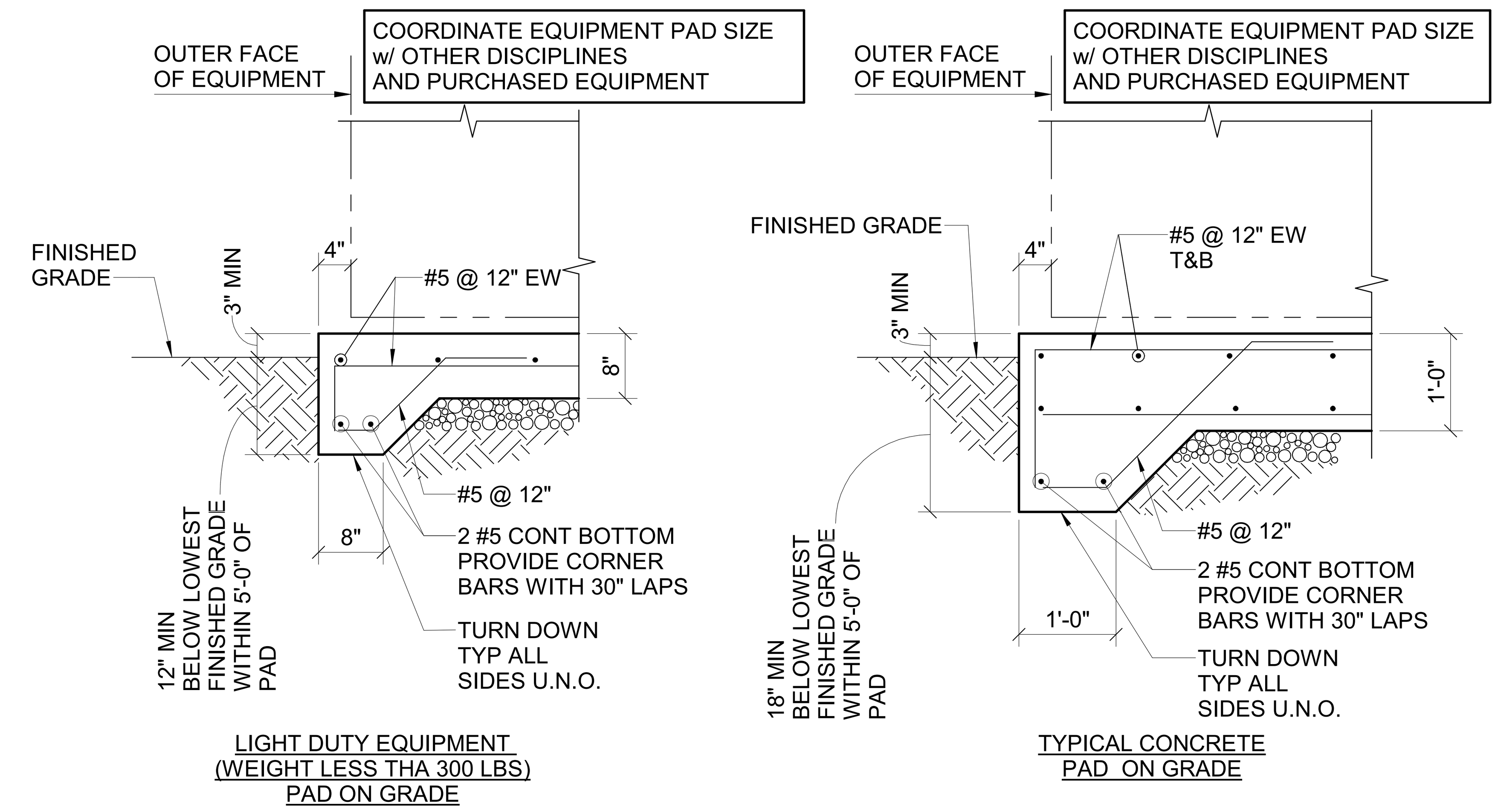




NOTES:
1. CONSTRUCTION JOINT MAY BE SUBSTITUTED FOR SAW JOINT AT CONTRACTOR'S OPTION.
2. IF CONSTRUCTION IS STOPPED BETWEEN INDICATED JOINTS, PROVIDE CONSTRUCTION. JOINT SHOWN WITH #5 x 2'-6" DWLS @ 24" CENTERED IN SLAB AND ON JOINT.
3. CONTROL JOINT SHALL BE PREFORMED OR SAWED. CUT AFTER SUFFICIENT STRENGTH IS ACHIEVED TO PREVENT SPALLING.

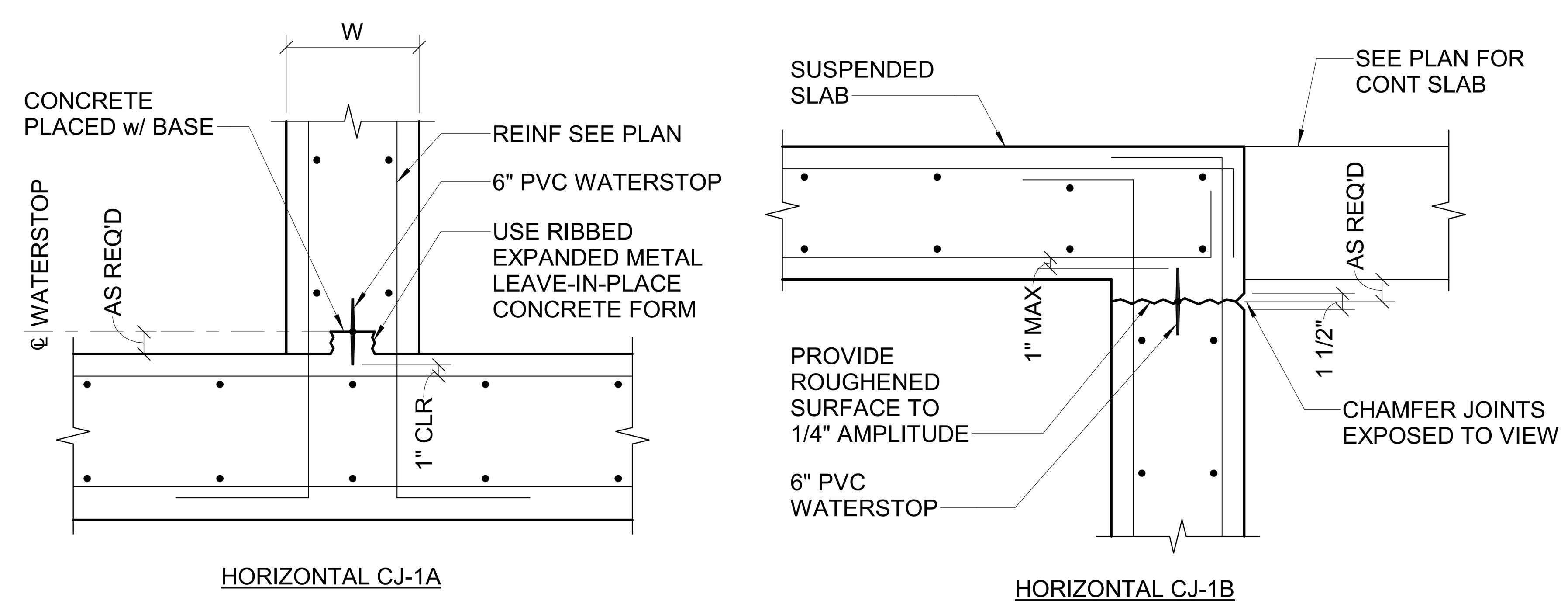
TYPICAL SLAB ON GRADE JOINTS

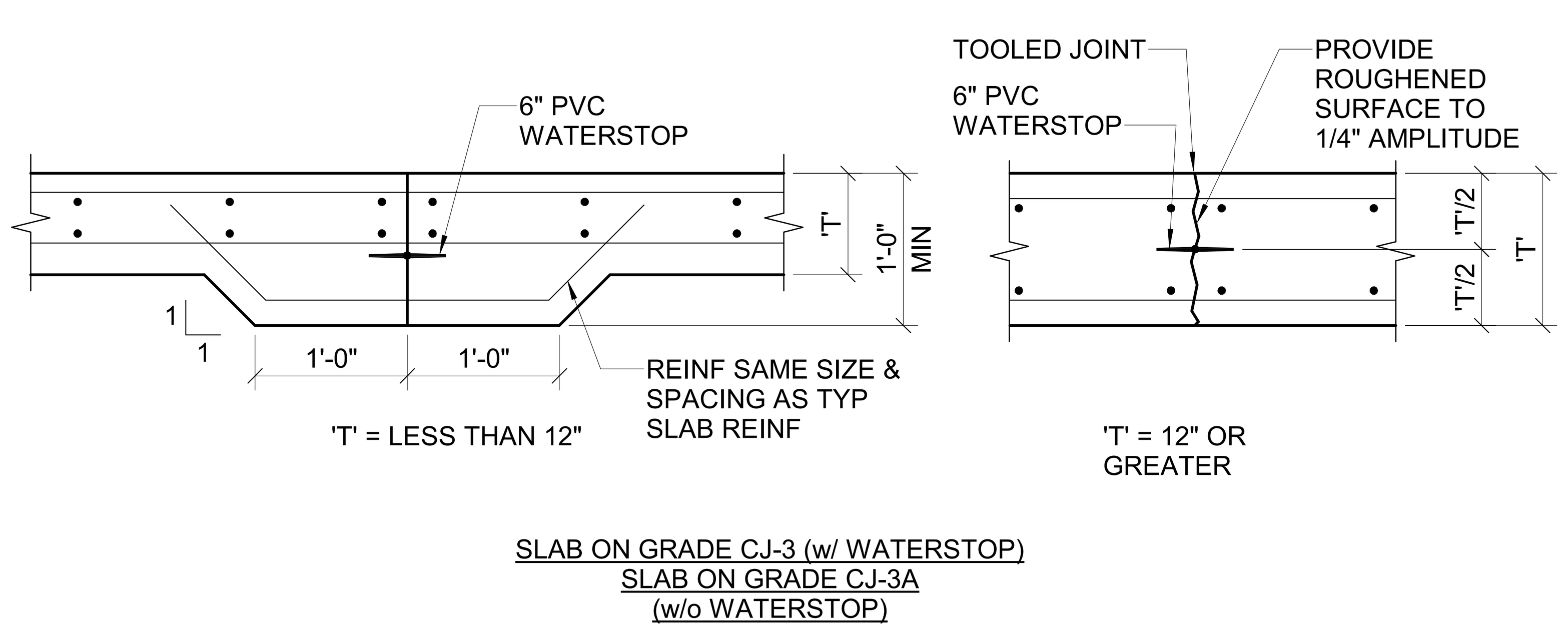
1 DETAIL
SCALE: 1" = 1'-0"



TURNDOWN AT
TYPICAL PAD ON GRADE

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

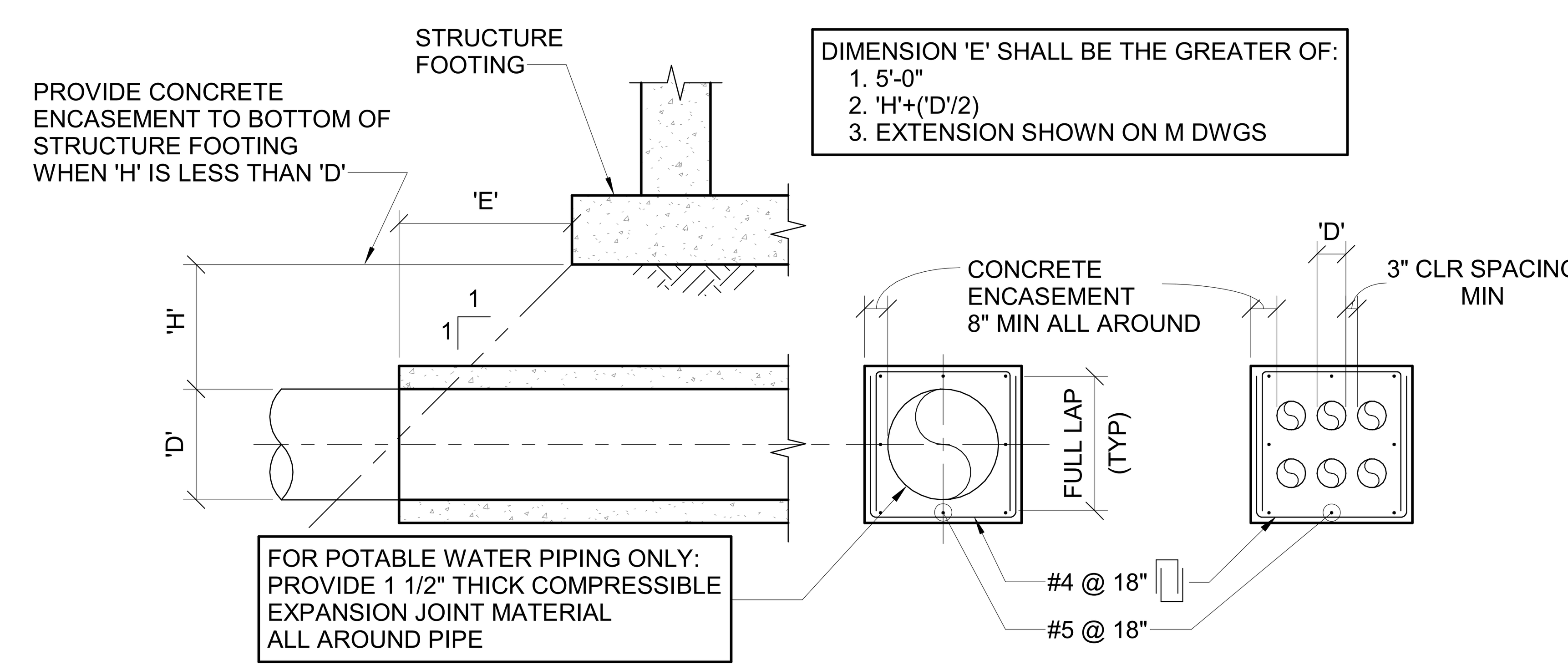




NOTES:
1. CONTINUE ALL REINFORCEMENT BARS THRU JOINTS.
2. CONSTRUCTION JOINTS SHALL NOT OCCUR WITHIN THE MINIMUM LENGTH OF LAPS FOR SPLICES OF REINFORCEMENT SEE GENERAL STRUCTURAL NOTES FOR LAP SPLICE REQUIREMENTS.

TYPICAL CONSTRUCTION JOINTS

3 DETAIL
SCALE: 1" = 1'-0"



NOTES:
1. ALL PIPES, CONDUITS, ELECTRICAL LINES ETC. ARE TO BE ENCASED AS FOLLOWS:
   A. ELEMENTS WHICH ENCOMPASS A DIAMETER OF 8" EITHER BY ITSELF OR THE CO-LOCATION OF SMALLER ELEMENTS STACKED IN MULTIPLE LAYERS EQUALING 8" IN DIAMETER
   B. ELEMENTS WHEN THEY ARE LOCATED LESS THAN 2'-0" BELOW BOTTOM OF CONCRETE SLAB, FOUNDATION ETC.
2. THIS REQUIREMENT MUST TAKE INTO ACCOUNT ALL APPLICABLE CODES AND REQUIREMENTS WHERE ENCASEMENT IS NOT ALLOWED BY SAID CODES.
   A. WHERE ENCASEMENT IS NOT PERMITTED, ELEMENTS WHICH ARE REGULATED SHALL BE PLACED AS THE CODE REQUIRES FOR THAT PARTICULAR ITEM OR ITEMS. IN THOSE CASES THE ITEM WHICH MAY NOT BE ENCASED SHALL BE PLACED MORE THAN 2'-0" BELOW THE STRUCTURAL CONCRETE.
3. FOR POTABLE WATER PIPING ONLY PROVIDE 1 1/2" THICK COMPRESSIBLE EXPANSION JOINT MATERIAL ALL AROUND PIPE.

REINFORCED CONCRETE PIPE ENCASEMENT UNDER STRUCTURES

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

REVISIONS:

NO	DATE	BY	DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: X-XXXX | P.E. No.: XXXX
SYSTEM: XXXX
LEGAL DESC: XX 1/4 SEC. XX, T. XX X., R. XX X.
TAX DIST.: XXXX | SB No.: XX-XX
DATE: 03/09/2026 | SCALE: AS SHOWN
DRAWN BY: MWK | REVIEWED BY: SMT | CHECKED BY: ACK

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: TYPICAL DETAILS 1

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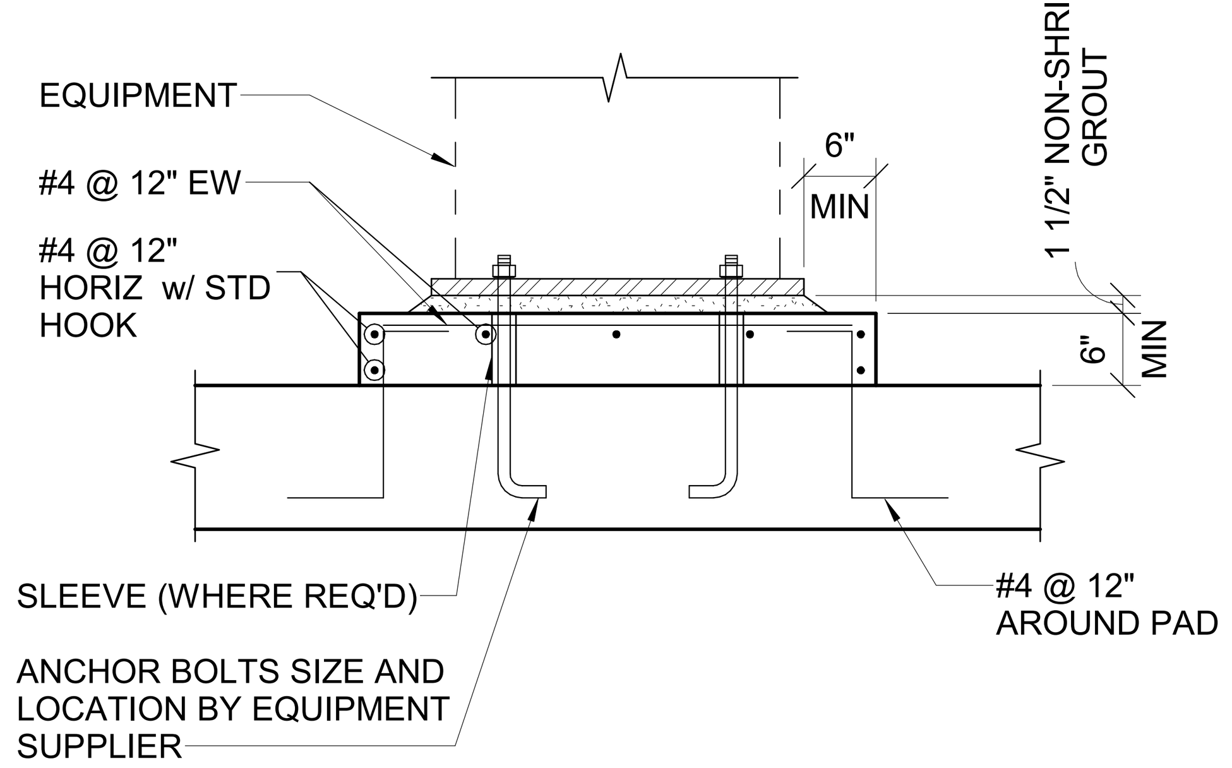
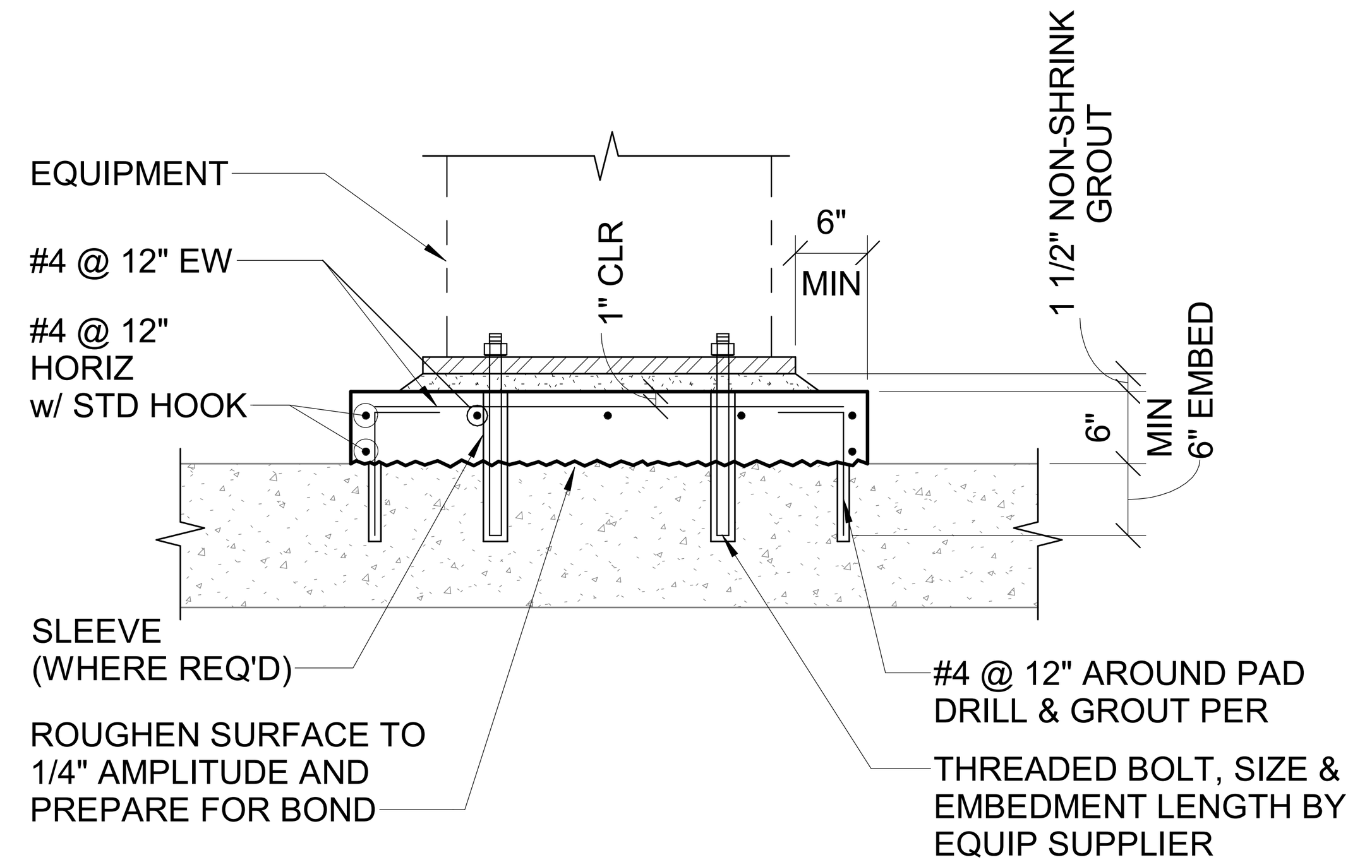
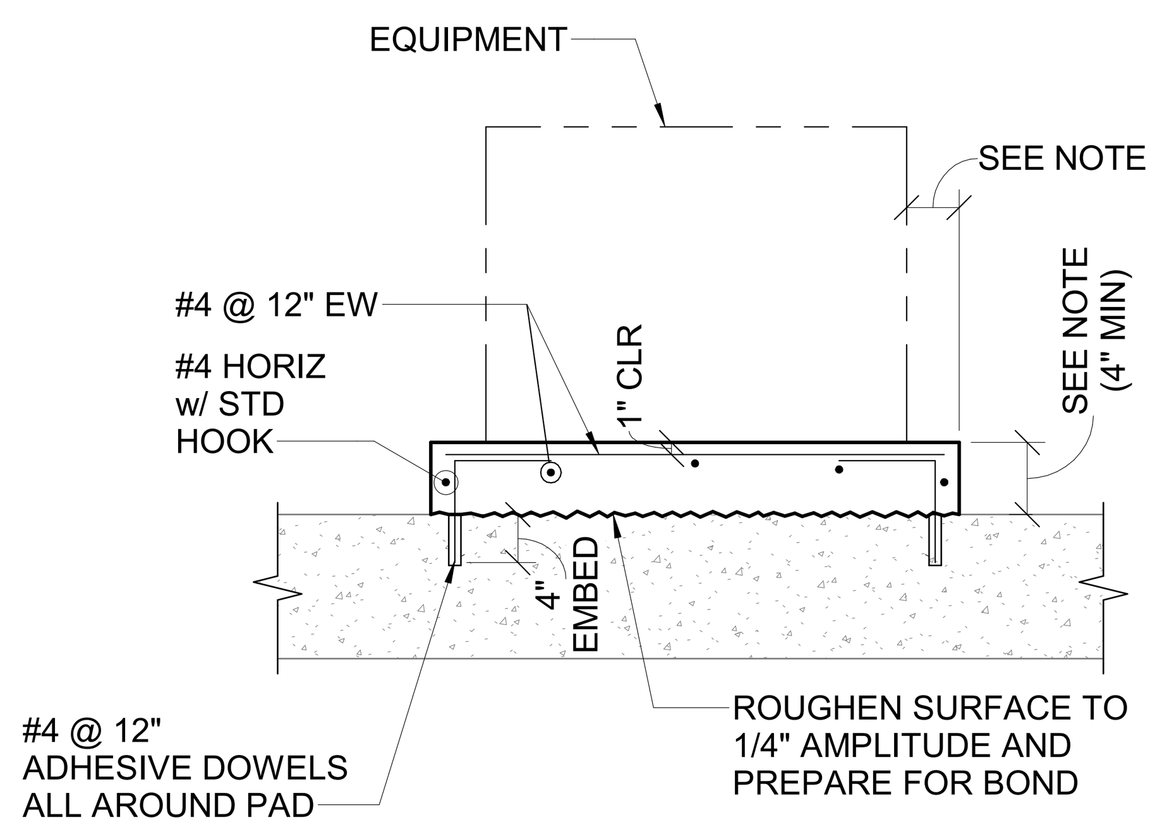
1 DETAIL
SCALE: 3/4" = 1'-0"



EQUIPMENT SUPPORT PAD DETAIL ON NEW CONSTRUCTION



EQUIPMENT SUPPORT PAD w/ DRILLED IN ANCHORS

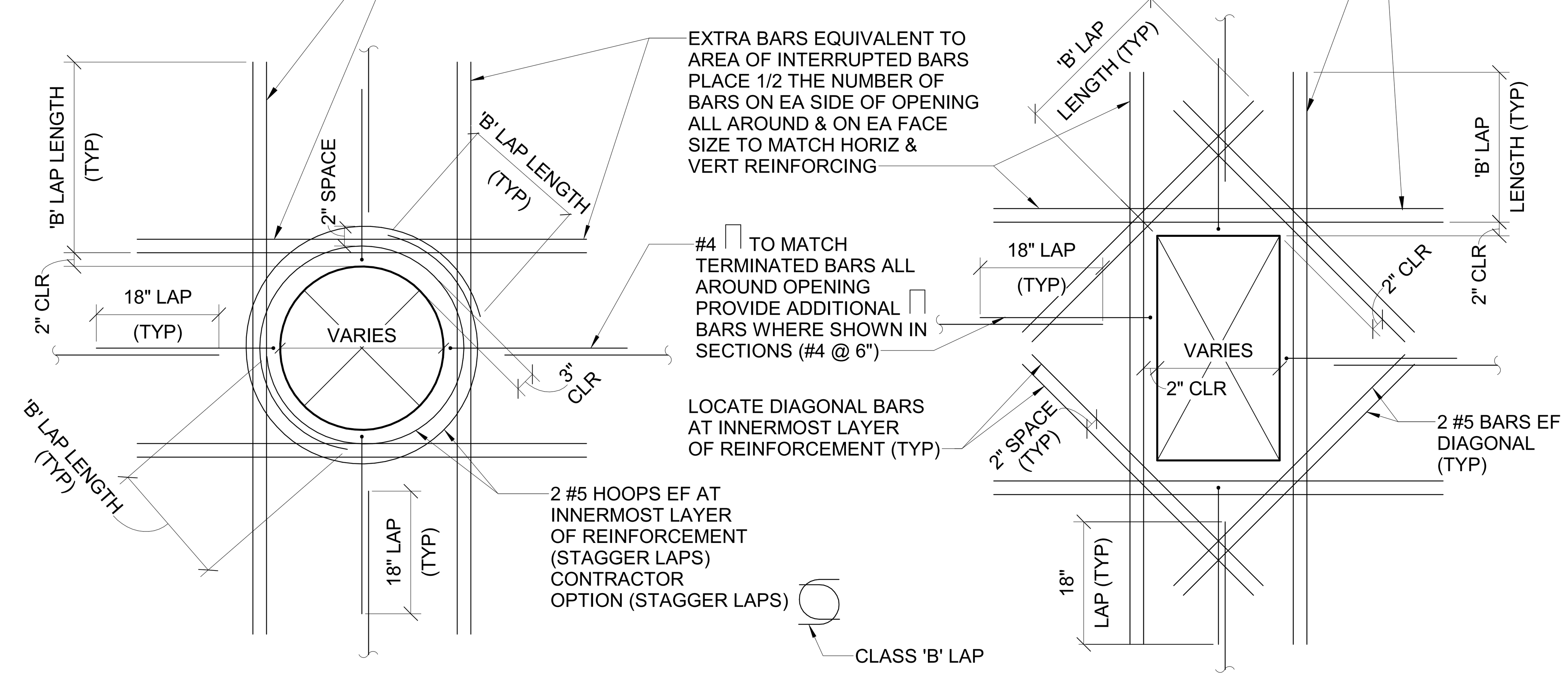


EQUIPMENT PAD w/ DRILLED IN ANCHORS

NOTES:
1. PROVIDE 1 1/2" NON-SHRINK GROUT UNLESS GREATER THICKNESS IS REQUIRED BY THE EQUIPMENT MANUFACTURER. REQUIREMENTS, AND WITH THE BUILDING CODE.
2. DIMENSION EQUIPMENT PADS IN CONFORMANCE WITH THE MECHANICAL DRAWINGS, EQUIPMENT REQUIREMENTS, AND WITH THE BUILDING CODE.
3. PROVIDE CRACK CONTROL JOINTS IN EQUIPMENT PADS AS FOLLOWS.
   A. TO MATCH JOINTS IN BASE SLAB.
   B. AT SPACING NOT TO EXCEED PAD THICKNESS x 30
   C. TO DIVIDE PAD INTO RECTANGULAR PANELS WITH ASPECT RATIO NOT EXCEEDING 2:1

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

NOTE:
INTERRUPTED REINFORCING BARS IN WALLS & SLAB ON GRADE CLOSEST TO CONCRETE SURFACES SHALL HAVE FULL SPAN LENGTH EXTRA REINFORCING EQUIVALENT TO THE AREA OF INTERRUPTED BARS, PLACE 1/2 THE NUMBER OF BARS ON EACH SIDE OF OPENING TOP & BOTTOM (SIZE TO MATCH TOP & BOTTOM REINFORCING).

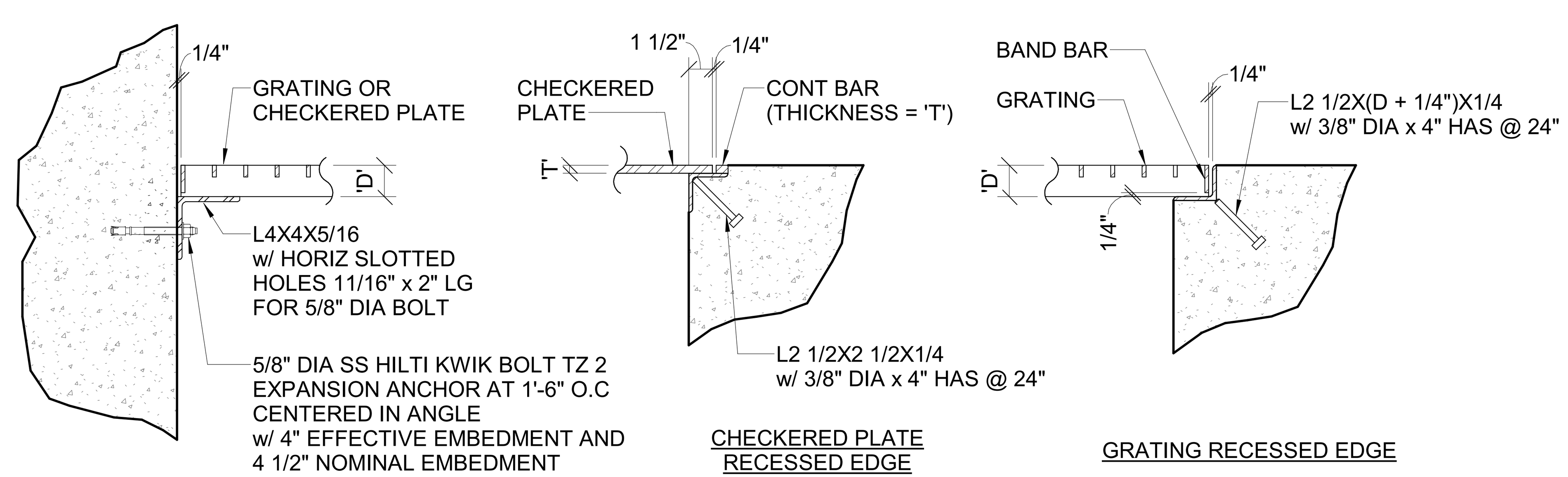


CIRCULAR OPENING

RECTANGULAR OPENING

PLAN VIEW
TYPICAL OPENING REINFORCING DETAILS

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



EDGE ANGLE AT WALL

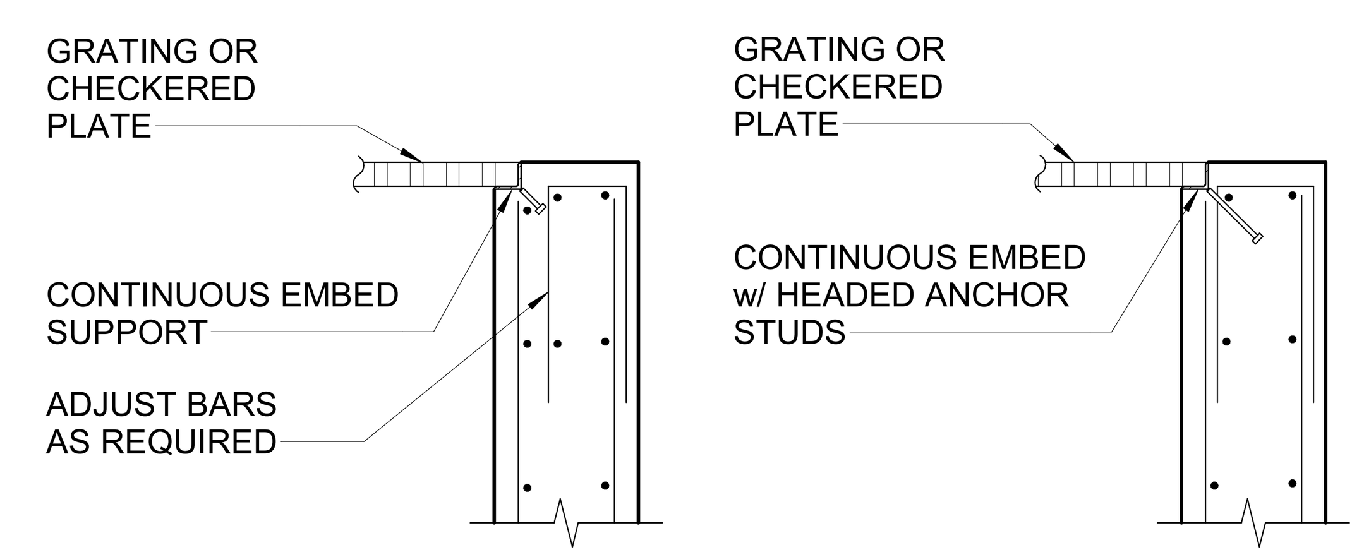
CHECKERED PLATE RECESSED EDGE

GRATING RECESSED EDGE

GRATING AND CHECKERED PLATE SUPPORT NOTES:
1. ALL NOTES AND DIMENSIONS ARE TYPICAL FOR SIMILAR CONDITIONS.
2. ALL SUPPORTS SHALL BE SAME AS GRATING OR CHECKERED PLATE MATERIALS, WHERE SUPPORTS ARE EMBEDDED IN CONCRETE, SURFACE IN CONTACT WITH CONCRETE SHALL RECEIVE COATING PER SPECIFICATIONS.
3. EMBEDDED ANGLES SHALL BE FUSION WELDED AT CORNERS FULL LENGTH OF CONTACT AND FULL THICKNESS OF MATERIAL.
4. GRATING SPAN SHALL NOT BE MORE THAN 4'-0".

GRATING AND CHECKERED PLATE SUPPORT DETAILS

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



WALL REINFORCEMENT AT CONTINUOUS EMBED

WALL REINFORCEMENT AT INTERMITTENT EMBEDS

GRATING AND CHECKERED PLATE SUPPORT DETAILS

REVISIONS: NO	DATE	BY	DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: X-XXXX
P.E. No.: XXXX
SYSTEM: XXXX
LEGAL DESC: XX 1/4 SEC. XX, T. XX X., R. XX X.
TAX DIST: XXXX
SB No.: XX-XX
DATE: 03/09/2026
SCALE: AS SHOWN
DRAWN BY: MWK
REVIEWED BY: SMT
CHECKED BY: ACK

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: TYPICAL DETAILS 2

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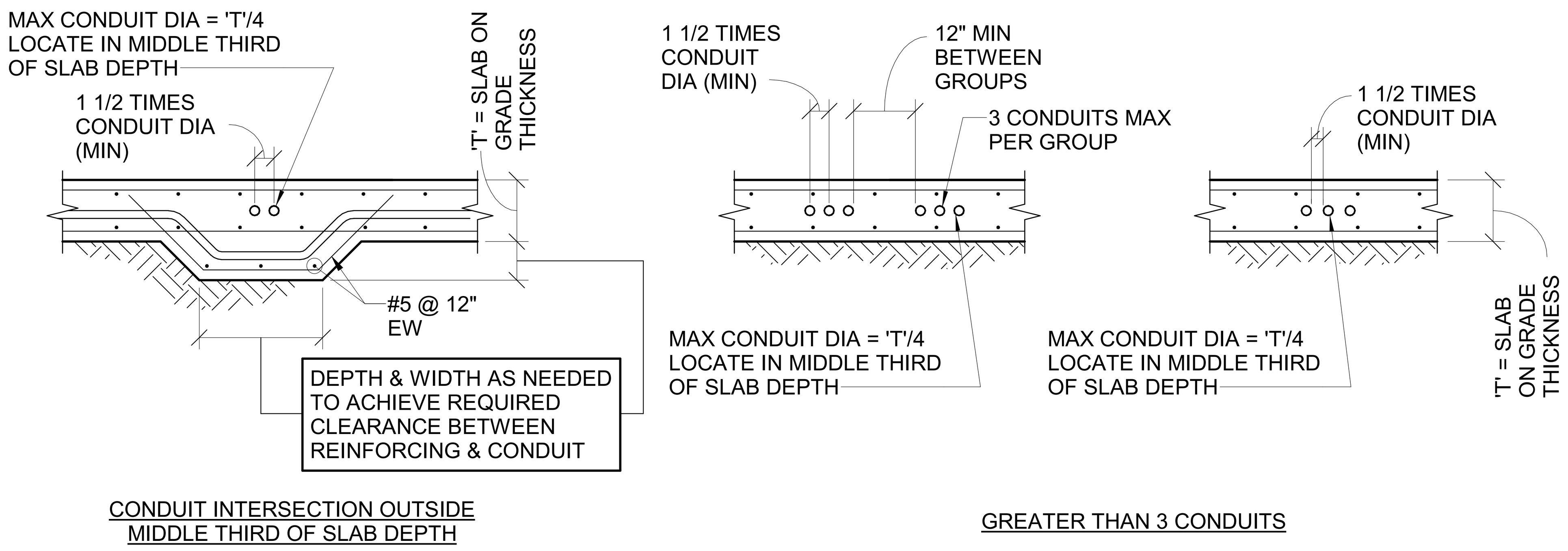
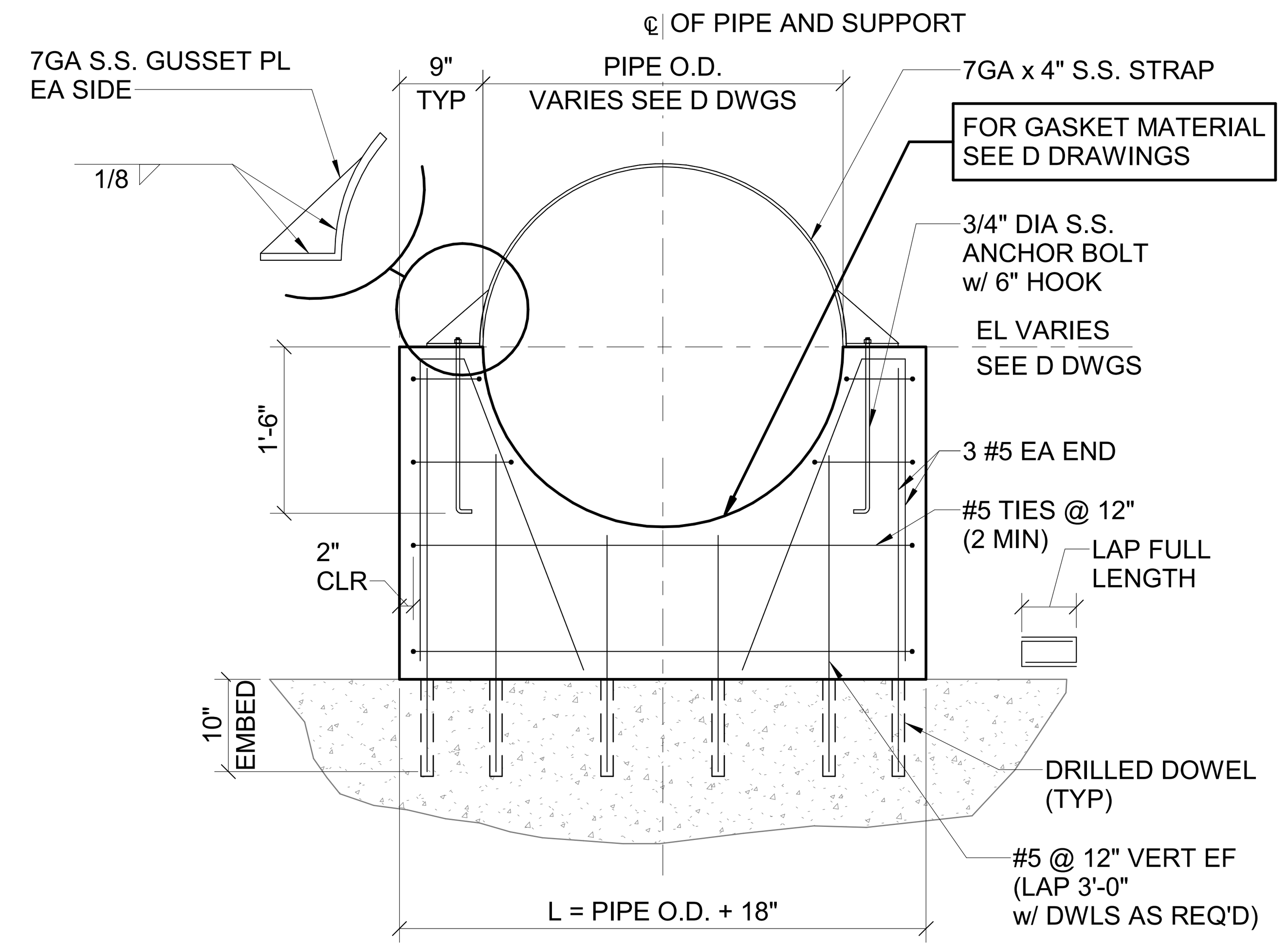
DWG NO.: S-006
OF 17



NOTES:
1. CONTRACTOR SHALL SUBMIT SHOP DRAWING SHOWING PLACEMENT OF CONDUITS IN SLABS.
2. CONDUIT PLACEMENT NOT CONFORMING TO TYPICAL DETAILS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REINFORCING OR SLAB THICKENING DESIGN.

DETAILS FOR CONDUITS EMBEDDED
IN SLAB ON GRADE

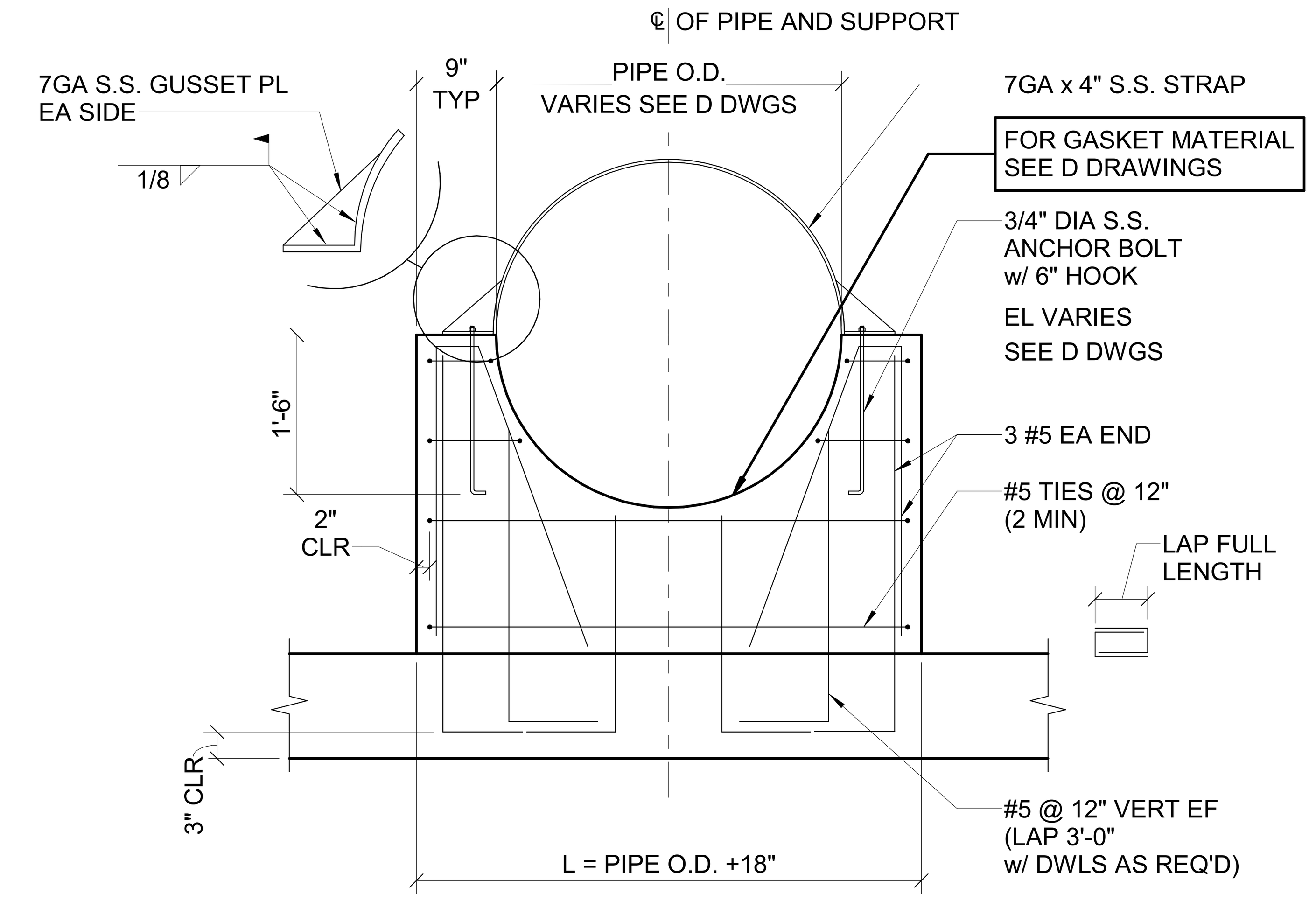
1 **DETAIL**
SCALE: 1/2" = 1'-0"



NOTE:
SUPPORT TO BE 12" THICK UNLESS OTHERWISE NOTED.

PIPE SUPPORT DETAIL

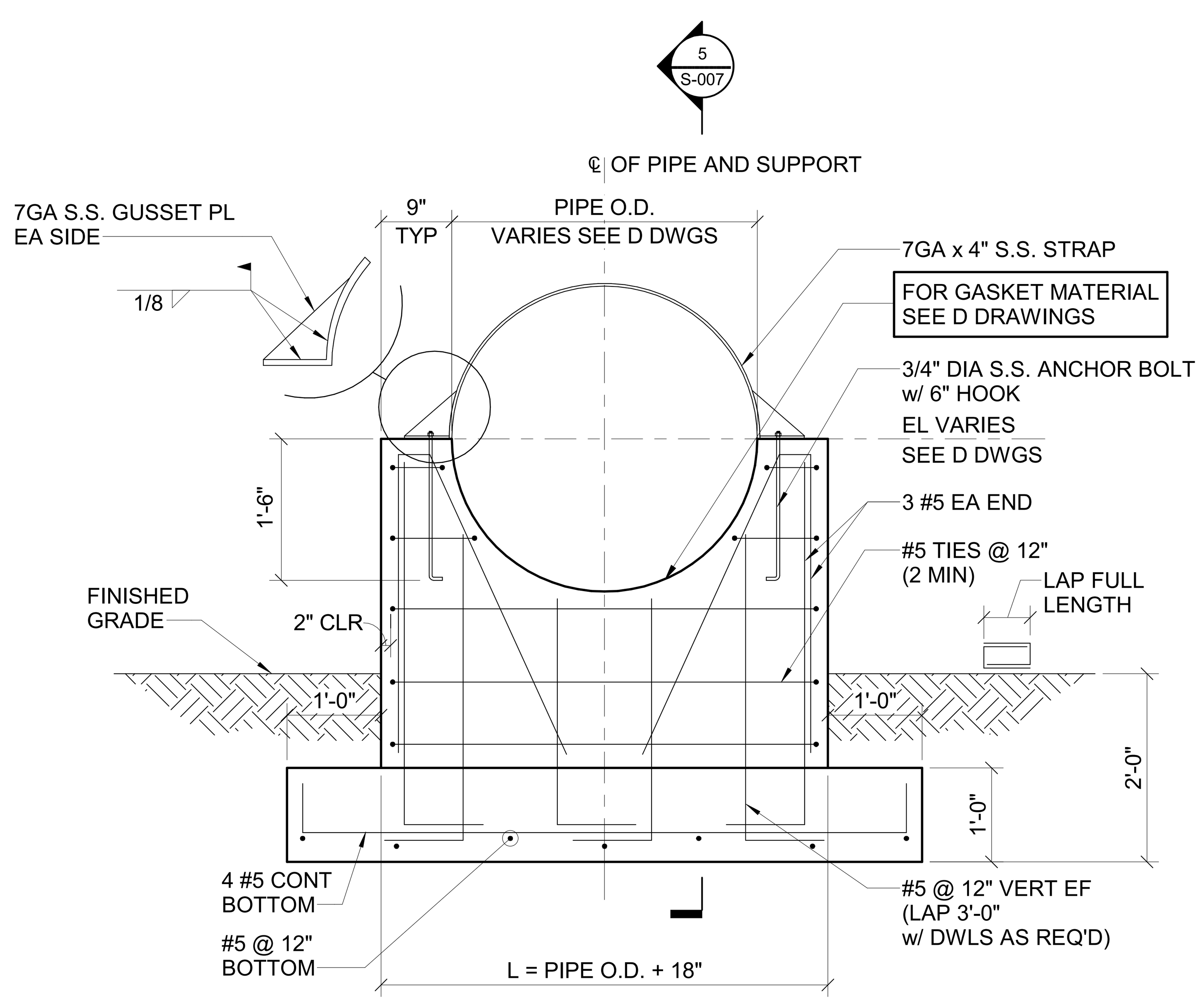
2 **DETAIL**
SCALE: 3/4" = 1'-0"



NOTE:
SUPPORT TO BE 12" THICK UNLESS OTHERWISE NOTED.

PIPE SUPPORT DETAIL

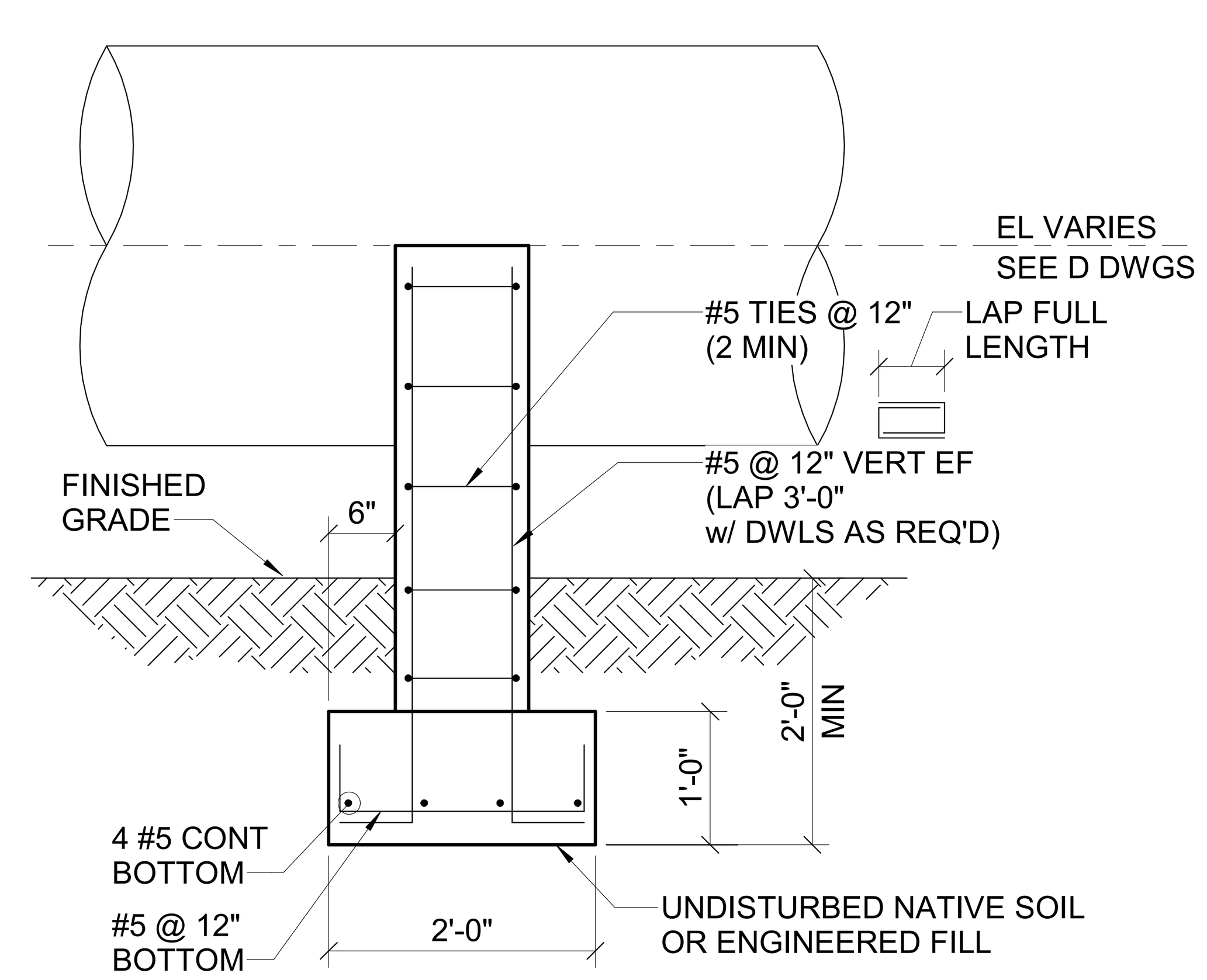
3 **DETAIL**
SCALE: 3/4" = 1'-0"



NOTE:
SUPPORT TO BE 12" THICK UNLESS OTHERWISE NOTED.

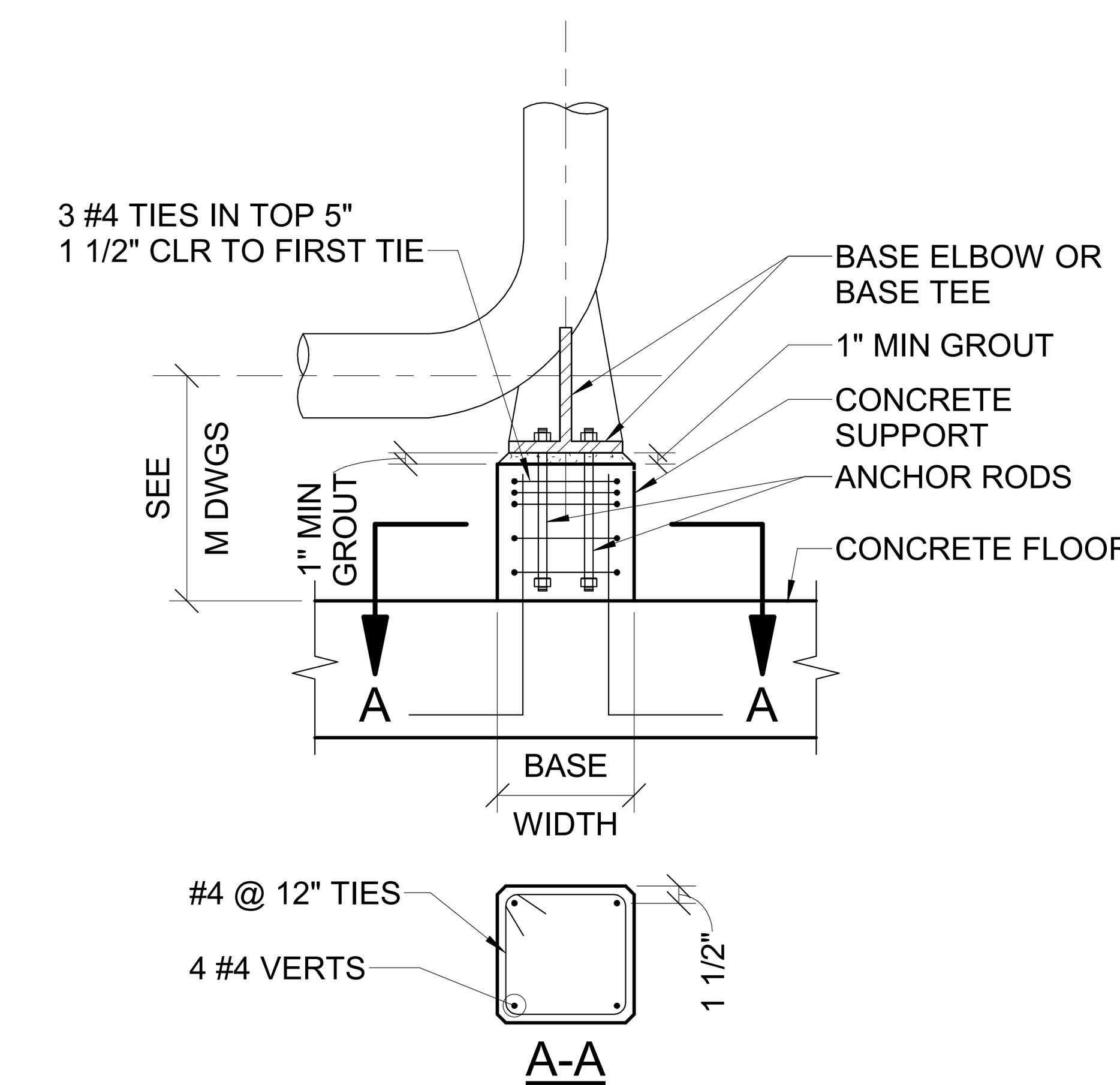
PIPE SUPPORT DETAIL

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



PIPE SUPPORT DETAIL

5 **DETAIL**
SCALE: 3/4" = 1'-0"



CONCRETE PEDESTAL

6 **DETAIL**
SCALE: 3/4" = 1'-0"

REVISIONS: NO | DATE | BY | DESCRIPTION

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W.A. No.: X-XXXX
P.E. No.: XXXX
SYSTEM: XXXX
LEGAL DESC.: XX 1/4 SEC. XX, T. XX X., R. XX X.
TAX DIST.: XXXX
SB No.: XX-XX
DATE: 03/09/2026
SCALE: AS SHOWN
DRAWN BY: MWK
REVIEWED BY: SMT
CHECKED BY: ACK

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: TYPICAL DETAILS 3

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DWG NO.: S-007

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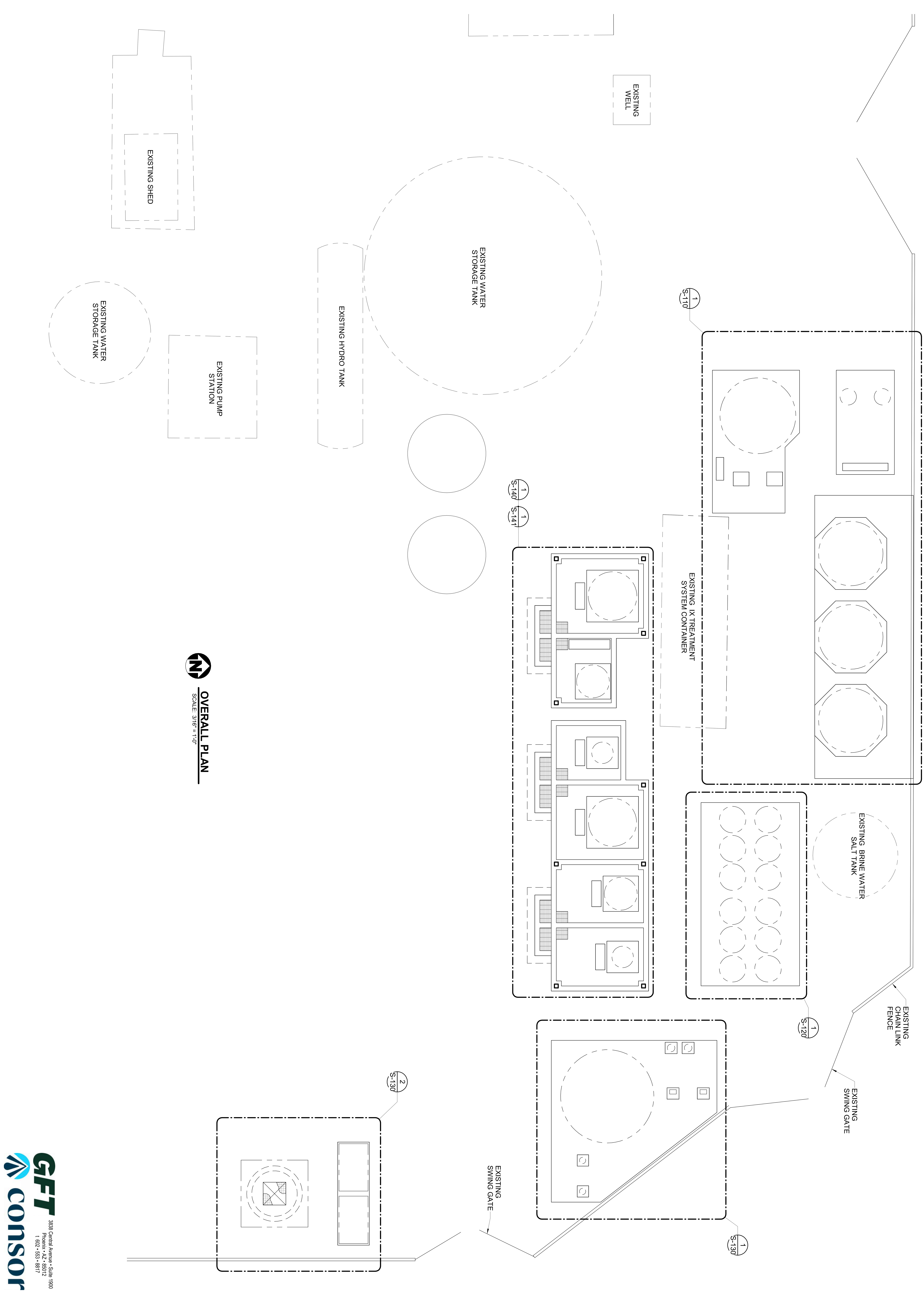

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ARIZONA WATER COMPANY

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PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: OVERALL PLAN

W.A. No.: X-XXXX	P.E. No.: XXXX
SYSTEM: XXXX	
LEGAL DESC.: XX 1/4 SEC. XX, T. XX X., R. XX X.	
TAX DIST.: XXXX	SIB No.: XX-XX
DATE: 03/09/2026	SCALE: AS SHOWN
DRAWN BY: MWK	REVIEWED BY: SMT
CHECKED BY: ACK	

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

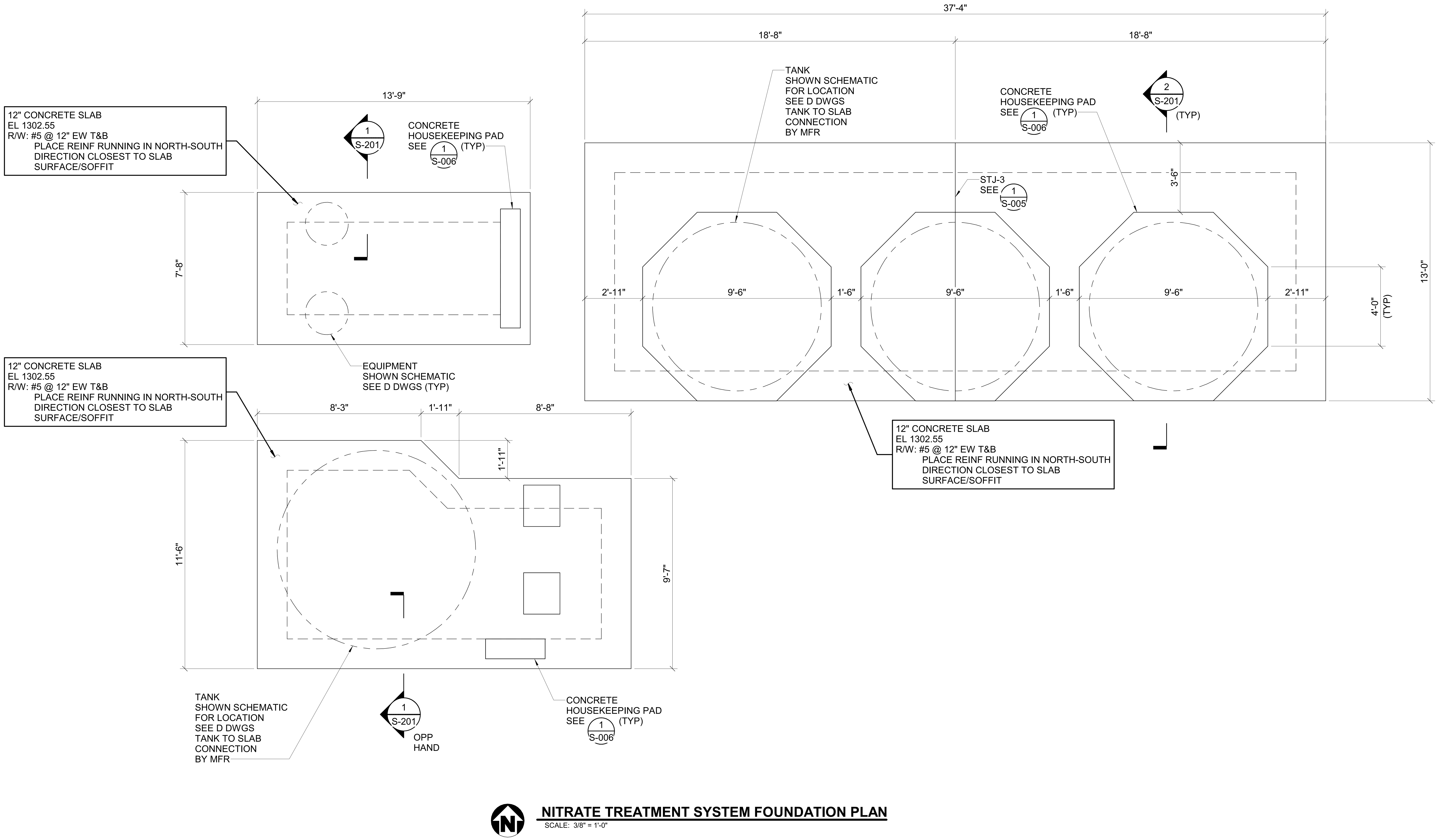
Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

REVISIONS:

NO	DATE	BY	DESCRIPTION

DWG NO: S-100
OF 17

NOTES:
1. CONTRACTOR TO COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH D DRAWINGS.



NITRATE TREATMENT SYSTEM FOUNDATION PLAN

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

NO	DATE	BY	DESCRIPTION

REVISIONS:

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

ARIZONA811 Call 811 or click Arizona811.com

W.A. No.: X-XXXX
P.E. No.: XXXX
SYSTEM: XXXX
LEGAL DESC.: XX 1/4 SEC. XX, T. XX X., R. XX X.
TAX DIST.: XXXX
SB No.: XX-XX
DATE: 03/09/2026
SCALE: AS SHOWN
DRAWN BY: MWK
REVIEWED BY: SMT
CHECKED BY: ACK

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY, POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC.: NITRATE TREATMENT SYSTEM FOUNDATION PLAN

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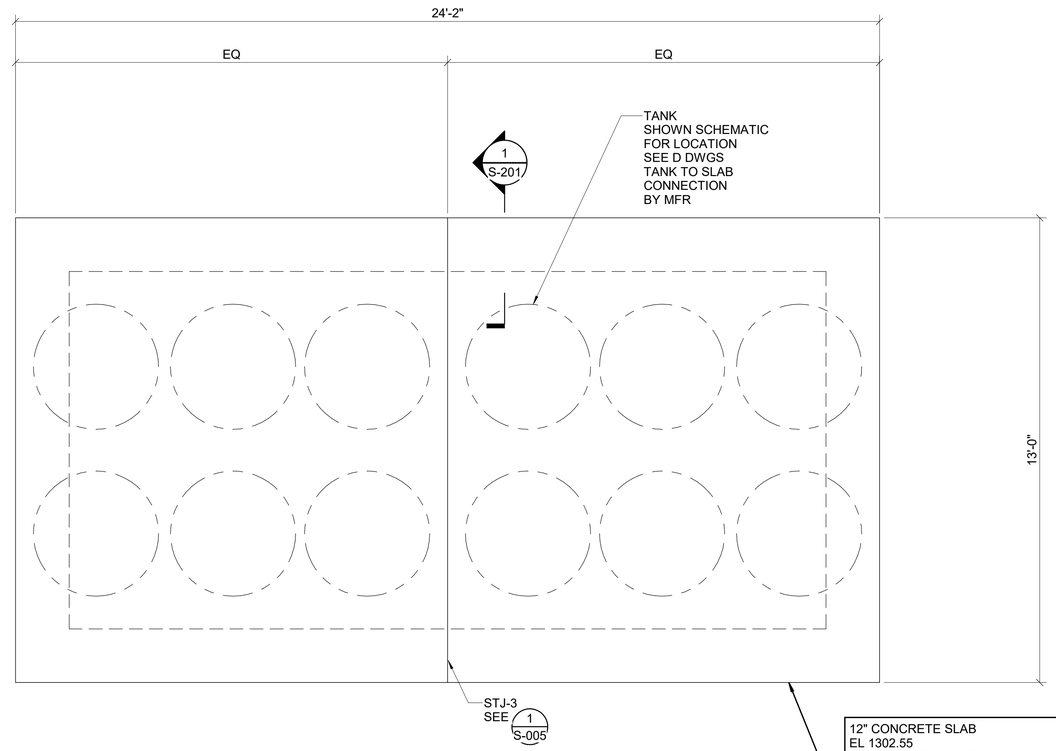
DWG NO.: S-110
OF 17

NOTES:
1. CONTRACTOR TO COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH D DRAWINGS.



ARSENIC TREATMENT FILTRATION SYSTEM FOUNDATION

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

REVISIONS:

NO	DATE	BY	DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Call Arizona 811 at least two full working days before you begin excavation.
ARIZONA 811
Call 811 or click Arizona811.com

W.A. No.: X-XXXX
P.E. No.: XXXX
SYSTEM: XXXX
LEGAL DESC.: XX 1/4 SEC. XX, T. XX X., R. XX X.
TAX DIST.: XXXX
SIB No.: XX-XX
DATE: 03/09/2026
SCALE: AS SHOWN
DRAWN BY: MWK
REVIEWED BY: SMT
CHECKED BY: ACK

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: **ARSENIC TREATMENT FILTRATION SYSTEM FOUNDATION**

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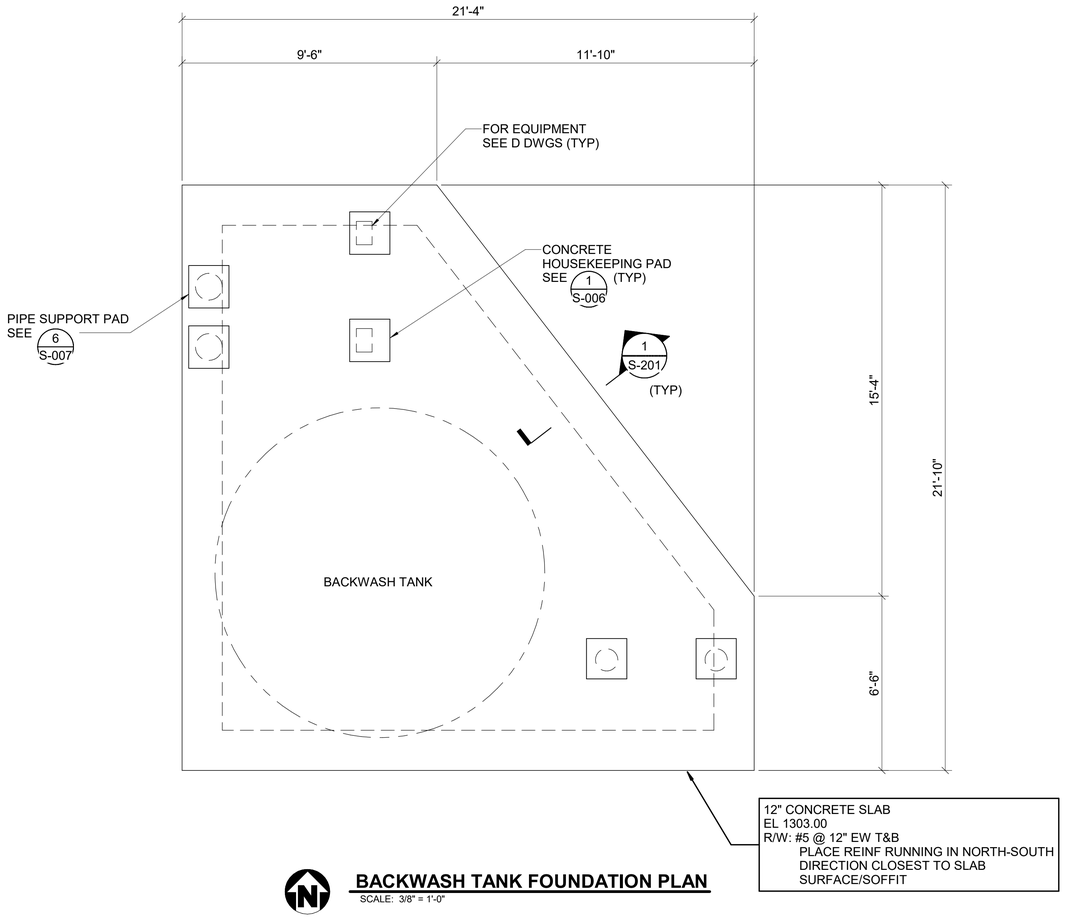
DWG NO.: S-120

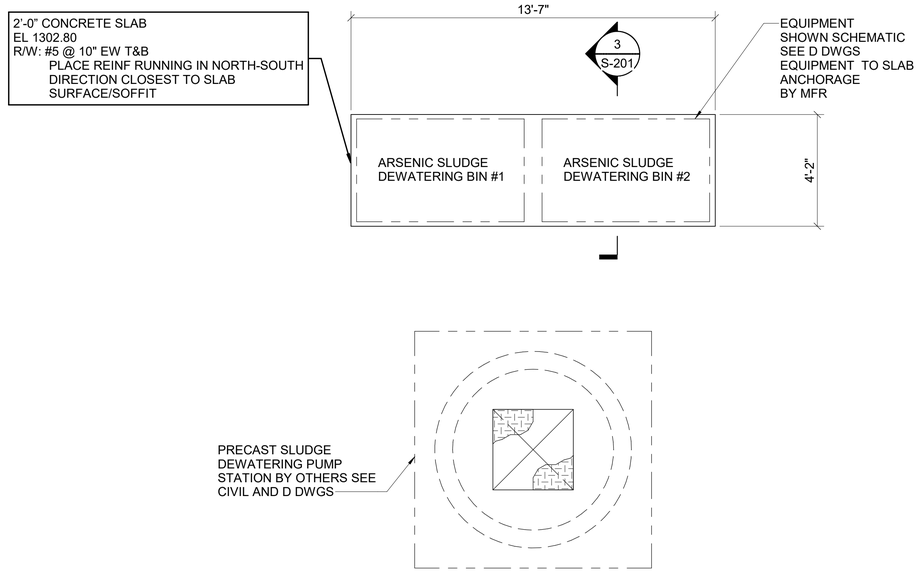
OF 17

90% SUBMITTAL

NOTES:
1. CONTRACTOR TO COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH D DRAWINGS.



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



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

REVISIONS:

NO	DATE	BY	DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Arizona 811 at least two full working days before you begin excavation
ARIZONA 811
Call 811 or click Arizona811.com

W.A. No.: X-XXXX
SYSTEM: XXXX
LEGAL DESC.: XX 1/4 SEC. XX, T. XX X., R. XX X.
TAX DIST.: XXXX
SB No.: XX-XX
P.E No.: XXXX
DATE: 03/09/2026
SCALE: AS SHOWN
DRAWN BY: MWK
REVIEWED BY: SMT
CHECKED BY: ACK

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: **BACKWASH TANK FOUNDATION PLANS**

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DWG NO.: S-130

OF 17

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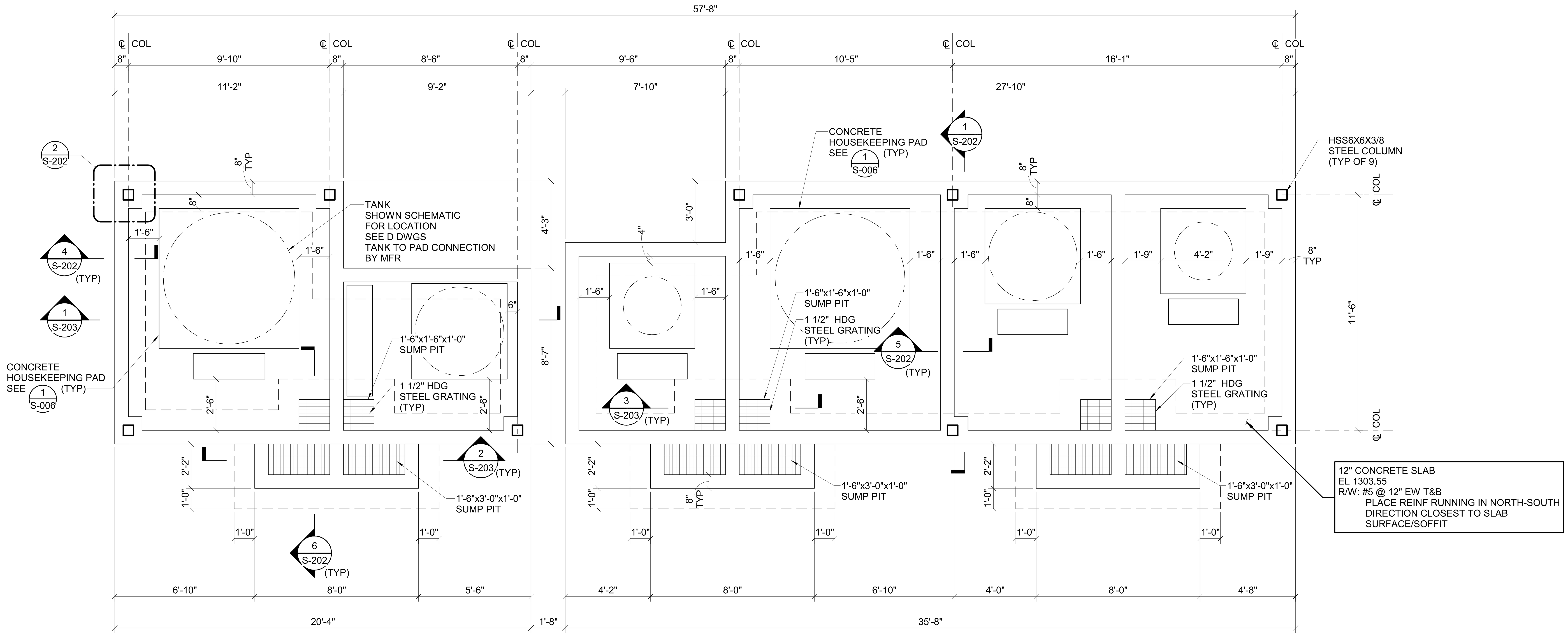
NOTES:
1. CONTRACTOR TO COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH D DRAWINGS.



TREATMENT CHEMICAL SYSTEM LOWER PLAN

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

REVISIONS: NO | DATE | BY | DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: X-XXXX	P.E. No.: XXXX
SYSTEM: XXXX	
LEGAL DESC.: XX 1/4 SEC. XX, T. XX X., R. XX X.	
TAX DIST.: XXXX	SB No.: XX-XX
DATE: 03/09/2026	SCALE: AS SHOWN
DRAWN BY: MWK	REVIEWED BY: SMT	CHECKED BY: ACK

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC.: TREATMENT CHEMICAL SYSTEM LOWER PLAN

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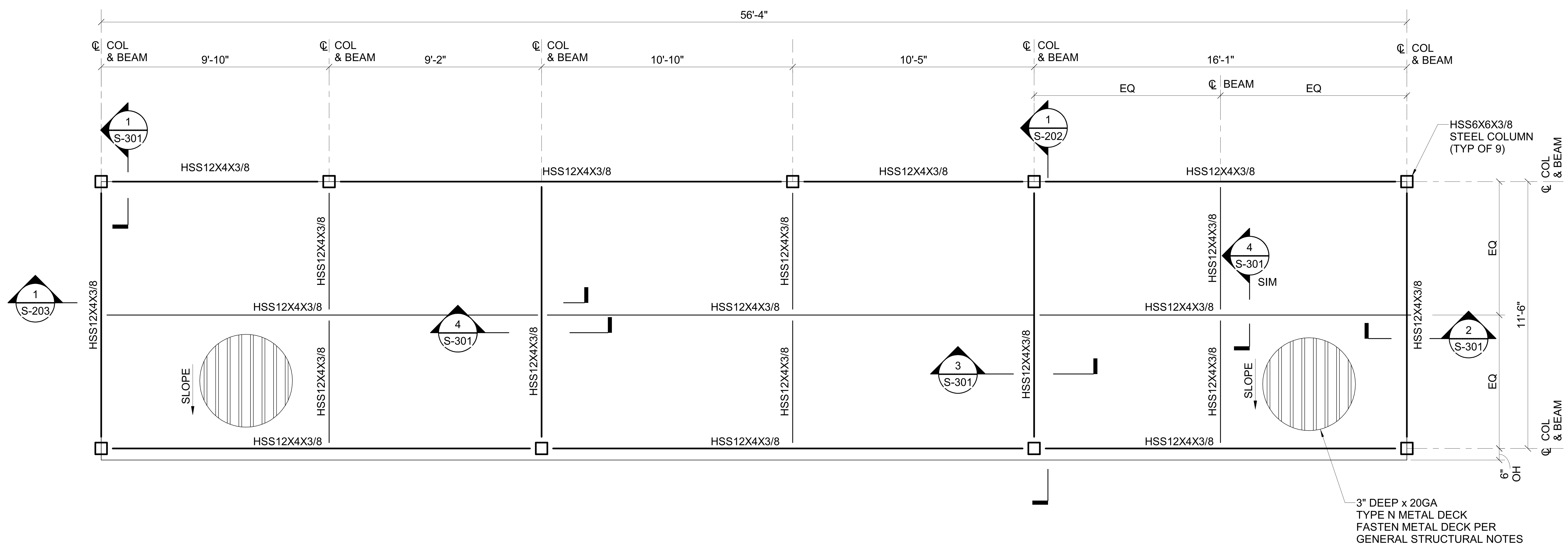
t 602 • 553 • 8817

DWG NO.: S-140

OF 17

NOTES:
1. CONTRACTOR TO COORDINATE ALL DIMENSIONS AND ELEVATIONS WITH D DRAWINGS.



TREATMENT CHEMICAL SYSTEM UPPER PLAN

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

REVISIONS: | NO | DATE | BY | DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: X-XXXX	P.E. No.: XXXX
SYSTEM: XXXX	
LEGAL DESC: XX 1/4 SEC. XX, T. XX X., R. XX X.	
TAX DIST.: XXXX	SB No.: XX-XX
DATE: 03/09/2026	SCALE: AS SHOWN
DRAWN BY: MWK	REVIEWED BY: SMT	CHECKED BY: ACK

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

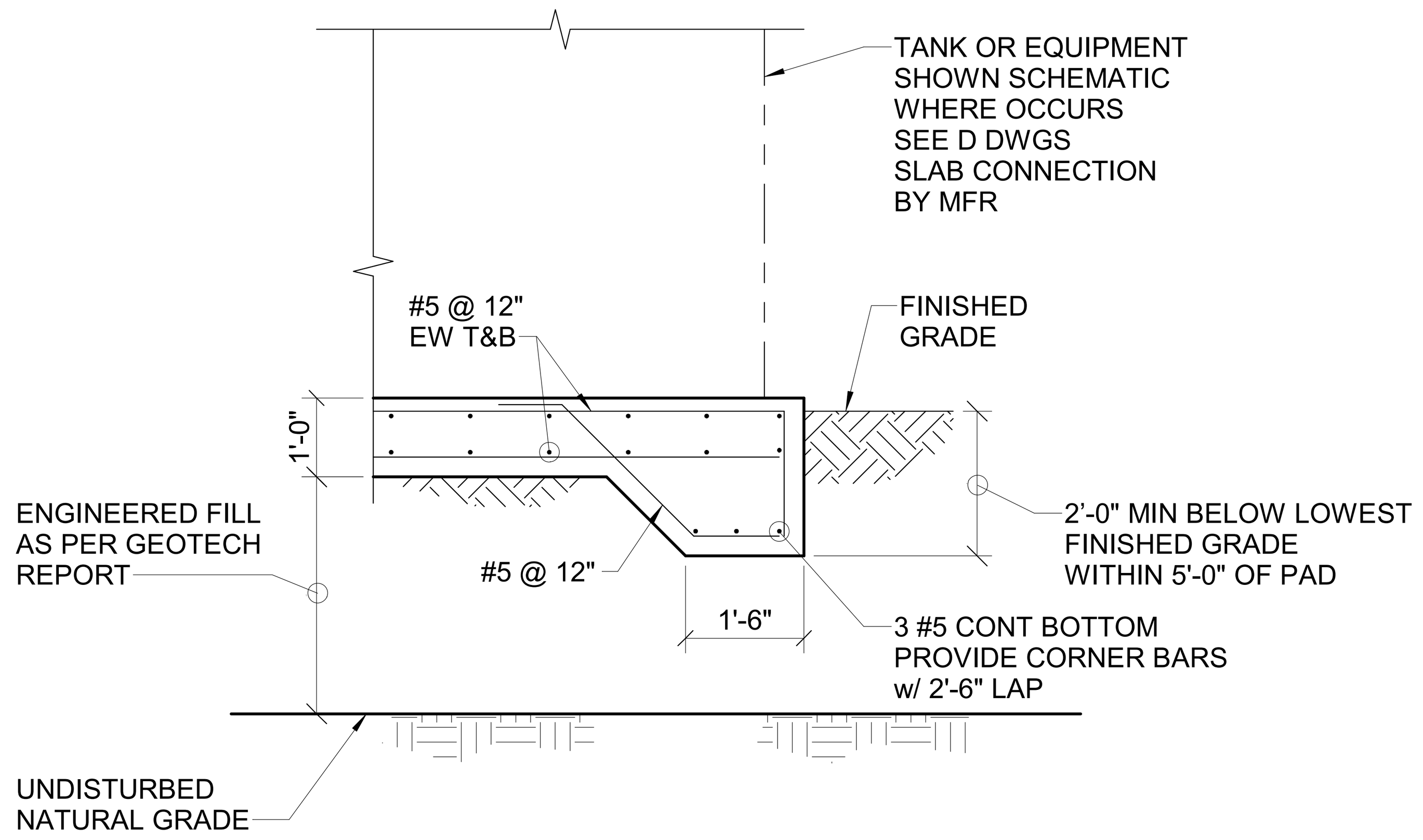
PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: TREATMENT CHEMICAL SYSTEM UPPER PLAN

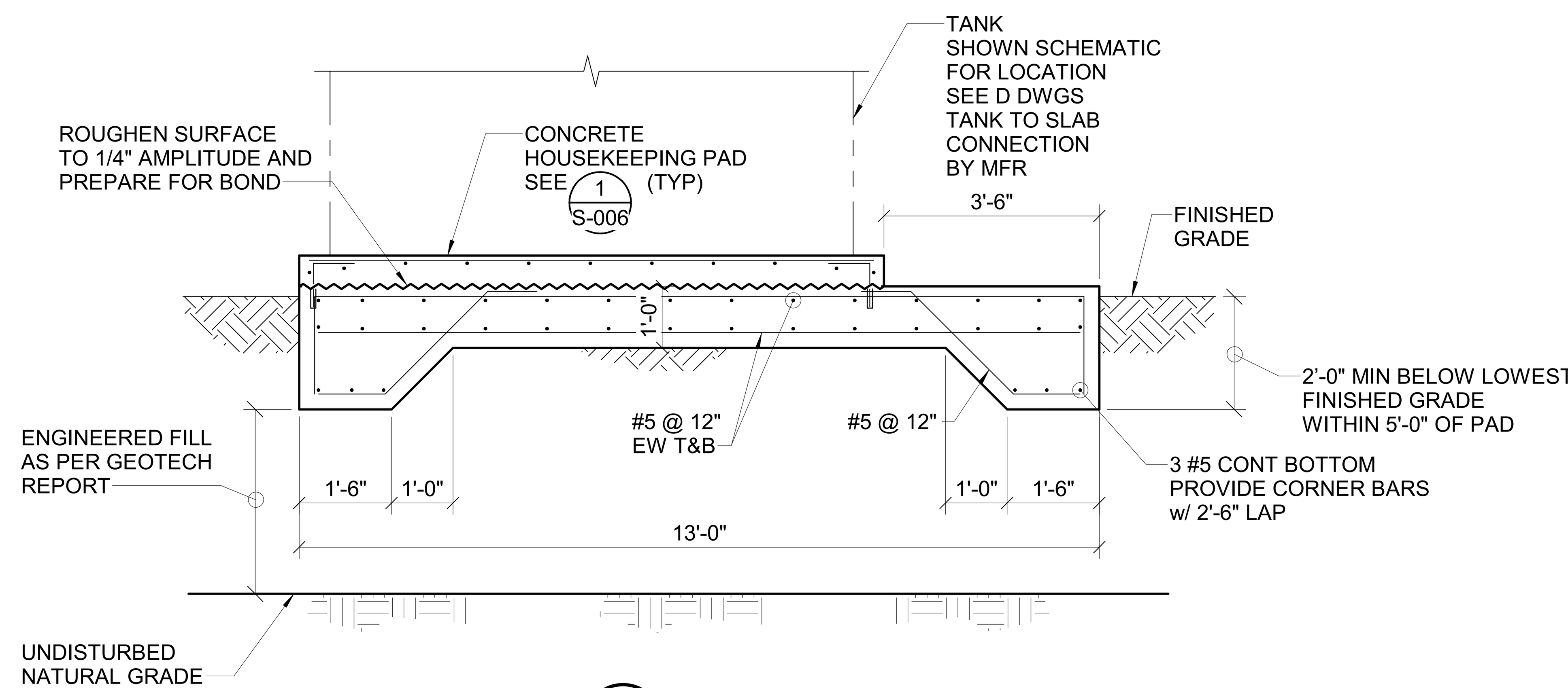
GFT consor
3838 Central Avenue • Suite 1900
Phoenix • AZ • 85012
t 602 • 553 • 8817

DWG NO.: S-141

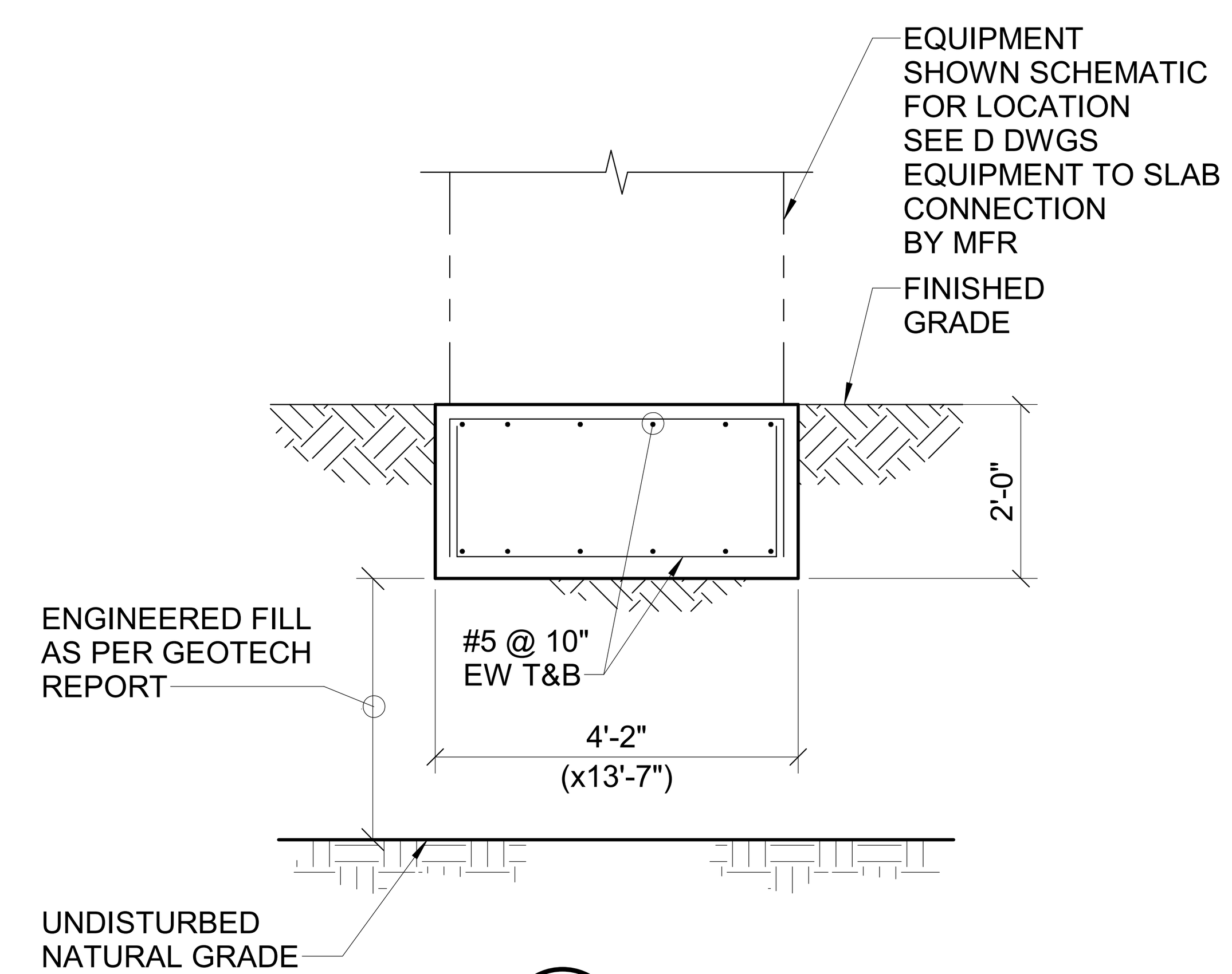
OF 17



1 SECTION
S-110 SCALE: 1/2" = 1'-0"



2 SECTION
S-110 SCALE: 1/2" = 1'-0"



3 SECTION
S-130 SCALE: 1/2" = 1'-0"

REVISIONS:

NO	DATE	BY	DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: X-XXXX
P.E. No.: XXXX
SYSTEM: XXXX
LEGAL DESC: XX 1/4 SEC. XX, T. XX X., R. XX X.
TAX DIST.: XXXX
SB No.: XX-XX
DATE: 03/09/2026
SCALE: AS SHOWN
DRAWN BY: MWK
REVIEWED BY: SMT
CHECKED BY: ACK

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY, POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

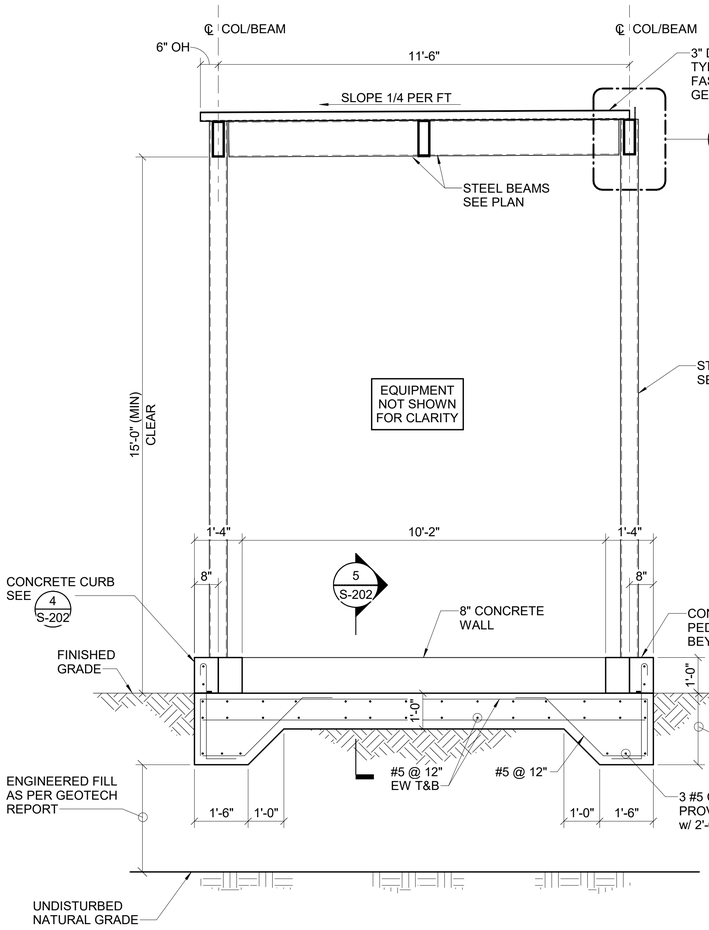
PROJECT SHEET DESC: FOUNDATION SECTIONS AND DETAILS 1

GFT 3838 Central Avenue • Suite 1900 Phoenix • AZ • 85012 t 602 • 553 • 8817

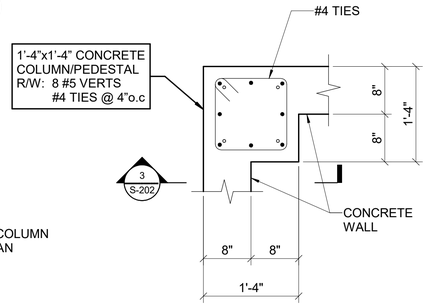
consor

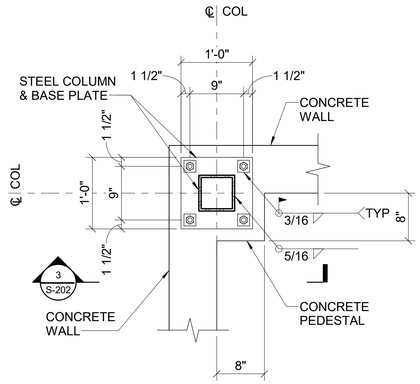
DWG NO.: S-201

OF 17

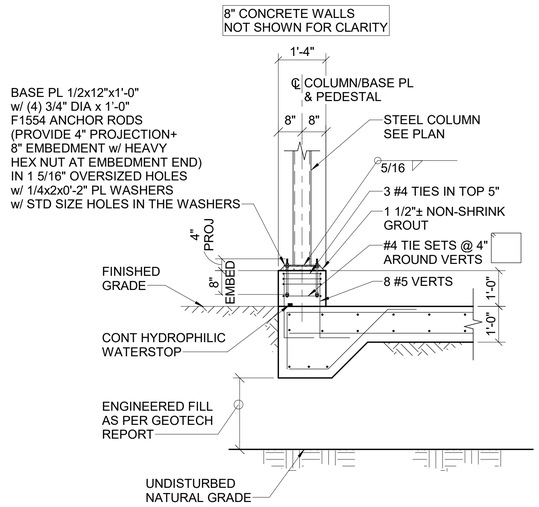


1 S-140 **SECTION** SCALE: 1/2" = 1'-0"

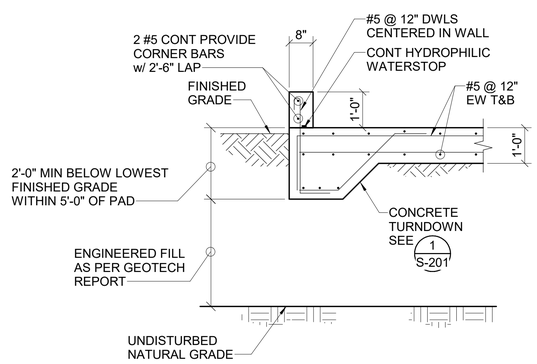




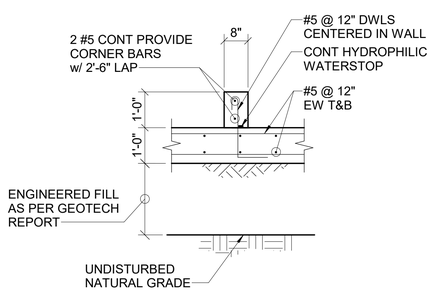
2 S-140 **DETAIL** SCALE: 1" = 1'-0"



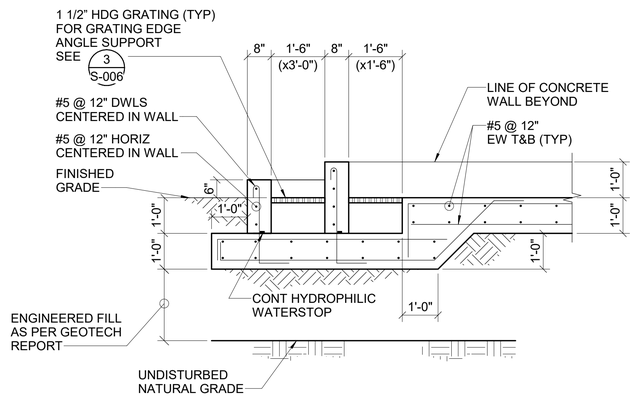
3 S-202 **SECTION** SCALE: 1/2" = 1'-0"



4 S-140 **SECTION** SCALE: 1/2" = 1'-0"



5 S-140 **SECTION** SCALE: 1/2" = 1'-0"



6 S-140 **SECTION** SCALE: 1/2" = 1'-0"

REVISIONS:

NO	DATE	BY	DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Arizona 811 at least two full working days before you begin excavation. Call 811 or click Arizona811.com

W.A No.: X-XXXX
SYSTEM: XXXX
P.E No.: XXXX
LEGAL DESC.: XX 1/4 SEC. XX, T. XX X., R. XX X.
TAX DIST.: XXXX
SBI No.: XX-XX
DATE: 03/09/2026
SCALE: AS SHOWN
DRAWN BY: MWK
REVIEWED BY: SMT
CHECKED BY: ACK

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC.: **FOUNDATION SECTIONS AND DETAILS 2**

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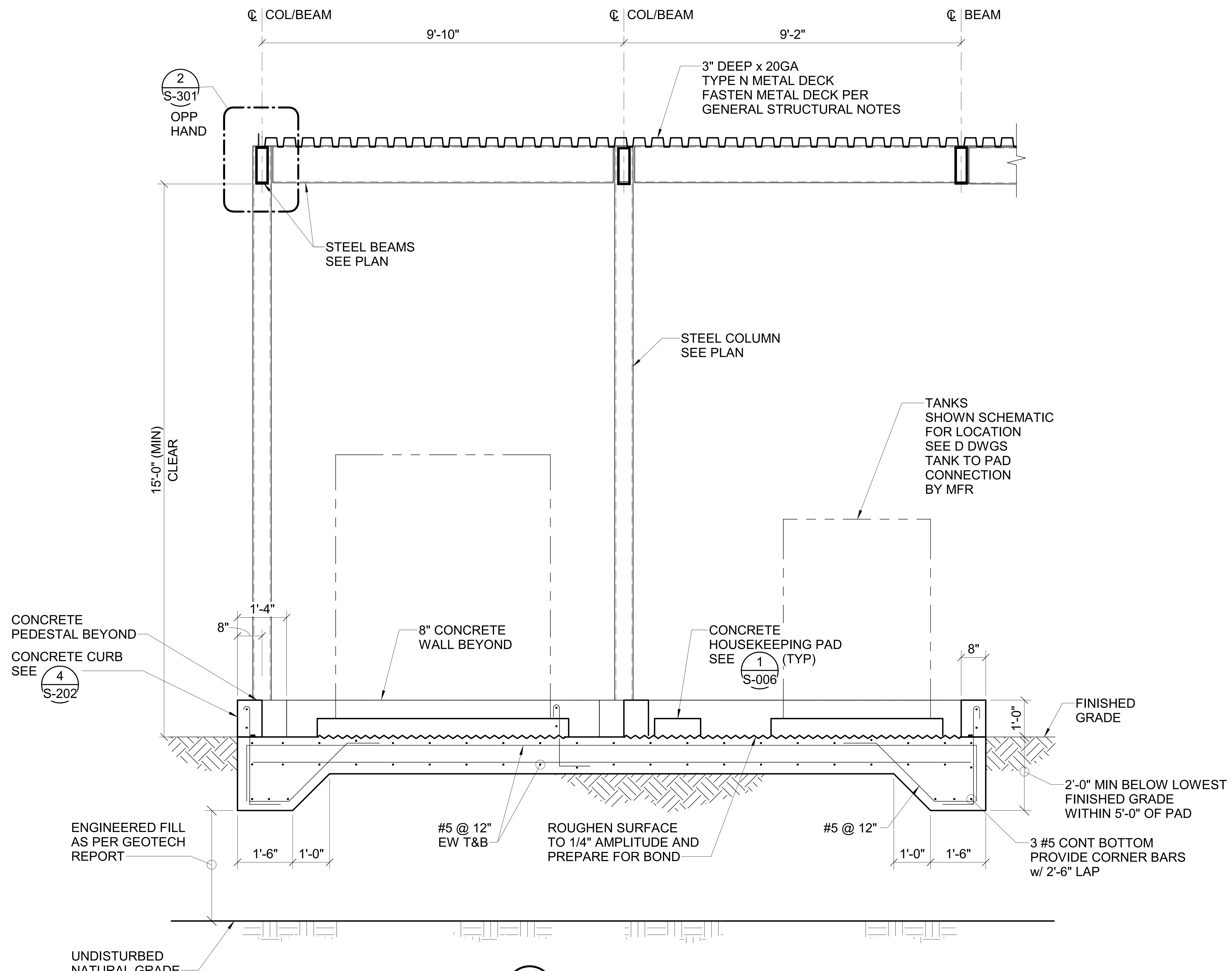
Phoenix • AZ • 85012
t 602 • 553 • 8817

DWG NO.: S-202

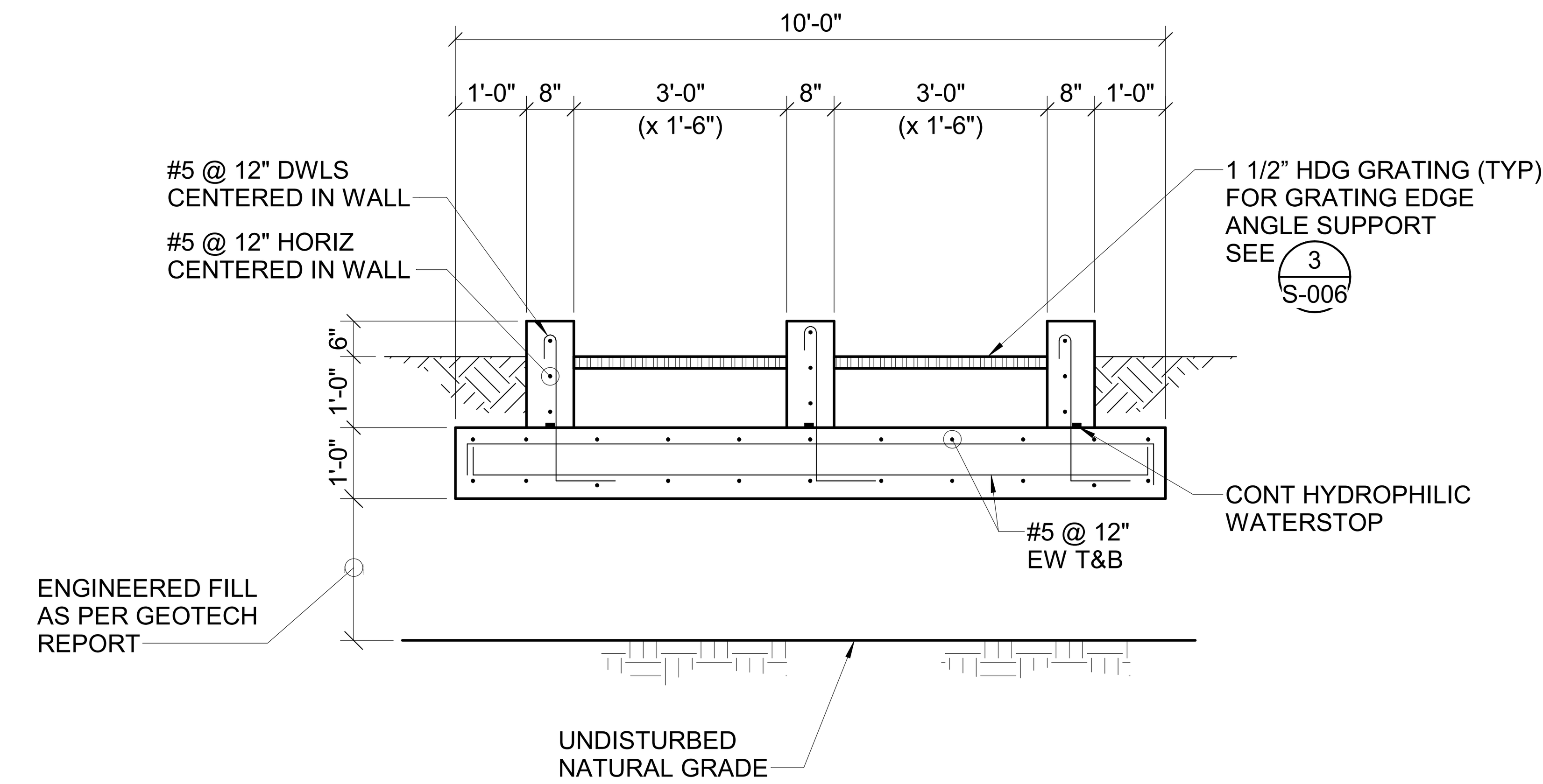
OF 17

3/9/2026 11:13:06 AM Autodesk Docs://083161_Consor_AZWater_Stanfield_WC/083161_CONSOR_AZWATER_STANFIELD _WC_CENTRAL_S_R24.rvt

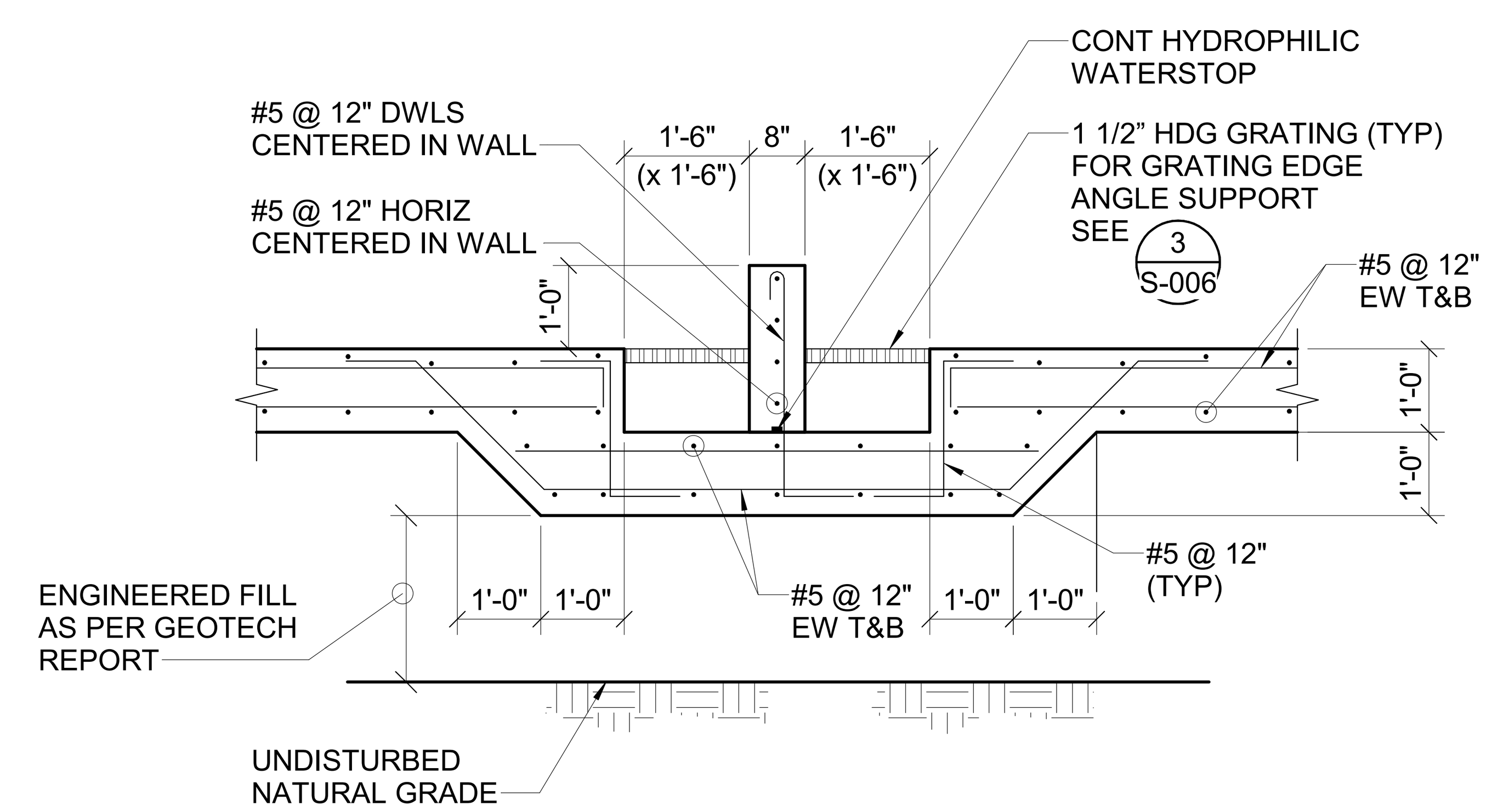
90% SUBMITTAL



1 S-140 **SECTION**
SCALE: 1/2" = 1'-0"



2 S-140 **SECTION**
SCALE: 1/2" = 1'-0"



3 S-140 **SECTION**
SCALE: 1/2" = 1'-0"

REVISIONS:

NO	DATE	BY	DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

ARIZONA 811

W.A. No.: X-XXXX
P.E. No.: XXXX
SYSTEM: XXXX
LEGAL DESC: XX 1/4 SEC. XX, T. XX X., R. XX X.
TAX DIST.: XXXX
SB No.: XX-XX
DATE: 03/09/2026
SCALE: AS SHOWN
DRAWN BY: MWK
REVIEWED BY: SMT
CHECKED BY: ACK

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: FOUNDATION SECTIONS AND DETAILS 3

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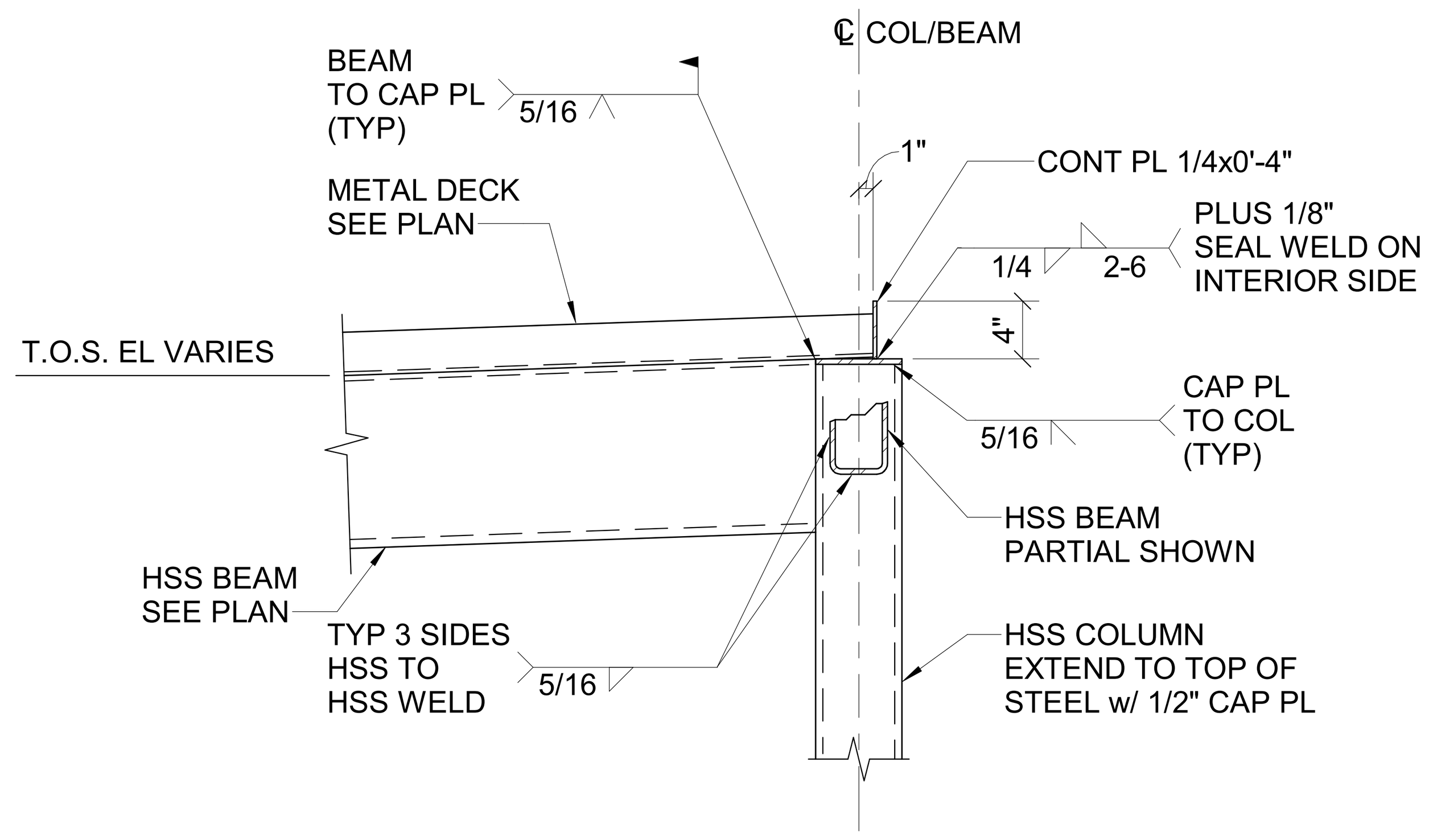
t 602 • 553 • 8817

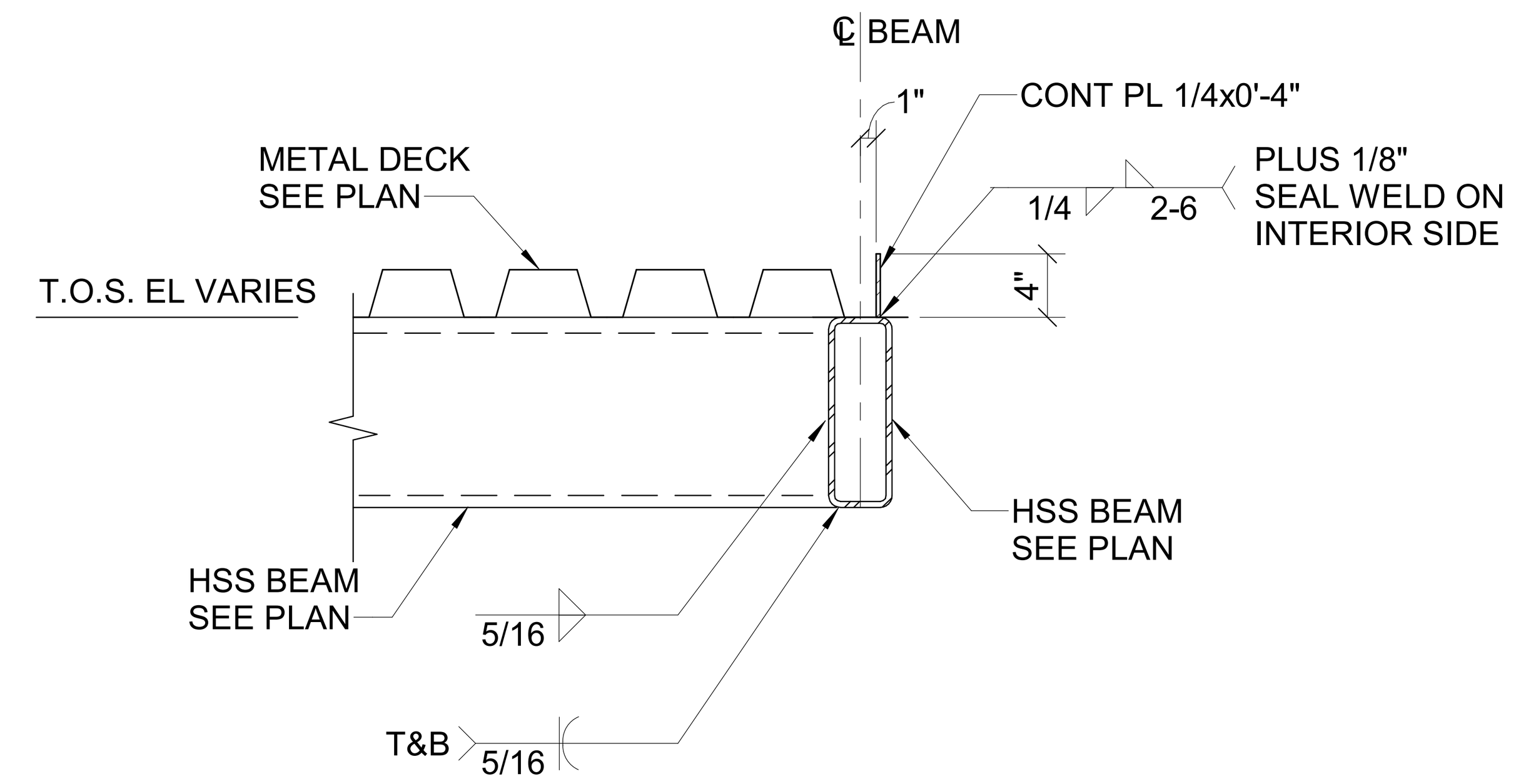
DWG NO.: S-203

OF 17

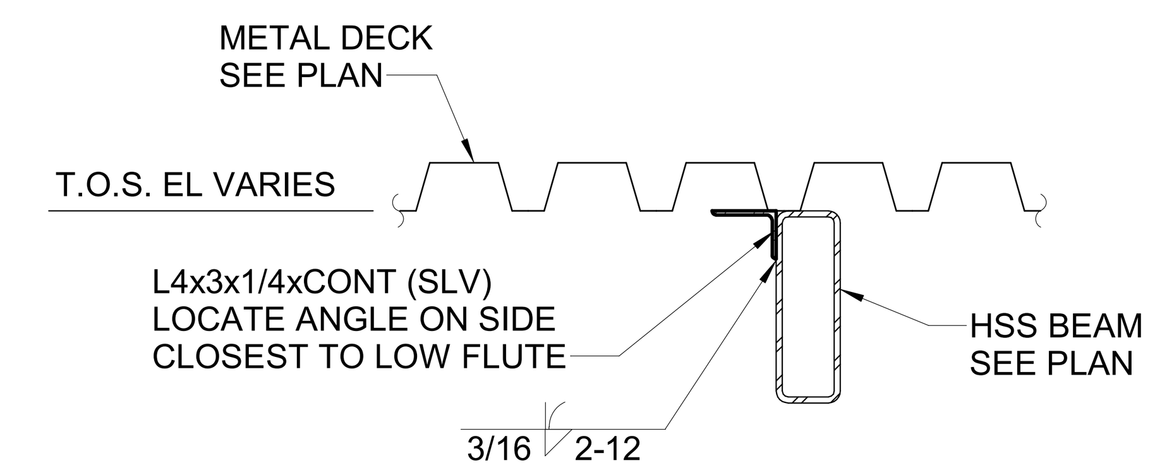
90% SUBMITTAL



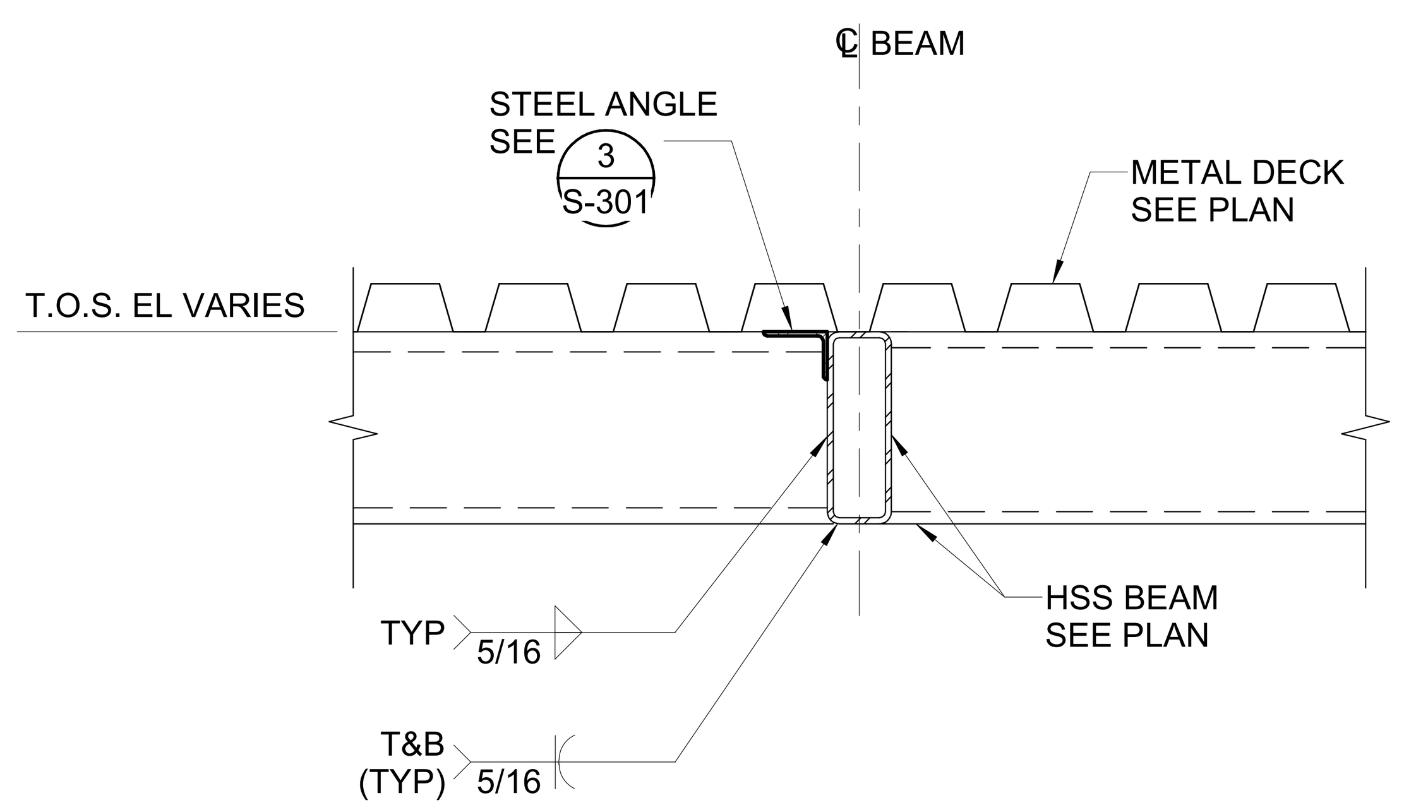
1 S-141 **SECTION**
SCALE: 1" = 1'-0"



2 S-141 **SECTION**
SCALE: 1" = 1'-0"



3 S-141 **SECTION**
SCALE: 1" = 1'-0"



4 S-141 **SECTION**
SCALE: 1" = 1'-0"

REVISIONS:

NO	DATE	BY	DESCRIPTION

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: X-XXXX	P.E. No.: XXXX
SYSTEM: XXXX	
LEGAL DESC: XX 1/4 SEC. XX, T. XX X., R. XX X.	
TAX DIST.: XXXX	SB No.: XX-XX
DATE: 03/09/2026	SCALE: AS SHOWN
DRAWN BY: MWK	REVIEWED BY: SMT	CHECKED BY: ACK

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY, POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: **CANOPY FRAMING SECTIONS AND DETAILS**

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t 602 • 553 • 8817

DWG NO.: S-301

OF 17

90% SUBMITTAL

PIPE SYMBOLS

DESCRIPTION	SYMBOL
PROPOSED	
HIDDEN	
BELOW GRADE	
EXISTING	
EXISTING HIDDEN	
DEMOLISH	
FUTURE	
CENTERLINE	℄
PIPE CUT	
PIPE BREAK	
PIPE BREAK (SINGLE LINE)	

PIPE JOINTS

DESCRIPTION	SYMBOL
FLANGED	
MECHANICAL JOINT	
GROOVED	
PVC	
STEEL	
PUSH-ON	
TAP	
SERVICE SADDLE	

PIPE FITTINGS

DESCRIPTION	SYMBOL
90° ELBOW	
45° ELBOW	
22.5° ELBOW	
11.25° ELBOW	
BASE ELBOW	
TEE	
CROSS	
LATERAL	
REDUCER (CONCENTRIC)	
REDUCER (ECCENTRIC)	
REDUCING 90° ELBOW	
EXPANSION JOINT (RESTRAINED)	
EXPANSION JOINT (UNRESTRAINED)	
DISMANTLING JOINT	
FLANGE COUPLING ADAPTER (FCA)	
RESTRAINED FLANGE COUPLING ADAPTER (RFCA)	
FLANGED x FLARED	

VALVE SYMBOLS

DESCRIPTION	PLAN	SECTION	SINGLE LINE
BALL VALVE			
BUTTERFLY VALVE			
BUTTERFLY VALVE (WAFER / LUGGED)			
CHECK VALVE (SWING)			
CHECK VALVE (BALL)			
DIAPHRAGM VALVE			
GATE VALVE			
GLOBE VALVE			
KNIFE GATE VALVE			
PINCH VALVE			
PLUG VALVE			

VALVE SYMBOLS

DESCRIPTION	PLAN	SECTION	SINGLE LINE
PRESSURE REDUCING VALVE (STRAIGHT)			
PRESSURE REDUCING VALVE (ANGLED)			
BACK PRESSURE REGULATOR VALVE (STRAIGHT)			
PRESSURE GAUGE			
AIR VALVE (COMBINATION)			
AIR VALVE (AIR RELEASE)			
AIR VALVE (AIR/VACUUM)			
FLOW METER			M

GENERAL NOTES:

1. THIS IS A STANDARD PROCESS LEGEND, NOT ALL OF THE INFORMATION MAY BE USED ON THIS PROJECT.
2. ONLY FLANGED END CONNECTIONS ARE SHOWN HERE. OTHER FITTING PATTERNS ARE SHOWN SIMILARLY ON THE CONSTRUCTION DRAWINGS. ALSO SEE PIPING SPECIFICATIONS.

PIPE TAG

100-8"-DI1-PI-1001

- FLOW STREAM DIRECTION
- FLOW STREAM IDENTIFICATION NUMBER (IF APPLICABLE)
- PIPE SERVICE, SEE PIPE SERVICE IDENTIFIERS ON SHEETS I001 P&ID LEGENDS
- PIPE MATERIAL, SEE PIPE SPECIFICATION IDENTIFIERS ON SHEETS I001 P&ID LEGENDS
- PIPE DIAMETER, INCHES
- AREA, SEE AREA IDENTIFIERS ON SHEET G002 SHEET INDEX (IF APPLICABLE)

EQUIPMENT & VALVE TAG

100-TNK-101

- EQUIPMENT & VALVE IDENTIFICATION NUMBER
- EQUIPMENT & VALVE TYPE, SEE EQUIPMENT & VALVE TAG IDENTIFIERS ON SHEETS I001 & I002 P&ID LEGENDS
- AREA, SEE AREA IDENTIFIERS ON SHEET G002 SHEET INDEX (IF APPLICABLE)

GENERIC PIPING NOTES:

1. LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS.
2. SIZE OF FITTINGS SHOWN ON DRAWINGS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE, UNLESS OTHERWISE INDICATED. TYPE OF JOINT AND FITTING MATERIAL SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
3. LOCATION AND NUMBER OF PIPE HANGERS AND PIPE SUPPORTS SHOWN IS ONLY APPROXIMATE. CONTRACTOR SHALL DESIGN SUPPORTS AS SPECIFIED.
4. ALL JOINTS SHALL BE WATERTIGHT. WALL PIPES SHALL BE USED WHEREVER PIPING PASSES FROM A STRUCTURE TO A BACKFILL.
5. ALL FLEXIBLE CONNECTORS AND COUPLING ADAPTERS SHALL BE PROVIDED WITH THRUST PROTECTION AS SPECIFIED, UNLESS OTHERWISE NOTED. THRUST PROTECTION SHALL BE ADEQUATE FOR TEST PRESSURES SPECIFIED.
6. SYMBOLS, LEGENDS AND PIPE USE IDENTIFICATIONS SHOWN SHALL BE FOLLOWED THROUGHOUT THE DRAWINGS, WHEREVER APPLICABLE. NOT ALL OF THE VARIOUS COMPONENTS ARE NECESSARILY USED IN THE PROJECT.
7. ALL BURIED PIPING SPECIFIED TO BE PRESSURE TESTED, EXCEPT FLANGED, WELDED OR SCREWED PIPING, SHALL BE PROVIDED WITH THRUST PROTECTION AS SPECIFIED, UNLESS OTHERWISE NOTED.
8. NUMBER AND LOCATION OF UNIONS SHOWN ON DRAWINGS IS ONLY APPROXIMATE. PROVIDE ALL UNIONS NECESSARY TO FACILITATE CONVENIENT REMOVAL OF VALVES AND MECHANICAL EQUIPMENT.
9. WHERE A GROOVED END COUPLING IS SHOWN, IT SHALL BE THE RIGID JOINT TYPE, UNLESS OTHERWISE SPECIFIED. WHERE A FLANGED COUPLING ADAPTER IS SHOWN, A STANDARD FLANGE SHALL BE JOINED TO THE COUPLING ADAPTER.

PIPE PENTRATIONS

WALL SPOOL (FLANGED)

WALL SPOOL (FLANGED x MJ)

LINK SEAL

INTERIOR

EXTERIOR

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

P.E. No.:

W.A. No.:

SYSTEM:

LEGAL DESC.:

SIB No.:

TAX DIST.:

SCALE: AS SHOWN

DATE: 03/03/2026

DRAWN BY: JLC

REVIEWED BY: SDC

CHECKED BY: FHT

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

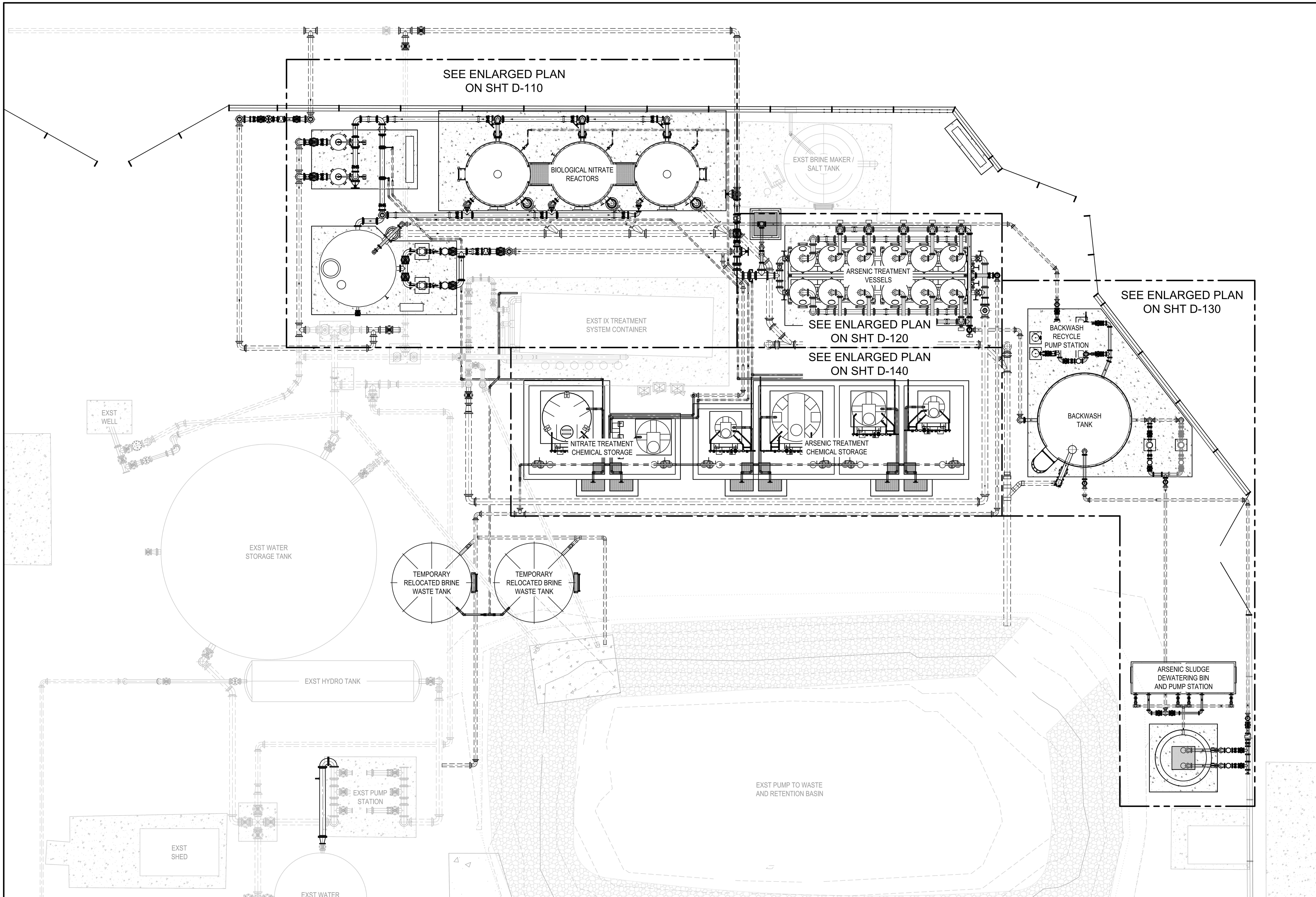
PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: PROCESS LEGEND AND NOTES

consor

DWG. No.: D-001

SHEET 31 OF 79



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

consor

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: OVERALL SITE PLAN

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

REVISIONS:

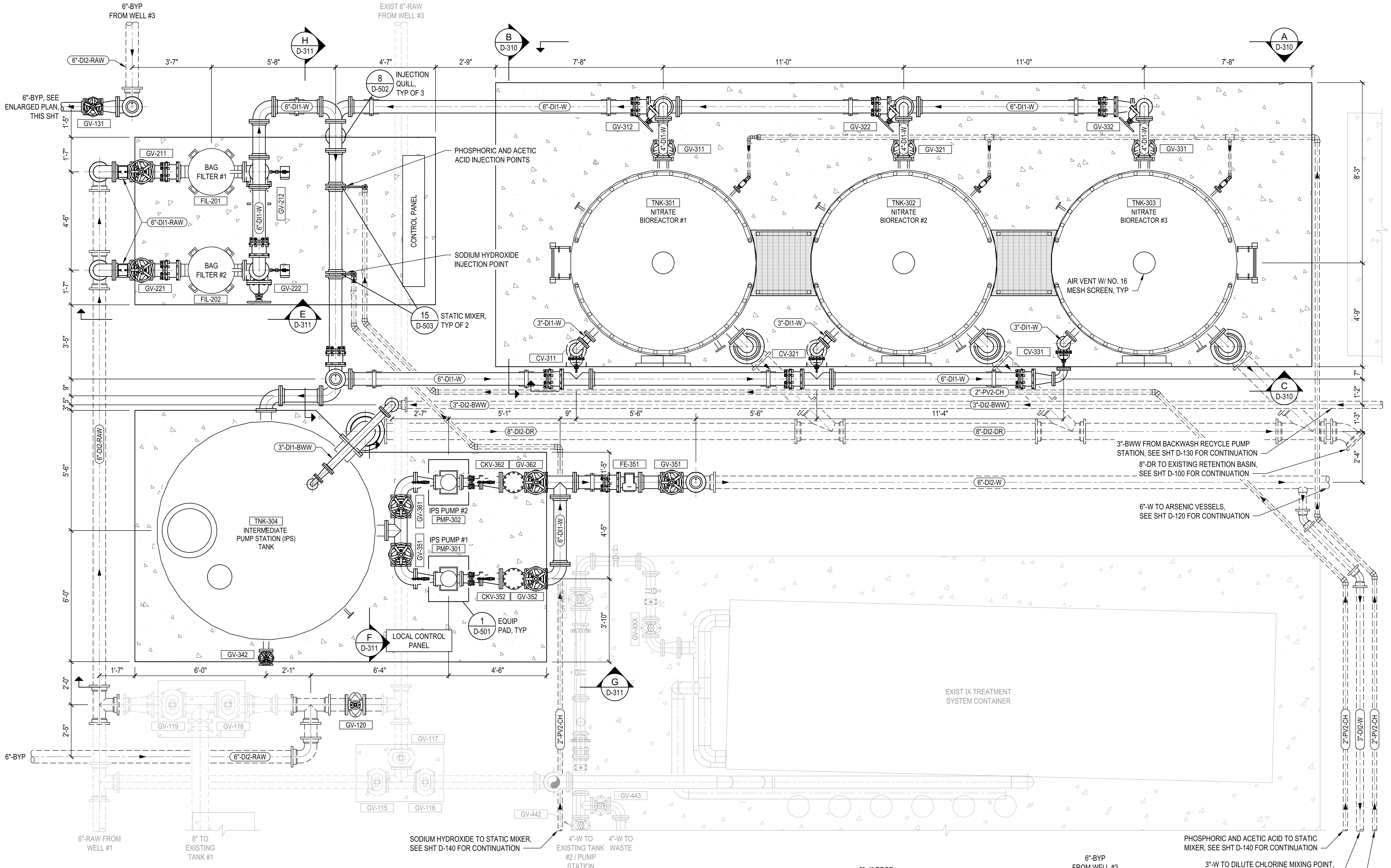
NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

W.A. No.:
P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

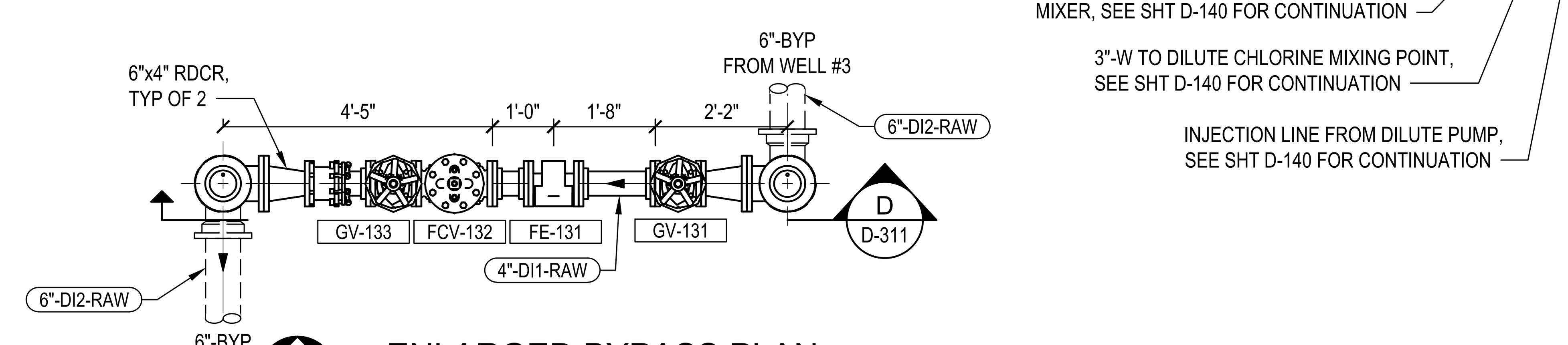
DWG. No.: D-100

SHEET 32 OF 80

Drawing Path and Name: C:\Users\jared.cloud\DC\ACCDocs\Consor\Stanfield GWS&T USBR Grant Coordination\Project Files\1-Design\07-PROC\2-SHEETS\W242167AZ.00_D-100.dwg, Plotted Date: March 9, 2026 1:39 PM By: Jared Cloud



ENLARGED NITRATE PLAN
SCALE: 1/2" = 1'-0"



ENLARGED BYPASS PLAN
SCALE: 1/2" = 1'-0"

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

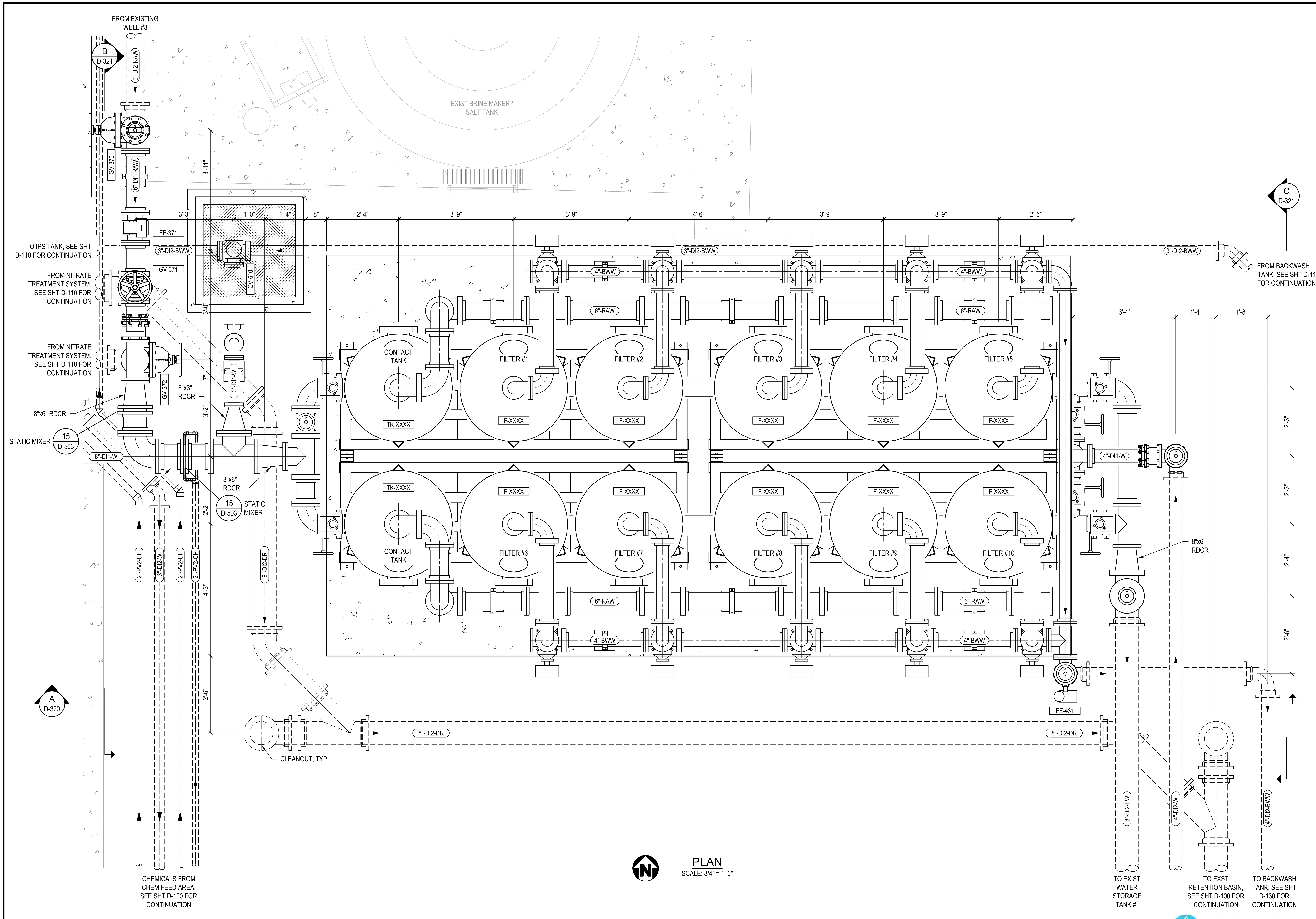
ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: NITRATE TREATMENT SYSTEM ENLARGED PLAN

DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

consor

DWG. No.: D-110
SHEET 33 OF 79



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

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The Installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: | P.E. No.: | SYSTEM: | LEGAL DESC.: | TAX DIST.: | SIB No.:

DATE: 03/03/2026 | SCALE: AS SHOWN | DRAWN BY: JLC | REVIEWED BY: SDC | CHECKED BY: FHT

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATON

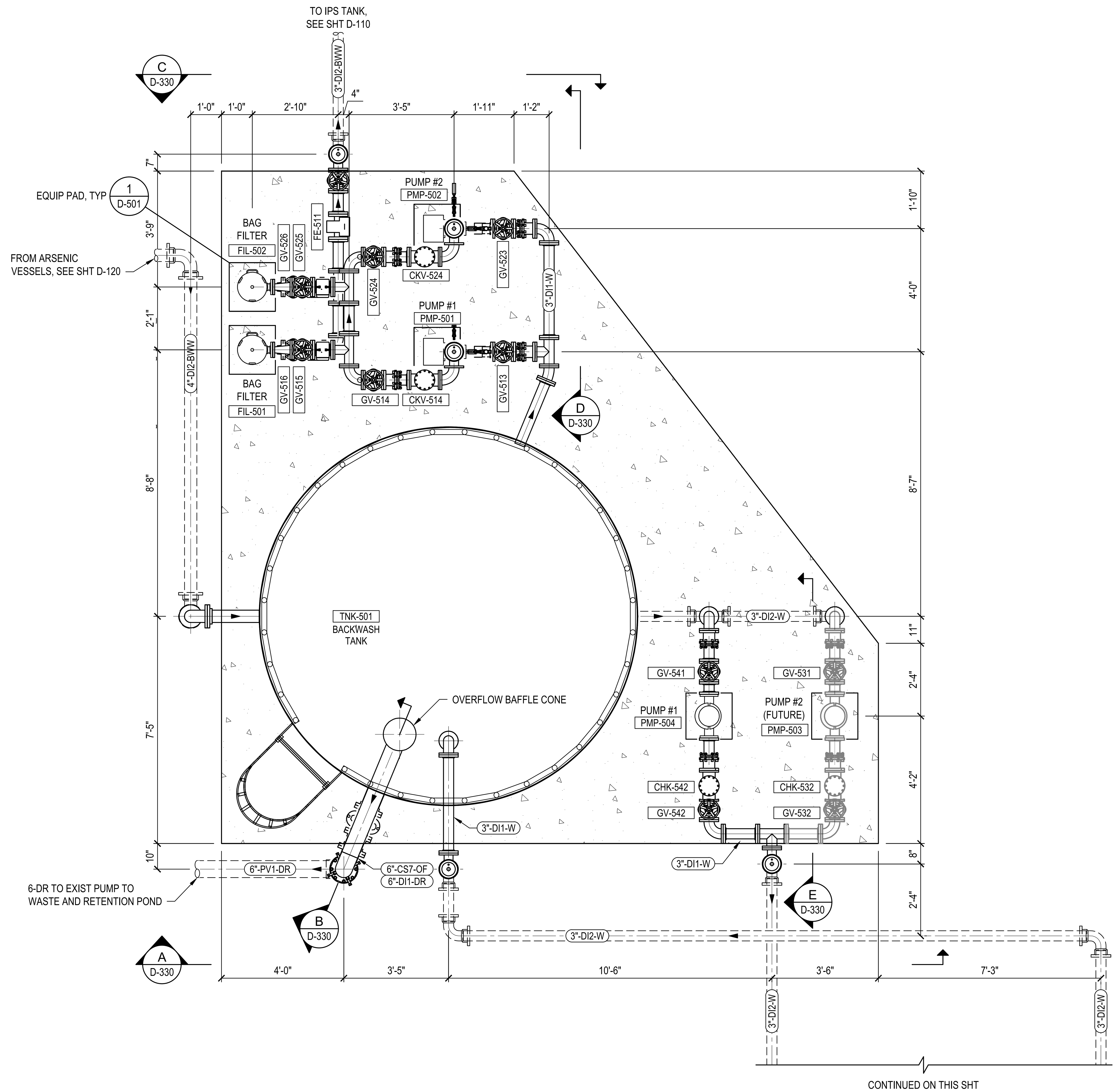
PROJECT SHEET DESC: ARSENIC TREATMENT FILTRATION SYSTEM ENLARGED PLAN

consor

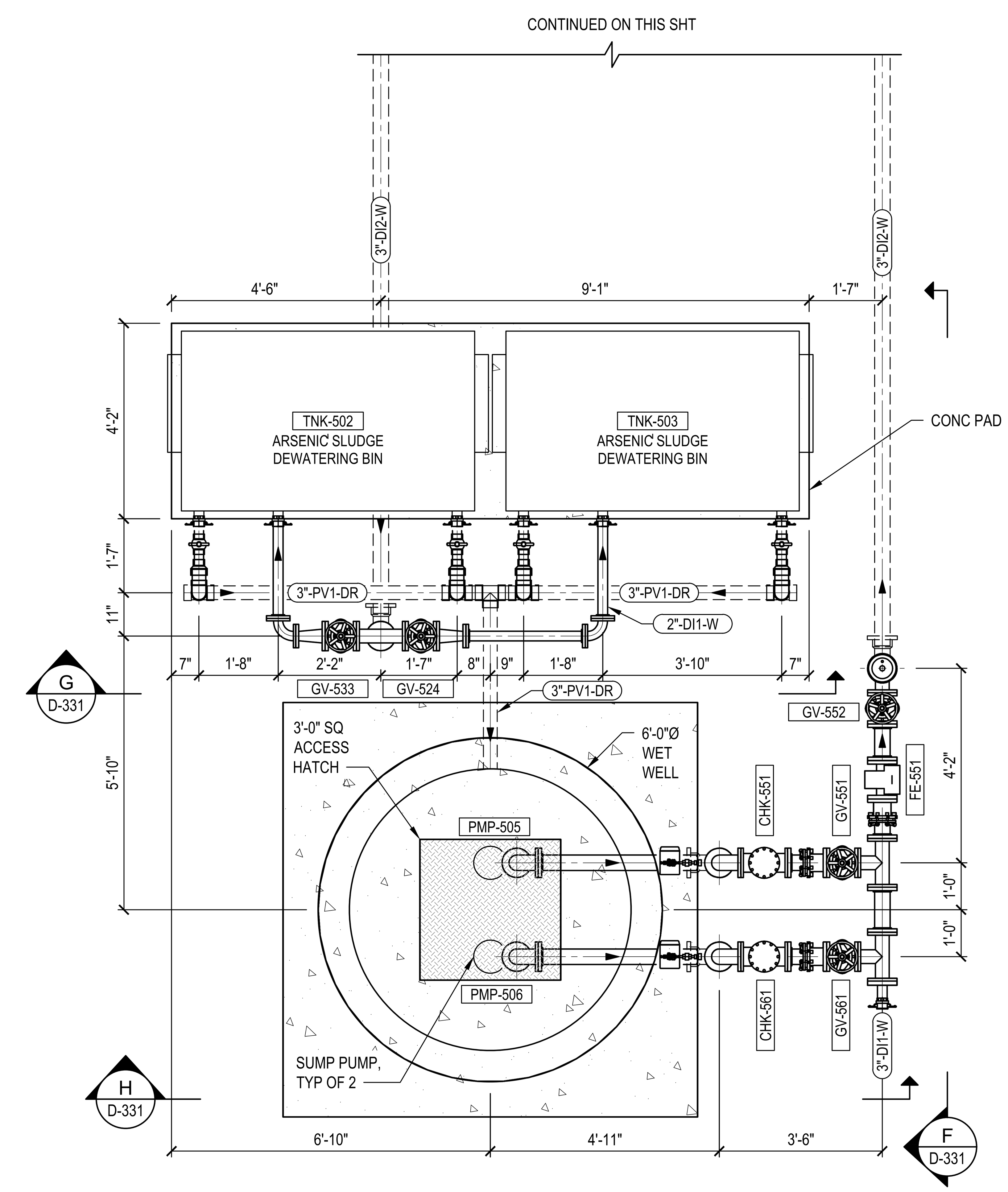
DWG. No.: D-120

SHEET 34 OF 79

Drawing Path and Name: C:\Users\jared.cloud\DC\ACCDocs\Consor\Stanfield GWS&T USBR Grant Coordination\Project Files\1-Design\07-PROC\2-SHEETS\W242167AZ.00_D-120.dwg, Plotted Date: March 9, 2026 8:26 AM By: Jared Cloud



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



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

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

P.E. No.:
W.A. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

ARIZONA WATER COMPANY

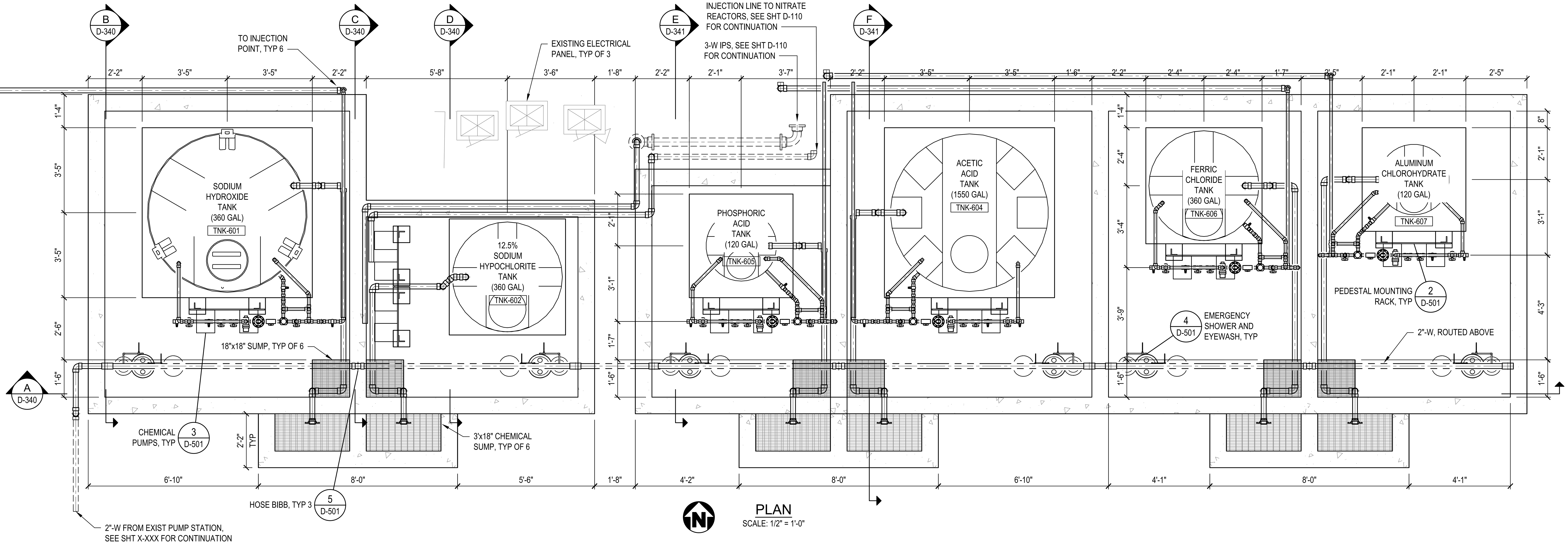
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATON

PROJECT SHEET DESC: BACKWASH TANK ENLARGED PLAN

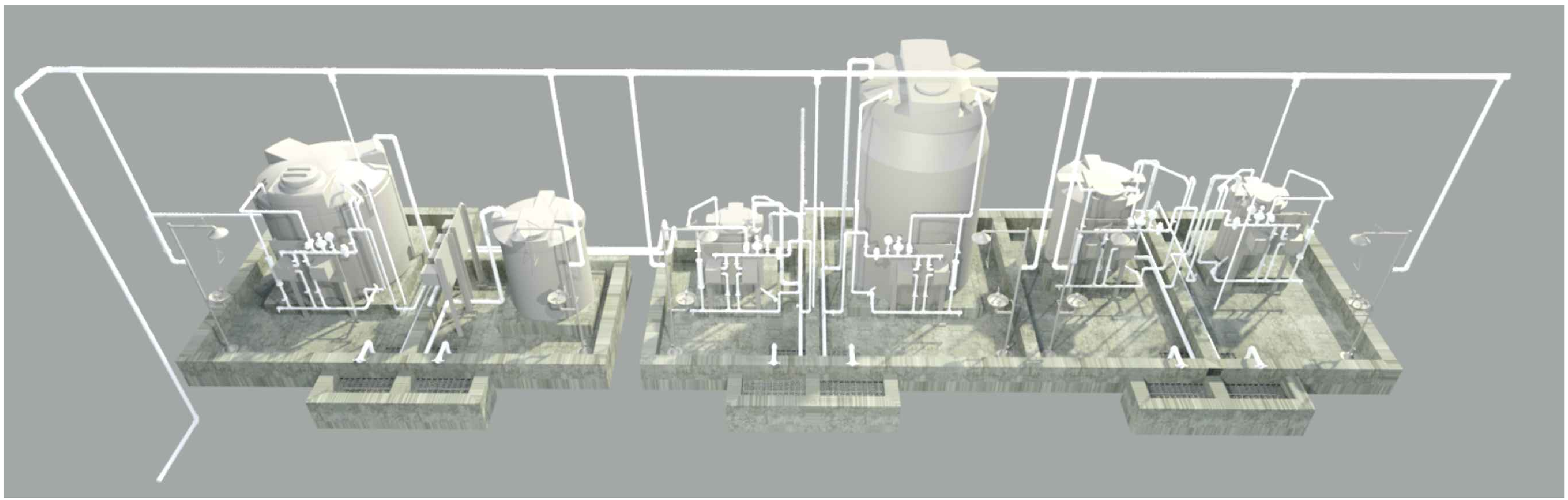
consor

DWG. No.: D-130



PLAN

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



3D PERSPECTIVE

SCALE: NTS

REVISIONS:			
NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Contact Arizona 811 at least two full working days before you begin excavation. ARIZONA811 Call 811 or click Arizona811.com

W.A. No.: P.E. No.:

SYSTEM:

LEGAL DESC.:

TAX DIST.: SIB No.:

DATE: 03/03/2026 SCALE: AS SHOWN

DRAWN BY: JLC REVIEWED BY: SDC CHECKED BY: FHT

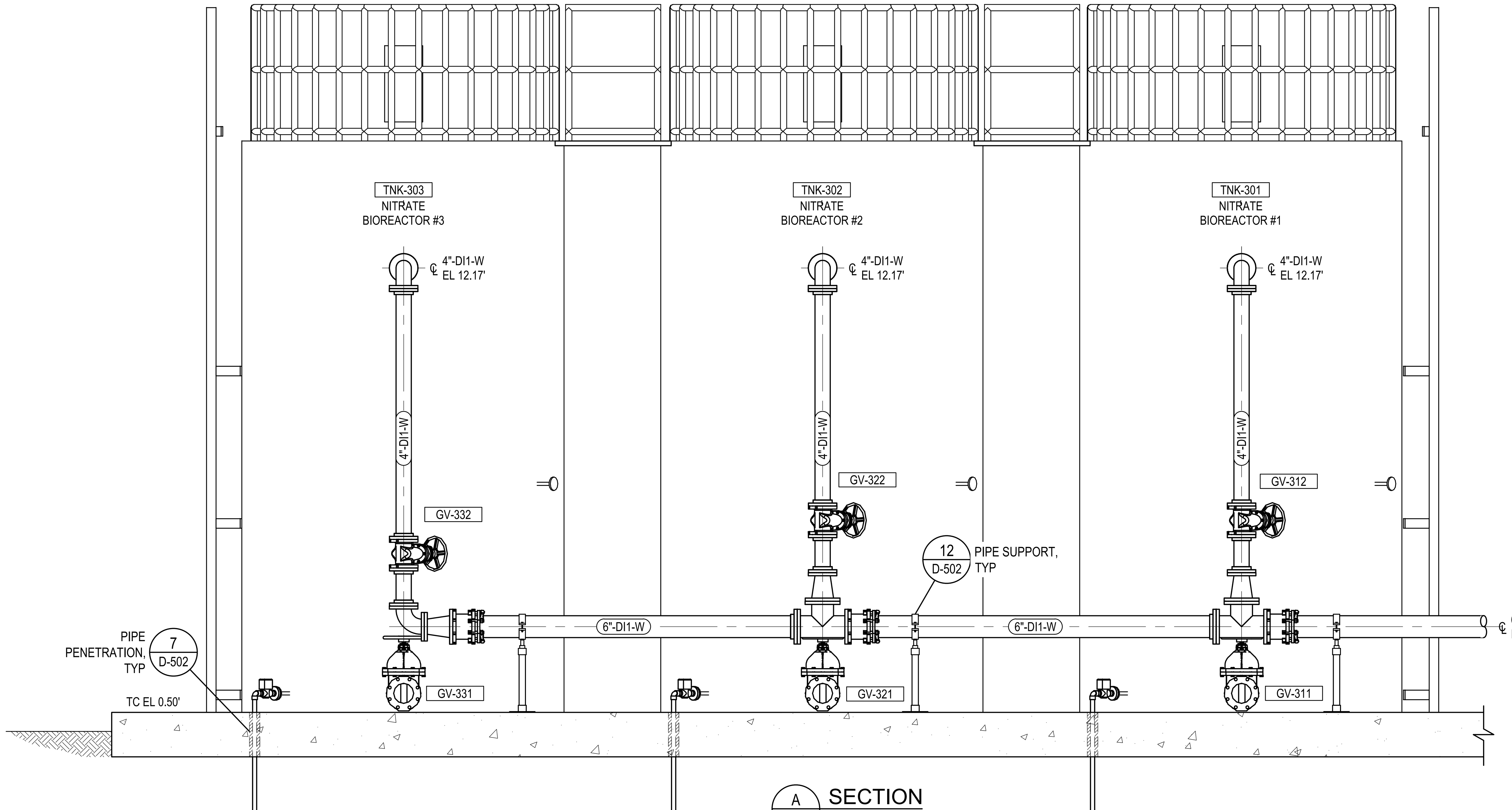
ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

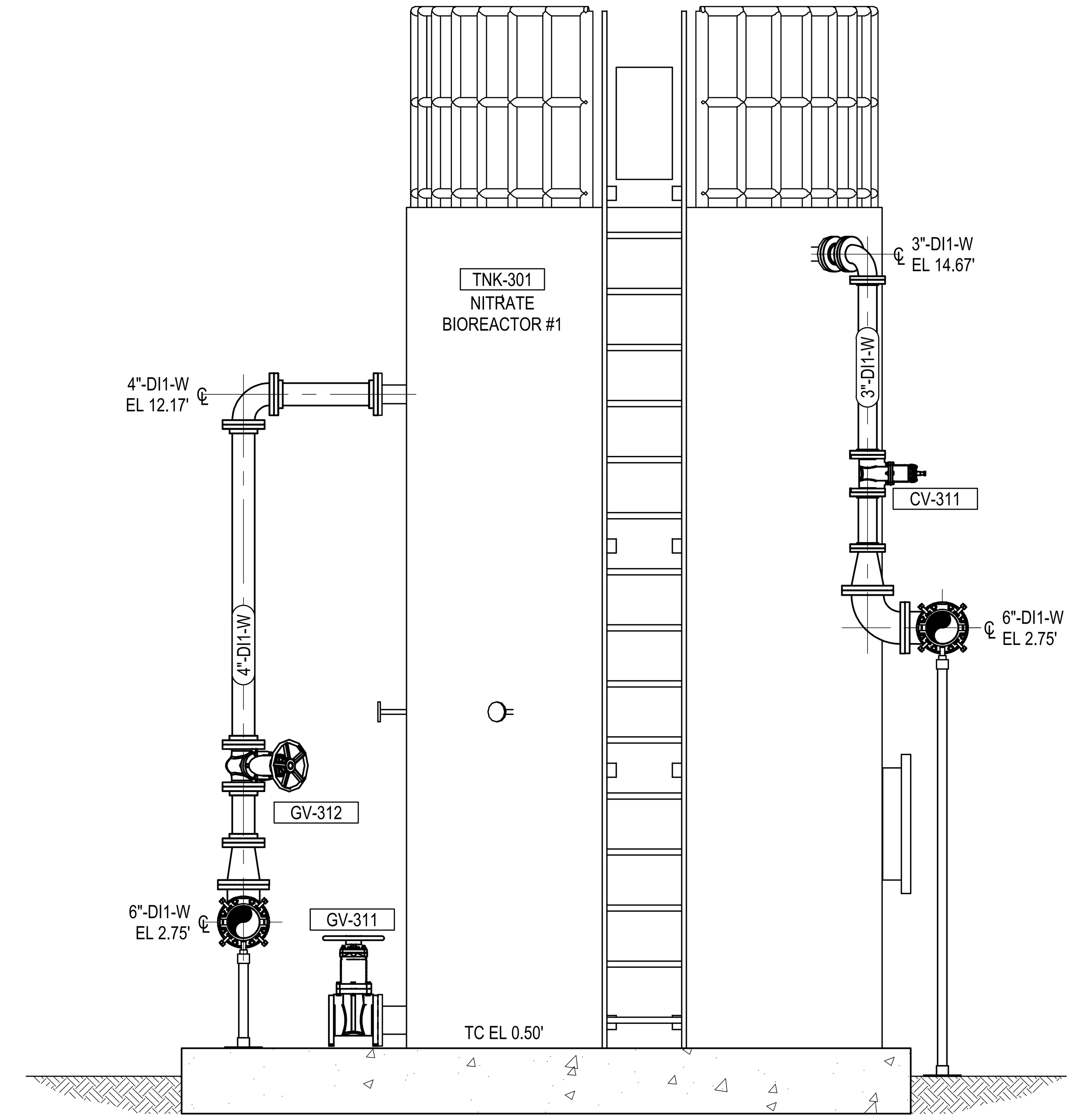
PROJECT SHEET DESC: TREATMENT CHEMICAL SYSTEM ENLARGED PLAN

consor

DWG. No.: D-140



A
D-110
SECTION
SCALE: 1/2" = 1'-0"



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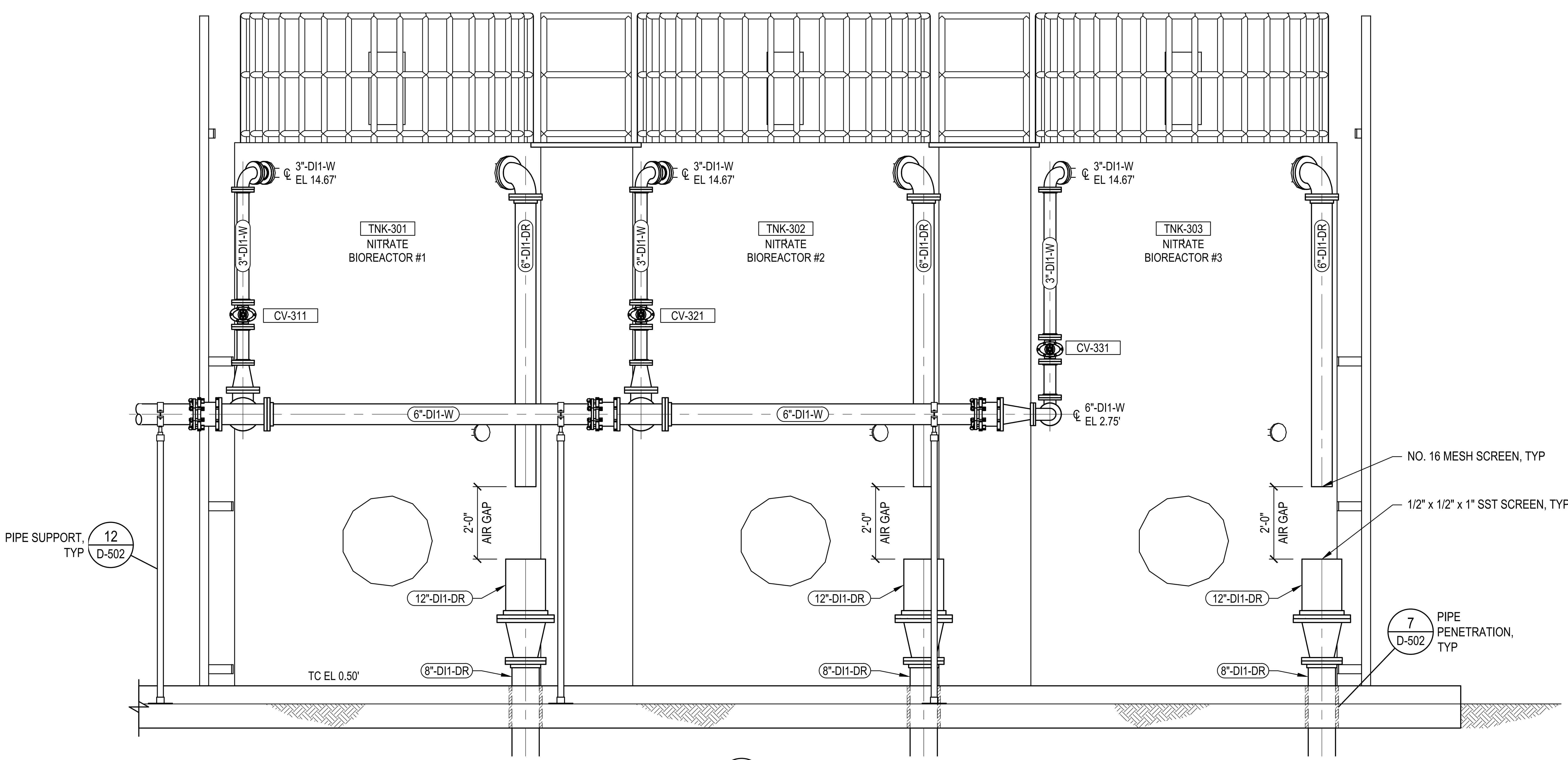
D-110
SECTION
SCALE: 1/2" = 1'-0"



C
D-110
SECTION
SCALE: 1/2" = 1'-0"

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.:
P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

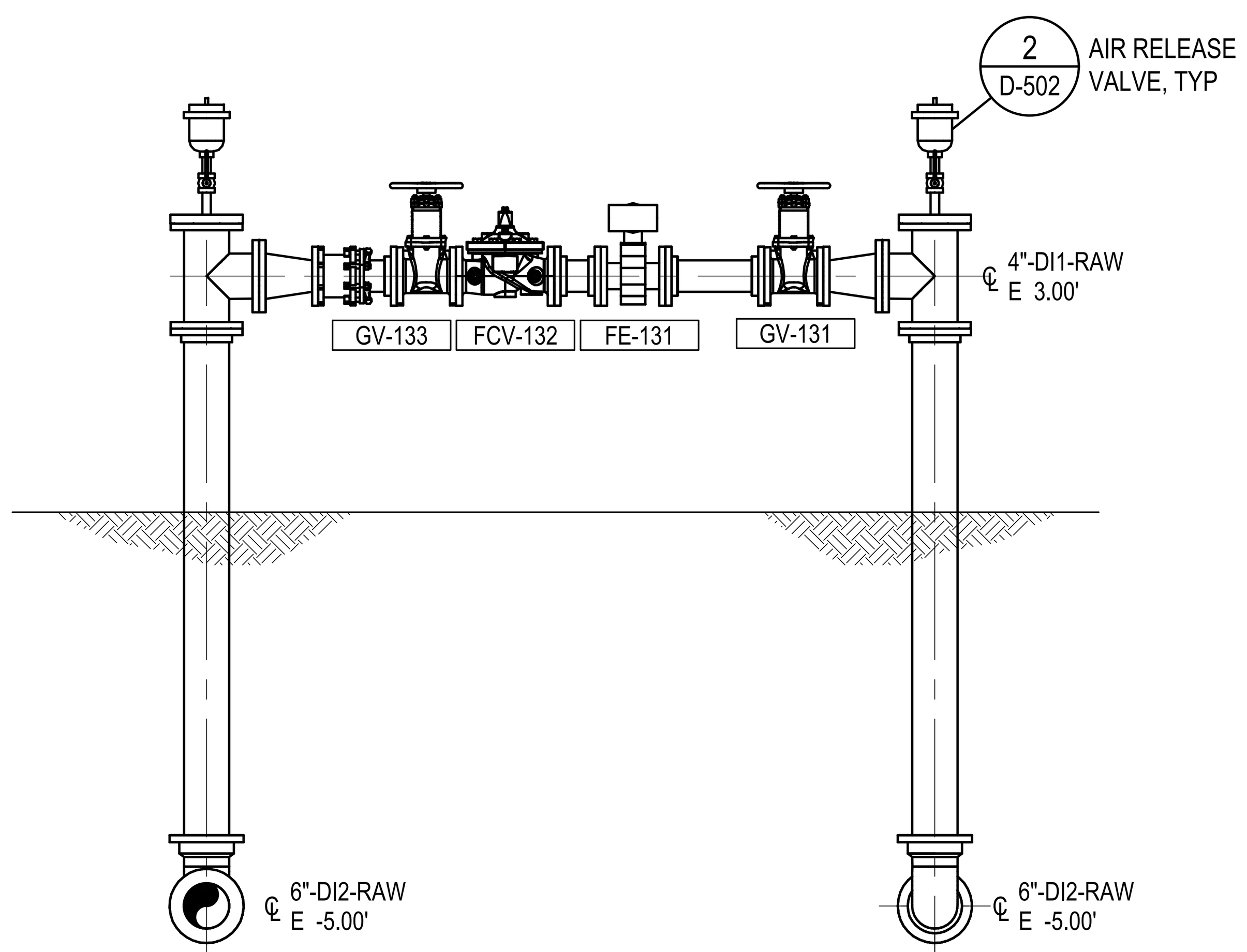
ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: NITRATE TREATMENT SYSTEM SECTIONS

consor

DWG. No.: D-310



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D-110
SECTION
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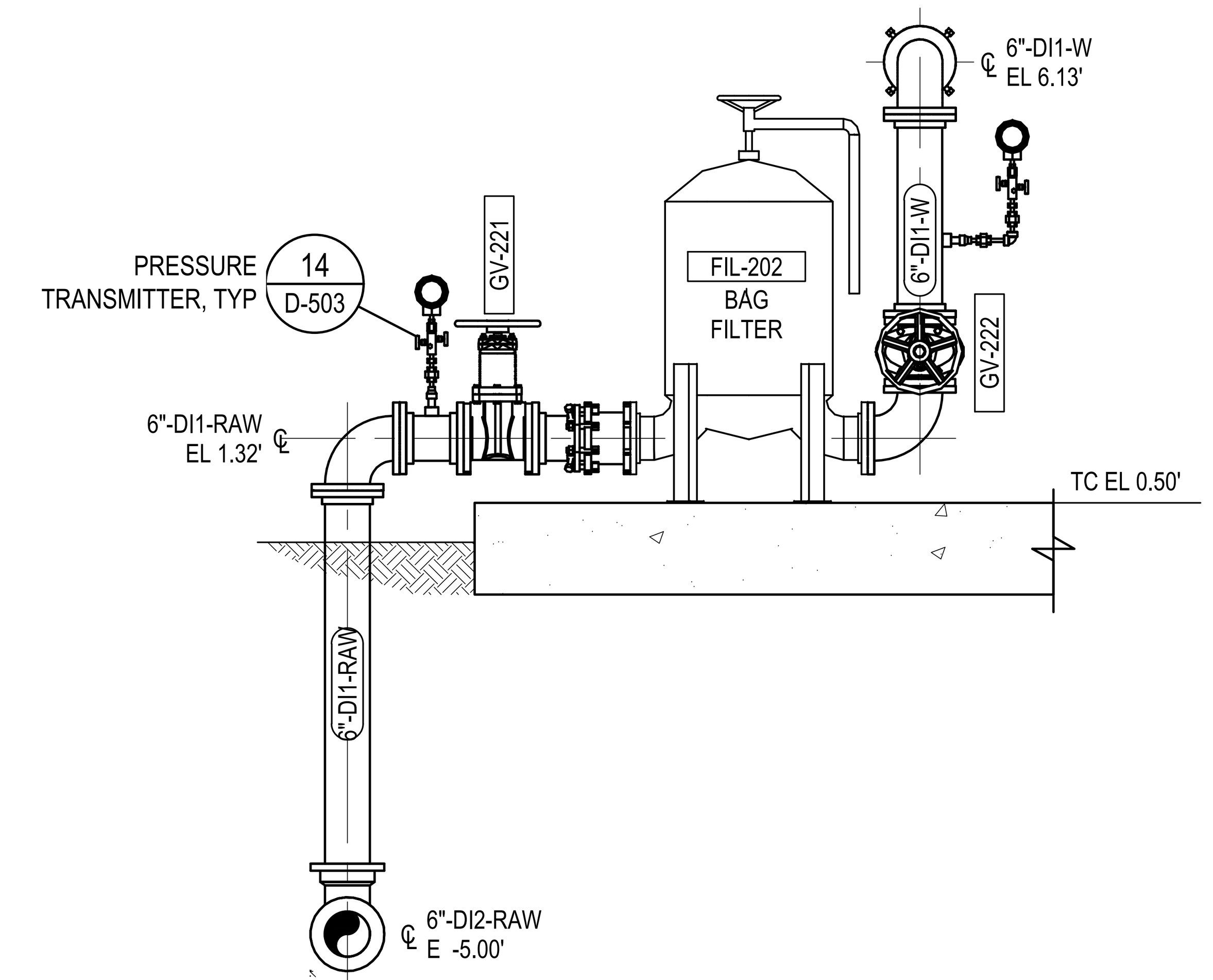
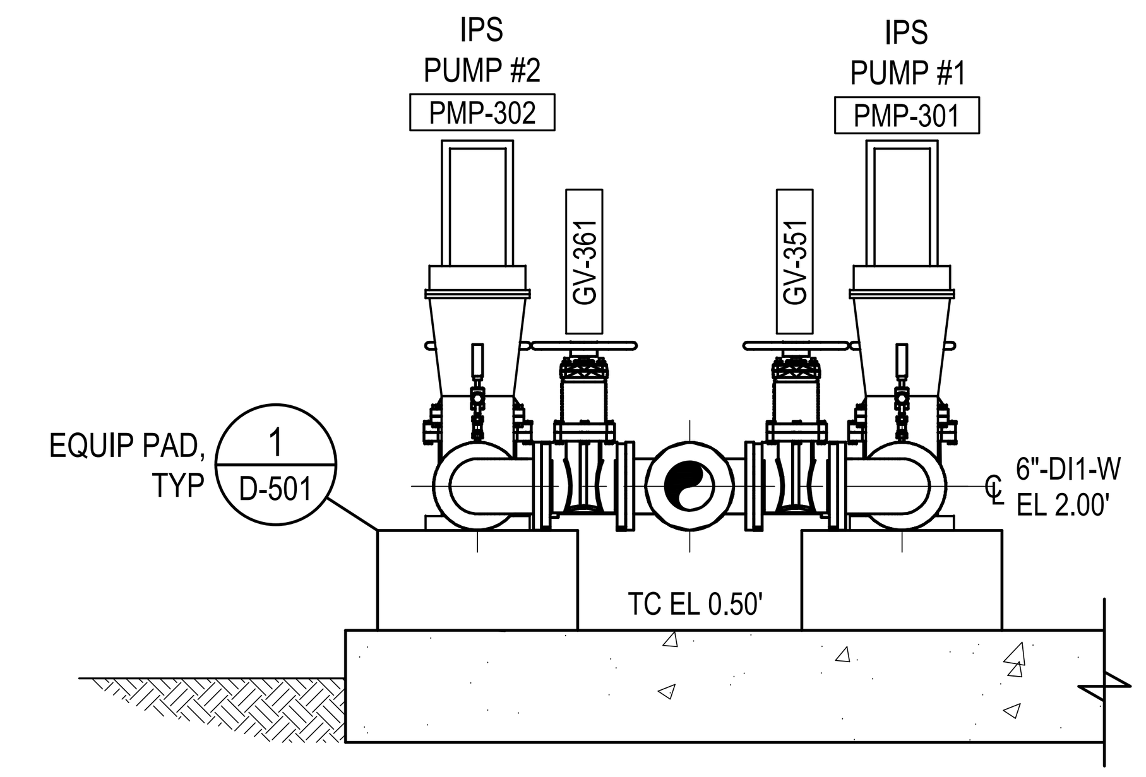
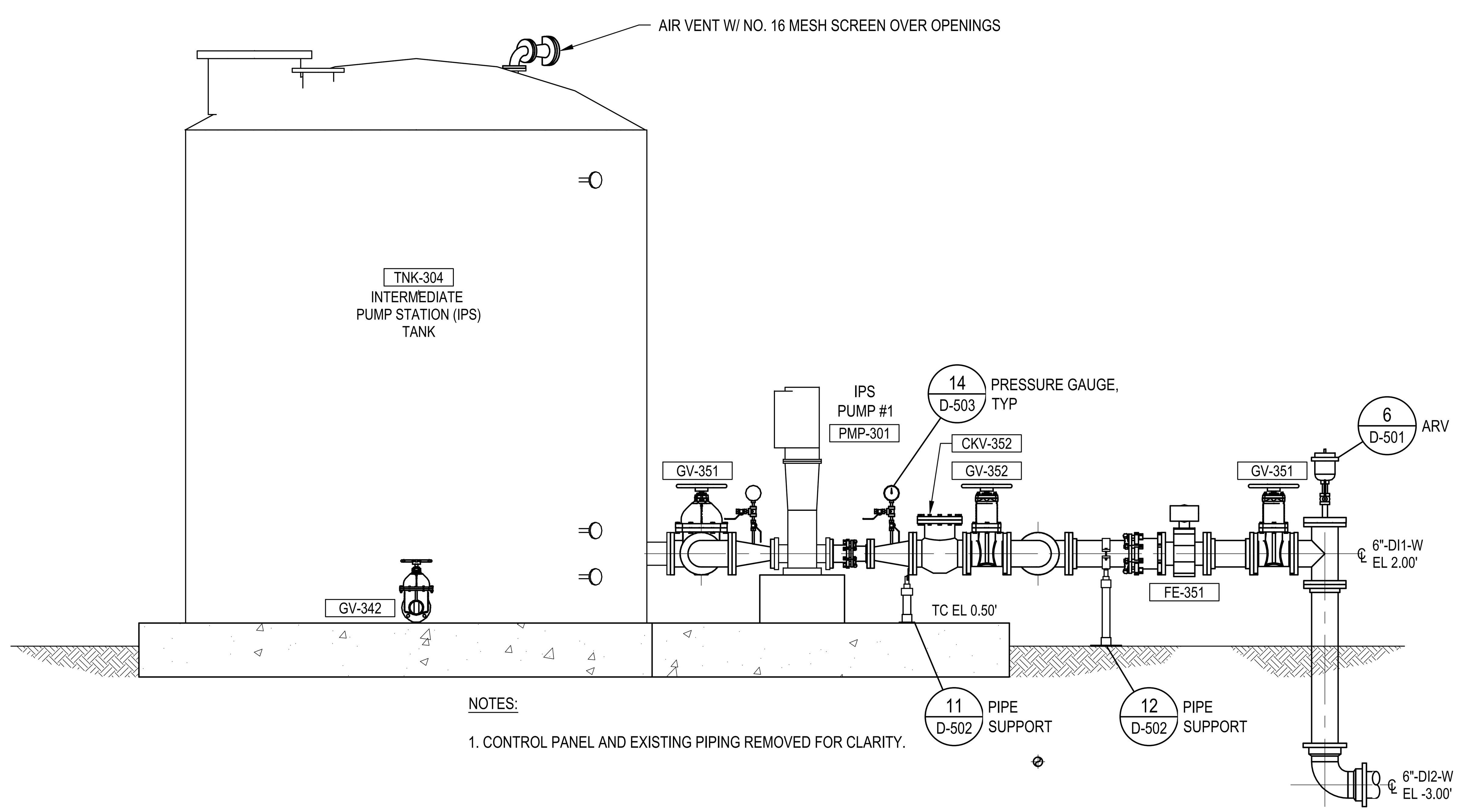


E
D-110
SECTION
SCALE: 1/2" = 1'-0"



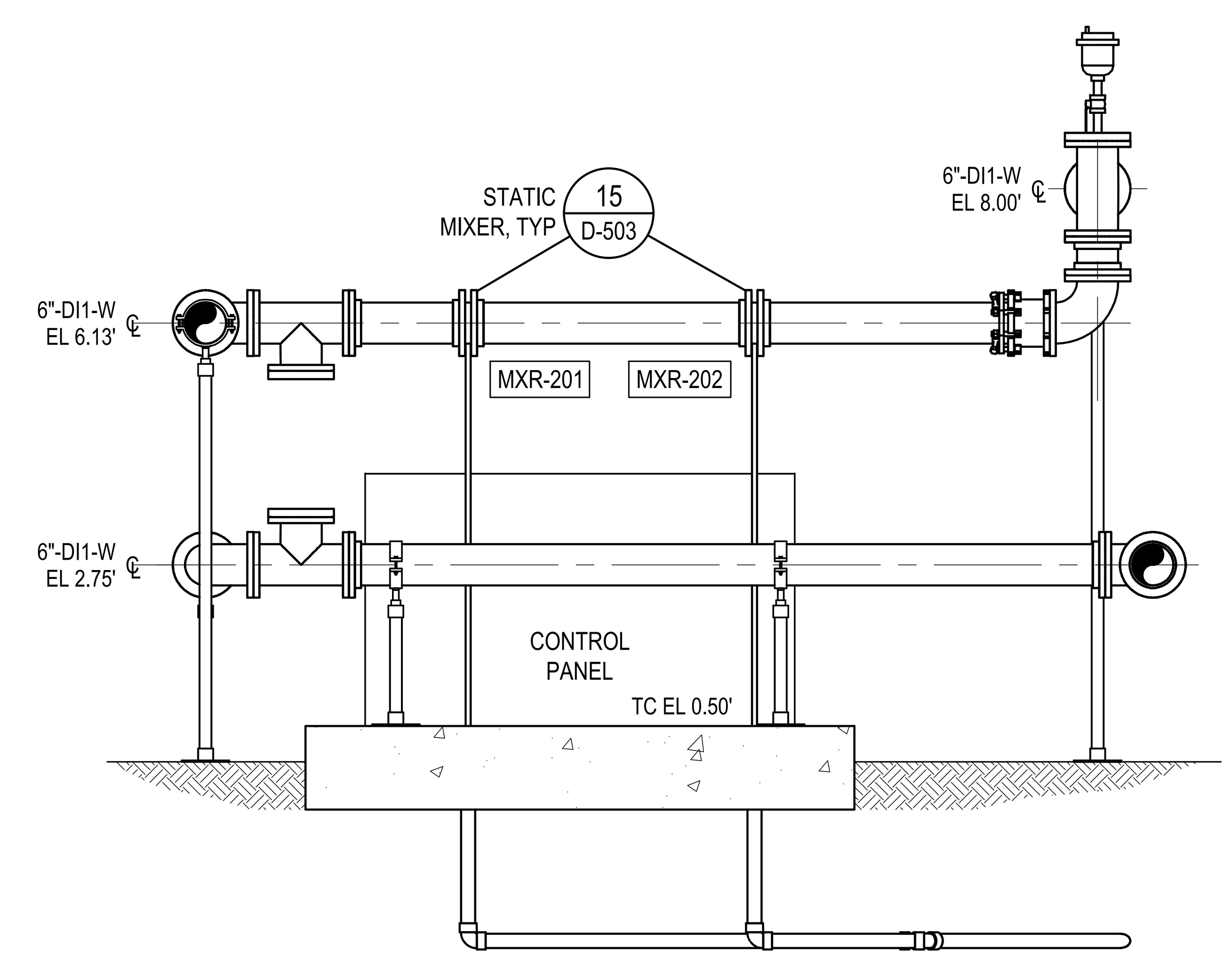
F
D-110
SECTION
SCALE: 1/2" = 1'-0"



NOTES:

1. CONTROL PANEL AND EXISTING PIPING REMOVED FOR CLARITY.

G
D-110
SECTION
SCALE: 1/2" = 1'-0"



H
D-110
SECTION
SCALE: 1/2" = 1'-0"

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

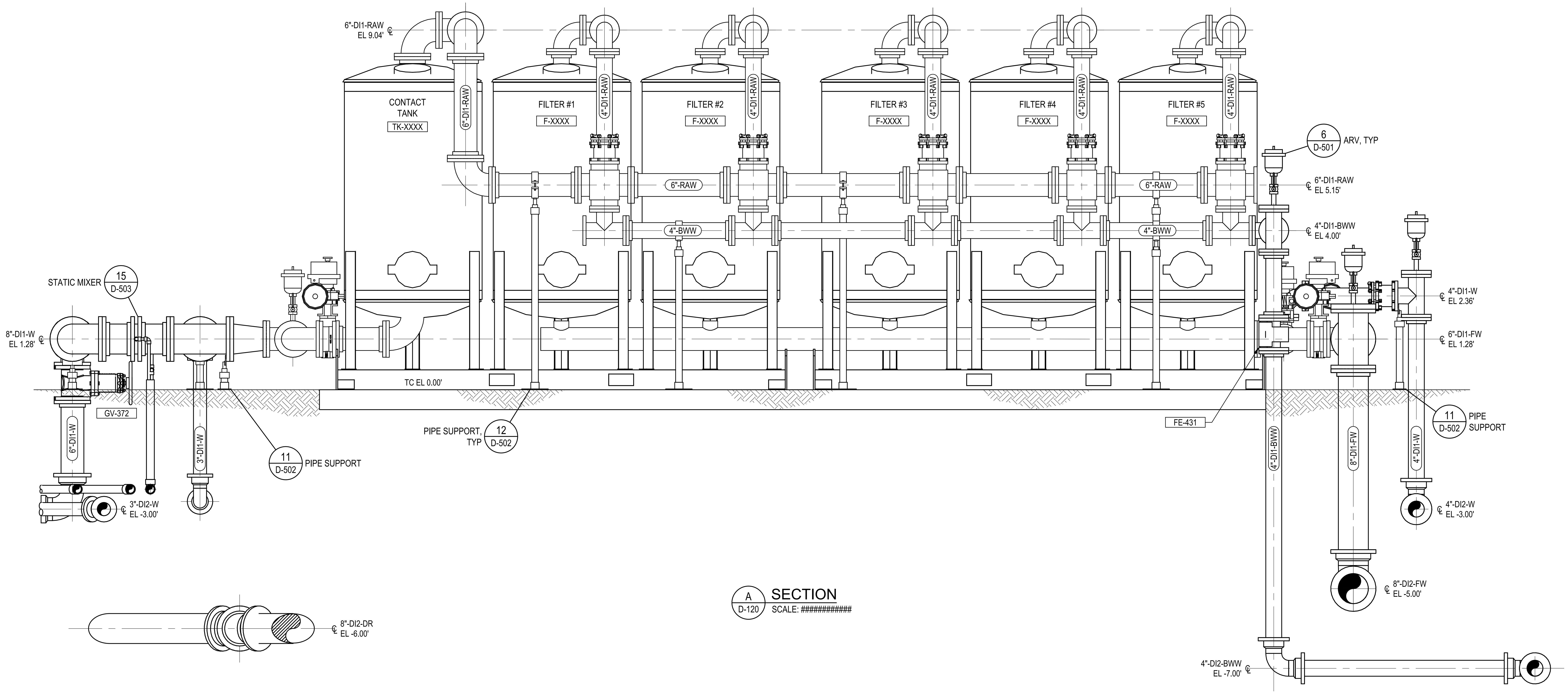
W.A. No.:
P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: NITRATE TREATMENT SYSTEM SECTIONS

consor

DWG. No.: D-311
SHEET 38 OF 79

Drawing Path and Name: C:\Users\jared.cloud\DC\ACCDocs\Consor\Stanfield GWS&T USBR Grant Coordination\Project Files\1-Design\07-PROC\2-SHEETS\W242167AZ.00_D-310-311.dwg, Plotted Date: March 9, 2026 9:59 AM By: Jared Cloud



A
D-120
SECTION
SCALE: ############

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

REVISIONS:

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Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

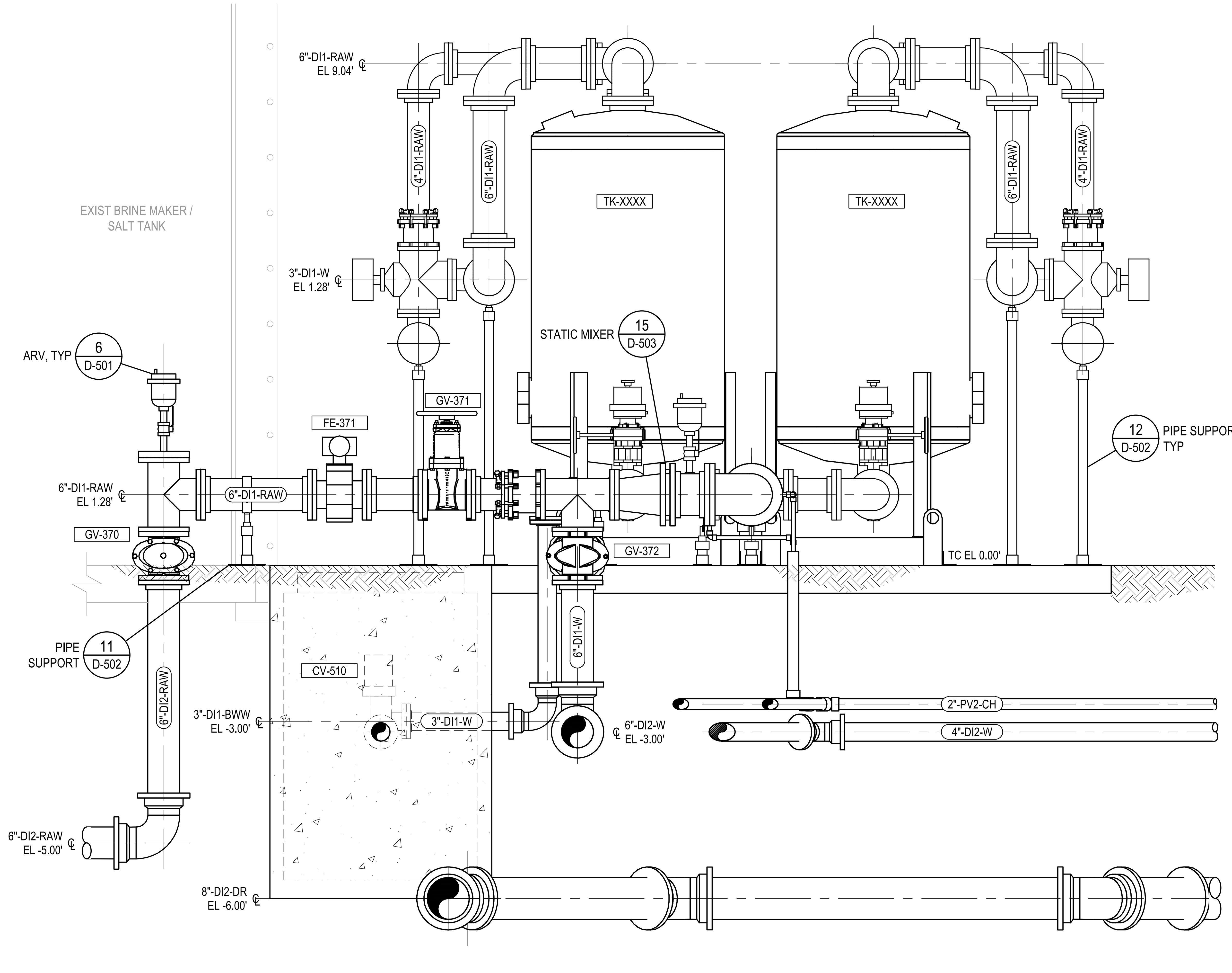
W.A. No.:
P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

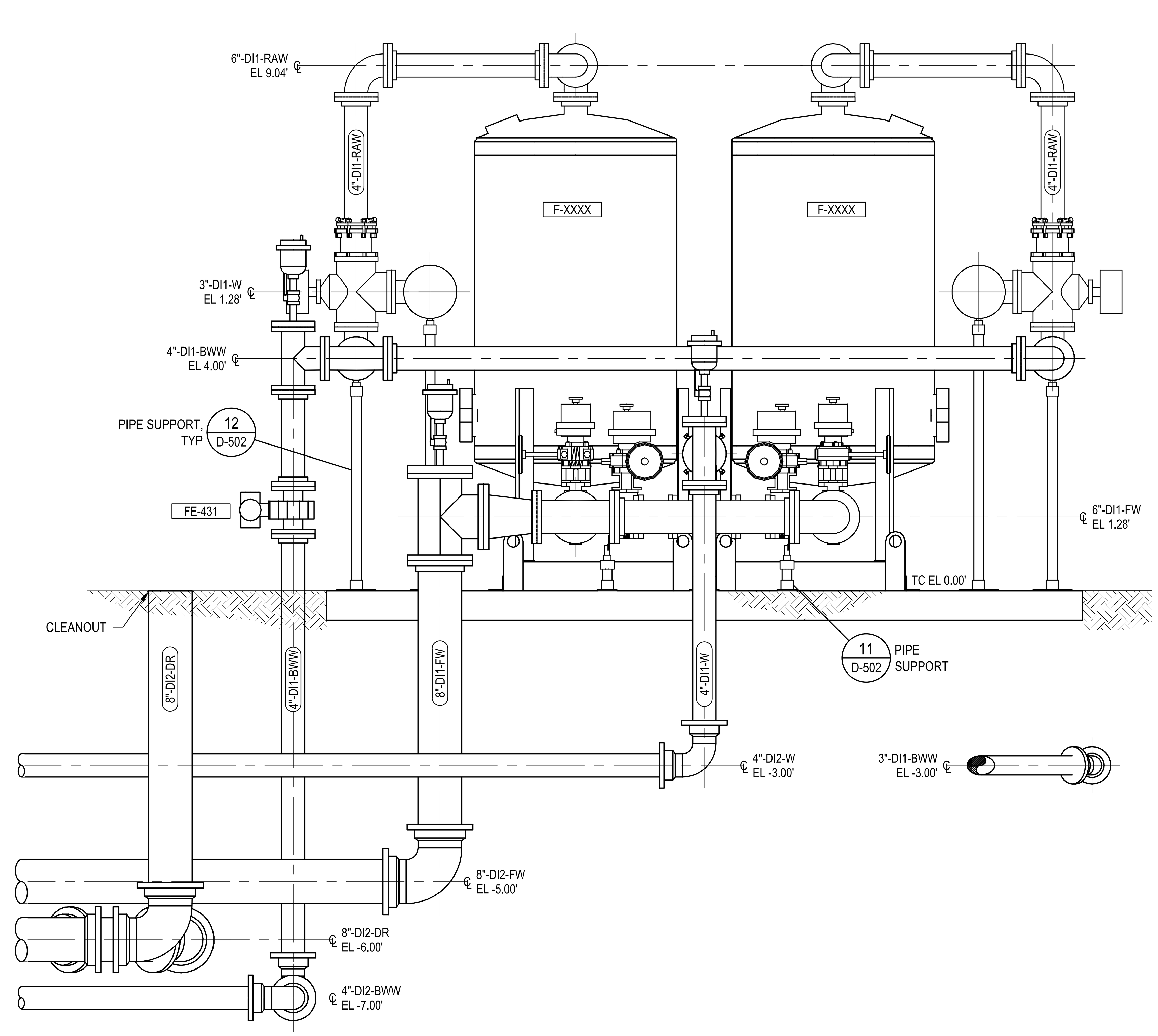
PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATON
PROJECT SHEET DESC: ARSENIC TREATMENT FILTRATION SYSTEM SECTIONS

consor

DWG. No.: D-320
SHEET 39 OF 79



B
D-120
SECTION
SCALE: 3/4" = 1'-0"



C
D-120
SECTION
SCALE: 3/4" = 1'-0"

REVISIONS:			
NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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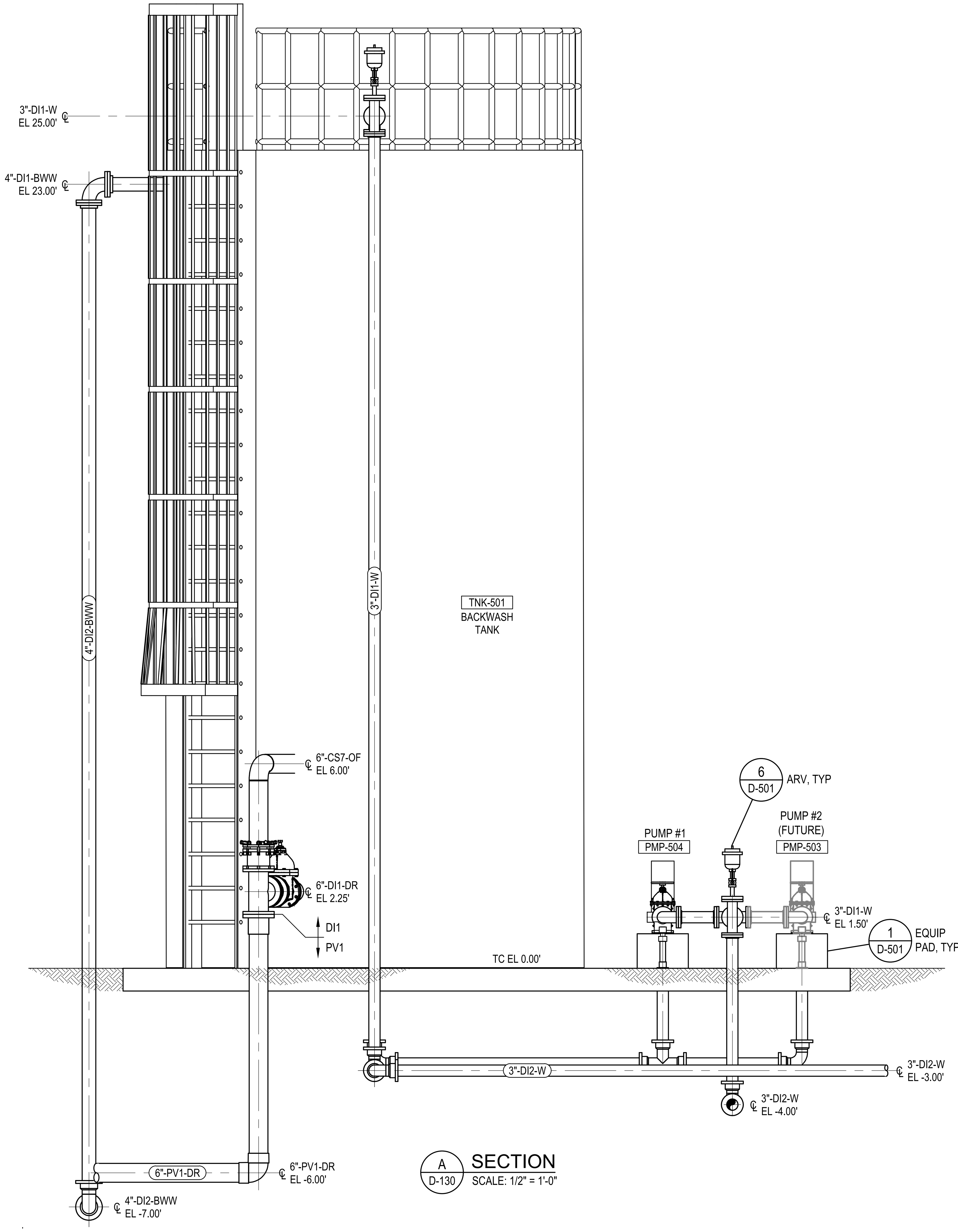
ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

W.A. No.:
P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATON
PROJECT SHEET DESC: W242167AZ.00 SUBTASK 255 STANFIELD GROUNDWATER SUPPLY AND TREATMENT

consor

DWG. No.: D-321
SHEET 40 OF 79



A
D-130
SECTION
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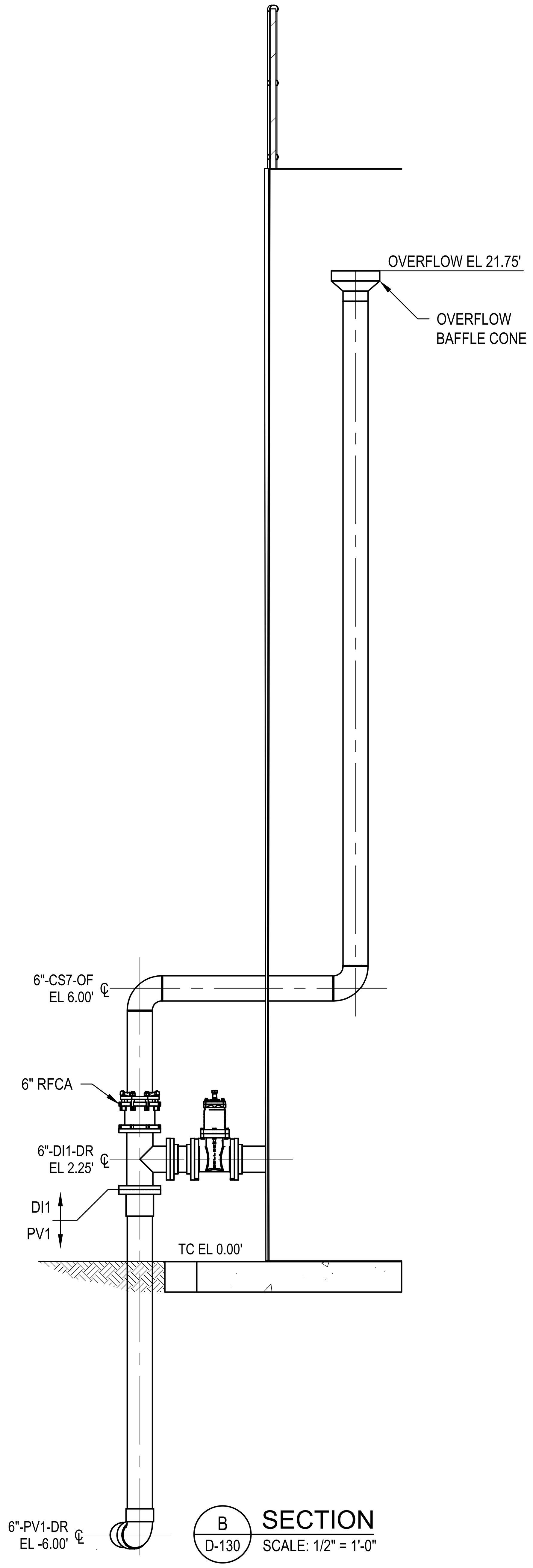

B
D-130
SECTION
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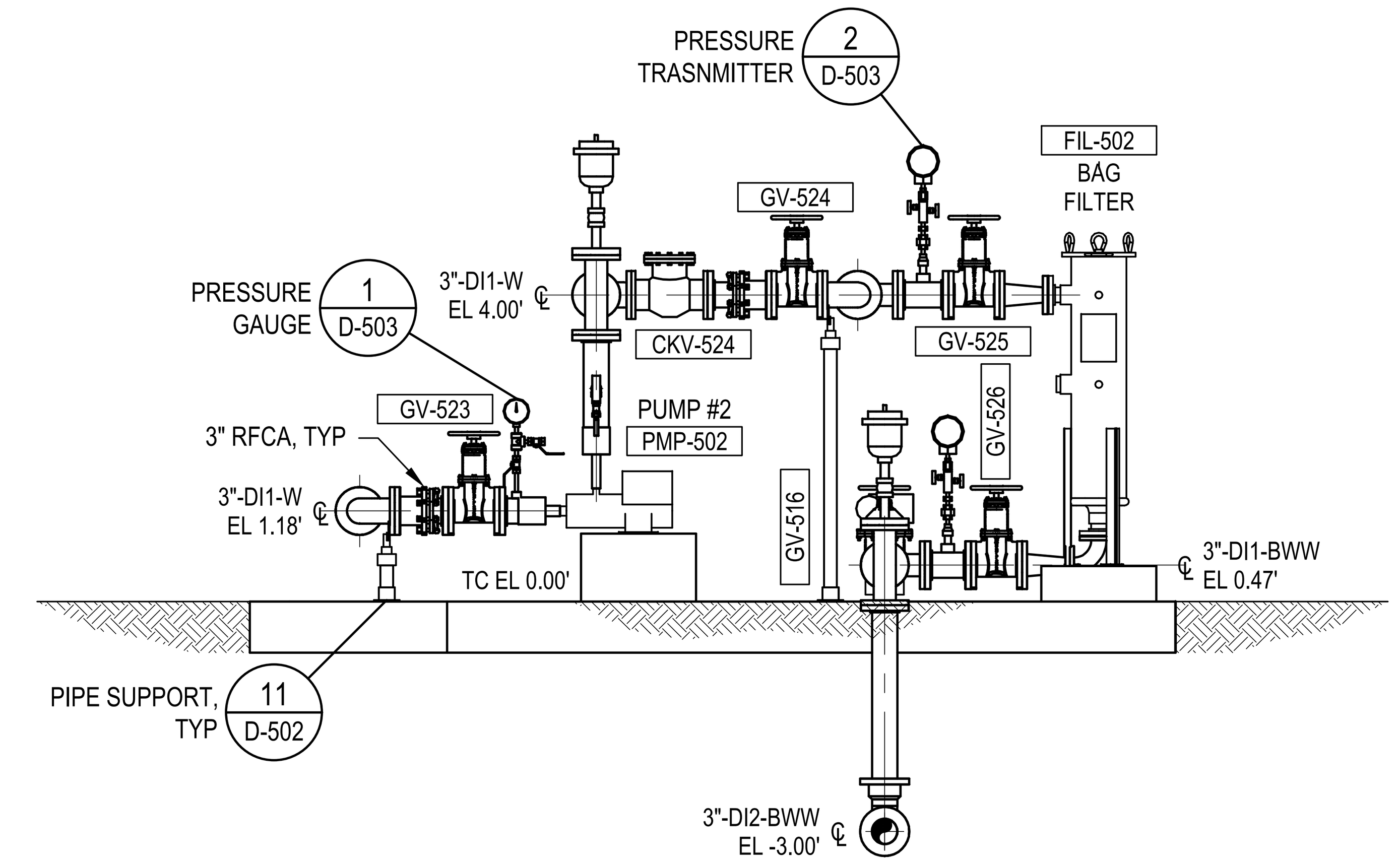

C
D-130
SECTION
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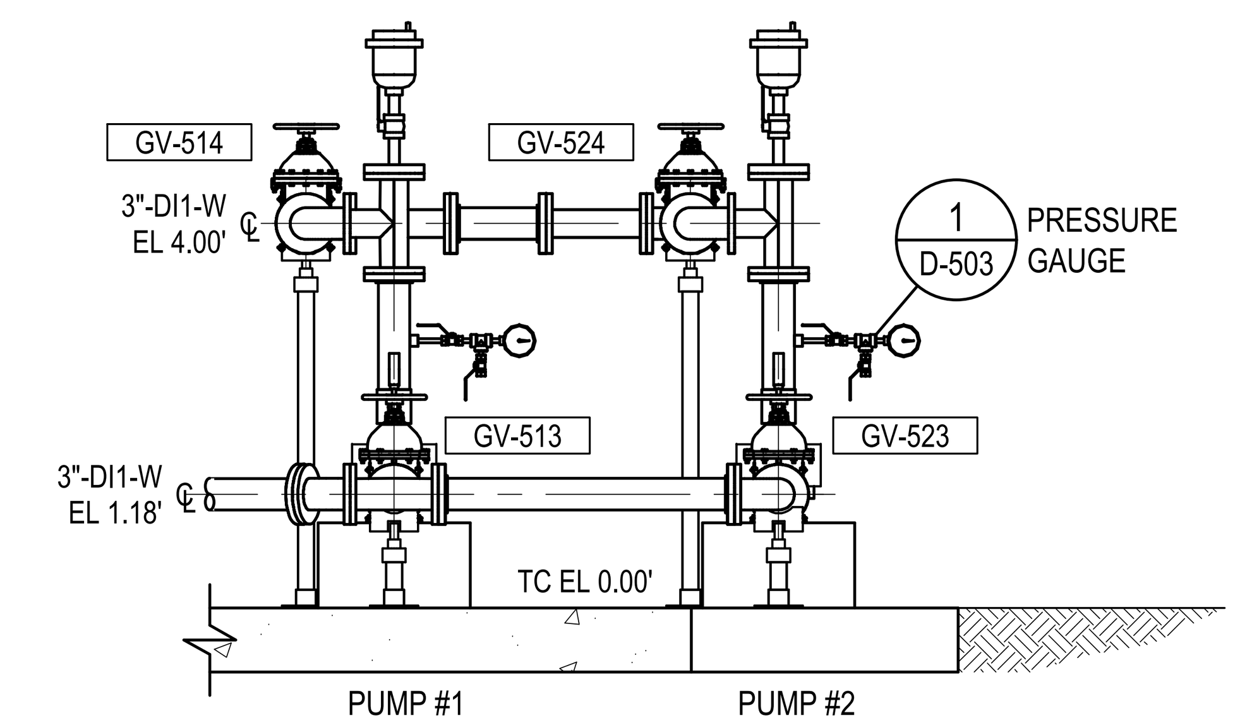

D
D-130
SECTION
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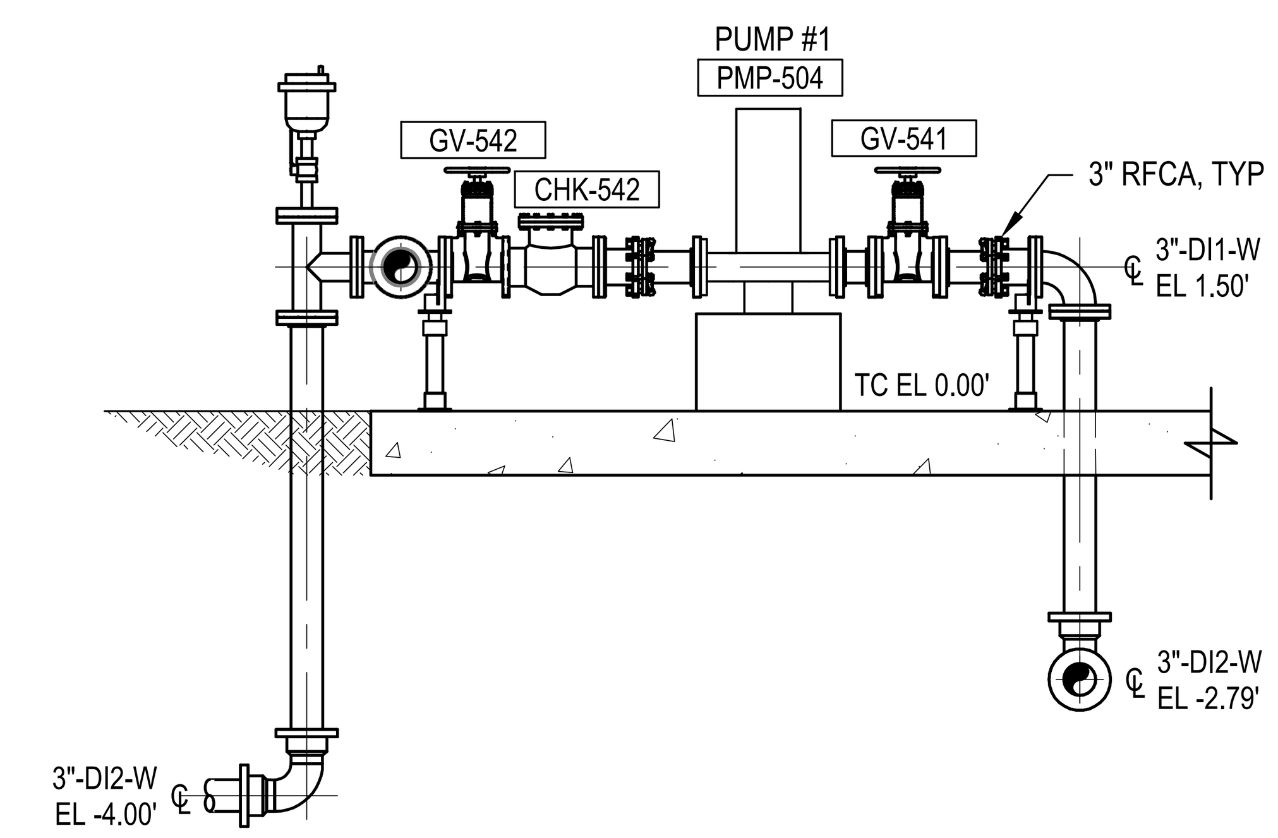

E
D-130
SECTION
SCALE: 1/2" = 1'-0"

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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P.E. No.:
W.A. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
SCALE: AS SHOWN
DATE: 03/03/2026
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

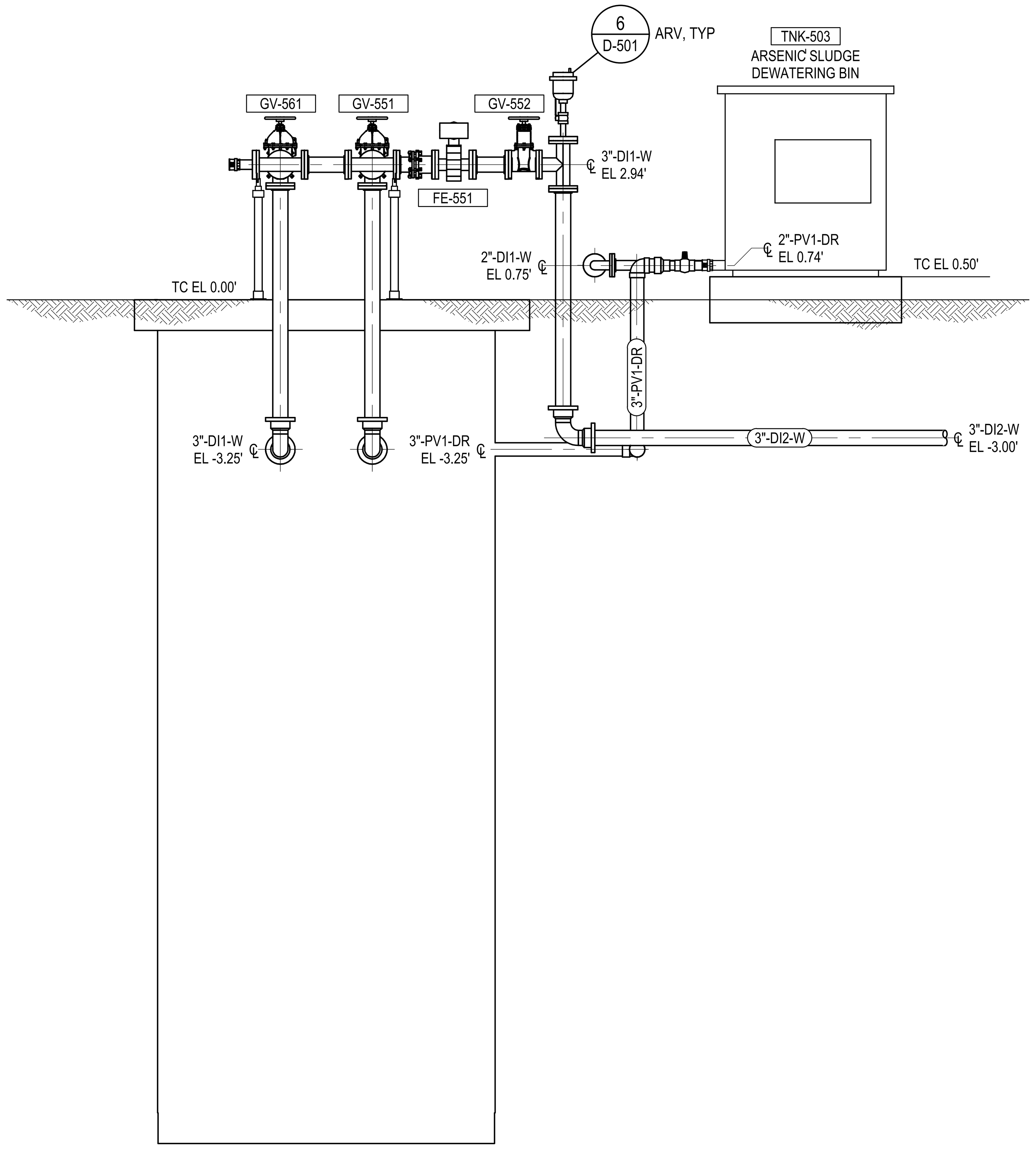
ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATON
PROJECT SHEET DESC.: BACKWASH TANK SECTIONS

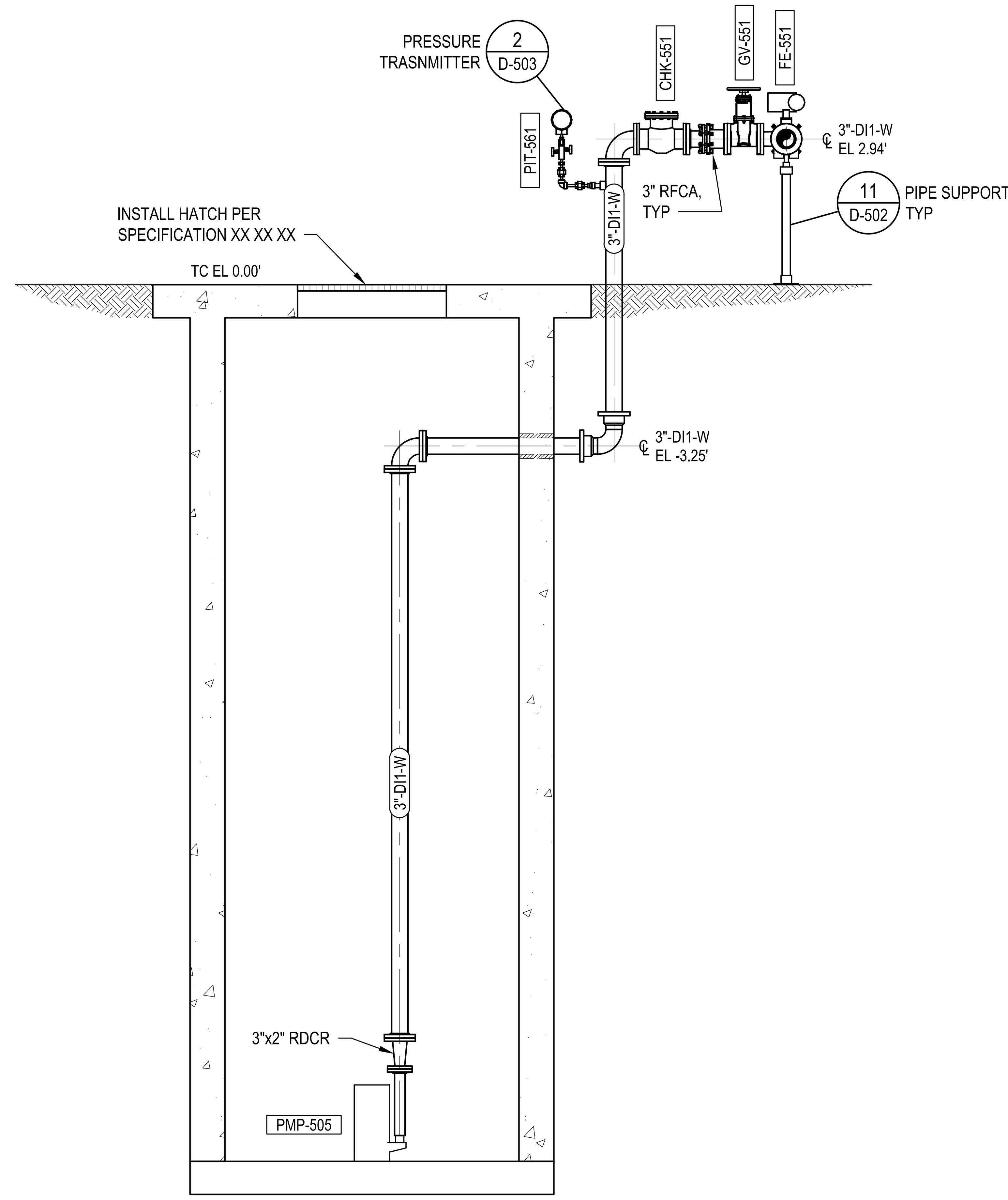
consor

DWG. No.: D-330
SHEET 41 OF 79

Drawing Path and Name: C:\Users\jared.cloud\DC\ACCDocs\Consor\Stanfield GWS&T USBR Grant Coordination\Project Files\1-Design\07-PROC\2-SHEETS\W242167AZ.00_D-330-331.dwg, Plotted Date: March 5, 2026 1:08 PM By: Jared Cloud



F
D-130
SECTION
SCALE: 1/2" = 1'-0"



G
D-130
SECTION
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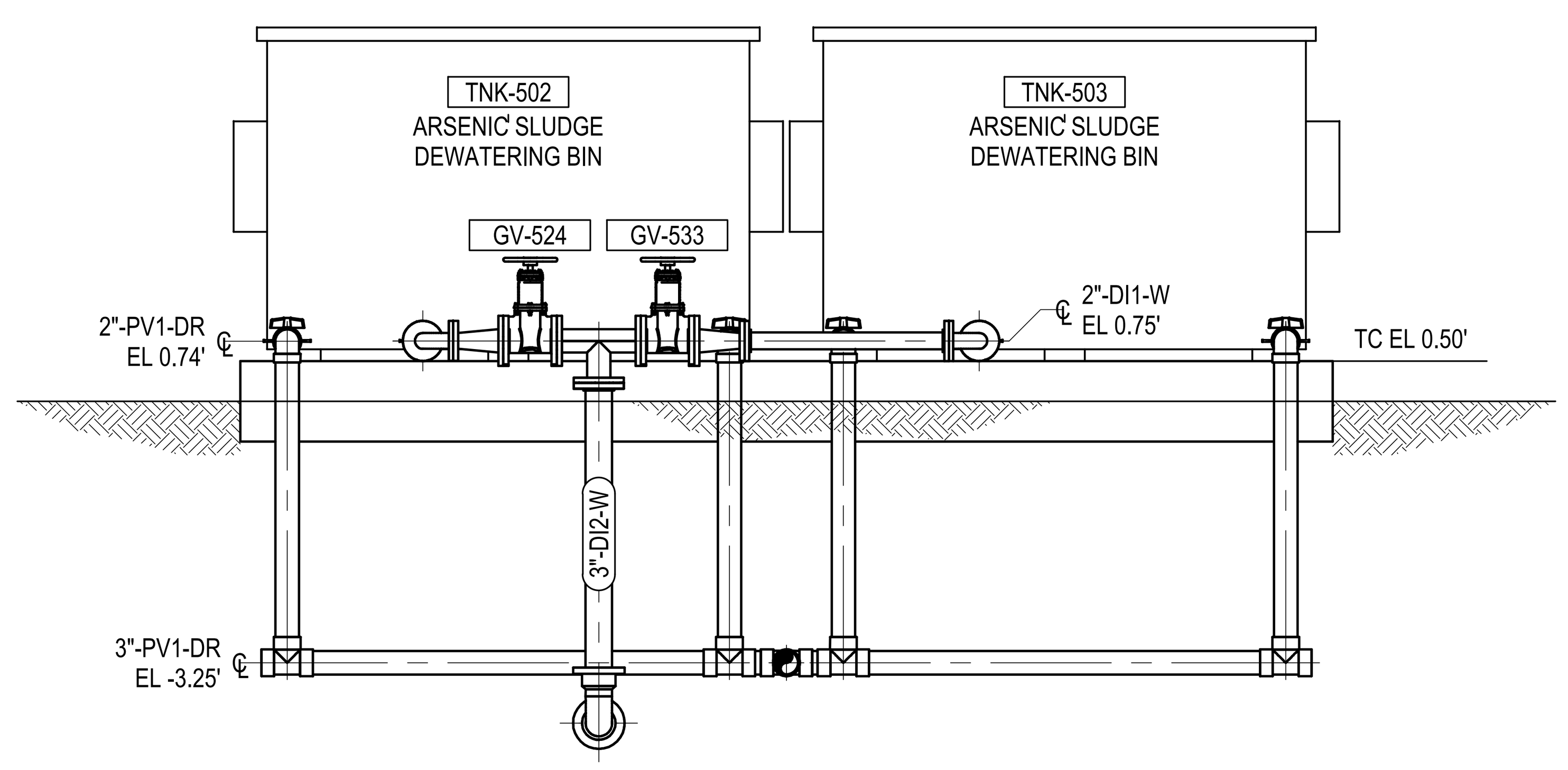

H
D-130
SECTION
SCALE: 1/2" = 1'-0"

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
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Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

W.A. No.:
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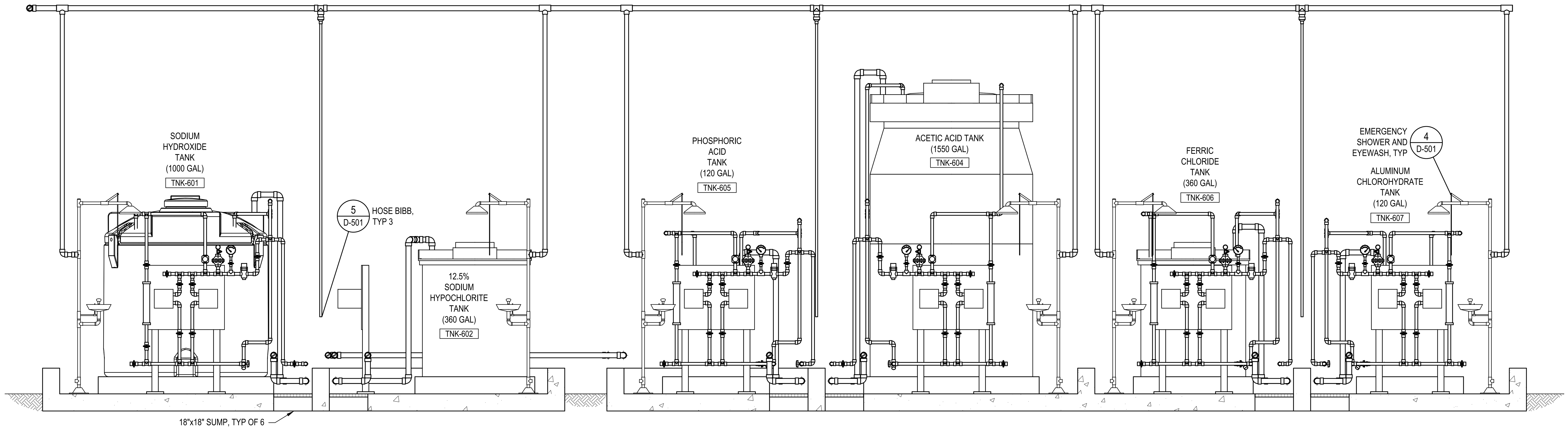
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: SLUDGE DEWATERING SECTIONS

consor

DWG. No.: D-331



A D-140 SECTION
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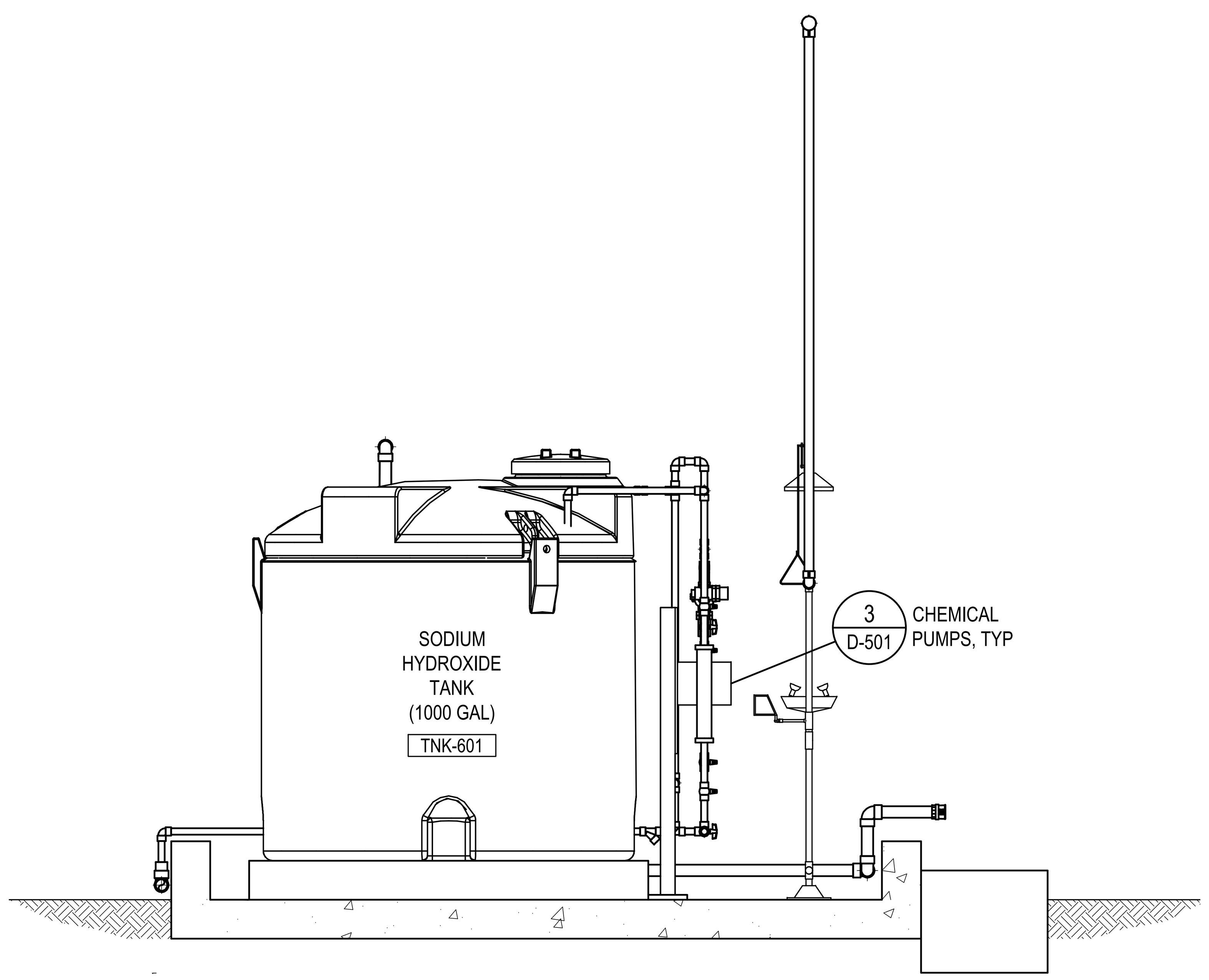

B D-140 SECTION
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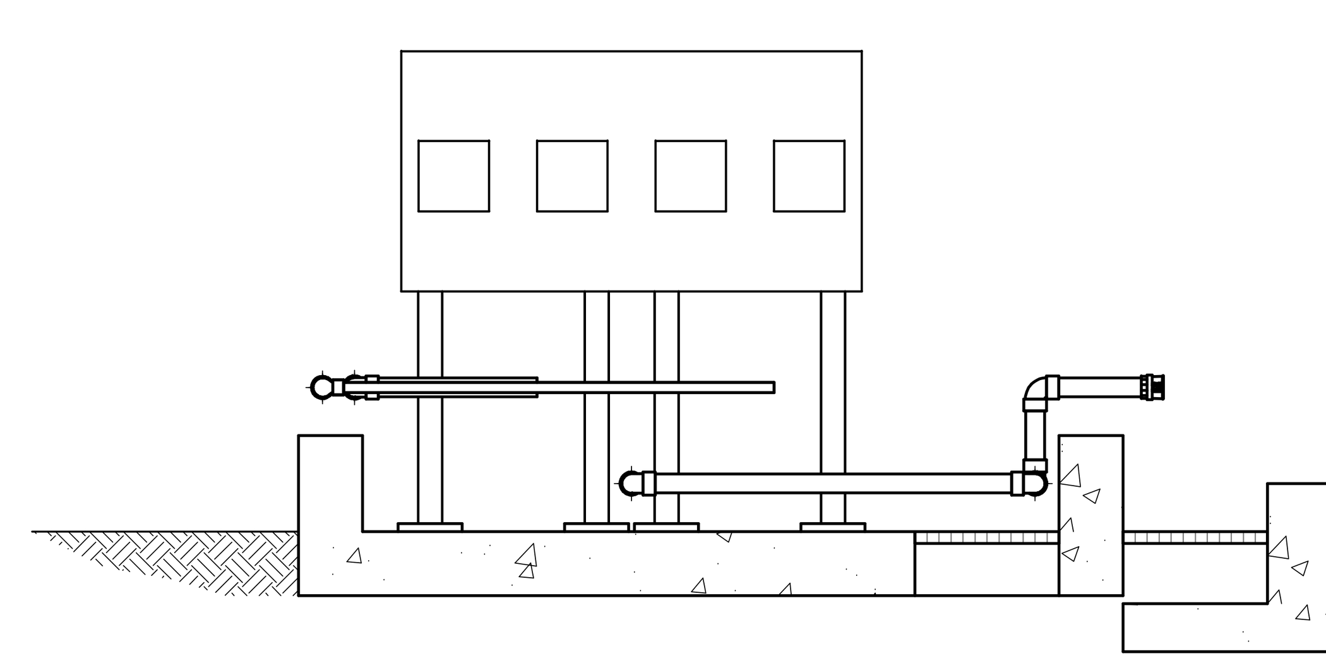
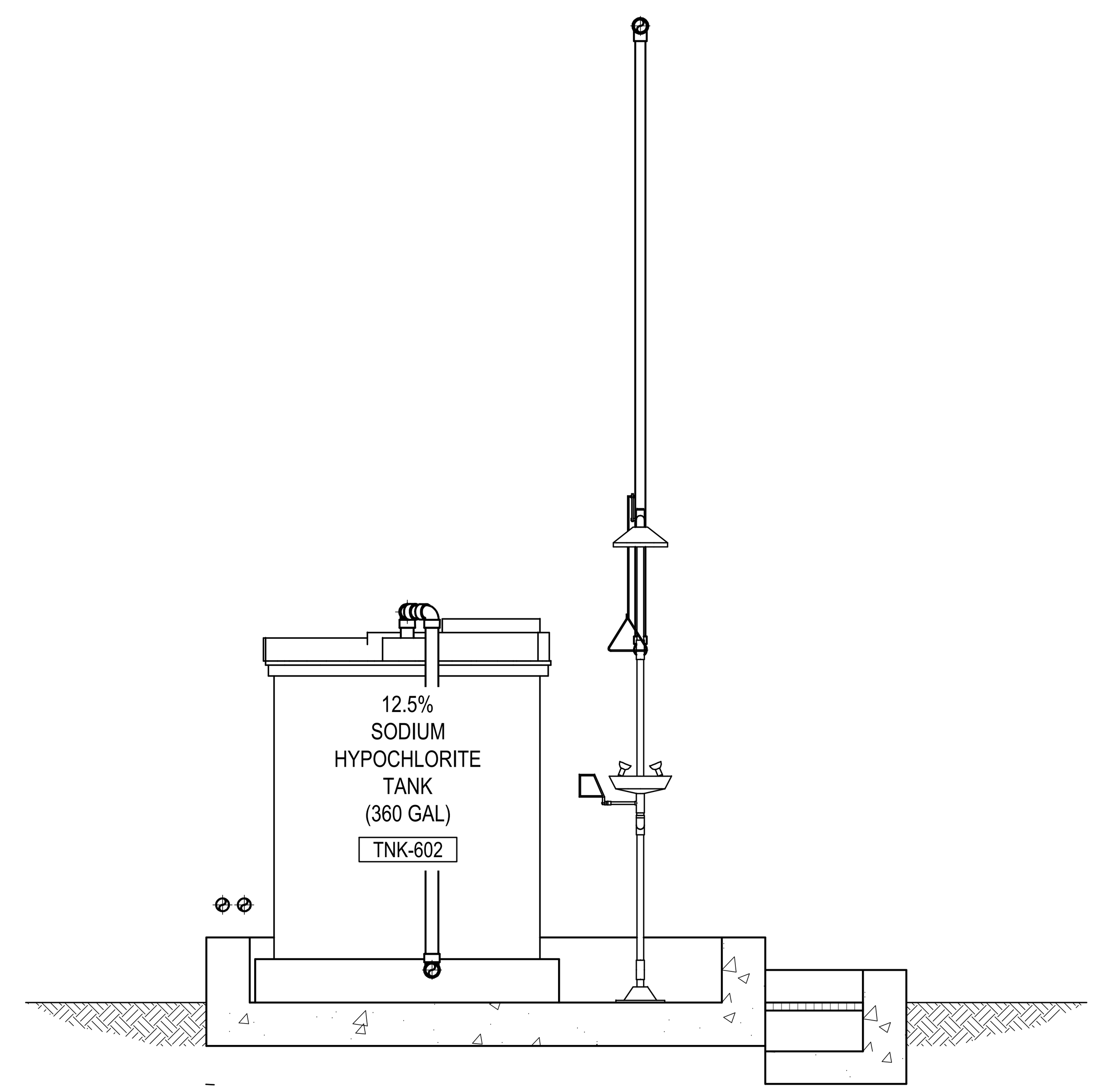


C D-140 SECTION
SCALE: 1/2" = 1'-0"



D D-140 SECTION
SCALE: 1/2" = 1'-0"

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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SIB No.:
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SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

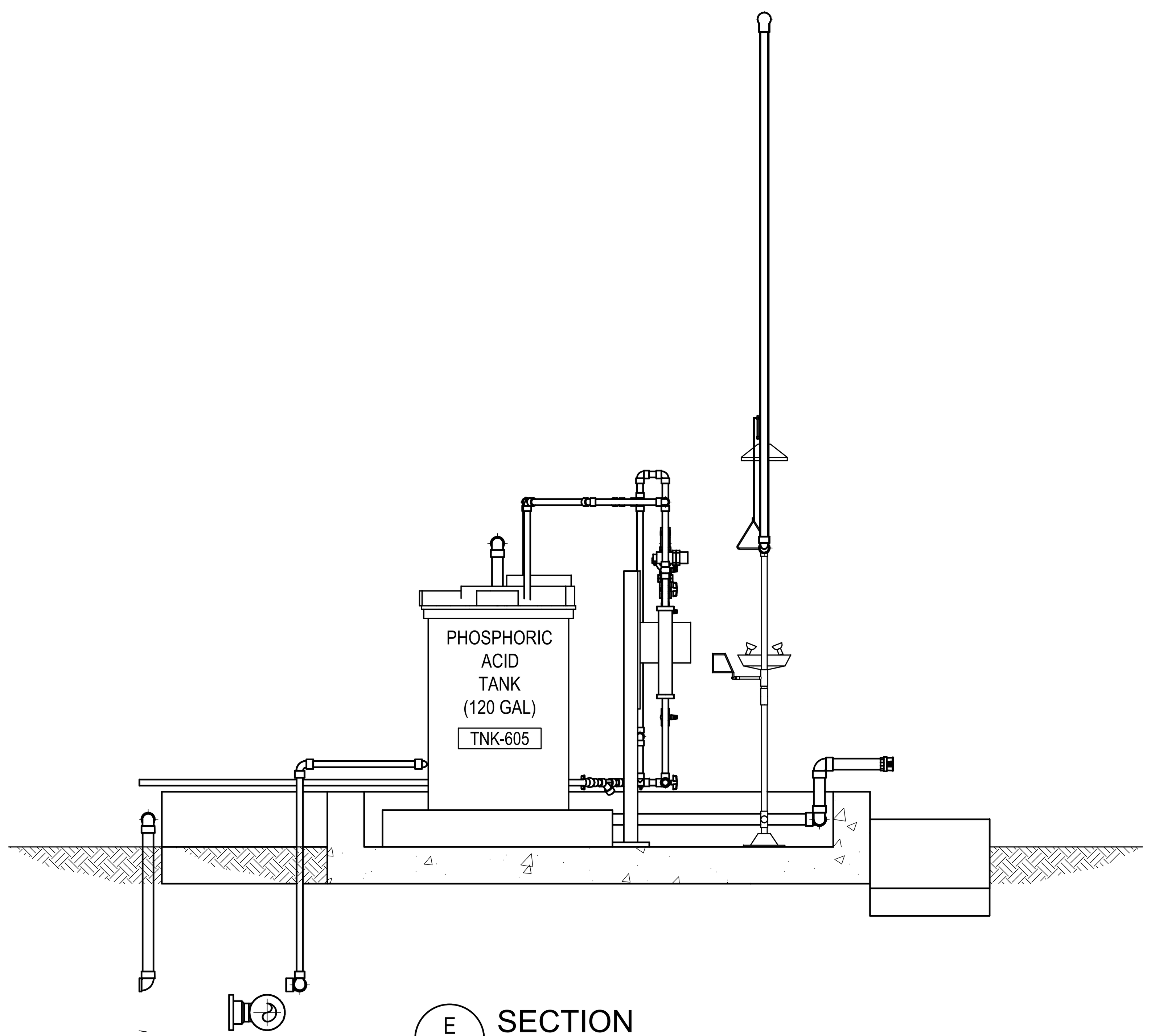
ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

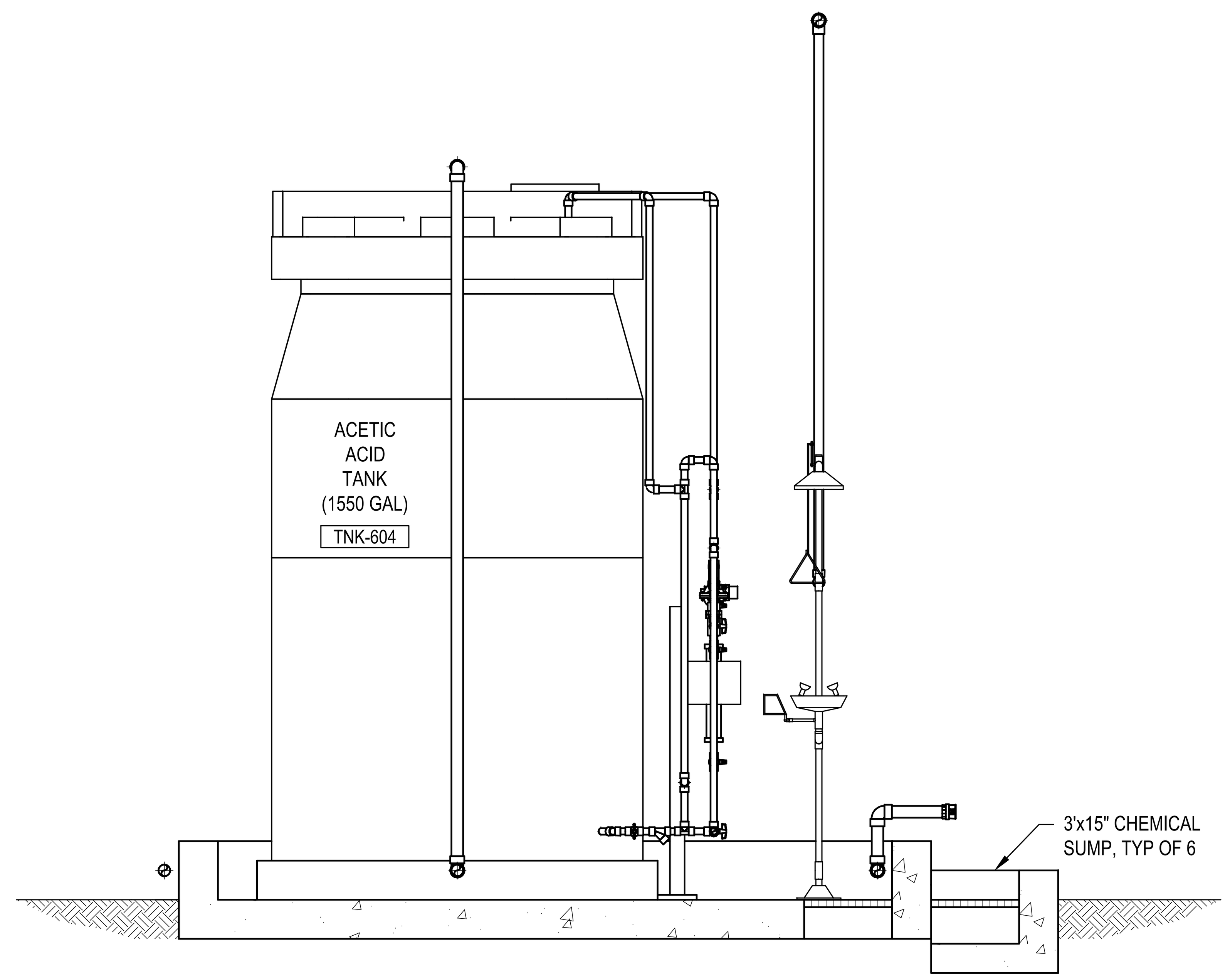
PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: TREATMENT CHEMICAL SYSTEM SECTIONS

consor

DWG. No.: D-340
SHEET 43 OF 80



E SECTION
D-140 SCALE: 1/2" = 1'-0"



F SECTION
D-140 SCALE: 1/2" = 1'-0"

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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W.A. No.:
P.E. No.:
SYSTEM:
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TAX DIST.:
SIB No.:
DATE: 03/03/2026
SCALE: AS SHOWN
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

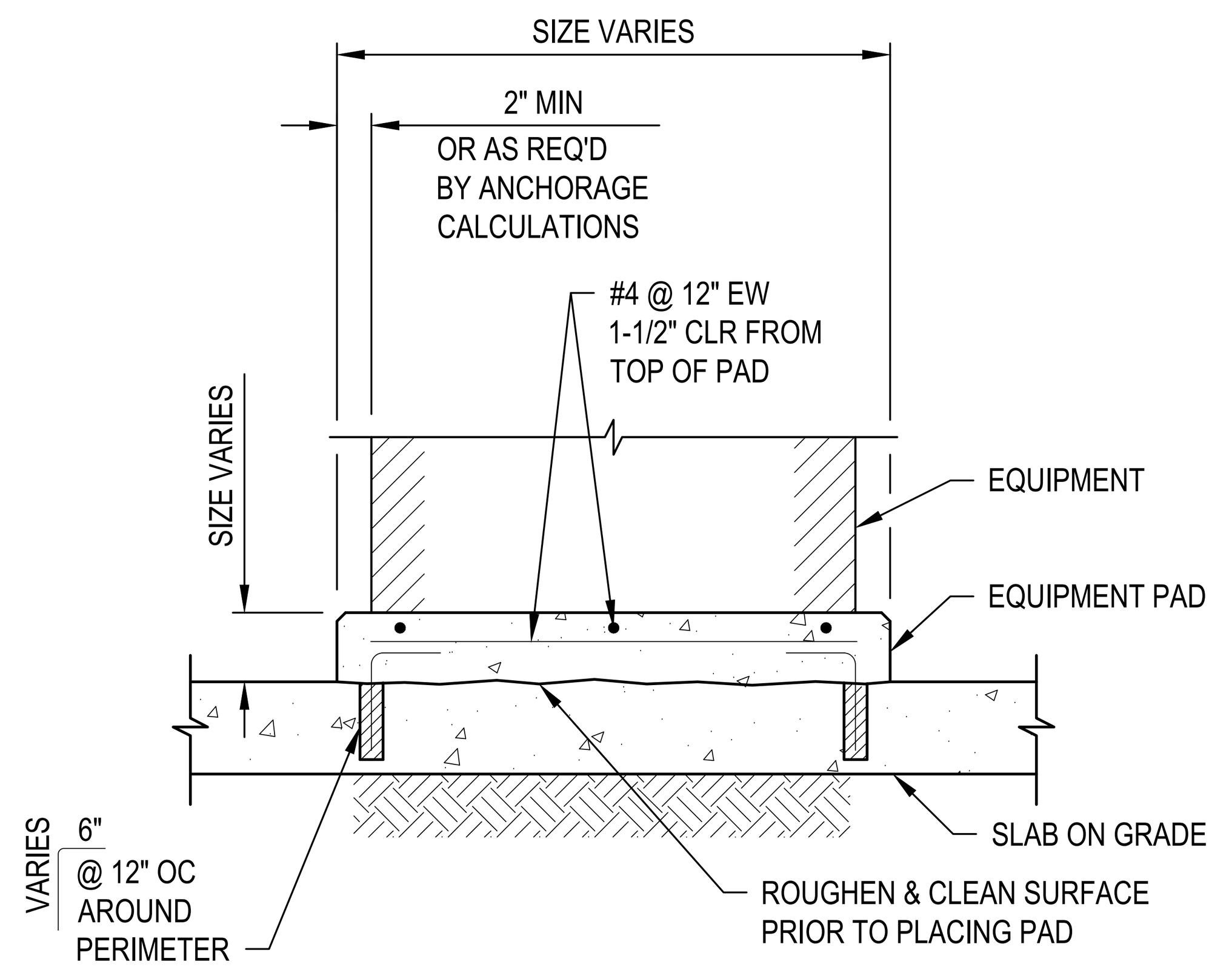
ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: TREATMENT CHEMICAL SYSTEM SECTIONS

consor

DWG. No.: D-341
SHEET 44 OF 80

Drawing Path and Name: C:\Users\jared.cloud\DC\ACCDocs\Consor\Stanfield GWS&T USBR Grant Coordination\Project Files\1-Design\07-PROC\2-SHEETS\W242167AZ.00_D-340-341.dwg, Plotted Date: March 9, 2026 1:14 PM By: Jared Cloud

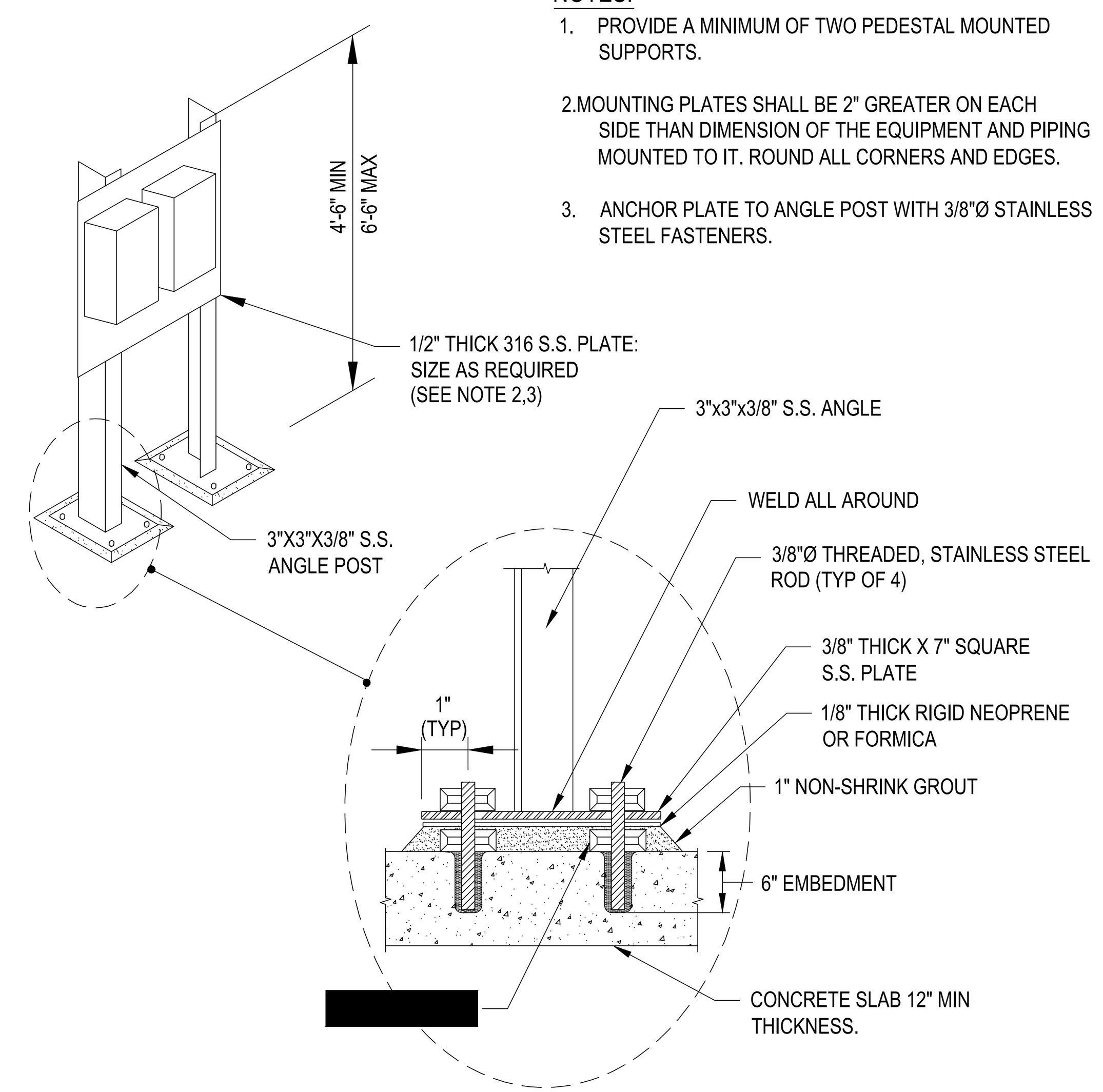


NOTE:

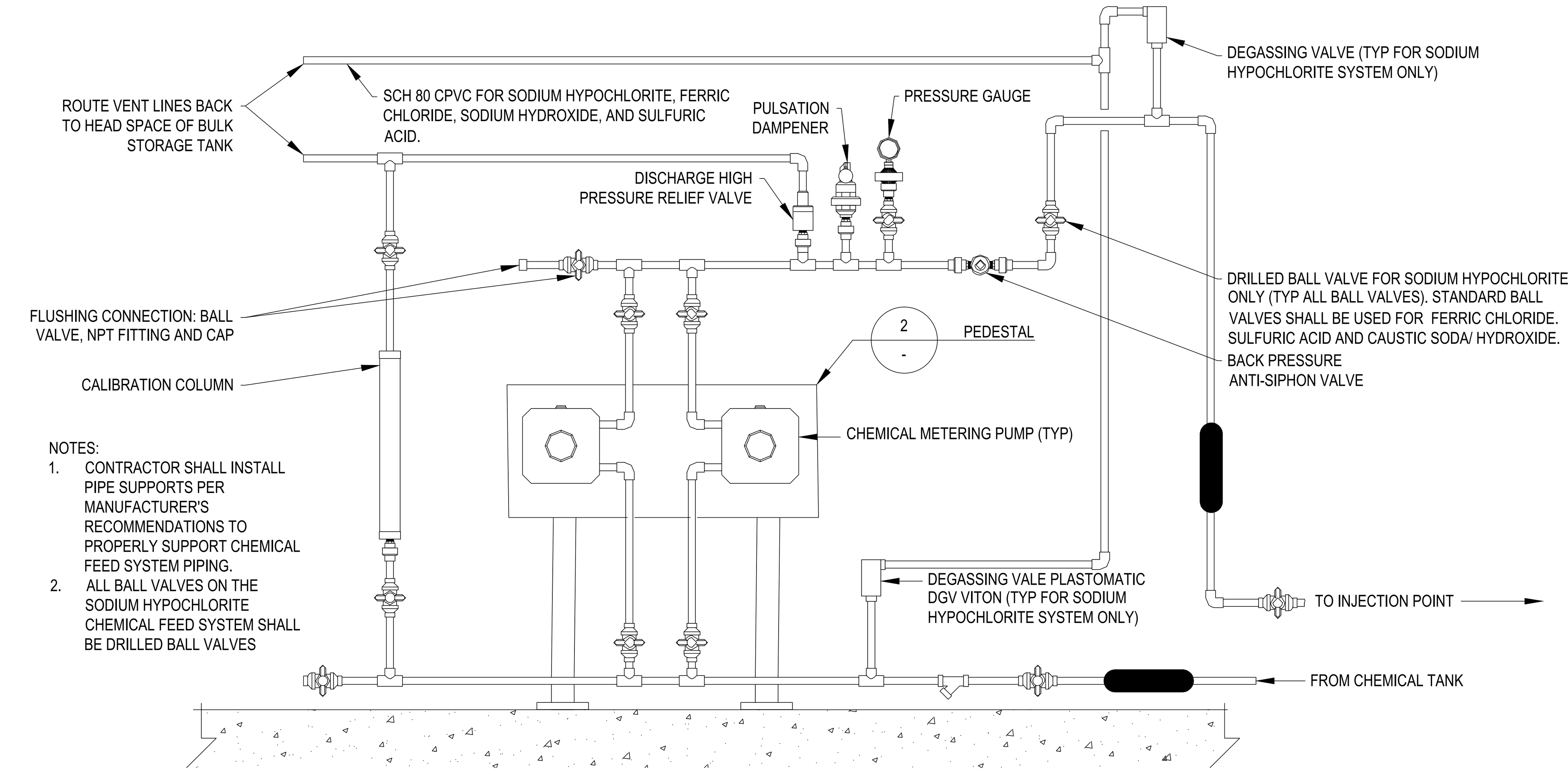
1. DRILL AND EPOXY TO SLAB WITH HILTI HIT-RE 500-SD EPOXY, 6" EMBEDMENT.

1 EQUIPMENT PAD ON SLAB
SCALE: NTS

NOTES:
1. PROVIDE A MINIMUM OF TWO PEDESTAL MOUNTED SUPPORTS.
2. MOUNTING PLATES SHALL BE 2" GREATER ON EACH SIDE THAN DIMENSION OF THE EQUIPMENT AND PIPING MOUNTED TO IT. ROUND ALL CORNERS AND EDGES.
3. ANCHOR PLATE TO ANGLE POST WITH 3/8"Ø STAINLESS STEEL FASTENERS.

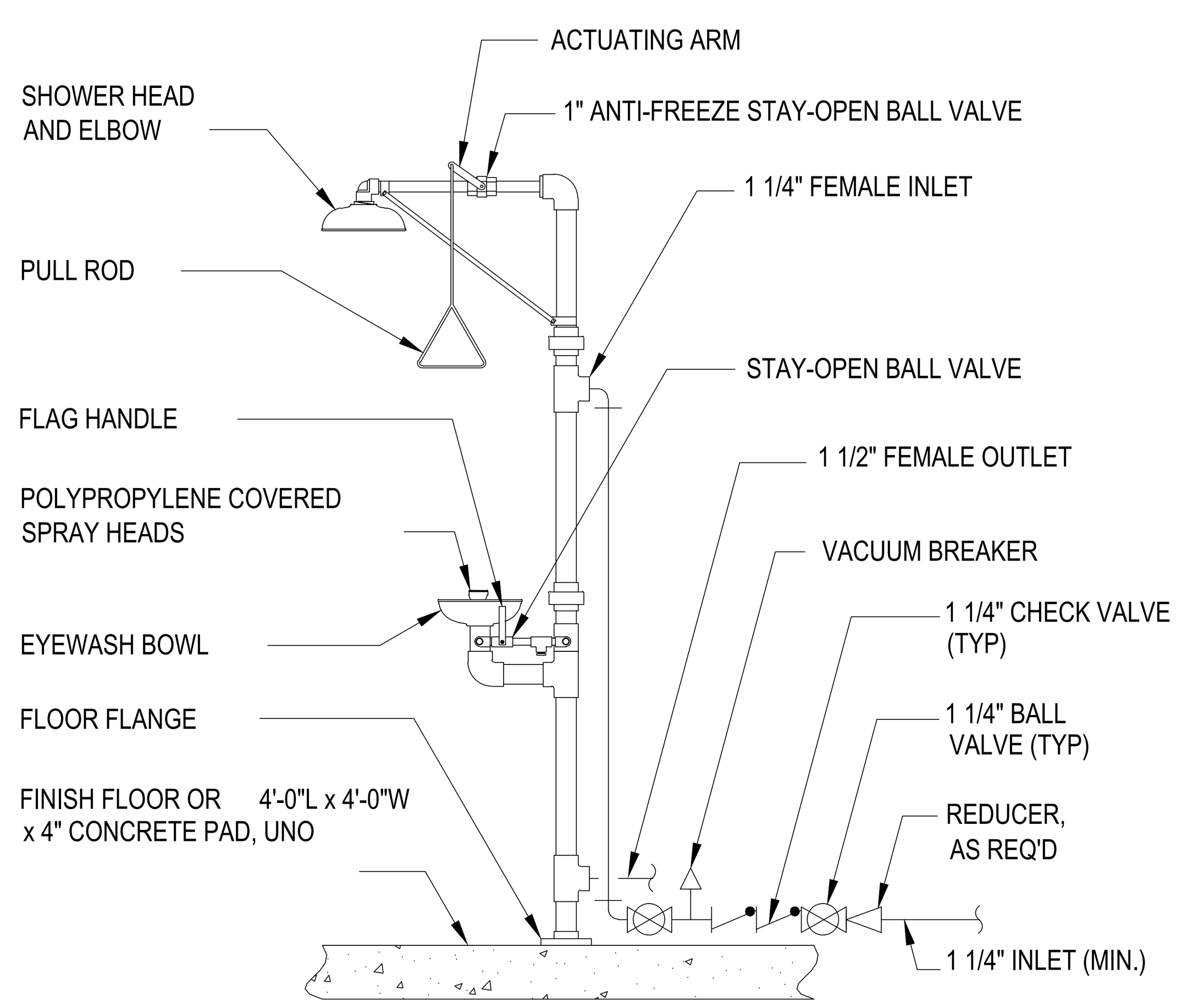


2 PEDESTAL MOUNTING RACK
SCALE: NTS



NOTES:
1. CONTRACTOR SHALL INSTALL PIPE SUPPORTS PER MANUFACTURER'S RECOMMENDATIONS TO PROPERLY SUPPORT CHEMICAL FEED SYSTEM PIPING.
2. ALL BALL VALVES ON THE SODIUM HYPOCHLORITE CHEMICAL FEED SYSTEM SHALL BE DRILLED BALL VALVES

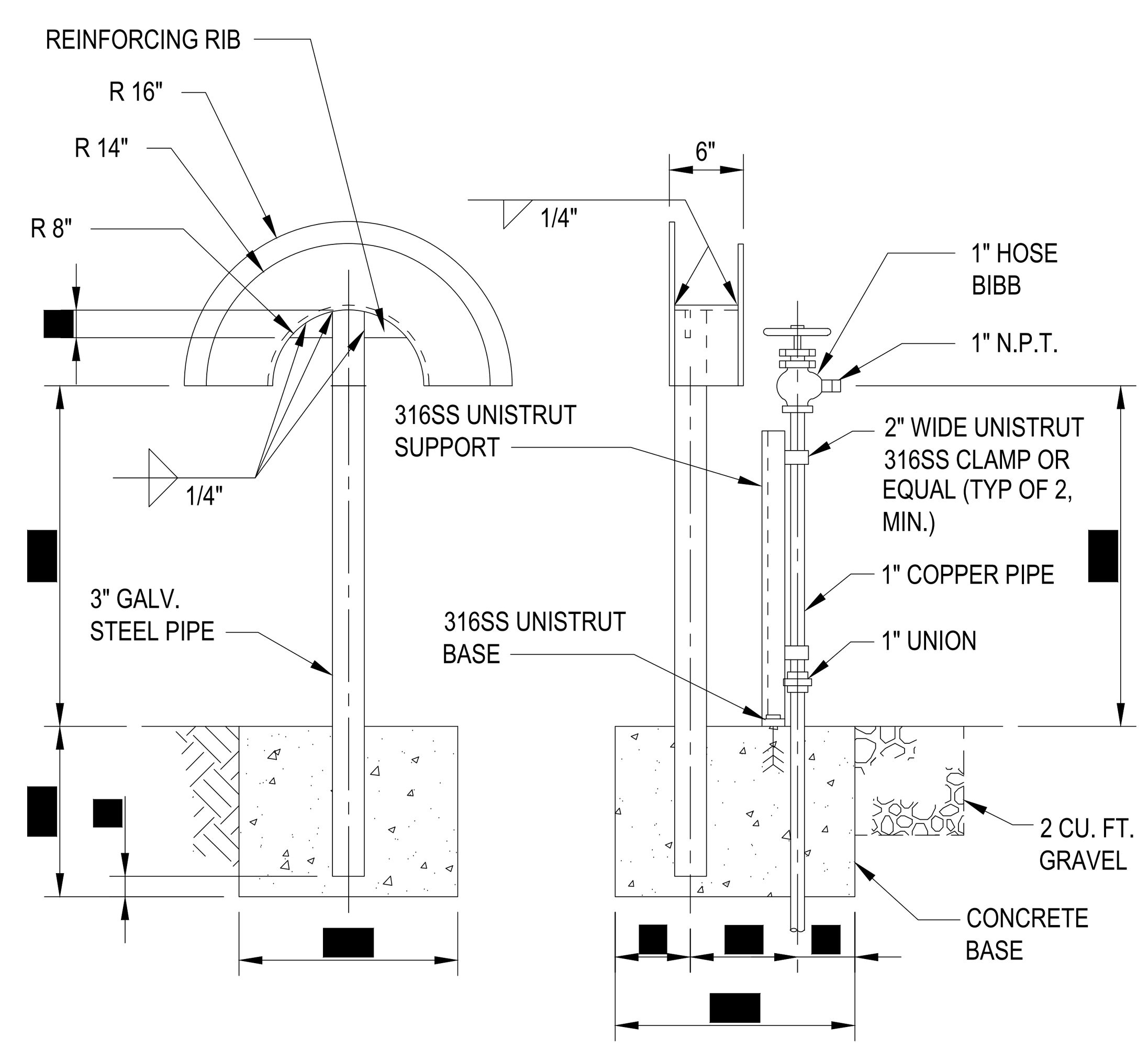
3 CHEMICAL FEED PUMPS & PIPING
SCALE: NTS



NOTES:

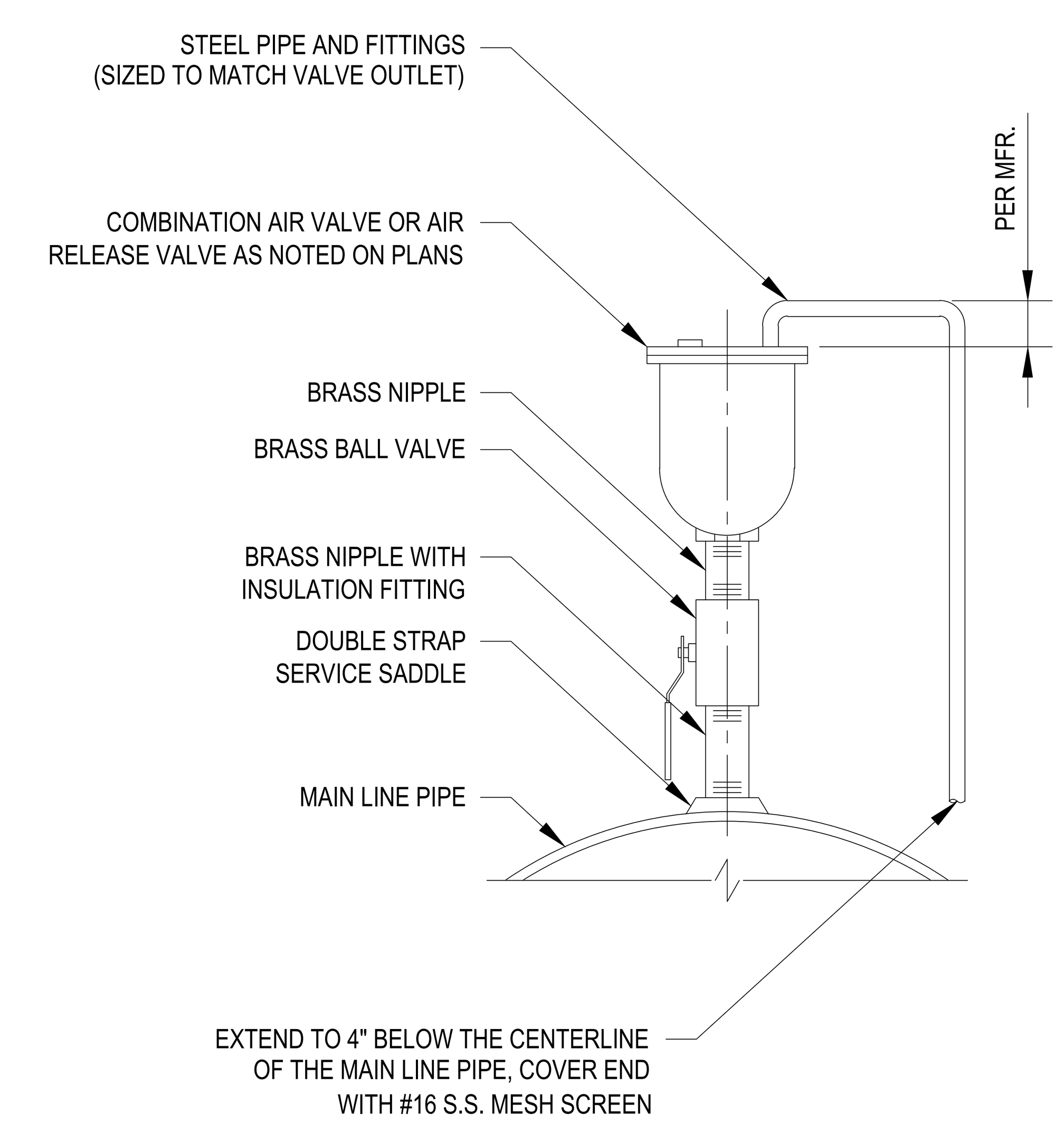
1. CONTRACTOR SHALL ROUTE EYEWASH DRAIN LINE TO NEAREST FLOOR DRAIN, TO BE APPROVED BY ENGINEER. FOR OUTSIDE INSTALLATION, CONTRACTOR SHALL DRAIN EYEWASH TO A 3'x3'x3' SUMP FILLED WITH 1/2" PEA GRAVEL.
2. ALL EYEWASHES SHALL BE EQUIPPED WITH ANTI-SCALD FEATURE.
3. INSULATE PIPING AND FITTINGS.
4. INSTALL FLOW SWITCH AND ALARM BEACON/HORN.
5. ANIT-FREEZE VALVE TO BE INCLUDED

4 EMERGENCY EYEWASH AND SHOWER
SCALE: NTS



NOTES:
1. CONSTRUCT RACK OF 3/16" STEEL PLATE, ROUND ALL EDGES SMOOTH.
2. HOT DIP GALVANIZE RACK AFTER FABRICATION PER ASTM A-153.

5 HOSE BIBB
SCALE: NTS



6 ARV
SCALE: NTS

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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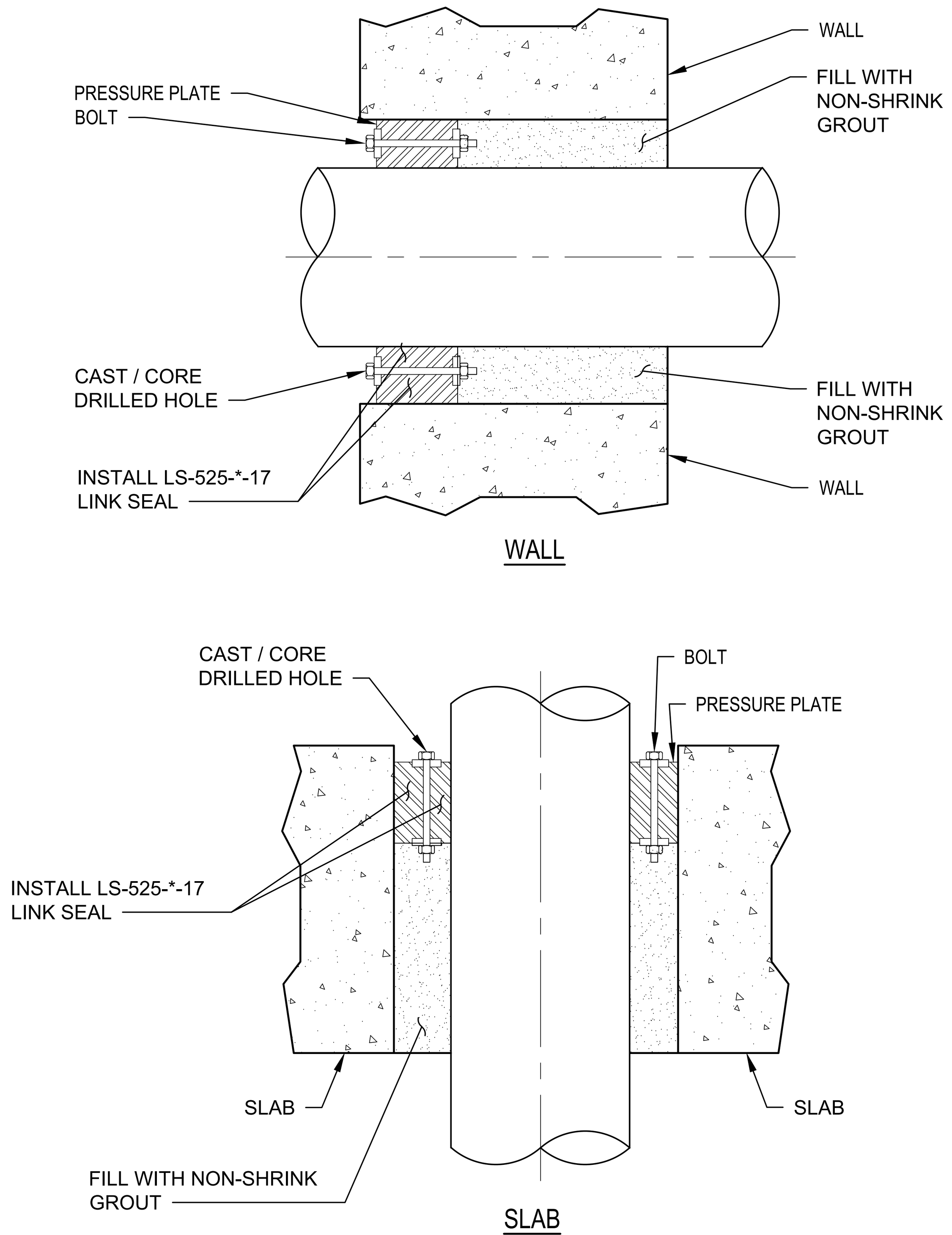
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

W.A. No.: P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.: SIB No.:
DATE: 03/03/2026 SCALE: AS SHOWN
DRAWN BY: JLC REVIEWED BY: SDC CHECKED BY: FHT

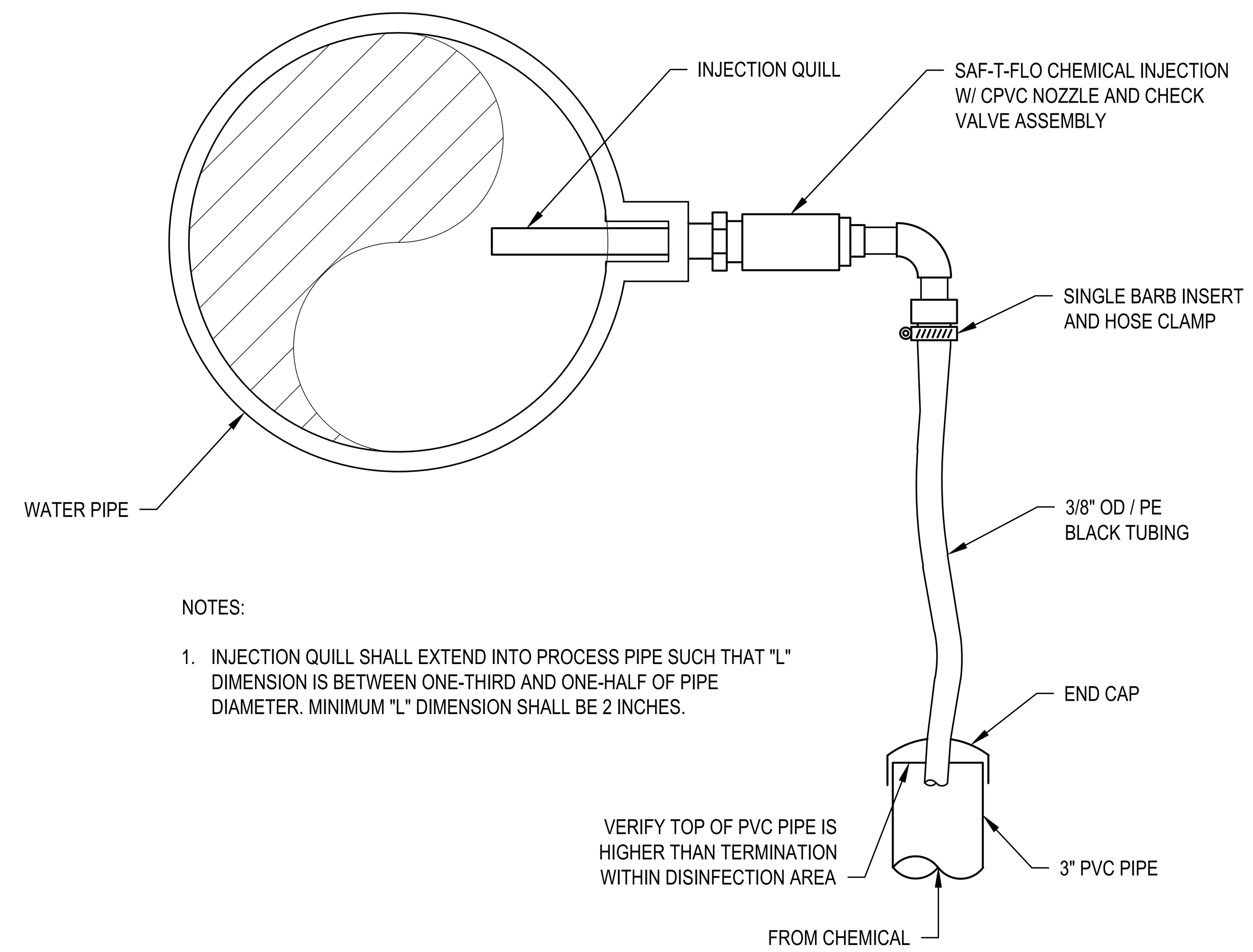
PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: PROCESS DETAILS

consor

DWG. No.: D-501
SHEET 45 OF 79



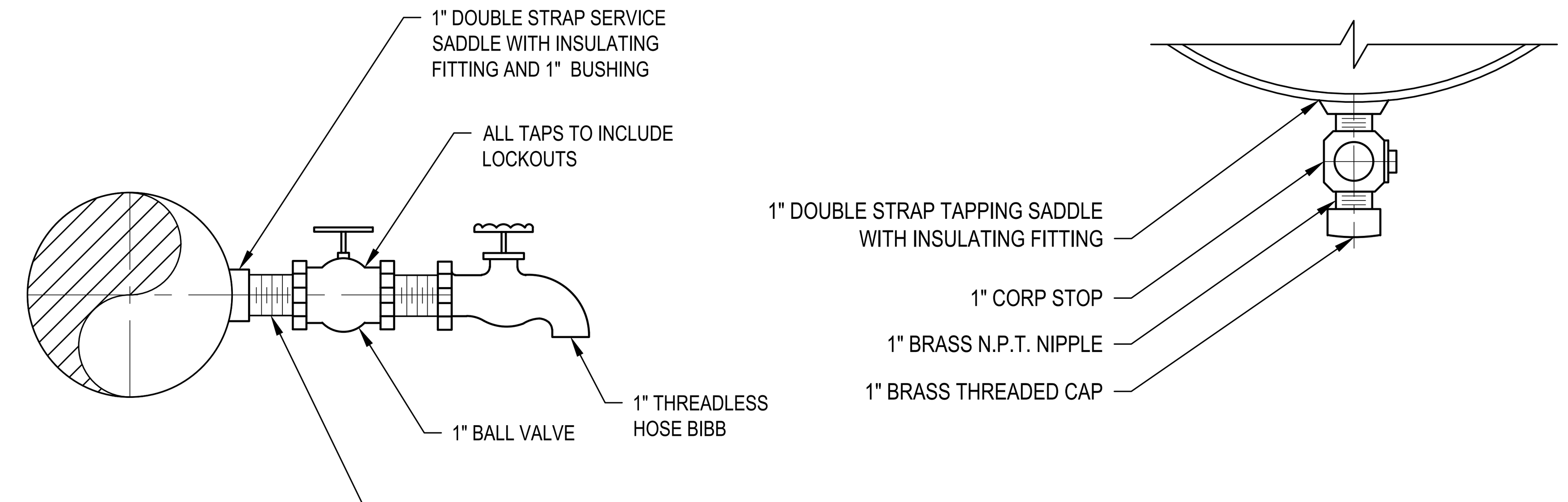
7 - **PIPE PENETRATION**
SCALE: NTS



NOTES:

1. INJECTION QUILL SHALL EXTEND INTO PROCESS PIPE SUCH THAT "L" DIMENSION IS BETWEEN ONE-THIRD AND ONE-HALF OF PIPE DIAMETER. MINIMUM "L" DIMENSION SHALL BE 2 INCHES.

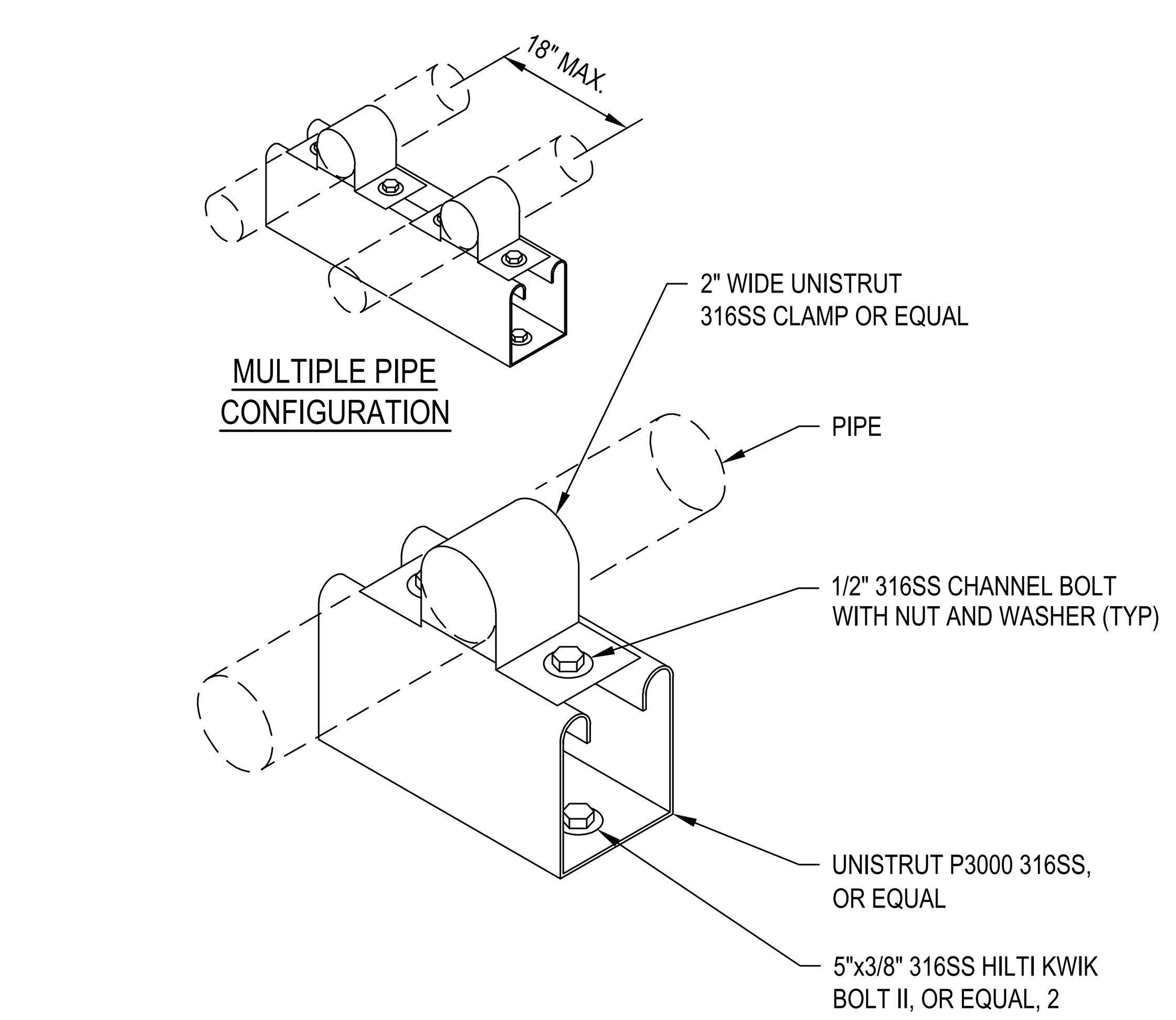
8 - **INJECTION NOZZLE**
SCALE: NTS



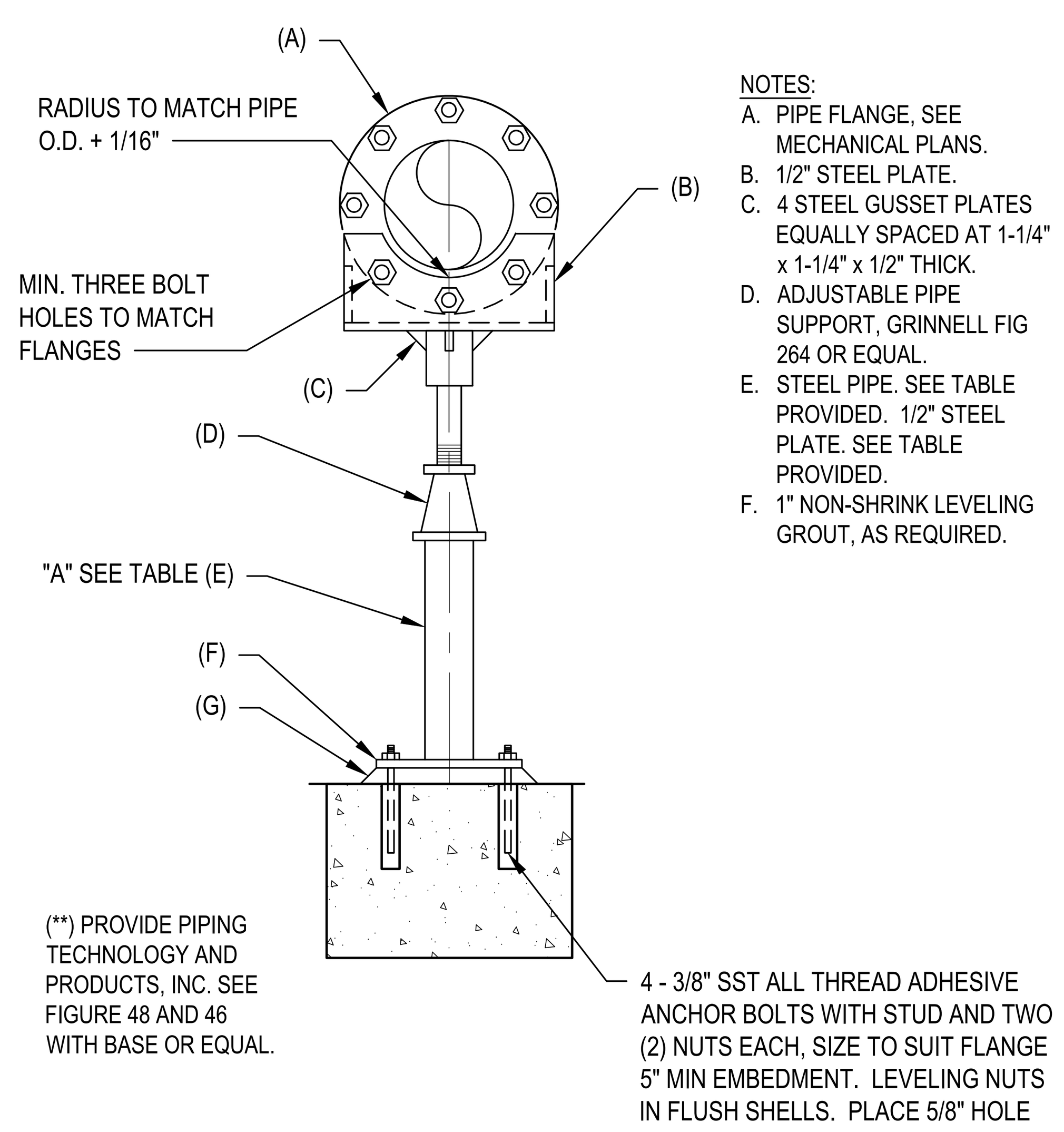
NOTES:

1. LOCATE DRAIN PORT ON THE BOTTOM OF PIPE UNLESS OTHERWISE SHOWN ON PLANS.

9 - **SAMPLE TAP & DRAIN PORT**
SCALE: NTS



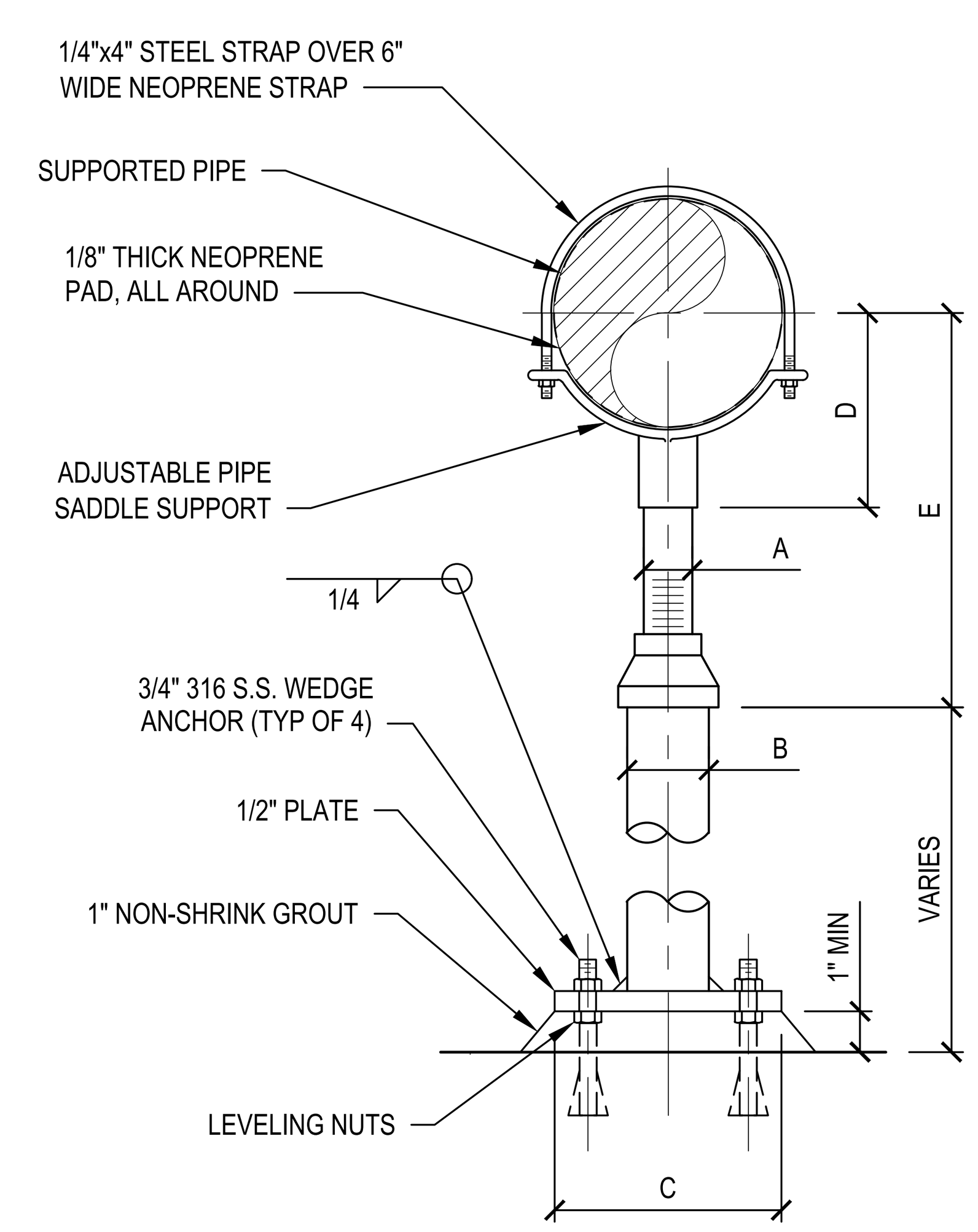
10 - **PIPE SUPPORT**
SCALE: NTS



NOTES:

A. PIPE FLANGE, SEE MECHANICAL PLANS.
B. 1/2" STEEL PLATE.
C. 4 STEEL GUSSET PLATES EQUALLY SPACED AT 1-1/4" x 1-1/4" x 1/2" THICK.
D. ADJUSTABLE PIPE SUPPORT, GRINNELL FIG 264 OR EQUAL.
E. STEEL PIPE. SEE TABLE PROVIDED. 1/2" STEEL PLATE. SEE TABLE PROVIDED.
F. 1" NON-SHRINK LEVELING GROUT, AS REQUIRED.

11 - **PIPE SUPPORT & FLANGE**
SCALE: NTS



DIMENSION TABLE						
PIPE SIZE	A	B	C	D	E MIN.	E MAX.
2 1/2	1 1/2	2 1/2	9	3 1/2	8	13
3	1 1/2	2 1/2	9	3 3/4	8 1/4	13 1/4
3 1/2	1 1/2	2 1/2	9	4	8 1/2	13 1/2
4	2 1/2	3	9	4 1/4	9 1/4	14
5	2 1/2	3	9	4 7/8	10	14 3/4
6	2 1/2	3	9	5 1/2	10 1/2	15 1/4
8	2 1/2	3	9	6 7/8	11 3/4	16 1/2
10	2 1/2	3	9	8 1/2	13 1/2	18 1/4
12	2 1/2	3	9	9 15/16	15	19 3/4
14	3	4	11	10 15/16	16 1/4	20 3/4
16	3	4	11	12 3/8	17 3/4	22 1/4
18	3 1/2	6	13 1/2	13 7/8	19 1/2	24
20	3 1/2	6	13 1/2	15 3/8	21	25 1/2
24	4	6	13 1/2	17 15/16	23 3/4	28 1/4
30	4	6	15	21 5/16	27	31 1/2
32	4	6	18	22 1/2	28 1/4	32 3/4
36	4	6	18	24 1/2	30 1/4	34 3/4

NOTES:

1. PIPE STANCHION SADDLE GRINNELL FIG. 258 OR EQUAL.
2. PIPE STANCHION SADDLE DESIGNED FOR PIPE 4"-36". PIPE LARGER THAN 36" SHALL BE SUPPORTED BY A STANCHION SADDLE DESIGNED BY THE MANUFACTURER.

12 - **PIPE SUPPORT**
SCALE: NTS

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: | P.E. No.: | SYSTEM: | LEGAL DESC.: | TAX DIST.: | SIB No.: | DATE: | SCALE: | DRAWN BY: JLC | REVIEWED BY: SDC | CHECKED BY: FHT

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC.: PROCESS DETAILS

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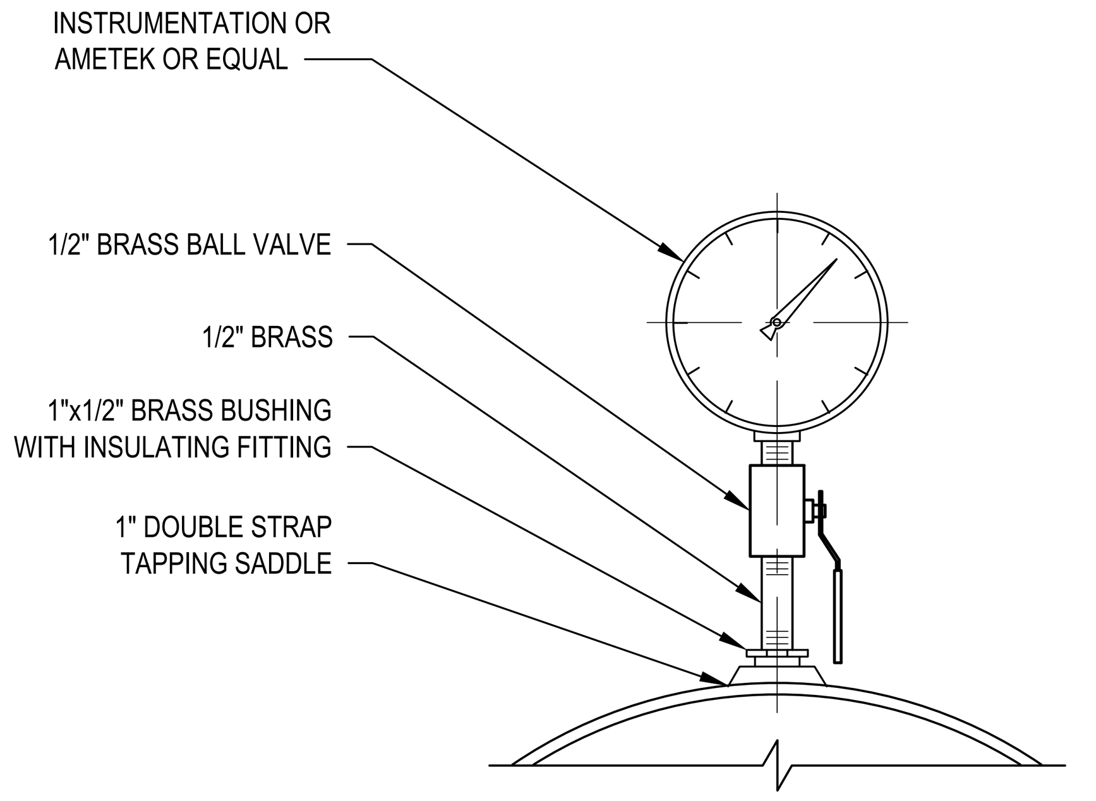
DWG. No.: D-502
SHEET 46 OF 79

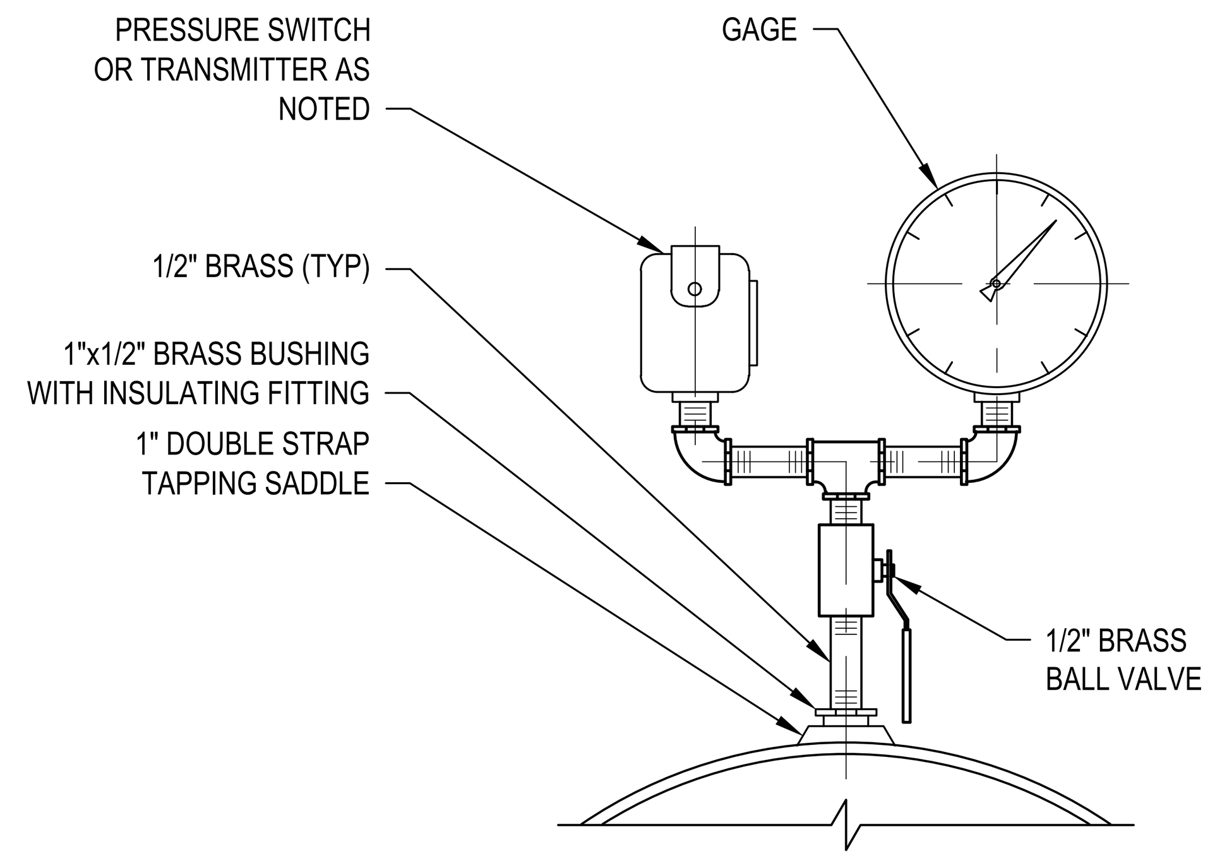


NOTES:

1. FOR S.S., GALV., AND PVC 2 1/2" AND SMALLER, USE A BUSHING IN A TEE.
2. MAX INDICATING RANGE ON SCALE SHALL NOT EXCEED 2x OF NORMAL MAX OPERATION PRESSURE.
3. GAUGE SHALL INCLUDE SILICONE OIL, STAINLESS STEEL WETTED COMPONENTS AND MICRO-ADJUSTMENT SCREWS.
4. PROVIDE SNUBBER IF REQ. TO STABILIZE READINGS.

13 - PRESSURE GAUGE

SCALE: NTS

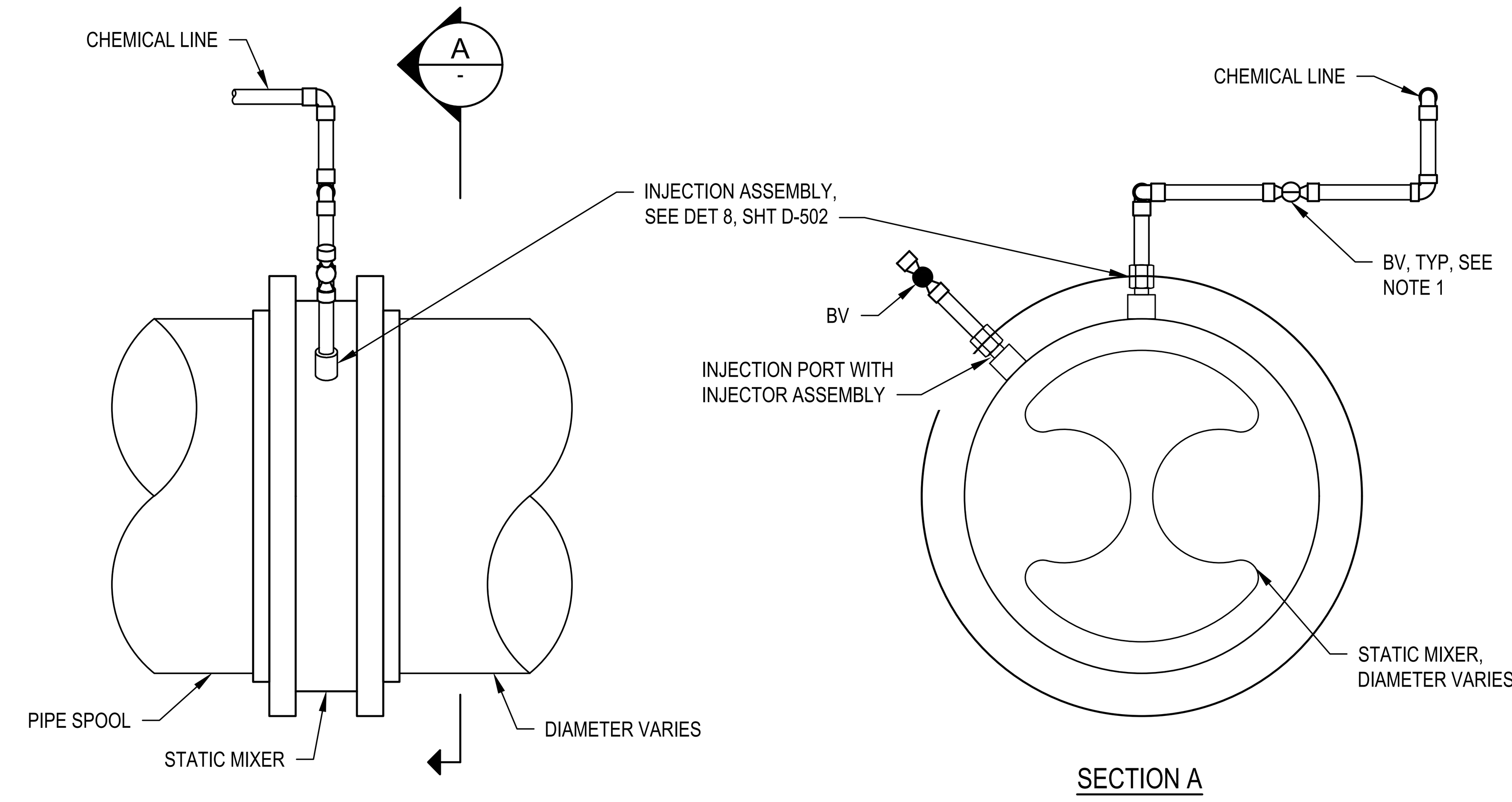


NOTES:

1. FOR S.S., GALV., AND PVC 2 1/2" AND SMALLER, USE A BUSHING IN A TEE.
2. MAX INDICATING RANGE ON SCALE SHALL NOT EXCEED 2x OF NORMAL MAX OPERATION PRESSURE.
3. PROVIDE SNUBBER IF REQ. TO STABILIZE READINGS.

14 - PRESSURE GAUGE & TRANSMITTER

SCALE: NTS

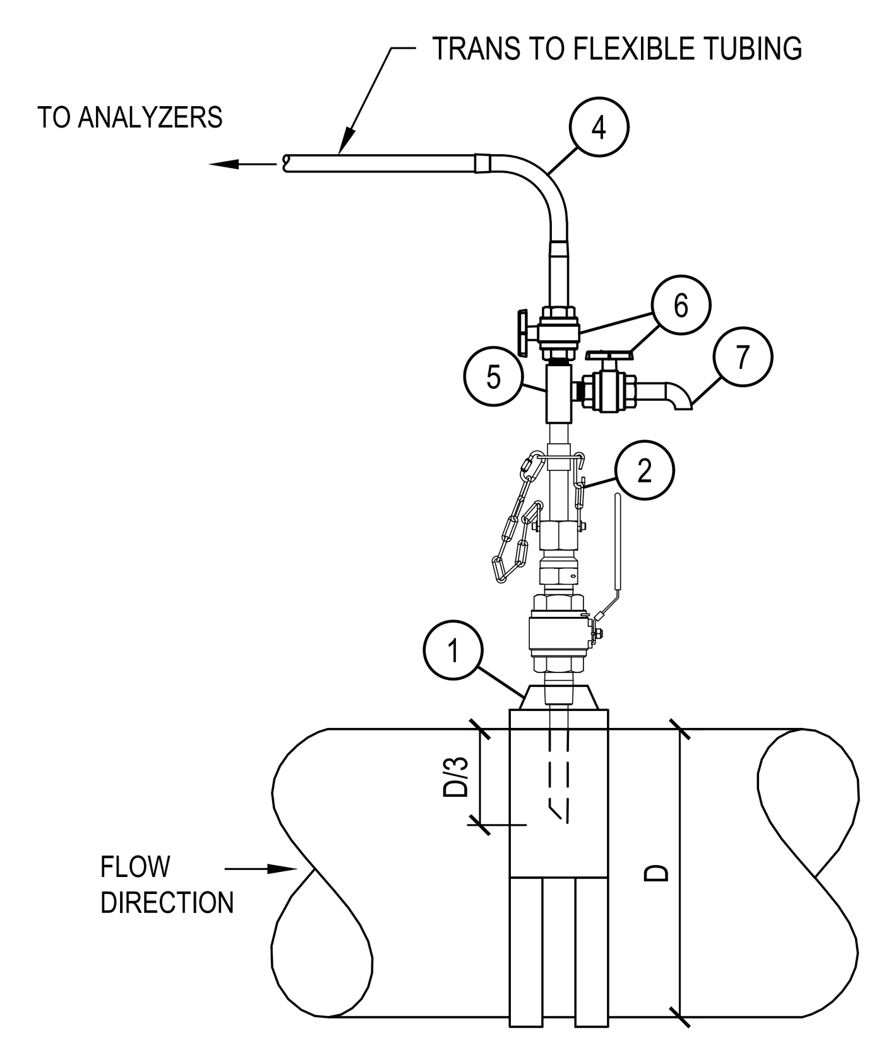


NOTES:

1. ALL BALL VALVES ON HYPOCHLORITE SERVICES TO BE VENTED.
2. STATIC MIXER SHALL BE CORROSION RESISTANT, OF A MATERIAL SUITABLE FOR USE WITH THE INJECTED CHEMICAL.
3. ALL WETTED MATERIALS SHALL BE NSF 61 CERTIFIED.

15 - STATIC MIXER (WAFER STYLE)

SCALE: NTS



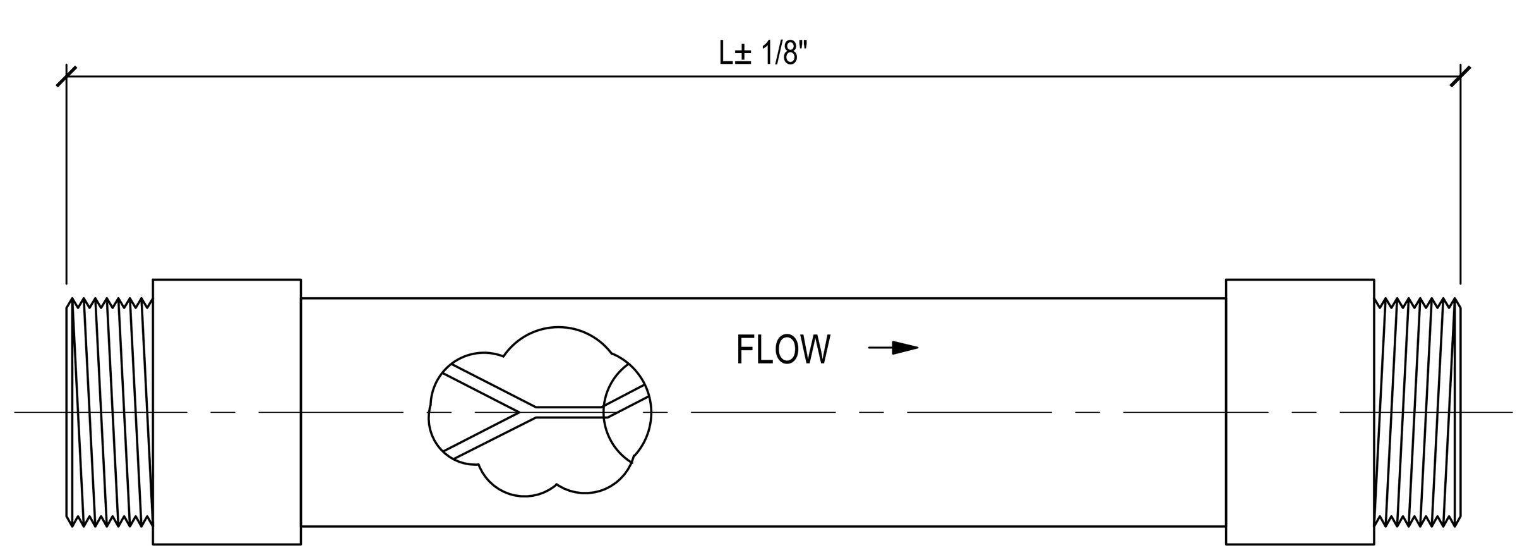
SAMPLING QUILL

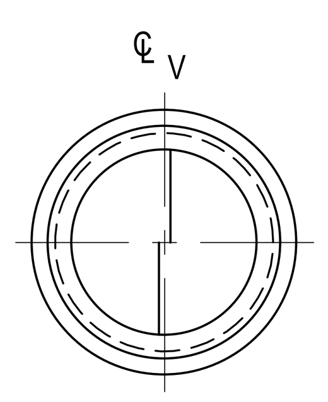
MATERIALS:

1. DI SERVICE SADDLE, EPOXY COATED W/ DUAL SST STRAPS AND 1" NPT
2. ½" SST RETRACTABLE SAMPLE QUILL, W/ 1" MNPT CONNECTION TO PIPE. SELF-SEALING ASSEMBLY. SST SAFETY CHAIN. 45° BEVEL TIP TO FACE UPSTREAM.
3. NOT USED
4. ½" FLEXIBLE, CLEAR, BRAIDED, REINF PVC HOSE
5. 1/2" PVC SCHED 80 THREADED TEE
6. 1/2" PVC SCHED 80 TRUE UNION BV
7. PVC SAMPLE PORT, ELBOW DOWN

17 - ANALYZER SAMPLING QUILL

SCALE: NTS





RIGHT SIDE VIEW

NOTES:

1. STATIC MIXER SHALL EITHER HAVE INTEGRAL CHEMICAL INJECTION OR BE INSTALLED DOWNSTREAM OF CHEMICAL INJECTION, WHERE SHOWN ON PLANS.
2. ALL WETTED MATERIALS SHALL BE COMPATIBLE WITH 12.5% STRENGTH SODIUM HYPOCHLORITE AND SHALL BE NSF 61 CERTIFIED.

16 - STATIC MIXER (IN-LINE)

SCALE: NTS

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

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P.E. No.:
W.A. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
SCALE:
DATE:
DRAWN BY: JLC
REVIEWED BY: SDC
CHECKED BY: FHT

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC.: PROCESS DETAILS

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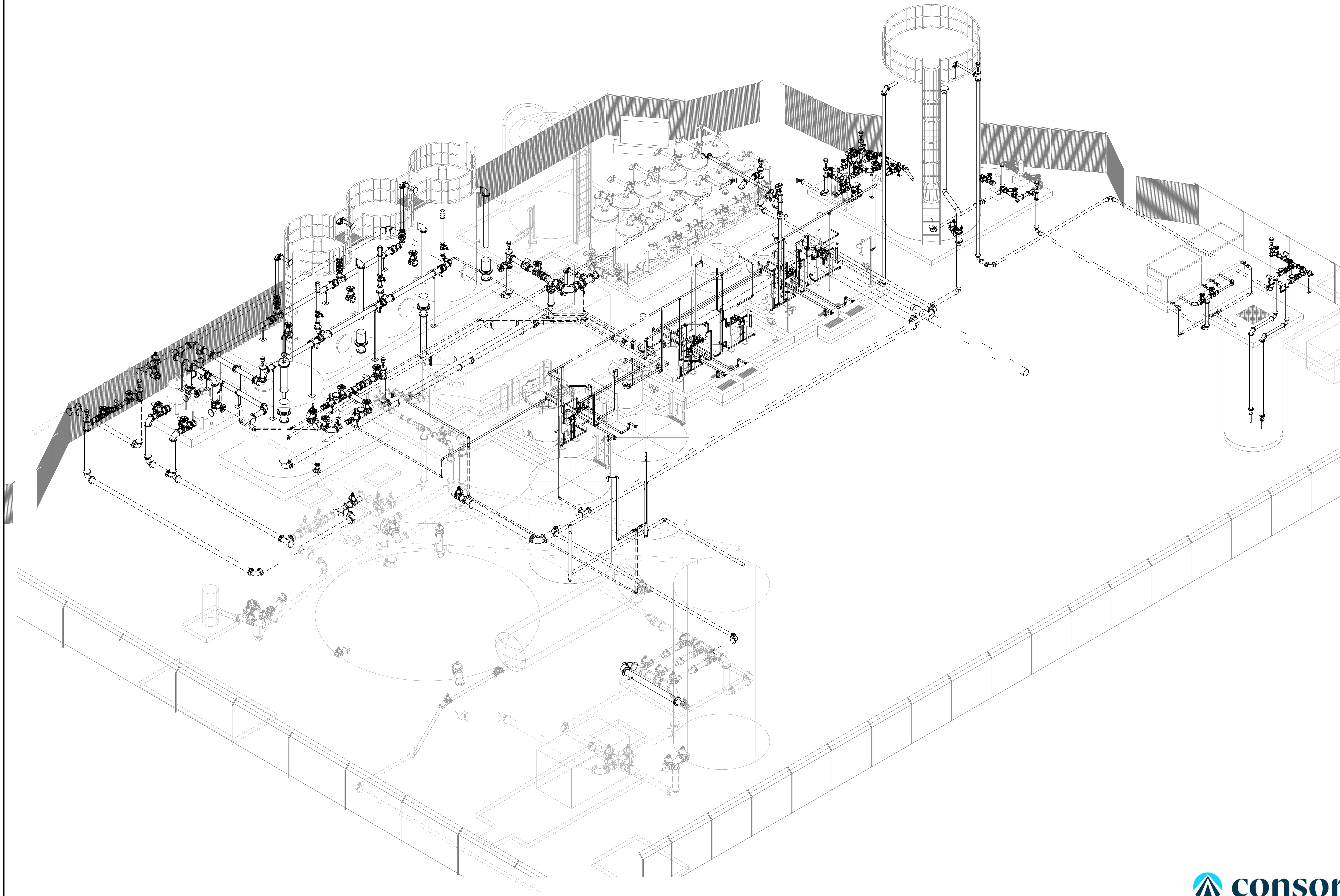
DWG. No.: D-503

SHEET 47 OF 79



consor

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3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC.: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC.: OVERALL SITE ISOMETRIC

W.A. No.:	P.E. No.:
SYSTEM:	
LEGAL DESC.:	
TAX DIST.:	SIB No.:
DATE: 03/03/2026	SCALE: AS SHOWN
DRAWN BY: JLC	REVIEWED BY: SDC / CHECKED BY: FHT

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/3/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/03/26	FT	90% SUBMITTAL

DWG. No.: D-900

SHEET 48 OF 80

Drawing Path and Name: C:\Users\jared.cloud\DC\ACCDocs\Consor\Stanfield GWS&T USBR Grant Coordination\Project Files\1-Design\07-PROC\2-SHEETS\W242167AZ.00_D-900.dwg, Plotted Date: March 9, 2026 1:50 PM By: Jared Cloud

PLAN LEGEND

- HOMERUN ((1) HOT, (1) NEUTRAL) (#12 MIN)
- EXPOSED CONDUIT
- UNDERGROUND CONDUIT DUCTBANK
- CONDUIT STUBUP
- CONDUIT TURNED DOWN
- CONDUIT RUN CONCEALED IN CEILING, FLOOR, OR IN WALLS
- UTILITY CONDUIT DUCTBANK
- EXISTING CONDUIT
- GROUNDING ELECTRODE CONDUCTOR
- OHE — EXISTING OVERHEAD ELECTRIC
- E — EXISTING UNDERGROUND ELECTRIC
- FENCE
- 20 — 240V SIMPLEX RECEPTACLE (NUMBER DENOTES CIRCUIT AMPS)
- 20 — 480V SIMPLEX RECEPTACLE (NUMBER DENOTES CIRCUIT AMPS)
- 120V, 20A SIMPLEX RECEPTACLE
- 120V, 20A DUPLEX RECEPTACLE
- $ — 120V, 20A SPST SWITCH
- $M — MANUAL MOTOR STARTER
- TELEPHONE JACK
- J OR J — JUNCTION BOX
- JB — UNDERGROUND JUNCTION BOX
- MS — MOTION DETECTOR
- R — ALARM BEACON
- ALARM HORN
- POLE MOUNTED AREA LIGHT
- NON-FUSED DISCONNECT SWITCH
- F — FUSED DISCONNECT SWITCH
- CB — CIRCUIT BREAKER STYLE DISCONNECT SWITCH
- COMBINATION MOTOR STARTER
- S — SOLENOID VALVE (ENERGIZE TO CLOSE)
- S — SOLENOID VALVE (ENERGIZE TO OPEN)
- BUTTERFLY VALVE
- PLUG VALVE
- GATE VALVE
- R — ALARM BEACON
- WALL MOUNTED LIGHT
- CXXXX — CONDUIT DESIGNATION
- GROUND ROD AND WELL
- PANELBOARD
- EXHAUST FAN
- LT — LEVEL TRANSMITTER
- PC — PHOTOCELL
- PI — PRESSURE GAUGE
- PS — PRESSURE SWITCH
- PT — PRESSURE TRANSMITTER
- T — THERMOSTAT
- NS — INTRUSION ALARM SWITCH
- LE — LEVEL ELEMENT
- H — SIREN/HORN
- FE — FLOW ELEMENT
- JB1 TYP — DETAIL REFERENCE
- AA — ELEVATION SECTION REFERENCE

SINGLE LINE DIAGRAM AND SCHEMATIC LEGEND

- INTERNAL WIRING / FIELD WIRING / TERMINAL BLOCK — TERMINAL BLOCK
- R — ALARM BEACON
- R — PILOT LIGHT (LETTER DENOTES COLOR)
- H, R — PUSH-TO-TEST PILOT LIGHT (LETTER DENOTES COLOR)
- CR — CONTROL RELAY
- 20 — MOTOR (20 DENOTES MOTOR HORSEPOWER)
- PRESSURE SWITCH CLOSES ON RISING PRESSURE
- PRESSURE SWITCH OPENS ON RISING PRESSURE
- NORMALLY OPEN CONTACT TIME TO CLOSE (ON DELAY)
- NORMALLY CLOSED CONTACT TIME TO OPEN (ON DELAY)
- TEMPERATURE SWITCH CLOSES ON RISING TEMPERATURE
- ETM — ELAPSED TIME METER
- FUSE
- FUSED TERMINAL BLOCK
- OVERLOAD (ELECTRONIC TYPE)
- EARTH GROUND CONNECTION
- SIREN/HORN
- ANTENNA
- PASSIVE FILTER
- OVERLOAD
- DISCONNECT SWITCH (N.O.)
- DISCONNECT SWITCH (N.C.)
- TERMINAL BLOCK
- CURRENT TRANSFORMER
- POWER TRANSFORMER
- CIRCUIT BREAKER WITH DOOR OPERATED HANDLE
- CIRCUIT BREAKER
- NORMALLY OPEN CONTACTS
- NORMALLY CLOSED CONTACTS
- CONTROL RELAY CONTACTS CONTROLLED BY PLC DISCRETE OUTPUT (N.O.)
- CONTROL RELAY CONTACTS CONTROLLED BY PLC DISCRETE OUTPUT (N.C.)
- 1 — LIGHTING CONTACTOR OR MOTOR STARTER (NUMBER INDICATES NEMA RATING)
- NORMALLY OPEN MOMENTARY-CONTACT PUSHBUTTON
- NORMALLY CLOSED MOMENTARY-CONTACT PUSHBUTTON
- 3-POSITION SELECTOR SWITCH
- PUSH-PULL EMERGENCY STOP PUSHBUTTON
- LEVEL PROBE
- EXHAUST FAN
- LIMIT SWITCH (N.C.)
- LIMIT SWITCH (N.O.)
- NORMALLY OPEN CONTACT TIME TO CLOSE (ON DELAY)
- NORMALLY OPEN CONTACT TIME TO OPEN (OFF DELAY)

GENERAL ELECTRICAL REQUIREMENTS

A. THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODE ORDINANCES AND REGULATIONS. CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES. ALL WORK SHALL BE DONE IN A NEAT, WORKMANLIKE, FINISHED AND SAFE MANNER, ACCORDING TO THE LATEST PUBLISHED N.E.C.A. STANDARDS OF INSTALLATION, UNDER COMPETENT SUPERVISION. INSTALL GROUNDING AS REQUIRED BY THE NATIONAL ELECTRIC CODE (2017).

B. VISIT THE SITE TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND ALL OTHER FACTORS WHICH MAY AFFECT THE EXECUTION OF THIS WORK.

C. ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, U.L. OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURER'S NAMES, MODELS AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE USEFULNESS AND BID PRICE. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED IN WRITING AND REVIEWED BY THE ENGINEER BEFORE ORDERING.

D. PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED UNDER THIS CONTRACT AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS OR ANY OTHER CAUSES. EQUIPMENT FOUND DAMAGED OR IN OTHER THAN NEW CONDITION WILL BE REJECTED AS DEFECTIVE.

E. LEAVE THE SITE CLEAN, REMOVE ALL DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT, WIRE SCRAPS AND ALL MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THE WORK DURING CONSTRUCTION. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS, LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK.

F. REFER TO OTHER PLANS FOR EXACT LOCATION OF EQUIPMENT AND STRUCTURAL/ARCHITECTURAL FEATURES.

G. REFER TO SPECIFICATIONS FOR ADDITIONAL PROJECT REQUIREMENTS.

H. THESE CONTRACT DOCUMENTS ARE SUBJECT TO THE INTERPRETATION OF THE ENGINEER. ALL QUESTIONS REGARDING THESE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ENGINEER. ANYONE WHO TAKES UPON THEMSELVES THE INTERPRETATION OF THESE CONTRACT DOCUMENTS OR MAKES REVISIONS TO THE SAME WITHOUT CONFERRING WITH THE ENGINEER SHALL BE RESPONSIBLE FOR THE CONSEQUENCES THEREOF.

I. LOCATION OF ELECTRICAL EQUIPMENT SHALL BE SCALED FROM THE SITE PLAN. UPON COMPLETION OF WORK, FURNISH A SET OF RED-LINED "AS-BUILT" DRAWINGS THAT ACCURATELY REFLECTS FINAL LOCATION OF UNDERGROUND CONDUIT AND OTHER ELECTRICAL EQUIPMENT COMPLETE WITH DIMENSIONS TO PERMANENT STRUCTURES.

J. CONTRACTOR SHALL NOTIFY OWNER AND/OR ENGINEER FOR INSPECTIONS AS REQUIRED.

K. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING INSPECTIONS FROM APPROPRIATE GOVERNMENTAL AGENCIES. INSPECTIONS BY OWNER AND/OR ENGINEER DO NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO OBTAIN REQUIRED INSPECTIONS FROM APPROPRIATE GOVERNMENTAL AGENCIES.

L. LABOR, MATERIALS, APPARATUS, AND APPLIANCES ESSENTIAL TO THE COMPLETE FUNCTIONING OF SYSTEMS DESCRIBED AND INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL, WHETHER MENTIONED IN THE CONTRACT DOCUMENTS OR NOT, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. IN CASE OF DOUBT AS TO THE WORK INTENDED, OR IN THE EVENT OF NEED FOR EXPLANATION THEREOF, CONTRACTOR SHALL REFER TO THE ENGINEER FOR SUPPLEMENTAL INSTRUCTIONS.

M. ALL ELECTRICAL EQUIPMENT SHALL BE CAPABLE OF OPERATING SUCCESSFULLY AT FULL-RATED LOAD, WITHOUT FAILURE, AT AN AMBIENT AIR TEMPERATURE OF 45°C, AND SPECIFICALLY RATED FOR AN ALTITUDE OF 1350 FEET. WHERE THESE CRITERIA CANNOT BE MET, ANCILLARY EQUIPMENT AND/OR SPECIAL DERATING FACTORS AS APPROVED BY THE ENGINEER AND/OR EQUIPMENT MFR SHALL BE UTILIZED.

N. THE CONTRACTOR SHALL PERFORM ALL NECESSARY SAW CUTTING, CORE DRILLING, EXCAVATING, REMOVAL, SHORING, BACKFILLING AND ETC. REQUIRED FOR THE PROPER LAYING OF CONDUITS WHETHER INSIDE OR OUTSIDE OF THE BUILDING(S) AND STRUCTURE(S). THE CONTRACTOR SHALL REPAIR AND PATCH WHERE DEMOLITION HAS TAKEN PLACE IN A MANNER TO MATCH EXISTING ORIGINAL STRUCTURE.

O. TYPICAL DETAILS APPLY IN ALL CASES WHETHER SPECIFICALLY REFERRED TO OR NOT.

P. BACKGROUND INFORMATION WAS DEVELOPED BASED ON AVAILABLE INFORMATION PROVIDED AT THE TIME OF DESIGN AND MAY NOT REFLECT ACTUAL FIELD CONDITIONS. CONFLICTS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION DURING CONSTRUCTION FOR DIRECTION.

Q. CONDUIT AND CONDUCTORS SPECIFICATIONS ARE BASED ON MINIMUM NEC REQUIREMENTS, CONTRACTOR MAY UP-SIZE AS NECESSARY BASED ON FIELD CONDITIONS ENCOUNTERED.

R. WORKING CLEARANCES IN FRONT OF AND AROUND ELECTRICAL EQUIPMENT SHALL BE PROVIDED PER NEC ARTICLE 110.26. FINAL ARRANGEMENT OF ELECTRICAL EQUIPMENT AND SERVICE CONNECTIONS SHALL ALLOW EQUIPMENT TO BE SERVICED, INCLUDING SPACE TO OPERATE SWITCHES, ACCESS RECEPTACLES, PULL MOTORS, ETC.

S. ARIZONA WATER COMPANY STANDARD DETAILS INCLUDED AS A PART OF THIS PROJECT APPLY IN ALL CASES WHETHER SPECIFICALLY REFERRED TO OR NOT.

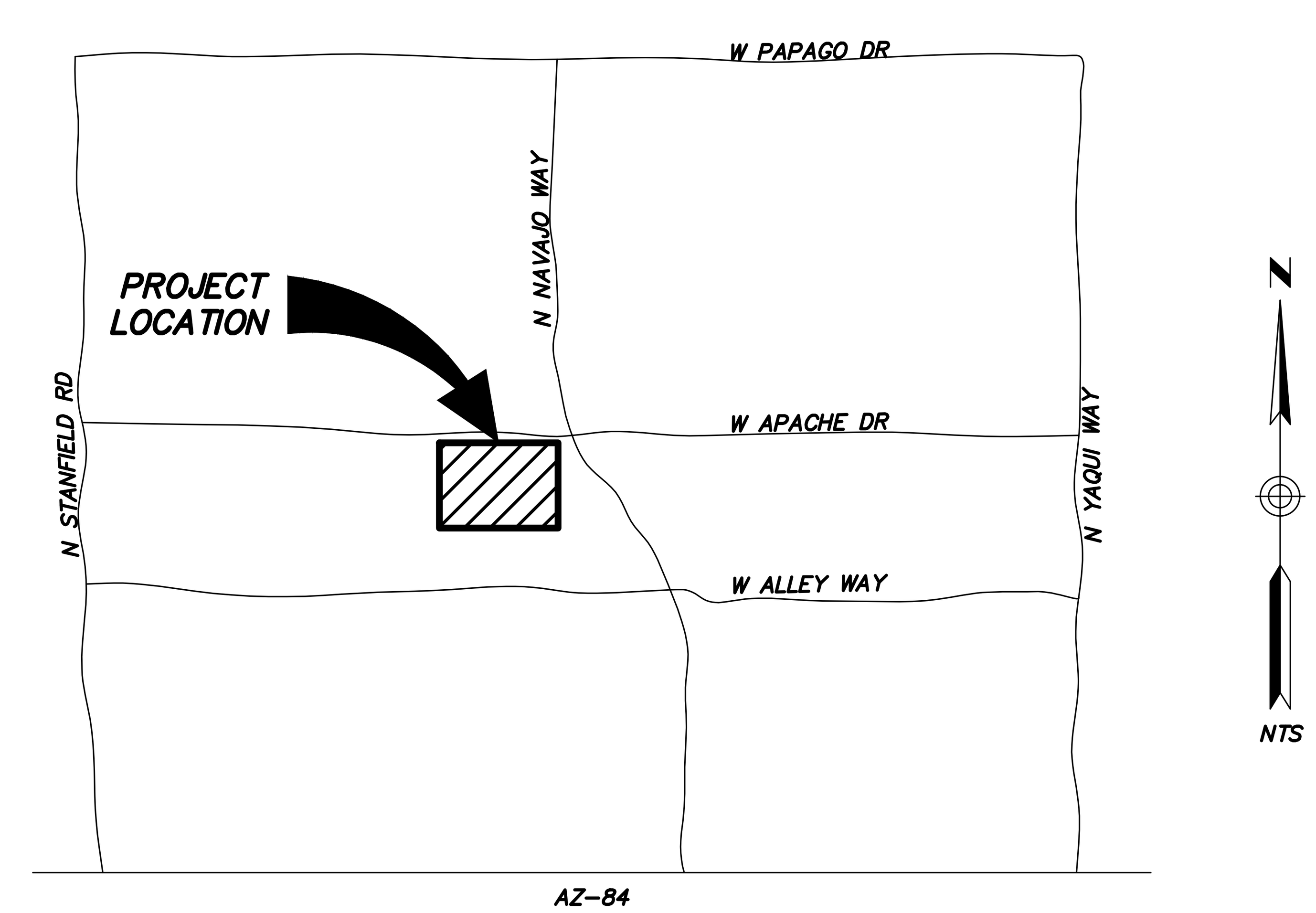
T. ALL HMI's, OIT's, DIM's AND/OR OPERATOR ADJUSTABLE CONTROL INTERFACES SHALL BE PANEL DOOR MOUNTED SO THAT THE OPERATOR IS NOT EXPOSED TO ELECTRICAL CIRCUITS.

U. RTU CABINET AND OTHER CONTROL PANELS INSTALLED AS A PART OF THIS PROJECT SHALL INCORPORATE FINGER SAFE ELECTRICAL COVERS ON ALL EXPOSED ELECTRICAL COMPONENTS.

ABBREVIATIONS

A/C	AIR CONDITIONING
AI	ANALOG INPUT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AO	ANALOG OUTPUT
APS	ARIZONA PUBLIC SERVICE
BLDG	BUILDING
BPS	BOOSTER PUMP STATION
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CL2	CHLORINE
CMU	CONCRETE MASONRY UNIT
COM	COMMON
CPT	CONTROL POWER TRANSFORMER
Cu	COPPER
DI	DISCRETE INPUT
DISC	DISCONNECT
DIST	DISTRIBUTION
DO	DISCRETE OUTPUT
DPDT	DOUBLE-POLE DOUBLE-THROW
DWG	DRAWING
(E)	EXISTING
E.C.	EMPTY CONDUIT
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ENCL	ENCLOSURE
FIT	FLOW INDICATING TRANSMITTER
FS	FUSE
GEC	GROUNDING ELECTRODE CONDUCTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
IC	INSTRUMENT CABLE
IHS	INDIAN HEALTH SERVICES
INST	INSTRUMENT
IMC	INTERMEDIATE METAL CONDUIT
J-BOX	JUNCTION BOX
LCC	LIGHTING CONTROL CABINET
LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
LIT	LEVEL INDICATING TRANSMITTER
LT	LIGHT
MBJ	MAIN BONDING JUMPER
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MFR	MANUFACTURER
MIN	MINIMUM
MLO	MAIN LUG ONLY
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
MUE	MULTI-USE EASEMENT
NTS	NOT TO SCALE
PCP	PUMP CONTROL PANEL
PIT	PRESSURE INDICATING TRANSMITTER
PQM	POWER QUALITY METER
PR	PAIR
PRESS	PRESSURE
PUE	PUBLIC UTILITIES EASEMENT
REQ'TS	REQUIREMENTS
RO	REVERSE OSMOSIS
ROW	RIGHT OF WAY
RTU	REMOTE TERMINAL UNIT
RVSS	REDUCED VOLTAGE SOFT STARTER
S/S	START/STOP
SCA	SHORT CIRCUIT AMPS
SES	SERVICE ENTRANCE SECTION
SPC	SPARE CONDUIT
SPD	SURGE PROTECTIVE DEVICE
STT	SHIELDED TWISTED TRIAD
SW	SWITCH
TSP	TWISTED SHIELDED PAIR
TST	TWISTED SHIELDED TRIAD
TTB	TELEPHONE TERMINAL BLOCK
TYP	TYPICAL
UV	ULTRAVIOLET
UON	UNLESS OTHERWISE NOTED
VLV	VALVE
VFD	VARIABLE FREQUENCY DRIVE
WDT	WASTE DURATION TIMER
WIU	WHILE-IN-USE
WP	WEATHERPROOF
WTP	WATER TREATMENT PLANT
XFMR	TRANSFORMER

VICINITY MAP



UTILITY CONTACT

ED3: CHRIS MICHIE (520-424-0408)

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2699 WWW.DARCORINC.COM

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REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

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W.A. No.: | P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.: | SIB No.:
DATE: 3/9/2026 | SCALE: N/A
DRAWN BY: MV | REVIEWED BY: VC | CHECKED BY: JLG

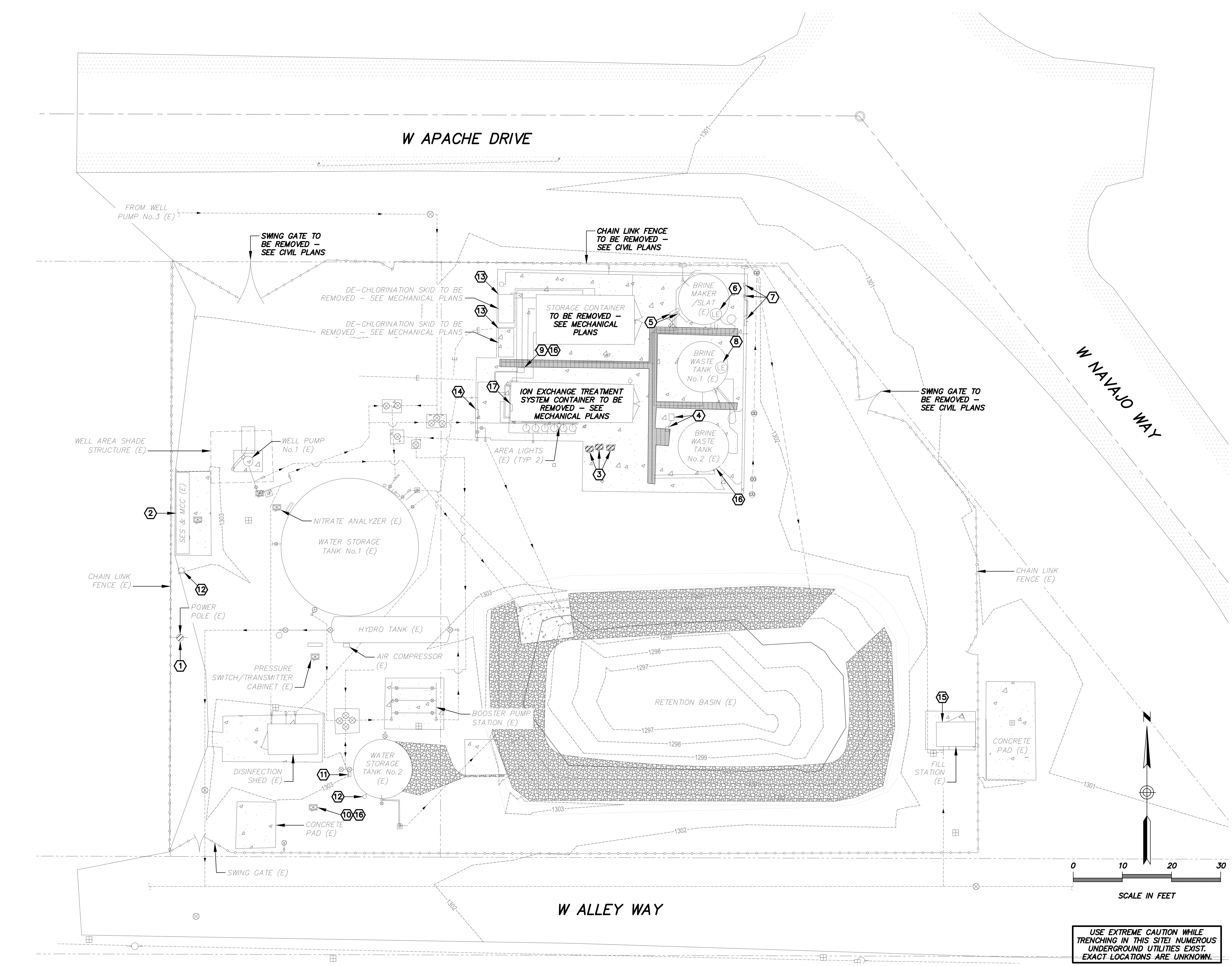
ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: ELECTRICAL LEGEND, NOTES & ABBREVIATIONS

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 Date Signed ARIZONA U.S.A.

DWG. No.: E-001

SHEET 60 OF 98



USE EXTREME CAUTION WHILE TRENCHING IN THIS SITE! NUMEROUS UNDERGROUND UTILITIES EXIST. EXACT LOCATIONS ARE UNKNOWN.

DEMOLITION GENERAL NOTES

A. DEMOLITION OF EQUIPMENT INCLUDES DISCONNECTING AND REMOVING ALL ASSOCIATED CONDUCTORS DISCONNECT AND REMOVE ALL CONDUCTORS. DEMOLITION OF CONDUITS INCLUDES REMOVAL AND DISPOSAL OF EXISTING EXPOSED CONDUITS.

B. ALL REMOVED MATERIAL NOT BEING SALVAGED BY OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR FOR REMOVAL AND DISPOSAL.

C. ALL DEMOLISHED AND REMOVED MATERIAL SHALL BE HAULED OFF SITE AND DISPOSED OF AT AN APPROVED LANDFILL, OR OTHER APPROVED LOCATION.

D. THE CONTRACTOR SHALL PERFORM ALL WORK ON THIS PROJECT WHILE THE EXISTING FACILITIES AND SURROUNDING UTILITIES ARE OPERATING. ALL CONNECTIONS OF NEW WORK TO EXISTING FACILITIES SHALL BE PERFORMED IN A MANNER TO MINIMIZE DOWNTIME, OPERATIONAL UPSETS.

E. DEMOLITION ON THIS PROJECT IS TO OCCUR AFTER NEW EQUIPMENT IS INSTALLED TO MINIMIZE DOWNTIME.

F. UNLESS OTHERWISE SPECIFIED, CUT UNDERGROUND CONDUITS 6" BELOW GRADE, CAP, AND ABANDON IN PLACE.

G. COORDINATE WITH OWNER FOR EQUIPMENT THAT IS TO BE SALVAGED.

DEMOLITION KEY NOTES

1. COORDINATE WITH ED3 FOR DISCONTINUANCE OF THE EXISTING ELECTRICAL SERVICE TO THE SITE. COORDINATE WITH ED3 FOR THE REMOVAL OF THE EXISTING POLE MOUNTED UTILITY TRANSFORMERS. THE EXISTING TELEPHONE TERMINAL BOX AND CABLES SHALL REMAIN UNDISTURBED.
2. DISCONNECT, REMOVE, AND PROPERLY DISPOSE OF EXISTING METER AND METER SECTION OF THE MCC, NEUTRAL TO GROUND CONNECTION, AND RTU SECTION. DISCONNECT AND REMOVE EXISTING CONDUIT AND CONDUCTORS BACK TO SOURCE. THE REMAINDER OF THE EQUIPMENT IN THE MCC SHALL REMAIN AND BE REUSED.
3. DISCONNECT, REMOVE, AND PROPERLY DISPOSE OF EXISTING PANELBOARDS, TRANSFORMER, JUNCTION BOXES, AND MOUNTING STANDS. DISCONNECT AND REMOVE EXISTING CONDUIT AND CONDUCTORS BACK TO SOURCE.
4. DISCONNECT, REMOVE, AND PROPERLY DISPOSE OF EXISTING SUMP PUMP, JUNCTION BOX, RECEPTACLE, PUMP CONTROLLER, FLOAT SWITCHES, AND MOUNTING STANDS. DISCONNECT AND REMOVE EXISTING CONDUIT AND CONDUCTORS BACK TO SOURCE.
5. EXISTING BRINE PUMP, PUMP CONTROLLER, MOUNTING STAND AND ASSOCIATED CONDUIT AND CONDUCTORS TO REMAIN AND BE REUSED.
6. EXISTING BRINE TANK LEVEL SENSORS TO REMAIN AND BE REUSED.
7. DISCONNECT, REMOVE, AND PROPERLY DISPOSE OF EXISTING WASTE OFFLOAD PUMP, JUNCTION BOX, PUMP CONTROLLER, FLOWMETER, OFFLOAD STATION, AND MOUNTING STANDS. DISCONNECT AND REMOVE EXISTING CONDUIT AND CONDUCTORS BACK TO SOURCE.
8. DISCONNECT, REMOVE, AND PROPERLY DISPOSE OF EXISTING PRIMARY WASTE TANK LEVEL SENSOR. DISCONNECT AND REMOVE EXISTING CONDUITS, INCLUDING UNUSED CONDUITS, AND CONDUCTORS BACK TO SOURCE.
9. EXISTING JUNCTION BOX SHALL REMAIN AND BE REUSED AS LONG AS THE EXISTING ION EXCHANGE TREATMENT SYSTEM CONTAINER REMAINS IN OPERATION. ONCE IT IS NO LONGER IN OPERATION, THE JUNCTION BOX AND ALL ASSOCIATED CONDUIT AND CONDUCTORS SHALL BE DISCONNECTED AND REMOVED.
10. DISCONNECT, REMOVE, AND PROPERLY DISPOSE OF EXISTING ABANDONED ELECTRICAL ENCLOSURES AND MOUNTING STAND, DISCONNECT AND REMOVE EXISTING CONDUITS AND CONDUCTORS BACK TO SOURCE.
11. EXISTING STORAGE TANK LEVEL TRANSMITTER, DIGITAL DISPLAY, JUNCTION BOX, AND MOUNTING STAND TO REMAIN AND BE REUSED.
12. EXISTING AREA LIGHT TO REMAIN AND BE REUSED.
13. DISCONNECT AND REMOVE ALL CONDUITS AND CONDUCTORS BACK TO SOURCE ASSOCIATED WITH THE CHEMICAL FEED SKID.
14. EXISTING FLOWMETER SHALL REMAIN AND BE REUSED AS LONG AS THE EXISTING ION EXCHANGE TREATMENT SYSTEM CONTAINER REMAINS IN OPERATION. ONCE IT IS NO LONGER IN OPERATION, THE FLOWMETER AND ALL ASSOCIATED CONDUIT AND CONDUCTORS SHALL BE DISCONNECTED AND REMOVED.
15. EXISTING FILL STATION TO REMAIN AND BE REUSED.
16. DISCONNECT AND REMOVE ABANDONED CONDUIT(S).
17. EXISTING HATCH NITRATE ANALYZER INSIDE ION EXCHANGE TREATMENT SYSTEM CONTAINER SHALL BE DISCONNECTED AND SALVAGED FOR REUSE.

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

The Installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

W.A. No.: | SYSTEM: | LEGAL DESC.: | P.E. No.: | TAX DIST.: | SIB No.:
DATE: 3/9/2026 | SCALE: AS SHOWN
DRAWN BY: MV | REVIEWED BY: VC | CHECKED BY: JLG

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: ELECTRICAL DEMOLITION SITE PLAN

Registered Professional Engineer Electrical — CERTIFICATE NO. 53839 JORGE GERARDO — 3/9/26 — ARIZONA U.S.A.

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2899 WWW.DARCORINC.COM

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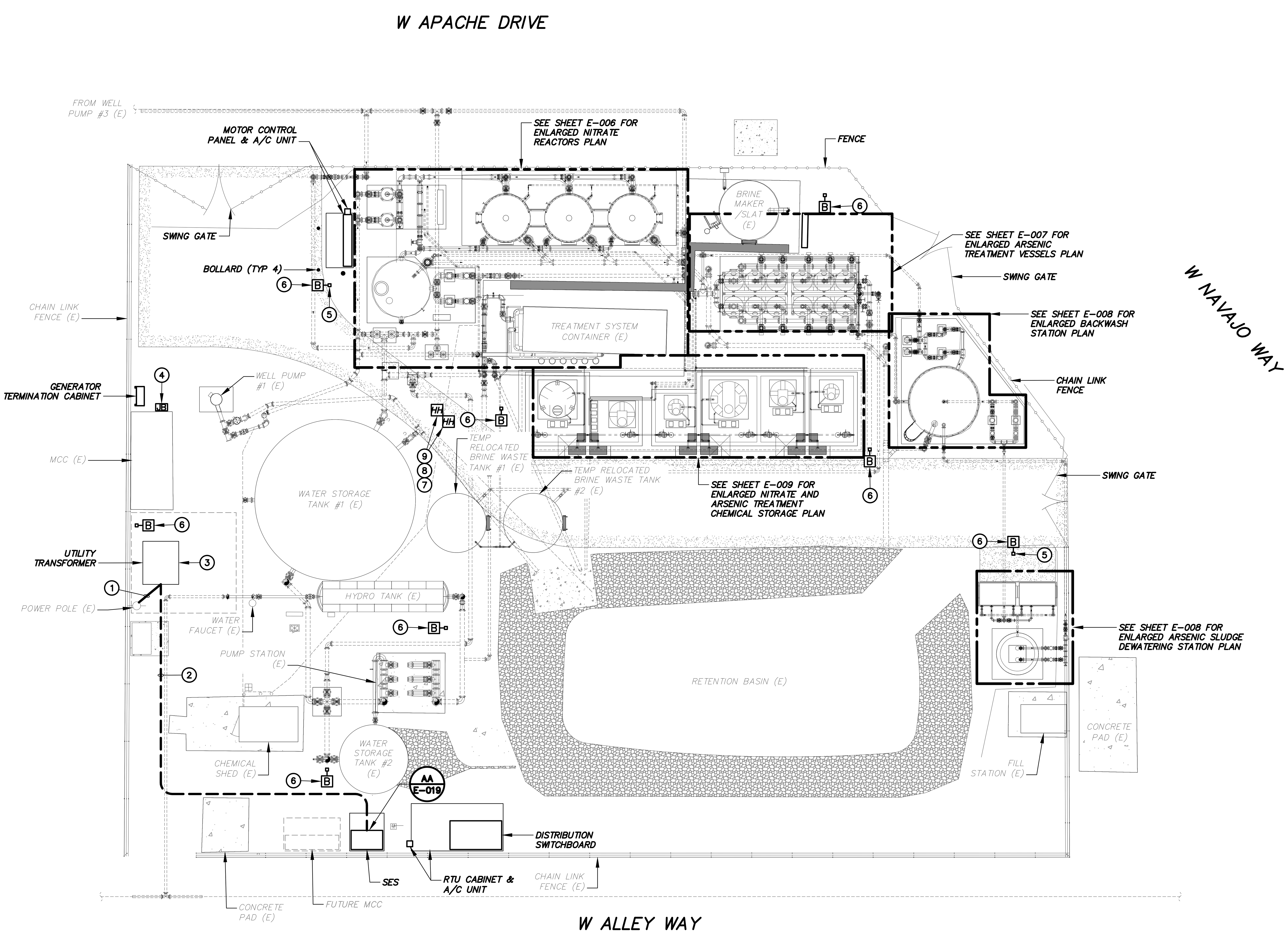
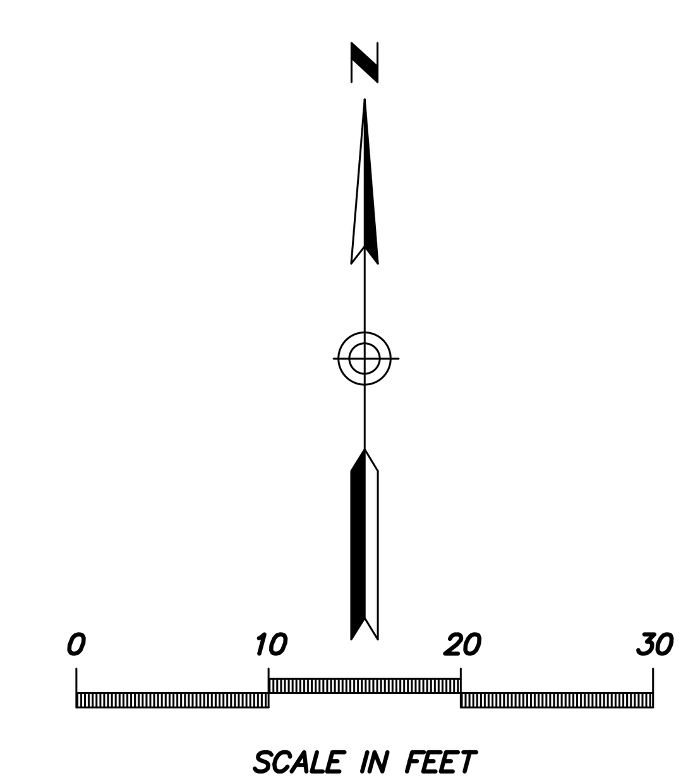
DWG. No.: E-002
SHEET 61 OF 98





USE EXTREME CAUTION WHILE TRENCHING IN THIS SITE! NUMEROUS UNDERGROUND UTILITIES EXIST. EXACT LOCATIONS ARE UNKNOWN.

GENERAL NOTES

A. SEE LUMINAIRE SCHEDULE ON SHEET E-001.

B. SEE SINGLE LINE DIAGRAM ON SHEET E-004 AND CONDUIT BLOCK DIAGRAMS ON SHEETS E-012 & E-015 FOR CONDUIT AND CONDUCTOR REQUIREMENTS.

C. SEE SHEETS E-019 THRU E-025 FOR ELECTRICAL DETAILS.

D. NO CONDUITS OR GROUND CONDUCTOR SHALL PENETRATE THE WELL PUMP PAD.

E. ALL EXPOSED CONDUIT SHALL BE SUPPORTED AS SPECIFIED OR PER NEC; WHICHEVER IS THE MORE STRINGENT REQUIREMENT.

F. MOST CONDUIT ROUTING NOT SHOWN FOR CLARITY. CONTRACTOR SHALL BE RESPONSIBLE FOR ROUTING CONDUITS IN SUCH A MANNER THAT THERE WILL BE NO MORE THAN 360 DEGREES OF CONDUIT BENDS PER RUN. FINAL ROUTING OF CONDUIT SHALL BE CLEARLY INDICATED AND DIMENSIONED ON THE CONTRACTOR "AS-BUILT" DRAWINGS.

KEY NOTES

1. INSTALL (2) 4" CONDUITS FOR UTILITY PRIMARY CONDUCTORS. MAINTAIN 12" VERTICAL SEPARATION AND 12" HORIZONTAL SEPARATION BETWEEN POWER AND COMMUNICATION CONDUITS. TRENCH AND BACKFILL PER ED3 REQUIREMENTS.
2. INSTALL (6) 4" SECONDARY CONDUITS, TRENCH AND BACKFILL PER ED3 REQUIREMENTS.
3. INSTALL UTILITY TRANSFORMER PAD PER ED3 REQUIREMENTS. MAINTAIN ALL REQUIRED WORKING CLEARANCES.
4. INSTALL ELECTRICAL UNDERGROUND #3-1/2 PULL BOX PER DETAIL UB2 ON DRAWING E-021.
5. INSTALL 120V, 20A LIGHT SWITCH IN "FD" TYPE BOX WITH WP COVER AT 48"AFG. SWITCH TO CONTROL AREA LIGHTS.
6. INSTALL POLE MOUNTED AREA LIGHT AT +13' AFG. POLE SHALL INCLUDE EXTENDED BASE PER AWC STANDARD DETAIL.
7. INSTALL CONCRETE ENCASED DUCTBANK PER AWC STANDARD DETAIL FOR CONDUIT DUCTBANKS UNDER DRIVEWAY.
8. #2/0 BARE Cu GROUNDING ELECTRODE CONDUCTOR AT 30" BELOW GRADE.
9. INSTALL (2) 48" X 48" X 48" TRAFFIC RATED ELECTRICAL HANDHOLES PER AWC STANDARDS DETAILS, ONE FOR POWER AND ONE FOR CONTROL CONDUITS.

REVISIONS:

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DRAWN BY: ###
REVIEWED BY: ###
CHECKED BY: ###

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: ELECTRICAL SITE PLAN

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 Date Signed ARIZONA U.S.A.

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140
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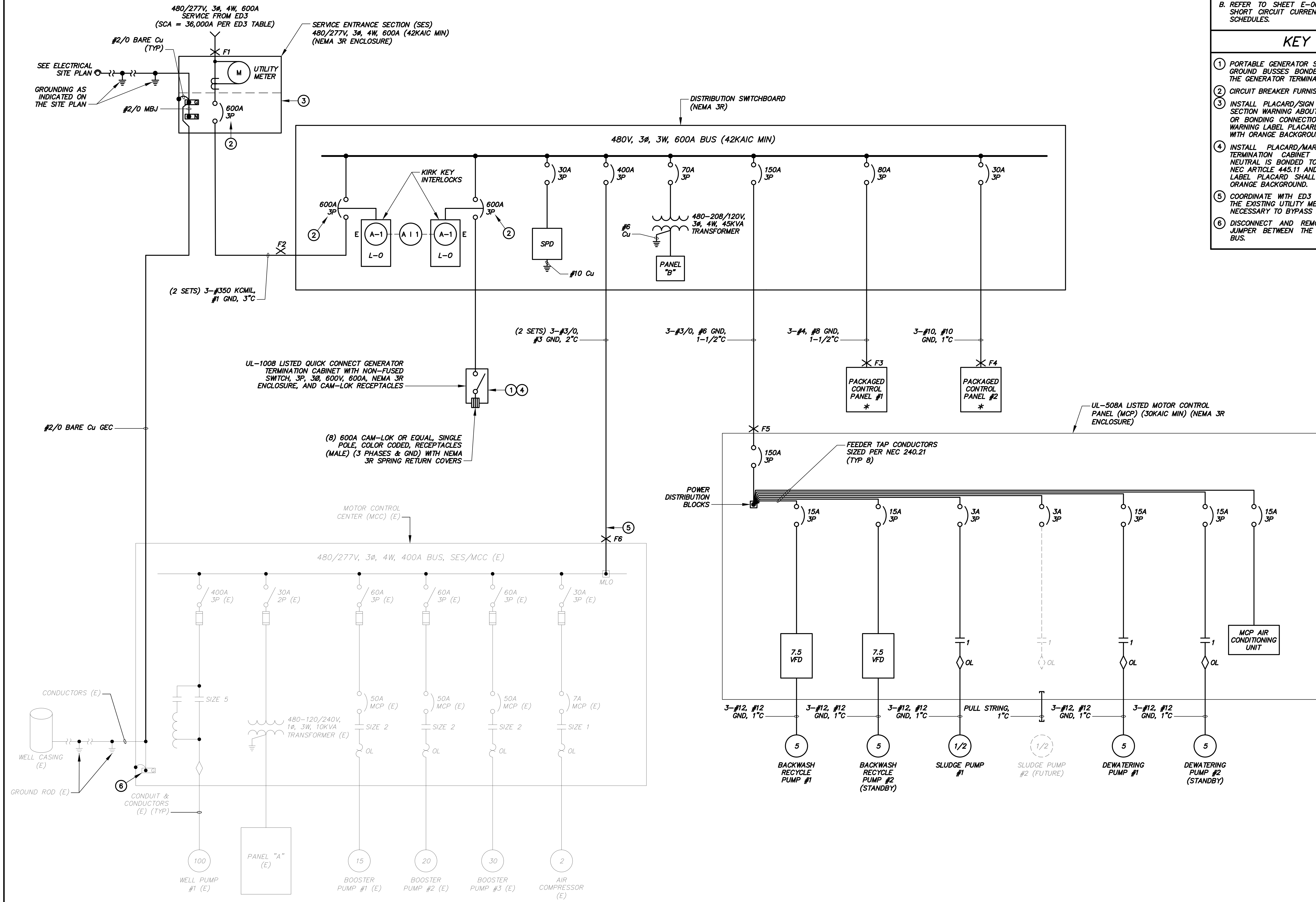
DWG. No.: E-003

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-E3 (Site Plan).dwg, Plotted Date: March 9, 2026 6:49 PM By: Tobias J. Wiley



* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM.

GENERAL NOTES

A. REFER TO CONDUIT BLOCK DIAGRAM ON SHEET E-012 & E-013 FOR ADDITIONAL CONDUIT AND CONDUCTOR REQUIREMENTS.

B. REFER TO SHEET E-005 FOR LOAD CALCULATIONS, SHORT CIRCUIT CURRENT CALCULATIONS, AND PANEL SCHEDULES.

KEY NOTES

1. PORTABLE GENERATOR SHALL HAVE ITS NEUTRAL AND GROUND BUSSES BONDED PRIOR TO CONNECTING TO THE GENERATOR TERMINATION CABINET.
2. CIRCUIT BREAKER FURNISHED WITH LSI FEATURES.
3. INSTALL PLACARD/SIGN AT THE SERVICE ENTRANCE SECTION WARNING ABOUT REMOVAL OF THE GROUNDING OR BONDING CONNECTION PER NEC ARTICLE 701.7(B) WARNING LABEL PLACARD SHALL HAVE BLACK LETTERS WITH ORANGE BACKGROUND.
4. INSTALL PLACARD/MARKING ON THE GENERATOR TERMINATION CABINET INDICATING THE GENERATOR NEUTRAL IS BONDED TO THE GENERATOR FRAME PER NEC ARTICLE 445.11 AND KEY NOTE 1 ABOVE. WARNING LABEL PLACARD SHALL HAVE BLACK LETTERS WITH ORANGE BACKGROUND.
5. COORDINATE WITH ED3 TO DISCONNECT AND REMOVE THE EXISTING UTILITY METER. INSTALL CONDUCTORS AS NECESSARY TO BYPASS REMOVED UTILITY METER.
6. DISCONNECT AND REMOVE EXISTING MAIN BONDING JUMPER BETWEEN THE GROUND BUS AND NEUTRAL BUS.

REVISIONS:

NO	DATE	BY	DESCRIPTION
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C	03/09/26	FT	90% SUBMITTAL

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P.E. No.: | W.A. No.: | SYSTEM: | LEGAL DESC.: | TAX DIST.: | SIB No.: | SCALE: N/A | DATE: 3/9/2026 | DRAWN BY: MV | REVIEWED BY: VC | CHECKED BY: JLG

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: SINGLE LINE DIAGRAM

53839
JORGE
GERARDO
3/9/26

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DWG. No.: E-004

480V, 3Ø LOAD CALCULATIONS

LOAD DESCRIPTION	KVA	H.P.	AMPS
BOOSTER PUMP No.1 (E)	--	10	14.0
BOOSTER PUMP No.2 (E)	--	20	27.0
BOOSTER PUMP No.3 (E)	--	30	40.0
WELL PUMP No.1 (E)	--	100	124.0
AIR COMPRESSOR (E)	--	2	3.4
PANEL "A" TRANSFORMER (E)	10	--	20.8
NEW LOADS	--	--	--
PANEL B TRNASFORMER (3PH)	***45***	--	***54.1***
MCP AIR CONDITIONING UNIT	***4.4***	--	***5.3***
NITRATE SYSTEM	--	--	--
PACKAGED CONTROL PANEL #1	***54***	--	***65.0***
ARSENIC SYSTEM	--	--	--
BACKWASH RECYCLE PUMP #1	--	***5***	***7.6***
BACKWASH RECYCLE PUMP #2 (STANDBY)	--	***5***	***0.0***
SLUDGE PUMP #1	--	***0.5***	***1.1***
FUTURE SLUDGE PUMP #2 (STANDBY)	--	***0.5***	***0.0***
DEWATERING PUMP #1	--	***5***	***7.6***
FUTURE DEWATERING PUMP #2 (STANDBY)	--	***5***	***0.0***
PACKAGED CONTROL PANEL #2	***20.8***	--	***25.0***
		SUBTOTAL =	***394.9***
		+25% OF LARGEST MOTOR (100HP) =	***31.0***
		MINIMUM SERVICE SIZE =	***425.9***
		SELECTED SERVICE SIZE =	***600A***

PANEL: "A" | VOLTAGE: 240 / 120 1Ø | MAINS: 100A MCB | BUS AMPS: EXISTING

TYPE: EXISTING | ENCLOSURE: EXISTING | MOUNTING: EXISTING | MIN AIC: 10,000

	CIRCUIT DESCRIPTION	BKR	CKT	AØ (VA LOAD)	BØ (VA LOAD)	CKT	BKR	CIRCUIT DESCRIPTION
X	AREA LIGHTS	20	1	200 / 1500		2	20	CHLORINE BLDG.
X	AREA RECEPT	20	3		180 / 300	4	20	WATER SALES DEVICE
X	MCC RECEPT	20	5	180 / 0		6	20	SPARE
X	MCC LIGHTS	20	7		200 / 100	8	20	REMOTE RTU CABINET
	SPARE	20	9	0 / 0		10	20	SPARE
	SPARE	20	11		0 / 0	12	20	SPARE
	SPARE	20	13	0 / 0		14	20	SPARE
	SPARE	20	15		0 / 0	16	20	SPARE
	SPARE	20	17	0 / 0		18	20	SPARE
	SPARE	20	19		0 / 0	20	20	SPARE
	SPARE	20	21	0 / 0		22	20	SPARE
	SPARE	20	23		0 / 0	24	20	SPARE
	CONNECTED VA PER PHASE			3118.0	3050.0	NOTES:		
	CONNECTED AMPS PER PHASE			26.0	25.4	"X" DENOTES CONTINUOUS LIGHTING LOAD		
	+25% LARGEST MOTOR VA			0	0	"XX" DENOTES LARGEST MOTOR LOAD		
	+25% CONTINUOUS LOAD VA			95	95			
	DEMAND VA PER PHASE			3213	3145	***NEW WORK DENOTED IN BOLD ITALIC TEXT***		
	TOTAL AMPS PER PHASE			26.8	26.2			

PANEL: "B" | VOLTAGE: 208 / 120 3Ø | MAINS: 150A MCB | BUS AMPS: 200

TYPE: BOLT ON C/B'S | ENCLOSURE: IN SWBD | MOUNTING: IN SWBD | MIN AIC: 22,000

	CIRCUIT DESCRIPTION	BKR	CKT	AØ (VA LOAD)	BØ (VA LOAD)	CØ (VA LOAD)	CKT	BKR	CIRCUIT DESCRIPTION	
	RTU CABINET	20	1	1200 / 400			2	20	POLE MOUNTED AREA LIGHTS	X
X	CHEMICAL AREA LIGHTS	20	3		200 / 400		4			X
	FIT-132	15	5			100	6			
	FIT-371	15	7	100			8			
	FIT-511	15	9		100		10			
			11				12			
			13				14			
			15				16			
			17				18			
			19				20			
			21				22			
			23				24			
			25				26			
			27				28			
			29				30			
			31				32			
			33				34			
			35				36			
			37				38			
			39				40			
			41				42			
	CONNECTED VA PER PHASE			1700.0	700.0	100.0	NOTES:			
	CONNECTED AMPS PER PHASE			14.2	5.8	0.8	"X" DENOTES CONTNOUS LIGHTING LOAD			
	+25% LARGEST MOTOR VA			0	0	0	"XX" DENOTES LARGEST MOTOR LOAD			
	+25% CONTINUOUS LOAD VA			100	150	0	"L" DENOTES LOCKING DEVICE			
	DEMAND VA PER PHASE			1800	850	100	"G" DENOTES GFCI TYPE CIRCUIT BREAKER			
	TOTAL AMPS PER PHASE			15.0	7.1	0.8				

SHORT CIRCUIT CALCULATIONS

CABLES/CONDUCTORS:

$$I_{SC\_RMS} = (I_{SC} \times M) + \text{MotorCont}_{\text{If applicable}}$$

$$M = 1/(1+f) \qquad f = \frac{1.732 \times L \times I_{SC}}{C \times E_{L-L}}$$

TRANSFORMERS:

$$I_{SCA} = I_{FLA} \times M \qquad M = \frac{100}{\% Z}$$

Fault Point F(_)	Panel/Transformer Description	Source (Fault Point)	I (Source) (Amps)	Conduit Type	Cable Type	Wire/Bus Size	"C" Value	E_{L-L} (Volts)	L (Length) (FT)	f	XFMR FLA (AMPS)	XFMR %Z	M	Motor Contribution	I (Short Circuit) (Amps)
1	SES	Utility	36,000												**36,000**
2	DISTRIBUTION SWITCHBOARD	1	36,000	NM	600V	2 SET(S) OF 350	22,737	480	30	0.086	--	--	0.921	496	**33,158**
3	EXISTING MOTOR CONTROL CENTER	2	33,158	NM	600V	2 SET(S) OF 3/0	13,923	480	120	0.516	--	--	0.660		**21,878**
4	MOTOR CONTROL PANEL	2	33,158	NM	600V	1 SET(S) OF 3/0	13,923	480	10	0.086	--	--	0.921		**30,534**
5	PACKAGED CONTROL PANEL #1	2	33,158	NM	600V	1 SET(S) OF 4	3,826	480	175	5.473	--	--	0.154		**5,123**
6	PACKAGED CONTROL PANEL #2	2	33,158	NM	600V	1 SET(S) OF 10	982	480	125	15.230	--	--	0.062		**2,043**
7	PANEL "A" TRANSFORMER SECONDARY				600V	SET(S) OF					124.9	3	33.333		**4,163**
8	PANEL "A"	3	4,163	NM	600V	1 SET(S) OF 1/0	9,317	208	5	0.019	--	--	0.982		**4,087**

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DATE: 3/9/2026 | SCALE: N/A | DRAWN BY: MV | REVIEWED BY: VC | CHECKED BY: JLG

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: PANEL SCHEDULE AND SHORT CIRCUIT CURRENT CALCULATIONS

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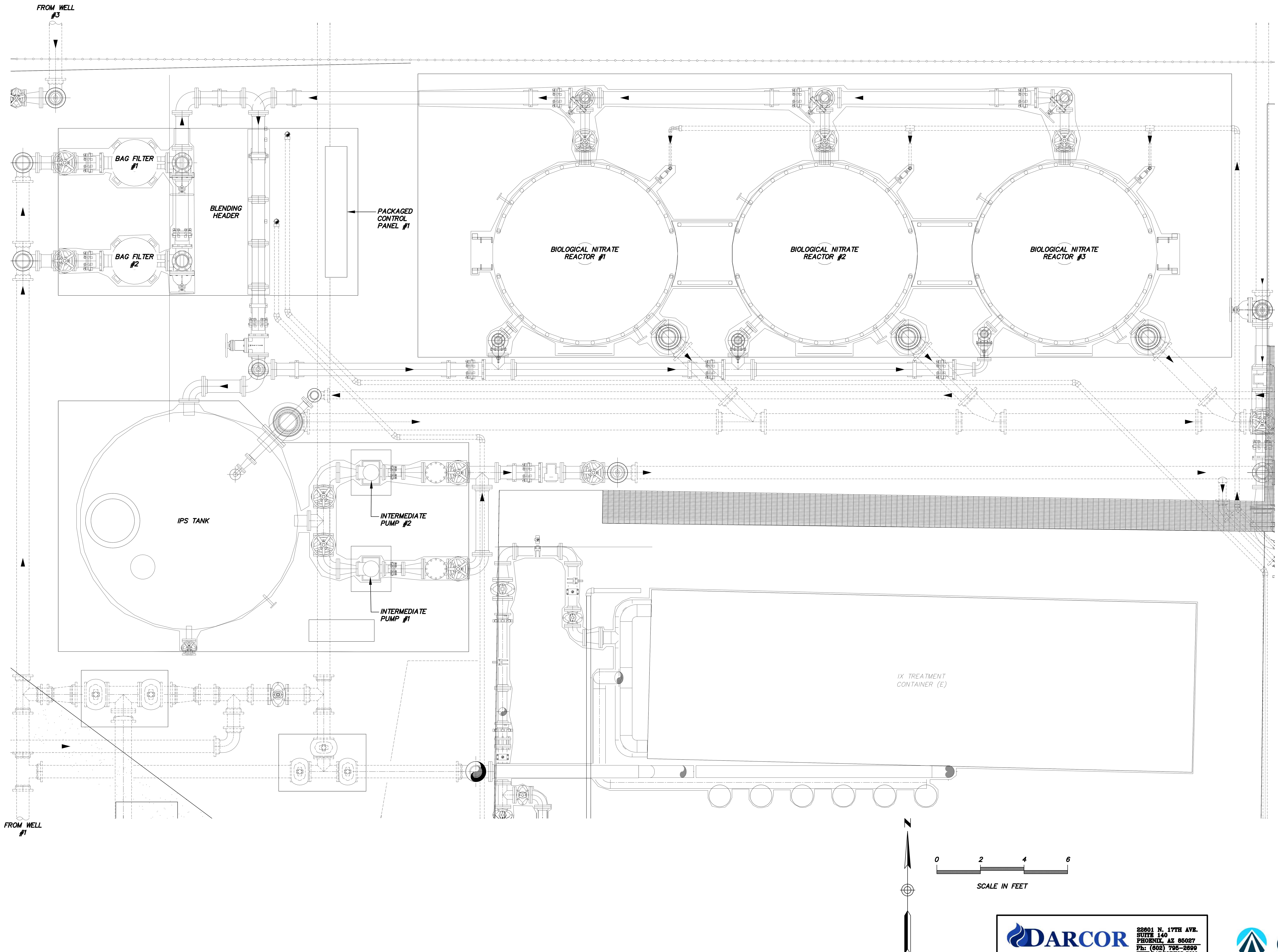
DWG. No.: E-005

SHEET 64 OF 98



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REVIEWED BY:
CHECKED BY:

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

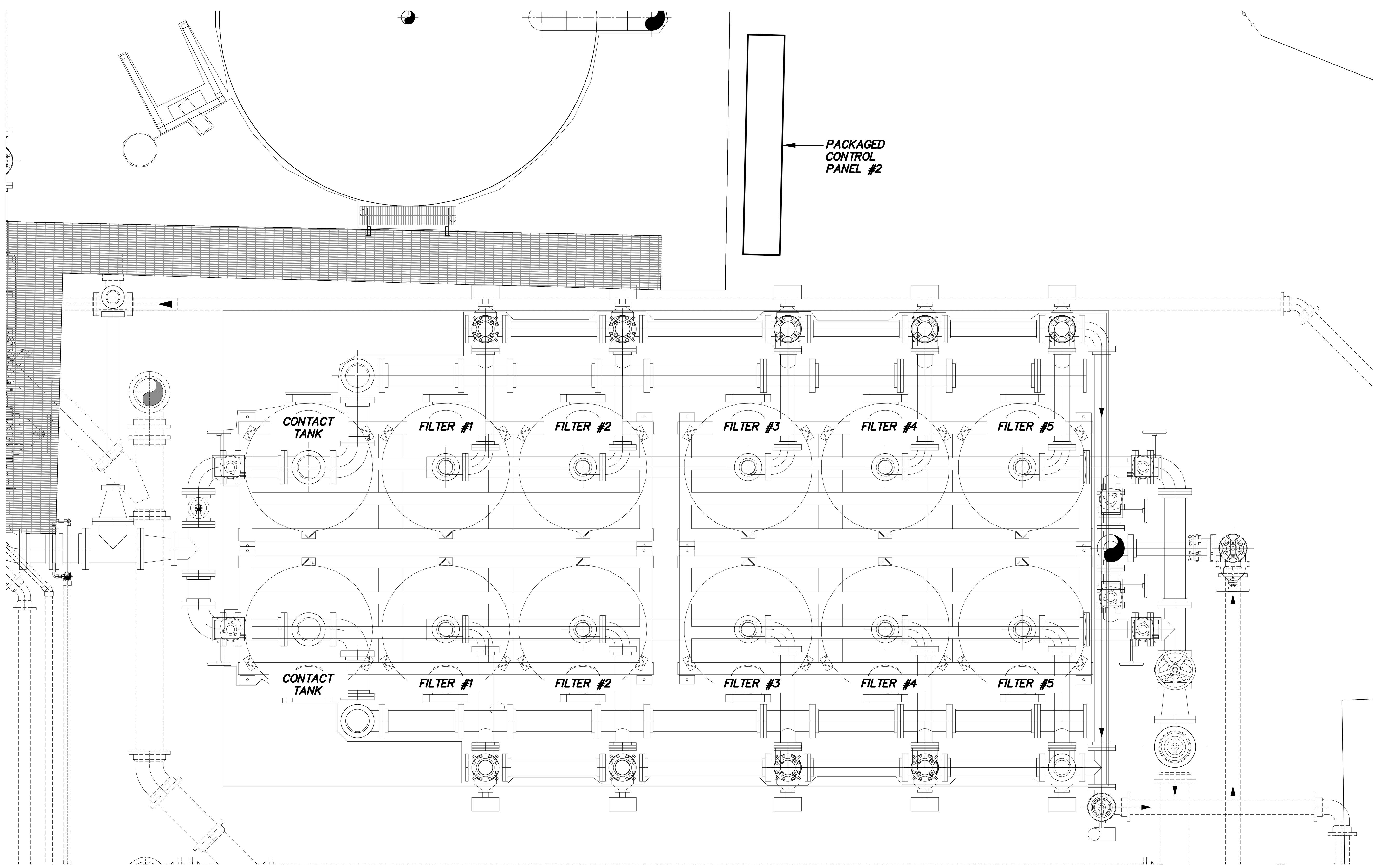
PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

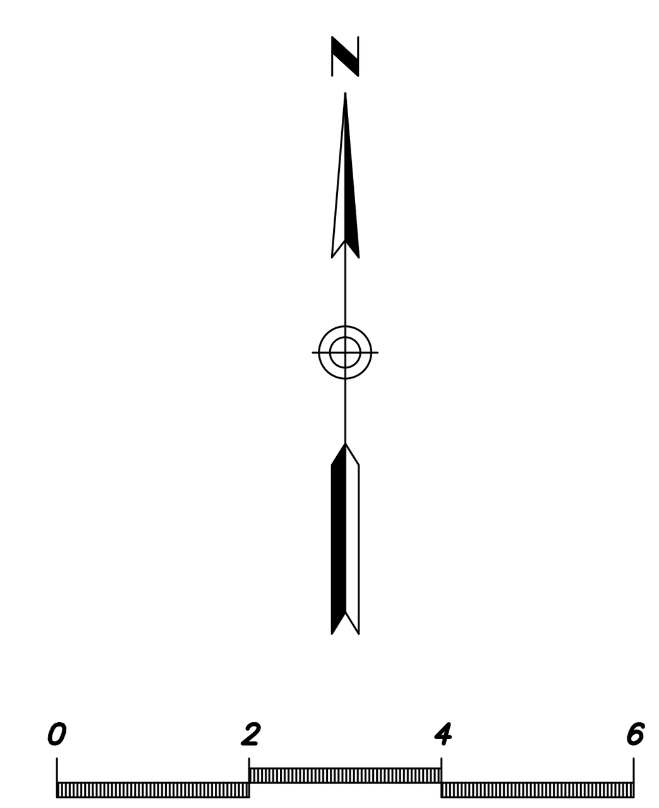
PROJECT SHEET DESC: NITRATE TREATMENT SYSTEM ENLARGED PLAN

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

DWG. No.: E-006

SHEET 65 OF 98





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Call 811 or click Arizona811.com

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LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 3/9/2026
SCALE: N/A
DRAWN BY:
REVIEWED BY:
CHECKED BY:

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

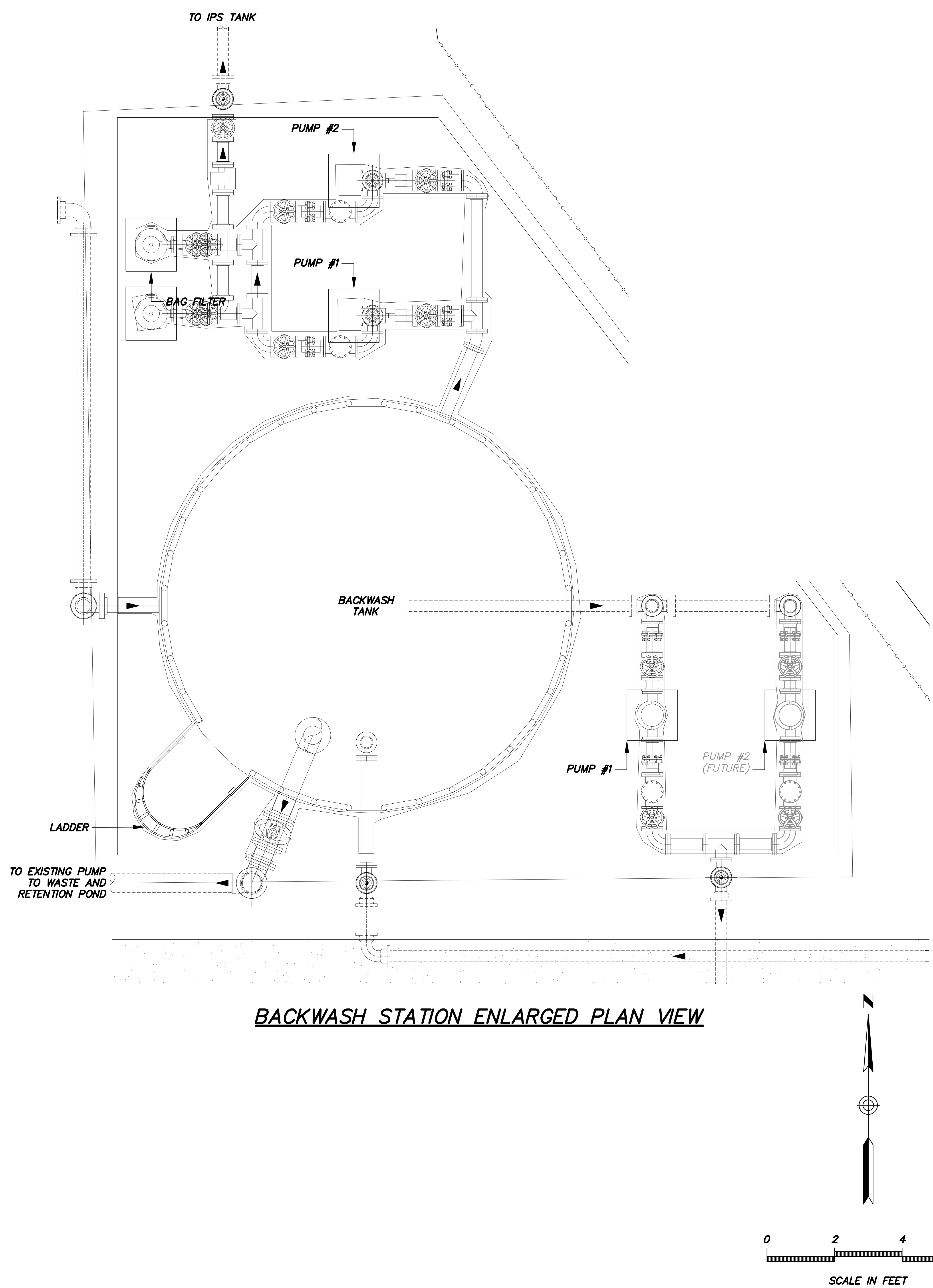
PROJECT SHEET DESC: ARSENIC TREATMENT FILTRATION SYSTEM ENLARGED PLAN

Registered Professional Engineer (Electrical)
CERTIFICATE NO.
53839
JORGE
GERARDO
3/9/26
Date Signed
ARIZONA U.S.A.

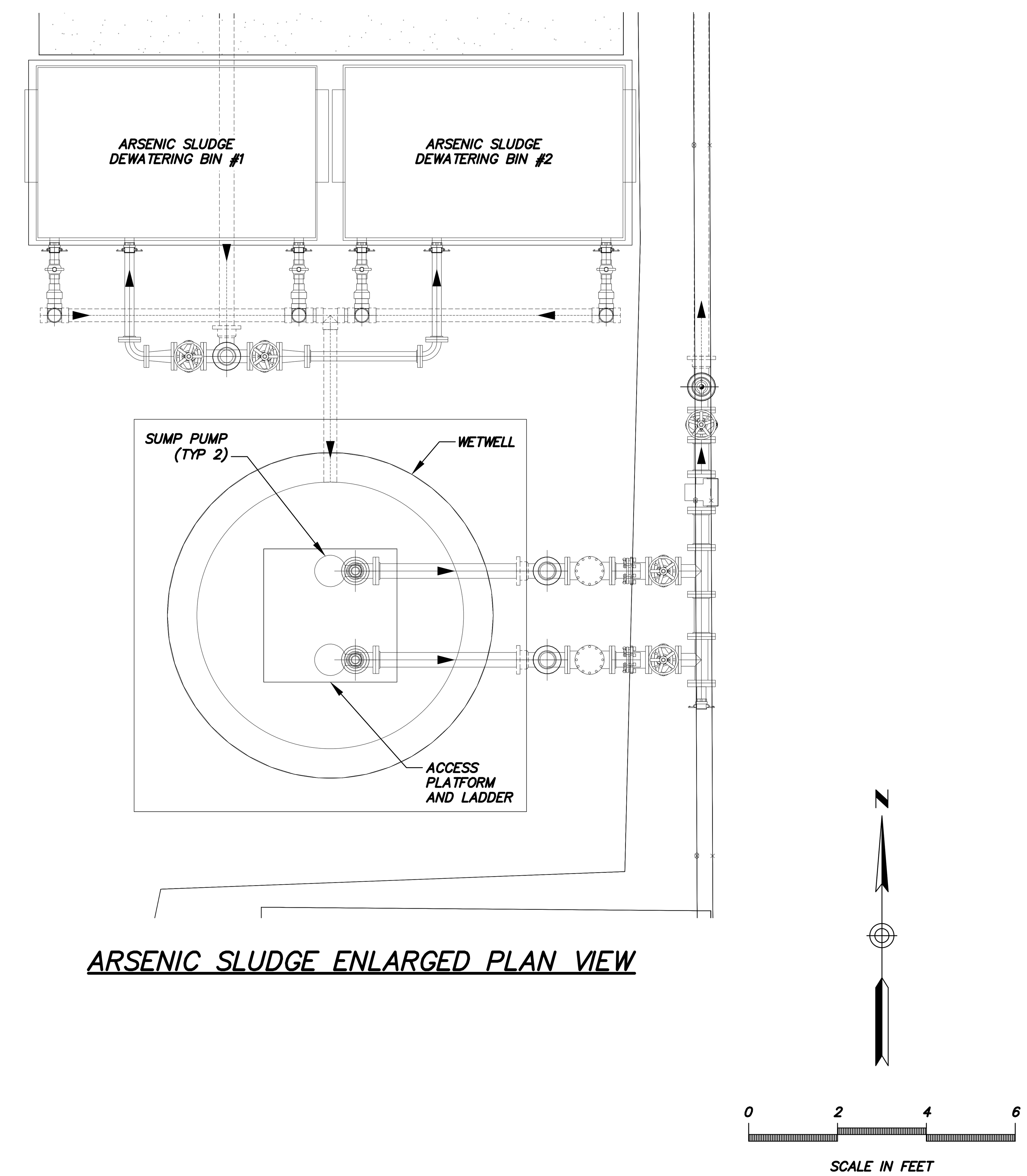
DWG. No.: E-007

SHEET 66 OF 98

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-E7 (Enlarged Arsenic Treatment Plan View).dwg, Plotted Date: March 9, 2026 6:51 PM By: Tobias J. Wiley



BACKWASH STATION ENLARGED PLAN VIEW



ARSENIC SLUDGE ENLARGED PLAN VIEW

REVISIONS:

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DATE: 3/9/2026
SCALE: N/A
DRAWN BY: [illegible]
REVIEWED BY: [illegible]
CHECKED BY: [illegible]

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: ENLARGED PLANS

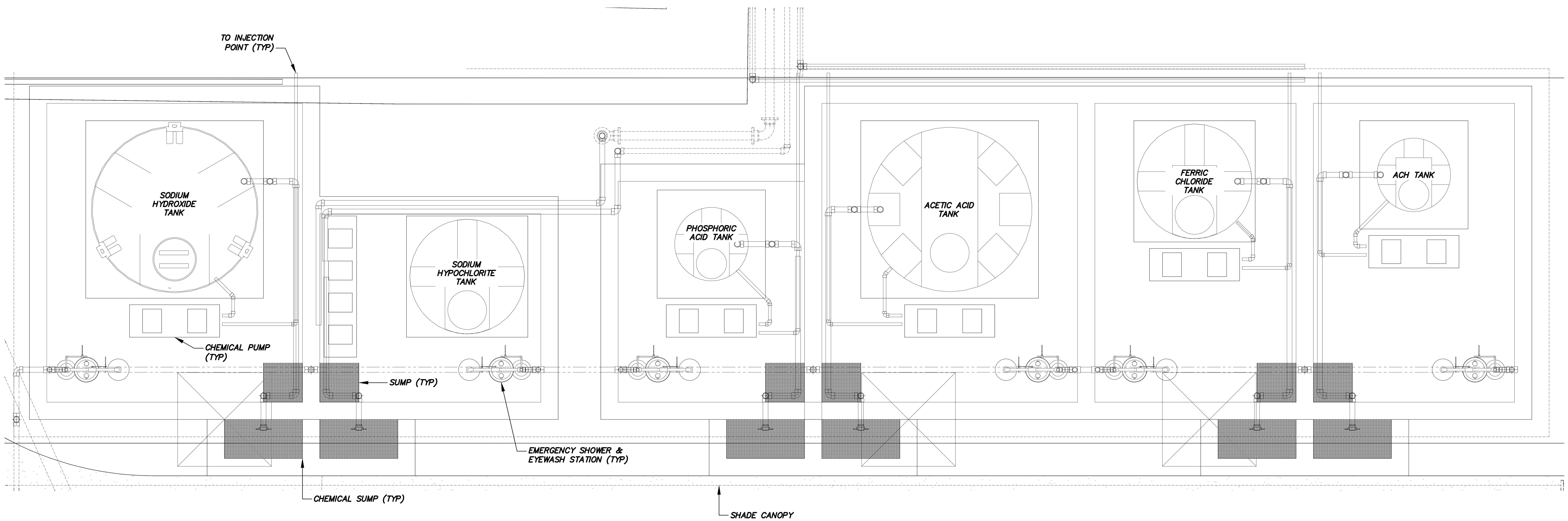
Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

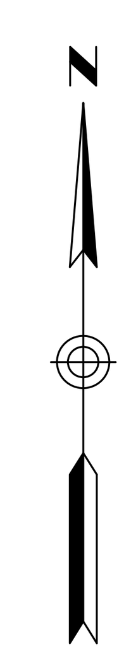
DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2699 WWW.DARCORINC.COM

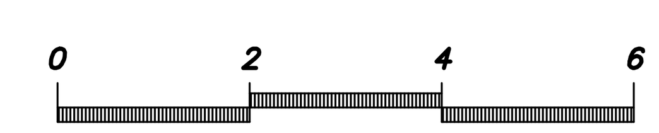
consor

DWG. No.: E-008

SHEET 67 OF 98







REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

W.A. No.:
P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 3/9/2026
SCALE: N/A
DRAWN BY: NAF
REVIEWED BY: HAD
CHECKED BY: JHJG

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: CHEMICAL STORAGE ENLARGED PLAN

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 Date Signed ARIZONA U.S.A.

DWG. No.: E-009

SHEET 68 OF 98

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Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-E9 (Chemical Storage Enlarged Plan View).dwg, Plotted Date: March 9, 2026 6:53 PM By: Tobias J. Wiley

GENERAL NOTES

A. THE CHEMICAL FEED AREA IS CONSIDERED A CORROSIVE AREA. ALL ENCLOSURES, FITTINGS, ETC. SHALL BE 316SS OR PVC COATED RIGID STEEL, AND ALL BOXES SHALL BE PVC COATED OR NEMA 4X, UNLESS OTHERWISE INDICATED OR SPECIFIED.

B. CONDUITS SHALL BE INSTALLED UNDERGROUND AS MUCH AS POSSIBLE. CONDUITS SHALL NOT PENETRATE THE CONTAINMENT BASIN FLOOR. CONDUITS MUST STUBUP THROUGH CONCRETE PEDESTALS OR CURBS.

C. ALL EXPOSED CONDUITS SHALL BE PVC COATED GRS. CONDUIT SHALL BE SUPPORTED AS REQUIRED BY NEC.

D. FURNISH AND INSTALL 3/4" CONDUIT FITTINGS, PULL BOXES, ETC. AS REQUIRED FOR LUMINAIRES.

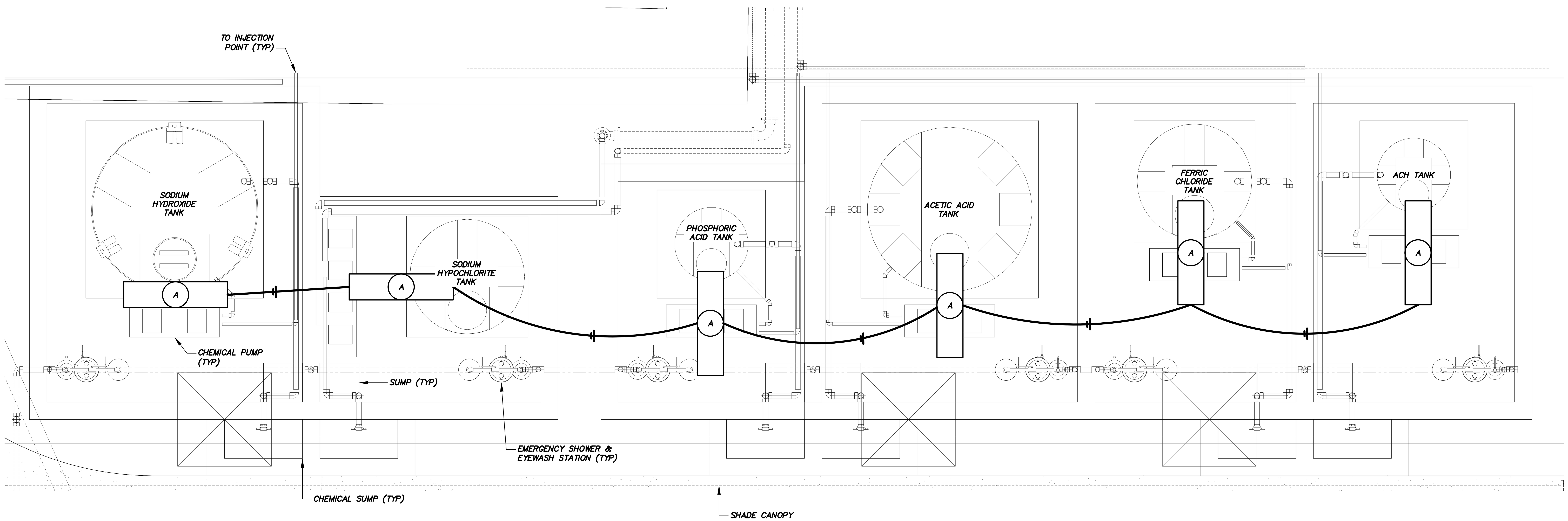
E. REFER TO THIS SHEET FOR LUMINAIRE SCHEDULE.

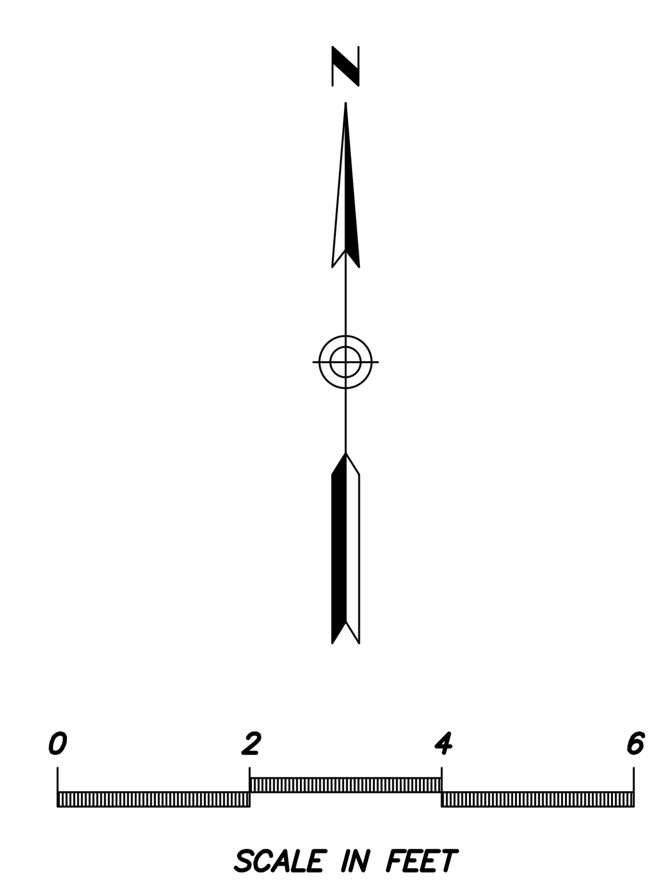
F. REFER TO DRAWING E-005 FOR PANEL SCHEDULE.

G. REFER TO CONDUIT BLOCK DIAGRAMS ON DRAWINGS E-012 THRU E-014 FOR CONDUIT & CONDUCTOR REQUIREMENTS.

KEY NOTES

(1) INSTALL 120V, 20A, SPST LIGHT SWITCH AND 120V, 20A, GFCI TYPE DUPLEX RECEPTACLE IN PVC COATED "FD" TYPE BOX AT +48" AFG WITH WP AND WHILE-IN-USE COVERS RESPECTIVELY.





LUMINAIRE SCHEDULE

SYMBOL	VOLTS	LEDs	LUMENS	DESCRIPTION	MANUFACTURER
(A) EM	120	LED 400K	6,000	48" SEALED AND GASKETED VAPORTIGHT CEILING MOUNTED LED, 4000K, MEDIUM DISTRIBUTION WITH HIGH IMPACT LENS. RATED FOR WET LOCATIONS WITH STAINLESS STEEL LATCHES. "EM" DENOTES LUMINAIRE TO INCLUDE AN EMERGENCY BATTERY PACK.	COOPER METALUX MODEL 4VT2
B	120	LED 4000K	6,000	AREA LIGHTING LUMINAIRE, FULLY GASKETED EXTRUDED ALUMINUM HOUSING, BRONZE THERMOSET POLYESTER POWDER COAT FINISH, IES TYPE V DISTRIBUTION PATTERN, UL LISTED FOR WET LOCATIONS.	VISIONAIRE LIGHTING MODEL EL2 COOPER LIGHTING MODEL VTS PHILLIPS/GARDCO MODEL P21

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

P.E. No.: W.A. No.: SYSTEM: LEGAL DESC.: TAX DIST.: SIB No.:

DATE: 3/9/2026 SCALE: N/A

DRAWN BY: MV REVIEWED BY: VC CHECKED BY: JLG

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: ENLARGED LIGHTING PLAN VIEWS - I

53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

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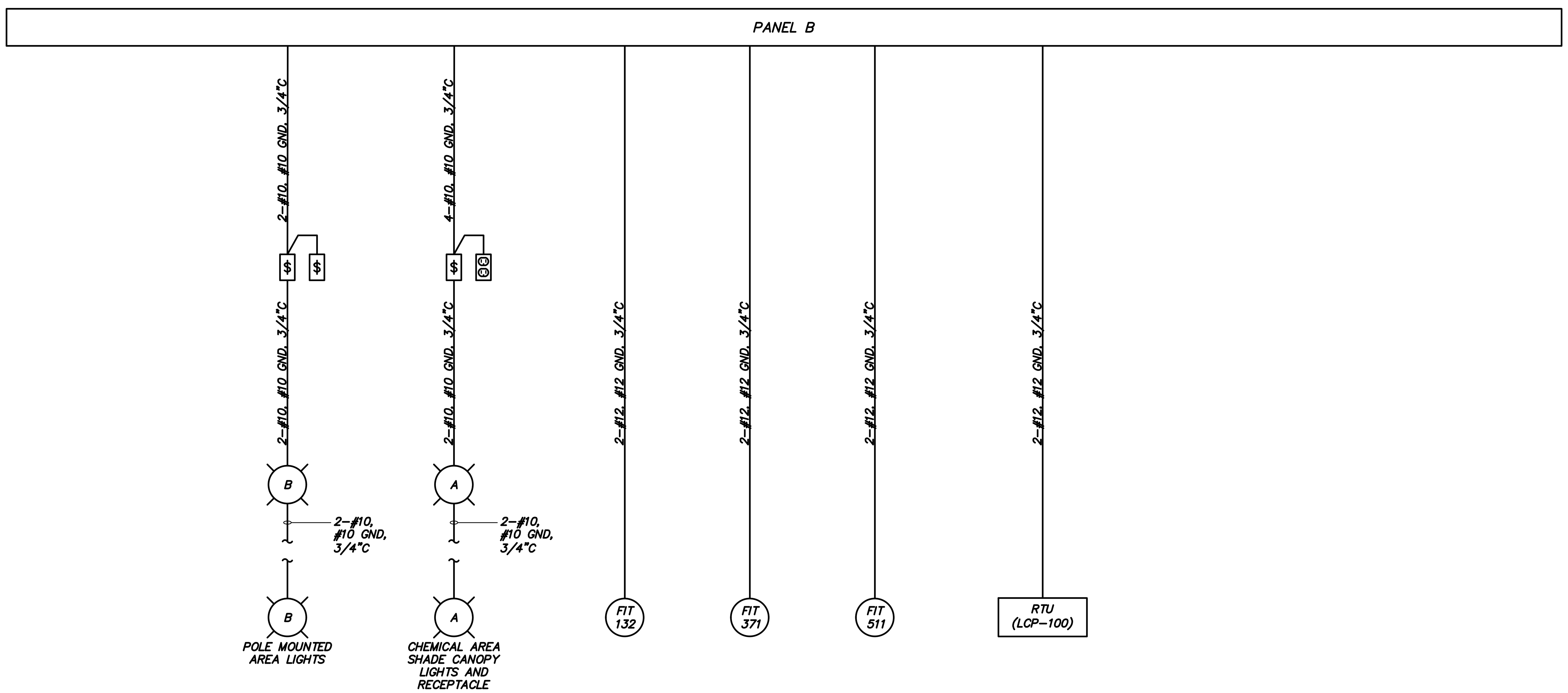
DWG. No.: E-010

SHEET 69 OF 98



NO	DATE	BY	DESCRIPTION
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B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

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W.A. No.:
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LEGAL DESC.:
TAX DST.:
SIB No.:
DATE: 3/9/2026
SCALE: N/A
DRAWN BY: MV
REVIEWED BY: VC
CHECKED BY: JLG

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: CONDUIT BLOCK DIAGRAM - I

53839 JORGE GERARDO 3/9/26

DARCOR ELECTRICAL CONSULTING ENGINEERS
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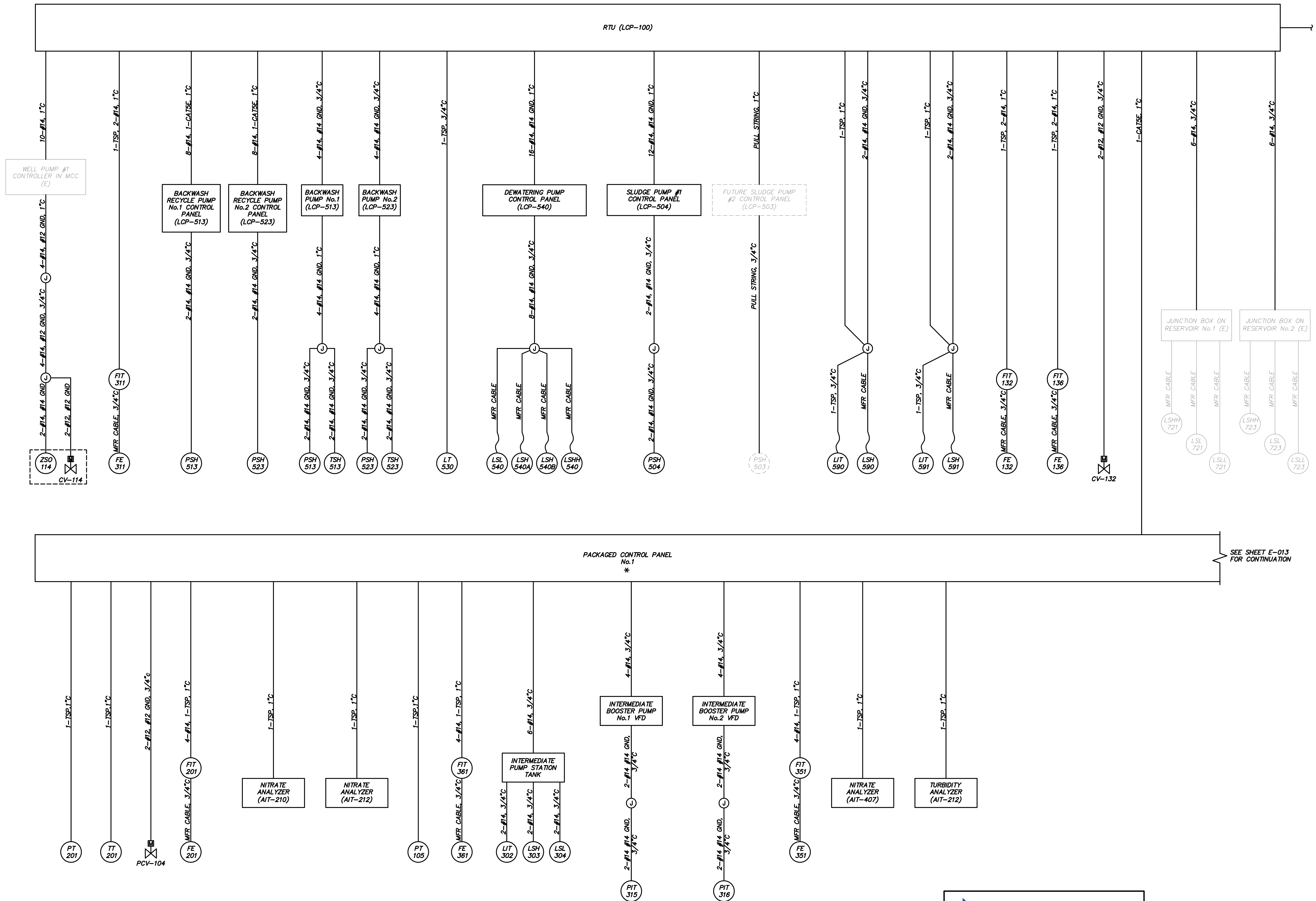
DWG. No.: E-011



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A	10/03/25	FT	30% SUBMITTAL
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C	03/09/26	FT	90% SUBMITTAL

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DATE: 3/9/2026 | SCALE: N/A | DRAWN BY: MV | REVIEWED BY: VC | CHECKED BY: JLG

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
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(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: CONDUIT BLOCK DIAGRAM - I

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

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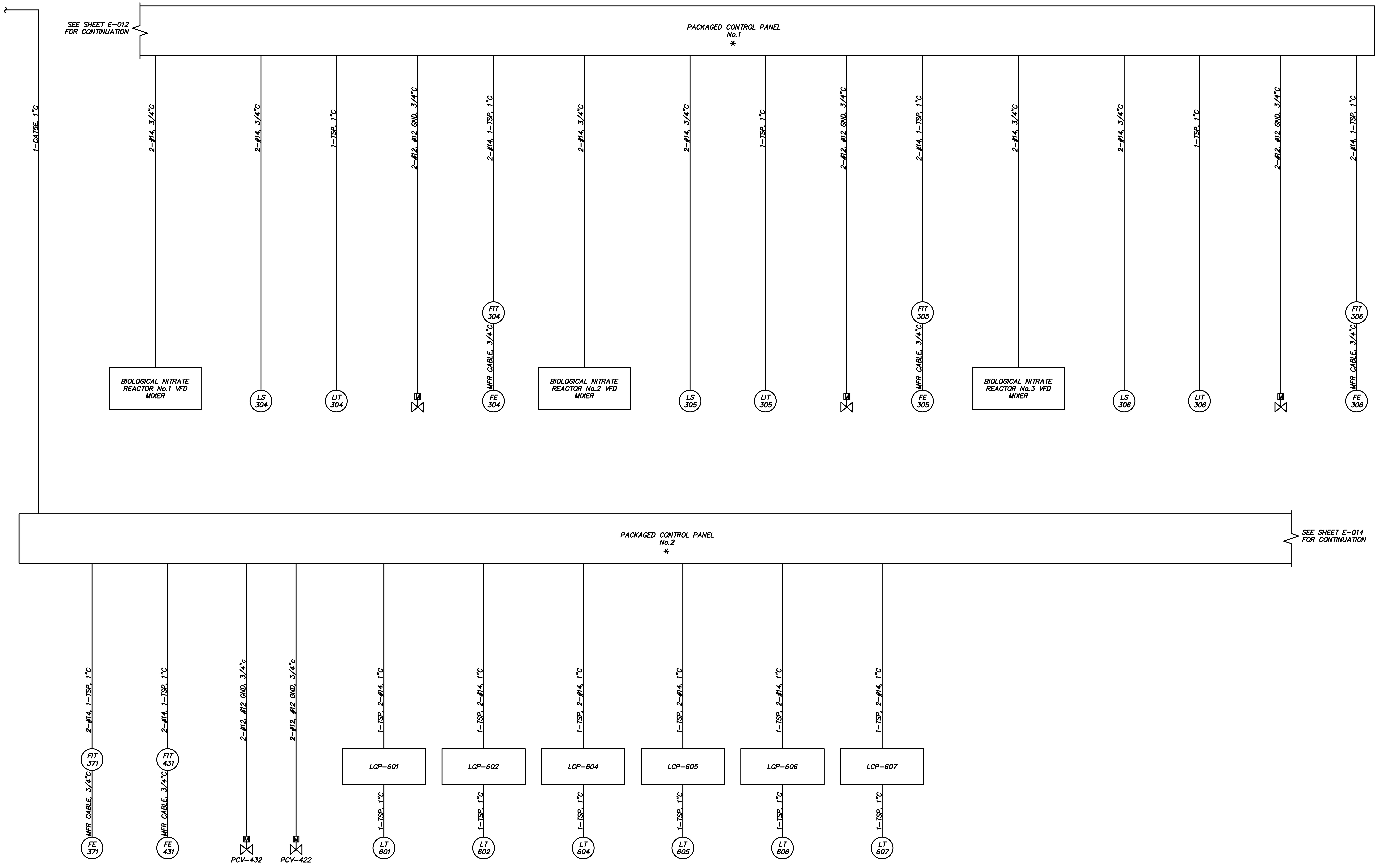
DWG. No.: E-012

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-E12 (CBD Control - I).dwg, Plotted Date: March 9, 2026 6:53 PM By: Tobias J. Wiley



REVISIONS:

NO	DATE	BY	DESCRIPTION
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SYSTEM:
LEGAL DESC.:
TAX DST.:
SIB No.:
DATE: 3/9/2026
SCALE: N/A
DRAWN BY: MV
REVIEWED BY: VC
CHECKED BY: JLG

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3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: CONDUIT BLOCK DIAGRAM - II

53839
JORGE
GERARDO
3/9/26

DARCOR
ELECTRICAL CONSULTING ENGINEERS
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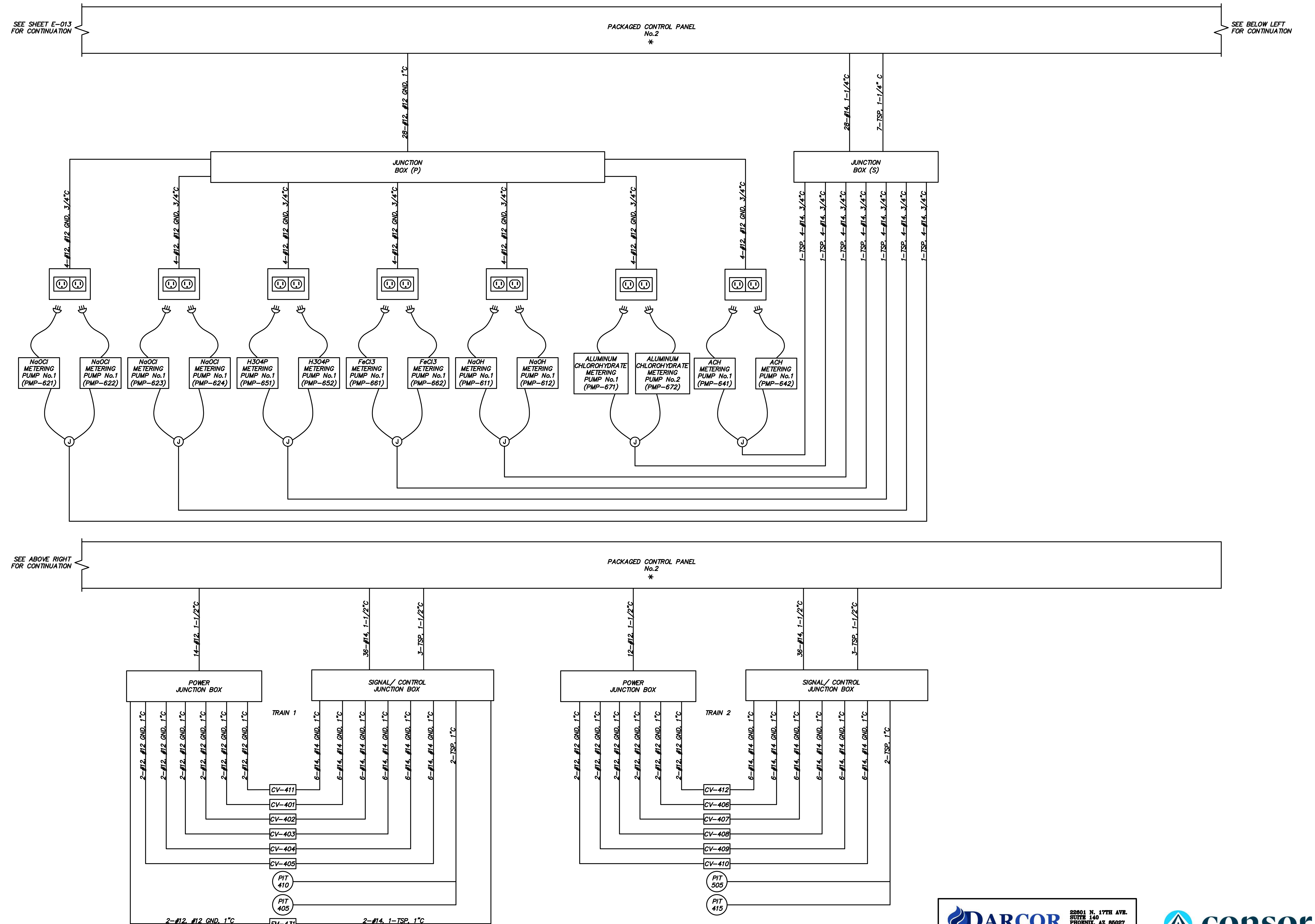
DWG. No.: E-013
SHEET 72 OF 98

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-E13 (CBD Control - II).dwg, Plotted Date: March 9, 2026 6:53 PM By: Tobias J. Wiley



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REVISIONS:

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P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 3/9/2026
SCALE: N/A
DRAWN BY: MV
REVIEWED BY: VC
CHECKED BY: JLG

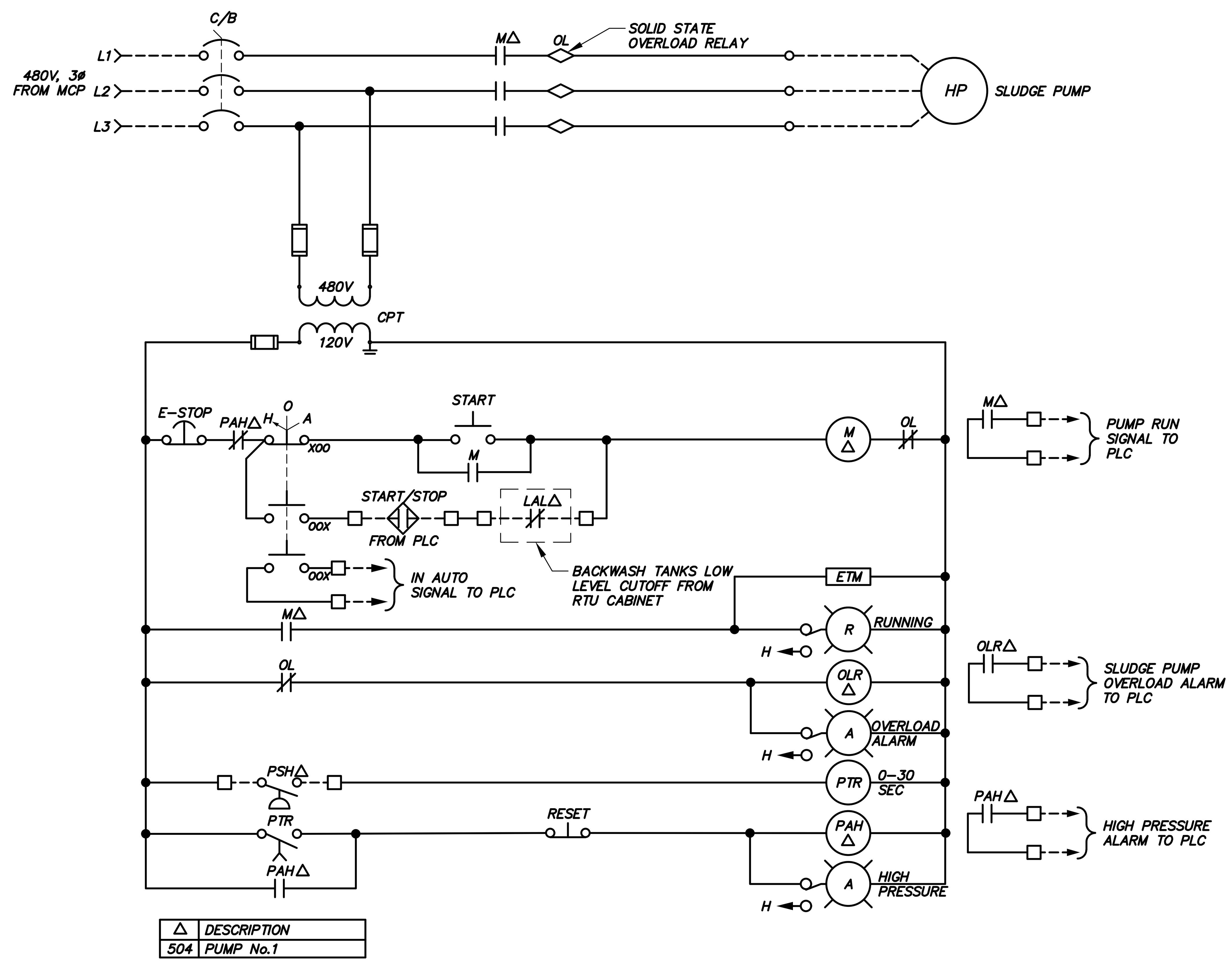
ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: CONDUIT BLOCK DIAGRAM - III

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 Date Signed ARIZONA U.S.A.

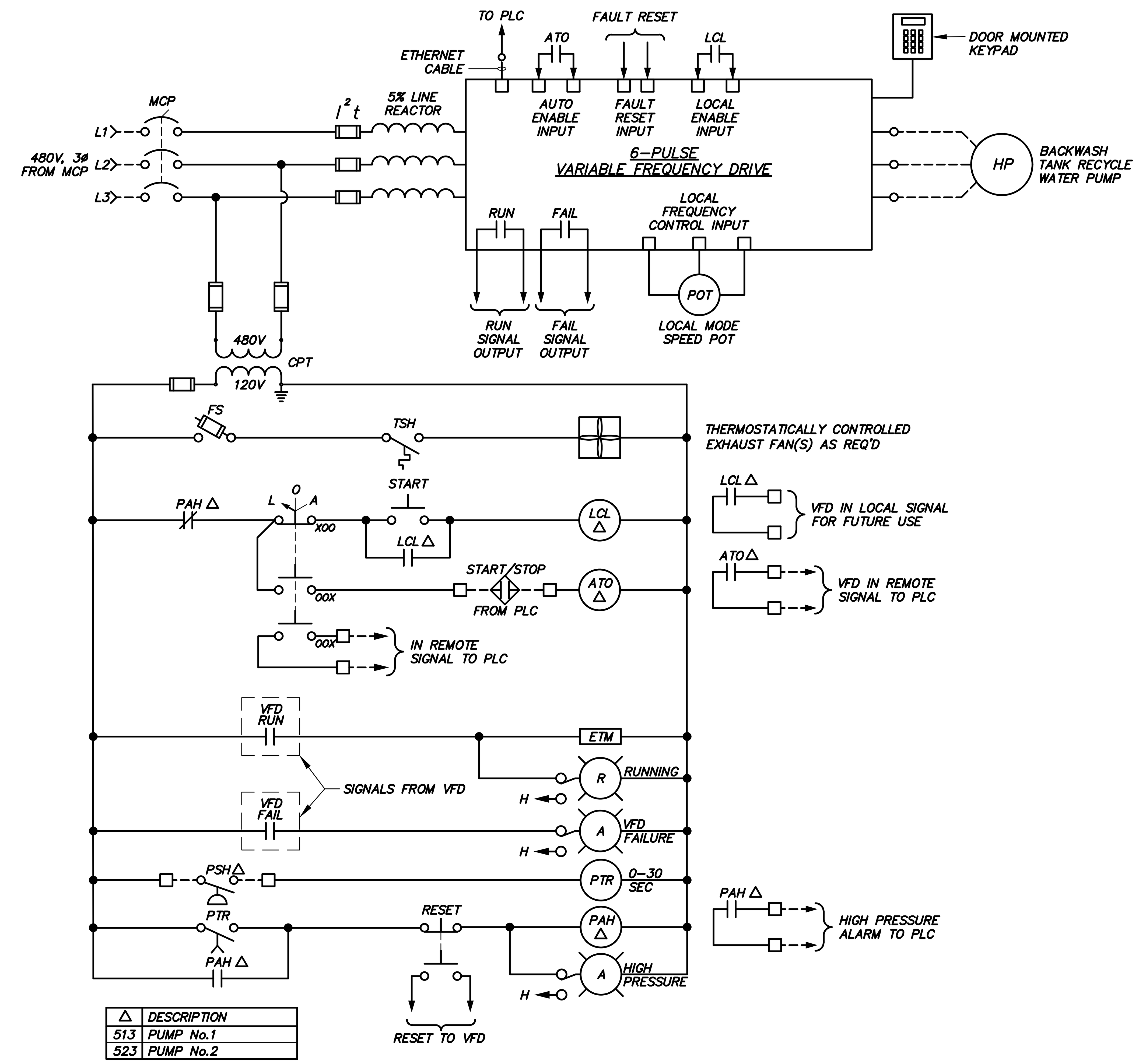
DWG. No.: E-014

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-E14 (CBD Control - III).dwg, Plotted Date: March 9, 2026 6:54 PM By: Tobias J. Wiley



Δ	DESCRIPTION
504	PUMP No.1

SLUDGE PUMP MOTOR CONTROL SCHEMATIC



Δ	DESCRIPTION
513	PUMP No.1
523	PUMP No.2

BACKWASH RECYCLE PUMP VFD MOTOR CONTROL SCHEMATIC

REVISIONS:

NO	DATE	BY	DESCRIPTION
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ARIZONA 811
Call 811 or click Arizona811.com

P.E. No.: W.A. No.: SYSTEM: LEGAL DESC.: TAX DIST.: SIB No.:
DATE: 3/9/2026 SCALE: N/A
DRAWN BY: MV REVIEWED BY: VC CHECKED BY: JLG

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: CONTROL SCHEMATICS - I

Registered Professional Engineer (Electrical) Certificate No. 53839 JORGE GERARDO 3/9/26 Arizona U.S.A.

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22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2699 WWW.DARCORINC.COM

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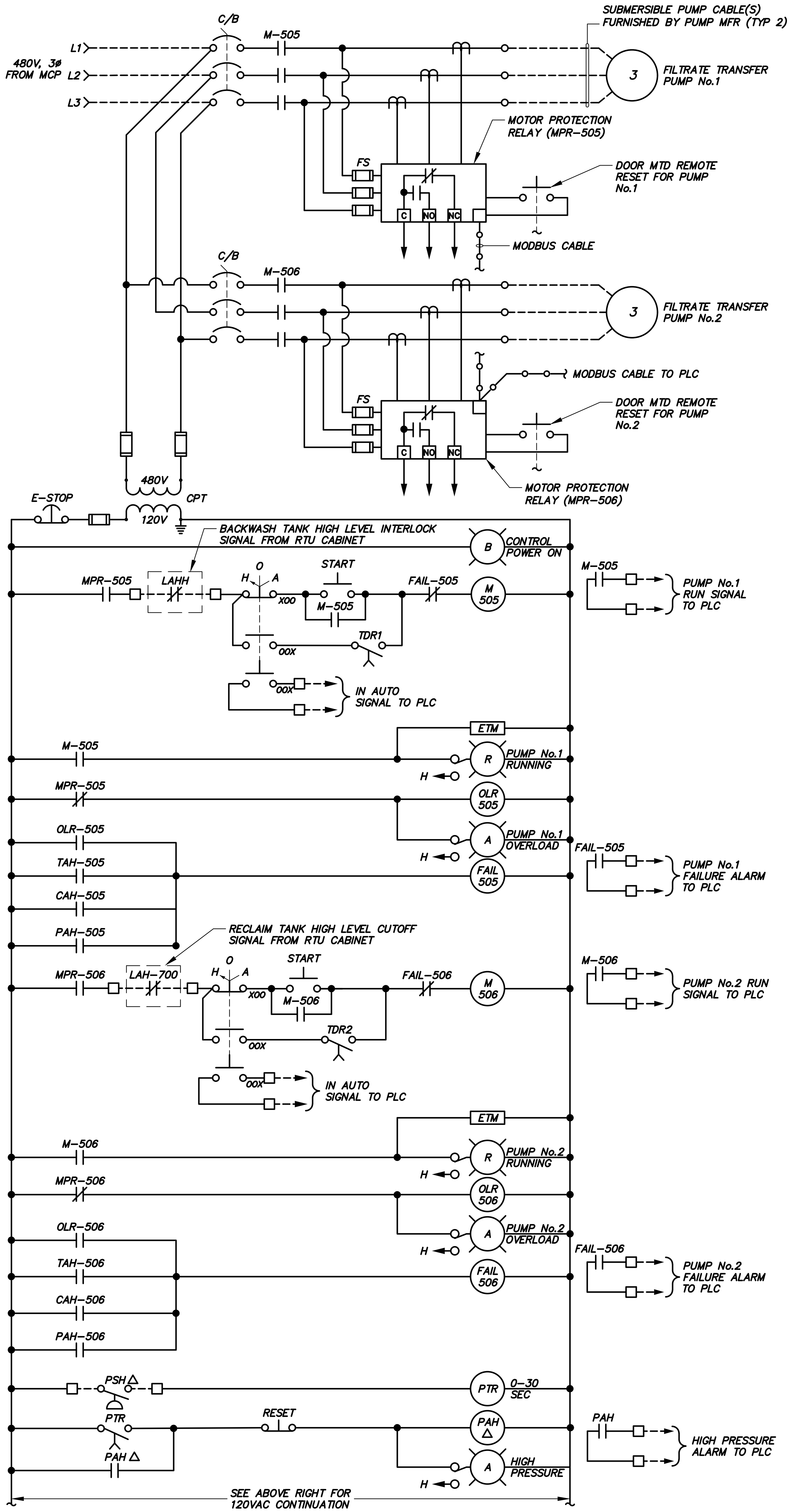
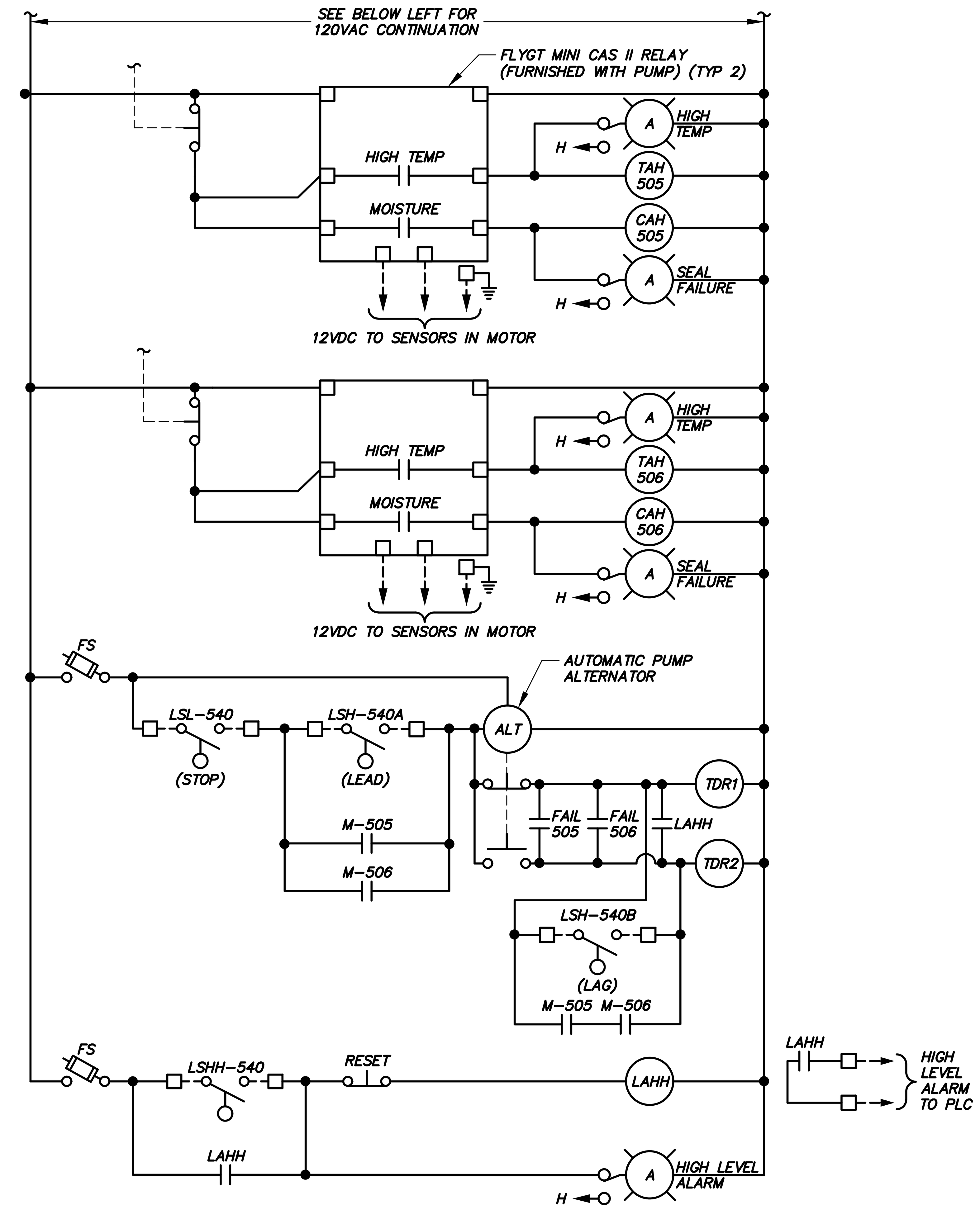
DWG. No.: E-015





DUPLEX DEWATERING PUMP CONTROL PANEL SCHEMATIC

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
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SCALE: N/A
DRAWN BY: MV
REVIEWED BY: VC
CHECKED BY: JLG

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
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(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: CONTROL SCHEMATICS - II

Registered Professional Engineer (Electrical) Certificate No. 53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

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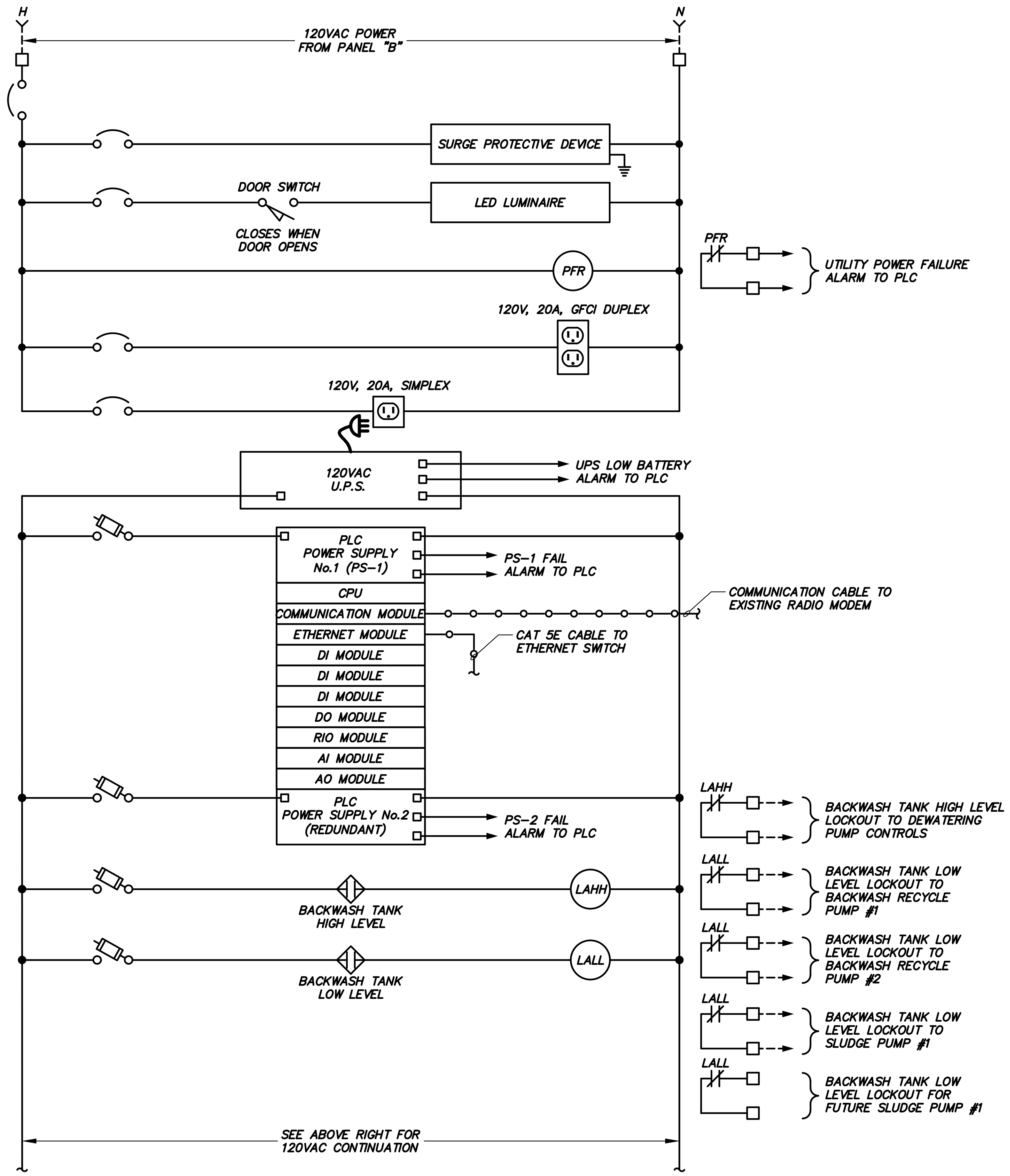
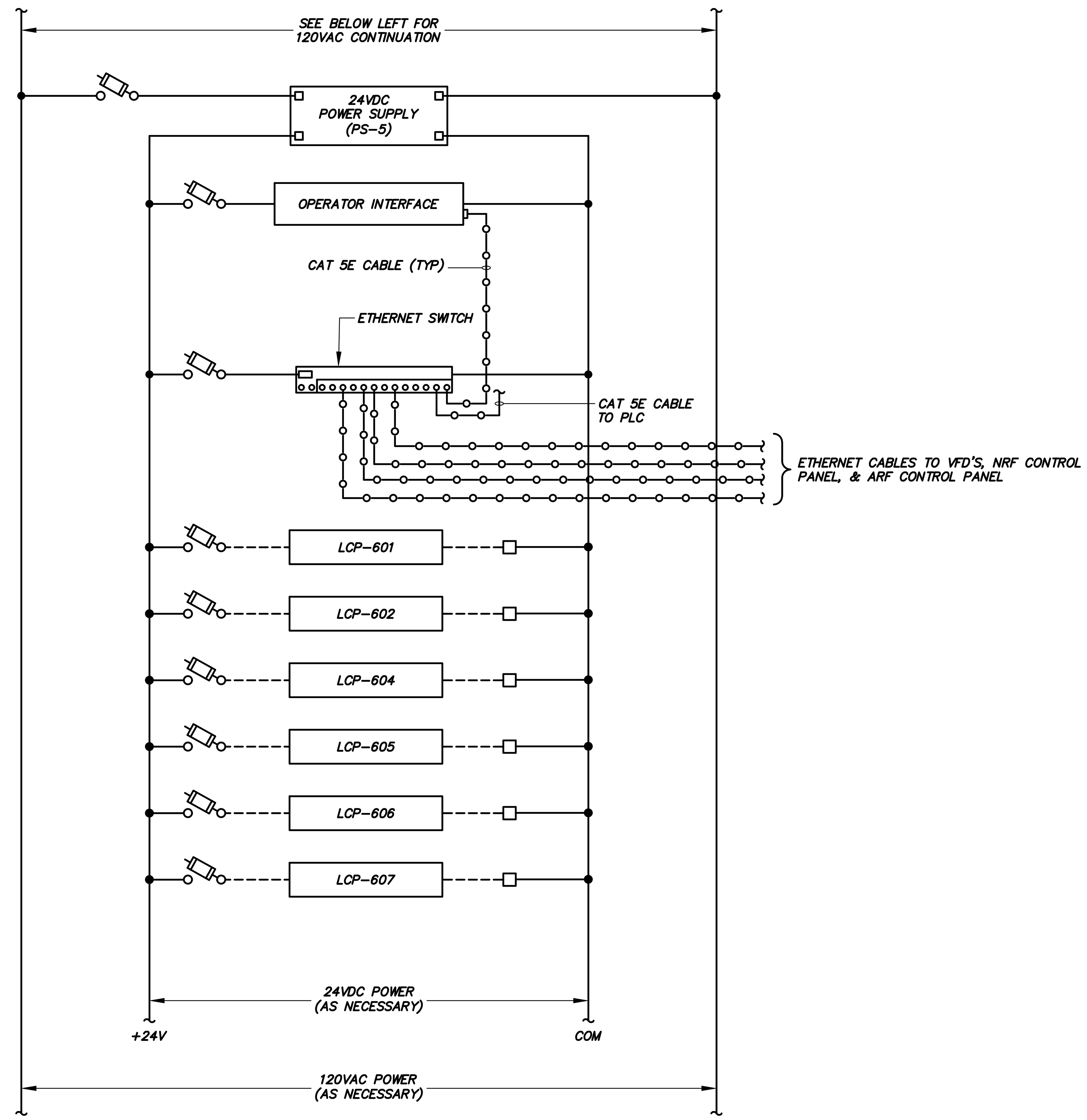
DWG. No.: E-016
SHEET 75 OF 98





NOTE: REFER TO P&ID SHEETS FOR I/O REQUIREMENTS

RTU CONTROL PANEL SCHEMATIC

NO	DATE	BY	DESCRIPTION
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ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: CONTROL SCHEMATICS - III

DATE: 3/9/2026 | DRAWN BY: MV | REVIEWED BY: VC | CHECKED BY: JLG | SCALE: N/A

53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

DARCOR ELECTRICAL CONSULTING ENGINEERS
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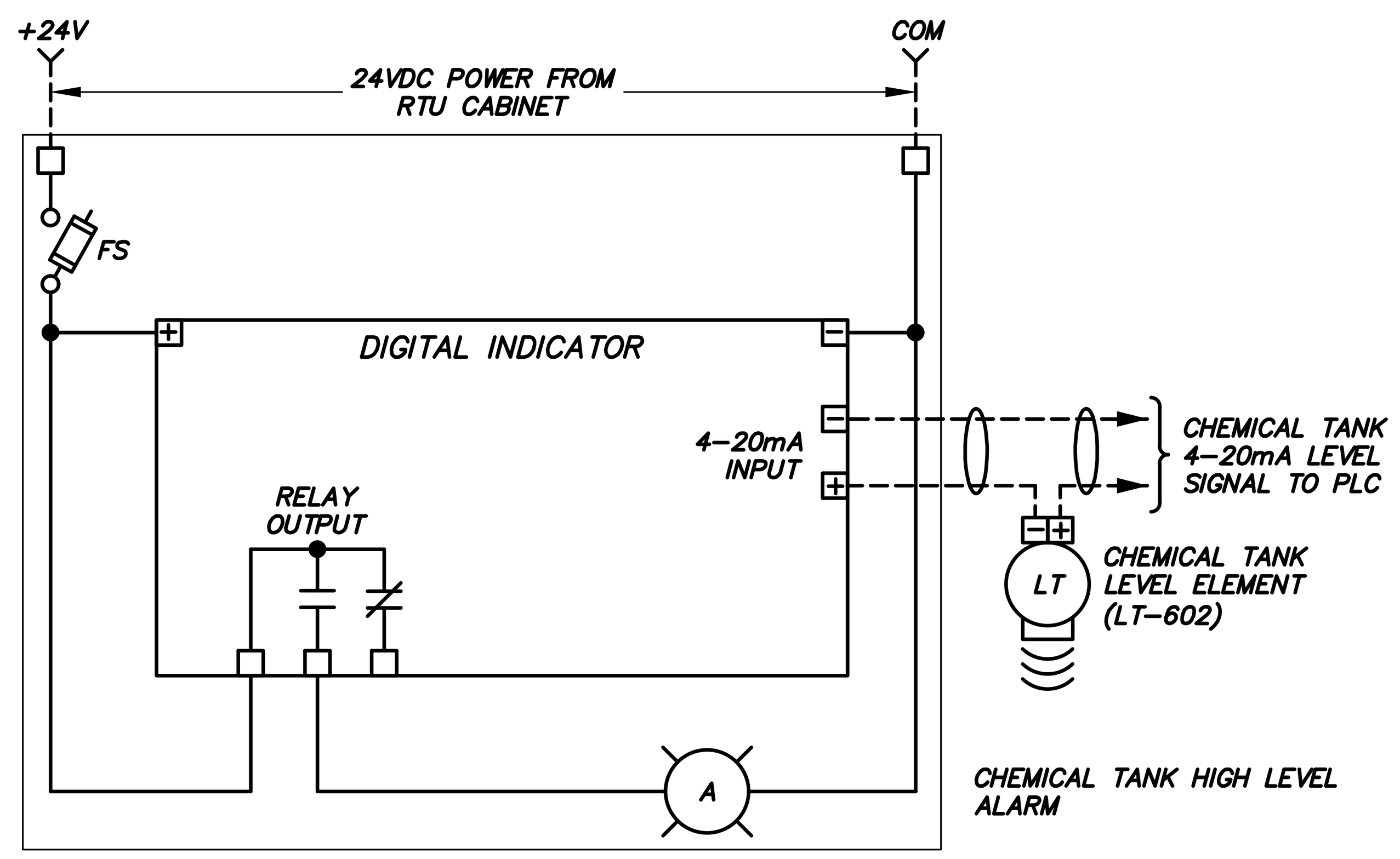
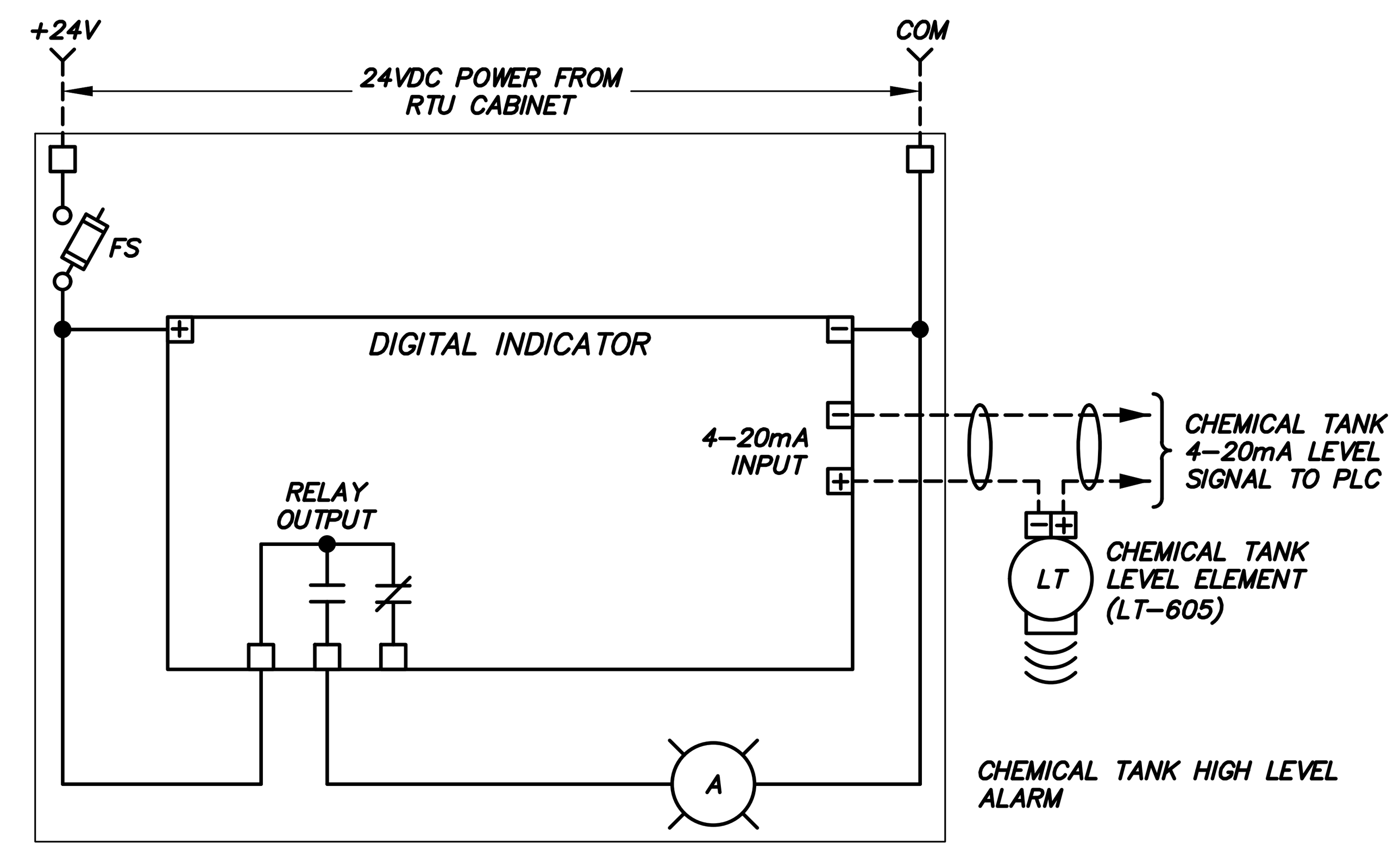
DWG. No.: E-017
SHEET 76 OF 98

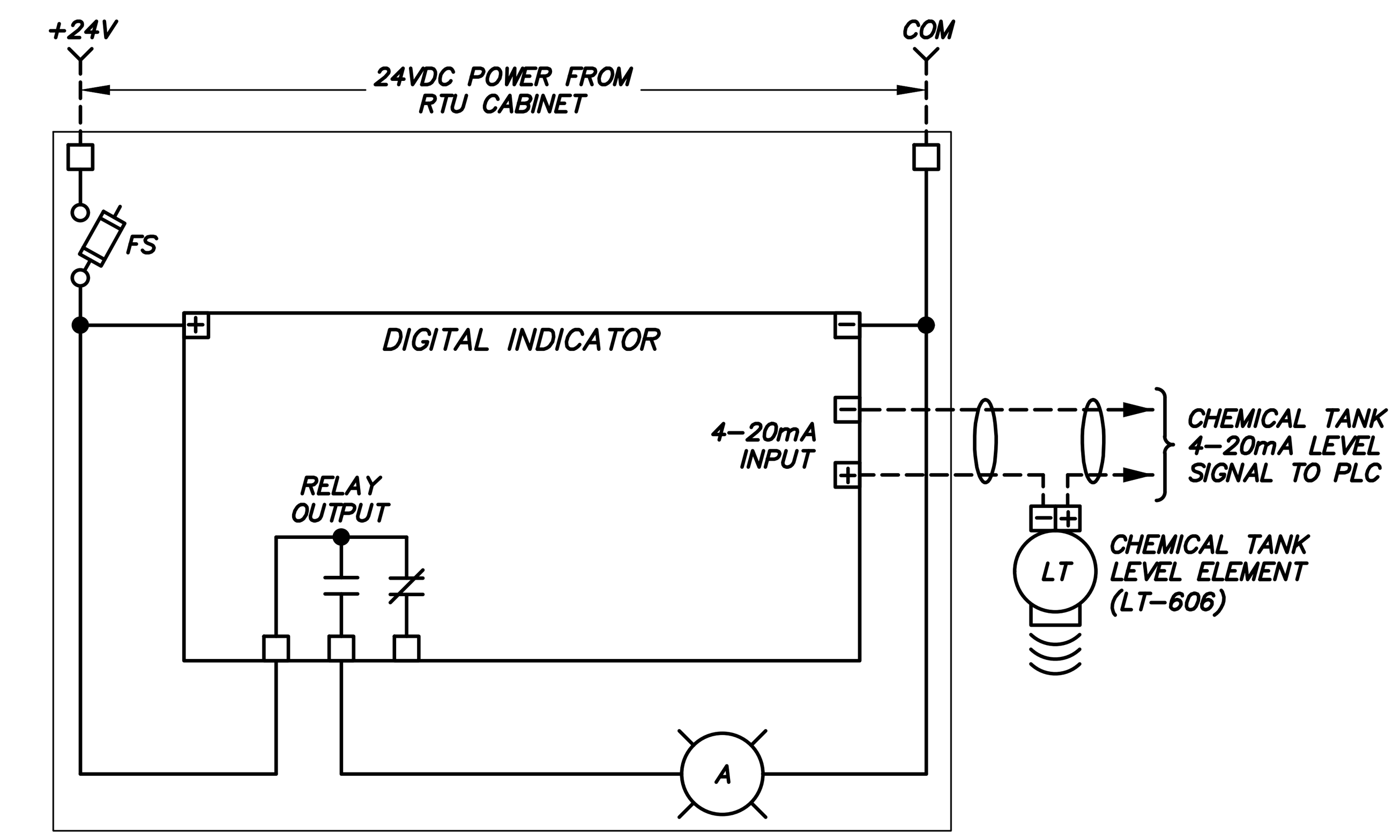
Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-E17 (Control Schematics - III).dwg, Plotted Date: March 9, 2026 6:54 PM By: Tobias J. Wiley



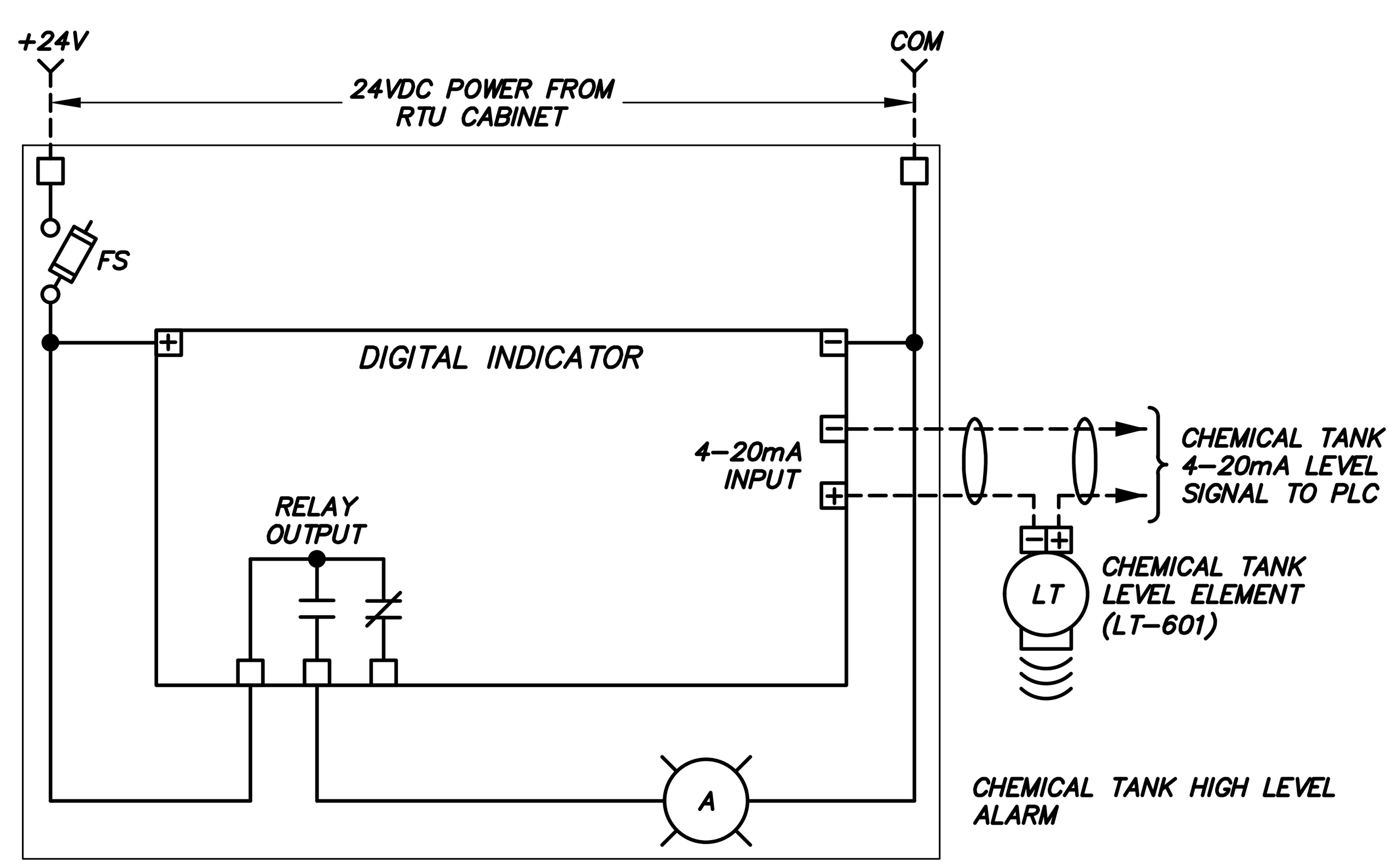
NaOCl STORAGE TANK LEVEL DISPLAY PANEL SCHEMATIC (LCP-602)



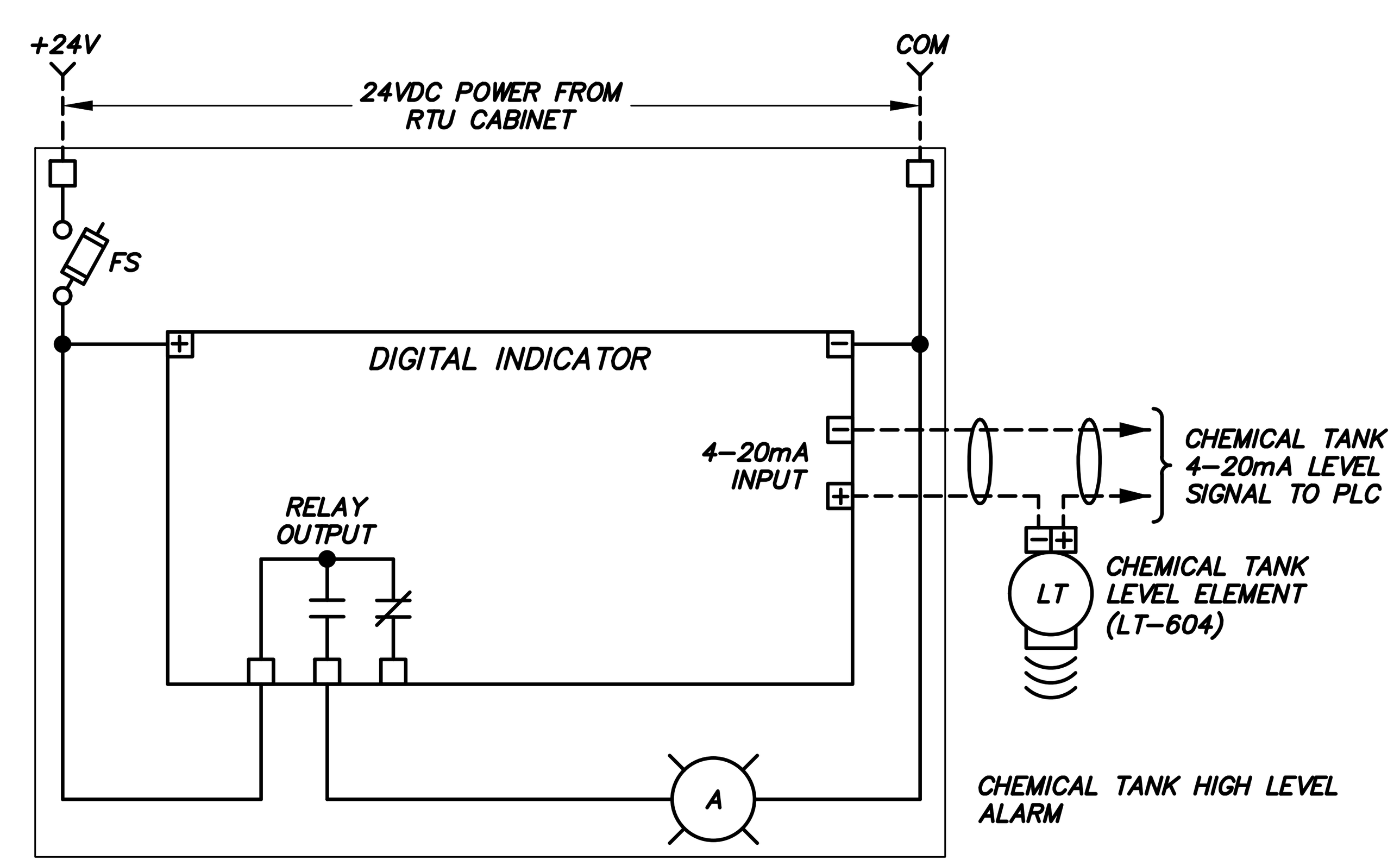
PHOSPHORIC ACID TANK LEVEL DISPLAY PANEL SCHEMATIC (LCP-605)



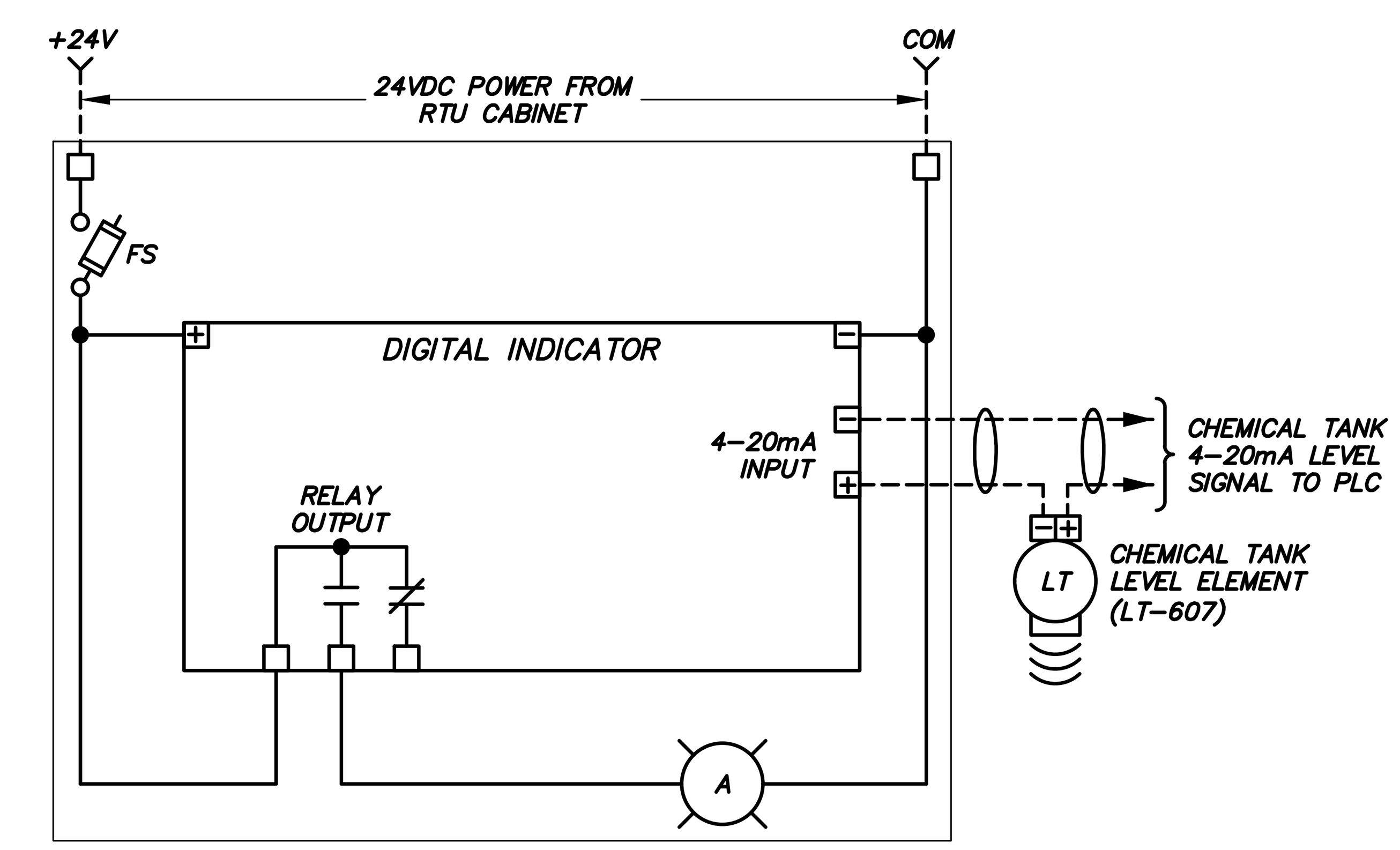
FERRIC CHLORIDE TANK LEVEL DISPLAY PANEL SCHEMATIC (LCP-606)



NaOH STORAGE TANK LEVEL DISPLAY PANEL SCHEMATIC (LCP-601)



ACETIC ACID TANK LEVEL DISPLAY PANEL SCHEMATIC (LCP-604)



ACH TANK LEVEL DISPLAY PANEL SCHEMATIC (LCP-607)

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
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W.A. No.: P.E. No.:
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LEGAL DESC.:
TAX DIST.: SIB No.:
DATE: 3/9/2026 SCALE: N/A
DRAWN BY: MV REVIEWED BY: VC CHECKED BY: JLG

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: CONTROL SCHEMATICS - IV

53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

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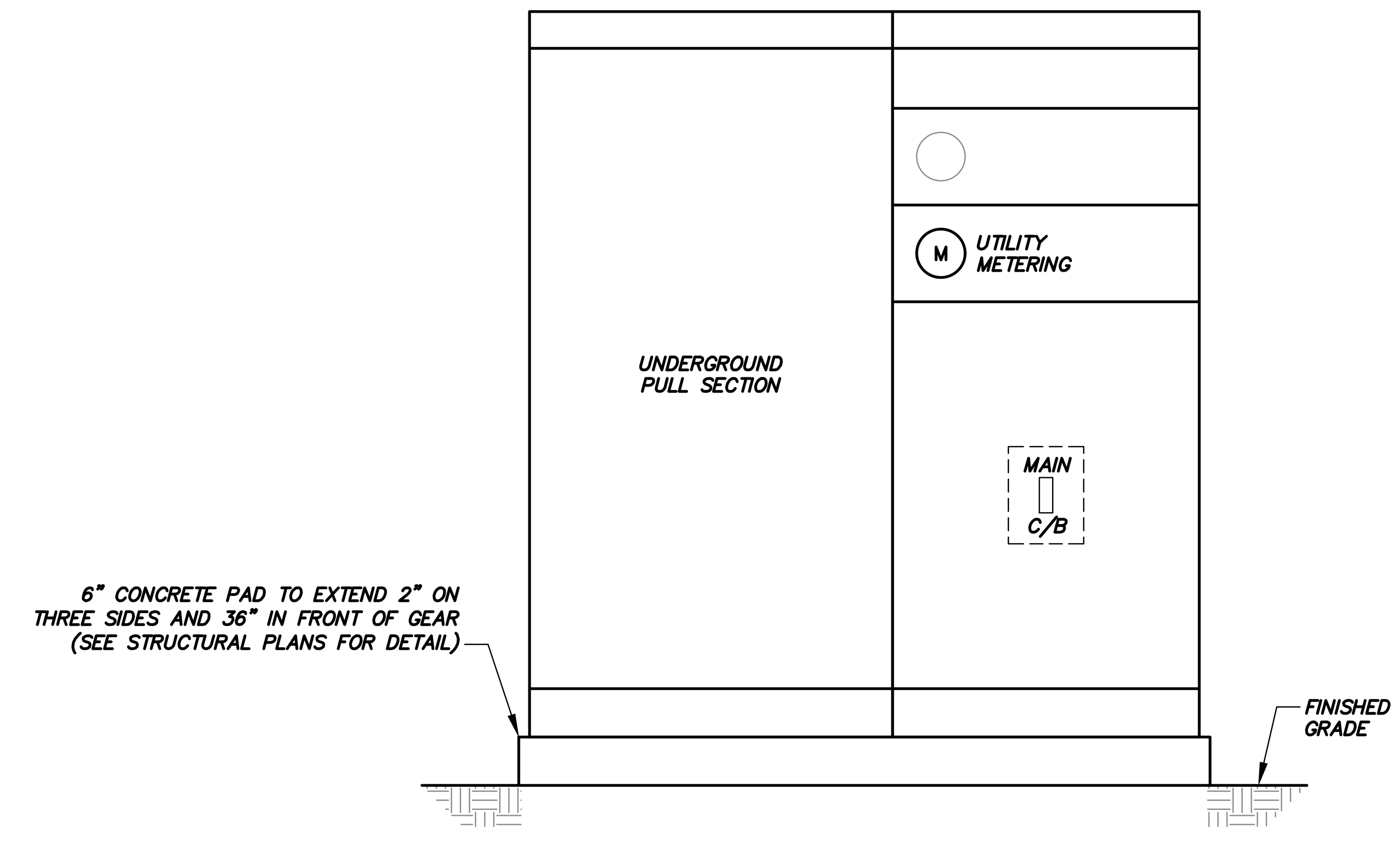
DWG. No.: E-018
SHEET 77 OF 98

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-E18 (Control Schematics - IV).dwg, Plotted Date: March 9, 2026 6:54 PM By: Tobias J. Wiley

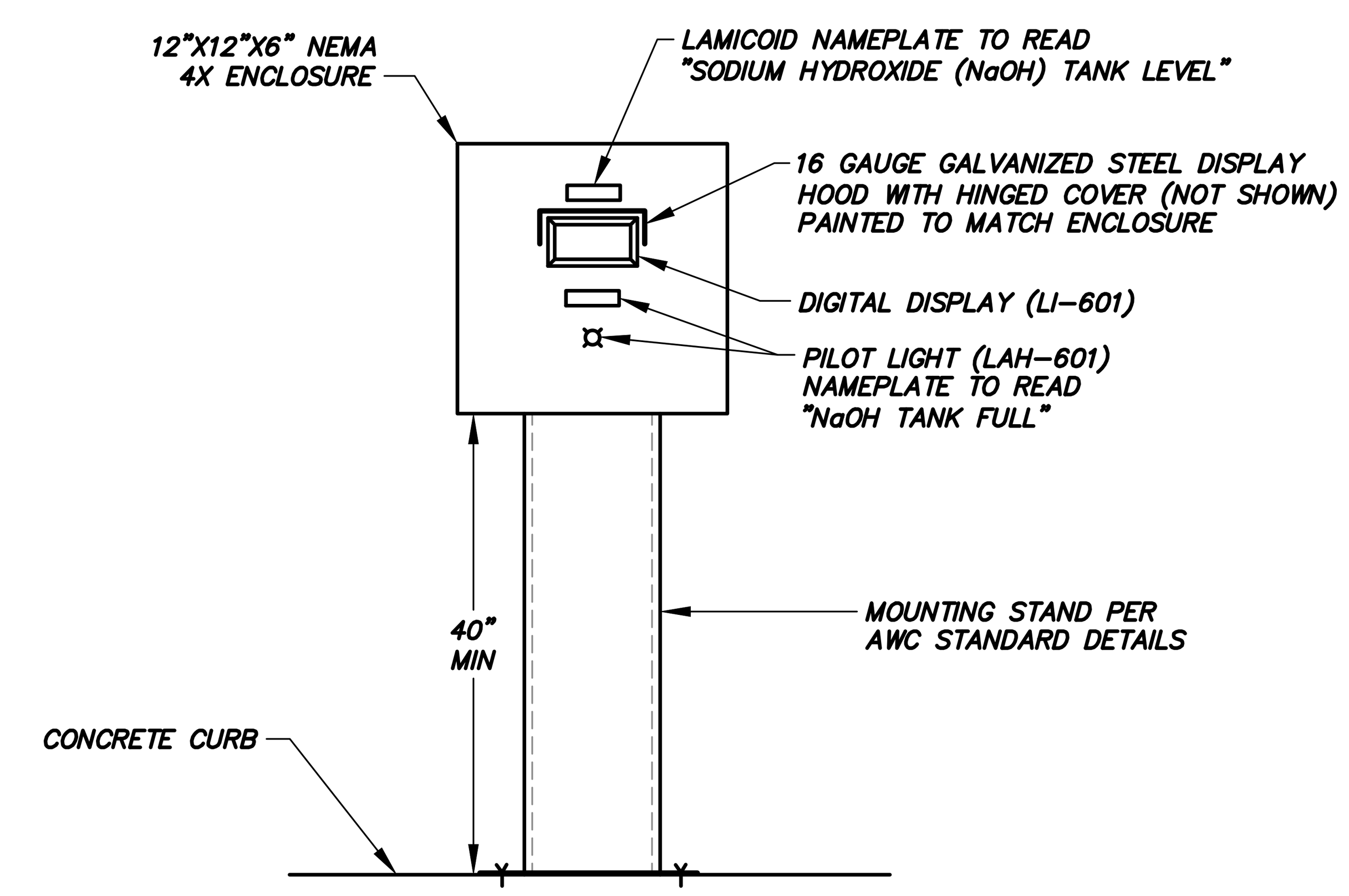
KEY NOTES

1. BOND GEC TO EQUIPMENT RACK USING UL LISTED LUG.
2. 1-5/8" GALVANIZED STEEL STRUT AS REQUIRED TO PROPERLY SUPPORT EQUIPMENT.
3. 3" GALVANIZED SQUARE STEEL POST AS REQUIRED TO PROPERLY SUPPORT EQUIPMENT.



AA E-003 SERVICE ENTRANCE SECTION ELEVATION

NTS



NOTES:

1. CONDUITS NOT SHOWN FOR CLARITY.
2. INSTALL TERMINAL BLOCKS AND DIN RAIL IN ENCLOSURE TO TERMINATE ALL FIELD WIRING.

A TYP NaOH TANK LEVEL DISPLAY PANEL (LCP-601) MOUNTING DETAIL

NTS

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
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SCALE: N/A
DATE: 3/9/2026
DRAWN BY: MV
REVIEWED BY: VC
CHECKED BY: JLG

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: ELECTRICAL ELEVATIONS

53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

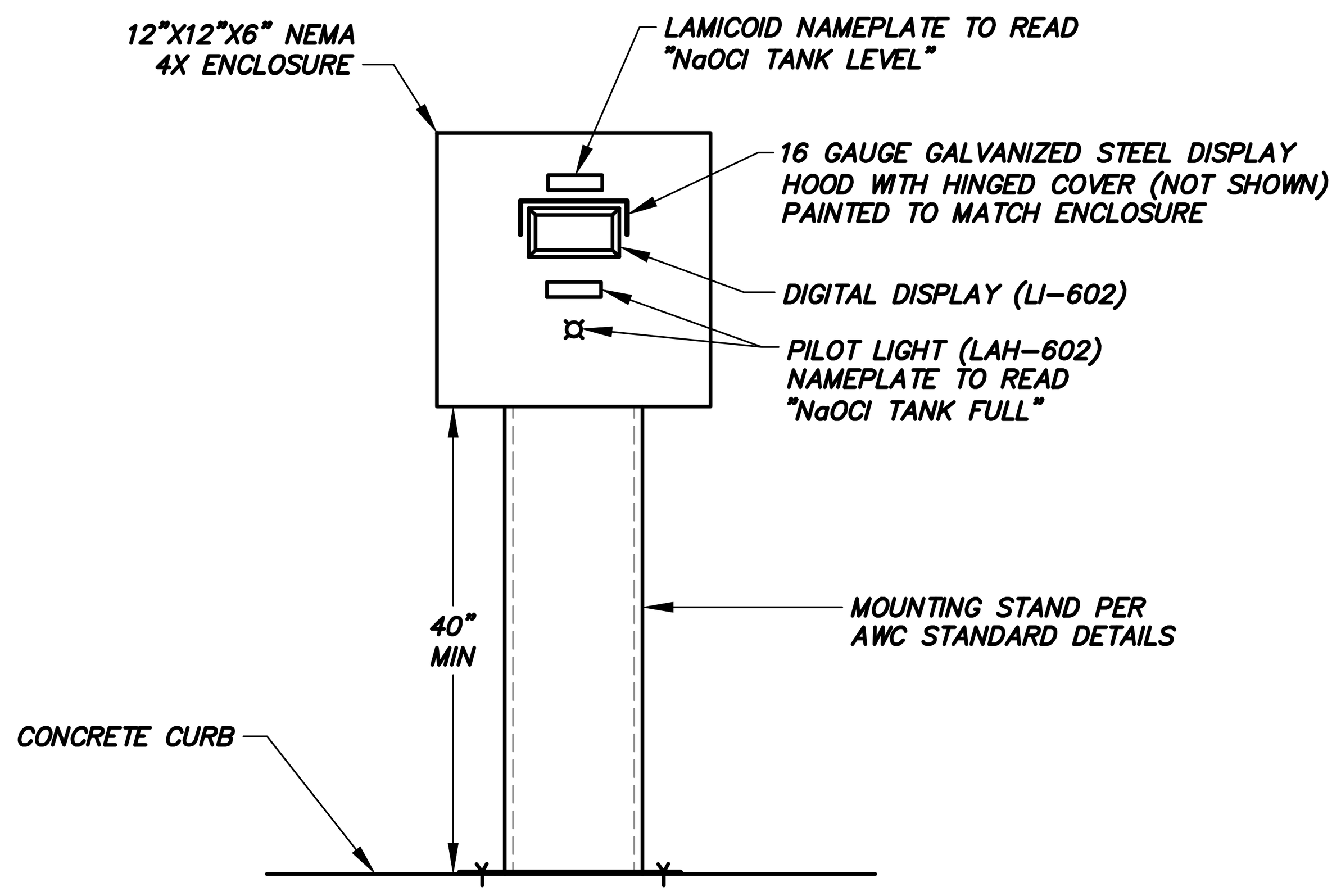
DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2699 WWW.DARCORINC.COM

consor

DWG. No.: E-019

SHEET 78 OF 98

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-E19 (Electrical Elevations).dwg, Plotted Date: March 9, 2026 6:54 PM By: Tobias J. Wiley

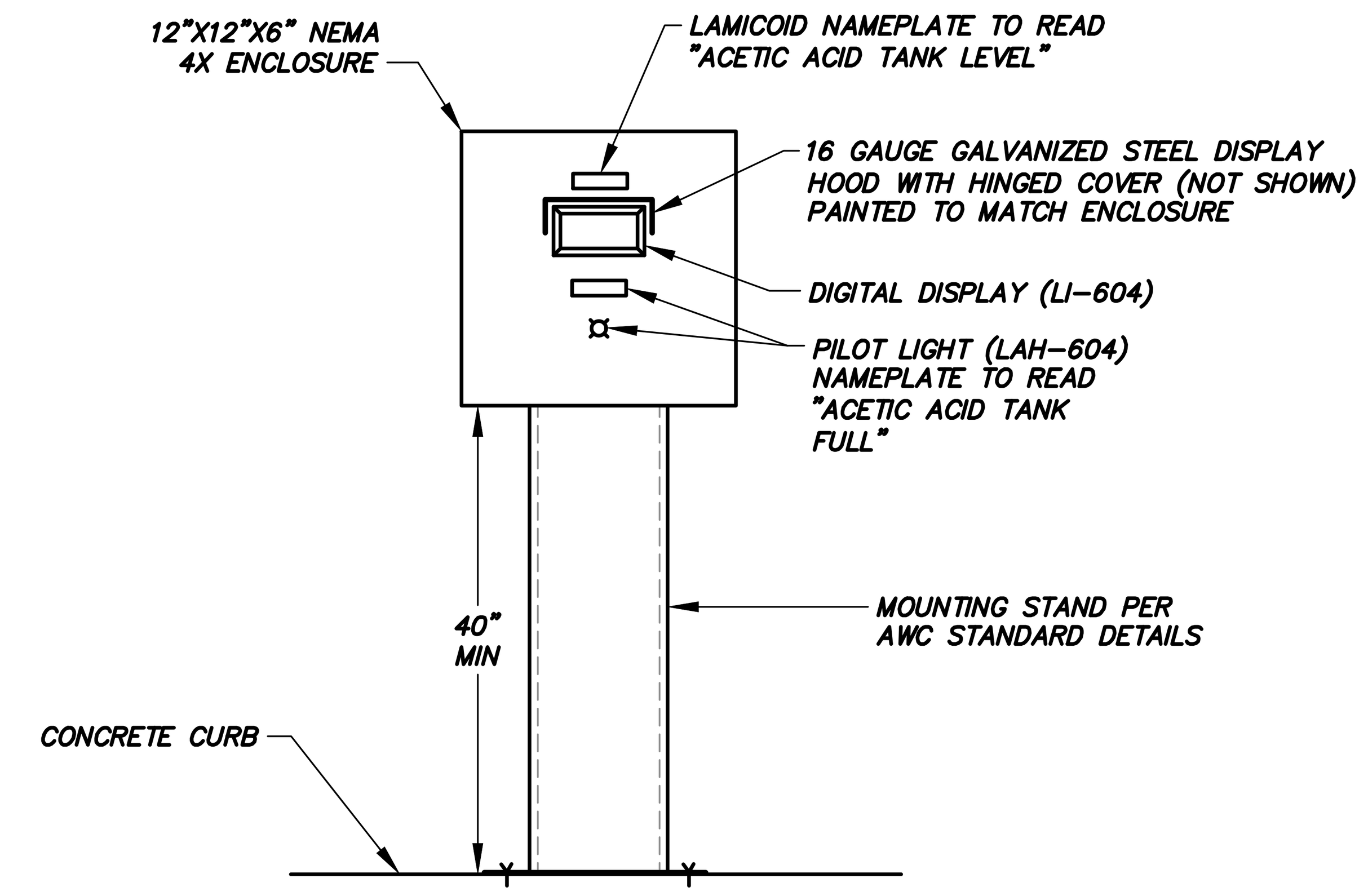


NOTES:

1. CONDUITS NOT SHOWN FOR CLARITY.
2. INSTALL TERMINAL BLOCKS AND DIN RAIL IN ENCLOSURE TO TERMINATE ALL FIELD WIRING.

B / TYP — NaOCl TANK LEVEL DISPLAY PANEL (LCP-602) MOUNTING DETAIL

NTS

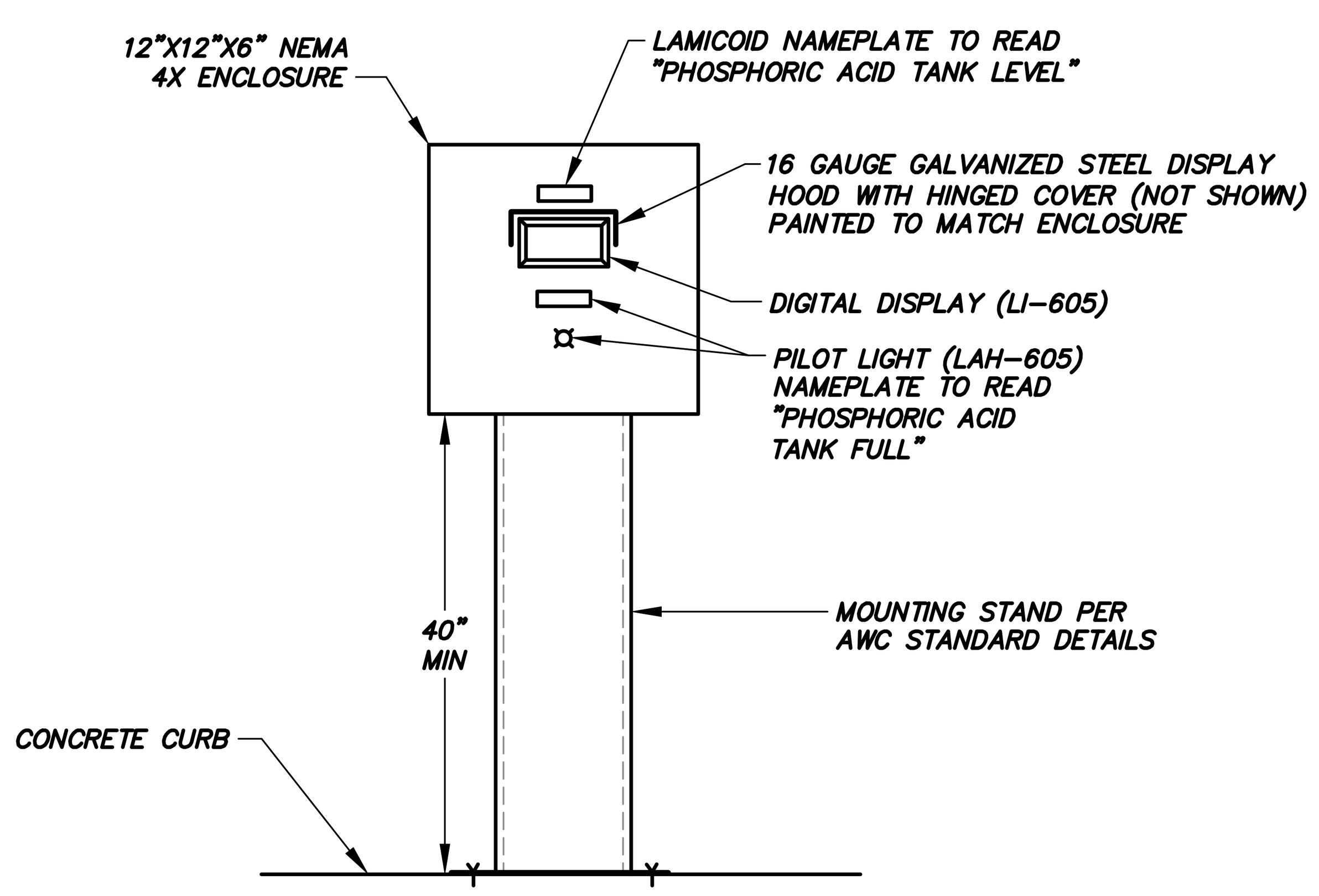


NOTES:

1. CONDUITS NOT SHOWN FOR CLARITY.
2. INSTALL TERMINAL BLOCKS AND DIN RAIL IN ENCLOSURE TO TERMINATE ALL FIELD WIRING.

C / TYP — ACETIC ACID TANK LEVEL DISPLAY PANEL (LCP-604) MOUNTING DETAIL

NTS

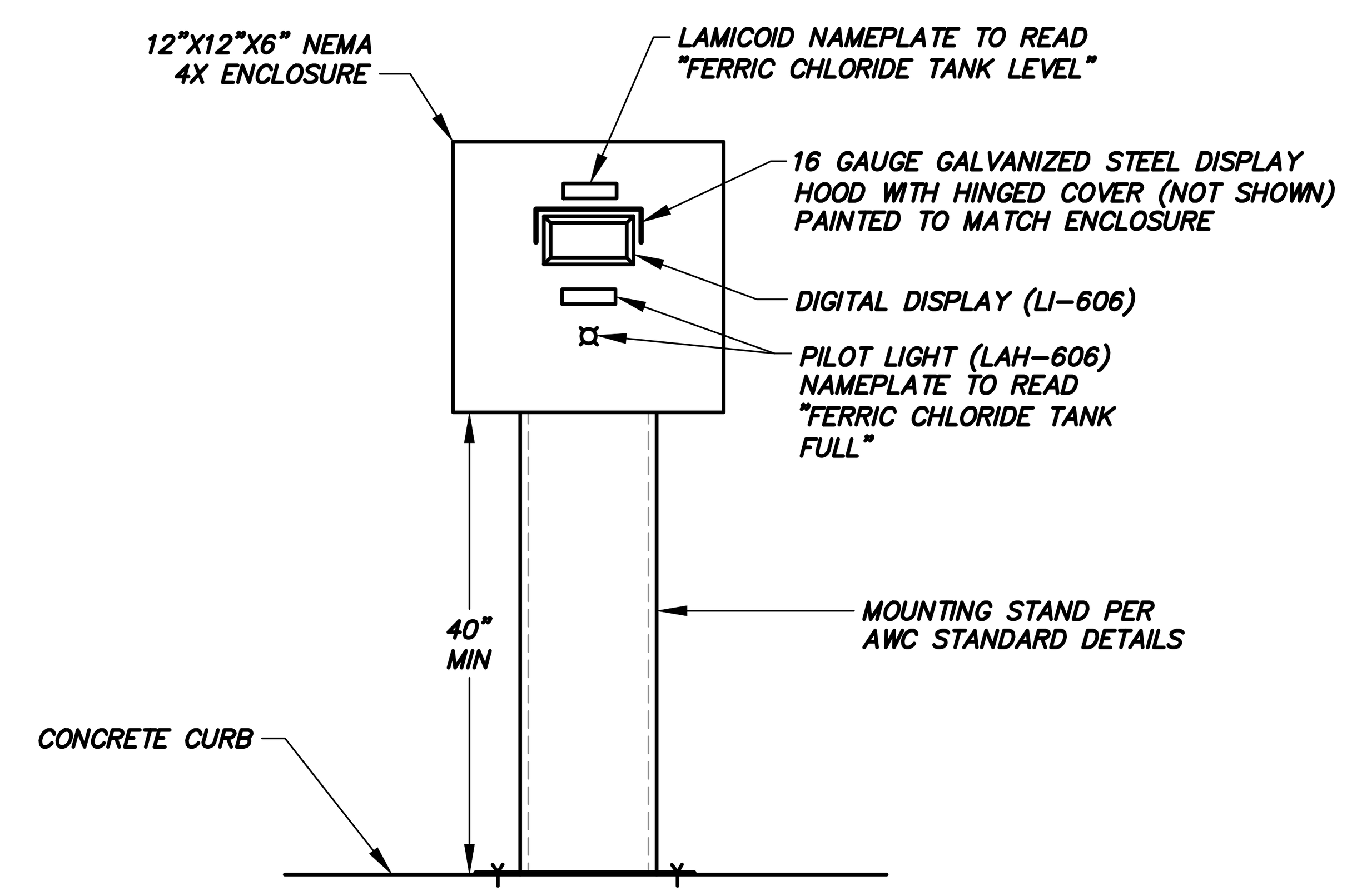


NOTES:

1. CONDUITS NOT SHOWN FOR CLARITY.
2. INSTALL TERMINAL BLOCKS AND DIN RAIL IN ENCLOSURE TO TERMINATE ALL FIELD WIRING.

D / TYP — PHOSPHORIC ACID TANK LEVEL DISPLAY (LCP-605) PANEL MOUNTING DETAIL

NTS



NOTES:

1. CONDUITS NOT SHOWN FOR CLARITY.
2. INSTALL TERMINAL BLOCKS AND DIN RAIL IN ENCLOSURE TO TERMINATE ALL FIELD WIRING.

E / TYP — FERRIC CHLORIDE TANK LEVEL DISPLAY PANEL (LCP-606) MOUNTING DETAIL

NTS

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: | P.E. No.: | SYSTEM: | LEGAL DESC.: | TAX DST.: | SIB No.:

DATE: 3/9/2026 | SCALE: N/A | DRAWN BY: MV | REVIEWED BY: VC | CHECKED BY: JLG

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

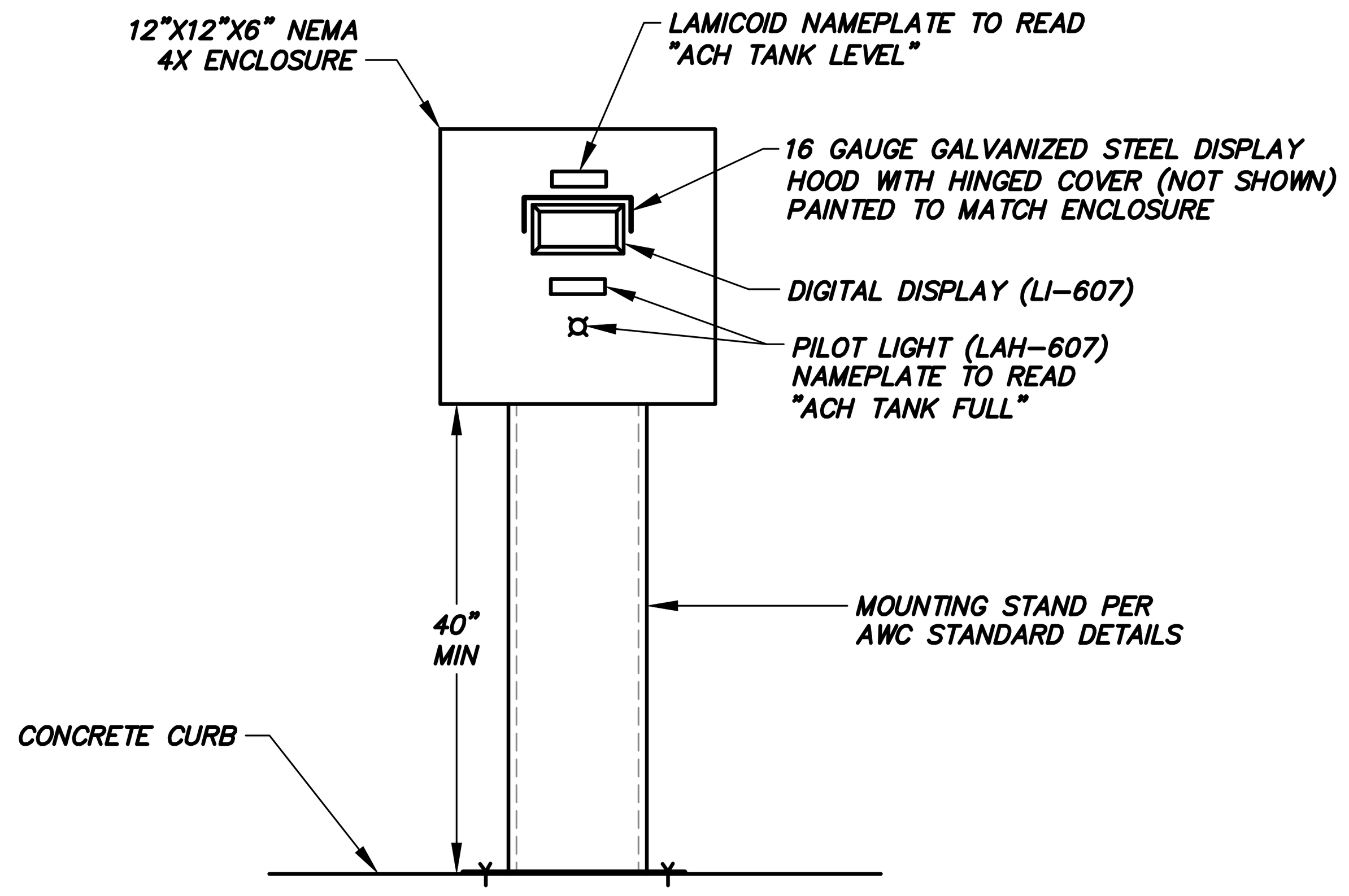
PROJECT SHEET DESC: ELECTRICAL DETAILS - I

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027
Ph: (602) 795-2699
WWW.DARCORINC.COM

consor

DWG. No.: E-020

SHEET 79 OF 98

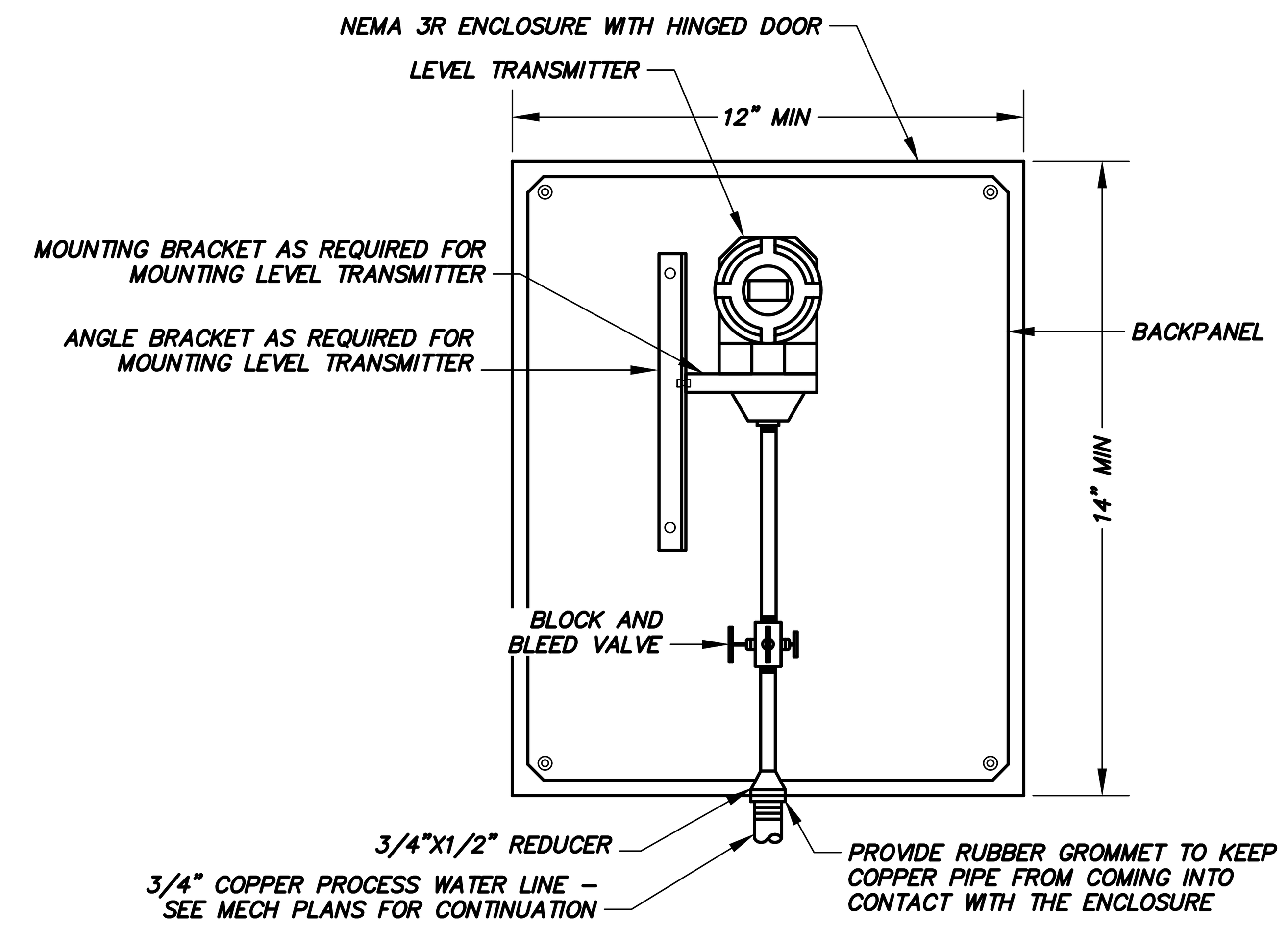


NOTES:

1. CONDUITS NOT SHOWN FOR CLARITY.
2. INSTALL TERMINAL BLOCKS AND DIN RAIL IN ENCLOSURE TO TERMINATE ALL FIELD WIRING.

(F / TYP) ACH TANK LEVEL DISPLAY PANEL (LCP-607) MOUNTING DETAIL

NTS

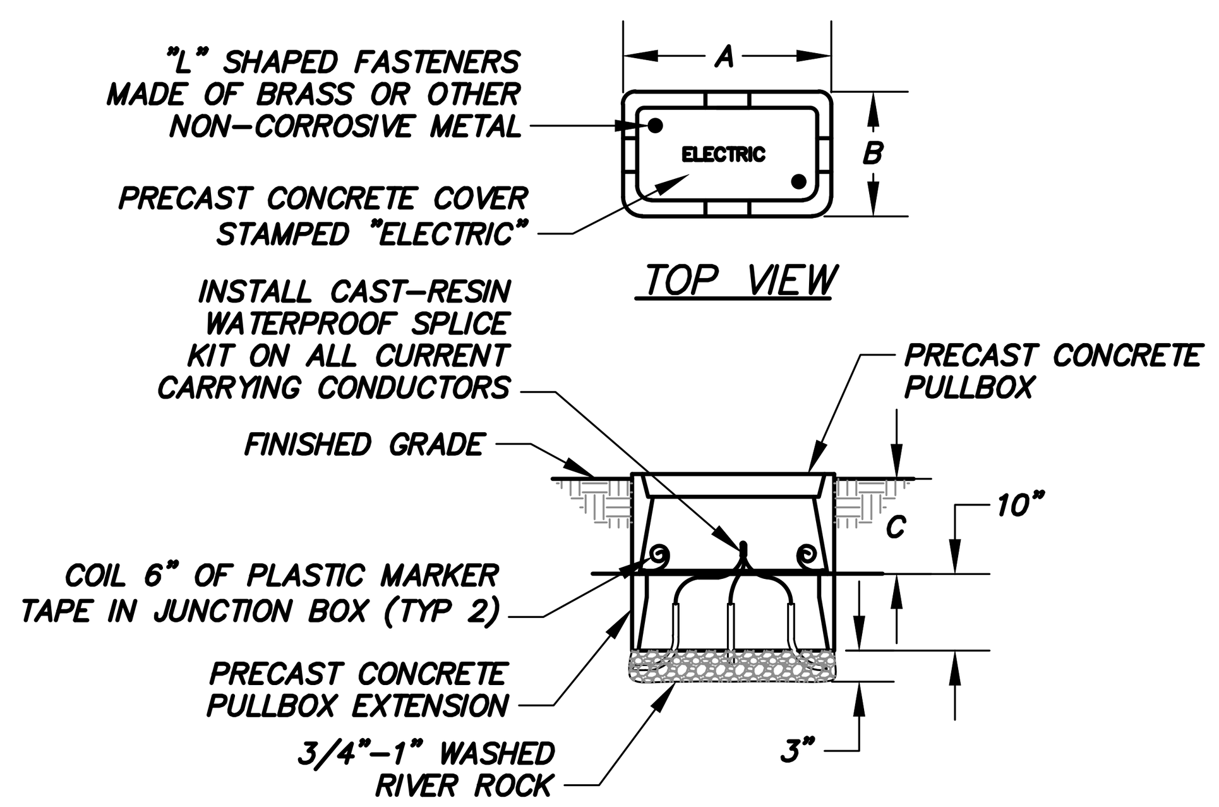


NOTES:

1. CONDUITS NOT SHOWN FOR CLARITY.
2. OUTER DOOR SHOWN REMOVED FOR CLARITY.
3. INSTALL ENCLOSURE ON MOUNTING STAND AT +24" AFG PER AWC STANDARD DETAIL.

(G / TYP) LEVEL TRANSMITTER ENCLOSURE DETAIL (LIT-401)

NTS

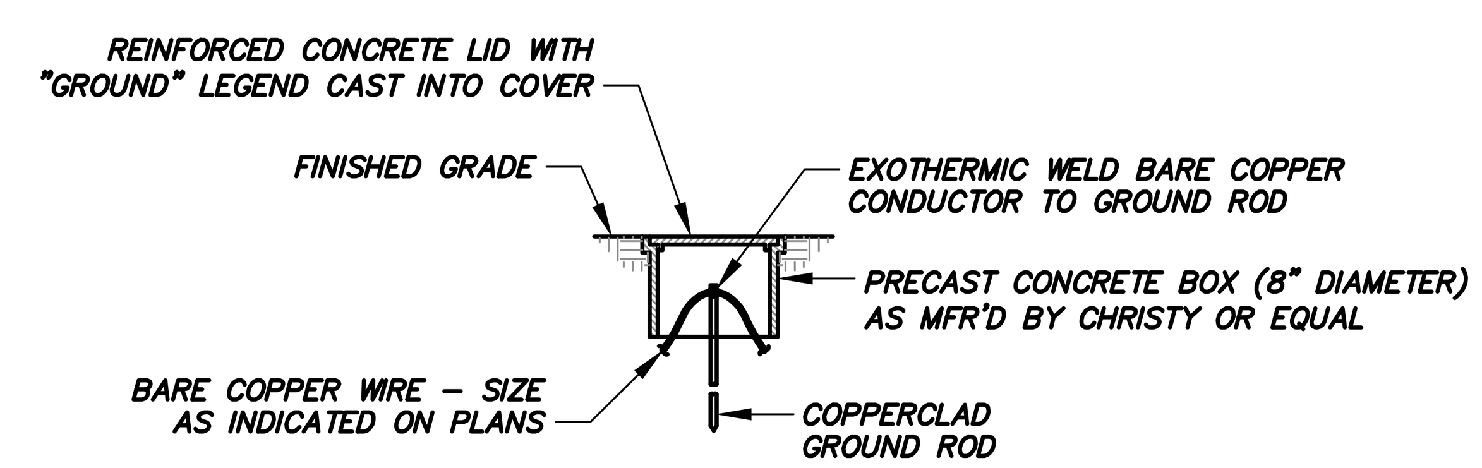


SIDE VIEW (SECTION)

TYPE	DIM. A	DIM. B	DIM. C
#3-1/2	20-1/4"	13-3/8"	12"
#7	37-5/8"	26"	18"

(UB2 / TYP) TYPICAL UNDERGROUND JUNCTION BOX DETAIL

NTS



(GRW / TYP) TYPICAL GROUND ROD AND WELL DETAIL

NTS

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Contact Arizona 811 at least two full working days before you begin excavation. ARIZONA811. Call 811 or click Arizona811.com

W.A. No.:
P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 3/9/2026
SCALE: N/A
DRAWN BY: MV
REVIEWED BY: VC
CHECKED BY: JLG

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: ELECTRICAL DETAILS - II

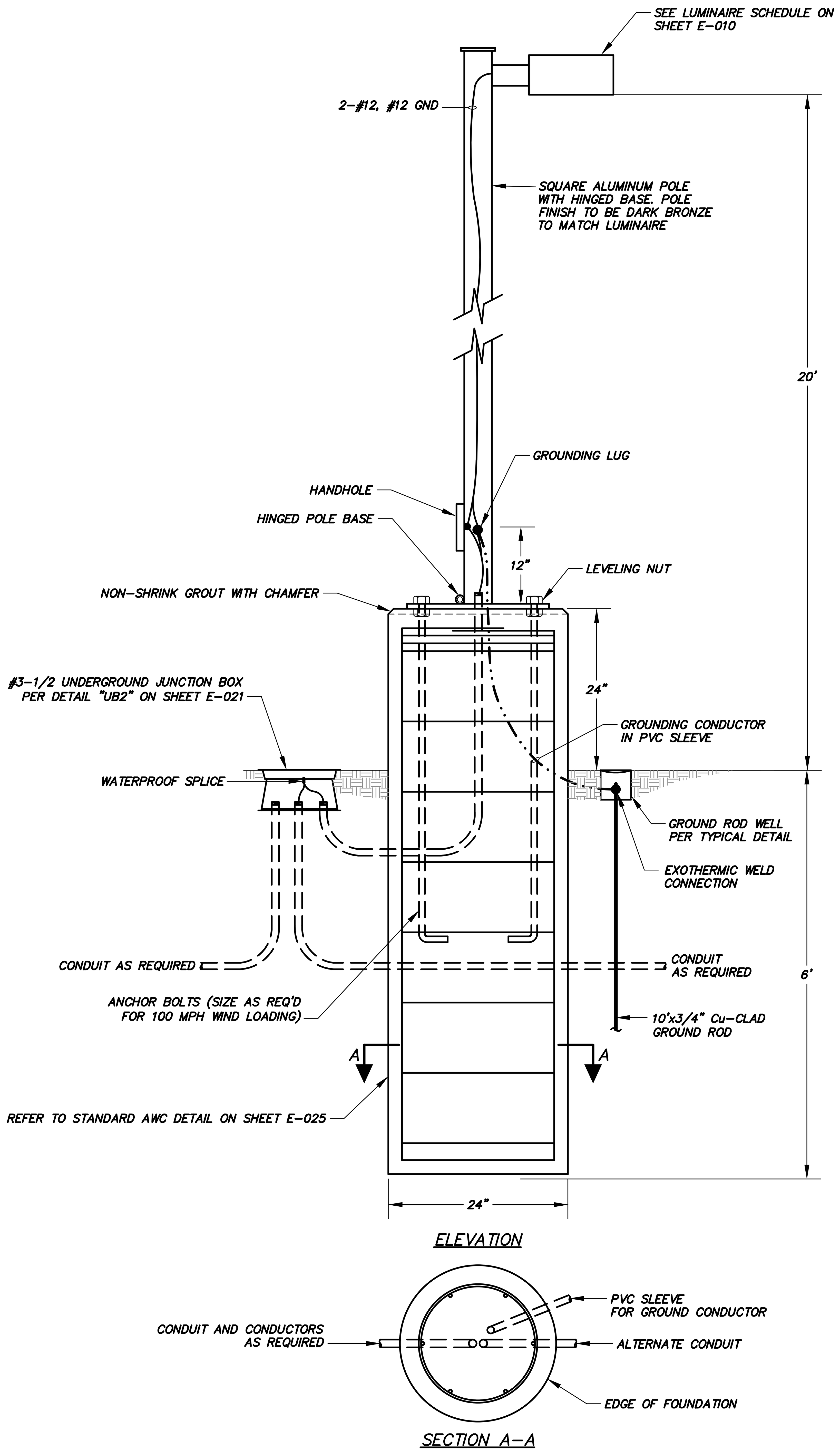
Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 Date Signed ARIZONA U.S.A.

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2699 WWW.DARCORINC.COM

consor

DWG. No.: E-021

SHEET 80 OF 98



AL1 TYP — TYPICAL AREA LIGHT DETAIL

NTS

NOTE:

1. PROVIDE SUBMITTALS FOR LUMINAIRES, LIGHT POLES AND ACCESSORIES, INCLUDING FOUNDATION DETAILS.

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: P.E. No.: SYSTEM: LEGAL DESC.: TAX DST.: SIB No.:

DATE: 3/9/2026 SCALE: N/A

DRAWN BY: MV REVIEWED BY: VC CHECKED BY: JLG

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: ELECTRICAL DETAILS - III

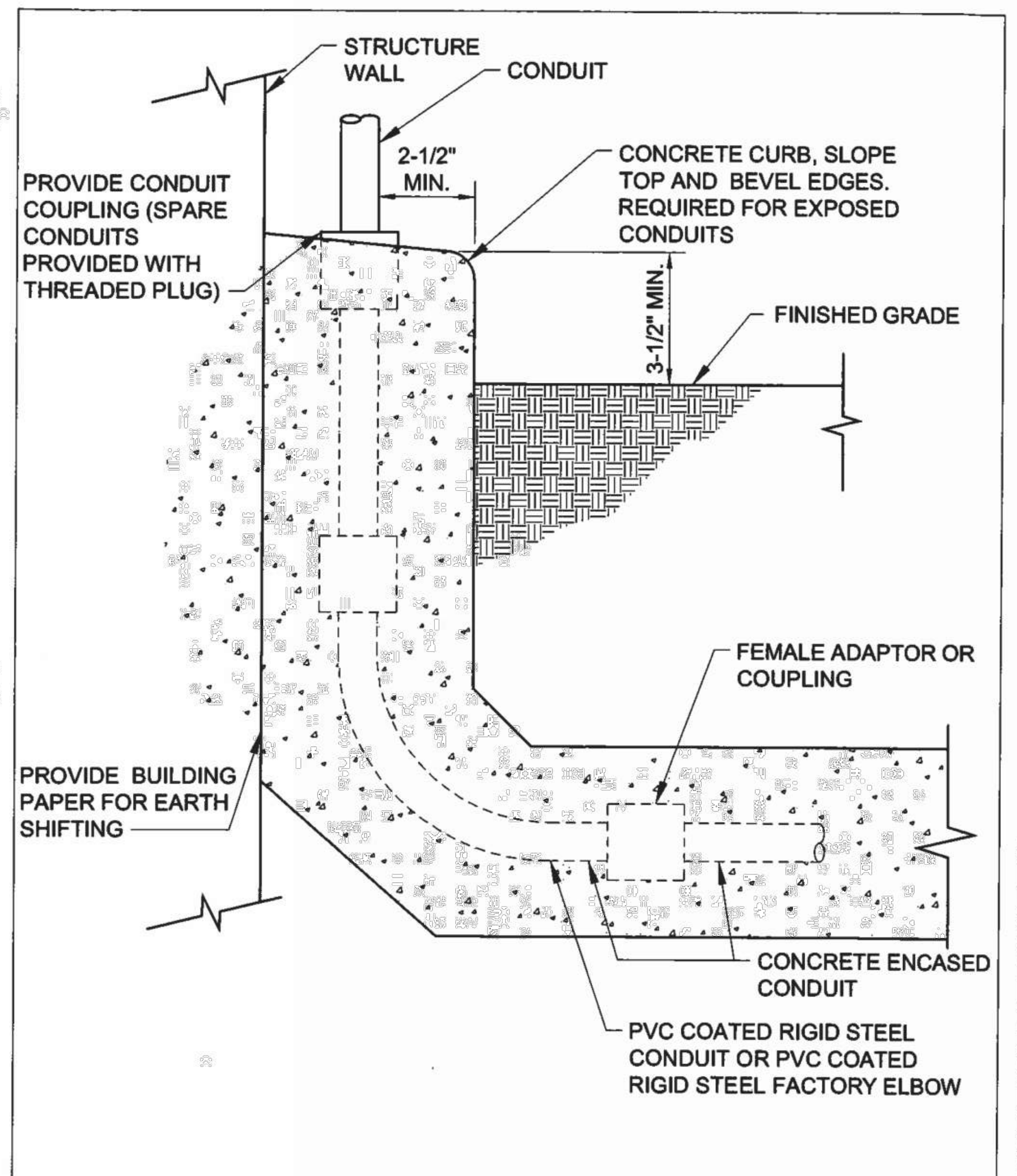
Registered Professional Engineer (Electrical) Certificate No. 53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140
PHOENIX, AZ 85027
Ph: (602) 795-2699
WWW.DARCORINC.COM

consor

DWG. No.: E-022

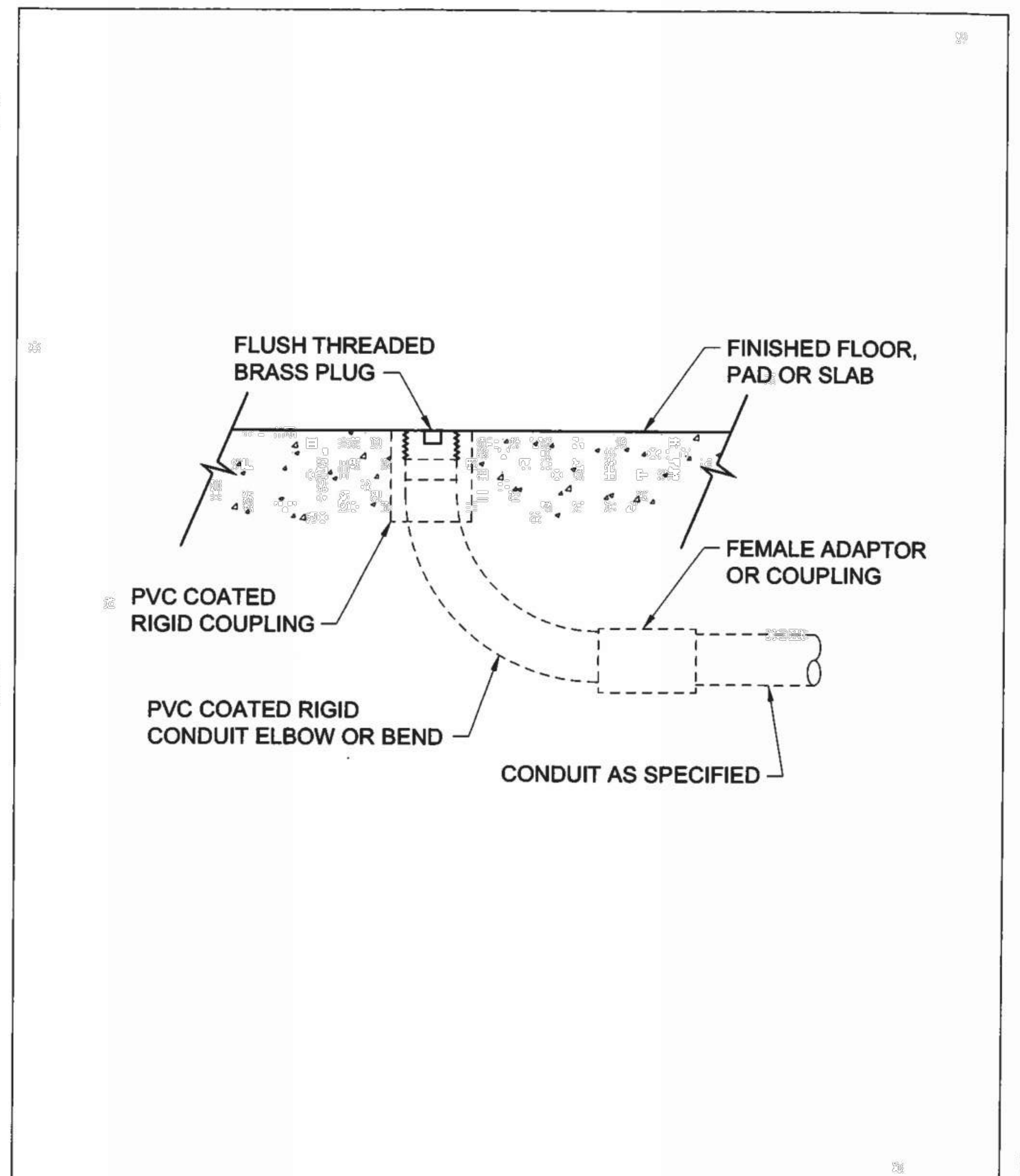
Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-E22 (Electrical Details - III).dwg, Plotted Date: March 9, 2026 6:55 PM By: Tobias J. Wiley



ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF CONDUIT CURB AT FINISHED GRADE

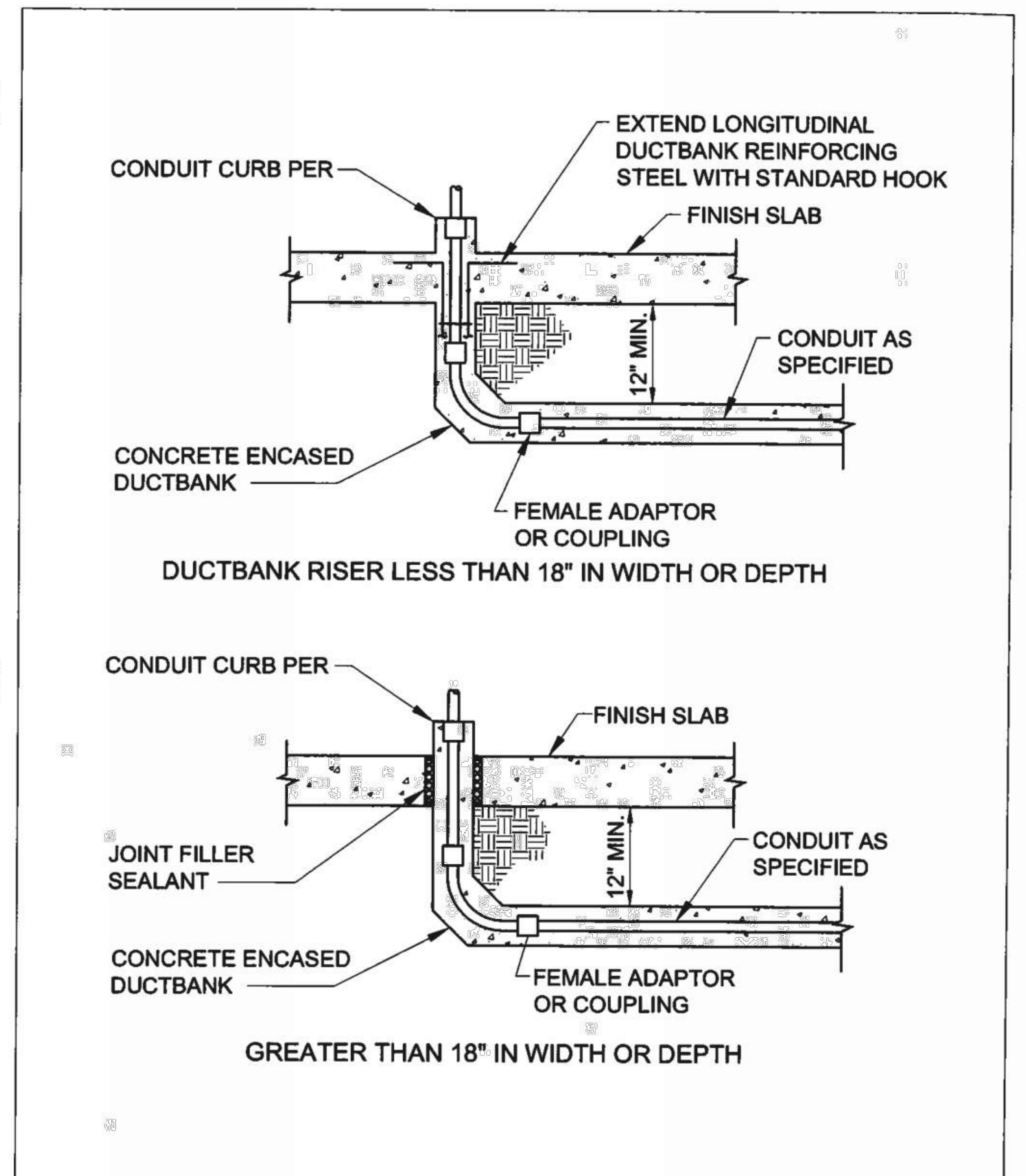
DRAWN BY: | APPROVED BY: | DATE: 12-23-08



ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF CONDUIT FLUSH TERMINATION IN SLAB

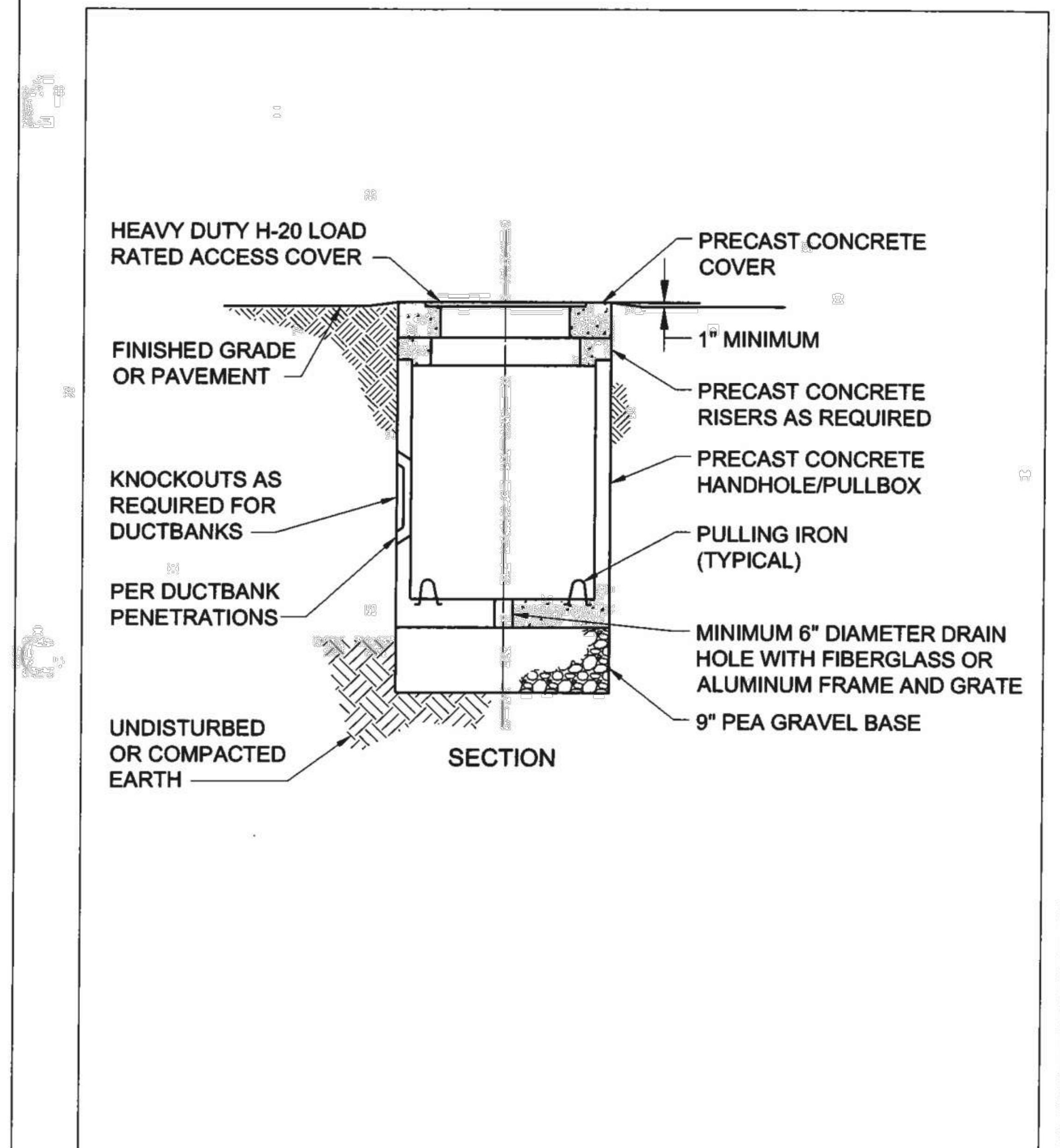
DRAWN BY: | APPROVED BY: | DATE: 12-23-08



ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF CONDUIT RISERS FROM DUCTBANK

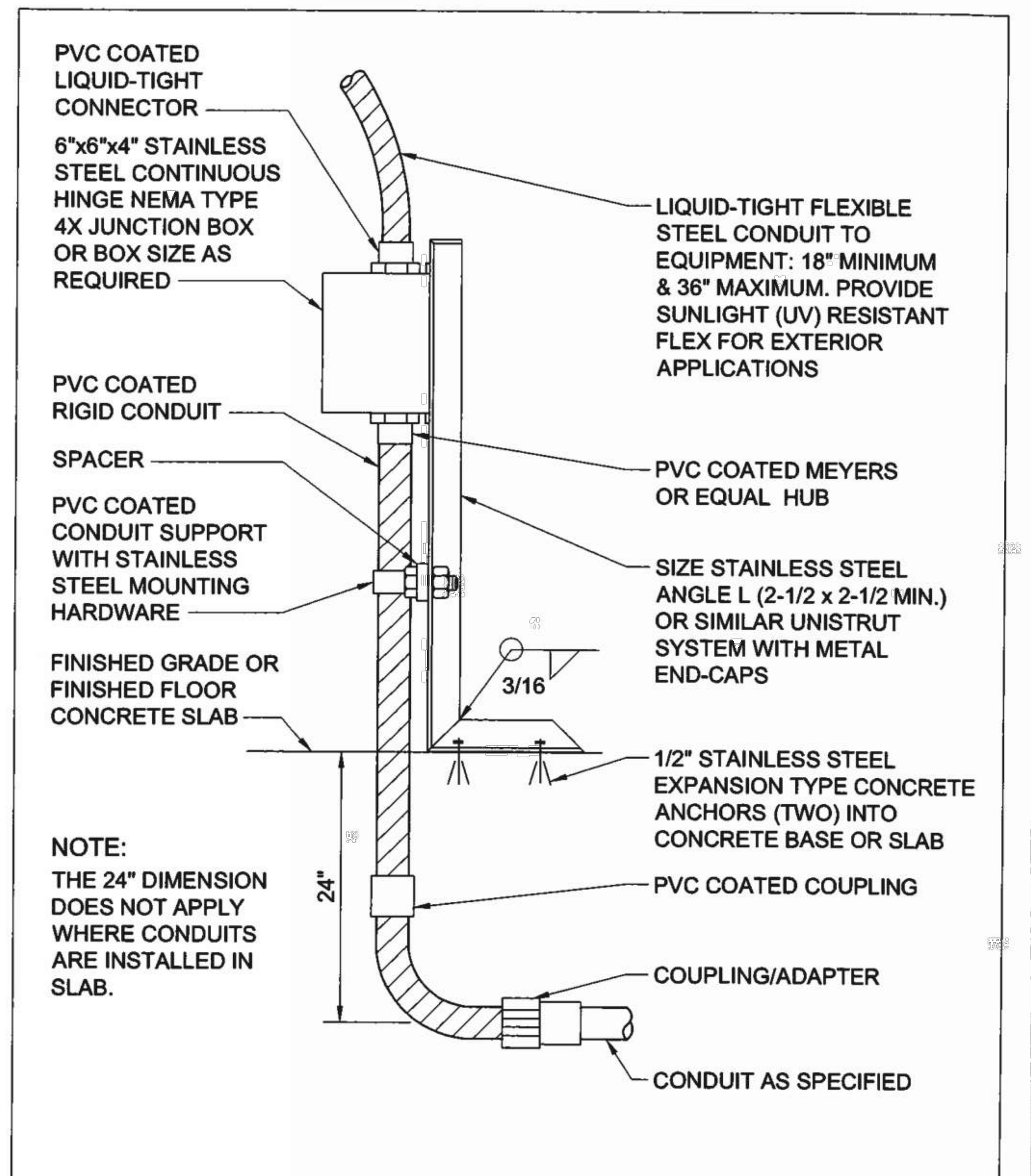
DRAWN BY: | APPROVED BY: | DATE: 12-23-08



ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF ELECTRICAL HANDHOLE/PULLBOX

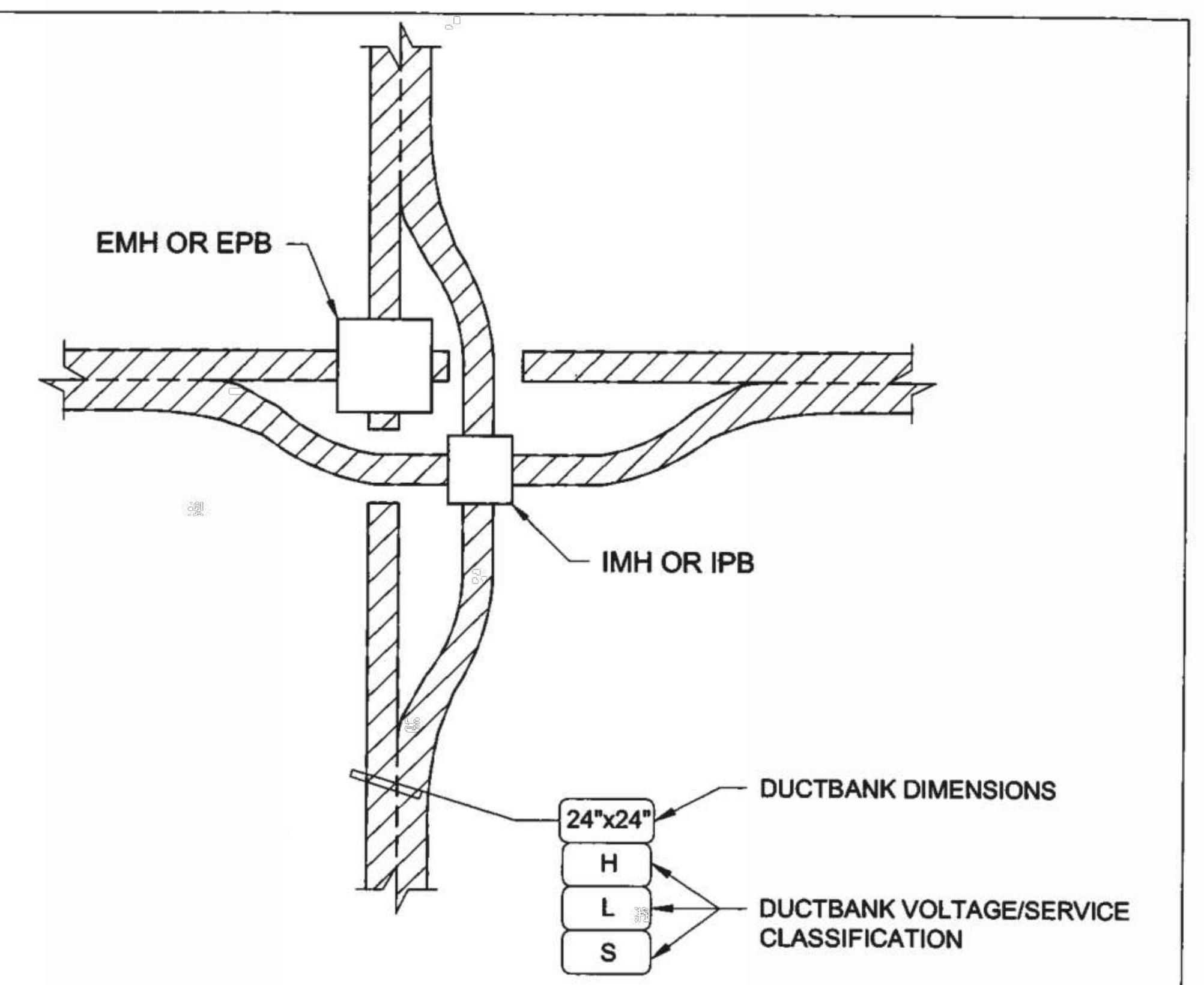
DRAWN BY: | APPROVED BY: | DATE: 12-23-08



ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF CONDUIT STUB-UP AND TRANSITION J-BOX SUPPORT

DRAWN BY: | APPROVED BY: | DATE: 12-23-08



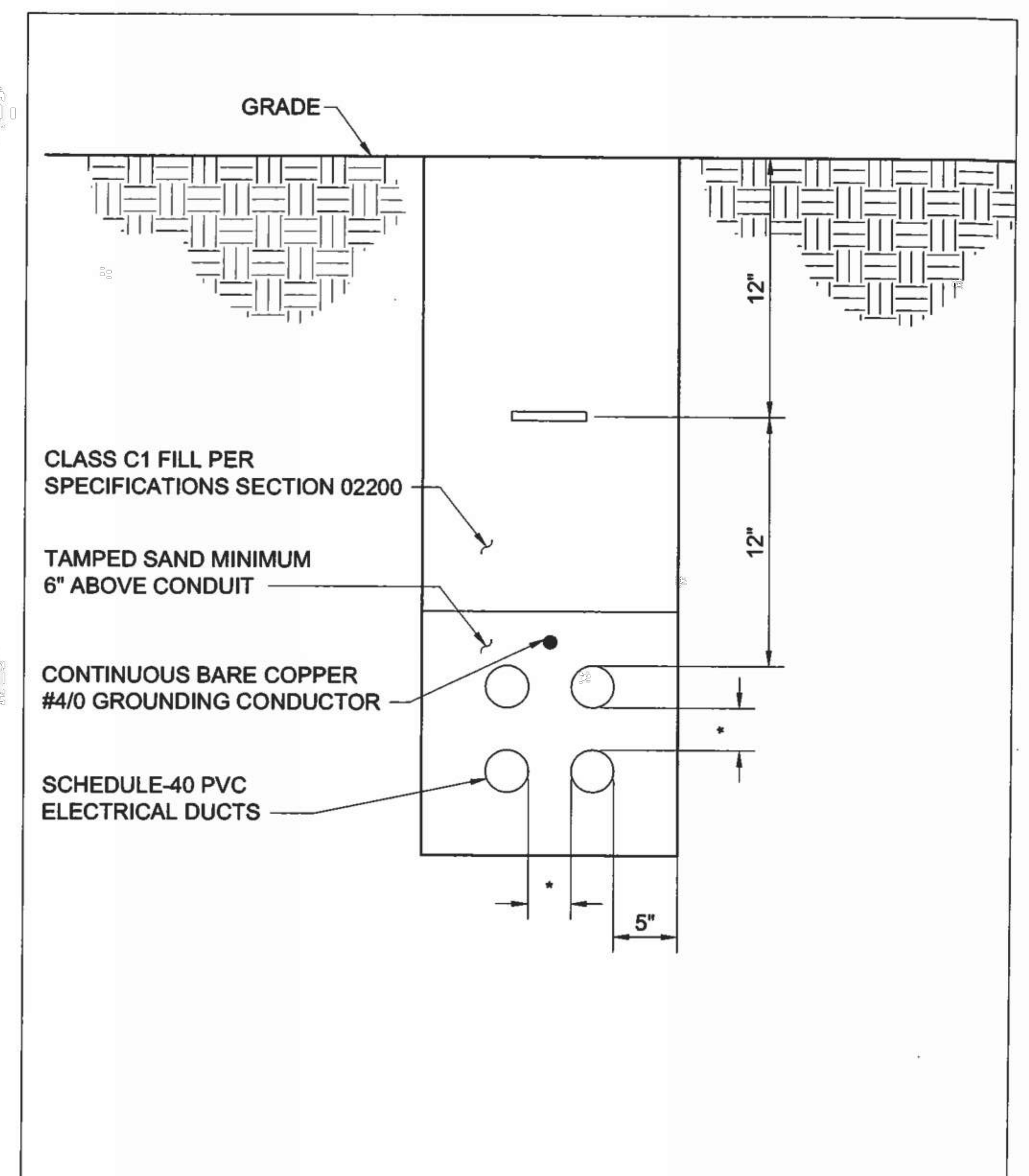
ABBREVIATIONS AND SYMBOLS:

- H = HIGH VOLTAGE: 5KV, 15KV, 25KV OR 35KV
- L = LOW VOLTAGE: 600V (POWER & CONTROL)
- S = SIGNAL: INSTRUMENTATION, DATA COMMUNICATION, TELEPHONE
- EMH = ELECTRICAL MANHOLE
- EPB = ELECTRICAL PULLBOX
- IMH = INSTRUMENT MANHOLE
- IPB = INSTRUMENT PULLBOX

ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF DUCTBANK WITH EMH/IMH LAYOUT

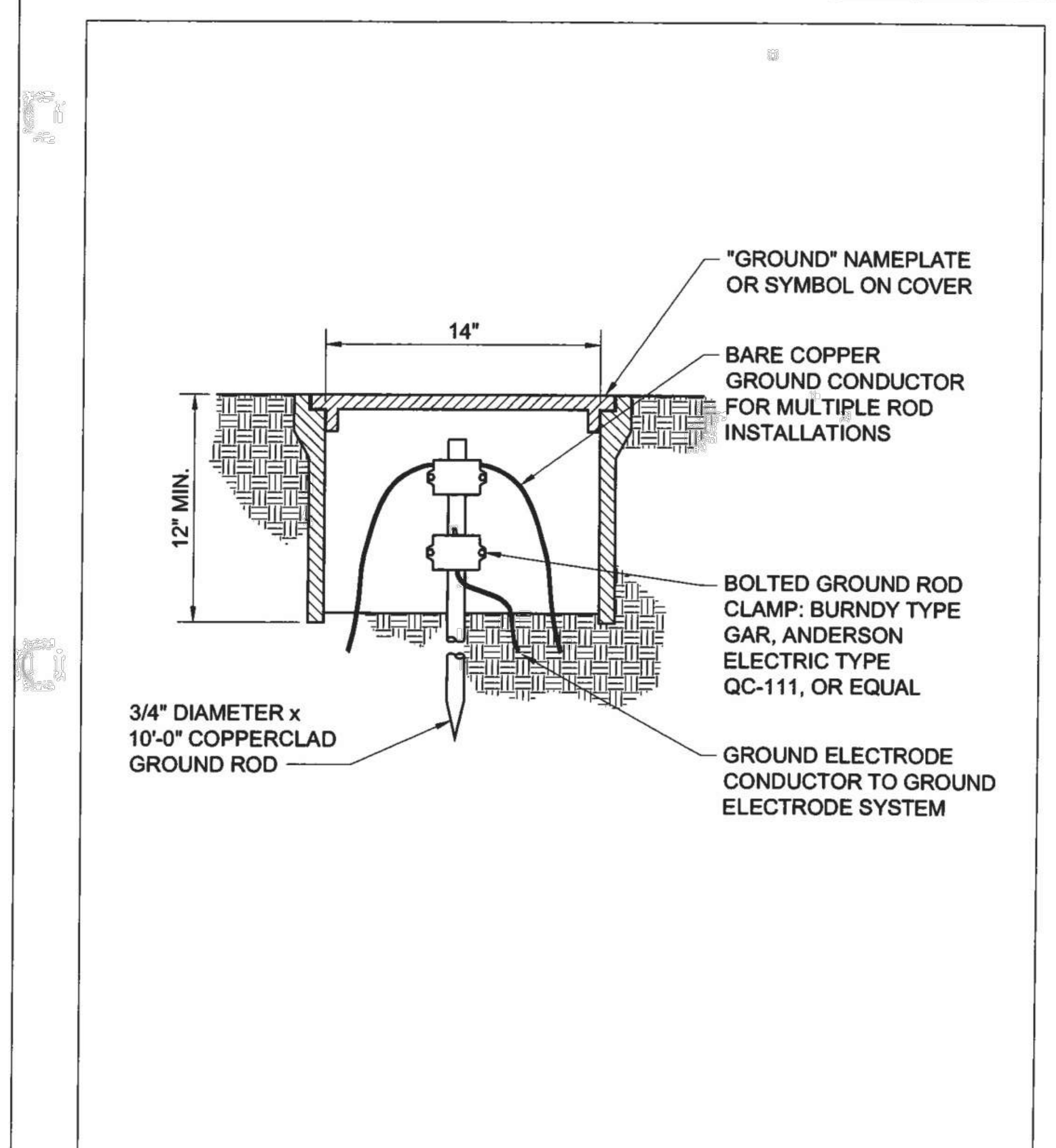
DRAWN BY: | APPROVED BY: | DATE: 12-23-08



ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF RACEWAYS DIRECT BURIED RACEWAYS

DRAWN BY: | APPROVED BY: | DATE: 12-23-08



ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF GROUND ROD TEST WELL

DRAWN BY: | APPROVED BY: | DATE: 12-29-08

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Contact Arizona 811 at least two full working days before you begin excavation. ARIZONA811 Call 811 or click Arizona811.com

P.E. No.: | W.A. No.: | SYSTEM: | LEGAL DESC.: | TAX DST.: | SIB No.: | DATE: 3/9/2026 | SCALE: N/A | DRAWN BY: MV | REVIEWED BY: VC | CHECKED BY: JLG

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: ELECTRICAL DETAILS - IV

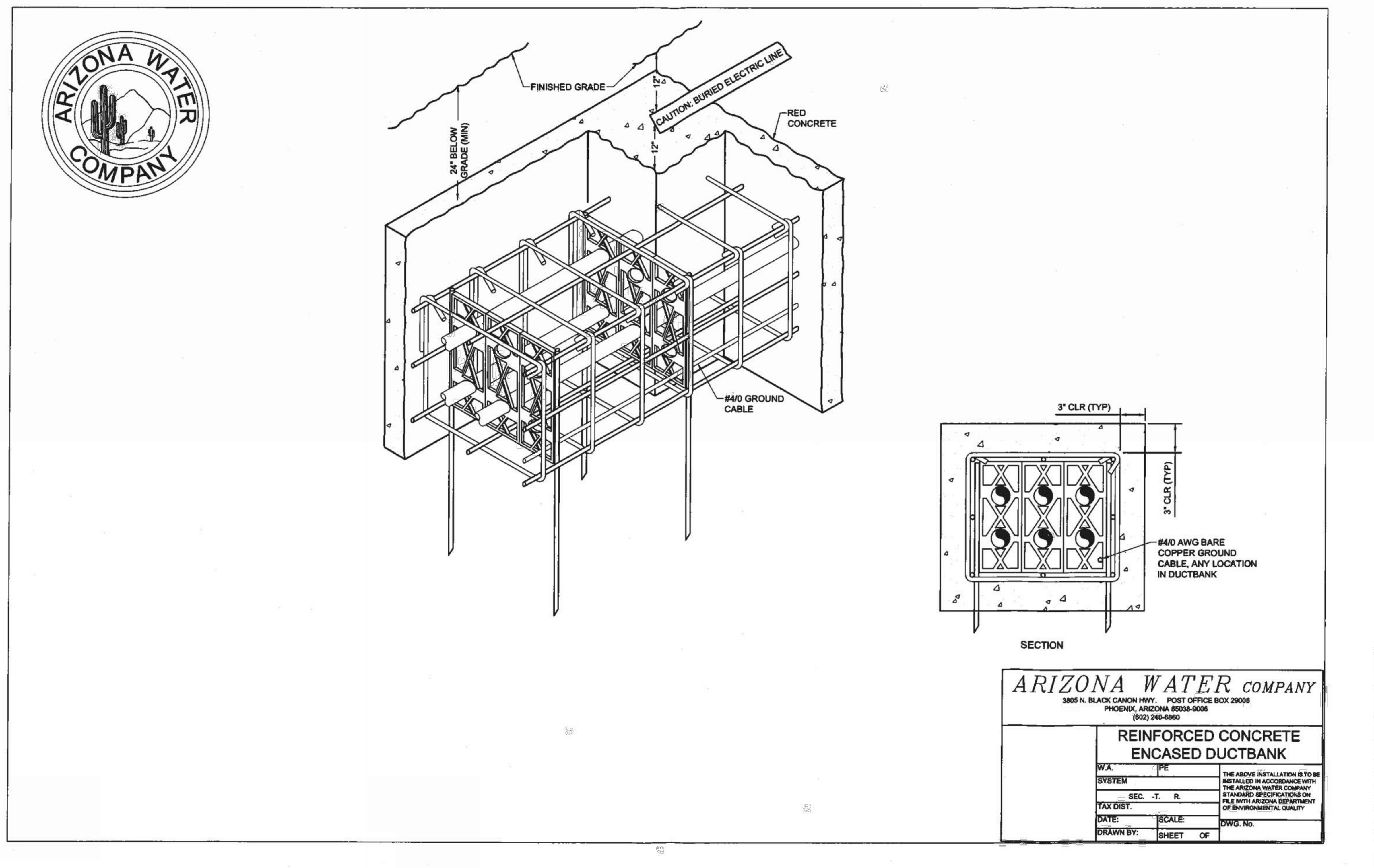
Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 ARIZONA, U.S.A.

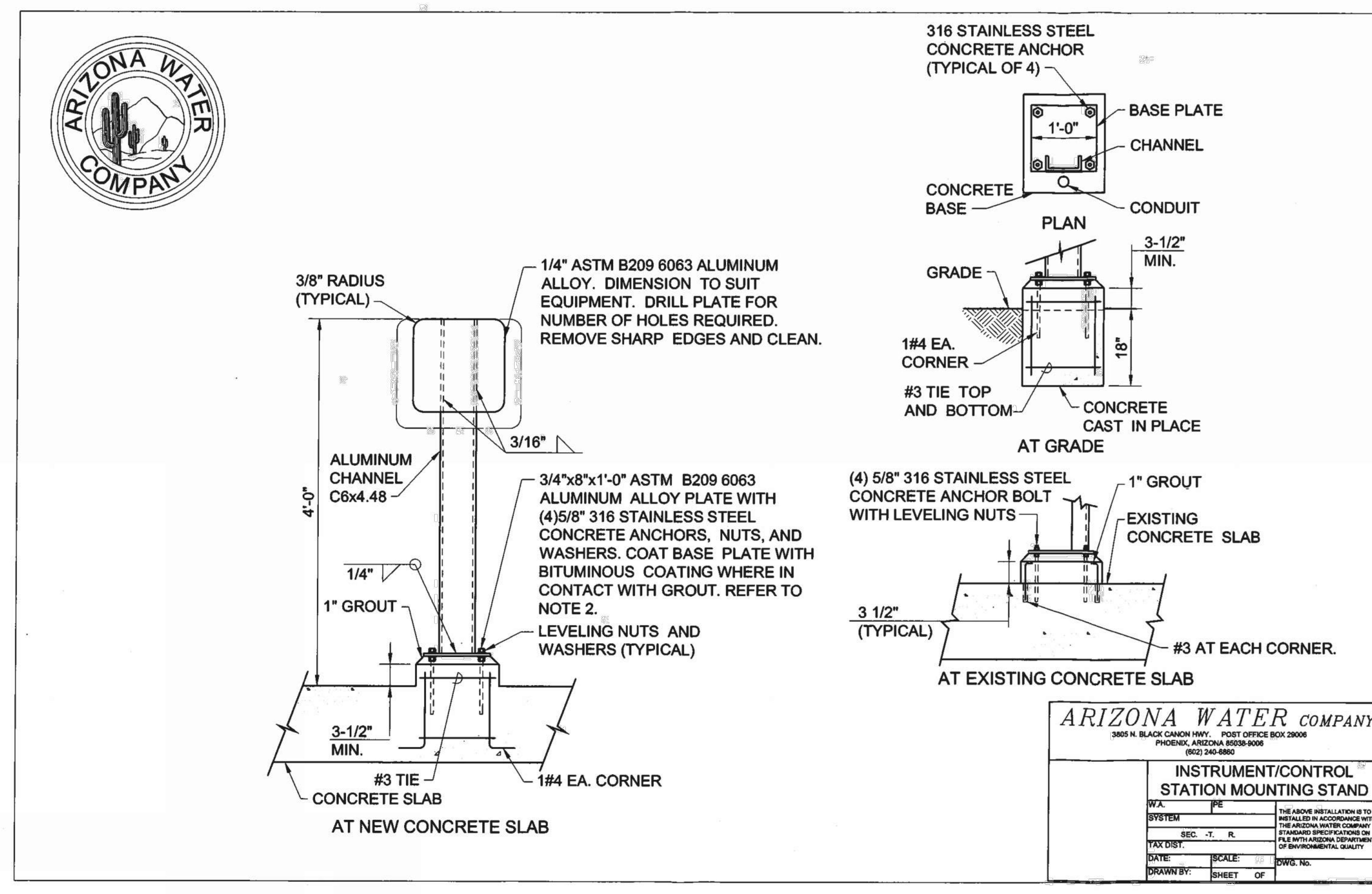
DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2899 WWW.DARCORINC.COM

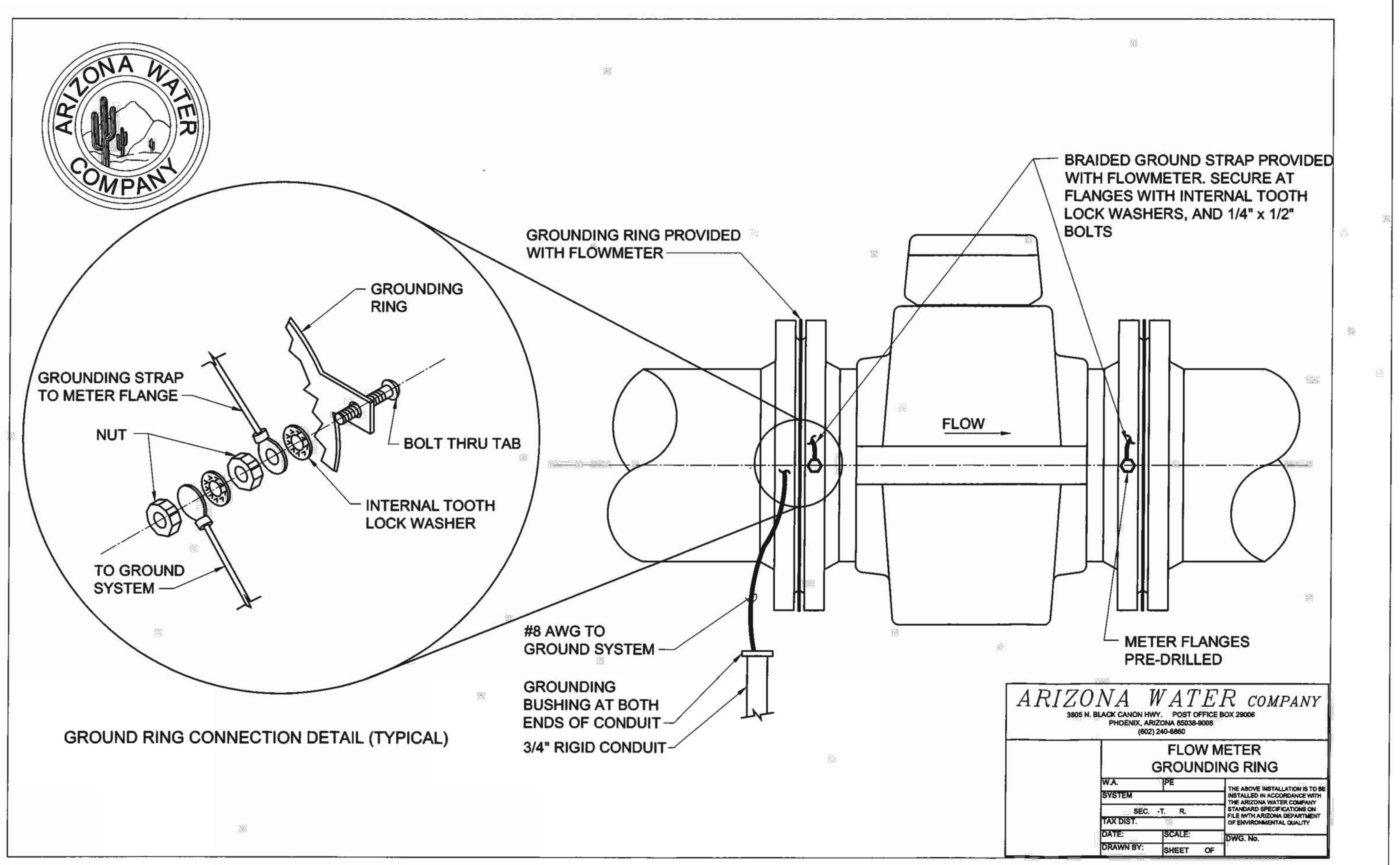
consor

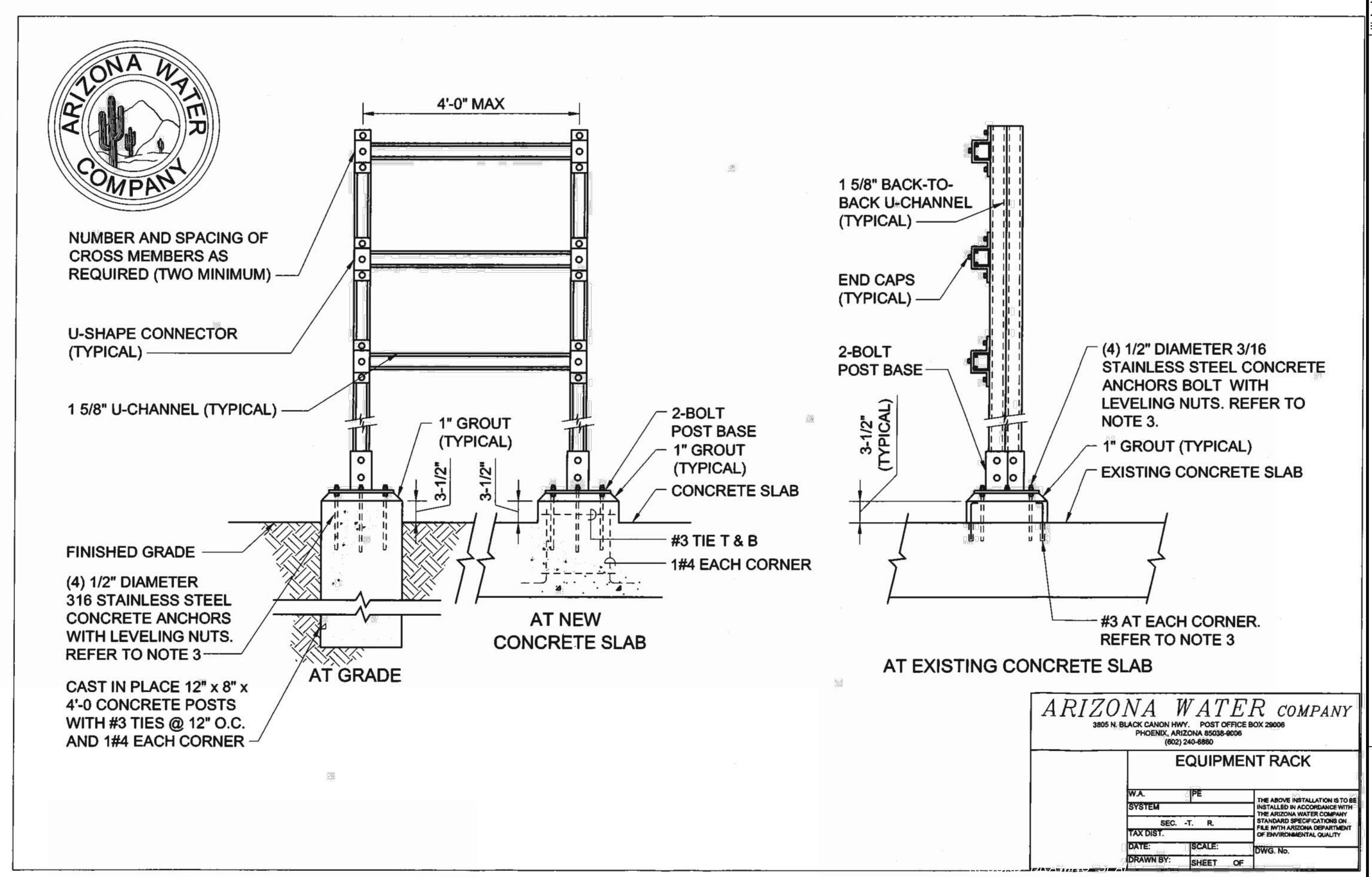
DWG. No.: E-023

SHEET 82 OF 98




316 STAINLESS STEEL CONCRETE ANCHOR (TYPICAL OF 4)
BASE PLATE
CHANNEL
1'-0"
CONCRETE BASE
CONDUIT
PLAN
3/8" RADIUS (TYPICAL)
1/4" ASTM B209 6063 ALUMINUM ALLOY. DIMENSION TO SUIT EQUIPMENT. DRILL PLATE FOR NUMBER OF HOLES REQUIRED. REMOVE SHARP EDGES AND CLEAN.
3/16"
ALUMINUM CHANNEL C6x4.48
4'-0"
3/4"x8"x1'-0" ASTM B209 6063 ALUMINUM ALLOY PLATE WITH (4)5/8" 316 STAINLESS STEEL CONCRETE ANCHORS, NUTS, AND WASHERS. COAT BASE PLATE WITH BITUMINOUS COATING WHERE IN CONTACT WITH GROUT. REFER TO NOTE 2.
1/4"
1" GROUT
LEVELING NUTS AND WASHERS (TYPICAL)
3-1/2" MIN.
#3 TIE
1#4 EA. CORNER
CONCRETE SLAB
AT NEW CONCRETE SLAB
GRADE
3-1/2" MIN.
1#4 EA. CORNER
18"
#3 TIE TOP AND BOTTOM
CONCRETE CAST IN PLACE
AT GRADE
(4) 5/8" 316 STAINLESS STEEL CONCRETE ANCHOR BOLT WITH LEVELING NUTS
1" GROUT
EXISTING CONCRETE SLAB
3 1/2" (TYPICAL)
#3 AT EACH CORNER.
AT EXISTING CONCRETE SLAB
ARIZONA WATER COMPANY
INSTRUMENT/CONTROL STATION MOUNTING STAND


BRAIDED GROUND STRAP PROVIDED WITH FLOWMETER. SECURE AT FLANGES WITH INTERNAL TOOTH LOCK WASHERS, AND 1/4" x 1/2" BOLTS
GROUNDING RING PROVIDED WITH FLOWMETER
GROUNDING RING
GROUNDING STRAP TO METER FLANGE
NUT
BOLT THRU TAB
INTERNAL TOOTH LOCK WASHER
TO GROUND SYSTEM
FLOW
#8 AWG TO GROUND SYSTEM
GROUNDING BUSHING AT BOTH ENDS OF CONDUIT
3/4" RIGID CONDUIT
METER FLANGES PRE-DRILLED
GROUND RING CONNECTION DETAIL (TYPICAL)
ARIZONA WATER COMPANY
FLOW METER GROUNDING RING


4'-0" MAX
NUMBER AND SPACING OF CROSS MEMBERS AS REQUIRED (TWO MINIMUM)
U-SHAPE CONNECTOR (TYPICAL)
1 5/8" U-CHANNEL (TYPICAL)
1" GROUT (TYPICAL)
2-BOLT POST BASE
1" GROUT (TYPICAL)
CONCRETE SLAB
3-1/2"
#3 TIE T & B
1#4 EACH CORNER
FINISHED GRADE
(4) 1/2" DIAMETER 316 STAINLESS STEEL CONCRETE ANCHORS WITH LEVELING NUTS. REFER TO NOTE 3
CAST IN PLACE 12" x 8" x 4'-0 CONCRETE POSTS WITH #3 TIES @ 12" O.C. AND 1#4 EACH CORNER
AT GRADE
AT NEW CONCRETE SLAB
1 5/8" BACK-TO-BACK U-CHANNEL (TYPICAL)
END CAPS (TYPICAL)
2-BOLT POST BASE
3-1/2" (TYPICAL)
(4) 1/2" DIAMETER 3/16 STAINLESS STEEL CONCRETE ANCHORS BOLT WITH LEVELING NUTS. REFER TO NOTE 3.
1" GROUT (TYPICAL)
EXISTING CONCRETE SLAB
#3 AT EACH CORNER. REFER TO NOTE 3
AT EXISTING CONCRETE SLAB
ARIZONA WATER COMPANY
EQUIPMENT RACK

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

P.E. No.:
W.A. No.:
SYSTEM:
LEGAL DESC.:
SIB No.:
TAX DIST.:
SCALE: N/A
DATE: 3/9/2026
DRAWN BY: MV
REVIEWED BY: VC
CHECKED BY: JLG
PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: ELECTRICAL DETAILS - V

53839 JORGE GERARDO 3/9/26

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2699 WWW.DARCORINC.COM

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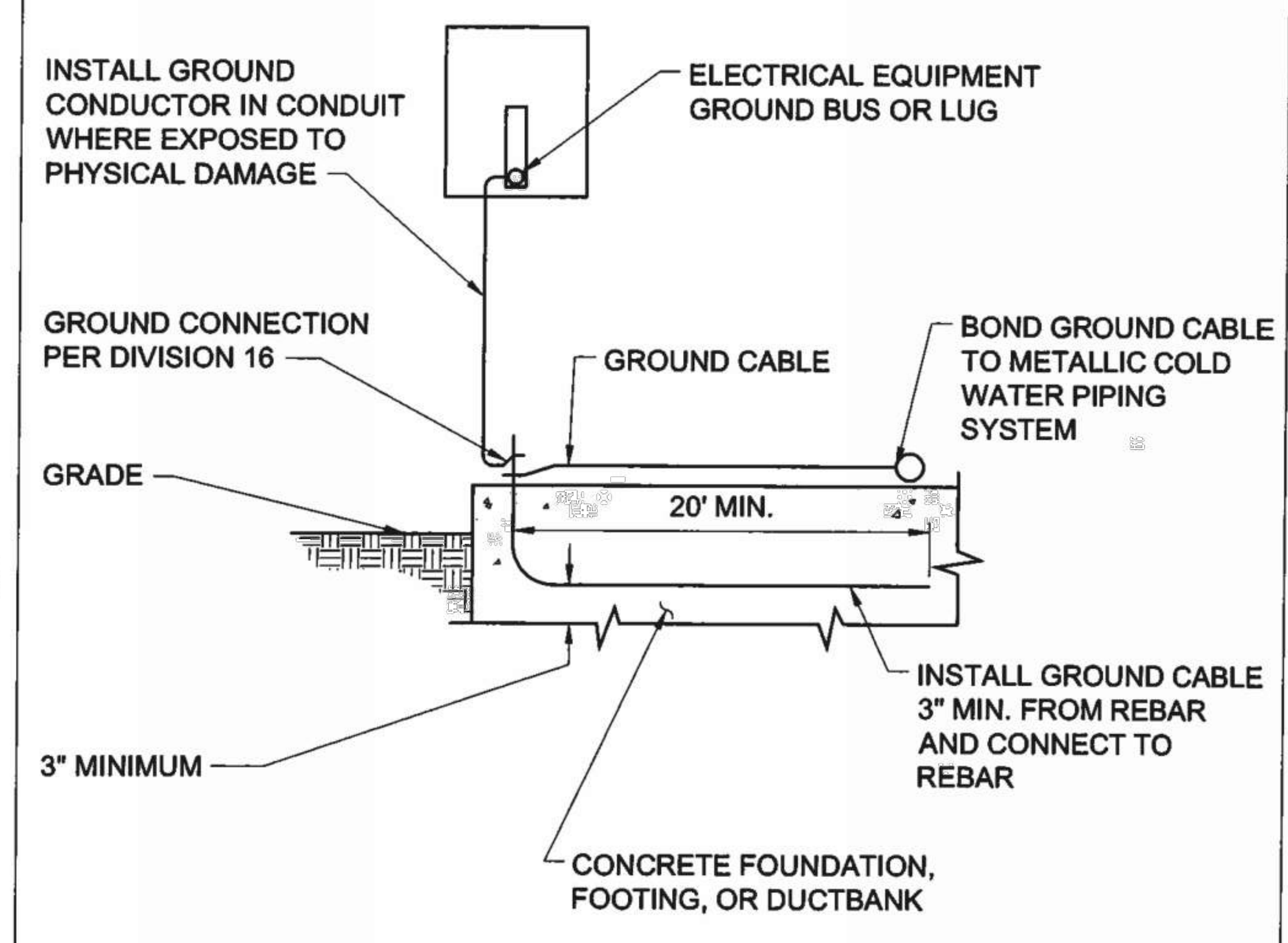
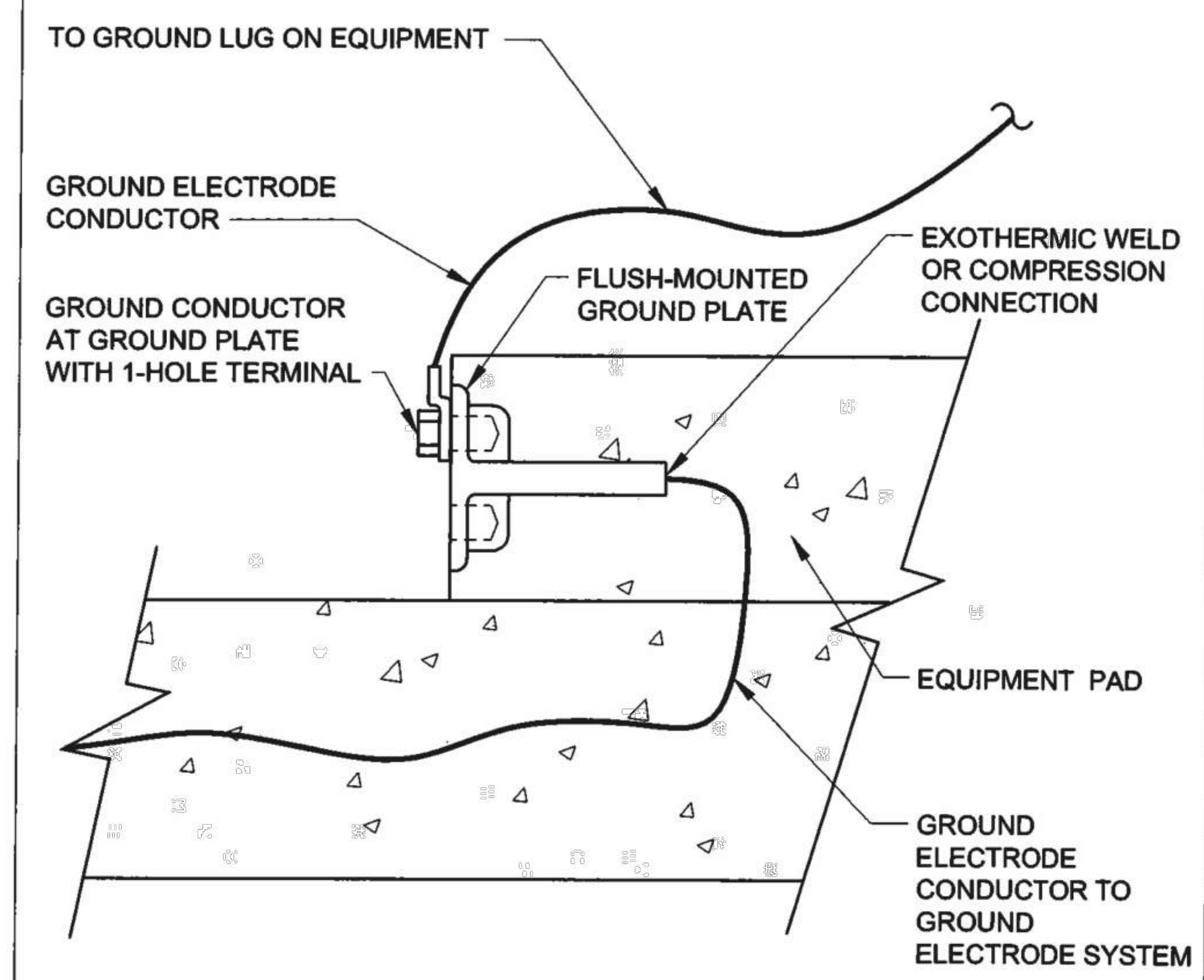
DWG. No.: E-024
SHEET 83 OF 98



ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF
GROUNDING CONCRETE ENCASED GROUND ELECTRODE CONDUCTOR

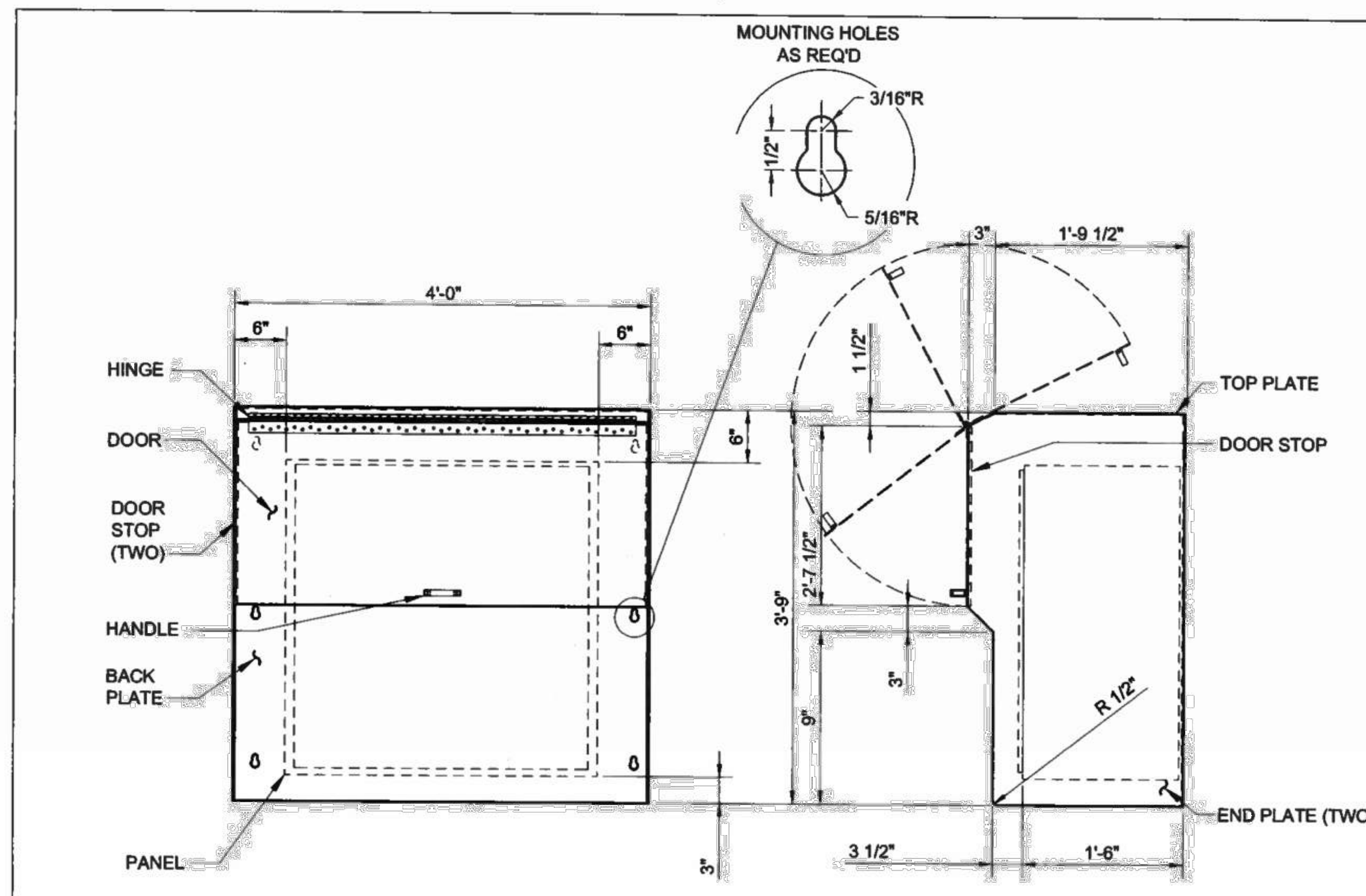
DRAWN BY: | APPROVED BY: | DATE: 12-29-08



ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF
EQUIPMENT GROUND PLATE

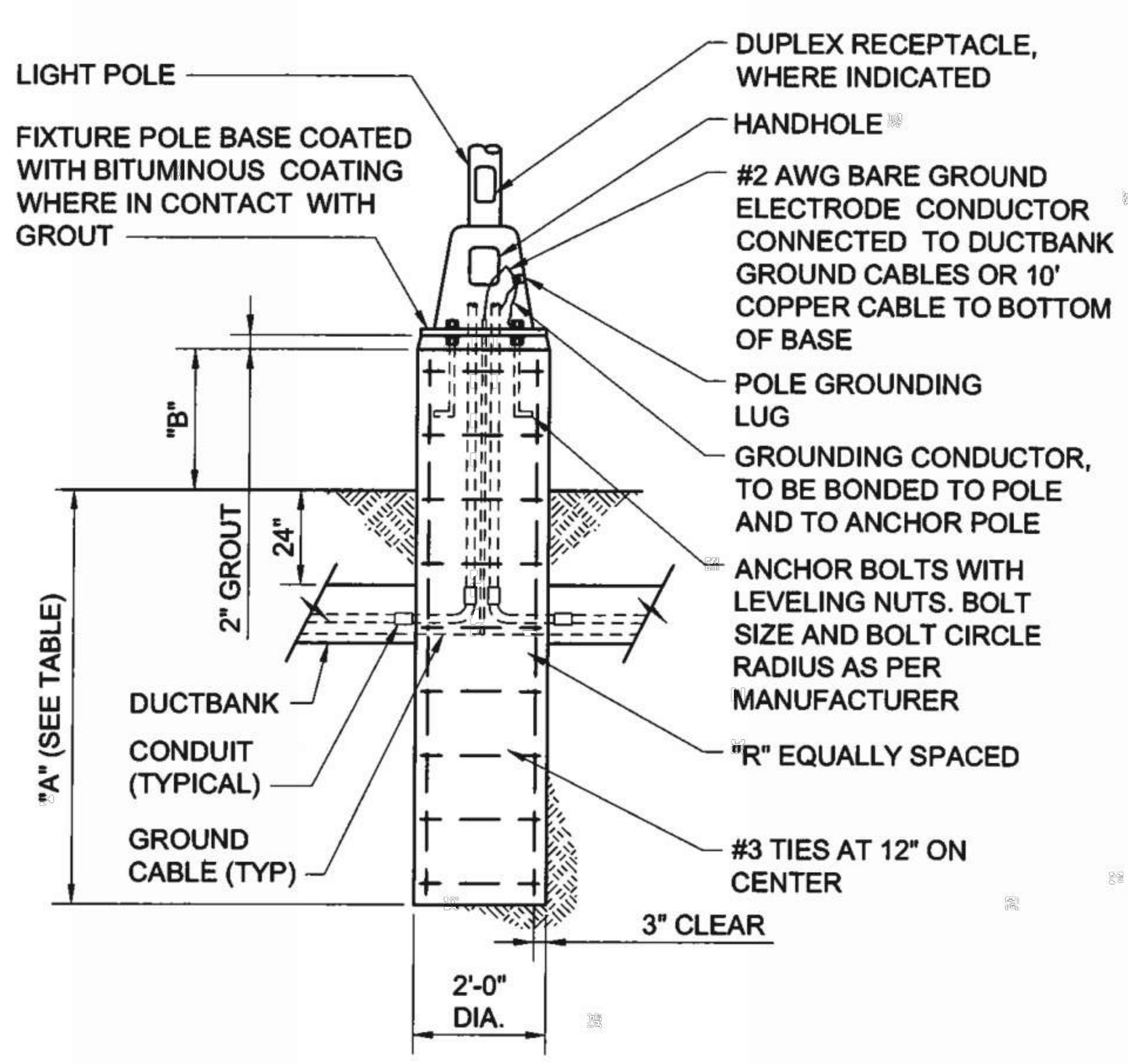
DRAWN BY: | APPROVED BY: | DATE: 12-29-08



ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF
INSTRUMENT SUN/RAIN HOOD

DRAWN BY: | APPROVED BY: | DATE: 12-29-08

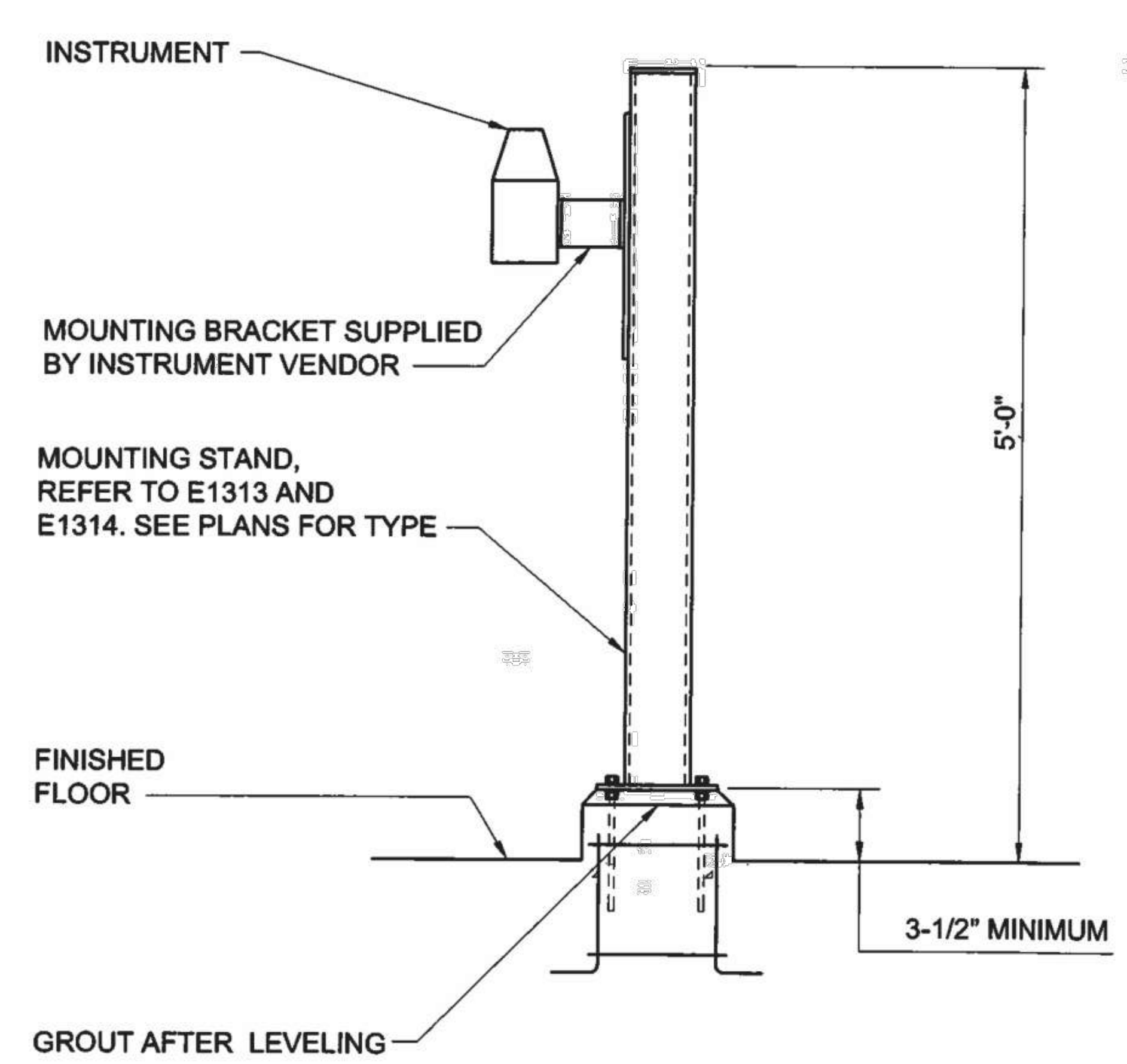


POLE HEIGHT	"A" MINIMUM	MAX BASE HEIGHT "B"	"R" LONGITUDINAL REINF.
10'-0"	4'-6"	3'-0"	(4) #4
20'-0"	5'-8"	3'-0"	(4) #5
30'-0"	7'-0"	3'-0"	(6) #5
40'-0"	7'-10"	3'-0"	(6) #6

ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF
POLE BASE (EXTENDED)

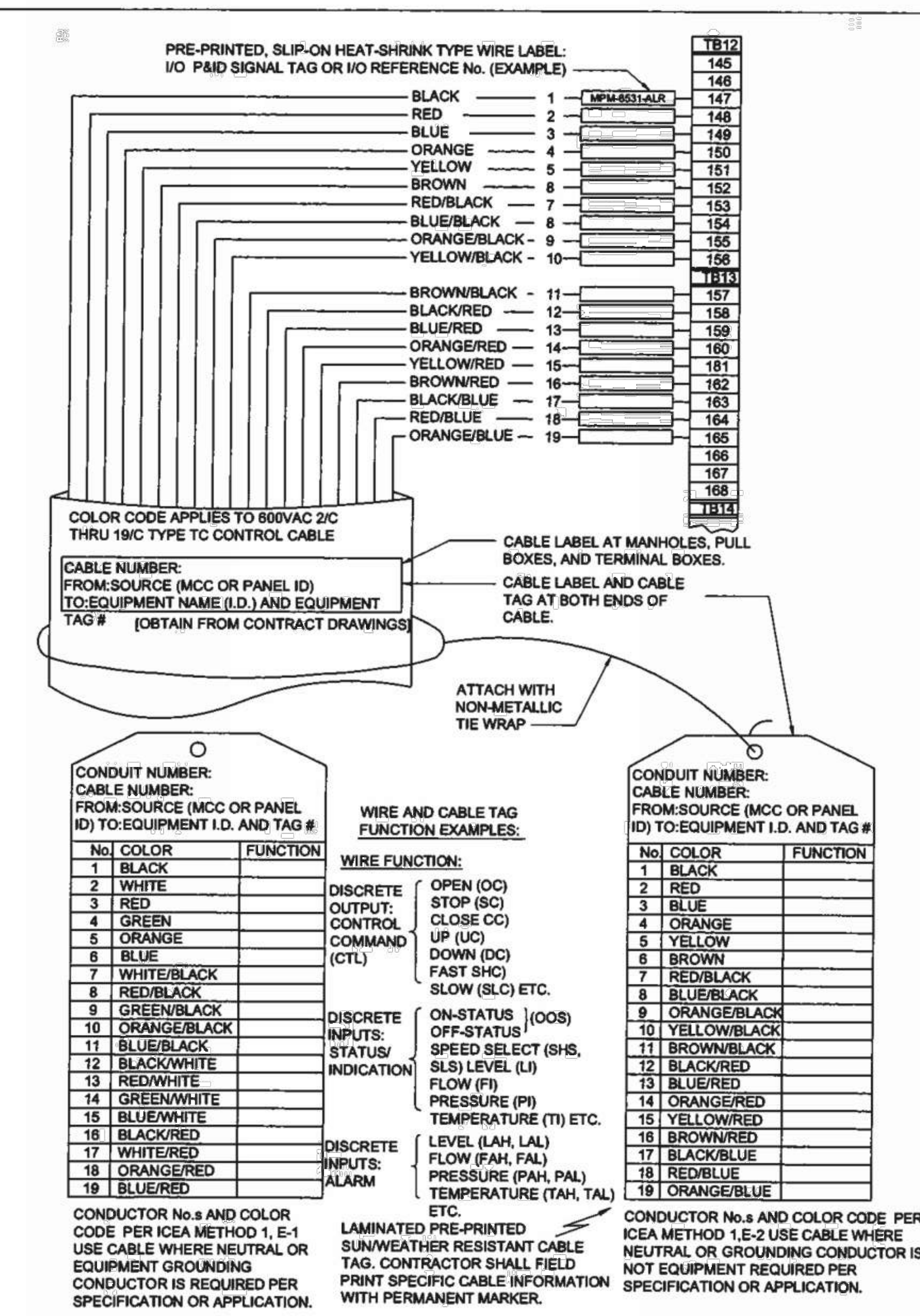
DRAWN BY: | APPROVED BY: | DATE: 12-29-08



ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF
INSTRUMENT FLOOR MOUNT

DRAWN BY: | APPROVED BY: | DATE: 12-23-08



ARIZONA WATER COMPANY

STANDARD DETAILS FOR THE INSTALLATION OF
CABLE TAGGING AND LABELING (EXAMPLE)

DRAWN BY: | APPROVED BY: | DATE: 12-23-08

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: | P.E. No.: | SYSTEM: | LEGAL DESC.: | TAX DIST.: | SIB No.:

DATE: 3/9/2026 | SCALE: N/A
DRAWN BY: MV | REVIEWED BY: VC | CHECKED BY: JLG

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: ELECTRICAL DETAILS - VI

Registered Professional Engineer, Certificate No. 53839, JORGE GERARDO, 3/9/26, ARIZONA U.S.A.

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2899 WWW.DARCORINC.COM

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DWG. No.: E-025
SHEET 84 OF 98

TAG NAME IDENTIFICATION TABLE

	FIRST LETTER	SUCCEEDING LETTER(S)	
	MEASURED VARIABLE	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS	ALARM	
B	BURNER, COMBUSTION		BYPASS
C	CONDUCTIVITY	CONTROL	CLOSED
D	DENSITY	DIFFERENTIAL	
E	VOLTAGE	PRIMARY ELEMENT	
F	FLOW RATE	FAILURE	FAST
G	GAUGE	GLASS, VIEWING DEVICE	
H	HAND (MANUAL)		HIGH
I	CURRENT (ELECTRICAL)	INDICATE	
J	POWER		
K	TIME, RATE OF CHANGE		
L	LEVEL		LOW
M	MOTION		MIDDLE
N	INTRUSION		NORMAL
O	TORQUE		OPEN
P	PRESSURE, VACUUM		
Q	QUANTITY	INTEGRATE, TOTALIZE	
R	RADIATION	RECORD OR PRINT	
S	SPEED, FREQUENCY	SWITCH	SLOW
T	TEMPERATURE	TRANSMIT	
U	MULTIVARIABLE	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION	VALVE, LOUVER	
W	WEIGHT, FORCE	WELL	
X	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, PRESENCE	RELAY, COMPUTE, CONVERT	
Z	POSITION	DRIVER, ACTUATOR,	

INSTRUMENT LINES

- EXISTING PRIMARY PROCESS FLOW
- EXISTING SECONDARY PROCESS FLOW
- PRIMARY PROCESS FLOW
- SECONDARY PROCESS FLOW
- PROCESS AIR
- ELECTRICAL SIGNAL
- SOFTWARE LINK
- PNEUMATIC AIR
- # # SIGNAL CONTINUATION

INSTRUMENT SYMBOLS

HOA — DEVICE FUNCTION (SEE ABBREVIATIONS)
HS — DEVICE IDENTIFICATION (SEE IDENTIFICATION TABLE)
101 — DEVICE TAG NUMBER (LOOP NUMBER REFERENCE)

- FIELD MOUNTED DEVICE – ASTERISK INDICATES DEVICE FURNISHED BY EQUIPMENT VENDOR
- FRONT PANEL MOUNTED DEVICE
- BACK PANEL MOUNTED DEVICE
- INDICATOR LIGHT
- GRAPHIC DISPLAY FUNCTION ON MAN-MACHINE INTERFACE – NUMBER DENOTES ALARM LEVEL (2)
- HUMAN MACHINE INTERFACE (HMI)
- I — GENERALIZED, UNDEFINED COMPLEX INTERLOCK LOGIC

ANALOG I/O — DIGITAL I/O — PULSE INPUT

PLC INPUTS/OUTPUTS

- # — CONTINUATION ARROW # REFERENCES SHEET OF CONTINUANCE

PROCESS FLOW AND MECHANICAL EQUIPMENT SYMBOLS

- AIR COMPRESSOR
- CENTRIFUGAL BLOWER
- CENTRIFUGAL PUMP
- FLOATING MIXER OR AERATOR
- AIR LIFT PUMP
- CHEMICAL METERING PUMP
- PROGRESSIVE CAVITY PUMP
- MIXER (M)
- STATIC MIXER
- ROTARY LOBE BLOWER OR PUMP
- SUBMERSIBLE PUMP (M)
- VERTICAL TURBINE PUMP
- SCREW (LIFT) PUMP (M)
- HORN (H)
- PARSHALL FLUME
- WIER
- MOTOR OPERATOR (M)
- DESSICANT BOX (D)
- SOLENOID OPERATOR (S)
- HAND OPERATOR
- INJECTOR
- AIR RELIEF VALVE
- AIR RELIEF/VACUUM BREAK VALVE
- RADIO COMMUNICATION PATH
- FLANGE
- BLOCK AND BLEED 3-WAY VALVE
- BALL VALVE (NORMALLY OPENED)
- BALL VALVE (NORMALLY CLOSED)
- BUTTERFLY VALVE (NORMALLY OPENED)
- BUTTERFLY VALVE (NORMALLY CLOSED)
- CONTROL VALVE (NORMALLY OPEN)
- CONTROL VALVE (NORMALLY CLOSED)
- GATE VALVE (NORMALLY OPEN)
- 3 WAY VALVE
- GATE VALVE (NORMALLY CLOSED)
- PLUG VALVE (NORMALLY OPENED)
- PLUG VALVE (NORMALLY CLOSED)
- CHECK VALVE
- DIAPHRAGM VALVE (NORMALLY OPEN)
- DIAPHRAGM VALVE (NORMALLY CLOSED)
- SLUICE GATE (NORMALLY OPEN)
- SLUICE GATE (NORMALLY CLOSED)
- ULTRASONIC LEVEL SENSOR (LE)
- LEVEL PROBE(S) (LE)
- TEMPERATURE PROBE (TIT)
- DOPPLER TYPE ULTRASONIC (PRIMARY FLOW ELEMENT) (FE)
- THERMAL FLOWMETER (FE)
- THERMAL FLOW SWITCH (FS)
- MAGNETIC FLOWMETER (MM)
- TELESCOPING VALVE
- SURGE ANTICIPATOR/PRESSURE RELIEF VALVE (NORMALLY OPEN)
- SURGE ANTICIPATOR/PRESSURE RELIEF VALVE (NORMALLY CLOSED)
- YAGI ANTENNA (PLAN VIEW)
- RADAR AREA/VELOCITY FLOWMETER (FE)
- ORIFICE PLATE (PRIMARY FLOW ELEMENT)
- PITOT TUBE (PRIMARY FLOW ELEMENT)
- PROPELLER FLOWMETER
- ROTAMETER (PRIMARY FLOW ELEMENT) (OR)
- THERMAL DISPERSION ELEMENT (PRIMARY FLOW ELEMENT)
- TRANSIT-TIME ULTRASONIC FLOWMETER (PRIMARY FLOW ELEMENT)
- VENTURI TUBE (PRIMARY FLOW ELEMENT)
- KNIFE GATE (NORMALLY OPEN)
- SLIDE PLATE
- FLOATING DECANTER
- DIAPHRAGM SEAL
- REDUCER
- INSERTION TYPE MAGNETIC (PRIMARY FLOW ELEMENT) (FE)
- SUBMERSIBLE MIXER (M)
- FLOAT SWITCH (FS)
- COMMUNICATION MODULE (C)
- WASHER SPRAY NOZZEL
- GEAR PUMP
- DRAIN
- WEIR GATE
- OMNI ANTENNA

ABBREVIATIONS

AI	ANALOG INPUT	L/R	LOCAL/REMOTE	PI	PROCESS INFLUENT
AO	ANALOG OUTPUT	LAN	LOCAL AREA NETWORK	PLC	PROGRAMMABLE LOGIC CONTROLLER
BKP	BACKUP MODE	LCP	LOCAL CONTROL PANEL	POLY	POLYMER
B/W	BACKWASH	LLA	LOW LEVEL ALARM	PS	PRIMARY SLUDGE
CEN	CENTRIFUGE	LOR	LOCAL OFF REMOTE	PW	POTABLE WATER
CLL	CHLORINE LIQUID	LPA	LOW PRESSURE ALARM	RAS	RETURN ACTIVATED SLUDGE
CLS	CHLORINE SOLUTION	LVL	LEVEL	RF	RADIO FREQUENCY
CV	CONTROL VALVE	M	MOTOR	RIO	REMOTE INPUT/OUTPUT
D	DECANT WATER	M/A	MANUAL/AUTO	RS	RAW SEWAGE
DCS	DISTRIBUTED CONTROL SYSTEM	MCC	MOTOR CONTROL CENTER	RST	RESET
DI	DIGITAL INPUT	ML	MIXED LIQUOR	SBR	SEQUENCING BATCH REACTOR
DO	DIGITAL OUTPUT	MLR	MIXED LIQUOR RECYCLE	SC	SCUM
DR	DRAIN	MMI	MAN MACHINE INTERFACE	SD	SANITARY DRAIN
DS	DIGESTED SLUDGE	MH	MANHOLE	SE	SECONDARY EFFLUENT
EFF	EFFLUENT	MTD	MOUNTED	SLC	SINGLE LOOP CONTROLLER
ETM	ELAPSED TIME METER	NaOCL	SODIUM HYPOCHLORITE	SP	SETPOINT
(E)	EXISTING OR RELOCATED	NO3	NITRATE	SPD	SURGE PROTECTIVE DEVICE
FA	FOUL AIR	NPW	NON POTABLE WATER	SPC	SET POINT CONTROL
FC	FAIL CLOSED	NS	NITROGEN SUPPLY	S/S	START/STOP (MOMENTARY)
FE	FINAL EFFLUENT	NaHSO3	SODIUM BISULFITE	SSS	SOLID-STATE SOFT STARTER
FeCL2	FERROUS CHLORIDE	NG	NATURAL GAS	SW	SEAL WATER
F/S	FAST/SLOW	NTU	TURBIDITY	TE	TREATED EFFLUENT
FM	FLOWMETER	OF	OVER FLOW	TPS	THICKENED PRIMARY SLUDGE
FOR	FORWARD-OFF-REVERSE	OIS	OPERATOR INTERFACE STATION	TWAS	THICKENED WASTE ACTIVATED SLUDGE
GT	GRIT	OIT	OPERATOR INTERFACE TERMINAL	UPS	UNINTERUPTIBLE POWER SUPPLY
HLA	HIGH LEVEL ALARM	OL	OVERLOAD	UW	UTILITY/PROCESS WATER
HMI	HUMAN MACHINE INTERFACE	OR	OVERRIDE	V	VALVE
HOA	HAND-OFF-AUTO	OT	OVERTORQUE	VFD	VARIABLE FREQUENCY DRIVE
HOR	HAND-OFF-REMOTE	O/C	OPEN/CLOSE	WAS	WASTE ACTIVATED SLUDGE
HPA	HIGH PRESSURE ALARM	O/O	ON/OFF (MAINTAINED)	WW	WASTEWATER
HS	HYDRAULIC SUPPLY	P	PUMP	1/2/B	PUMP 1/PUMP 2/BOTH
HTA	HIGH TEMPERATURE ALARM	P/B	PLC/BACKUP (MAINTAINED)	XMTR	TRANSMITTER
INF	INFLUENT	PCP	PROCESS CONTROL PANEL		
I/O	INPUT/OUTPUT	PE	PRIMARY EFFLUENT		
IAS	INSTRUMENT AIR SUPPLY	PFS	PRIMARY FINE SCREEN		

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REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

Contact Arizona 811 at least two full working days before you begin excavation. ARIZONA811 Call 811 or click Arizona811.com

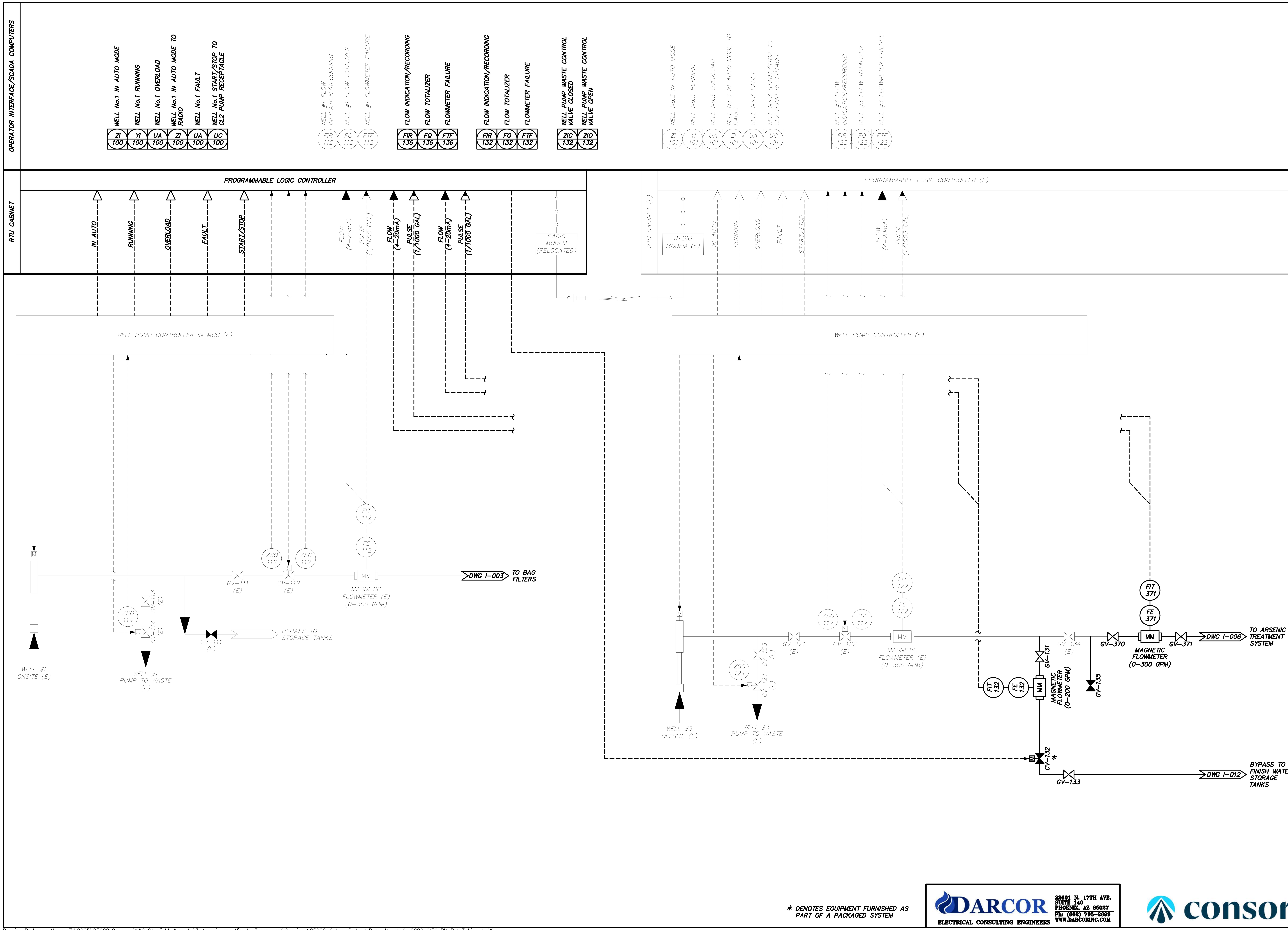
ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006 PHOENIX, ARIZONA 85038-9006 (602) 240-6860

W.A. No.: | P.E. No.: | SYSTEM: | LEGAL DESC.: | TAX DIST.: | SIB No.: | DATE: 3/9/2026 | SCALE: N/A | DRAWN BY: MV | REVIEWED BY: VC | CHECKED BY: JLG

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: P&ID - LEGEND

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

DWG. No.: I-001



OPERATOR INTERFACE/SCADA COMPUTERS
WELL No.1 IN AUTO MODE
WELL No.1 RUNNING
WELL No.1 OVERLOAD
WELL No.1 IN AUTO MODE TO RADIO
WELL No.1 FAULT
WELL No.1 START/STOP TO CL2 PUMP RECEPTACLE
ZI 100
YI 100
UA 100
ZI 100
UA 100
UC 100
WELL #1 FLOW INDICATION/RECORDING
WELL #1 FLOW TOTALIZER
WELL #1 FLOWMETER FAILURE
FIR 112
FQ 112
FTF 112
FLOW INDICATION/RECORDING
FLOW TOTALIZER
FLOWMETER FAILURE
FIR 136
FQ 136
FTF 136
FLOW INDICATION/RECORDING
FLOW TOTALIZER
FLOWMETER FAILURE
FIR 132
FQ 132
FTF 132
WELL PUMP WASTE CONTROL VALVE CLOSED
WELL PUMP WASTE CONTROL VALVE OPEN
ZIC 132
ZIO 132
WELL No.3 IN AUTO MODE
WELL No.3 RUNNING
WELL No.3 OVERLOAD
WELL No.3 IN AUTO MODE TO RADIO
WELL No.3 FAULT
WELL No.3 START/STOP TO CL2 PUMP RECEPTACLE
ZI 101
YI 101
UA 101
ZI 101
UA 101
UC 101
WELL #3 FLOW INDICATION/RECORDING
WELL #3 FLOW TOTALIZER
WELL #3 FLOWMETER FAILURE
FIR 122
FQ 122
FTF 122
RTU CABINET
PROGRAMMABLE LOGIC CONTROLLER
IN AUTO
RUNNING
OVERLOAD
FAULT
START/STOP
FLOW (4-20mA)
PULSE (1/1000 GAL)
FLOW (4-20mA)
PULSE (1/1000 GAL)
FLOW (4-20mA)
PULSE (1/1000 GAL)
RADIO MODEM (RELOCATED)
RTU CABINET (E)
PROGRAMMABLE LOGIC CONTROLLER (E)
RADIO MODEM (E)
IN AUTO
RUNNING
OVERLOAD
FAULT
START/STOP
FLOW (4-20mA)
PULSE (1/1000 GAL)
WELL PUMP CONTROLLER IN MCC (E)
WELL PUMP CONTROLLER (E)
FIT 112
FE 112
ZSO 112
ZSC 112
GV-111 (E)
CV-112 (E)
MM
MAGNETIC FLOWMETER (E) (0-300 GPM)
DWG I-003
TO BAG FILTERS
GV-113 (E)
ZSO 114
CV-114 (E)
WELL #1 ONSITE (E)
WELL #1 PUMP TO WASTE (E)
GV-111 (E)
BYPASS TO STORAGE TANKS
FIT 122
FE 122
ZSO 112
ZSC 112
GV-121 (E)
CV-122 (E)
MM
MAGNETIC FLOWMETER (E) (0-300 GPM)
GV-123 (E)
ZSO 124
CV-124 (E)
WELL #3 OFFSITE (E)
WELL #3 PUMP TO WASTE (E)
FIT 132
FE 132
MM
MAGNETIC FLOWMETER (0-200 GPM)
GV-131
GV-134 (E)
GV-135
CV-132 *
GV-133
FIT 371
FE 371
GV-370
MM
MAGNETIC FLOWMETER (0-300 GPM)
GV-371
DWG I-006
TO ARSENIC TREATMENT SYSTEM
DWG I-012
BYPASS TO FINISH WATER STORAGE TANKS
* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM
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ARIZONA WATER COMPANY

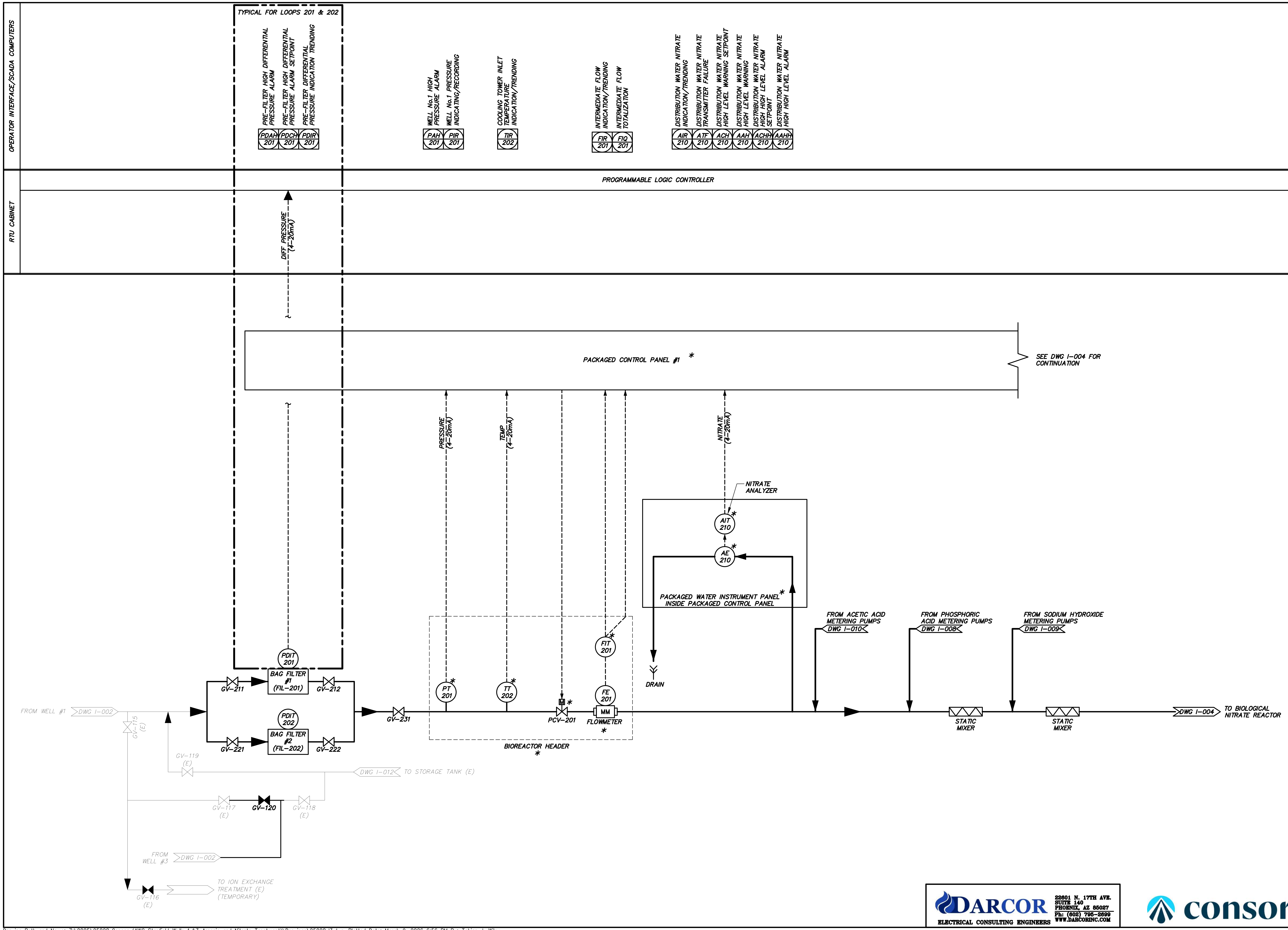
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: P&ID - I

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 Date Signed ARIZONA U.S.A.

DWG. No.: I-002


OPERATOR INTERFACE/SCADA COMPUTERS
RTU CABINET
TYPICAL FOR LOOPS 201 & 202
PRE-FILTER HIGH DIFFERENTIAL PRESSURE ALARM
PRE-FILTER HIGH DIFFERENTIAL PRESSURE ALARM SETPOINT
PRE-FILTER DIFFERENTIAL PRESSURE INDICATION TRENDING
PDAH 201
PDCH 201
PDIR 201
WELL No.1 HIGH PRESSURE ALARM
WELL No.1 PRESSURE INDICATING/RECORDING
PAH 201
PIR 201
COOLING TOWER INLET TEMPERATURE INDICATION/TRENDING
TIR 202
INTERMEDIATE FLOW INDICATION/TRENDING
INTERMEDIATE FLOW TOTALIZATION
FIR 201
FIQ 201
DISTRIBUTION WATER NITRATE INDICATION/TRENDING
DISTRIBUTION WATER NITRATE TRANSMITTER FAILURE
DISTRIBUTION WATER NITRATE HIGH LEVEL WARNING SETPOINT
DISTRIBUTION WATER NITRATE HIGH LEVEL WARNING
DISTRIBUTION WATER NITRATE HIGH HIGH LEVEL ALARM SETPOINT
DISTRIBUTION WATER NITRATE HIGH HIGH LEVEL ALARM
AIR 210
ATF 210
ACH 210
AAH 210
ACHH 210
AAHH 210
PROGRAMMABLE LOGIC CONTROLLER
DIFF PRESSURE (4-20mA)
PACKAGED CONTROL PANEL #1 *
SEE DWG I-004 FOR CONTINUATION
PRESSURE (4-20mA)
TEMP (4-20mA)
NITRATE (4-20mA)
NITRATE ANALYZER
AIT 210 *
AE 210 *
PACKAGED WATER INSTRUMENT PANEL* INSIDE PACKAGED CONTROL PANEL
DRAIN
PDIT 201
PDIT 202
BAG FILTER #1 (FIL-201)
BAG FILTER #2 (FIL-202)
GV-211
GV-212
GV-221
GV-222
GV-231
PT 201 *
TT 202 *
PCV-201 *
FIT 201 *
FE 201
MM
FLOWMETER *
BIOREACTOR HEADER *
FROM ACETIC ACID METERING PUMPS DWG I-010
FROM PHOSPHORIC ACID METERING PUMPS DWG I-008
FROM SODIUM HYDROXIDE METERING PUMPS DWG I-009
STATIC MIXER
STATIC MIXER
DWG I-004 TO BIOLOGICAL NITRATE REACTOR
FROM WELL #1 DWG I-002
GV-115 (E)
GV-119 (E)
DWG I-012 TO STORAGE TANK (E)
GV-117 (E)
GV-120
GV-118 (E)
FROM WELL #3 DWG I-002
GV-116 (E)
TO ION EXCHANGE TREATMENT (E) (TEMPORARY)

REVISIONS:

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PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: P&ID - II

53839 JORGE GERARDO 3/9/26

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DWG. No.: I-003

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-I3.dwg, Plotted Date: March 9, 2026 6:56 PM By: Tobias J. Wiley

OPERATOR INTERFACE/SCADA COMPUTERS

AIR 300	ATF 300	ACH 300	ACL 300	AAH 300	AAL 300
pH INDICATION/TRENDING	pH ANALYZER FAILURE	pH HIGH LEVEL ALARM SETPOINT	pH LOW LEVEL ALARM SETPOINT	pH HIGH LEVEL ALARM	pH LOW LEVEL ALARM

LIR 301A	LCHH 304	LAHH 304	LCLL 304	LALL 304	LCH 304	LCL 304	LTF 304
BIOLOGICAL NITRATE REACTOR No.1 LEVEL INDICATION/TRENDING (PRIMARY)	BIOLOGICAL NITRATE REACTOR No.1 HIGH LEVEL ALARM SETPOINT	BIOLOGICAL NITRATE REACTOR No.1 HIGH LEVEL ALARM	BIOLOGICAL NITRATE REACTOR No.1 LOW LEVEL ALARM SETPOINT	BIOLOGICAL NITRATE REACTOR No.1 LOW LEVEL ALARM	BIOLOGICAL NITRATE REACTOR No.1 HIGH LEVEL WARNING SETPOINT	BIOLOGICAL NITRATE REACTOR No.1 LOW LEVEL WARNING SETPOINT	BIOLOGICAL NITRATE REACTOR No.1 PRIMARY LEVEL TRANSMITTER FAILURE

FIR 304	FIQ 304
BIOLOGICAL NITRATE REACTOR No.1 FLOW INDICATION/TRENDING	BIOLOGICAL NITRATE REACTOR No.1 FLOW TOTALIZATION

LIR 302A	LCHH 305	LAHH 305	LCLL 305	LALL 305	LCH 305	LCL 305	LTF 305
BIOLOGICAL NITRATE REACTOR No.2 LEVEL INDICATION/TRENDING (PRIMARY)	BIOLOGICAL NITRATE REACTOR No.2 HIGH LEVEL ALARM SETPOINT	BIOLOGICAL NITRATE REACTOR No.2 HIGH LEVEL ALARM	BIOLOGICAL NITRATE REACTOR No.2 LOW LEVEL ALARM SETPOINT	BIOLOGICAL NITRATE REACTOR No.2 LOW LEVEL ALARM	BIOLOGICAL NITRATE REACTOR No.2 HIGH LEVEL WARNING SETPOINT	BIOLOGICAL NITRATE REACTOR No.2 LOW LEVEL WARNING SETPOINT	BIOLOGICAL NITRATE REACTOR No.2 PRIMARY LEVEL TRANSMITTER FAILURE

FIR 305	FIQ 305
BIOLOGICAL NITRATE REACTOR No.2 FLOW INDICATION/TRENDING	BIOLOGICAL NITRATE REACTOR No.2 FLOW TOTALIZATION

LIR 303A	LCHH 306	LAHH 306	LCLL 306	LALL 306	LCH 306	LCL 306	LTF 306
BIOLOGICAL NITRATE REACTOR No.3 LEVEL INDICATION/TRENDING (PRIMARY)	BIOLOGICAL NITRATE REACTOR No.3 HIGH LEVEL ALARM SETPOINT	BIOLOGICAL NITRATE REACTOR No.3 HIGH LEVEL ALARM	BIOLOGICAL NITRATE REACTOR No.3 LOW LEVEL ALARM SETPOINT	BIOLOGICAL NITRATE REACTOR No.3 LOW LEVEL ALARM	BIOLOGICAL NITRATE REACTOR No.3 HIGH LEVEL WARNING SETPOINT	BIOLOGICAL NITRATE REACTOR No.3 LOW LEVEL WARNING SETPOINT	BIOLOGICAL NITRATE REACTOR No.3 PRIMARY LEVEL TRANSMITTER FAILURE

FIR 306	FIQ 306
BIOLOGICAL NITRATE REACTOR No.3 FLOW INDICATION/TRENDING	BIOLOGICAL NITRATE REACTOR No.3 FLOW TOTALIZATION

AIR 212	ATF 212	ACH 212	AAH 212	ACHH 212	AAHH 212
DISTRIBUTION WATER NITRATE INDICATION/TRENDING	DISTRIBUTION WATER NITRATE TRANSMITTER FAILURE	DISTRIBUTION WATER NITRATE HIGH LEVEL WARNING SETPOINT	DISTRIBUTION WATER NITRATE HIGH LEVEL WARNING	DISTRIBUTION WATER NITRATE HIGH HIGH LEVEL ALARM SETPOINT	DISTRIBUTION WATER NITRATE HIGH HIGH LEVEL ALARM

RTU CABINET (LCP-100)

PROGRAMMABLE LOGIC CONTROLLER

ETHERNET — TO ETHERNET SWITCH

SEE DWG I-003 FOR CONTINUATION

PACKAGED CONTROL PANEL #1 *

SEE DWG I-005 FOR CONTINUATION

VFD

VFD

VFD

NITRATE (4-20mA)

FROM BIOREACTOR HEADER
DWG I-003

FIT 301

FIT 302

FIT 303

MOVABLE pH SENSOR

RADAR LEVEL TRANSMITTER (TYP 3)

FE 301 — MM — FLOWMETER (FIT-301) *

CV-301 *

HS 300 *

AIT 300 *

LIT 304

FE 302 — MM — FLOWMETER (FIT-302) *

CV-302 *

LIT 305

FE 303 — MM — FLOWMETER (FIT-303) *

CV-303 *

LIT 306

LS 304

LS 305

LS 306

AE 300

REACTION ZONE

AERATION ZONE

QUIESCENT ZONE

MIXER #1

MIXER #2

MIXER #3

BIOLOGICAL NITRATE REACTOR #1

BIOLOGICAL NITRATE REACTOR #2

BIOLOGICAL NITRATE REACTOR #3

CV-304 *

CV-305 *

CV-306 *

FIT 304 — FE 304 — MM — FLOWMETER (FIT-304) *

FIT 305 — FE 305 — MM — FLOWMETER (FIT-305) *

FIT 306 — FE 306 — MM — FLOWMETER (FIT-306) *

GV-312

GV-322

GV-332

NITRATE ANALYZER

AIT 212

AE 212

ANALYZER STREAM PUMP (PU-213)

PACKAGED WATER INSTRUMENT PANEL * INSIDE PACKAGED CONTROL PANEL

DRAIN

TO IPS TANK HEADER
DWG I-005

DWG I-005 FROM CHLORINE DILUTION

NOTE: SEE CIVIL/MECHANICAL PLANS FOR PIPING REQUIREMENTS FOR PACKAGED NITRATE REMOVAL FACILITY

* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM

REVISIONS:

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B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

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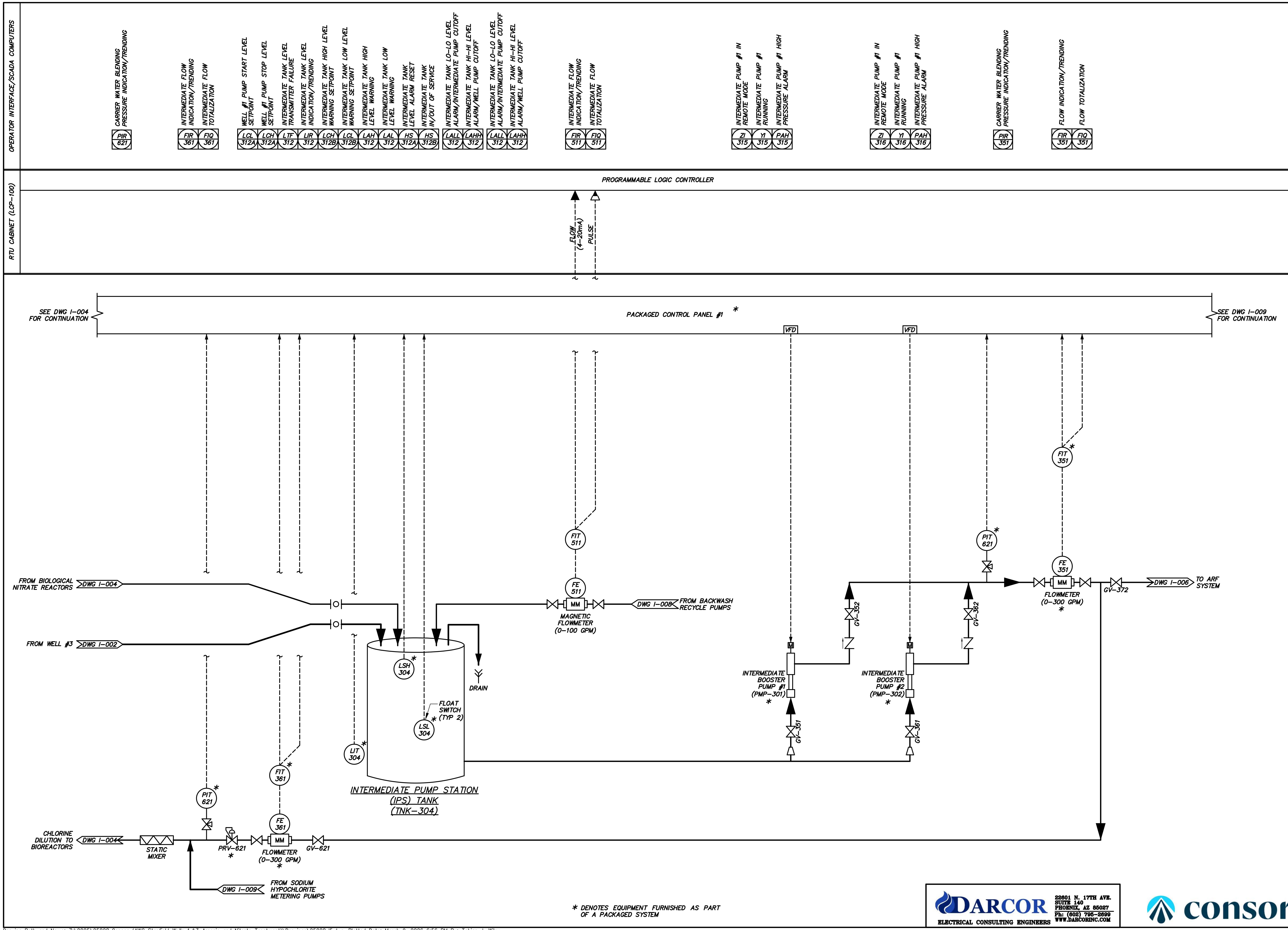
Assured Assured Water Water Assured Water Assured Water Assured


OPERATOR INTERFACE/SCADA COMPUTERS
CARRIER WATER BLENDING PRESSURE INDICATION/TRENDING
PIR 621
INTERMEDIATE FLOW INDICATION/TRENDING
FIR 361
INTERMEDIATE FLOW TOTALIZATION
FIQ 361
WELL #1 PUMP START LEVEL SETPOINT
LCL 312A
WELL #1 PUMP STOP LEVEL SETPOINT
LCH 312A
INTERMEDIATE TANK LEVEL TRANSMITTER FAILURE
LTF 312
INTERMEDIATE TANK LEVEL INDICATION/TRENDING
LIR 312
INTERMEDIATE TANK HIGH LEVEL WARNING SETPOINT
LCH 312B
INTERMEDIATE TANK LOW LEVEL WARNING SETPOINT
LCL 312B
INTERMEDIATE TANK HIGH LEVEL WARNING
LAH 312
INTERMEDIATE TANK LOW LEVEL WARNING
LAL 312
INTERMEDIATE TANK LEVEL ALARM RESET
HS 312A
INTERMEDIATE TANK IN/OUT OF SERVICE
HS 312B
INTERMEDIATE TANK LO-LO LEVEL ALARM/INTERMEDIATE PUMP CUTOFF
LALL 312
INTERMEDIATE TANK HI-HI LEVEL ALARM/WELL PUMP CUTOFF
LAHH 312
INTERMEDIATE TANK LO-LO LEVEL ALARM/INTERMEDIATE PUMP CUTOFF
LALL 312
INTERMEDIATE TANK HI-HI LEVEL ALARM/WELL PUMP CUTOFF
LAHH 312
INTERMEDIATE FLOW INDICATION/TRENDING
FIR 511
INTERMEDIATE FLOW TOTALIZATION
FIQ 511
INTERMEDIATE PUMP #1 IN REMOTE MODE
ZI 315
INTERMEDIATE PUMP #1 RUNNING
YI 315
INTERMEDIATE PUMP #1 HIGH PRESSURE ALARM
PAH 315
INTERMEDIATE PUMP #1 IN REMOTE MODE
ZI 316
INTERMEDIATE PUMP #1 RUNNING
YI 316
INTERMEDIATE PUMP #1 HIGH PRESSURE ALARM
PAH 316
CARRIER WATER BLENDING PRESSURE INDICATION/TRENDING
PIR 351
FLOW INDICATION/TRENDING
FIR 351
FLOW TOTALIZATION
FIQ 351
RTU CABINET (LCP-100)
PROGRAMMABLE LOGIC CONTROLLER
FLOW (4-20mA)
PULSE
SEE DWG I-004 FOR CONTINUATION
PACKAGED CONTROL PANEL #1 *
SEE DWG I-009 FOR CONTINUATION
VFD
VFD
FIT 351 *
FIT 511
FIT 621 *
FE 351
FE 511
FROM BIOLOGICAL NITRATE REACTORS
DWG I-004
FROM WELL #3
DWG I-002
MM
MAGNETIC FLOWMETER (0-100 GPM)
DWG I-008
FROM BACKWASH RECYCLE PUMPS
MM
FLOWMETER (0-300 GPM) *
GV-372
DWG I-006
TO ARF SYSTEM
GV-352
GV-362
M
M
INTERMEDIATE BOOSTER PUMP #1 (PMP-301) *
INTERMEDIATE BOOSTER PUMP #2 (PMP-302) *
GV-351
GV-361
LSH 304 *
DRAIN
FLOAT SWITCH (TYP 2)
LSL 304 *
LIT 304 *
INTERMEDIATE PUMP STATION (IPS) TANK (TNK-304)
FIT 361 *
PIT 621 *
FE 361
CHLORINE DILUTION TO BIOREACTORS
DWG I-004
STATIC MIXER
PRV-621 *
MM
FLOWMETER (0-300 GPM) *
GV-621
DWG I-009
FROM SODIUM HYPOCHLORITE METERING PUMPS
* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

The installation shown is to be installed in accordance with the Arizona Water Company standard specifications on file with the Arizona Department of Environmental Quality

W.A. No.: P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DST.: SIB No.:
DATE: 3/9/2026 SCALE: N/A
DRAWN BY: MV REVIEWED BY: VC CHECKED BY: JLG

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: P&ID - IV

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2699 WWW.DARCORINC.COM

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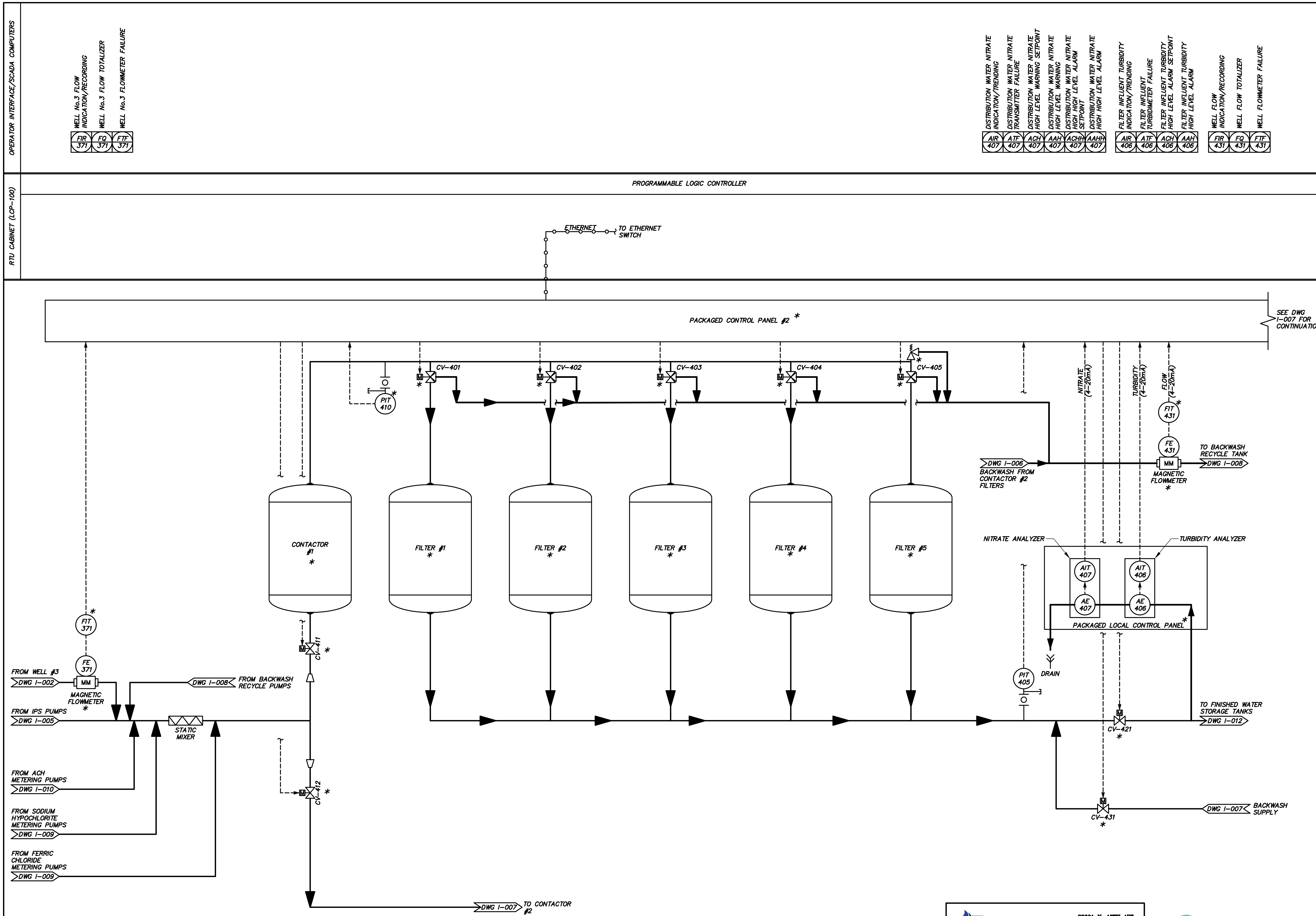
DWG. No.: I-005
SHEET 89 OF 98


OPERATOR INTERFACE/SCADA COMPUTERS
WELL No.3 FLOW INDICATION/RECORDING
WELL No.3 FLOW TOTALIZER
WELL No.3 FLOWMETER FAILURE
FIR 371
FQ 371
FTF 371
DISTRIBUTION WATER NITRATE INDICATION/TRENDING
DISTRIBUTION WATER NITRATE TRANSMITTER FAILURE
DISTRIBUTION WATER NITRATE HIGH LEVEL WARNING SETPOINT
DISTRIBUTION WATER NITRATE HIGH LEVEL WARNING
DISTRIBUTION WATER NITRATE HIGH HIGH LEVEL ALARM SETPOINT
DISTRIBUTION WATER NITRATE HIGH HIGH LEVEL ALARM
AIR 407
ATF 407
ACH 407
AAH 407
ACHH 407
AAHH 407
FILTER INFLUENT TURBIDITY INDICATION/TRENDING
FILTER INFLUENT TURBIDIMETER FAILURE
FILTER INFLUENT TURBIDITY HIGH LEVEL ALARM SETPOINT
FILTER INFLUENT TURBIDITY HIGH LEVEL ALARM
AIR 406
ATF 406
ACH 406
AAH 406
WELL FLOW INDICATION/RECORDING
WELL FLOW TOTALIZER
WELL FLOWMETER FAILURE
FIR 431
FQ 431
FTF 431
PROGRAMMABLE LOGIC CONTROLLER
RTU CABINET (LCP-100)
ETHERNET
TO ETHERNET SWITCH
PACKAGED CONTROL PANEL #2 *
SEE DWG I-007 FOR CONTINUATION
CV-401
CV-402
CV-403
CV-404
CV-405
PIT 410
NITRATE (4-20mA)
TURBIDITY (4-20mA)
FLOW (4-20mA)
FIT 431
FE 431
DWG I-006
BACKWASH FROM CONTACTOR #2 FILTERS
MM
MAGNETIC FLOWMETER
TO BACKWASH RECYCLE TANK
DWG I-008
CONTACTOR #1 *
FILTER #1 *
FILTER #2 *
FILTER #3 *
FILTER #4 *
FILTER #5 *
NITRATE ANALYZER
TURBIDITY ANALYZER
AIT 407
AE 407
AIT 406
AE 406
PACKAGED LOCAL CONTROL PANEL *
DRAIN
PIT 405
FIT 371
FE 371
FROM WELL #3
DWG I-002
MAGNETIC FLOWMETER
DWG I-008
FROM BACKWASH RECYCLE PUMPS
FROM IPS PUMPS
DWG I-005
STATIC MIXER
CV-411
CV-412
FROM ACH METERING PUMPS
DWG I-010
FROM SODIUM HYPOCHLORITE METERING PUMPS
DWG I-009
FROM FERRIC CHLORIDE METERING PUMPS
DWG I-009
DWG I-007
TO CONTACTOR #2
TO FINISHED WATER STORAGE TANKS
DWG I-012
CV-421
CV-431
DWG I-007
BACKWASH SUPPLY

* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM

REVISIONS:			
NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
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Contact Arizona 811 at least two full working days before you begin excavation. ARIZONA 811. Call 811 or click Arizona811.com

W.A. No.:
P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
SIB No.:
DATE: 3/9/2026
SCALE: N/A
DRAWN BY: MV
REVIEWED BY: VC
CHECKED BY: JLG

ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: P&ID - V

Registered Professional Engineer (Electrical) Certificate No. 53839 JORGE GERARDO 3/9/26 Date Signed ARIZONA U.S.A.

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027
Ph: (602) 795-2699
WWW.DARCORINC.COM

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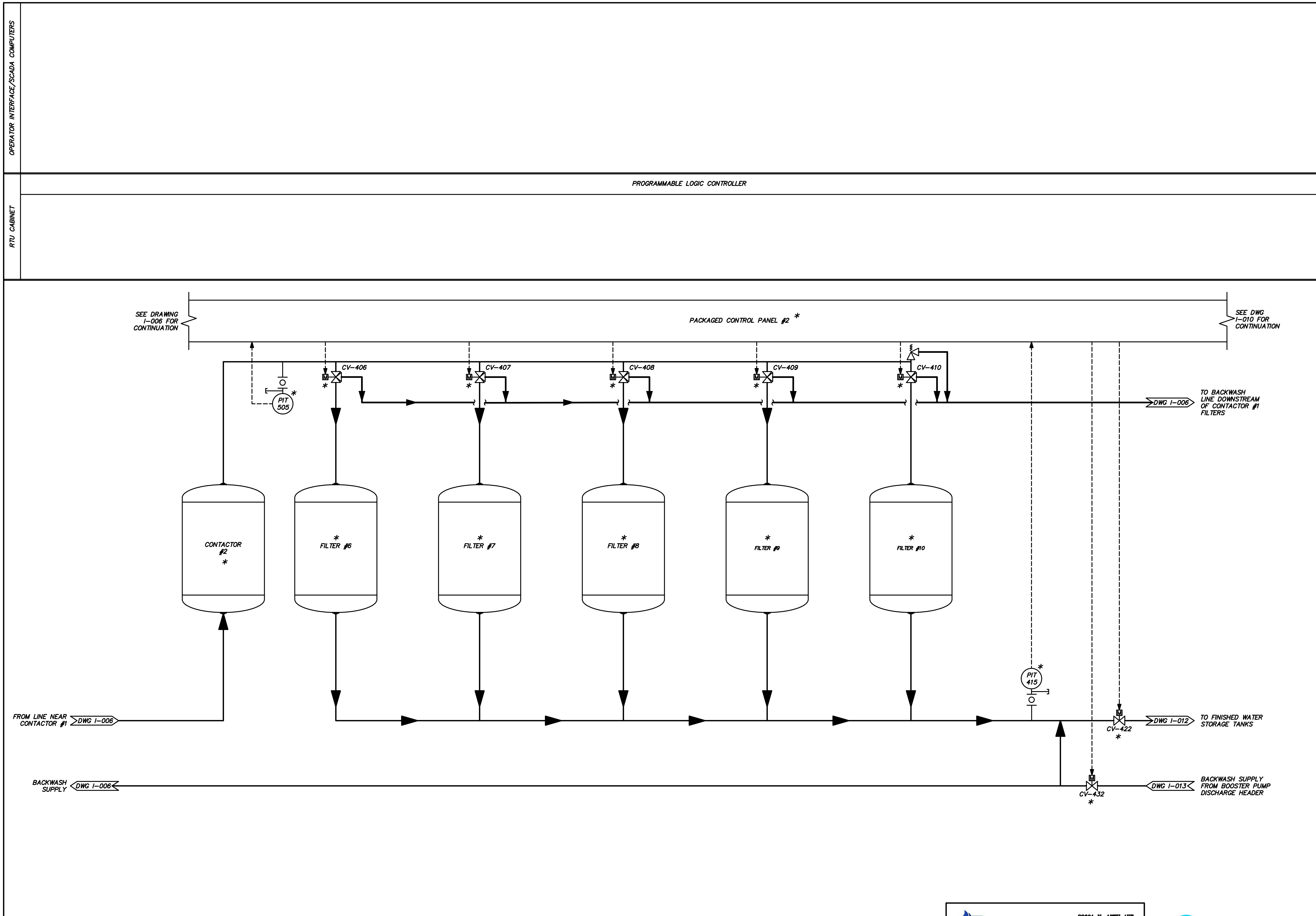
DWG. No.: I-006

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-I6.dwg, Plotted Date: March 9, 2026 6:56 PM By: Tobias J. Wiley



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DATE: 3/9/2026 | SCALE: N/A | DRAWN BY: MV | REVIEWED BY: VC | CHECKED BY: JLG

ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: P&ID - VI

Registered Professional Engineer (Electrical) Certificate No. 53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2699 WWW.DARCORINC.COM

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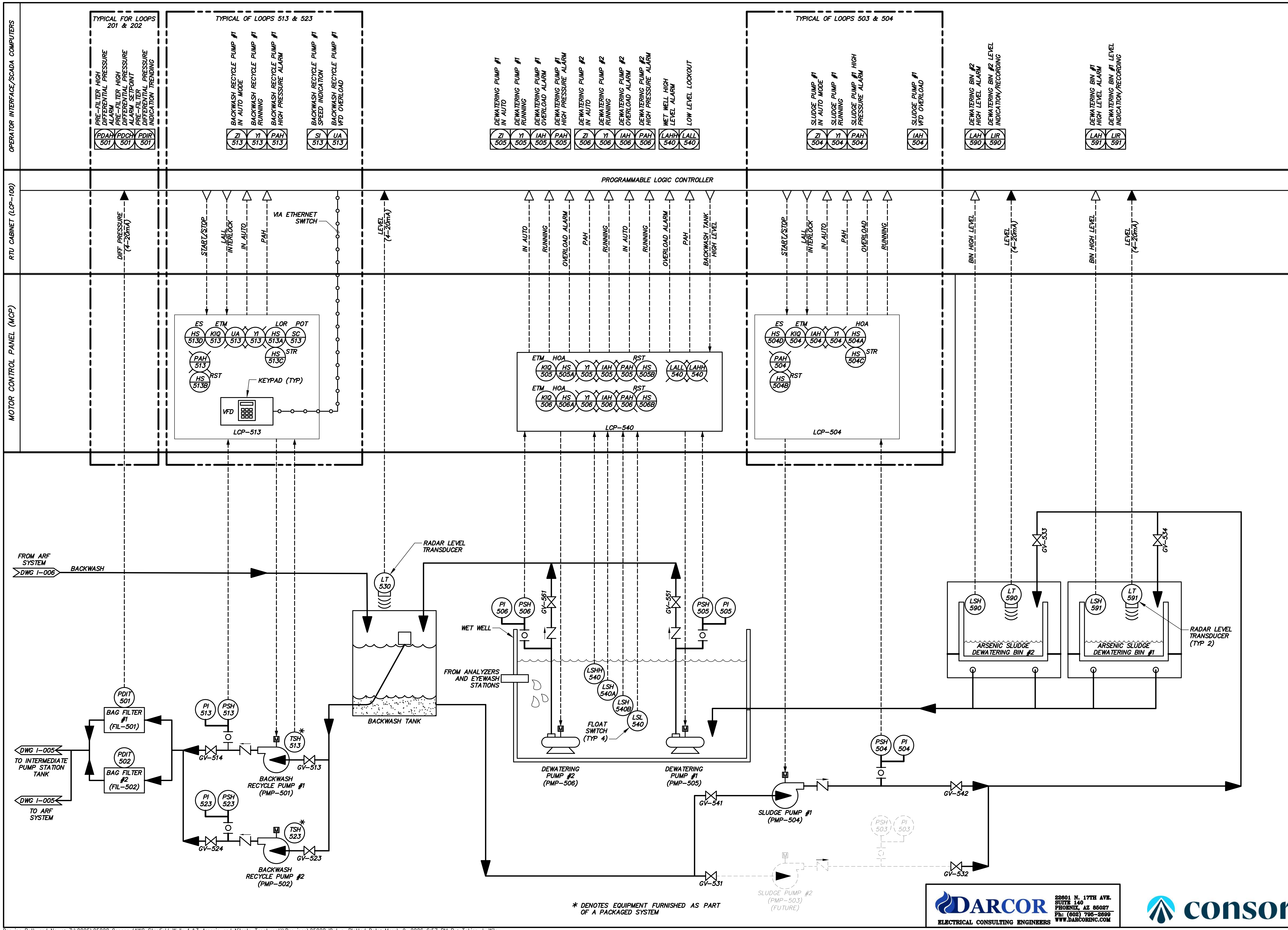
DWG. No.: I-007
SHEET 91 OF 98

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-I7.dwg, Plotted Date: March 9, 2026 6:57 PM By: Tobias J. Wiley



OPERATOR INTERFACE/SCADA COMPUTERS
RTU CABINET (LCP-100)
MOTOR CONTROL PANEL (MCP)
TYPICAL FOR LOOPS 201 & 202
TYPICAL OF LOOPS 513 & 523
TYPICAL OF LOOPS 503 & 504
PRE-FILTER HIGH DIFFERENTIAL PRESSURE ALARM
PRE-FILTER HIGH DIFFERENTIAL PRESSURE ALARM SETPOINT
PRE-FILTER DIFFERENTIAL PRESSURE INDICATION TRENDING
PDAH 501
PDCH 501
PDIR 501
BACKWASH RECYCLE PUMP #1 IN AUTO MODE
BACKWASH RECYCLE PUMP #1 RUNNING
BACKWASH RECYCLE PUMP #1 HIGH PRESSURE ALARM
BACKWASH RECYCLE PUMP #1 SPEED INDICATION
BACKWASH RECYCLE PUMP #1 VFD OVERLOAD
ZI 513
YI 513
PAH 513
SI 513
UA 513
DEWATERING PUMP #1 IN AUTO
DEWATERING PUMP #1 RUNNING
DEWATERING PUMP #1 OVERLOAD ALARM
DEWATERING PUMP #1 HIGH PRESSURE ALARM
DEWATERING PUMP #2 IN AUTO
DEWATERING PUMP #2 RUNNING
DEWATERING PUMP #2 OVERLOAD ALARM
DEWATERING PUMP #2 HIGH PRESSURE ALARM
WET WELL HIGH LEVEL ALARM
LOW LEVEL LOCKOUT
ZI 505
YI 505
IAH 505
PAH 505
ZI 506
YI 506
IAH 506
PAH 506
LAHH 540
LALL 540
SLUDGE PUMP #1 IN AUTO MODE
SLUDGE PUMP #1 RUNNING
SLUDGE PUMP #1 HIGH PRESSURE ALARM
SLUDGE PUMP #1 VFD OVERLOAD
ZI 504
YI 504
PAH 504
IAH 504
DEWATERING BIN #2 HIGH LEVEL ALARM
DEWATERING BIN #2 LEVEL INDICATION/RECORDING
LAH 590
LIR 590
DEWATERING BIN #1 HIGH LEVEL ALARM
DEWATERING BIN #1 LEVEL INDICATION/RECORDING
LAH 591
LIR 591
PROGRAMMABLE LOGIC CONTROLLER
DIFF PRESSURE (4-20mA)
START/STOP
LALL INTERLOCK
IN AUTO
PAH
VIA ETHERNET SWITCH
LEVEL (4-20mA)
IN AUTO
RUNNING
OVERLOAD ALARM
PAH
RUNNING
IN AUTO
RUNNING
OVERLOAD ALARM
PAH
BACKWASH TANK HIGH LEVEL
START/STOP
LALL INTERLOCK
IN AUTO
PAH
OVERLOAD
RUNNING
BIN HIGH LEVEL
LEVEL (4-20mA)
BIN HIGH LEVEL
LEVEL (4-20mA)
ES ETM LOR POT
HS 513D
KIQ 513
UA 513
YI 513
HS 513A
SC 513
HS 513C
STR
PAH 513
HS 513B
RST
KEYPAD (TYP)
VFD
LCP-513
ETM HOA RST
KIQ 505
HS 505A
YI 505
IAH 505
PAH 505
HS 505B
LALL 540
LAHH 540
KIQ 506
HS 506A
YI 506
IAH 506
PAH 506
HS 506B
LCP-540
ES ETM HOA
HS 504D
KIQ 504
IAH 504
YI 504
HS 504A
HS 504C
STR
PAH 504
HS 504B
RST
LCP-504
FROM ARF SYSTEM
DWG I-006
BACKWASH
RADAR LEVEL TRANSDUCER
LT 530
BACKWASH TANK
PDIT 501
BAG FILTER #1 (FIL-501)
PDIT 502
BAG FILTER #2 (FIL-502)
DWG I-005
TO INTERMEDIATE PUMP STATION TANK
DWG I-005
TO ARF SYSTEM
PI 513
PSH 513
GV-514
GV-513
TSH 513 *
BACKWASH RECYCLE PUMP #1 (PMP-501)
PI 523
PSH 523
GV-524
GV-523
TSH 523 *
BACKWASH RECYCLE PUMP #2 (PMP-502)
WET WELL
PI 506
PSH 506
GV-561
GV-551
PSH 505
PI 505
FROM ANALYZERS AND EYEWASH STATIONS
LSHH 540
LSH 540A
LSH 540B
LSL 540
FLOAT SWITCH (TYP 4)
DEWATERING PUMP #2 (PMP-506)
DEWATERING PUMP #1 (PMP-505)
GV-533
GV-534
LSH 590
LT 590
LSH 591
LT 591
ARSENIC SLUDGE DEWATERING BIN #2
ARSENIC SLUDGE DEWATERING BIN #1
RADAR LEVEL TRANSDUCER (TYP 2)
PSH 504
PI 504
GV-541
SLUDGE PUMP #1 (PMP-504)
GV-542
PSH 503
PI 503
GV-531
SLUDGE PUMP #2 (PMP-503) (FUTURE)
GV-532
* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM

DARCOR
ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2699 WWW.DARCORINC.COM

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REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
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W.A. No.: P.E. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.: SIB No.:
DATE: 3/9/2026 SCALE: N/A
DRAWN BY: MV REVIEWED BY: VC CHECKED BY: JLG

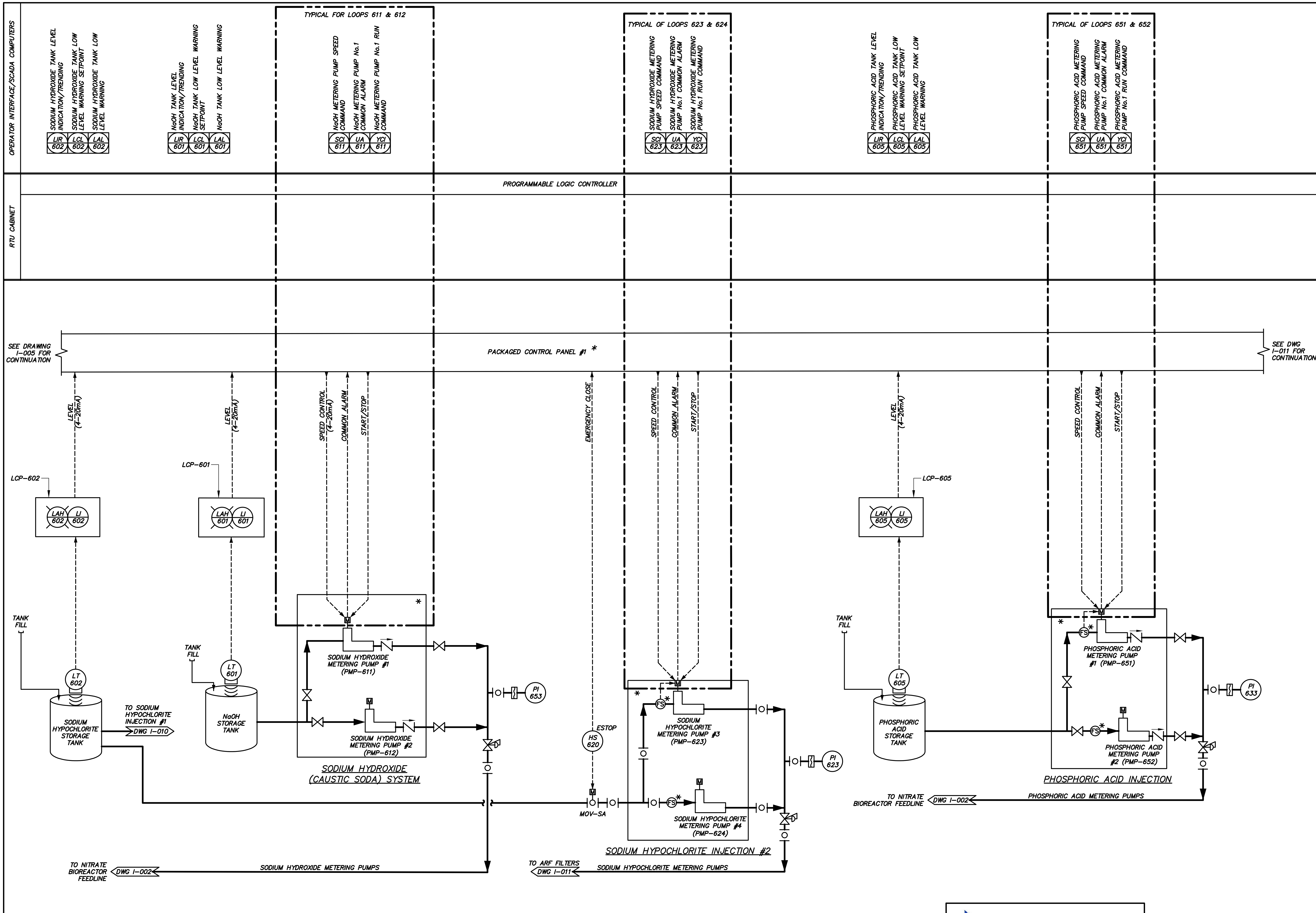
ARIZONA WATER COMPANY

3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: P&ID - VII

53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

DWG. No.: I-008
SHEET 92 OF 98



OPERATOR INTERFACE/SCADA COMPUTERS
RTU CABINET
SODIUM HYDROXIDE TANK LEVEL INDICATION/TRENDING
SODIUM HYDROXIDE TANK LOW LEVEL WARNING SETPOINT
SODIUM HYDROXIDE TANK LOW LEVEL WARNING
LIR 602
LCL 602
LAL 602
NaOH TANK LEVEL INDICATION/TRENDING
NaOH TANK LOW LEVEL WARNING SETPOINT
NaOH TANK LOW LEVEL WARNING
LIR 601
LCL 601
LAL 601
TYPICAL FOR LOOPS 611 & 612
NaOH METERING PUMP SPEED COMMAND
NaOH METERING PUMP No.1 COMMON ALARM
NaOH METERING PUMP No.1 RUN COMMAND
SCI 611
UA 611
YCI 611
TYPICAL OF LOOPS 623 & 624
SODIUM HYDROXIDE METERING PUMP SPEED COMMAND
SODIUM HYDROXIDE METERING PUMP No.1 COMMON ALARM
SODIUM HYDROXIDE METERING PUMP No.1 RUN COMMAND
SCI 623
UA 623
YCI 623
PHOSPHORIC ACID TANK LEVEL INDICATION/TRENDING
PHOSPHORIC ACID TANK LOW LEVEL WARNING SETPOINT
PHOSPHORIC ACID TANK LOW LEVEL WARNING
LIR 605
LCL 605
LAL 605
TYPICAL OF LOOPS 651 & 652
PHOSPHORIC ACID METERING PUMP SPEED COMMAND
PHOSPHORIC ACID METERING PUMP No.1 COMMON ALARM
PHOSPHORIC ACID METERING PUMP No.1 RUN COMMAND
SCI 651
UA 651
YCI 651
PROGRAMMABLE LOGIC CONTROLLER
SEE DRAWING I-005 FOR CONTINUATION
PACKAGED CONTROL PANEL #1 *
SEE DWG I-011 FOR CONTINUATION
LEVEL (4-20mA)
SPEED CONTROL (4-20mA)
COMMON ALARM
START/STOP
EMERGENCY CLOSE
SPEED CONTROL
LCP-602
LAH 602
LI 602
LCP-601
LAH 601
LI 601
LCP-605
LAH 605
LI 605
TANK FILL
LT 602
SODIUM HYPOCHLORITE STORAGE TANK
TO SODIUM HYPOCHLORITE INJECTION #1
DWG I-010
LT 601
NaOH STORAGE TANK
SODIUM HYDROXIDE METERING PUMP #1 (PMP-611)
SODIUM HYDROXIDE METERING PUMP #2 (PMP-612)
PI 653
SODIUM HYDROXIDE (CAUSTIC SODA) SYSTEM
ESTOP
HS 620
MOV-SA
SODIUM HYPOCHLORITE METERING PUMP #3 (PMP-623)
SODIUM HYPOCHLORITE METERING PUMP #4 (PMP-624)
FS
PI 623
SODIUM HYPOCHLORITE INJECTION #2
LT 605
PHOSPHORIC ACID STORAGE TANK
PHOSPHORIC ACID METERING PUMP #1 (PMP-651)
PHOSPHORIC ACID METERING PUMP #2 (PMP-652)
PI 633
PHOSPHORIC ACID INJECTION
TO NITRATE BIOREACTOR FEEDLINE
DWG I-002
PHOSPHORIC ACID METERING PUMPS
SODIUM HYDROXIDE METERING PUMPS
TO ARF FILTERS
DWG I-011
SODIUM HYPOCHLORITE METERING PUMPS

* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM

DARCOR ELECTRICAL CONSULTING ENGINEERS — 22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2699 WWW.DARCORINC.COM

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REVISIONS:

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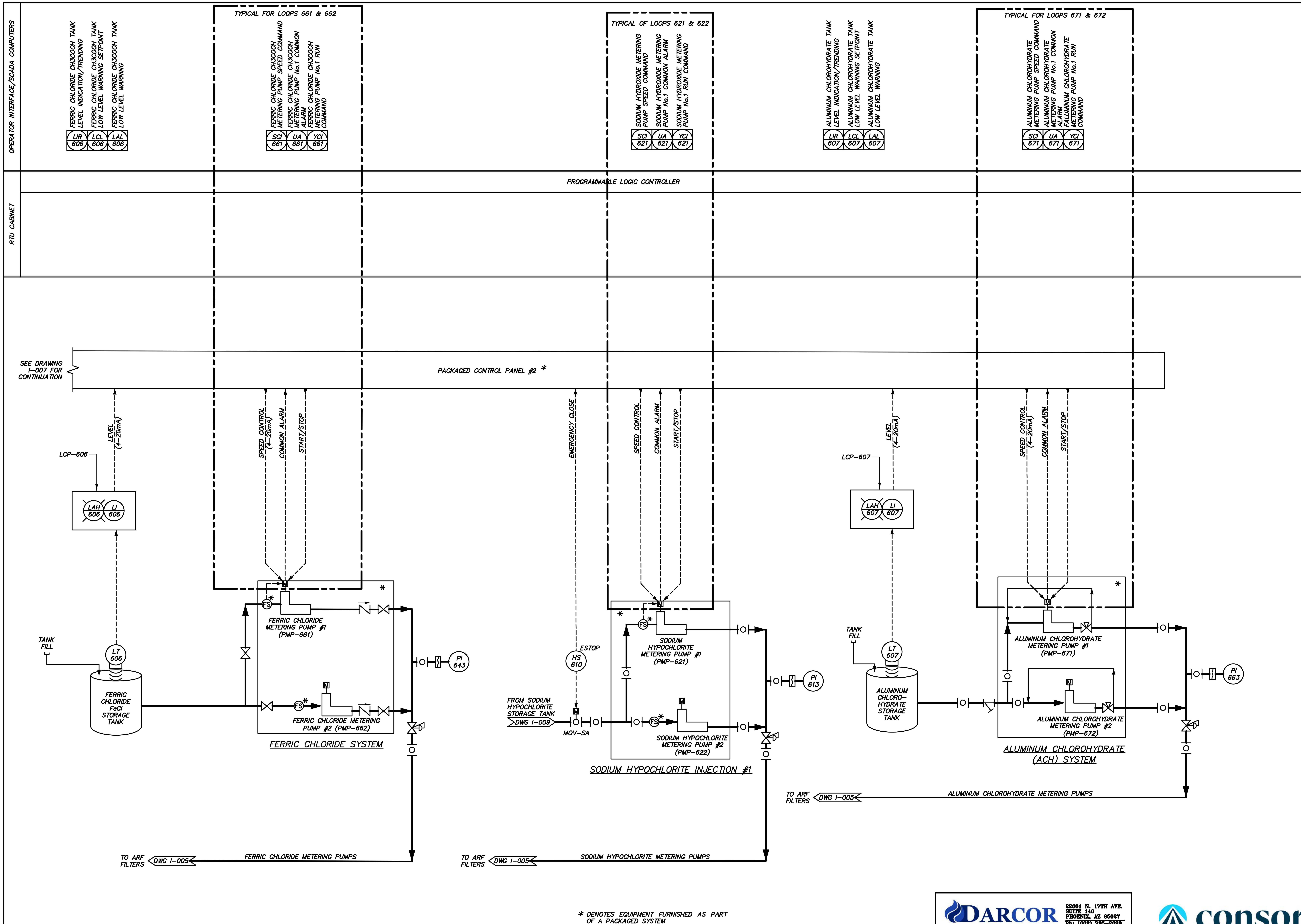
ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

W.A. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
P.E. No.:
SB No.:
DATE: 3/9/2026
SCALE: N/A
DRAWN BY: MV
REVIEWED BY: VC
CHECKED BY: JLG
PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: P&ID - VIII

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

DWG. No.: I-009
SHEET 93 OF 98

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-I9.dwg, Plotted Date: March 9, 2026 6:57 PM By: Tobias J. Wiley


OPERATOR INTERFACE/SCADA COMPUTERS
RTU CABINET
FERRIC CHLORIDE CH3COOH TANK LEVEL INDICATION/TRENDING
FERRIC CHLORIDE CH3COOH TANK LOW LEVEL WARNING SETPOINT
FERRIC CHLORIDE CH3COOH TANK LOW LEVEL WARNING
LIR 606
LCL 606
LAL 606
TYPICAL FOR LOOPS 661 & 662
FERRIC CHLORIDE CH3COOH METERING PUMP SPEED COMMAND
FERRIC CHLORIDE CH3COOH METERING PUMP No.1 COMMON ALARM
FERRIC CHLORIDE CH3COOH METERING PUMP No.1 RUN COMMAND
SCI 661
UA 661
YCI 661
TYPICAL OF LOOPS 621 & 622
SODIUM HYDROXIDE METERING PUMP SPEED COMMAND
SODIUM HYDROXIDE METERING PUMP No.1 COMMON ALARM
SODIUM HYDROXIDE METERING PUMP No.1 RUN COMMAND
SCI 621
UA 621
YCI 621
ALUMINUM CHLOROHYDRATE TANK LEVEL INDICATION/TRENDING
ALUMINUM CHLOROHYDRATE TANK LOW LEVEL WARNING SETPOINT
ALUMINUM CHLOROHYDRATE TANK LOW LEVEL WARNING
LIR 607
LCL 607
LAL 607
TYPICAL FOR LOOPS 671 & 672
ALUMINUM CHLOROHYDRATE METERING PUMP SPEED COMMAND
ALUMINUM CHLOROHYDRATE METERING PUMP No.1 COMMON ALARM
FALUMINUM CHLOROHYDRATE METERING PUMP No.1 RUN COMMAND
SCI 671
UA 671
YCI 671
PROGRAMMABLE LOGIC CONTROLLER
SEE DRAWING I-007 FOR CONTINUATION
PACKAGED CONTROL PANEL #2 *
LEVEL (4-20mA)
LCP-606
LAH 606
LI 606
SPEED CONTROL (4-20mA)
COMMON ALARM
START/STOP
EMERGENCY CLOSE
SPEED CONTROL
COMMON ALARM
START/STOP
LEVEL (4-20mA)
LCP-607
LAH 607
LI 607
SPEED CONTROL (4-20mA)
COMMON ALARM
START/STOP
TANK FILL
LT 606
FERRIC CHLORIDE FeCl STORAGE TANK
FS *
FERRIC CHLORIDE METERING PUMP #1 (PMP-661)
FERRIC CHLORIDE METERING PUMP #2 (PMP-662)
PI 643
FERRIC CHLORIDE SYSTEM
TO ARF FILTERS
DWG I-005
FERRIC CHLORIDE METERING PUMPS
ESTOP
HS 610
FROM SODIUM HYPOCHLORITE STORAGE TANK
DWG I-009
MOV-SA
SODIUM HYPOCHLORITE METERING PUMP #1 (PMP-621)
SODIUM HYPOCHLORITE METERING PUMP #2 (PMP-622)
PI 613
SODIUM HYPOCHLORITE INJECTION #1
TO ARF FILTERS
DWG I-005
SODIUM HYPOCHLORITE METERING PUMPS
TANK FILL
LT 607
ALUMINUM CHLORO-HYDRATE STORAGE TANK
ALUMINUM CHLOROHYDRATE METERING PUMP #1 (PMP-671)
ALUMINUM CHLOROHYDRATE METERING PUMP #2 (PMP-672)
PI 663
ALUMINUM CHLOROHYDRATE (ACH) SYSTEM
TO ARF FILTERS
DWG I-005
ALUMINUM CHLOROHYDRATE METERING PUMPS
* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027
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ARIZONA WATER COMPANY
3805 N. BLACK CANYON HWY. POST OFFICE BOX 29006
PHOENIX, ARIZONA 85038-9006
(602) 240-6860

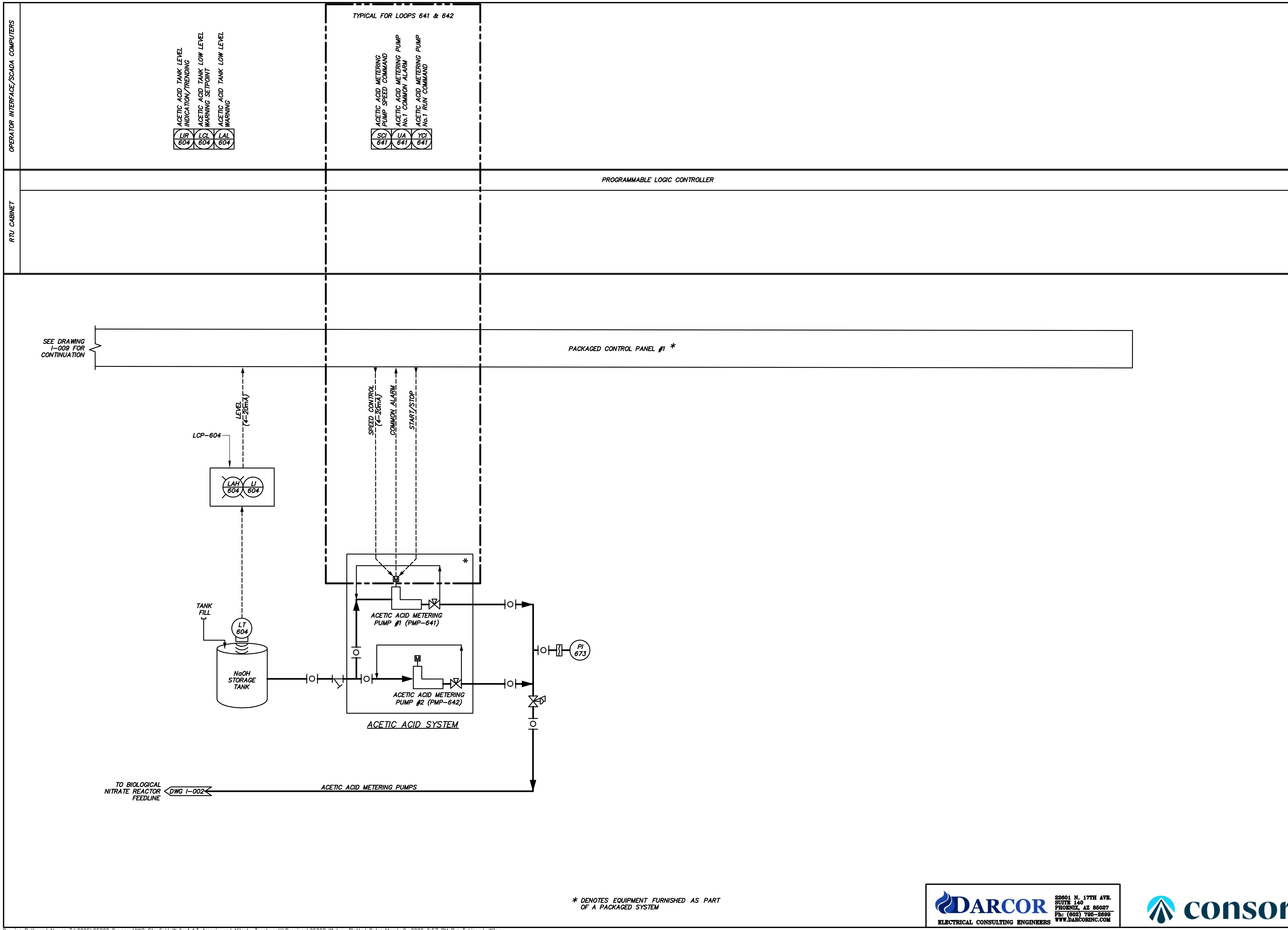
W.A. No.:
SYSTEM:
LEGAL DESC.:
TAX DIST.:
P.E. No.:
SIB No.:
DATE: 3/9/2026
SCALE: N/A
DRAWN BY: MV
REVIEWED BY: VC
CHECKED BY: JLG

PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: P&ID - IX

Registered Professional Engineer (Electrical) CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

DWG. No.: I-010

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-I10.dwg, Plotted Date: March 9, 2026 6:57 PM By: Tobias J. Wiley



OPERATOR INTERFACE/SCADA COMPUTERS
RTU CABINET
ACETIC ACID TANK LEVEL INDICATION/TRENDING
ACETIC ACID TANK LOW LEVEL WARNING SETPOINT
ACETIC ACID TANK LOW LEVEL WARNING
LIR 604
LCL 604
LAL 604
TYPICAL FOR LOOPS 641 & 642
ACETIC ACID METERING PUMP SPEED COMMAND
ACETIC ACID METERING PUMP No.1 COMMON ALARM
ACETIC ACID METERING PUMP No.1 RUN COMMAND
SCI 641
UA 641
YCI 641
PROGRAMMABLE LOGIC CONTROLLER
SEE DRAWING I-009 FOR CONTINUATION
PACKAGED CONTROL PANEL #1 *
LEVEL (4-20mA)
SPEED CONTROL (4-20mA)
COMMON ALARM
START/STOP
LCP-604
LAH 604
LI 604
TANK FILL
LT 604
NaOH STORAGE TANK
ACETIC ACID METERING PUMP #1 (PMP-641)
ACETIC ACID METERING PUMP #2 (PMP-642)
ACETIC ACID SYSTEM
PI 673
TO BIOLOGICAL NITRATE REACTOR FEEDLINE
DWG I-002
ACETIC ACID METERING PUMPS
* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM

REVISIONS:

NO	DATE	BY	DESCRIPTION
A	10/03/25	FT	30% SUBMITTAL
B	12/12/25	FT	60% SUBMITTAL
C	03/09/26	FT	90% SUBMITTAL

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REVIEWED BY: VC
CHECKED BY: JLG

ARIZONA WATER COMPANY
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PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: P&ID - X

53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

DARCOR ELECTRICAL CONSULTING ENGINEERS
22601 N. 17TH AVE. SUITE 140 PHOENIX, AZ 85027 Ph: (602) 795-2699 WWW.DARCORINC.COM

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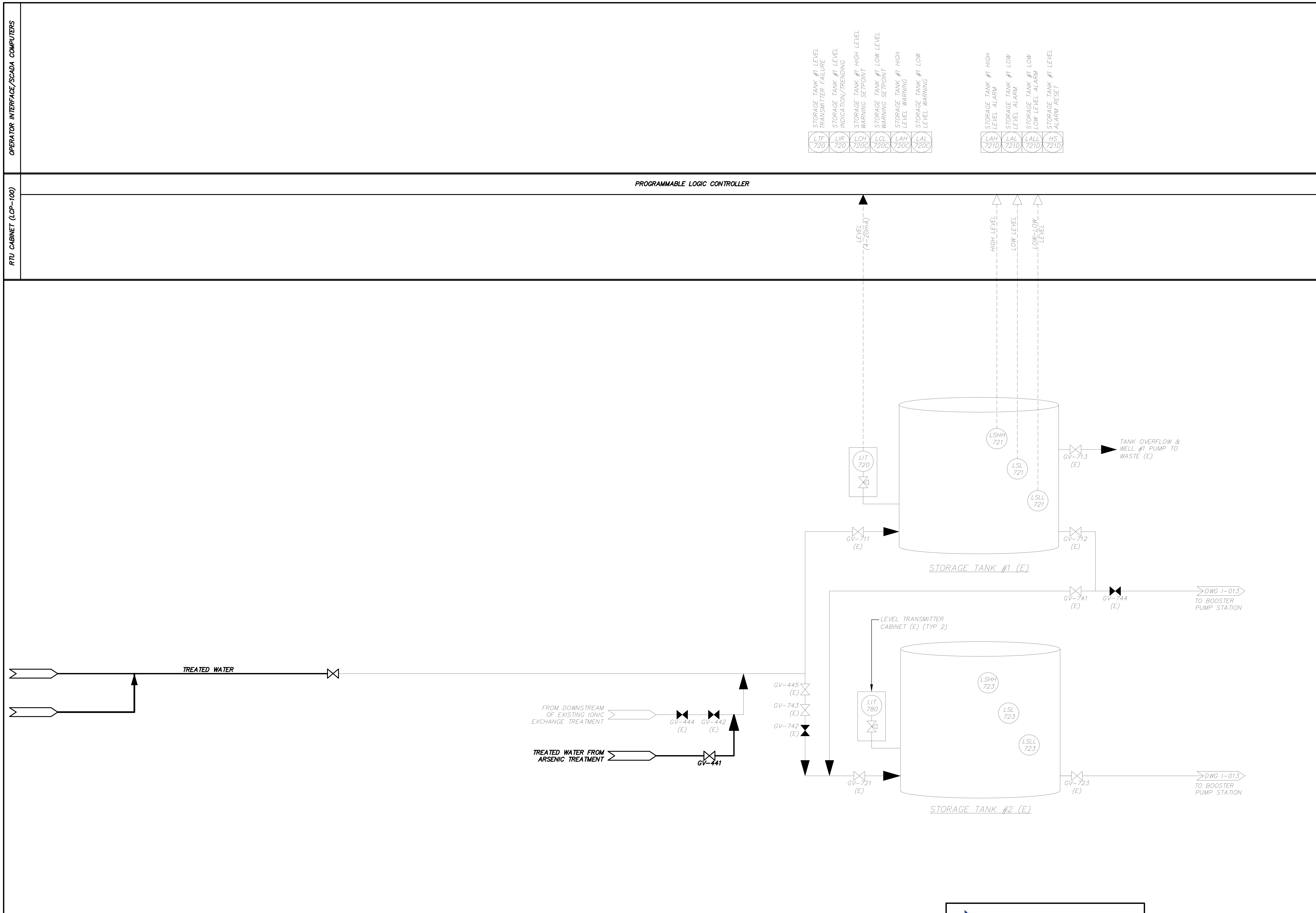
DWG. No.: I-011
SHEET 95 OF 98

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-I11.dwg, Plotted Date: March 9, 2026 6:57 PM By: Tobias J. Wiley



OPERATOR INTERFACE/SCADA COMPUTERS
STORAGE TANK #1 LEVEL TRANSMITTER FAILURE
STORAGE TANK #1 LEVEL INDICATION/TRENDING
STORAGE TANK #1 HIGH LEVEL WARNING SETPOINT
STORAGE TANK #1 LOW LEVEL WARNING SETPOINT
STORAGE TANK #1 HIGH LEVEL WARNING
STORAGE TANK #1 LOW LEVEL WARNING
STORAGE TANK #1 HIGH LEVEL ALARM
STORAGE TANK #1 LOW LEVEL ALARM
STORAGE TANK #1 LOW LOW LEVEL ALARM
STORAGE TANK #1 LEVEL ALARM RESET
LTF 720
LIR 720
LCH 720C
LCL 720C
LAH 720C
LAL 720C
LAH 721D
LAL 721D
LALL 721D
HS 721D
RTU CABINET (LCP-100)
PROGRAMMABLE LOGIC CONTROLLER
LEVEL (4-20mA)
HIGH LEVEL
LOW LEVEL
LOW-LOW LEVEL
LIT 720
LSHH 721
LSL 721
LSLL 721
GV-713 (E)
TANK OVERFLOW & WELL #1 PUMP TO WASTE (E)
GV-711 (E)
GV-712 (E)
STORAGE TANK #1 (E)
GV-741 (E)
GV-744 (E)
DWG I-013
TO BOOSTER PUMP STATION
LEVEL TRANSMITTER CABINET (E) (TYP 2)
TREATED WATER
GV-445 (E)
GV-743 (E)
GV-742 (E)
FROM DOWNSTREAM OF EXISTING IONIC EXCHANGE TREATMENT
GV-444 (E)
GV-442 (E)
TREATED WATER FROM ARSENIC TREATMENT
GV-441
LIT 780
LSHH 723
LSL 723
LSLL 723
GV-721 (E)
GV-723 (E)
DWG I-013
TO BOOSTER PUMP STATION
STORAGE TANK #2 (E)

* DENOTES EQUIPMENT FURNISHED AS PART OF A PACKAGED SYSTEM

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SCALE: N/A
DRAWN BY: MV
REVIEWED BY: VC
CHECKED BY: JLG

ARIZONA WATER COMPANY

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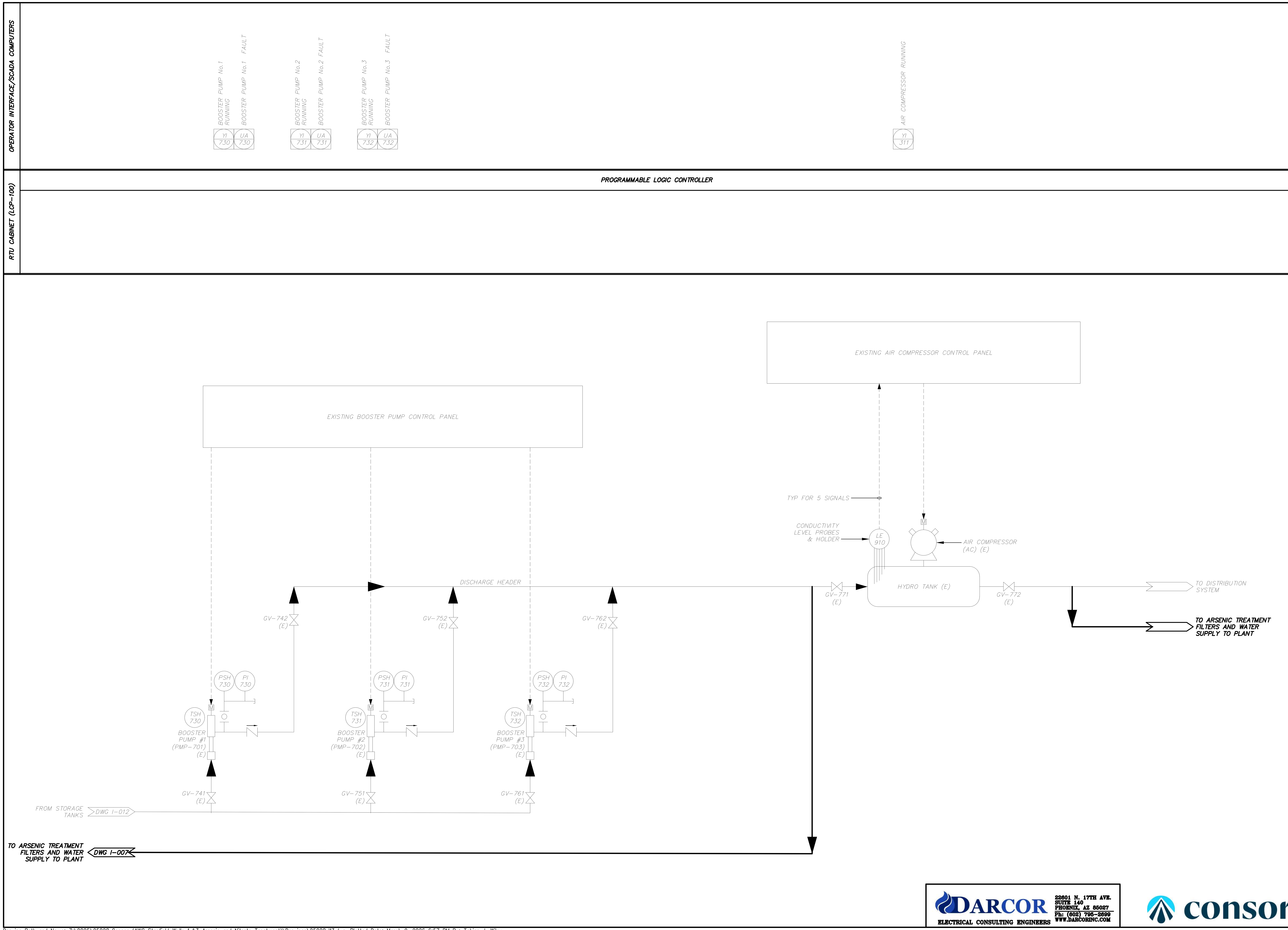
PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: P&ID - XI

CERTIFICATE NO. 53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

DWG. No.: I-012
SHEET 96 OF 98

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-I12.dwg, Plotted Date: March 9, 2026 6:57 PM By: Tobias J. Wiley


OPERATOR INTERFACE/SCADA COMPUTERS
BOOSTER PUMP No.1 RUNNING
BOOSTER PUMP No.1 FAULT
YI 730
UA 730
BOOSTER PUMP No.2 RUNNING
BOOSTER PUMP No.2 FAULT
YI 731
UA 731
BOOSTER PUMP No.3 RUNNING
BOOSTER PUMP No.3 FAULT
YI 732
UA 732
AIR COMPRESSOR RUNNING
YI 311
RTU CABINET (LCP-100)
PROGRAMMABLE LOGIC CONTROLLER
EXISTING AIR COMPRESSOR CONTROL PANEL
EXISTING BOOSTER PUMP CONTROL PANEL
TYP FOR 5 SIGNALS
CONDUCTIVITY LEVEL PROBES & HOLDER
LE 910
AIR COMPRESSOR (AC) (E)
DISCHARGE HEADER
GV-771 (E)
HYDRO TANK (E)
GV-772 (E)
TO DISTRIBUTION SYSTEM
TO ARSENIC TREATMENT FILTERS AND WATER SUPPLY TO PLANT
GV-742 (E)
GV-752 (E)
GV-762 (E)
PSH 730
PI 730
PSH 731
PI 731
PSH 732
PI 732
TSH 730
TSH 731
TSH 732
BOOSTER PUMP #1 (PMP-701) (E)
BOOSTER PUMP #2 (PMP-702) (E)
BOOSTER PUMP #3 (PMP-703) (E)
GV-741 (E)
GV-751 (E)
GV-761 (E)
FROM STORAGE TANKS
DWG I-012
TO ARSENIC TREATMENT FILTERS AND WATER SUPPLY TO PLANT
DWG I-007

REVISIONS:

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TAX DIST.: SIB No.:
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DRAWN BY: MV REVIEWED BY: VC CHECKED BY: JLG

ARIZONA WATER COMPANY

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PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION
PROJECT SHEET DESC: P&ID - XII

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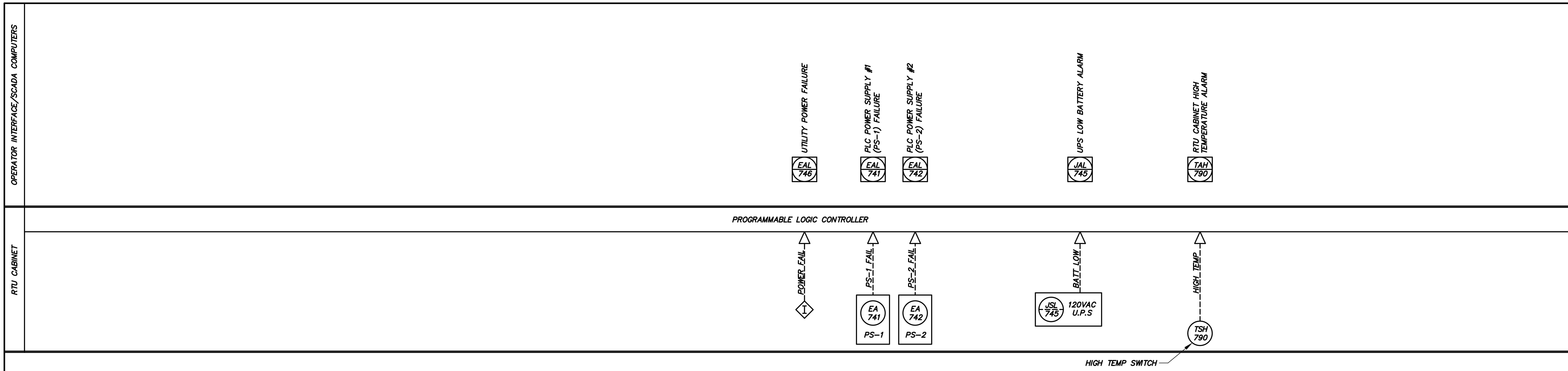
DWG. No.: I-013
SHEET 97 OF 98

Drawing Path and Name: Z:\2025\25028-Consor (AWC Stanfield Wells 1 &3 Arsenic and Nitrate Treatment)\Drawings\25028-I13.dwg, Plotted Date: March 9, 2026 6:57 PM By: Tobias J. Wiley



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PROJECT DESC: STANFIELD GWS&T USBR GRANT COORDINATION

PROJECT SHEET DESC: P&ID - XIII

Registered Professional Engineer (Electrical) Certificate No. 53839 JORGE GERARDO 3/9/26 ARIZONA U.S.A.

DWG. No.: I-014

SHEET OF 98

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